




2023 Environmental Literacy Summit

Maryland Environmental Literacy Update

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Vision statement submitted by Olivia (DNR) to Summit - “Develop a shared understanding of current green career pathways within your state and discuss opportunities for supporting the development of a workforce that has the skills and competencies necessary to address climate change and related challenges.”

One Pager submitted to El Summit from Olivia Wisner -DNR-  MD - 1 Pagers

Building Green Career Pathways

Guidance Documents:

- [Blueprint for Maryland’s Future: College and Career Readiness Roadmap to Implementation](#)
 - An update on the preparation for implementing Policy Area 3: College and Career Readiness, which reimagines what today’s students must know and be able to do by the end of the 10th grade. The Blueprint establishes the standard that will signify a student is college and career ready.
- [Maryland 2021 Clean Energy Industry Report](#)
 - Details employment across five key sectors of the clean energy economy: Energy Efficiency; Clean Energy Generation; Alternative Transportation; Clean Grid and Storage; and Clean Fuels. Includes data about overall clean energy employment dating back to 2016, provides a breakout of employment by technology sector, sub-sector, and value chain segment.
- [Maryland Conservation Careers Guide](#)
 - Presents career options to young adults and career changers who want to make a difference, who enjoy being outdoors, and who are passionate about the environment.

Recent Accomplishments:

- Establishment of the [Department of Service and Civic Innovation](#)
 - Two new exciting service pathways for eligible youth and adults, in addition to existing volunteer and service opportunities available through [the Governor's Office on Service and Volunteerism](#) and [Volunteer Maryland](#)- 1)The Service Year Option (for young adults) and 2) the Maryland Corps (for adults of all ages).
- Blueprint for Maryland’s Future set new [College and Career Readiness \(CCR\) Standard](#)
 - The new CCR standard prepares graduates for success in college and the workforce by ensuring they have the knowledge and skills to complete entry-level credit-bearing college courses and work in high-wage and high-demand industries. The Blueprint aims to have all students meet the CCR standard by the end of their 10th grade year.

Opportunities:

- Across the state various government agencies, nonprofits and coalitions are working to enhance climate mitigation and adaptation skill sets into training and job placement programs. Maryland's draft [Next Generation Adaptation Plan](#) includes priorities and

milestones for climate jobs and training to ensure no net job loss as a result of changing climate conditions; increase opportunities for climate adaptation training and education for entry level, mid-career job seekers and existing employees; provide re-training to support employees during climate-driven industry changes; invest in new and emerging technology and new adaptation-related economies; incorporate climate adaptation into early-career training programs and educational curriculum.

Challenges / Gaps:

- Frequent challenges for *adult* career development programs: childcare, transportation, valid driver's license.
- Ensuring that there's industry demand for the jobs that people are being trained for.

Key Partners:

State Agencies-

- Maryland Department of Labor
 - [Maryland Apprenticeship and Training Program \(MATP\) - Division of Workforce Development and Adult Learning](#)
- Maryland Department of Natural Resources
 - [Maryland Conservation Corps](#)
Corps Members gain experience during their service year that enables them to be highly competitive when applying for Maryland Park Service and other natural resources management careers.
 - [Maryland Veterans Conservation Corps](#)
The focus of the VCC is to develop veterans professionally through training and on the job experience within the Maryland Park Service and the Department of Natural Resources.

Other-

- [Chesapeake Bay Trust](#)
 - [Chesapeake Conservation and Climate Corps](#): Provides young adults with opportunities to gain career skills and become more engaged through meaningful community service. Corps Members are placed with a nonprofit or government agency to work fulltime for a year in the environmental field.
- [Greater Baltimore Wilderness Coalition](#)
 - Maryland Climate Crew Network: Connects individuals with training, field experience, and industry exposure through our green workforce development network.
- [Chesapeake Research Consortium](#)
 - [Environmental Management Staffer Program](#)
- [Defensores De La Cuenca](#)
- [Howard EcoWorks](#)
- [Grow Home](#)
- Chesapeake Bay Program Workforce Action Team
 - This Action Team was established to coordinate efforts at the Chesapeake Bay Program to promote environment-focused career pathways after workforce

challenges were identified as a limiting factor in achieving some of the 2014 Watershed Agreement.

Major Funding Programs:

Federal-

- [2023 Inflation Reduction Act Climate Ready Workforce for Coastal and Great Lakes States, Tribes and Territories Initiative](#) (NOAA)

State-

- [EARN Maryland Grants, Maryland Department of Labor](#)
 - EARN Maryland is a state-funded, competitive workforce development grant program that is industry-led, regional in focus, and a proven strategy for helping businesses cultivate the skilled workforce they need to compete.
- [Teacher Externship Program, Maryland Department of Commerce](#)
 - A unique workforce development program that pairs high school educators with leading businesses from across the state, equipping them with invaluable experiences and insights to prepare their students for in-demand careers and industries.

Exemplars (slides)

- [Prince George's County CTE Program](#)
- Baltimore City Public Schools - Trains for Wind Program

High Impact Actions for Sustainable Schools

Guidance Documents:

- [U.S. Department of Energy Better Buildings Initiative](#)
 - Better Buildings is an initiative of the U.S. Department of Energy (DOE) designed to improve the lives of the American people by driving leadership in energy innovation. Through Better Buildings, DOE partners with leaders in the public and private sectors to make the nation's homes, commercial buildings, and industrial plants more energy-efficient by accelerating investment and sharing successful best practices.
- Chesapeake Bay Watershed Agreement - [Environmental Literacy Goal](#)
 - Sustainable Schools Outcome: "Continually increase the number of schools in the region that reduce the impact of their buildings and grounds on their local watershed, environment and human health through best practices, including student-led protection and restoration projects."
- [Zero Energy Schools Toolkit](#) by Northeast Energy Efficiency Partnerships (NEEP)
 - This toolkit aims to equip school building committees, facility directors, business managers, superintendents, interested citizens, and others with reliable information that can be used at certain intervention points throughout the development process of a healthy, zero energy school building.

Accomplishments:

- [Anne Arundel County Public Schools \(AACPS\)](#) achieved an aggressive 20% reduction goal in energy use intensity from a 2013 baseline in 2019, 5 years earlier than anticipated. Now the district has set a new goal of 30% by 2026 as part of their commitment to the Better Buildings Challenge and dedication to the energy efficiency of District buildings.
- The Montgomery County Public School (MCPS) Board of Education, [Policy ECA](#), [Sustainability](#), sets a goal to increase the number of Maryland-certified Green schools. Montgomery County's 2021 Climate Action Plan states, "MCPS has a target of 50% of its schools reaching certification as Maryland Green Schools within the next 3 years (2024) and a long-term goal of 100% by 2035."

Opportunities:

- "The request for proposal (RFP) or request for services (RFS) provides municipalities with the ability to set ambitious energy goals for the design of their project. The RFP indicates to design firms submitting bids exactly what the municipality is looking for. Therefore, the RFP must be comprehensive to guide design submissions so that they achieve zero energy while also fulfilling the other goals of the proposed school"- [Northeast Energy Efficiency Partnerships \(NEEP\)](#)
- Schoolyard Forest Initiative
 - An emerging partnership with Maryland Forest Service, Five Million Trees, MAEOE, Green Schoolyards America to increase "child-accessible tree canopy" on public school grounds.

Key Partnerships:

- [Building Energy Transition Implementation Task Force](#) (ending in December 2023)
 - The Climate Solutions Now Act of 2022 requires that MDE create the Building Energy Transition Implementation Task Force. The Task Force shall recommend programs, policies, and incentives aimed at reducing greenhouse gas emissions from the buildings sector.
- [Interagency Commission on School Construction](#)
 - The Interagency Commission on School Construction (IAC) is an agency of the Maryland State Government responsible for developing and executing policies, procedures, and guidelines related to public PK-12 school construction funding. Their vision is a fiscally sustainable statewide portfolio of K-12 school facilities that will remain educationally sufficient for current and future generations of students and teachers.
- Maryland Association for Environmental and Outdoor Education (MAEOE) [Green Schools Program](#)
 - Hands-on, inquiry-based instruction, to empower youth to practically apply knowledge at school, home, and in their communities to reduce environmental impact and encourage sustainable practices. There are currently 642 Maryland Green Schools. This is 36% of approximately 2,200 public and independent schools; there are approximately 430,000 PreK to 12th-grade students attending these schools.

Challenges:

- Bus driver shortage- canceling or postponing field trips.
- Maintenance of sustainable school projects by school facilities staff (ex. Not mowing over planting projects).
- Compensating teachers who champion sustainable school initiatives outside of their regular working duties.

Major Funding Programs:

- Maryland Association for Environmental and Outdoor Education (MAEOE) Green Team Teacher Stipends
- NOAA Chesapeake Bay Office Bay-Watershed Education and Training (B-WET) grants

[Exemplars \(slides\)](#)

Climate Change

State and/or National Guidance Documents (i.e. climate action plans, resilience and adaptation plans, or energy plans):

- Following the requirements of the 2022 Maryland Climate Solutions Now Act, the Maryland Department of the Environment in partnership with the University of Maryland released [Maryland's Climate Pathway Report](#) (June 2023)
 - This report demonstrates how Maryland can meet its ambitious climate goals of 60% reduction of greenhouse gas emissions by 2031 relative to 2006 levels, and attain a net-zero economy by 2045, all while realizing health and economic benefits for Marylanders, including improved air quality, new jobs, and household cost savings.
- The Maryland Department of Environment is coordinating the State's planning effort to reduce climate pollution and will deliver the following:
 - December 2023: State of Maryland 2031 Greenhouse Gas Reduction Plan, building further upon the Climate Pathway Report, achieve 60% climate pollution reductions by 2031 and be on track to net zero emissions by 2045.
 - March 2024: Maryland's Priority Climate Action Plan to identify near-term, high-priority, and implementation-ready measures to reduce climate pollution and prepare Maryland's eligible entities to compete in the transformative federal funding from the Bipartisan Infrastructure Law and the Inflation Reduction Act, including the \$4.6 billion EPA Climate Pollution Reduction Grant competition.
- (Forthcoming) Maryland Department of Natural Resources: Market Analysis & Needs Assessment
 - In 2013, the Maryland Commission on Climate Change identified increasing temperature, increasing precipitation, and sea level rise as the biggest climate change exacerbating stressors facing Maryland coastal communities. Throughout the state, there are a number of organizations and institutions that have created resources, education, information, programs, and services to increase awareness and prepare Marylanders to confront and combat these stressors. In an effort to better understand the steps that these organizations and institutions have taken, the Maryland Department of Natural Resources, Chesapeake and Coastal Service (CCS) conducted a market analysis. Results are expected in fall of 2023.
- Maryland Energy Administration [Energy Plan for 2022](#)
 - An overview of the state of energy in Maryland; inform on state plans addressing a cleaner energy sector while maintaining affordability, reliability, and energy justice; provide a better understanding of statewide energy programs; and end with some actionable recommendations for the state.
- County Climate Action Plans
- North American Association for Environmental Education (NAAEE), [Mapping the Landscape of K-12 Climate Change Education Policy in the United States](#)

This study explored the status of climate change education policy in the United States by analyzing the extent and type of climate change inclusion in 802

publicly available education policies from state departments or boards of education.

Accomplishments:

- Prince George's County Public Schools Climate Action Plan
 - [PGCPS Climate Change Action Plan Committee Year-End Report, July 2023](#)
- High school students from Howard County Public Schools are working with the Science Coordinators to develop a Climate Action Plan for HCPSS. Phase I of research has been completed; Phase II of plan development is taking place this year (2023).

Opportunities for environmental literacy work to support climate action, resilience, or energy goals:

- [5 million tree initiative](#), Maryland Department of Natural Resources, Forest Service
 - The 5 Million Trees Initiative was mandated by legislation, the Tree Solutions Now Act of 2021. Part of this legislation included a historic directive to plant 5 million native trees on public and private land by 2031.
- Schools as landowners have the opportunity to lessen their carbon footprint.
- Blueprint for Maryland's Future- climate change education can be leveraged to compliment all 5 pillars
- [Maryland's Climate Pathway](#) – See education as a mitigation strategy

Key Partnerships

- [Maryland Commission on Climate Change \(MCCC\)](#)
 - Established by law in 2015 to advise the Governor and General Assembly "on ways to mitigate the causes of, prepare for, and adapt to the consequences of climate change."
- [Mid-Atlantic Climate Change Education Collaborative \(MACCE\)](#)
 - Convenes organizations and individuals representing diverse perspectives throughout the Mid-Atlantic region who will create and participate in a network that centers, supports, and uplifts the advancement of education for climate action.
- [Youth Climate Institute](#)- Howard County Conservancy
 - The Youth Climate Institute educates and certifies the next generation of leaders on climate science, environmental justice and real world solutions.

Challenges/ gaps:

- Climate change education is rarely included as a mitigation strategy in funding programs
- Lack of funded climate education policy for the State of Maryland (like Washington State, California, Maine, and Indiana)

Major Funding Programs:

- Regional Greenhouse Gas Initiative (RGGI)

[Exemplars \(slides\)](#)

Student Environmental Literacy (MWEE)

Guidance Documents:

- [Maryland- Environmental Literacy Indicator Tool \(ELIT\) Survey Responses \(2022\)](#)
 - This report summarizes the Maryland responses of the Chesapeake Bay Watershed Environmental Literacy Indicator Tool which monitors the capacity and progress of public school districts toward meeting the Environmental Literacy Goal of the 2014 Watershed Agreement.
- [Chesapeake Bay Watershed Environmental Literacy Indicator Tool \(ELIT\) Report](#)
 - This report summarizes responses and trends from public school districts throughout the Chesapeake Bay Watershed.
- [MSDE Environmental Literacy Standards Framework](#)
 - State Frameworks are developed by the Maryland State Department of Education (MSDE) to support local education agencies in providing high-quality instructional programs in Environmental Literacy. State Frameworks are defined as supporting documents and provide guidance for implementing the State Standards in Environmental Literacy which are reviewed and adopted by the Maryland State Board of Education every eight years.

Accomplishments:

- Maryland Environmental Literacy Graduation Requirement

Opportunities:

- PG County- Stormwater fee that pays for field trips and school greening projects (Kendra, Anacostia Watershed Society)

Key Partnerships:

- Project Green Classrooms (PGC)
- Maryland Environmental Literacy Advisory Network (MELAN)
- Chesapeake Bay Program Education Workgroup

Challenges:

- Transportation issues (past issues have been cost/funding; current issues are bus driver shortages and issues with capacity of companies to run field trip routes)

Major Funding Programs:

- NOAA Chesapeake Bay Office Bay-Watershed Education and Training (B-WET) grants
- [Chesapeake Bay Trust Environmental Education Grants](#)
 - Funds programs and initiatives that advance environmental literacy and result in students having the knowledge, skills, attitudes, and motivation to take informed and responsible actions to protect and improve the environment.
- [MD DNR- Grants Gateway, Outcome 4](#): Improve student ability to take action benefiting Chesapeake and coastal ecosystems through outdoor learning and stewardship.

[Exemplars \(slides\)](#)

State Network Updates

Maryland Environmental Literacy Network (MELN):

- The Maryland Environmental Literacy Advisory Network (Advisory Network) is a group of formal and non-formal education professionals from a diversity of perspectives dedicated toward the advancement of environmental literacy. The vision of the Advisory Network is to build the capacity and increase collaboration of existing state-wide environmental literacy networks to ensure all students in Maryland are environmentally literate upon graduation. The Advisory Network will function adjacent to Project Green Classrooms (PGC) as an advisory network.

Project Green Classrooms (PGC):

- A coalition of state agencies and other government and non-government partners working to mobilize resources and promote outdoor activities and environmental education through schools, in communities, and on public lands to benefit Maryland's young people. Co-chaired by Maryland State Department of Education (MSDE) and Maryland Department of Natural Resources (DNR)

Maryland Association for Environmental and Outdoor Education (MAEOE):

- MAEOE is a member association, the organization promotes environmental education and environmental literacy with a network of teachers, natural resource managers, nature center staff and environmental program managers. MAEOE provides training, conferences, publications, programs and other resources. MAEOE's Maryland Green Schools program has over 640 schools and 40 Green Centers promoting environmental literacy and student action as well as systemic district partners working to improve the health of the school and school grounds. MAEOE encourages, engages and empowers our community to understand, responsibly use, and promote the natural world.

Notes from Summit Breakout Sessions

Breakout session 1 (Building Career Pathways):

- Please share examples that come to mind of how Maryland state agencies are building connections to support "green career" pathways for students and jobseekers?
 - MD Good Jobs program (DOL)
 - Chesapeake Conservation and Climate Corps and AmeriCorps
 - MDNR Conservation Career Guide
 - MDNR Career Camp
 - Agency requirements coming from State priorities (Governor Moore's Maryland's Climate, Our Economic Future plan, MDE 2030 Greenhouse Gas Reduction Act Plan)
 - CTE Program (Ag Science Education) with environmental focused programs
 - CBF programming
 - PGC Summer Youth Enrichment program (working to increase enviro offerings through the broader program)
 - MDE goes to career fairs
 - Looking at Blueprint and number of students looking for internships (need availability of internships, then scalability, transferable skills, titles, etc.)
 - Opportunities for citizen science

- What knowledge and skills do you believe are most important for Maryland high school and college graduates to have in order to pursue current and future careers focused on environmental literacy for environmental sustainability?
 - Notes:
 - How humans impact the environment/understanding environmental impact
 - How a job can positively (negatively) impact the environment
 - Basic environmental literacy (earth systems, watershed services, fossil fuel emissions impacts)
 - Criteria thinking skills & problem solving
 - Ask questions, learn from mistakes
 - Maintenance of green school facilities (more enviro friendly, less waste, more sustainability)

Breakout session 2 (High Impact Actions for Sustainable Schools):

Transportation, lower GHG, food residual reduction

- How does the U.S. Army Corps of Engineers fit in? (They are under federal on the mapping exercise)
 - Knowledge-based - there are personnel who are LEED certified and include LEED certification in new buildings, not sure if that means internships for students, bringing them on to see construction and engineering.

- Everything involved in sustainability has some kind of engineering aspect, showing students that there is a pathway to engineering through federal, through military, with sustainability
- IAC - do funding for new construction and renovations (adding energy efficient HVAC)
 - Follow-up question - are there guidelines for green buildings from the IAC? LEAs decide what goes into the RFPs for school construction, not the IAC
- Where are non-profits on the maps (listed in yellow)? Thinking about conservation (tree planting, wetland restoration)
- BCPS - Educating students on why it's important and what the impact is, is an important aspect for behavior change for students and staff. Been impactful to work with office of construction for buy-in and behavior change
- BCPS - food waste hauler collects data, energy is School Dude (Brightly now).
 - Center for Green Schools has been a great contact, lots of opportunities for schools and connecting around the country.
- Partnership between facilities and curriculum (a lot of leadership comes from LEAs) but from the state level, we think about standards - 5th standards of impact and consequences and seems like a good place to start.
- ACPS facilities staff is doing a lot to reduce their environmental impact but they aren't connected to the data in the ELit Tool/ the person from ACPS who fills out the ELit Survey

Next steps:

- Meeting that would bring together different parties (facilities, ELIT, etc) to bring together different voices and have conversations about linking to climate and ELIT framework
- Connecting with Board of Public Works (missing from the map)
- Use Maryland Green School app to make suggestions on higher impact actions (figure out what they are or suggest what they might be)
- Is there a survey that MSDE or IAC goes to LEAs to gather data on alternative energy, sustainability, etc.
 - IAC does a report
- Connecting with the IAC
 - Potential collaboration between PGC and IAC: develop RFP "best practices for sustainability" for schools to consider adding high impact actions to their RFPs for school construction and renovation (How to incorporate high impact actions into RFPs for school construction/ renovation)

Beyond 2025

- Input on current 2014 Watershed Agreement Environmental Literacy Goal:
 - The MWEE is too constraining, there is value in environmental education that doesn't fit the true definition of a MWEE
 - Because properly implementing a true MWEE requires a lot of training, time, and resources we feel that MWEEs are not equitably implemented
- Recommendations for future Watershed agreement:
 - Emphasize the multidisciplinary nature of environmental literacy (inquiry/ experiential learning lends itself to science but is broader than just science)
 - Consider a numeric target for the Sustainable Schools goal

- Use the next Watershed Agreement to advance the number of sustainability offices within LEAs in the watershed (to promote the adoption of high impact actions on and in schools)
- General themes we'd like to see in the next environmental literacy goal of the WA:
 - Climate
 - Skills-based
 - Sustainability
 - Mitigation and adaptation
 - Getting kids outside
 - Multidisciplinary
 - Applying what they're learning to environmental issues
 - Curriculum integration
- Infuse DEI/ equity language into the Environmental Literacy Goal
- Other notes:
 - Broadening the language to include more than MWEEs may open up funding opportunities for other types of environmental education
 - From Olivia Wisner- Clearly define what audience we're trying to reach under the Environmental Literacy Goal vs other human-centered Goals/ Outcomes in the agreement (ex. Stewardship)
 - Consider updating the ELit Tool to capture the sustainable schools work that is happening in the watershed (shift away from relying solely on certified green schools as the metric)