E.O. 13508 *Strategy for Protecting and Restoring the Chesapeake Bay Watershed*

Draft Fiscal Year 2011 Action Plan

Preliminary Internal Review Draft, September 10, 2010

NOTES:

The following pages represent the main body of the Fiscal Year 2011 Action Plan. However, the final document will also include:

- a cover letter from the Federal Leadership Committee;
- an overview narrative providing an introduction to the action plan, key highlights, and a description of how it was developed;
- an additional summary table of key investments.

These additional elements will be included in the draft Fiscal Year 2011 Action Plan distributed for final review on or about September 16, 2010.

The Action Plan is organized on the structure and specific actions of the *Strategy for Protecting and Restoring the Chesapeake Bay Watershed.* The table beginning on the following page lists strategy actions and the planned FY11 activities in each of the four goal and four supporting strategy sections. At the end of each goal or supporting strategy section is a summary of funding by outcome and agency – based on the President's Budget for Fiscal Year 2011. A summary table of funding by goal/supporting strategy and agency is included on the last page.

Draft Fiscal Year 2011 Action Plan

E.O. 13508 ***Strategy for Protecting and Restoring the Chesapeake Bay Watershed***

Restore Clean Water

WQ.1 Implement the Chesapeake Bay TMDL, a rigorous accountability framework for reducing pollution to ensure that all practices needed to reduce pollution to meet Bay water quality standards are in place by 2025

#	Action Name	Lead	Due
1	Complete final Bay TMDL including responding to comments (pg 24)	EPA	
2	Continue to provide the states with support in their development of the Phase 2 WIPs, as the states take their allocations down to the county scale and individual source sectors. Review Phase II WIPs. Modify/Public Notice TMDL as necessary (Pg 24)	EPA	Sep 2011
3	Continued development (early FY11) and then application (throughout FY11) of the Scenario Builder to support the states completion of their Phase I WIPs (due November 1, 2010) and development of their Phase 2 WIPs (due November 1, 2011).	EPA	Nov 2011
4	Scope/Conduct studies with Maryland and Pennsylvania to reduce sediment behind Conowingo Dam and from iwthin the watershed.	USACE	Sep 2011

WQ.1.a Federal agencies will contribute to Watershed Implementation Plans

#	Action Name	Lead	Due
1	Each Federal agency will provide spatial property boundary data for their respective facilities and lands to EPA to determine baseline pollutant load estimates through modified version of Phase 5.3 watershed model (Pg 25)	EPA	Oct 2011
2	Include federal facilities load allocations in the apppropriate State Phase II WIPs or develop Federal Implementation Plan (FIP) that meets load allocations proposed by State or District (Pg 25)	EPA	Nov 2011
3	Identify pollution reductions from point and non-point sources associated with Federal lands, and commit to actions, programs, policies and resources necessary to reduce N, P, and sediment by specific dates (Pg 24)	EPA	Nov 2011

WQ.1.b Create a system for tracking and reporting for TMDL pollution reduction commitments and two-year milestone commitments.

#	Action Name	Lead	Due
1	Develop and implement a Bay Tracking and Accounting System (Bay TAS) (pg. 26)	EPA	Jan 2011
2	Completing work on setting up the NEIEN (National Environmental Information Exchange Network) system for the Bay watershed for receipt of implementation tracking data from the states from a wider array of sources in a consistent format for input into the Scenario Builder, critical to supporting states work on their Phase 2 WIPs and getting the Bay Tracking and Accounting System (Bay TAS) operational post-December 2010.	EPA	Mar 2011
3	Initiate the development of 2 year milestones to begin CY 2012 (pg 24)	EPA	Sep 2011

WQ.1.c Improve mechanisms for tracking and forecasting land-use and land cover changes associated with water quality degradation.

#	Action Name	Lead	Due
1	USGS will improve its initial urban landuse change analysis and incorprote into USGS land-change model to improve forecasting of land use change in urban and agricultural areas and work with EPA to forecast changes using the CBP watershed model. Additional improvement will be made in later years.	USGS	Dec 2010
3	Statistically align forested areas as defined by on-the-ground monitoring (by forest researchers), and satellite-derived forest (vs. tree cover) as used in CBP LU/LC maps and track avoided deforestation.	FS	Sep 2011

WQ.2 Take regulatory and other actions to support state and District plans to implement the TMDL.

#	Action Name	Lead	Due
1	Providing contractual support to Region 3 in early FY11 for preparing responses to anticipated thousands of comments on the draft Bay TMDL following the end of the 45 day public comment period.	EPA	FY11

WQ.2.a Implement current regulations for concentrated animal feeding operations (CAFOs) and propose new regulations to more effectively achieve pollutant reductions necessary to meet the Chesapeake Bay TMDL.

#	Action Name	Lead	Due
1	Complete Technical Standards review and engage states in necessary revisions to meet TMDL goals in CAFO Permits. Seek corporate/trade group partnerships to go beyond compliance requirements and work with growers. Conduct a review of each state's CAFO program by 12/30/2010.	EPA	Sep 2011

2	Complete CAFO designation strategy and field test	EPA	Sep 2011
3	EPA will work in FY11 to develop new CAFO regulations by June 2012 to more effectiely address pollutant reductions necessary to meet the Chesapeake Bay TMDL. (Final rule to be adopted by 2014).	EPA	Jun 2012

WQ.2.b Implement improvements to the current stormwater program and initiate new national stormwater rulemaking with Chesapeake Bay watershed provisions.

#	Action Name	Lead	Due
1	Initiate review all MS4 and Stormwater Construction Permits in the Bay Watershed for TMDL conformance and implementation Urban Stormwater Guidance Issued 7/31 in review of stormwater permits. Provide Training to states and permittee on MS4 requirements.	EPA	Sep 2011
2	EPA intends to propose revisions by September 2011 to the national stormwater regulations, including establishing specific requirements for stormwater discharges from new and redeveloped sites. EPA intends to propose additional provisions specific to the Chesapeake Bay.	EPA	
3	Develop Stormwater Designation strategy for high priority sources and implement. Update requirements for EPA's Construction General Permit and Multisector Stormwater General Permit to be consistent with Bay TMDL	EPA	Sep 2011

WQ.2.c Launch the Chesapeake Bay/ Anacostia Green Streets-Green Jobs Initiative

#	Action Name	Lead	Due
1	Design and Implementation of strategy, training and outreach and management of interagency partnership	EPA	
2	Organize and hold Green Streets-Green Jobs training forums	EPA	FY11
3	Collaborate with Chesapeake Bay Trust, Maryland DNR and others on a green design competition funded through a competitive grants.	EPA	FY11

WQ.2.d Engage in early dialogue with Bay states and the District regarding how EPA will determine if state programs achieve TMDL pollution reduction goals and meet minimum federal program elements for stormwater and Concentrated Animal Feeding Operations.

#	Action Name	Lead	Due
1	Conduct field effectiveness studies of state non-CAFO programs to assess compliance rate with state regulations and effectiveness of controls in priority states.	EPA	Sep 2011

	2	Conduct Review of Headwater State Stormwater Programs to assess the effectiveness of the state programs		Sep 2011

WQ.2.e Reduce pollution from wastewater dischargers.

#	Action Name	Lead	Due
1	Initiate review of all proposed new or reissued NPDES permits for significant point source discharges of nitrogen, phosphorous, and sediment for TMDL consistency	EPA	Sep 2011
2	Monitor implementation of compliance schedules in any NPDES permits or enforcement orders for significant municipal and industrial wastewater dischargers and conduct annual reviews to ensure sources are in compliance with TMDL based limits	EPA	Sep 2011
3	Review all significant permits to insure that TMDL wasteload allocations have bene incorporated.	EPA	Sep 2011

WQ.2.f Reduce pollution from septic systems.

#	Action Name	Lead	Due
1	Develop outline of model state program for internal EPA review	EPA	Sep 2011
2	Develop first draft of model state program for review by EPA and other federal agency representatives	EPA	Sep 2011

WQ.2.g Reduce pollution from atmospheric deposition.

#	Action Name	Lead	Due
		EPA	Jul 2011
1	Propose NOxSOx secondary national ambient air quality standards by July 11, 2011.		
2	Finalize Transport Rule by summer 2011.	EPA	Jul 2011
3	Conduct evaluations of large NOx-emitting sources in NSR priority sectors in Bay airshed and pursue enforcement. Perform modeling to substantiate endangerment to the Bay from nitrogen deposition of broiler house ammonia emissions.	EPA	FY11

WQ.2.h Reduce costs and provide flexibility through trading and development of protocols and programs for offsetting new and expanded discharges of nutrients and sediment.

#	Action Name	Lead	Due

	1 Develop a state trading and offset program review program to ensure that goals of program are being met. To be implemented in FY'12	EPA	FY11-12
	2 Establish Trading mechanism for existing discharges of N and P to meet load and wasteload allocations established in Bay TMDL	EPA	FY11

WQ.2.i	Reduce pollution through enforcement and compliance efforts.		
	# Action Name	Lead	Due
	1 Implement Bay Enforcement Strategy for Stormwater, Agriculture, and Wastewater. Conduct inspections/pursue enforcement at non-compliant stormwater point sources within geographic areas critical to restoration of Bay. Take enforcement action in accordance with serious of violations. Address significant non-compliance at significant WWTPs.	EPA	Sep 2011
	2 Conduct enhanced SRF and State SNC oversight with emphasis on Bay Dischargers. Prioritize Bay Stormwater, CSO and SSO facilities in Bay Watershed for action	EPA	Sep 2011
WQ.2.j	EPA will coordinate with the Clean Water State Revolving Fund managers to build cooperation and partnership in using resources to better protect the Chesapeake Bay.		
	# Action Name	Lead	Due
	1 Engage Region 3's State SRF programs to discuss near and long term SRF plans to integrate Bay protection/restoration goals w/ other SRF program priorities. Initiate opportunities to implement SRF plans identified.	EPA	Sep 2011
	2 As a pilot project, EPA will provide technical assistance to MDE for proposed changes that will encourage use of Clean Water SRF to fund projects that promote sustainable communities (Pg 32)	EPA	Sep 2011
WQ.2.k	Provide states with additional grants for regulatory and accountability programs.		
	# Action Name	Lead	Due
	1 Provide support to states through Chesapeake Bay Regulatory and Accountability Program grants.	EPA	Sep 2011
	2 Target other CWA funds, such as Chesapeake Bay Implementation Grants, to better protect the Bay and its tributaries. (pg. 32)	EPA	Sep 2011
WQ.2.l	Pursue funding of stream restoration grants.		
	# Action Name	Lead	Due

	1	Complete an assessment of options to direct existing funds to support increased funding for stream restoration	EPA	Dec 2010

WQ.3	Ensure the federal government leads by example in reducing pollution from federal lands and facilities.			
	#	Action Name	Lead	Due
	1	Work with states to ensure Federal Facilities achieve and maintain compliance with regulatory requirements through a federal compliance workgroup	EPA	Sep 2011
	3	Pursue Federal Facilities Compliance Agreements where appropriate	EPA	

WQ.3.a	Implement the Energy Independence and Security Act, Section 438.			
	#	Action Name	Lead	Due
	1	Develop agency-wide policy to ensure implementation of EISA Section 438 stormwater requirements	EPA	Dec 2010
	2	DoD - recommend adding an action on actual implementation vice developing a policy, i.e., Identify FY11 projects approved for design and/or construction that meet EISA 438 policies and incorporate LID practices. Funding information will be deleted if action remains to develop agency policy as DoD has completed this (JG).		

WQ.3.b	Implement sustainable land management practices and programs into all federal capital improvements, public works management and energy management projects.			
	#	Action Name	Lead	Due
	1	Work with Federal Agencies with 10 or more acres in the Chesapeake Bay watershed to initiate implementation of Section 502 Guidance	EPA	Sep 2011
	2	Federal Agencies will incorporate Section 502 Guidance considerations as part of their load reductions strategies in the state Phase II WIPs (pg. 34	EPA as facilitator	Sep 2011

WQ.3.c	Ensure that stormwater impacts are minimized as part of environmental review of federal-aid highway projects and other federally-assisted transportation projects.			
	#	Action Name	Lead	Due

1	DOT will provide technical assistance to state DOTs as requested and continue encouragement of using federal transportation funds eligible under environmental restoration for projects to address stormwater management problems.	DOT	Sept 2011

WQ.4 Focus resources on priority watersheds and practices for agriculture to assist states in implementing their Watershed Implementation Plans (WIPs)

#	Action Name	Lead	Due
1	See tasks under WQ4a and b		

WQ.4.a Target efforts at watersheds that contribute the most nitrogen, phosphorus, and sediment.

#	Action Name	Lead	Due
1	Obtain and evaluate new datasets (such as SPARROW sediment, high resolution N and P data, vulnerable soils, priority fish and wildlife habitat layers, etc.) that will inform review of priority watershed locations. Review FY 10 priority watershed locations and updated if needed for FY 11.	NRCS	Dec 2010
2	Align targeted watershed efforts with state watershed implementation plans	NRCS	Sep 2011
3	Strive to obligate 100% of FY 11 Chesapeake Bay Watershed Initiative financial assistance dollars in targeted priority watersheds. Utilize other financial assistance programs as appropriate to plan and implement additional conservation practices in the Watershed.	NRCS	Sep 2011
4	Scope and conduct study with Maryland to reduce sediment behind Conowingo Dam. Scope and Conduct study with Pennsylvania to reduce nutrient and sediment from Conestoga River watershed. Construct low impact development projects using prioritized watersheds idenitified in the Anacosita watershed restoration plan.	USACE	Sep 2011

WQ.4.b Identify the most effective conservation practices.

#	Action Name	Lead	Due
1	Review FY 10 priority practices in light of CEAP results, SPARROW data and other new data to determine effects of these practices and update as necessary for CBWI program. Explore implications of SPARROW models and watershed properties on conservation practices.	NRCS	Dec 2010
2	Work with States to ensure that where possible, State priority practices are included in the Federal priority practice list	NRCS	Dec 2010

	3 Provide assistance to state and local governments as needed to review and recommend agricultural conservation practices that most effectively reduce N, P, and sediment loads to the Bay for watershed implementation plans.	NRCS	May 2011

WQ.5	Accelerate conservation adoption by working with partners to leverage conservation funding and simplify program participation.		
	# Action Name	Lead	Due
	1 See tasks under WQ 5 a-e.		

WQ.5.a	Leverage funding for conservation in the Chesapeake Bay watershed.		
	# Action Name	Lead	Due
	1 Publish FY 2011 CCPI request for proposals. NRCS anticipates up to $5,000,000 may be available in potential CCPI grants.	NRCS	Dec 2010
	3 FWS PFW program will partner with NRCS and others to identify projects that benefit federal trust species and improve water quality and to promote citizen-centered conservation.	FWS	Sep 2011

WQ.5.b	Utilize EPA funding for agriculture challenges.		
	# Action Name	Lead	Due
	1 EPA will fund projects to address key agricultural challenges in the Chesapeake Bay through the Innovative Nutrient and Sediment Reduction Program, CWA S117 and other grant programs.	EPA	Sep 2011

WQ.5.c	Establish showcase projects in small watersheds.		
	# Action Name	Lead	Due
	1 Prepare annual work plans for FY11 for Showcase Watershed projects.	NRCS	Dec 2010
	2 Conduct outreach to farmers in showcase watersheds. The outreach goal for the Upper Chester and Conewago Watersheds is to contact 90% of identified farmers. The outreach goal for the Smith Creek Watershed is to contact the 100 largest landowners in the watershed.	NRCS	Sep 2011

WQ.5.d	Monitor the results of showcase projects.		
	# Action Name	Lead	Due

1	USGS will work with NRCS to plan monitoring and assessment in 3 showcase watersheds and implement monitoring and assessment in the 3 showcase watersheds. NRCS will provide conservation practice data and USGS will institute water-quality monitoring in FY2011 is all three watersheds. USGS and NRCS will collaborate to initiate the evaluation of changes in water quality. Initial project will be a study plan among collaborators. USGS funds shown in WQ13.	USGS	Mar 2011
2	FS will provide contextual setting of the showcase projects, analyzing existing data in the CBP watershed framework to describe how the showcase projects are similar and different from the surrounding landscape.	FS	Sep 2011

WQ.5.e Simplify conservation planning for producers.

#	Action Name	Lead	Due
1	Limited production release of the CDSI Financial Assistance Desktop Version 1.0 (to selected states across the country). The Conservation Delivery Streamlining Initiative is a national project designed to streamline conservation planning and contracting for NRCS staff and cooperators.	NRCS	Jan 2011
2	Limited production release of the CDSI Client Gateway Version 1.0 (to selected states across the country). The Conservation Delivery Streamlining Initiative is a national project designed to streamline conservation planning and contracting for NRCS staff and cooperators.	NRCS	Jan 2011
3	Develop and release a revised resource concern and planning criteria list to support CDSI tools. The Conservation Delivery Streamlining Initiative is a national project designed to streamline conservation planning and contracting for NRCS staff and cooperators.	NRCS	Dec 2011

WQ.6 Accelerate development of new conservation technologies.

#	Action Name	Lead	Due
1	See tasks under WQ 6 a and b.		

WQ.6.a Fund research and development of conservation technology.

#	Action Name	Lead	Due
1	Release Conservation Innovation Grants Chesapeake Bay request for proposals. NRCS anticipates up to $xxxxxxx may be available for potential CIG grants.	NRCS	Nov 2010
2	Evaluate priority funding needs for conservation technology to ensure that funding resources are effectively utilized.	NRCS	Sep 2011

WQ.6.b	Evaluate effectiveness of next generation conservation tools.			
	#	Action Name	Lead	Due
	1	Hold workshop on opportunities for enhancing agricultural conservation to meet 2025 goaline.	EPA	Oct 2010
	2	Utilize CEAP results, workshop information, and other data to begin the process of developing a method to assess the effectiveness of new conservation practices in reducing nitrogen, phosphorus, and sediment losses.	NRCS	Sep 2011
WQ.7	Develop a system of accountability for tracking and reporting conservation practices.			
	#	Action Name	Lead	Due
	1	Meet with state and local partners to expand existing tracking and reporting systems for agricultural conservation practices. (see also tasks under WQ 1b and 1c).	EPA	Sep 2011
WQ.7.a	Expand existing tracking and reporting sytems for conservation practices, best management practices, and treatment technologies.			
	#	Action Name	Lead	Due
	1	Review and finalize NEIEN protocols to facilitate data exchange and incorporate state data into the Bay model.	EPA	Sep 2011
	2	Implement data sharing agreements with USGS to effectively transfer USDA conservation practice data into the Bay model.	NRCS	Sep 2011
	3	NRCS and EPA will continute to review and evaluate CEAP and Bay model results to determine the most appropriate way to model agricultural practices in the Bay model	NRCS	Sep 2011
WQ.7.b	Develop and implement a method for tracking and reporting voluntary conservation practices on agricultural land			
	#	Action Name	Lead	Due
	1	Begin developing protocols for reporting voluntary conservation practices that were applied without federal or state financial assistance. NEIEN data transfer standards will be used. The protocol should include a procedure for assessing these practices and determining if they are 1) functioning and 2) meet technical standards. The protocol should indicate where landowners can go to report their data (e.g., a website, a local NRCS or FSA office, the county extension agent, etc.). This work is being funded through an agreement with NACD.	NRCS	Sep 2011

WQ.8 EPA, DOI, and NOAA will work with state and local governments and stakeholders to expand understanding of the extent and seriousness of the toxic contaminant problem in the Bay and its watershed and to develop contaminant reduction goals by 2013

#	Action Name	Lead	Due
1	Implement Toxics workplan; EPA, USGS, FWS, & NOAA workgroup will meet with federal and state managers to discuss critical information needed to develop specific toxic outcomes for the Toxics report.	EPA	Sep 2011
2	Complete assessments in priority areas; USGS & USFWS will conduct sampling and prepare results of selected fish and wildlife species in the Potomac watershed.[USGS: See action 3, suggest removing action 2 as written]	HSCD/EPA	Sep 2011
3	USGS working with USFWS will conduct sampling of selected fish and wildlife species in the Potomac watershed. The sampling will focus on endocrine-disrupting chemicals in fish, wildlife, water, and sediment. The sampling design will address potential sources of the compounds including waste-water treatment plants and confined feeding operations. The USGS will also summarize recent sampling results from the Potomac watershed on fish health condition and endocrine-disrupting compounds.	USGS	Sep 2011

WQ.9 EPA will work with DOI, states, and stakeholders to develop toxic contaminant strategies by 2015

#	Action Name	Lead	Due
1	Work with EPA to reconcile implementation of FWS SmaRxt Disposal and USEPA pharmaceutical takeback programs	FWS	Sep 2011
2	Review and modify workplan to ensure effectiveness of activities in priority areas to inform strategy development; EPA will work with partners to begin development of a prioritization process that will help identify the most likely regulatory and voluntary controls that can be used to reduce toxic contaminants.	EPA	Sep 2011
3	EPA will work with partners to begin development of a prioritization process that will help identify the most likely regulatory and voluntary controls that can be used to reduce toxic contaminants. The initial findings would be part of the 2012 report (see above) that includes an assessment of progress toward management actions take for the Chesapeake Bay Toxics Reduction and Prevention Strategy	EPA	

WQ.10 Improve computer models used to guide restoration activities.

#	Action Name	Lead	Due

1	USGS will work with EPA to improve models to guide water-quality restoration. In 2011, USGS will improve SPARROW nutrient models for Chesapeake Bay and models to estimate changes in water-quality trends. USGS will support targeting needs of the WIP (WQ1) and conservation practices (WQ1). USGS will also improve its land-change model. (see WQ 1c.)	USGS	Sep 2011

WQ.10.a Use results from watershed models to prioritize locations of actions.

#	Action Name	Lead	Due
1	USGS and EPA will work together to provide seleced results from the CBP watershed model and existing SPARROW models to help states develop the Phase 2 watershed implementation plans. Selected results will be put into the USGS COAST decision tool for improved access to model information. USGS will establish a decision-support specialist to closely interact with the states and NRCS to apply the results. [USGS funds reflected under WQ10]	USGS	Dec 2010
2	Provide results from upadated watershed models to help agencies and states focus water quality actions in areas of hgiest nutrient and sediment loads in the Bay. [USGS comment: Unless a lead is identified, this action will be deleted]	EPA	Sept. 2011

WQ.10.b Develop groundwater models.

#	Action Name	Lead	Due
1	USGS will release a ground-water model of the MD eastern shore. The results wil be used to help determine direct ground-water discharge of nitrogen to the Bay.	USGS	Sep 2011

WQ.10.c Ensure availability of Bay forecasts and modeling results.

#	Action Name	Lead	Due
1	Engage with stakeholders (via workshop) to: (1) identify potential forecast models and define models, outputs, users and paths to operational status; (2) Support activities leading to pre-operational and operational implementation of ready models and forecasts; and (3) distribute pre-operational models for evaluation. This work will include coordination with partners to identify data-inputs. For example, USGS will provide results of loads to the Bay from River-input stations to help improve ecological forecasting.	NOAA and USGS	Sep 2011
2	Specific examples of outputs for FY 2011 include: (1) NOAA will complete and validate habitat model for harmful algal bloom (HAB) species in the Bay (complete for one species, validate for 2 additional species.); (2) NOAA will document user requirements for water quantity and quality products and services (including through stakeholder meetings to develop requirements for Coast Estuary River Information Services (CERIS)), and conduct research to assess estuary model sensitivity to various freshwater inputs.	NOAA	Sep 2011

3	NOAA will implement a coupled Regional Ocean Modeling System-Water Quality hydrodynamic model for use in ecological forecasting. In addition, NOAA will expand hypoxia forecasting efforts for Chesapeake Bay to consider interactions between nutrient management trends and variable climatic conditions, and to determine the exposure of economically and ecologically important species to hypoxia (and co-occurring low pH) in the field.	NOAA	Sep 2011

WQ 11 Improve water-quality monitoring in the watershed

#	Action Name	Lead	Due
1	USGS will work with the EPA and the states to maintiain the CBP nontidal network. Sites will be added out the outlets of up to 5 small watersheds to improve monitroing in agricutural and urban land use areas (related to item WQ 13).	USGS	Sep 2011
2	Support state monitoring programs with grant funds.	EPA	Dec 2010

WQ 12 Improve tracking of management actions and land use activities.

#	Action Name	Lead	Due
1	See actions related to WQ1b (Bay Tracking and Accounting System and the National Environmental Information Exchange Network) and WQ7 (tracking and reporting systems for agricultural conservation practices).	EPA	Sep 2011
2	USGS will work with FSA and NRCS to store information on agricutural BMPs and and provide to EPA for the watershed model.	USGS	Sep 2010

WQ 13 Monitor and assess restoration activities in small urban and agricultural watersheds.

#	Action Name	Lead	Due
1	USGS and EPA will work together in 5 small watershed to plan and implement monitoring and assessment of water quality change (the 3 NRCS showcase watersheds and two urban watersheds). The USGS will enhance research of processes affecting nutrients and sediment in a subset of these watersheds. NRCS will provide improved reporting of BMP information in the showcase watershed and work with USGS to explain water quality change.	USGS	Mar 2011
2	Support state monitoring programs with grant funds. (*aslo see WQ14)	EPA	Sep 2011

	3 Baltimore Ecosystem Study (BES) will monitor and evaluate urban restoration activities in the Baltimore ecoregion, adopting an integrated research approach that utilizes ecological, social and economic data. Baltimore is one of two urban Long Term Ecological Research (LTER) projects in the US. The LTER boasts decades of research and should be one of the urban watersheds monitored for the EO.	FS	Sep 2011

WQ 14 Improve monitoring and assessment of stream conditions.

#	Action Name	Lead	Due
1	Support state monitoring programs with grant funds.	EPA	Sep 2011

WQ 15 Improve monitoring of tidal waters.

#	Action Name	Lead	Due
1	NOAA, through the CoastWatch East Coast Node, will distribute satellite remote sensing data products that provide information about chlorophyll a concentrations, temperature, and turbidity for the Chesapeake Bay.	NOAA	Jun 2011
2	NOAA will coordinate with MD DNR to provide data to support improved detection of harmful algal blooms of the genus Microcystis.	NOAA	Dec 2010
3	Support state monitoring programs with grant funds.	EPA	Sep 2011

WQ 16 Expand NOAA buoy system to improve water-quality monitoring and assess new sensors for monitoring emerging contaminants.

#	Action Name	Lead	Due
1	NOAA will continue to operate and maintain Chesapeake Bay Interpretive Buoy System (CBIBS). In addition, and in cooperation with MD DNR, NOAA will begin to support water quality monitoring.	NOAA	Sep 2010

WQ 17 Evaluate water-quality changes and progress to adjust management actions.

#	Action Name	Lead	Due
1	USGS will start a regional explaination of water-quality patterns on the Choptank River and Eastern Shore in FY11. Additional watersheds will be assessed in 2012-2016.	USGS	Dec 2010

WQ 18 Ensure TMDL allocations account for climate change impacts.

#	Action Name	Lead	Due
1	Determine the climatological changes (temperature, wind, rainfall) likely to occur with climate change and, thru the use of the bay models, determine the changes that will occur in water quality at Bay TMDL loads and other scenarios		Sep 2011