

Table 2: CBP Tidal Monitoring Network Disinvestments:  
table sorted in recommended order of consideration.

Program	Change	Change Value (\$)	Current Uses	Effect of Change	Rationale This action reduced continuous monitoring and dataflow sampling in VA, from only those sites paid for by State Match funds.	Cumulative Investment	Reinvestment funds available
Shallow Water Monitoring Program	VA – reduced sample collection effort	-\$50,000# (VA State Funds)	SAV/water clarity listing assessments DO criteria listing assessments VA VECOS website	Less information is available for analyses related to regulatory criteria		-\$50,000	\$0
Phyto-plankton Monitoring Program	MD & VA - only collect an analyze minimum required to support P-IBI, at cost = current VA program, for a total of \$150,000	-\$220,000* (MD & VA State Funds)	Trend analyses (note: non-303d listing chlorophyll a analyses)  Some “Level 1” reports  Academic research  Harmful Algae assessments lending support to narrative chlorophyll criterion evaluations.  Understanding/ explaining ecosystem functioning (e.g. mechanisms driving HABs)  Used to calculate Phytoplankton Index of Biotic Integrity (P-IBI), CBP Bay Barometer indicator; component of the UMCES Ches Bay Report Card  Fish habitat Suitability modeling	Horizontal and vertical fluorescence trend analyses for states, which give more comprehensive view of chlorophyll a trends than surface data alone  May reduce our ability to detect early improvements in trends  Reduced explainability of bay ecosystem phenomena	Much of this program involves collection and analysis of data that are not used in criteria listing and delisting analyses or communications products.  A single-source provider could maintain sufficient sampling and analysis to support existing communications products (Bay Barometer, UMCES Report Card) at a cost savings.	-\$270,000	\$0
MD Benthic Monitoring Program	MD Eliminated spring sampling	-\$20,000** (MD State Funds)	Long-term trends  Measuring effects of anoxic events on benthic communities	Loss of long-term trends information for spring season  Loss of ability to compare benthic community health before and after summer anoxic events	VA already eliminated their spring sampling  Samples do not contribute to de-listing assessments	-\$290,000	\$0

Program	Change	Change Value (\$)	Current Uses	Effect of Change	Rationale	Cumulative Investment	Reinvestment funds available
Tributary Water Quality Monitoring	VA Reduced number of nutrient monitoring stations in Elizabeth River from 10 to 5	-\$30,000# (VA State Funds)	Water quality criteria assessment  Status and trends  Part of core fixed station long-term monitoring dataset for Chesapeake Bay mainstem	Reduced explainability	Elizabeth River has an excess of nutrient monitoring stations relative to other tributaries.	-\$320,000	\$0
Ecosystem Processes Analysis	MD – reduced funding of MD's ecosystem processes analysis program	-\$112,000** MD State Funds	Analysis support for shallow water monitoring program  Development of new technological and analytical capabilities	Loss of expertise in realms of data analysis and new methods development	These functions are not critical to current needs vis-à-vis listing assessments and communications products. Other resources and new initiatives may provide similar analytical support.	-\$432,000	\$0
Shallow Water Monitoring Program	MD - reduce collection/analysis of nutrient samples at Shallow Water Continuous Monitoring sites)	-\$40,000† (MD State Funds)	Diagnostic analyses in SAV beds  Targeting of SAV restoration activities  MD Baystat  Summer tracking and review  Comparing near-shore and open-water habitats	Would reduce information available for targeting and managing SAV restoration  Less information available for comparing near-shore and open-water habitats	This action would cut nutrient sampling and analysis from continuous monitoring and dataflow samples in MD, from only those sites paid for by EPA &/or State Match funds.  These analyses go beyond those performed for shallow water monitoring in VA.	-\$472,000	\$40,000  (\$0) This funding value in parentheses is the cumulative total of only the EPA funding disinvestments without State cuts.

Program	Change	Change Value (\$)	Current Uses	Effect of Change	Rationale	Cumulative Investment	Reinvestment funds available
Shallow Water Monitoring (SWM) Program (1)	MD - reduce number of SWM stations to 15	-\$100,000 (EPA Funds)	<p>SAV/water clarity listing assessments</p> <p>Event-based monitoring and explanatory analyses (i.e. HAB monitoring, Fish Kill analyses, catastrophic event analyses)</p> <p>Tributary basin summaries</p> <p>Fisheries management</p> <p>Education curricula</p> <p>Fieldwork planning for other programs (e.g. SAV overflights)</p> <p>Restoration &amp; permitting of wetlands</p> <p>Storm surge model calibration</p> <p>Websites: MD Eyes on the Bay ; VA VECOS</p> <p>Comparisons of near-shore &amp; open water habitats</p>	<p>Reduces number of CBP-funded continuous monitoring sites in MD from 27 to 15.</p> <p>Would reduce number of Dataflow cruises in MD from 12/month to 9/month</p> <p>Would probably push back completion date of complete coverage of bay from 2014 to 2016-17 in MD</p> <p>Reduce efficiency and/or effectiveness of other monitoring programs that use data from continuous monitors to guide their data collection</p>	<p>This action would reduce the number of CBP-funded SWM sites to the same number currently funded in VA. MD has been able to backfill their SWM program with funding from other partners.</p> <p>While data available for SAV/water clarity listing assessment would be reduced from current levels, listing assessments could still be conducted with remaining data.</p>	-\$572,000	\$140,000 (\$100,000)
Tidal Mainstem Water Quality Monitoring Program	MD - reduce number of mainstem cruises from 16 to 14	-\$34,000 (EPA Funds)	<p>Water quality criteria assessment</p> <p>Status and trends</p> <p>Part of core fixed station long-term monitoring dataset for Chesapeake Bay mainstem</p>	<p>Reduce number of cruises in June and September of each year from 2 to 1</p>	<p>VA's mainstem cruise schedule has comprised only 14 cruises for the majority of years since 1996.</p> <p>This action would reduce the number of mainstem cruises in MD to the level conducted in VA</p>	-\$606,000	\$174,000 (\$134,000)

Program	Change	Change Value (\$)	Current Uses	Effect of Change	Rationale	Cumulative Investment	Reinvestment funds available
Shallow Water Monitoring (2)	Further reduce federal funding to bring entire program's cost to \$115,000 per state	-\$190,000 (EPA Funds)  (reduction equally divided between MD & VA)	SAV/water clarity listing assessments  Event-based monitoring and analyses  Tributary basin summaries  Fisheries management  Education curricula  Fieldwork planning for other programs  Restoration & permitting of wetlands  Storm surge model calibration  Websites MD Eyes on the Bay; VA VECOS  Comparisons of near-shore & open water habitats	Reductions in addition to the those listed for Shallow Water Monitoring (1), affecting both MD & VA  Reduce amount of data available for SAV/water clarity listing assessments  Would lengthen time to completion of one-time Shallow Water listing assessment from 2014 to approximately 2023.	This option maintains some degree of all programs that contribute data to listing assessments and communications products.	-\$796,000	\$364,000  (\$324,000)
Ecosystem Processes Analysis	Eliminate funding for MD's Ecosystem Processes Analysis Program	-\$100,000† (MD State Funds)	Analysis support for shallow water monitoring program  Development of new technological and analytical capabilities	Loss of expertise in realms of data analysis and new methods development  This action eliminates a full program.	These functions, while important, are not critical to current needs vis-à-vis listing assessments and maintaining current communications products. There may be other resources and new initiatives that could provide similar analytical support in new ways.	-\$896,000	\$464,000  (\$324,000)

Program	Change	Change Value (\$)	Current Uses	Effect of Change	Rationale	Cumulative Investment	Reinvestment funds available
Status & Trends	Eliminate funding for status and trends (VA & MD)	-\$112,000 (EPA Funds)	Tributary strategies Track progress of nutrient reduction strategies Data QA/QC MD Eyes on the Bay website	As presently provided, these analytical results would not be available for current uses	Not used for listing/delisting.  Potential exists to backfill these analytical activities through other RFPs and analytical vehicles currently being developed or discussed.	-1,008,000	\$576,000 (\$436,000)
Tidal Mainstem Water Quality Monitoring	Reduce mainstem nutrient sampling by 50%	-\$51,000 EPA Funds (\$41,000 from MD; \$10,000 from VA)	Exploration of mechanisms controlling status and functioning of the system Summer tracking/review Targeting and assessment of management actions Long-term trends P-IBI	P-IBI needs would dictate where (32 stations)/when nutrient samples are taken, in order to maintain Report Card  Loss of explainability regarding mechanisms of ecosystem conditions	This option does not affect data collected on delisting parameters during cruises. Tidal Bay nutrients are not used in listing/delisting decisions.	-1,059,000	\$627,000 (\$487,000)

† State funds are allocated at the discretion of individual states and may not be available for reallocation to watershed monitoring network without State partners consent.

\* MD has already eliminated its phytoplankton program (\$219,000) in recent budget cuts, and VA has trimmed \$25,000 from its phytoplankton monitoring budget. These funds are not be available for reallocation.

# VA has already eliminated these funds in recent budget cuts, thus funds are not be available for reallocation.

\*\* MD has already eliminated these funds in recent budget cuts, thus funds are not be available for reallocation.