

## Biennial Strategy Review System: Logic Table

### Students MWEEs Logic Table

**Long-term Target:** Continually increase students' age-appropriate understanding of the watershed through participation in teacher-supported, meaningful watershed educational experiences and rigorous, inquiry-based instruction, with a target of at least one meaningful watershed educational experience in each grade band -- elementary, middle and high school.

**Two-year Target:** Not established

**KEY: Use the following colors to indicate whether a Metric and Expected Response have been identified.**

<b>Metric</b>	Percent (and number) of public and charter schools in the Chesapeake Bay watershed certified sustainable
<b>Expected Response</b>	No timeline for progress for this action has been specified

Factor	Current Efforts	Gap	Actions (critical in bold)	Metrics
<i>What is impacting our ability to achieve our outcome?</i>	<i>What current efforts are addressing this factor?</i>	<i>What further efforts or information are needed to fully address this factor?</i>	<i>What actions are essential to achieve our outcome?</i>	<i>Optional: Do we have a measure of progress? How do we know if we have achieved the intended result?</i>
State Education Agency Leadership for Environmental Literacy	<i>Encouraging the adoption of a new Education Directive</i>	<i>High level engagement from state DOEs</i>	2.3 See also Environmental Literacy Planning	No.
Legislation and Policy	<i>MD graduation requirement; DC Healthy Schools Act</i>	<i>In many states there are no state level policy drivers</i>	See also Environmental Literacy Planning	
Local Education Agency Implementation of MWEEs (with partners)	<i>Use ELIT to track MWEEs and needs</i>	<i>Urgency at the school district level to conduct MWEEs; Accountability measures; Supportive policies</i>	2.3 See also Environmental Literacy Planning	Yes. ELIT survey collects data.
Education Reform/Curriculum Alignment	<i>Work with states and school districts to integrate MWEEs into curriculum to reduce perceived burden</i>	<i>Understanding that MWEEs are not add-ons</i>	1.2, 1.3, 1.4, 2.2	Yes. ELIT tracks districts that have integrated curriculum
Funding/Staffing	<i>Pursue private and</i>	<i>Adequate funding for teacher training,</i>	See also Environmental Literacy Planning	No.

	<i>innovative funding</i>	<i>transportation, and action projects</i>		
School community (teachers, principals, staff) awareness and readiness (NEW)	<i>Train “Ambassadors” using the new MWEE Guide to support the development of more and better MWEEs; Create online training and maintain resources on Bay Backpack</i>	<i>Principals (administrators) need to encourage MWEEs and line up the staff to support them. Teachers need to be trained to deliver them.</i>	1.1, 1.2, 1.3, 1.4, 2.1	No.
State agency and partner coordination (NEW)	<i>Ensure that there are staff to drive MWEE development and implementation</i>		2.3	No.

ENVIRONMENTAL LITERACY: 2018-2019 STUDENT WORK PLAN ACTIONS						
Action #	Description	Performance Target(s)	Responsible Party (or Parties)	Geographic Location	Expected Timeline	Partner organizations
<b>Management Approach 1: Increase professional development opportunities for educators (pre-service, teachers, and non-formal) to support the development and implementation of MWEEs.</b>						
1.1	Create an online MWEE training hub on Bay Backpack based on the MWEE Guide that includes both regional and state-specific training modules and information about in-person training opportunities.					
		Complete series of videos explaining the elements of the MWEE.	CBP	Region	Aug 2018	NOAA, CBF, CBT, UMCES, Washington College, MSDE
		Develop and post a new MWEE e-learning training on Chesapeake Exploration platform.	NOAA	Region	Sept 2018	CBF, CBT, UMCES, Washington College, MSDE
		Develop state-specific modules to be included as part of the MWEE e-learning training.	CBP	MD, DC, VA, DE, PA	Course developed by Dec 2018; pilot it in 2019.	NOAA, CBF, MSDE, CBT, VRUEC, DDOE, OSSE, Stroud Water Research Center
		Migrate lessons/activities/environmental literacy plans to Bay Backpack once they have been approved through a vetting process.	VDOE	VA	Dec 2019	VRUEC, VAEE, VSELA, VAST, CBF, DGIF, DOF, SWCD, DEQ, DCR, SAV, VCE
1.2	Build and support a cadre of "MWEE Ambassadors" to champion the MWEE and help educators develop and implement them.					
		Present on MWEEs at state EE conferences.	NOAA	MD, VA, PA, DE	Ongoing	CBF, CBT, PAEE, MAEOE, VRUEC, DAEE
		Promote "MWEE Ambassador" program to formal educators as a source of teacher recertification points. Promotion to occur through Science Update and Teacher Direct.	VDOE	VA	Ongoing	CBF
		Promote "MWEE Ambassador" program to informal educators through VRUEC and regional environmental teams.	VRUEC	VA	Ongoing	DGIF, VDOF, SWCD, DCR, DEQ, VCE, VAEE
		Develop MWEE Programming and disseminate through the NOAA Environmental Literacy Capacity Building Task Force.	PA DEP	PA	2020	PA PDE, DCNR, DEP and Stroud Water Research Center
		Present at state science teachers associations annual conferences.	State DOEs	DE, PA, VA, DC	2019	NOAA

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		Establish and support implementation of a structure for professional development statewide for key audiences that will promote and help to achieve systemic Environmental Literacy that ultimately reaches every student with standards-based MWEEs. Use the regional MWEE training hub as the basis to develop a Maryland-specific version as part of a strategic approach, with coordinated content, support system / network, and plan for training more EE providers and formal educators to use standards-based MWEEs as a tool to achieve Environmental Literacy.	Project Green Classrooms	MD	Course developed by Dec 2018; pilot it in 2019.	MSDE, CBF, NOAA, CBT, others
1.3	Increase the number of standards aligned environmental literacy professional development opportunities that support MWEE implementation.					
		Fund systemic MWEEs that include standards aligned environmental literacy professional development.	NOAA, CBT	Region	Sept 2018; Sept 2019	
		Work with Professional Standards Teacher Education Board (PSTEB) to influence the Council for the Accreditation of Educator Preparation (CAEP) standards implementation in Maryland to include environmental literacy. Submit recommendations to consider e-lit preparation for pre-service teachers; work with MSDE to guide/influence implementation of new professional standards; explore other opportunities to increase EE experiences in undergraduate teacher education.	Project Green Classrooms	MD	2019	MSDE, Montgomery County Public Schools, MD Higher Education Commission, PSTEB
		Organize and host an NAAEE Guidelines workshop for nonformal education partners.	DCEEC	DC	2018	OSSE
		Promote high quality PD for implementation of EE Standards and Science, Technology and Engineering Standards aligned to the proposed 2018 Science Standards of Learning.	VDOE	VA	Ongoing	VRUEC
		Design and implement high quality PD aligned with EE and Science standards using BWET and Title II funds.	VDOE	VA	Ongoing	VAEE, CBF, DGIF, DOF, SWCD, DEQ, DCR, SAV, VCE
		Maintain professional development for PA State Park staff at existing levels.	DCNR	PA	2019	DCNR
		Develop a plan to provide professional development to all providers as a means to advance MWEE implementation.	PDE	PA	2019	PDE, PA DEP, DCNR, EEAC
		Promote high quality MWEEs.	PA DEP	PA	2020	PDE, DCNR, PA DEP, and Stroud Water Research Center
		Provide PD for watershed education professionals and traditional K-12 educators.	PA DEP	PA	Ongoing	PA PDE, DCNR, DEP, and Stroud Water Research Center

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		Provide PD to increase MWEEs implemented in schools.	PA DEP	PA	2020	PA PDE, DEP, DCNR, PAEE, CBF and Stroud Water Research center
		Provide regional PD for providers of services to incorporate MWEEs and align to EE Standards.	EEAC	PA	Ongoing	PDE, PA DEP, DCNR, EEAC
		Communicate PD opportunities through Teaching Green, Science Matters, SAS, and other STEM communication channels.	PDE, DEP	PA	Ongoing	PDE, PA DEP, DCNR, EEAC
		Collaborate with PACTE to incorporate MWEEs and EE Education in pre-service programs.	PDE	PA	2020	PDE, PACTE, PAEE
		Post 5th, 8th, and Biology MWEE units on Schoology site for teachers to use.	DNREC	DE	Jun 2018	DOE
		Provide MWEE Workshop in Delaware to introduce Delaware Teachers to MWEEs.	Delaware Children in Nature	DE	Jun 2018	Delaware Children in Nature, DDOE, Delaware State Parks, DAEE
		Develop and implement MWEE PD for teachers in WV Bay Counties that ties to existing WV CSO's and WVDE priorities.	Cacapon Institute	WV Bay Counties	Dec 2018	Experience Learning
1.4	Collect a set of exemplary Environmental Literacy Models (ELMs) that include scope and sequence and student work; and broadly distribute to professional development providers and educators.					
		Post example ELMs on Bay Backpack.	CBP	Region	Dec 2018	CBF, VDOE, PA DEP, MSDE
		Include example ELMs in online MWEE training.	NOAA	Region	Sept 2018	NOAA
		Contribute examples from MD, collected through a project funded through NOAA, working with school system curriculum writers and EE partners.	Univ. of Maryland Center for Environmental Science, Appalachian Lab (UMCES)	MD	Dec 2019	MSDE, MD DNR, CBF
		As part of state-wide effort to build an open education resource, create an environmental education repository that would be a platform for formal and non-formal educators to share environmental instructional plans, lessons, activities, professional development opportunities, etc.	VDOE	VA	Dec 2019	VAEE, CBF, DGIF, DOF, SWCD, DEQ, DCR, SAV, VCE, VIMS, VRUEC
		Request district/grade level and non-formal educator instructional plans that integrate all components of MWEE to serve as exemplars for distribution.	VDOE	VA	Dec 2018	VAEE, CBF, DGIF, DOF, SWCD, DEQ, DCR, SAV, VCE, VIMS, VRUEC
		Use the NOAA PA Environmental Literacy Capacity Building Task Force to collect and disseminate resources, including ELM models.	PA DEP	PA	Dec 2019	PA PDE, DCNR, DEP, and Stroud Water Research Center

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Action #	Description	Performance Target(s)	Responsible Party (or Parties)	Geographic Location	Expected Timeline	Partner organizations
		Create repository of resources to be utilized by formal, non-formal, and preservice educators.	PA DEP	PA	Dec 2019	PA PDE, DCNR, DEP, PACTE and Stroud Water Research Center
<b>Management Approach 2: Increase the visibility and adoption of MWEEs as an educational best practice.</b>						
2.1	Maintain environmental education awards programs to maintain visibility and excitement					
		Continue DAEE/DCIN Awards for Excellence as an annual award program.	DAEE/DCIN	DE	Dec 2018	DAEE/DCIN
		Organize and host the annual Anacostia Environmental Youth Summit for grades 4-8.	DOEE	DC	Ongoing	DCEEC
		Broadly engage Potomac Highlands communities in stormwater runoff pollution mitigation BMP's including schoolyard based BMP's tied to MWEE's.	Cacapon Institute	WV Bay Counties	Nov 2019	Experience Learning, WVDEP, WVCA, WVDOF
2.2	Create marketing and instructional materials that showcase the importance of the MWEE and connect it to existing education initiatives (e.g. Next Generation Science Standards, Project Based Learning, Workforce Development, etc.).					
		Complete 90 second promotional video on MWEE.	NOAA	Region	Aug 2018	
		Complete formatting of High School Environmental Science instructional sequences, which were developed by District teachers to support teaching NGSS through the 5E instructional model. Post on the OSSE website and involve teachers in professional development opportunities.	OSSE	DC	2018	DCEEC
		Develop exemplar MWEE performance assessments aligned to Virginia Science Standards of Learning for 4th, 6th, Earth Science and/or Biology courses.	VDOE	VA	Dec 2019	
		Develop new videos promoting MWEEs through the framework of PDE's Environment and Ecology Standards as part of the NOAA PA Environmental Literacy Capacity Building Grant.	PA DEP	PA	2020	PDE, DEP, DCNR, Stroud Water Research Center
		Incorporate 3D Teaching and Learning in all MWEEs and instructional materials.	PDE	PA	2020	PDE, EEAC, DEP, DCNR
		Provide resources and training for after school programs.	PDE	PA	2020	PSAYDN, CSIU, PDE, EEAC, DEP, DCNR
		Promote summer based programs.	PDE	PA	2020	PSAYDN, CSIU, PDE, EEAC, DEP, DCNR
2.3	Improve the ability of regional and state networks to efficiently and effectively disseminate information about environmental literacy programs and practices.					

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		Compile a concise set of pertinent research links and articles related to best practices and outcomes (e.g. academic achievement, stewardship ethic, enthusiasm for learning, 21st century skills, etc.) of the MWEF essential elements to inform program development, marketing, and growth.	CBP	Region	Ongoing	Project Green Classrooms
		Maintain presence on Facebook & Twitter, and maintain the education workgroup listserve; look for opportunities to cross-post to national and state social media sites	CBP	Region	Ongoing	
		Strengthen the partnership between Delaware Association for Environmental Education and Delaware Children in Nature, increasing DAEE's leadership role in DCIN.	DAEE/DCIN	DE	May 2019	DAEE/DCIN
		Set up a network system to disseminate information to teachers electronically and through social media.	Delaware Teachers of Science	Dover	Ongoing	DOE, DAEE, and others
		Create environmental repository (open education resource) that would be a platform for formal and non-formal educators to share environmental instructional plans, lessons, activities, professional development opportunities, etc.	VDOE	VA	Dec 2019	VAEE, CBF, DGIF, DOF, SWCD, DEQ, DCR, SAV, VCE, VIMS
		Compile a concise set of resources on the website (hosted by MD DNR), and link this to Bay Backpack and partners.	Project Green Classrooms	MD	Dec 2018 / ongoing	DNR, MSDE, etc.
		Disseminate information through "Teaching Green," Science Matters, SAS Learning Communities, Pennsylvania STEM Coalition, State Systems of Supports Workgroup and other relevant communication channels.	PA DEP	PA	Ongoing	PA DEP
		Promote and implement the Pennsylvania Environmental Literacy Plan on both the state and mid-Atlantic levels for Environmental Education in Pennsylvania as outlined by the 2014 Chesapeake Bay Watershed Agreement ("CBA") to the extent practicable.	PDE	PA	Ongoing	PDE, DEP, DAG, DCNR

**\*\*Note:** As a member of the Chesapeake Executive Council and a signatory to the Chesapeake Bay Watershed Agreement, the Chesapeake Bay Commission (CBC) functions as the legislative arm of the Chesapeake Bay Program working within Maryland, Pennsylvania and Virginia and at the federal level to identify specific Bay management concerns requiring intergovernmental coordination and cooperation. CBC makes recommendations to the federal, state and local governments on legislative and administrative actions necessary to effectuate coordinated and cooperative management for the Bay watershed. The Commission will work collaboratively with Bay Program partners to identify legislative, budgetary and policy needs to advance the key actions identified in this outcome and to anticipate those needed in the future. The CBC's work is supported by the annual appropriations of its three member states totaling \$675,000 and is, on occasion, supplemented by project-specific grants.