MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Larry Hogan, Governor
Boyd Rutherford, Lt. Governor
Jeannie Haddaway-Riccio, Secretary

June 26, 2019

The Honorable Larry Hogan
State House
Annapolis, MD

Re: Submission of Maryland Project Green Classrooms Initiative
Agency: Maryland Department of Natural Resources
Report Authority: Executive Order 01.01.2017.12 E (6), MSAR 11837

Dear Governor Hogan:

In accordance with Executive Order 01.01.2017.12 E (6), MSAR 11837 the Maryland Department of Natural Resources hereby submits the attached report regarding the annual progress report and recommendations for the project green classrooms initiative.

If you would like any additional information or should you have any questions regarding this report, please feel free to contact me or James W. McKitrick, DNR's Legislative Director, at 410-260-8112 or via email sent to at jamesw.mckitrick@maryland.gov.

Sincerely,

Jeannie Haddaway-Riccio
Secretary

Attachment

cc: Sarah Albert (5 copies)

Maryland Project Green Classrooms Initiative
Annual Progress Report and Recommendations – June 2019

The statewide Project Green Classrooms initiative was established in June 2017 by Governor Larry Hogan's Executive Order 01.01.2017.12. The executive order directs the Department of Natural Resources to provide an annual report to discuss Project Green Classrooms' activities in 2018 and make recommendations to advance the priorities of the initiative.

BACKGROUND

The executive order created a coalition of state agencies and other government and nongovernment partners to mobilize resources ensuring that Maryland's youth experience, understand and learn to conserve the natural environment. The initiative was established to promote outdoor activities and environmental education in schools, communities and on public lands to benefit Maryland's young people. The membership is more diverse and robust than past efforts, presenting new and exciting opportunities to work more effectively across state government and with our public and private sector partners.

The Project Green Classrooms initiative is an advisory body, working collectively to identify gaps and barriers and make recommendations to state decision-makers regarding solutions that will bring about change to advance in three main areas:

1. Supporting environmental literacy programs in schools;
2. Increasing access to nearby nature;
3. Promoting the use of the outdoors for learning, discovery, healthy play and career exploration.

The executive order specifies the initiative's responsibilities to include the following:

- Recommend and facilitate statewide actions needed to meet established priorities, convening partners to address gaps, recommending realignment of resources such as funding and improvement of coordination among and across public and private programs to efficiently advance outcomes;
- Develop recommendations to help shape state policy and stakeholder practices to address barriers, needs and opportunities identified by the initiative;
- Broaden engagement of stakeholders in the initiative's work and help establish the tools and resources necessary to advance the work of the group.

The term "green classrooms" can be taken in its broadest sense, to mean all of Maryland as a collection of numerous opportunities to learn about and discover the environment and natural resources, both indoors and outdoors, during the school day as well as outside of school hours at home and in communities. Outdoor experiences are critical to learning about the environment and developing empathy and stewardship and should be foundational to child development, wellness and academic programs. Because it is often a challenging piece, this initiative will focus additional efforts in the near term on bridging gaps for increasing interactions with the outdoors as an important means to support academic achievement and whole child benefits.

The partners involved have been working under an annual action plan, developing and implementing a variety of action items to help address gaps and advance work in the priority areas. The action plan identifies and follows several strategies that focus on approaches to help answer the following overarching, guiding questions, collectively, and the recommendations are rooted in these concerns: Does every child in Maryland have the means, access, opportunity, knowledge, support, encouragement, desire and inclination to play, explore and learn outdoors – both during and outside of the school day?

1. What can be done to increase the time youth spend outdoors during and outside of the school day?
2. Do enough places exist to experience nature, are they sufficient and are they in the right locations?
3. Can they get there?
4. How can we do more to build good stewards for the 21st century and prepare youth for life and careers?
5. What are some avenues of outreach that can help with all of the above?

RECOMMENDATIONS

As a result of the work of this initiative, the group has identified a set of 10 recommendations, representing actions that would require partnership, coordination or action by other entities and, if implemented would support advancement of the work significantly. These recommendations support Project Green Classrooms' priorities either directly or indirectly in meaningful ways and open avenues to allow our work to move forward more quickly, efficiently and effectively, engaging and cutting across multiple disciplines to provide increased benefit for Maryland youth.

Therefore, we respectfully submit the following recommendations to the governor for consideration. These recommendations address staffing, funding and coordination/integration to support environmental literacy development and outdoor interaction throughout Maryland.

This is a shortened summary list of the recommendations. The full recommendations, along with supporting information and rationale follows.

Project Green Classrooms recommends that the state should:

1. Support converting the existing Environmental Literacy Program Specialist position at the Maryland State Department of Education from a contractual to a permanent position.
2. Develop and promote guidance to local education agencies on environmental literacy programs, identify effective professional development components and support implementation.
3. Prepare pre-service teachers to facilitate environmental literacy learning with Maryland students.
4. Establish a sustainable schools team at the state level to support school districts in developing and implementing sustainability plans.
5. Consider allocating funding annually to support field-based outdoor educational experiences for students at public lands (such as local, state, and federal parks, forests, natural areas, and reserves) or other natured-based sites away from school campuses.
6. Establish a panel to identify and invest in a sustainable model of environmental education implementation at our parks.
7. Address equitable access to parks and green space, working with communities.
8. Establish formal policies that encourage and facilitate all public and private early learning facilities to designate space for children to interact with nature.
9. Identify how best to include health considerations into all programs and services for children/youth/families.
10. Direct, encourage and guide intentional coordination among Project Green Classrooms and a variety of existing state boards, commissions and other entities.

1. Environmental Literacy Programs in Schools

GOAL: Provide prioritized support for our state's obligation to meet academic standards and requirements set forth by the Code of Maryland Regulations, as well as commitments under the Chesapeake Bay Agreement, that are related to environmental literacy.

RECOMMENDATION: The state should support converting the existing Environmental Literacy Program Specialist position at the Maryland State Department of Education from a contractual to a permanent position during the next fiscal year.

RATIONALE: The Maryland State Department of Education agrees with the importance of this position and the intent of this recommendation. Contractual positions are, by definition, considered temporary. Such designation suggests a 'less than' or uncertain priority being placed upon the role. This is

incongruous considering the level of responsibility in the position, which includes: (1) providing ongoing technical assistance related to preK-12 environmental literacy programs aligned to the Maryland Next Generation Science Standards implementation for formal and informal educators; (2) collaborating with local education agencies and external partners to assure requirements of Project Green Classrooms are attained; (3) providing technical assistance in aligning Maryland's Environmental Literacy programs and Maryland's Next Generation Science Standards with the Environmental Literacy Goal of the Chesapeake Bay Program; (4) administering the Maryland Green Ribbon Schools Award program in collaboration with the U.S. Department of Education. As a leader among the Chesapeake Bay watershed region, converting the position would be a positive step in demonstrating the priority Maryland places on the environmental literacy of its students.

This position is critical to the state's achievement of its commitments under both the Chesapeake Bay Watershed Agreement and the Governor's Executive Order for Project Green Classrooms. It provides a necessary role in assuring local education agency support and implementation of the Environmental Literacy Standards and graduation requirement without which, as has occurred in neighboring states, success and growth in these areas suffers.

2. Environmental Literacy Guidance to Local Education Agencies
GOAL: Ensure that guidelines and resources are in place to support local education agencies with advancement of their environmental literacy programs, including facilitating effective partnerships and engagement; and continue to promote increased preparation of all teachers and staff responsible for environmental literacy.

RECOMMENDATION: The Maryland State Department of Education should develop and promote guidance to local education agencies on what constitutes a "comprehensive, multidisciplinary environmental education program infused within current curricular offerings," as outlined in the Code of Maryland Regulations. The Maryland State Department of Education should identify effective professional development program components and support local education agencies implementation by providing models, links to funding opportunities and recommending partners; and by highlighting existing, available professional learning and other resources, for both classroom-based and field-based educators.

RATIONALE: Inconsistencies exist across the state with regard to expectations and components of 'complete' environmental literacy programs. Benefits to establishing and documenting consistent, consensus-based expectations include: the ability to share and compare as the programs evolve; the ability of funders to better evaluate grant requests; potential use of documented plans as program certification; and facilitating coordination with supporting partners such as field-based environmental education providers who can tailor student outdoor experiences, professional learning opportunities for teachers and instructional resources. In turn, field-based educators (such as at parks, environmental education centers, farm-based education sites) can use the information about local education agencies environmental literacy programs to identify needs and opportunities to prepare their staff to fit their offerings to academic requirements, to better meet schools' needs. This will help to ensure that local education agencies plans advance environmental literacy teaching and learning for all students equitably across the state.

3. Preparation of Pre-Service Teachers
GOAL: Teachers certified through Maryland institutions of higher learning will graduate prepared to deliver environmental literacy content in all grades (preK-12) and across multiple content areas, as environmental literacy is interdisciplinary in nature.

RECOMMENDATION: Pre-service teacher requirements should include preparation for Maryland teachers to support students on their journey toward environmental literacy. It is recommended that those

with appropriate authority and capacity consider and implement means to incorporate an environmental literacy pre-service component into teacher education curricula at Maryland higher education institutions. This may include infusing effective content into coursework in different disciplines, added credential opportunities and/or adding environmental literacy to certification requirements and regulations.

RATIONALE: In view of the existing state regulations and policies that call for rigorous learning about our local environment, it is imperative that teachers enter Maryland preK-12 schools with the knowledge, experience and skills to lead outdoor learning in environmental education. These policies include the Code of Maryland Regulations in Environmental Education, the 2017 Governor's Executive Order establishing the Maryland Project Green Classrooms initiative and the Chesapeake Bay Watershed Agreement, signed by the representatives of each of the jurisdictions within the watershed. Further, environmental literacy experiences support Next Generation Science Standards and inquiry-based instruction. Currently, there is no environmental literacy pre-service requirement for teacher education degree completion or certification. The absence of teachers who are proficient and prepared in environmental content and practices, including leading outdoor field investigations and student action projects, who can develop lessons that inspire and effectively infuse Maryland Environmental Literacy Standards, will hinder students' abilities to achieve the Maryland Environmental Literacy Graduation Requirement.

Different program options are in place or developing at several Maryland institutions, such as Towson University, Goucher College, Salisbury University, Notre Dame of Maryland University, Hood College and others. Considering these will be beneficial to establishing new practices. Some options include: environmental literacy preparation integrated into various content areas, including science courses and other topics, as well as teaching methods courses; endorsements or optional additional certifications and professional development schools in partnership with local public schools offering practical teaching experiences with K-12 students learning about the environment in authentic settings.

4. Sustainable Schools

GOAL: Maryland will have the cleanest, greenest, healthiest schools providing world class education that supports development of 21st century skills, helps the state achieve environmental quality goals and saves taxpayer money.

RECOMMENDATION: The state should establish a sustainable schools team at the state level to support school districts in developing and implementing sustainability plans and sharing best practices statewide as an important component of environmental literacy. The plans would help guide schools in providing environmental benefits by aligning to the three pillars of the U.S. Green Ribbon Schools program: conforming to green standards, benefiting the health of students and staff and complementing and supporting the academic curriculum. This will also assist the state in achieving its goals under plans such as the Chesapeake Bay Watershed Agreement and Maryland's Greenhouse Gas Reduction and Climate Adaptation Plans; and in increasing the number of sustainable Maryland Green Schools.

The team should consist of those who can advise in the various disciplines applicable to the three pillars. These may include staff responsible for facilities and maintenance, health and wellness, curriculum and instruction, contracting, budgeting and more, including partners from agencies and organizations outside of the formal school system; and it would work in coordination with the Interagency Commission on School Construction and the School Safety Commission. A team at the state level would have the ability to assess practical measures and establish guidance and would serve as a model for teams at the local level to improve implementation.

RATIONALE: It is imperative that the state work to ensure that every student in every community has access to effective programs that use sustainable schools practices as a means to advance environmental

literacy. Because school districts are responsible for defining curriculum and maintaining their real property and buildings, the state must support district efforts to embed locally appropriate environmental practices, content and learning opportunities into their required curriculum and operations. Sustainability plans should include actions that address and incentivize school facility renovations and construction, as well as components that involve students in planning and conducting stewardship efforts and daily best practices. This can be done in part through coordination with the Interagency Commission on Public School Construction to identify actions in support of sustainable school efforts that align with the three pillars as noted above.

Additional efforts are needed in order to make green spaces more widely available for outdoor learning, healthy play and career exploration. Benefits of time spent outdoors in nature are well documented and Maryland has a lot to offer its residents of all ages. Several means have been identified to advance the vision of connecting more of our young people to outdoor experiences that will benefit their health and wellness; help them develop a connection to, sense of place and ethic for stewardship of their local environment; and open avenues to forward-thinking job skills and opportunities.

5. Funding For Outdoor Learning Experiences
GOAL: Assure that an important part of providing the state's youth with a world class education includes opportunities to interact with the local environment to reinforce classroom content, develop a stewardship ethic and help prepare students to meet the challenges they face in a 21st century workforce and economy.

RECOMMENDATION: The state should consider identifying private and public funding sources to support a field-based outdoor educational experience for students in at least one grade level in each school district at public lands (such as local, state, and federal parks, forests, natural areas, and reserves) or other natured-based sites away from school campuses.

RATIONALE: An investment of at least $5 million annually would support the Chesapeake Bay Watershed Agreement environmental literacy goal to provide every child in Maryland with a "Meaningful Watershed Educational Experience" at least one time each in the elementary, middle and high school years (i.e., at least three times for every student). The recommended level of funding will provide one of three experiences called for under the Agreement. This experience is foundational to building students' awareness of and appreciation for natural resources, which are a crucial part of Maryland's economy, lifestyle and identity and provide livelihood and sustenance for its residents. Yet there remains a tremendous gap in funding outdoor experiences for students, as teachers and school systems report consistently a lack of funding for transportation and associated costs. Existing grant programs that support environmental education are meeting only a small portion of the demand/need and are jeopardized by fluctuating budgets. A dedicated, sustained source of funding, administered equitably, is needed to move toward a goal of providing the opportunity for every child in every community to have these experiences. Some examples to consider include Oregon's Outdoor School for All, which was signed into law in 2015 with $24 million over two years appropriated in 2016 from state lottery proceeds. The funding covers all costs for students in grades 5 and 6 at public and charter schools to receive a 3-6 day outdoor environmental experience. The program is administered by Oregon State University Extension, working with the school districts. A study of participating students shows the investment returns significant meaningful academic and personal growth. Other states have generated funding using different methods, including Pennsylvania, which uses revenue generated from environmental fines and penalties to support a robust environmental education grant program.

Maryland has an opportunity to generate funding for this request from the just-passed measure for casino revenue to be used for education, or from other new legislated funding. It is recommended that specific logistics be left to the discretion of the Department of Budget and Management, working with the agencies and appropriate funding streams.

6. Environmental Education Experiences on Public Lands

GOAL: Increase use of public lands by schools as additional sites for outdoor learning that provide curriculum-based environmental education experiences, by improving the model of how parks and other facilities are prepared to support schools.

RECOMMENDATION: The state should establish a panel to determine measures to invest differently in how our parks are positioned for effectively supporting environmental literacy. Further investigation is needed to identify a sustainable model of environmental education implementation, including looking at staffing options such as a public-private partnership model that pairs natural resources professionals with environmental education partners from nonprofits, universities and others. Training for all involved should be included, to assure that program offerings are aligned to schools' needs and are thus effective. The plan should identify options for adequate funding to support and sustain the model long term, benefiting all involved partners.

RATIONALE: Public lands offer accessible sites to experience nature in its finest settings, as well as associated cultural heritage and rural legacy components. State, federal and county governments maintain facilities to benefit the people as well as to conserve natural and cultural resources. A challenge in using these sites to advantage is that teachers' time and background in science and environmental topics is often limited, so they are most likely to utilize public lands where the available programming supports academic requirements and assistance is provided for leading an on-site program. Some public lands sites have active environmental education programs with permanent educators on staff, but this is not possible at every site. Public lands managers and natural resources staff are often not equipped to conduct education programs and their time is divided among many duties. This presents a barrier to schools utilizing an obvious resource to enhance and support learning.

Partnering with outside environmental educators can be a solution to staffing challenges, though it must come with effective operations agreements and funding to secure partners' time. The state should coordinate with school districts, recreation agencies, public lands managers (state, federal and local parks), environmental education field providers (government and nongovernment, including resources through institutions of higher education), potential funders and other interests to address barriers, identify opportunities and develop a functional proposed model. State practices can influence those at local parks, by example, as well as through the 2019 State Land Preservation and Recreation Plan, which includes additional guidance and recommendations related to this. Efforts can be bolstered by leadership direction and other support to facilitate collaborative solutions.

Some examples of these effective partnerships Maryland State Parks, include the Sassafras Environmental Education Center, which operates at Sassafras Natural Resources Management Area in Kent County with staff from the nonprofit Eastern Shore Land Conservancy. Programming is also assisted by state park and adjoining county park personnel. Additionally environmental education programs are often provided at parks by partner organizations, such as the Alice Ferguson Foundation conducting "Bridging the Watershed" at Rocky Gap State Park; Audubon Maryland-DC bringing Baltimore City students to North Point State Park for "Audubon Watershed Experiences;" and the National Aquarium bringing students to Sandy Point State Park for aquatic studies. Partners benefit from outside funding to support their work as well as having natural sites for their programs; the parks are able to receive school visitors with additional education assistance from partners; and students benefit from the quality learning experiences.

7. Equitable Access to Green Space

GOAL: Establish equitable access to parks and green space, in partnership with local communities, to assure benefits to children from all types of communities.

RECOMMENDATION: The state and its partners should identify and promote existing incentives and help communities prioritize projects that establish and maintain equitable access to parks and green space. This includes developing, sharing and using available federal, state and local resources to identify gaps and best practices; and engaging community members in the planning process. Special emphasis should be placed on efforts for communities that historically have had obstacles connecting to open nature spaces.

RATIONALE: Equitable access provides increased health and academic benefits for all communities, especially those often underserved and under-engaged. While awareness has increased regarding the need for equitable access, much more specific, intentional initiatives are needed. Entities positioned to affect change are often at a loss for effective measures to employ to address equity. Examples of projects may include strengthening trail or pedestrian connections to green space, colocation of natural areas within communities and providing mechanisms to maintain new and existing areas. This aligns with additional recommendations included in the 2019 State Land Preservation and Recreation Plan. This can be facilitated through leadership direction, funding and other support in order to create and implement incentives.

Some of the many existing tools available to aid in identifying gaps and priorities include the state's Park Equity Analysis, the U.S. Environmental Protection Agency Environmental Justice screening tool and the Maryland Department of Transportation storymap "Get Kids Outside in Maryland."

8. Outdoor Play and Learning Environments
GOAL: All preschool children have regular access to high quality outdoor play and learning environments containing a natural diversity of plants and wildlife, fresh food, water, soil and loose parts, where they can freely explore, initiate their own adventures and engage in active play, such as digging, gardening, running, climbing and more, in places that are safe, exciting, dynamic and engaging.

RECOMMENDATION: The state should establish formal policies that encourage and facilitate all public and private early learning facilities to designate space as an enhanced outdoor play and learning environment that includes, in particular, features that allow interaction with nature and related activities that benefit children's health and well-being. Guidelines for a high quality outdoor learning environment can come from the well-established local and national leaders such as the U.S. Forest Service, National Wildlife Federation and Natural Learning Initiative collaborative. Project Green Classrooms offers online guidelines and tools in accordance with these resources, which support early childhood outdoor natural learning environments. This can be facilitated through leadership direction, guidance materials, identifying and promoting funding resources, establishment of partnerships and other support.

RATIONALE: Implementation of high-quality early childhood play and learning outdoor environments are important to the health and well-being of children in Maryland. Research-supported benefits: promotes cognitive development; improves academic performance; stimulates constructive, imaginative and collaborative play; improves self-regulation and reduces stress, depression and aggression; lessens the symptoms of Attention-deficit/hyperactivity disorder; builds an environmental stewardship ethic; advances physical fitness and gross motor development; improves nutrition and can protect against myopia. Relevant early childhood environmental education frameworks and environmental assessment tools also recognize the importance of outdoor play and learning to environmental quality.

9. Improve Connections to Health and Wellness:
GOAL: Increase awareness around and inclusion of policies and practices that promote the physical and mental health benefits from active play and outdoor recreation among Maryland children and adults.

RECOMMENDATION: The state and its partners should identify how best to incentivize the inclusion of health considerations into all programs and services for children/youth/families. This involves the broad school community as defined by the 2006 Maryland Nutrition and Physical Activity Plan, encompassing the full spectrum of learning institutions at all levels as well as family and community settings. An accompanying resource portfolio should be created that includes information around physical and mental health benefits of nature-based recreation and made available in an accessible format. Special emphasis should be placed on schools and communities with lower levels of outdoor activity.

RATIONALE: The benefits of nature and outdoor activities have been widely accepted throughout both the educational and public health communities. Therefore, outdoor recreation programming must consider and incorporate a health perspective. Project Green Classrooms has worked to create two white papers that will serve as the first step toward achieving systematic understanding and integration of health components into outdoor time. The two papers, currently in draft, highlight some of the scientific and policy findings and serve as the foundation of this rationale. This recommended work should be coordinated with and advised by the Health in All Policies Center for Health Equity Workgroup as noted below. These groups and associated agencies and organizations will have the capacity for developing the resource portfolio.

10. Coordination Among Complementary Groups

GOAL: Operate Project Green Classrooms with increased capacity and effectiveness without undue duplication of other state initiatives and vice versa; coordinate resources for improved outcomes and to demonstrate an exemplary model of integrating interests and responsibilities.

RECOMMENDATION: Project Green Classrooms should coordinate intentionally with existing state boards, commissions and other entities to integrate implementation of complementary goals and plans and share resources, as appropriate. Some direction on the part of the state to encourage and guide this coordination would be helpful. Entities involved may include the following:

- Maryland Climate Change Commission regarding educational goals and outcomes related to climate change and building resiliency;
- Maryland Outdoor Recreation and Economic Commission to assure that all elements are well-addressed, in particular environmental education as an integral part of outdoor recreation and access to the outdoors, to best benefit Maryland's economy, growing workforce and residents. These entities share priorities for integrating educational and recreational goals, as introducing young people to nature can open doors to a lifetime of recreational pursuits, enjoyed with friends and families, which continue to contribute to our state's economy.
- Various groups to assist and support sustainable schools actions, such as:
    - Interagency Commission on School Construction
    - Maryland Green Building Council
    - School Safety Commission
- The Maryland Higher Education Commission's Segmental Advisory Council for consideration to incorporate an Environmental Literacy pre-service component into teacher education curricula at Maryland higher education institutions.
- Health in All Policies Act, University of Maryland School of Public Health, Center for Health Equity Workgroup to incorporate guidance on policies and practices regarding healthy activities in programs and services for children and to connect appropriate initiatives across government sectors, working with other partners such as the medical and health care community. Health in All Policies is an approach adopted in several states that is rooted in the fact that the environments in which people live, work, study and play shape their health outcomes therefore,

government agencies should consider health outcomes in the decisions that shape those environments. Looking at health through an environmental frame, using intersectoral collaboration to promote health, would engage considerations for wellness services, parks, transportation, community planning, equity, neighborhood safety and more incorporating health considerations into decision making across sectors and policy areas.

- 2019 State Land Preservation and Recreation Plan to help implement and share the set of recommendations regarding connecting children to nature and improving access to and availability of nature areas at parks and other green spaces.
- Department of Labor, Licensing and Regulation to determine ways that Project Green Classrooms career pathways efforts can be guided by or contribute to the state's Workforce Innovation and Opportunity Act State Plan that aims to integrate services to support both businesses and job-seekers through strategic cross-sector partnerships; and envisions connecting workforce, education, human services and economic development entities.
- Kirwan Commission on Innovation and Excellence in Education to use the report and connect with working groups as feasible for guidance on their recommendations that may apply to the Project Green Classrooms activities, so that we can be in step with what is being implemented at a higher level.

RATIONALE: Project Green Classrooms already works closely with the Chesapeake Bay Program and serves as the means to achieve Maryland's commitments to environmental literacy under the Chesapeake Bay Watershed Agreement. The additional entities referenced here include shared interests where coordination makes sense. As noted with each suggested entity, the intent is to highlight the importance of education about the environment and natural resources to a variety of fields, businesses, etc. and to find ways to advance overlapping goals through efficient use of resources, especially staff time, across state government and partners. This sort of integration among entities could position Maryland as an exemplary model for other states, for greater regional and national impact.

2018 STRATEGIES AND ACCOMPLISHMENTS

For each of the following strategies, Project Green Classrooms initiative formed committees that identified specific barriers, challenges, potential solutions and actions to affect change and used those as the basis of the work plan, including specific key actions for each strategy. Each group was led by a steering committee member and consisted of a combined team of steering committee members, partners and interested parties outside the official membership. The work plan was approved by the Voting Members (state agency heads or their representatives) in May 2018; and many of the actions are ongoing. Intentional efforts are made throughout all of this work to infuse actions, solutions and recommendations for inclusivity, agriculture and health-related components; and to explore possibilities for funding resources. All of the strategies have multiple components that are cross-cutting, necessitating interaction among agencies, committees, organizations and outside partners. None of the strategies can be addressed in a "silo."

Environmental Literacy and Learning Outdoors

Partners are engaged in many ongoing activities that support environmental literacy programs in schools. As a main driver this year, we will use the strong relationship between the Next Generation Science Standards and Environmental Literacy standards to recommend best instructional strategies targeting student achievement and environmental stewardship in Maryland. Critical to this goal will be networking key stakeholders and increasing their capacity to integrate environmental learning across disciplines, with the expectation that outdoor learning experiences are fundamental. This work may entail actions such as

guiding professional learning, advising instructional content, recommending best practices and more. Stakeholders include but are not limited to: (1) higher education entities such as pre-service and certifying teachers, classroom based educators serving as mentors for interns and environmental-related departments (environmental studies, conservation, agriculture, etc.); (2) field and classroom-based educators; (3) curriculum writers and program developers; and (4) administrators at various levels.

Action 1: 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 reaches every student with standards-based Meaningful Watershed Educational Experiences. [Committee led by the Maryland State Department of Education]

End Goal: A strategic approach, coordinated content, support system/network and plan for training more environmental education providers and formal educators to use standards-based Meaningful Watershed Educational Experiences as a tool to achieve environmental literacy.

Achievements: A subset of the Environmental Literacy Professional Development committee completed a draft syllabus meant to provide guidance and consistency across Maryland when Meaningful Watershed Educational Experiences workshops are developed. This syllabus also provides the basis for a state-specific module as a component of the Chesapeake Bay Program online course. The draft syllabus was reviewed during the October 2018 Maryland State Department of Education statewide Environmental Literacy Briefing in order to solicit feedback from more than 30 local education agency representatives and environmental education partners in attendance.

Action 2: Work with Professional Standards Teacher Education Board to influence the Council for the Accreditation of Educator Preparation standards implementation in Maryland to include environmental literacy. [Committee led by the Maryland State Department of Education]

End Goal: Create and submit recommendation through appropriate channels that the State Board of Education accommodate preparation for environmental literacy when considering the new Council for the Accreditation of Educator Preparation standards. Request that before adopting and adding to the Maryland version of those standards, they look for where pre-service teachers will receive the content and pedagogy needed to ensure that the state regulations in environmental education are met in the classroom.

Achievements: Committee members participated in a Maryland State Department of Education workgroup to analyze new, draft pre-service K-6 Elementary Teacher Standards, in regard to the inclusion of the content and pedagogy of environmental education. Subsequently, the workgroup was being reorganized and was stalled waiting for an update to standards from the accrediting body. The Maryland State Department of Education bases the state professional standards for teachers on the Council for the Accreditation of Educator Preparation. The committee has worked to determine where and if there is an appropriate role for Project Green Classrooms members to potentially influence the development of the standards. In the meantime, they are supporting and learning from institutions of higher education that are proactively integrating environmental literacy into their pre-service coursework and exploring options such as endorsements and other credential options.

Sustainable Schools

Sustainable schools efforts connect conservation practices, health and wellness policies and real-world student stewardship experiences with the schoolyard and the school building as learning laboratories. Partners aim to increase the ability of schools to utilize their buildings and grounds as a means for authentic hands-on learning and a place to practice stewardship toward an eventual culture shift to embrace practices at school and in the community that benefit the environment and human health. We

will do this by using the new Sustainable Schools Guide when complete in 2018, Bay Backpack and online training resources to link school buildings and grounds to curriculum in environmental literacy.

Currently, approximately 27 percent of Maryland schools have earned designation as Maryland Green Schools, many have also achieved Eco-Schools status and Maryland schools and school districts are recognized annually through the U.S. Green Ribbon Schools Program. While Maryland is a leader in participation in sustainable schools programs, there is still a long way to go before reaching benefits to students at every school. The efforts of this group strive to support exponential growth in this area. [Committee led by the Maryland Department of Planning]

Action 3: Develop a means to connect and better integrate the various programs and initiatives offered at the state level to support sustainable practices in schools; provide readily accessible information on these resources via BayBackpack, linked to partners' websites; and promote them through existing sustainable schools programs.

End Goal: Develop a comprehensive list of programs and initiatives that is accessible.
Achievements: The committee is in the process of identifying and compiling an inventory of existing programs, policies and initiatives from state agencies such as "no idling" zones, reducing carbon footprints and energy and water conservation initiatives. Resulting information will be made available through BayBackpack and the School Grounds for Learning resource page.

Action 4: Develop recommendations and guidance for implementing sustainable practices at school facilities and grounds; explore options to secure a statewide sustainable schools coordinator role to provide technical assistance for school districts to develop and implement sustainability plans to increase the number of sustainable schools in Maryland.

End Goal: Ultimately establish sustainability plans at all 24 school districts in Maryland, with emphasis on integrating best practices into curricular offerings to help meet state environmental literacy academic requirements. Utilize the 1,382 schools and associated 28,324 acres of property to help the state achieve its goals as outlined in state policies on renewable energy, greenhouse gas reduction, water and air quality, natural resources restoration and more.

Achievements: Research conducted by Abey Adeoye, a member of the Governor's Public Service Scholars summer internship program, looked at existing sustainable school programs across the U.S. and developed white papers on the programs in Ohio and California. He also reviewed sustainability programs in Baltimore City and the counties of Baltimore, Howard, Montgomery and Frederick. Examples and best practices from this research will be used to develop recommendations for Maryland programs.
In the initial research and discussions, we identified a need for technical assistance to help the school districts develop, organize and implement a sustainable school plan

Healthy Outdoor Time
Through partnerships, programming and technical support, Maryland Department of Health and partners will work together to encourage healthy outdoor play and learning for all children in Maryland. Health benefits for children are maximized when their outdoor environment is safe, healthy and there is equitable access. More benefits can be realized when planning considers the needs of all children within the context of health and community safety. We will strive to increase awareness of the value of active time outdoors in nature settings for health, wellness and academic success; and make best use of the benefits by combining knowledge, planning and data tools available among the partners, to promote and guide development of safe and inclusive outdoor programming and activities. We will provide recommendations and guidance resources for educators, caregivers, facility managers, local planners and

others; identify areas of need in Maryland; and consider avenues to address challenges. [Committee led by the Maryland Department of Health]

Action 5: Develop white papers to provide scientific and policy basis for recommendations and our actions moving forward in regards to the public health/health benefits to increased time for outdoor activities. These white papers will focus on: (1) Policy – Current state of policy and regulations in Maryland that cover the concept of outdoor time in schools; and (2) Science – Scientific summary of benefits to students from outdoor time.

End Goal: Use the white papers as a foundation to build support and awareness and to further work into next year to dive into case studies and programming in Maryland, including more data to help guide decision making.

Achievements: Over the course of 2018, the committee drafted an outline which was provided to the steering committee for comment, then conducted the necessary research and compilation required to develop both white papers. Due to the broad scope of the white papers and the breadth of evidence for these topics, the white papers are still in draft format, currently in the pipeline for approval at the Maryland Department of Health. Once approved, they will be distributed to Project Green Classrooms partners for comments and finalized versions made available to appropriate entities for consideration in decision-making.

Action 6: Develop recommendations around healthy outdoor time based on findings of the two white papers for inclusion in the 2018 report to the Governor.

End Goal: Recommendations to state government leadership for how to improve or where to head as it relates to policy and regulations around healthy outdoor time/outdoor time for children in school.
Achievements: Based on the findings of the research that went into the draft white papers, a recommendation to address growth in this area was developed and is included in this report. The focus is recommending first steps to move forward on systemic integration of health considerations in all nature-based recreation and outdoor activities.

Access to Nature
To increase children's access to nature, the partners recommend working together to find synergies and develop a set of guidance materials that outline methods and resources for successfully getting children to nature, both during and outside of school hours. Each of the partners have various programs, funding sources, data and mapping resources that can be used to help advance children's access to nature, but they are currently working independently of one another. By identifying potential collaborations, the partners will be more efficient and effective administering current programs; communicating to teachers, administrators and parents about how to take advantage of these programs; identifying where resources are still needed and exploring mechanisms across programs to carry out effective solutions. [Committees led by the Maryland Department of Transportation]

Action 7: Combine the partners' GIS data, overlaying schools, parks, trails, open space, transportation systems, communities, etc., to provide a more comprehensive understanding of existing access to nature across Maryland.

End Goal: Understanding existing access to nature will help focus efforts to identify specific needs such as new transportation links or expanded trail systems and explore mechanisms across programs to carry out effective solutions.

Achievements: A GIS story map was created, "Get Kids Outside in Maryland," that includes destinations, schools and transportation linkages (bicycle/pedestrian, trains, buses). The online resource is available for practitioners and the public to use to help identify places to go to access green space and how to get there by various means; and for decision-makers to use to identify where there are gaps that need to be addressed.

Action 8: Identify funding sources that support off-site field experiences, specifically for transportation from schools to nature sites (coordinated with action 16, below).

End Goal: Develop a user-friendly resource for existing funding sources that directly and indirectly support transportation from schools to nature sites.

Achievements: The committee collected available grant and other funding resource information that may be used to support off-site field experiences. These resources mainly consist of federal and state funding programs for bicycle and pedestrian projects. A description of funding resources was entered onto a spreadsheet compiled by the Chesapeake Bay Program Environmental Literacy workgroup. This will assist with future efforts to identify available funding sources and increase awareness of them among the environmental education community, as well as to determine gaps and needs that would warrant future exploration for opportunities.

Action 9: Identify existing and perceived institutional barriers that prevent or discourage educators from bringing children to nature spaces and provide guidance on best practices to overcome them.

End Goal: Support preparation of principals, teachers and environmental education partners to appropriately facilitate quality learning experiences outdoors.

Achievements: The committee developed an action plan and identified points of contact. This action is expected to take approximately 1-2 years to accomplish.

Green Space

One of the critical pieces for connecting more children and communities to Maryland's natural resources is to increase the quantity, quality and accessibility of green spaces available for exploration, recreation and learning. We will continue to work with local, state and federal agencies, nonprofits and industry representatives to highlight design practices, share tools for green space planning and programming and advocate for incorporation of these policies into long-term planning efforts. We will work with partners to identify needs and build resources to support the design, creation, maintenance and use of green infrastructure, including nature play spaces, pocket parks and raingardens, as well as larger parks and public lands. This will include efforts to increase awareness of the value of green space to the economy, human health, education, community building, climate resiliency and overall ecological benefits as well as future policy recommendations. [Committees led by the Maryland Department of Natural Resources]

Action 10: Expand involvement in the Parking Day event (annually, the third Friday in September) as a way to raise awareness of parks/green space, to stimulate conversations about how we use our urban landscape and as an opportunity to promote the benefits of getting outside, local agriculture, or happenings in local and state parks. Expand participation to include five new partners including Project Green Classrooms organizations, local schools and park systems.

End Goal: Participate in an ongoing event and engage Project Green Classrooms partners and their constituencies while encouraging Marylanders to interact with nature and get outside.

Achievements: The committee and various partners hosted Parking Day exhibit spaces in several locations, including downtown Towson to promote Maryland State Parks, at the Maryland Department of Natural Resources in Annapolis, other state partners' sites and at a number of Howard County Public Schools sites and the school superintendent's parking spot. The group worked with Maryland Recreation and Parks Association on expansion of the event for the future.

Action 11: Co-host a NatureCity forum to share best practices, data and inspiration to support existing and new programs and collaborations. The forum will target practitioners in Maryland who are responsible for park planning and other environmental programs in urban and suburban landscapes, such as local planners, landscape architects, park managers and local decision makers.
End Goal: Host an event for professionals that will promote increased access to nature and green infrastructure, serving as a platform to build capacity by sharing data and other planning tools for green space projects, facilitating interaction and exchange of practices. In addition, the effort will help partners to develop enhanced amenities as well as programming that encourages and engages communities typically disenfranchised from parks and green spaces. The forum will aim to:

- Help communities become more resilient to climate change impacts;
- Support more equitable opportunities for residents to access green space;
- Engage in understanding cutting edge green infrastructure design; and
- Advocate for daily connection to nature-based activities.

Achievements: The conference was hosted in fall 2017 at Cylburn Arboretum in Baltimore with more than 130 people attending. Presentations and discussions were included on the topics of equity, green infrastructure, public health and cutting-edge GIS tools. Planning has begun for the next NatureCity forum to take place in late winter/spring.

Action 12: Provide a centralized resource for local partners and community planners by expanding the **Community Green Space Guide**.

End Goal: Develop a shared resource tool that will assist with the promotion and creation of nearby nature in communities. Project Green Classrooms has developed a community planning green guide website to provide ideas for inclusion of easily accessible green space into community spaces. The guide includes practices and examples from across Maryland and beyond as well as examples of policy, practices, programming and design. This website can be a launching site for outreach and communication and can be expanded to include recommendations for successful coordination among partners and more resources.

Achievements: The initial iteration of the guide was developed and hosted by the Maryland Department of Natural Resources. Updates and promotion of the site are underway and expected to continue.

Action 13: Contribute to the update of the statewide Land Preservation and Recreation Plan by providing input and recommendations regarding equitable access to public lands, how to increase community and school connections to green space and how to support environmental literacy requirements through the accessibility and programming of public lands and parks.

End Goal: Provide policy recommendations for the statewide Land Preservation and Recreation Plan that will support access to nature for children in future land preservation and recreation planning.

Achievements: A committee was formed to draft and review nearby nature recommendations. Goals, objectives and case studies were drafted to be included in the 2019 Statewide Land Preservation and Recreation Plan. Goals include environmental literacy and outreach on public lands, equity, access and

health. These goals will serve as a guide for future local planning efforts, as the county-based plans look to the state plan as a resource.

Career Pathways
The initiative aims to help provide a clearer picture of what green careers look like and to support a robust pipeline into successfully pursuing them. Through connecting numerous environmental career development programs in Maryland, including opportunities in agriculture and less-traditional areas of natural resources conservation and listening to youth participants, the group is working to identify and address gaps and needs; and is exploring ideas on how to improve the pathway into green jobs and careers in Maryland. Ideas have been identified for tools, resources and other opportunities for collaboration. By continuing to connect the various youth career development programs as a singular community, the group will facilitate intentional strategies to: increase and improve outreach to youth, better communicate and define green careers, strengthen and simplify the pathways between programs, increase diversity and equitable access to these opportunities, strengthen the alignment of program elements with workforce demand; and continue to identify where tools and resources are still needed. [Committee led by the Chesapeake Bay Trust]

Action 14: Create one central online communication hub for information on green career opportunities and resources in Maryland, working with the Alliance for the Chesapeake Bay to develop a youth green career section of the Chesapeake Network.

End Goal: Create a comprehensive database of the green career programs and positions in Maryland that is used by youth as a one-stop-shop to easily access the vast number of opportunities available to build knowledge, skills, experience and better prepare young professionals entering the green career field. This site will provide the list of existing programs, access to green career resources and tools and serve as a space for entry level jobs as well as internship, corps and workforce development programs to post their opportunities.

Achievements: Developed first phase of the green career database. Now in the process of inputting program data into the database and then piloting it for further refinements. Goal is to be completed by the end of 2018.

Action 15: Explore effective means to share best practices and improvements for recruitment and retention of youth and young profession to green job positions in federal, state, county, for-profit and nonprofit sectors.

End Goal: To increase transparency, awareness, support and communication among stakeholders along the green career pathway by sharing best practices, stories, opportunities and data on the emerging green workforce in Maryland as well as improving recruitment and retention of young professionals within the green career field.

Achievements: The committee is in the process of compiling and analyzing data from the Maryland Department of Labor, Licensing and Regulations on (1) current occupations, (2) occupational projections and (3) real time labor information for Maryland. To complement this information, the committee is planning means to develop a variety of resources such as factsheets and short videos, possibly created by students to increase awareness of different types of jobs. These resources will ideally showcase a variety of green career fields and some case study examples of experienced professionals in them.

Policy and Planning Considerations
Because the initiative has been charged with serving in an advisory role, with the call to make recommendations to state decision-makers and with some of those decision-makers engaged as the leadership of the initiative, we have the capacity to recommend and explore options for potentially

influencing policy and operations as appropriate to support the stated priorities. As committees identify areas of need that might be helped by higher level requests for solutions, this committee will assist them by researching opportunities and mechanisms. In addition, as Project Green Classrooms is the vehicle to plan and achieve commitments under the Chesapeake Bay Watershed Agreement, actions needed to address and track that parallel work will be noted here.

Action 16: Explore means to secure dedicated funding to support field experiences for students at sites away from school campuses. [Committee led by the North American Association for Environmental Education]

End Goal: Dedicated funding allocated for off-site field experiences secured.

Achievements: The Maryland Department of Natural Resources has secured $100,000 through the U.S. Environmental Protection Agency Chesapeake Bay Implementation Grant for the 2018-19 school year with possible renewal for the ensuing two years to support field experiences, primarily transportation. The department is developing criteria and a proposal format for competitive funding to administer this resource; and it will be used in the short term as a pilot effort to help determine challenges and needs that would inform a longer-term initiative to establish a larger pool of funding for the future. Meanwhile, the committee is analyzing potential costs and sources of funding, current funding levels and gaps; and is researching successful programs in other states, in order to formulate a recommendation potentially for a larger ask.

Action 17: Serve as a means to achieve commitments under the Chesapeake Bay Watershed Agreement's Environmental Literacy goal. This goal calls for states to have a comprehensive and systemic approach to environmental literacy that includes policies, practices, funding and tracking metrics. [Led by the Maryland State Department of Education and the Maryland Department of Natural Resources]

End Goal: Develop the new two-year action plan to address environmental literacy, including actions addressing student/teacher needs, sustainable schools and environmental literacy planning and tracking. The goal addresses environmental literacy opportunities primarily through formal education and Project Green Classrooms' work is broader, including connections to nature outside of the school day; however, there are many common commitments. Use the subset of Project Green Classrooms actions that address environmental literacy opportunities through formal education as the state's contribution of actions toward the regional strategies, so that both work plans are in alignment with each other where appropriate.

Achievements: The Project Green Classrooms 2018 action plan was developed and actions that serve the regional Chesapeake Bay Program environmental literacy strategies were identified and used to update the two-year plan for Maryland, in coordination with the Chesapeake Bay Program Mid-Atlantic Environmental Literacy Workgroup. Work toward those actions is underway and achievement as above contributes to the state's commitments.

The Chesapeake Bay Program Environmental Literacy Indicator Tool survey was administered to school systems (23 responded) and responses compiled and reported Chesapeake Progress. The data gathered will be used as a means to target state actions to serve the most needs.

Completed a draft module on Maryland specific considerations to be included in the Chesapeake Bay Program online training for the Meaningful Watershed Educational Experience.

Communications

A communications committee will determine means to increase awareness of the statewide initiative, the work the partners are doing and the important messages we need to convey to decision-makers and other audiences to promote and build support for outdoor learning, discovery, healthy play and career exploration in Maryland. The committee will create a communications and outreach plan to guide a

strategic approach and regular attention to communications as a necessary tool to advance our priority activities and highlight outcomes; and to provide ready access to online resources available among partners. [Coordinated by the Maryland Department of Natural Resources]

Action 18: Coordinate development and distribution of various informational pieces to promote Project Green Classrooms priorities in alignment with annual action plan, improve awareness of the group and its actions/ goals and gain support. Facilitate regular communications throughout the year and assist other committees periodically/as planned/as opportunities arise, to serve communications needs that will advance their actions.

End Goal: Throughout the year, maintain a regular, current, consistent presence in communications with professionals in the related fields, partners and decision-makers, to help generate interest, support and possible additional partners for our work. Update web content quarterly; assure continued access to shared outreach materials by all partners; provide timely information on related news, events and accomplishments.

Achievements: The Project Green Classrooms website was updated and an outline developed for expanding content to include more on environmental literacy, nearby nature and supporting articles and other resources. The new content is being developed and is expected soon, and additional updates to the site will continue. Outreach regarding events and opportunities has been provided through the Maryland Department of Natural Resources Office of Communications, with all partners assisting with sharing information to their networks.

Looking ahead
The work plan for the initiative is anticipated to focus on completing the work set in the 2018 plan and growing those areas of work as they evolve, meeting the environmental literacy commitments under the Chesapeake Bay Watershed Agreement and pursuing the steps necessary to assist with progress toward the recommendations, if approved.