Building Green Career Pathways

Guidance Documents:
- Future Ready PA Index Industry-Based Learning Indicator (work-based learning and industry recognized credentials accountability) and Career Readiness Indicator (career experiences/evidence/career portfolio)
- PDE Career Standards

Accomplishments:
- The PDE Secretary's Career Ready PA Coalition has highlighted "green careers" through best practices, including providing resources in partnership with other agencies such as, DCNR (EcoCorps, DEP, Health, and community learning events through the annual Remake Learning Days international festival (held in May).
- Students can earn artifacts from attending events through the "Career Ready PA Backpack Challenge" which counts toward the Future Ready PA Index Career Readiness Indicator.
- Multi-agency and stakeholder participation in the Remake Learning Days festival over 3 years (4000 artifacts, 50+ events highlighting STEM with DCNR and Agriculture careers in the Backpack Challenge)

Opportunities:
- PDE has supported distribution of Project Learning Tree Career resources such as PLT Green Jobs: Exploring Forest Careers and Black Faces in Green Spaces: The Journeys of Black Professionals in Green Careers, via the EE Advisor Position and partnership with the PA Hardwoods Development Council
- Ongoing best practices in green careers and partnerships with stakeholders at monthly Career Ready PA Coalition sessions
- Festival events highlighting environmental literacy at the Remake Learning Days festival

Key Partnerships:
- State agencies (Departments of Education, Agriculture, Conservation and Natural Resources, Environmental Protection)
- Remake Learning Days

Challenges:
- Outreach and awareness

Major Funding Programs:
- PaSMART grants

Exemplars (slides)

High Impact Actions for Sustainable Schools

Guidance Documents:
- U.S Department of Education Green Ribbon School Program
- Chesapeake Bay Watershed Agreement - Environmental Literacy Goal
- PA ELIT Plan
- PA ELIT Plan template for LEAs
- IPM for Pennsylvania Schools and Childcares: A How-To Manual

Accomplishments:
- Revitalization and redesign of PA Pathways to Green Schools program
- Inclusion of recognition for sustainability work completed in EJ Areas
- Annual Award recognition at PDE SAS institute
- Administration of Environmental Literacy ACT 45 course for administrators
- Reestablishment and fortification of PA Green and Healthy Schools Partnership

Opportunities:
- Pillar recognition and award for schools building a sustainable school culture

Key Partnerships
- PA Green and Healthy Schools Partnership
  - Key Members include PA Departments of Education, Conservation and Natural Resources, Environmental Protection, Health, Women for a Healthy Environment, Green Building Alliance, PASBO, Boyer Sudith, NWF Eco Schools, GreenLink, School District of Philadelphia Green Futures

Challenges:
- Funding to develop and support statewide mentor program and outreach team
- Funding for support staffing track work of applicants and awardees and coordinate mentor program
- Lack of awareness of resources

Major Funding Programs:
- Federal Clean Bus Funding/Infrastructure Bills

Exemplars (slides)

Climate Change

State and/or National Guidance Documents (i.e. climate action plans, resilience and adaptation plans, or energy plans):
- Federal Executive Order (White House)
- Pennsylvania Climate Action Plan ([complete plan](#))
- Pennsylvania Climate Action Plan ([overview](#))

Accomplishments:
- 26% Greenhouse gas reduction by 2025 - have already met this goal.
- Help both stakeholders and the public understand the current state of greenhouse gas emissions (GHG) and GHG and climate adaptation action in PA.
- Present a comprehensive plan for climate action to meet both short and long-term GHG emission goals in PA, including analysis of costs, benefits, and co-benefits.
- Identify more opportunities to reduce inequality through strategies; and recommend legislative changes to the General Assembly needed to implement the CAP.
- [PA Green Gov Council](#) and [Pennsylvania Climate Change Mitigation and Resilience Network](#) developed a training program, PA partners included Depts of Education, Environmental Protection, Health,

Opportunities for environmental literacy work to support climate action, resilience, or energy goals:
- MWEE/MELE development
- PA STEELS Academic Standards suite (integrated into the standards)
- Support of Pathways to Green Schools Program elements
- PA Climate Network Training Program and Modules
- PA Green Gov Sustainability Week

Key Partnerships
- PA State Agency Councils, Committees, Boards
  - Environmental Justice Advisory Board
  - PA GreenGov Council
  - PA Climate Network

Challenges:
- General Awareness
- Recognition of issue
- Funding availability
- Level of agency leadership/staff awareness and cooperation efforts

Major Funding Programs:
- Pennsylvania's Climate Action Plan leverages funding sources such as the Federal Inflation Reduction Act (IRA), Infrastructure Investment and Jobs Act (IIJA), and other climate planning efforts within the Commonwealth.
- Guaranteed Energy Savings (GESA) Program)

[Exemplars (slides)](#)

Student Environmental Literacy (MWEE)

Guidance Documents:
- 2022 ELIT Report - Pennsylvania
- PA Status and Needs Report
- PA ELIT Plan
- LEA ELIT & Sustainability Plan
- U.S. Green Ribbon Pillars (Educational Pillar)

Accomplishments:
- PA STEELS Academic Standards - 2022
- PA STEM SOW and State System of Support funds to support IU's and MWEE development ($25,000 per IU (29) plus funds for   )
- Created MWEE Facilitator network and PD sequence. Partners to include IUs and Non-Formal Education Partners

Opportunities:
- IU Points of Contact now have 2 MWEE/Stream Study kits for loan or IU centered PD

Key Partnerships:
- PA ELit Network regional hubs - connecting formal and non-formal educators and businesses to support MWEE/MELEs

Challenges:
- Raising awareness and valuing of ELit building programs
- Building understanding with administrators about benefits
- Building understanding with state leadership about research proven benefits for inquiry based instruction using Environment as an Integrated concept for academic improvements across disciplines

Major Funding Programs:
- PDE/STEM IU Statement of work. PDE has provided funding for 29 IUs that received $25,000 ($725,000) to establish MWEE related work in their service area.

- **Exemplars (slides)**

State Network Updates

PA Advisory Council for Environmental Education:
- Multi agency and community based council created via the PA Environmental Education Act. Last remaining council from that legislation.
- Advised during standards writing process
- Currently rewriting the PA ELIT Plan to align with the STEELS and CBWA ELIT Goals

Pennsylvania Environmental Literacy Network (PA ELIT):
- In the 7th year of development and capacity building. Funded through the NOAA B-Wet Capacity Building Grants
- Members also participate in the Regional Outdoor Learning Network with Maryland, Virginia, DC, and Delaware and Chesapeake Bay Program Education Workgroup
- Advocated for support funding from PDE to support ELIT and MWEE related work through the IU statements of work

Pennsylvania Association of Environmental Educators (PAEE), PA Affiliate of the North American Association for Environmental Education (NAAEE)**:**
- **Professional development programs include:**
  - **Annual Conference:** every March
  - **Virtual Professional Development Workshops**
  - **NAAEE Guidelines for Excellence Professional Development workshops**
  - **Project WET Trainings**
- **DEI Committee** - working on DEI Assessment Toolkit to evaluate programs, materials, etc.
- **Find EE Near Me** – interactive map of EE providers across PA

PA Department of Environmental Protection
- **Environmental Education Grants Program (Continuous source of funding –EE Act 1993) for Formal and Nonformal education programming** Questions about the EE Grants Program? Please contact Kathleen Banski: kbanski@pa.gov
- 2024 Program currently accepted application (deadline is November 15, 2023)
  - **Priority funding for environmental education projects within environmental justice areas in topics related to water and/or climate change .**
  - **Mini-grants (up to $5,000) for local projects; General Grants ($5,001-$65,000) for large scale "regional" projects.**
  - **2023 Program awarded more than $1 million; 83% EJ**
    - 69 active projects; 27 projects within portions of the C Bay watershed
    - Audience behavior change as a result of participating in the project
    - Many youth-orientated projects address potential environmental career paths.

For questions please contact: Michelle Niedermeier, Pennsylvania Sea Grant at mxn14@psu.edu or Tammie Peffer, Pennsylvania Department of Education at TPEFFER@pa.gov

NOTES

Green Careers (Morning breakout)

- Context: PA recently passed STEELS standards (includes ELit), currently going through a Perkins update, workforce opportunity act (in public comment or just out of period)
- Unite all departments to advance CTE - apprenticeship opportunities connection as a good example
- Three breakouts (what would you like to see in 10 years?, who needs to be involved?, 3 goals)
  - **Group 1**
    - Statement: Environmental literacy is a graduation requirement and create community stakeholder involvement for pathways to career opportunities to foster equitable and joyous society
    - Who: local businesses, stakeholders, PDE, public utilities, students, legislation, higher education, technical sectors, DCNR, Labor & Industry
    - Goals: focus on underserved (EJ areas); grow the PA environmental literacy network to include representatives from our "who" category (should include students)
      - Leverage the new STEELS standards and ELit connection
  - **Group 2**
    - Statement: PA agencies and partners lead the nation to develop pathways to green careers and portable credentials
    - Who: caregivers and scholars
    - Goals: spotlight best practices (30 days), take job corp work and give it credentials, identify and implement careers and associated credentials for green careers
  - **Group 3**
    - Statement: PA leads nation in accessibility in high quality training and green careers (need to define green certification)
    - Who: scholars, union leaders
    - Goals: more strategic planning (climate plans at local and state level); need office of green workforce development at the state level; need green certification badging/certification developed (create a digital badge that could transfer between states); standardize exposure to green careers in K-12 (not just in a CTE program but across all K-12)
- Example: Erie, PA high school partners with local businesses to fund programs. Students create parts that are sold to community businesses.

Sustainable Schools (Afternoon breakout)

- Who is missing or not represented on the state flow chart? (See picture 1 and 2)
- Woodland Hills has a Green Award for curriculum work - hard to become a Green Ribbon school because of age of buildings and staff capacity

- High impact action
  - Schools to Forest program at DCNR
    - Maryland Schoolyard Canopy program (use as model)
    - Philly tree program with school connection
    - Pittsburgh has 1 tree to 1 student program
    - Ag has a lot of tree money
    - Asphalt to natural spaces (DCNR has trouble funding those types of projects)
    - potential partners: DCNR, PDE, Ag, business connection (who is growing the trees?), CTE horticulture programs, STEELS connection with a MWEE program
  - Students, Teachers, and Facility staff join policy making decision groups - all at the same table to make sustainability changes
    - Potential to add school board members - make connections to climate but also school safety
  - Need to go beyond the building and incorporate the community
    - Many schools across the state are going for the green ribbon awards but struggle to make it to district level
    - Woodland Hills is working at the district level but struggling to get all buildings on board
    - Example: 16 National Parks in DC, they tried to do a scattershot of improvements (i.e. HVAC) but it had a little impact
      - They then grouped all parks together under one contract and do a system-wide audit to find improvements
      - This resulted in quicker improvements and one "bill"
      - Could IUs do something similar to help their districts?
  - Green Ribbon Schools - each district needs to start at different pillars that work for them
  - Guaranteed Energy Savings Grant for PA - works by region and completes audits for the parks and forests
    - Changes made in this grant can also serve as education and can turn into curriculum for schools
    - Take this model and use it at schools
      - Is the IU capable of doing this? Could they help with organizing an infrastructure support/audit by working with contracts
      - Contract processes utilities bills - all supports reducing energy costs

Final breakout

- Review the three outcomes of the Education Bay Agreement
  - Where did the student outcome come from? Why 3 MWEEs?
    - This is the minimum but can we push for more?
- Student Outcome

- ○ Method for evaluating if the MWEE is resulting in more environmentally literate students
    - ■ At the end of 12th grade, do they appreciate nature, want to protect nature, understand sustainability?
    - ■ Teacher change in knowledge, attitude and behavior
        - ● Some have seen changes with those participating in PDs
        - ● Woodland Hills - teacher attitude toward climate action change when they had to complete a climate action project
    - ■ Maybe start measuring with the teachers
    - ■ Could there be a connection between this measurement and the career piece?
  - ○ Student Outcome - could we incorporate the career piece?
  - ○ Act 339 - collect college artifacts grade 3 to 11 - 19 artifacts for each students at end of 12th grade
    - ■ Make at least one of them related to this - how will the career you are planning for impact the environment? How could your future career be more sustainable?
        - ● Schools would like more structure as to what these artifacts are - artifacts are not defined
  - ○ Measure of success dependent on content knowledge but could it be about their connection to the environment
    - ■ Can we ask better questions to get this knowledge?
- ● Sustainable Schools
  - ○ How can we make connections to those trying to be Green Ribbon buildings or districts?
  - ○ Go back to example from National Capitol Region about the parks - group schools together as a contract so they get a good price for improvements
    - ■ Test drive this with a local government
  - ○ Breakdown the divide between curriculum and building - students see there are opportunities to cut down on energy and the school now has a mechanism to actually take action so they take action - then students can see and measure this change
  - ○ MWEEs and curriculum around sustainability need to be cross-curriculum
    - ■ Wellness and clean air can be covered in health class
    - ■ Huck Finn in literature and connection to watershed
  - ○ Outdoor classrooms can help with this connection - this could just be helping teachers learn how to use the schoolyard they already know
    - ■ Help teachers embrace their local park
- ● Is environmental work or sustainability connections recognized in the High Priority Occupations?