

**Partnership
between
the Environmental Education Council of Ohio (EECO)
and
the Ohio EPA Office of Environmental Education (OEE)**

Report on 2017-2019 and Proposal for 2019-2021

RATIONALE

In 1995, Ohio EPA's Office of Environmental Education initiated a long-term partnership with EECO to build statewide capacity for environmental education in ways that could not be accomplished within the confines of a one- to two-year general grant from the Ohio Environmental Education Fund (OEEF). OEE and EECO are able to provide professional development opportunities statewide for educators, and quality curriculum resources aligned with the Ohio Department of Education's New Learning Standards and education reform goals. The more than twenty-year partnership has provided the infrastructure to address and implement broad statewide initiatives. For the current two-year partnership (July 2017-June 2019), our focus has been on implementing the **Environmental Career Ambassador Network (ECAN)**. This diverse group of volunteer career ambassadors in environmental science and engineering includes professionals from universities, agencies, businesses and organizations. The initiative has been enthusiastically received by environmental professionals and educators alike. We propose to continue and expand this effort for the next two years (July 2019-June 2021). This document reports on deliverables met and progress to date, and next steps we are proposing.

Ohio students, teachers and career counselors have little grasp of the wide range of careers available in environmental science and engineering, or the specialized training and skills required. When high school students are asked about environmental careers, they typically mention recycling and park rangers but are unaware of the many opportunities available in fields such as regulatory compliance, storm water management, drinking and wastewater treatment, energy efficiency, fisheries management, forestry, environmental health and safety, pollution prevention and waste minimization, site assessments and wildlife management.

The Environmental Career Ambassador initiative is designed to allow Ohio youth to experience a variety of occupations in the fields of environmental science and engineering. Working with statewide trade and professional associations and local contacts, the partners have already exceeded the two-year goal to sign up 445 volunteers around the state. The environmental scientists and engineers are willing to make classroom or career fair presentations about their careers, and/or provide shadowing, internship, field trip and scholarship opportunities to Ohio students. The initiative is concentrating on career programs for the middle and high school grades, but we have also filled some requests for career ambassadors from college classes and elementary schools.

WHY NOW?

It is important to respond to the opportunity presented by the state's emphasis on Science, Technology, Engineering and Mathematics (STEM) fields in preparing students for jobs in Ohio's high-tech economy, and to the Ohio Department of Education's New Learning Standards, which emphasize student learning about real-world careers. Ohio's schools and career centers are looking for business professionals to provide role models and diverse workplace experiences in environmental fields. Of growing concern is the declining enrollment in some undergraduate environmental programs at Ohio colleges and universities, at a time when a wave of retirements is depleting the ranks of professionals in some environmental fields, and Ohio employers are indicating that qualified applicants are becoming harder to find. This is also true for high school students entering the work force and for those attending career/tech/vocational programs.

HOW IT WORKS

The Ohio State University School of Environment and Natural Resources is assisting with recruiting through its online Environmental Professionals Network (EPN) at <http://epn.osu.edu/>, through publicity at monthly meetings and by providing a link to EECO's homepage. EECO and Ohio EPA gratefully acknowledge this support! EECO houses and manages the database where professionals registering can check career activities they would be willing to participate in as volunteers. Activities might include making classroom presentations about their career in local schools; participating in school Career Exploration Days, science fairs and career-oriented competitions; hosting field trips; providing internships, mentoring and shadowing opportunities to students; sharing online resources about specific careers; assisting students with job skills such as resume writing and interviewing; and recruiting professional peers to the network. The EECO Executive Director, EECO Regional Directors and Ohio EPA Office of Environmental Education staff are maintaining county-by-county lists of available ambassadors, and matching them with requests from educators and county career tech centers to schedule presentations, events and mentoring for Ohio schools and students.

PARTNERSHIP STRUCTURE

- An eight-member **partnership steering committee** sets partnership goals in consultation with the EECO Board of Directors and the OEEF Advisory Council. The committee includes the EECO Executive Director and the Chief of Ohio EPA's Office of Environmental Education, and the chairmanship alternates between OEE and EECO representatives.
- Partnership staff members contribute the equivalent of a full-time position, with EECO staff contributing 70% FTE and OEE staff contributing 30% FTE.

- The partnership supports a part-time **regional director** in each of 8 regions, who works closely with teachers, environmental educators and businesses at the local level to share career education resources and offer workshops that showcase exemplary resources. A map of the regions is included.
- A **partnership insert** in the EECO newsletter goes out three times each academic year to more than 10,000 educators statewide, promoting the Environmental Career Ambassador Network, OEEF grant programs, the products resulting from outstanding environmental education grant projects, and EECO conference and workshop opportunities.
- To most effectively reach a wider audience and avoid duplication of effort, the partners work closely with **local environmental educator networks** to offer **regional resource fairs, career events and special events** such as the Cincinnati Paddlefest, and the Dayton and Central Ohio Children's Water Festivals. Local collaborators include soil and water conservation districts, solid waste management districts, county extension offices, health departments, park districts, zoos, nature centers, botanical businesses, recycling and litter prevention programs, schools and career centers, and local Leave No Child Inside collaboratives.

RECENT CAREER INITIATIVE ACCOMPLISHMENTS (deliverables met)

As of December 2018, the partners have recruited **455 Environmental Career Ambassadors in 70 counties**. As part of the **ambassador recruiting effort**, the partners placed articles in the newsletters of 19 different professional associations, including the following:

- American Camping Association
- American Society of Civil Engineers
- Association of Nature Center Administrators
- Association of Ohio Recyclers
- Keep America Beautiful local chapters
- National Association for Interpretation
- National Engineers Week Future City Competition judges
- Ohio Academy of Science
- Ohio Association of Litter Prevention and Recycling Professionals
- Ohio Environmental Service Industries
- Ohio Floodplain Management Association
- Ohio Parks and Recreation Association
- Ohio Society of Professional Engineers
- Ohio State Bar Association environmental committee
- Ohio Wildlife Rehabilitators Association
- Organization of Solid Waste Districts of Ohio
- Solid Waste Association of North America
- US Green Building Council local chapters

- Water Environment Federation
- Water Management Association of Ohio

Ambassadors were also recruited through presentations and exhibits at the following local and regional meetings and conferences:

- Association of Ohio Health Commissioners/Ohio Public Health Association
- Great Lakes Ecological Research Association
- Mid-Ohio Regional Planning Commission's Central Ohio Sustainability Summit
- Ohio Chemistry Technology Council
- Ohio County Sanitary Engineers Association
- Ohio DNR Wildlife Diversity Conference
- Ohio Environmental Health Association
- Ohio EPA Compliance Conference
- Ohio Natural History Conference
- Ohio Stormwater Conference
- Ohio Watershed Leaders (OWLS) Conference

During the 2016-2017 and 2017-2018 Fiscal years: 15 recruiting presentations were made to 653 environmental professionals, and 12 staffed conference exhibits reached another 2,700 professionals. The ambassadors were surveyed electronically about their activities which resulted in the following information: 43 presentations were given by Career Ambassadors to 10,600 students.

In the past two years a **total of 11,071 educators have been contacted**, through 135 presentations and professional development workshops and 17 exhibits at teacher conferences, including the following:

- Greater Cincinnati Environmental Educators Teacher Resource Fair
- North American Association for Environmental Education
- Northwest Ohio STEM Conference
- Ohio Chemistry Technology Council's "Teachers, Industry and the Environment" Conferences
- Ohio Department of Education Career Development Conference
- Ohio University "BOOKS" summer teacher conference
- Science Education Council of Ohio/Ohio Science Institute
- State Science Day
- University of Cincinnati STEM conference
- EECO's two annual and four regional conferences
- Various EECO Regional Teacher Workshops
- SE Green Teacher Inquiry Conference
- NW Metro Parks Teacher Resource Fair
- Ohio School Administrators Conference
- The Environmental Education Council of Ohio Annual Conference
- Creative Ways to Teach STEM Winter Conference
- 101 Alternative to the Chalkboard SW Conference

Most importantly, during the 2016-2017 and 2017-2018 fiscal years, **46,840 elementary, middle school, high school and undergraduate students have been introduced to environmental careers**, through 147 classroom presentations and exhibits and local career exploration days.

To showcase environmental careers, the partners created twelve regional and two statewide **exhibits** that include ten environmental careers from the Occupational Outlook Handbook from the US Bureau of Labor Statistics as well as videos, DVDs, Web links, books, slide presentations, career cards and resources from federal agencies such as the US Army Corps of Engineers, US Geological Survey, US Fish and Wildlife Service, and Scientists at the Smithsonian. Ohio EPA's Office of Environmental Education created a [classroom activity and bingo game](#) that describes 41 different Ohio-specific environmental careers in the public and private sectors. These resources are also posted on both the EECO and Ohio EPA Office of Environmental Education Web pages. www.eeco-online.org

The OEEF and EECO Partnership also joined forces with Project WET, Project WILD and Project Learning Tree state coordinators in Ohio to develop a teacher workshop and exhibits called "Who Works for Water? Who Works for Wildlife? Who Works for the Forest?" showcasing the best career-related activities from each curriculum. Project WET's "Urban Waters" activity features careers at every state of the drinking and wastewater treatment and distribution processes. The Project WILD Aquatic classroom activity "Working for Wildlife" has middle and high school student's role play a job applicant and an interviewer hiring for ten different positions. Project Learning Tree's "Who Works in this Forest" activity provides career connections for younger elementary students. This program will be on display at the EECO 2019 Annual Conference and other events in the future.

The Ohio Department of Education's Career Connections office has developed a series of [Career Pathway diagrams](#) to show students and parents different job requirements, salaries, and the classes students should be taking in middle and high school, and college courses in two- and four-year degree programs, to prepare for those jobs. These career pathways are also posted on the [Ohio Means Jobs K-12 Web page](#). To receive a designation as an "Ohio In-Demand Job" the job must be offered every year in every Ohio county. In the Environment and Natural Resources Career Cluster, only one Career Pathway had previously been developed, leading ultimately to a position as a petroleum engineer. While many environmental careers require a four-year bachelor's degree, it is important to showcase careers that are also available to students right out of high school with on the job training, and career opportunities for students with two-year technical degrees. Ohio EPA recognizes a growing shortage of Certified Operators in the drinking water and wastewater treatment plants of many municipalities and private businesses. Office of Environmental Education staff members worked with Ohio EPA's Division of Drinking and Ground Waters, Columbus State Community College, and trade associations representing Certified Operators to develop a new Career Pathway for a water plant operator, water plant manager, and

public utilities director. This new Career Pathway received the “Ohio In-Demand Job” designation and is currently posted at http://education.ohio.gov/getattachment/Topics/Career-Tech/Career-Connections/Career-Pathways/AgSystems-environmental_2-2015.pdf.aspx, on the Ohio Means Jobs page at <http://jfs.ohio.gov/owd/careerpathways/index.stm>. The summer 2016 issue of the EECO newsletter also included a feature on Butler County high school students visiting the Fairfield drinking and wastewater treatment plants and exploring water treatment careers. This issue was distributed electronically to more than 10,000 Ohio teachers and 400 environmental professionals, and reprinted for distribution through career fairs and conference exhibits.

Career pathways also exist for Ohio In-demand Jobs as environmental specialist/natural science manager and geoscientist. The partners also worked with the Ohio Department of Natural Resources Division of Forestry’s Urban Forestry Advisory Committee to develop and add a career pathway for an arborist/forestry specialist.

The partners are using two **brochures** to market the environmental career ambassador initiative. One is a recruiting tool to encourage environmental professionals to join the effort. The second brochure for teachers and school administrators explains how to find local career ambassadors, and how these programs can benefit their students and complement STEM education. To help environmental professionals adapt their presentations to children and teenagers, the partners compiled two **Ambassador Toolkits**, one on water and one on natural resources. These bring together time-tested classroom activities from respected national curricula such as Project WET, and contact information to borrow EnviroScape models that the OEEF has funded in more than fifty Ohio counties, to illustrate watersheds, ground water flow, and drinking and wastewater treatment processes. These toolkits are posted on the EECO Website <https://eeco.wildapricot.org/eca> and linked from Ohio EPA’s.

Currently the partners are working on an informative card for High School and College Students. This information card will be linked to a tab on the Environmental Education Council of Ohio’s website. This page will give students information on a variety of environmental careers as well as possible mentors or contacts in those fields. The volunteers that will be listed are part of our Career Ambassador Network of Environmental Professionals.

To further support the career ambassador initiative, the Ohio Environmental Education Fund also provides annual sponsorships of five specific career initiatives that the partnership helps to publicize:

- \$50,000 in scholarships for students in environmental science and engineering at Ohio colleges and universities, <http://www.ohiosci.org/oeef-scholarship/>
- the Ohio Envirothon competition for high school students <http://soilandwater.ohiodnr.gov/education-professional-development/envirothon>
- the National Engineer’s Week Future City Competition – Ohio Region for middle school students <http://futurecity.org/ohio>

- State Science Day, sponsored by the Ohio Academy of Science for grade 7-12 student-initiated science research projects, including the Governor's Awards for Excellence in Environmental Protection Research <http://www.ohiosci.org/state-science-day/>
- The "Teachers, Industry and the Environment (TIE) Conference offered by the Ohio Chemistry Technology Council
<http://www.ohiochemistry.org/aws/OCTC/pt/sp/tieconference>

OTHER ACCOMPLISHMENTS

So far in the current two-year partnership, from July 2017 until March 15, 2019 the EECO staff have completed **125 regional professional development workshops, classroom presentations and special events reaching 59736 participants.** Professional development workshops offer teachers certification in nationally recognized curricula such as: *Healthy Water, Healthy People*, www.healthywater.org; Project Learning Tree, www.plt.org; Project WET (Water Education for Teachers), www.projectwet.org; Project WILD, www.projectwild.org; WOW! The Wonders of Wetlands, www.wetland.org/wowteacher.html; and Windows on Waste, <http://www.dnr.state.oh.us/Portals/15/pdf/Windows%20on%20Waste.pdf>. Programs for teachers and nonformal educators were offered EECO's Annual Conferences at Mohican, Deer Creek and Maumee Bay State Parks; and regional EE conferences in northeast ("Winter Conference- Creative Ways to teach STEM") and southwest ("101 Alternatives to the Classroom") Ohio.

During the current two-year partnership period, the partners also:

- Administered Ohio's **Green Ribbon Schools** award competition for the Ohio Department of Education, selecting Ohio nominees for these awards issued by the US Department of Education. The Award recognizes schools that are exemplary in reducing environmental impact and costs, improving the health and wellness of students and staff, and providing effective environmental and sustainability education, which incorporates STEM, civic skills and green career pathways.
- Worked in collaboration with the Ohio Departments of Education and Natural Resources, Ohio Parks and Recreation Association, and Local Leave No Child Inside Collaboratives to implement Ohio's **State Environmental Literacy Plan**, <https://eeco.wildapricot.org/Resources/Documents/Environmental%20Literacy%20Plan%20for%20Ohio%20Version%2004-23=12.pdf>.
- Collaborated this current year of the partnership to train and certify 8 professionals through Ohio's **Environmental Educator Certification** program. This is an intensive week long training for educators. This program provides the professional certification for not only Ohio, but is recognized in a variety of other states. Participants can also receive college credit for this training.
<https://eeco.wildapricot.org/eecertification>

Over the past twenty-three years, the EECO-OEE Partnership has made great strides in consistently communicating EE news and information, disseminating EE resources and providing grant writing tools to educators.

PARTNERSHIP DELIVERABLES FOR 2019-2021

The focus of the EECO-OEE Partnership for 2019-2021 will continue to be on statewide and regional environmental career initiatives with the following deliverables:

I. Promoting High School to Workplace Career Paths

The partnership will put a new emphasis on promoting careers in which students can go straight from high school to the workforce. Examples of “in demand” careers that can be reached through the high school to workplace path may include:

Drinking water treatment operator

Wastewater treatment plant operator

Diesel mechanic (needed to work on new high tech emissions control systems)

Partnership activities that will meet this deliverable are embedded in all elements of the initiative. Professionals in these types of careers will be recruited as Ambassadors. High School to workplace careers will be emphasized in presentations and exhibits provided by regional directors and in the EECO-OEE newsletter.

II. Career Ambassador Network

The partners will continue to recruit environmental professionals, with the objective to sign up enough professionals to meet our goal of 500 volunteer ambassadors statewide, initially concentrating our efforts in the 17 counties where we do not yet have anyone signed up. We will also focus our efforts on recruiting more ambassadors from the private sector. We will use many outlets to publicize the availability of these environmental professionals to school staff, career tech centers and county Educational Service Centers to promote career presentations, field trips, mentoring and shadowing opportunities. We will survey the ambassadors annually, and also survey the educators who contact us for assistance, about the number and effectiveness of programs offered.

II. Career Pathway Diagrams

The partners will work with universities and business professionals to develop at least two more career pathway diagrams to submit to the Ohio Department of Education and Ohio Means Jobs Websites, to show students and parents possible jobs and income levels, and the school and college coursework needed. We will seek “Ohio In-Demand Job” designations for pathways related to environmental safety and health, environmental regulatory compliance, and at least one example that students can enter

the workforce directly from high school.

IV. Career Initiative strands or sessions at annual and regional conferences during 2019-2021

The partners will work with Conference Planning Committees of the EECO Annual Conferences and two regional conferences to ensure that an appropriate strand and sessions are offered to illustrate effective tools and methods for introducing Ohio students to real world careers in environmental science and engineering. We will review the evaluations of those attending these sessions to monitor their effectiveness and identify opportunities for future programs.

V. Career Education Opportunities and Resources in the Partnership Newsletter.

The EECO-OEE Partnership Newsletter will be published electronically three times a year. Printed copies will be available as a recruitment tool to introduce EECO and the Environmental Career Ambassador program to new businesses, agencies and organizations. Newsletter contents will feature the following; 1) samples for teachers of STEM and environmental activities that match required standards and also showcase examples of real-world work done by environmental professionals, 2) vignettes of Career Ambassadors and what they can offer, 3) Updates on the environmental career initiative, 4) OEEF General and Mini Grant awards, 5) updates on career education presentations in the regions.

VI. Career Outreach through EECO Regional Network

The EECO-OEE partnership has a well established network of Regional Directors across the state who are working with local environmental educators and environmental professionals to introduce students to careers in environmental science and engineering. The Regional Directors will be working with middle and high school guidance counselors, career centers, STEM programs and educators, businesses, industry, colleges and universities.

Regional Directors will support environmental career education at the local level by providing services from following menu. The part-time Regional Directors will offer a minimum of three services each year.

1. Connect with guidance counselors, career advisors, STEM/Environmental Science Teachers to increase the environmental content in local career education and raise awareness of resources such as the ODE environmental Career Pathways diagrams.
2. Recruit local environmental professionals in the private and public sectors to join the career ambassador network.
3. Provide exhibits showcasing environmental careers for career and science fairs, especially at technical and joint vocational schools.
4. Provide training for educators and environmental professionals in the use of established curricula such as WET, Wild, and Learning Tree to introduce students to real world STEM careers.
5. Present at conferences about environmental career initiatives.

6. Provide classroom presentations and work directly with students to introduce environmental science and engineering careers, especially at technical and joint vocational schools.
7. Write articles for local media, social media networks and the EECO Newsletter on Environmental Careers activities in their region.

The EECO Executive Director and OEE Chief will continue to review the Regional Director quarterly reports and evaluate their performance in keeping with their contracts.

PARTNERSHIP STAFFING AND DIRECTION

EECO and Ohio EPA's Office of Environmental Education staff will continue to align their efforts and programs with:

- Ongoing revisions to the Ohio Department of Education's *New Learning Standards* <http://education.ohio.gov/Topics/Ohio-s-New-Learning-Standards/Ohios-New-Learning-Standards>
- Ohio's *Best Practices for Environmental Education: Guidelines for Excellence* <https://eeco.wildapricot.org/Resources/Documents/bestpractices.pdf>
- The North American Association for Environmental Education's *Guidelines for Excellence in Environmental Education* <http://eelinked.naaee.net/n/guidelines>
- Ohio's *State Environmental Literacy Plan*, <https://eeco.wildapricot.org/Resources/Documents/Environmental%20Literacy%20Plan%20for%20Ohio%20Version%2004-23=12.pdf>

Both EECO and OEE staff will be jointly responsible for:

- ensuring that the requirements of the Partnership Agreement are being met;
- promoting the environmental career ambassador network at appropriate events and locations around the state;
- recruiting environmental professionals as Environmental Career Ambassadors; and
- maintaining the Career Ambassador Network database and county lists

EECO staff will be responsible for:

- contracting new regional directors where positions are vacant;
- building local and statewide environmental career education networks;
- overseeing work done by regional directors;
- overseeing the development of social media communications and website management;
- providing regional directors with support materials and direction;
- promoting the career ambassador program with school staff, educators, career tech schools and education service centers.
- scheduling and providing career presentations and events;
- evaluating the Career Ambassador Network effectiveness;
- editing and disseminating three issues of the EECO newsletter each year;
- participating in national activities to learn about national career education initiatives and acting as liaison to NAAEE and the US Fish and Wildlife Service on behalf of

EECO;

- communicating with Annual Conference Planning Committee on strands
- overseeing budgetary management of the Partnership;
- preparing all reports required by OEE as part of the Partnership Agreement.

OEE Staff will be responsible for:

- editing three issues of the OEEF insert to the newsletter each year;
- recruiting environmental professionals to the Environmental Career Ambassador Network;
- offering *Healthy Water, Healthy People* water quality monitoring programs and level one Credible Data certification at various EECO conferences;
- offering *Project WET* programs and certification courses;
- participating in implementation of Ohio's State Environmental Literacy Plan; and
- documenting in-kind contributions to the partnership through these and other presentations and activities

The joint Partnership Steering Committee will consist of three representatives from EECO and three representatives from the OEE, with the EECO Director serving as an *ex officio* member. The Steering Committee will continue to meet quarterly to guide Partnership activities. In 2019-2020, the Steering Committee will be chaired by an OEE representative and in 2020-2020, by an EECO representative.

ATTACHMENTS:

Partnership Regional Map and Regional Director Contacts

Partnership Steering Committee Contacts

Recruiting brochures

<https://eeco.wildapricot.org/resources/Documents/ECA%20brochure%20proof%20-%20Compressed.pdf>

<https://eeco.wildapricot.org/resources/Documents/ECA%20STEM%20brochure%20for%20teachers%20-%20New%20Logo.pdf>

Proposed Budget 2019-2021

Water Treatment Operator and Urban Forester Career Pathways developed for Ohio Department of Education/Ohio Means Jobs

Spring 2019 EECO Newsletter

<https://eeco.wildapricot.org/resources/Documents/EECO%20Spring%202019.pdf>

Career Resources list

<https://eeco.wildapricot.org/resources/Documents/Environmental%20Career%20Resources%20List%20Aug17.docx>

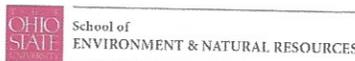
Environmental Careers Classroom Activity

Ambassador Toolkit (sample – Water Resources)

<https://eeco.wildapricot.org/resources/Documents/ECAN/ECAN%20Water%20Tool%20Kit.pdf>

Career Fair photos

Ohio EPA—Environmental Education Council of Ohio Partnership Regions



Environmental Career Ambassadors Initiative
<https://eeco.wildapricot.org/eca>



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Region 8- Dawn Wrench

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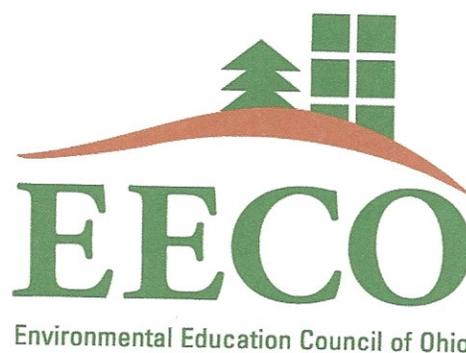
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Vacant (staff to committee)



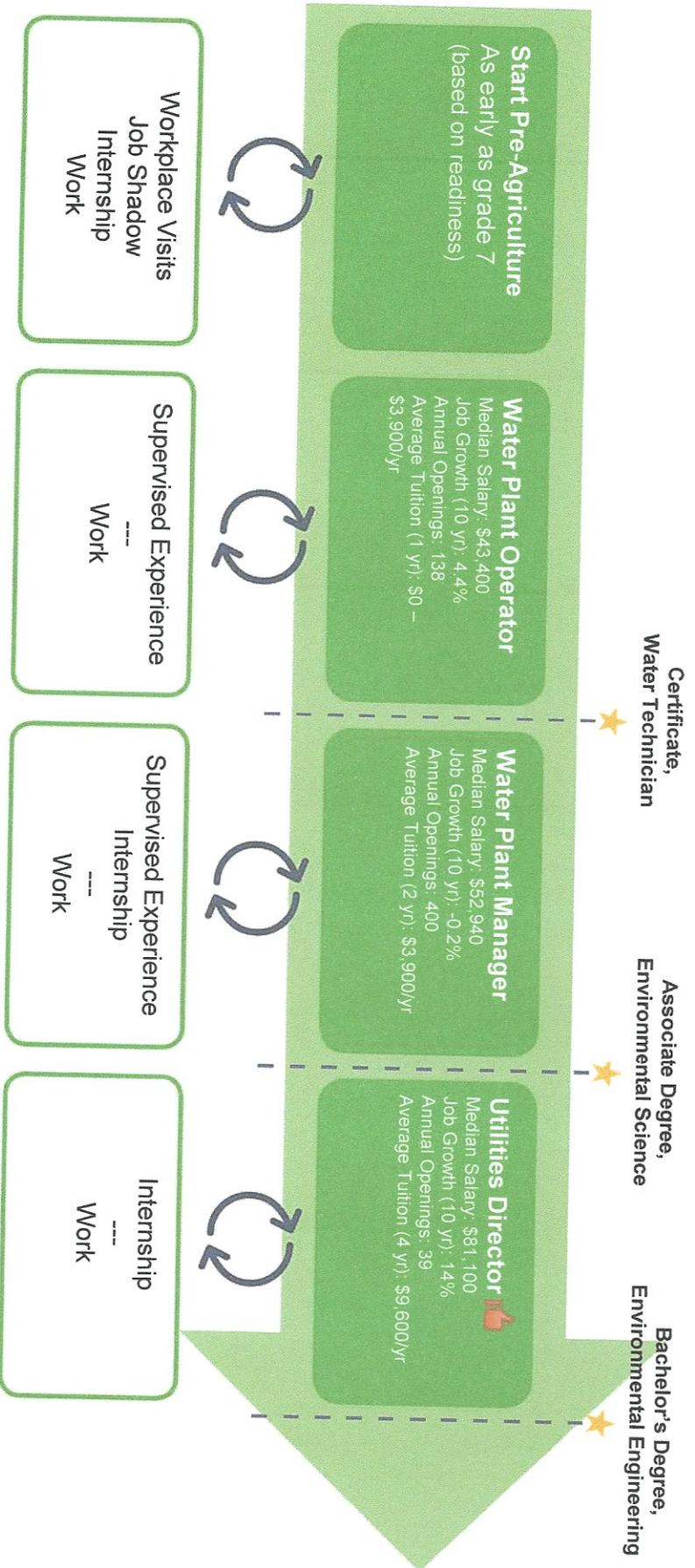
**Two Year Partnership Budget
July 2019 - July 2021**

Activity

	Year 1	Year 2
Environmental Career Ambassador Network (ECAN) Statewide Coordination, Development, Recruitment and rollout of program: ED time for recruitment, rollout, marketing materials, oversight & tracking of database.	\$34,000.00	\$34,000.00
Mileage for ED	\$3,000.00	\$3,000.00
ECAN Promotional Materials	\$1,000.00	\$1,000.00
ECAN Regional Recruitment and Marketing Regional Director Hours from 8 regions 12.5 hours X 12 months @ \$15.00 per hour = \$2,250.00 X 12 Regions	\$18,000.00	\$18,000.00
Regional ECAN Expenses \$750 per each of 8 regions for travel, long distance phone and supplies for local Ambassador recruitment and visits to career centers and schools (mileage reimbursed at state rate)	\$6,000.00	\$6,000.00
Database Maintenance Maintain the Environmental Career Ambassador Database and Network	\$1,500.00	\$1,500.00
Evaluation of Successful OEEF Projects Organization and review of K-12 and General Public Projects to evaluate success of grants provided by the OEEF in the past four years.	\$0.00	\$0.00
Statewide Conferences April 2-5, 2020 and TBD March of 2021 OEEF: Stewardship Sponsor level ECAN Ambassador and School Recruitment and ECAN sessions at the conference.	\$1,000.00	\$1,000.00
Partnership Steering Committee Expense:	\$0.00	\$0.00
Regional Conferences: Northeast Conference \$500 per year February Southwest Conference \$500 per year October Northwest Conference \$500 per year June ECAN Sessions, Ambassador and School recruitment at all conferences	\$0.00	\$0.00
TOTAL	\$64,500.00	\$64,500.00

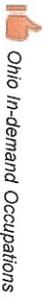


Agriculture and Environmental Systems Career Pathway

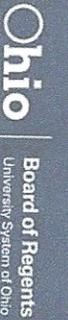


Provided by middle schools, high schools, employers, Ohio Tech Centers, and colleges.

Preparing students for multiple options after high school: gainful employment and/or postsecondary study.



Data reflects 2014 Ohio labor statistics and public institutions of higher education for 2013-2014. For specific tuition costs, visit ohiohighered.org.





Agriculture and Environmental Systems Career Pathway

Secondary Pathway: **Natural Resource Management**

Postsecondary Program: **Environmental Science**

An Example of Courses with Secondary and Postsecondary Credits

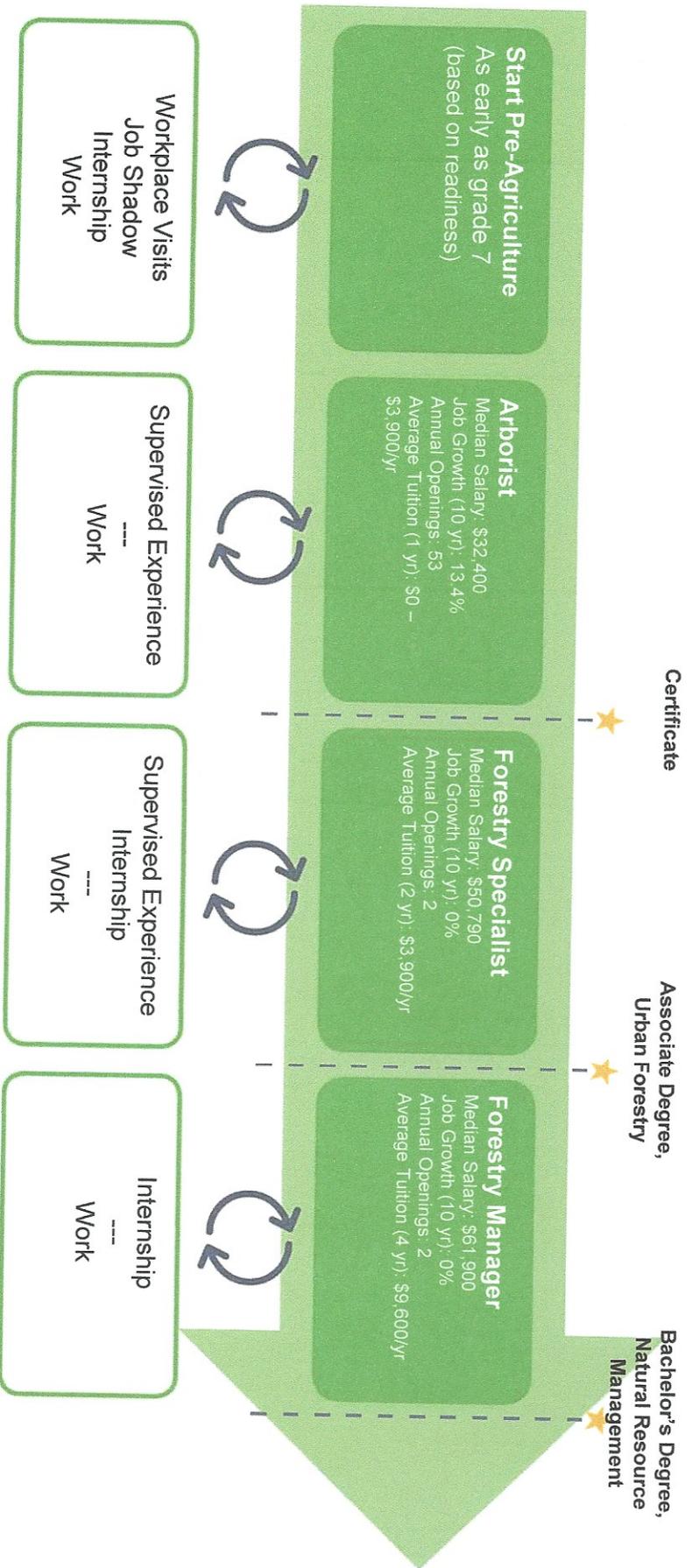
	7	8	9	10	11	12							
Secondary	English I	Algebra I	Physical Science	Social Studies	Fine Arts	Ag, Food, & Natural Resources	Natural Resources						
	English II	Geometry	Biology	World History	Health (.5) PE (.5)	Environmental Science	World Languages						
	English III	Algebra II	Chemistry	U.S. History	Environmental Systems Management	World Languages	World Languages						
	English IV	Trigonometry/Calculus	Physics	U.S. Government	Bio Energy	Hydraulics & Pneumatics							
	Year 1 1st Semester	English Composition I	Biology I	College Algebra	Public Speaking	Wastewater Treatment							
	Year 1 2nd Semester	English Composition II	Biology II	Environmental Sustainability	Water Resources	Environmental Field Biology							
	Year 2 1st Semester	Introduction to Psychology	Chemistry I	Trigonometry	Water Collection	Water Distribution							
	Year 2 2nd Semester	Technical Writing	Utility Management	Statistics	Environmental Policy, Law & Ethics								
	High School Career-Technical Education Program Courses												
	High School Courses for Postsecondary Credit (Including Apprenticeship Hours) and the Corresponding Postsecondary Courses												
	Required Courses												
	Recommended Electives												

Visit education.ohio.gov/CareerConnections for reference information.
Course titles and sequences will vary between schools.

2/2015



Agriculture and Environmental Systems Career Pathway



Provided by middle schools, high schools, employers, Ohio Tech Centers, and colleges.

Preparing students for multiple options after high school:
gainful employment and/or postsecondary study.

Ohio In-demand Occupations

Data reflects 2014 Ohio labor statistics and public institutions of higher education for 2013-2014. For specific tuition costs, visit ohiohighered.org.

Ohio Department of Education

Ohio MEANS Jobs

Ohio Department of Higher Education



Agriculture and Environmental Systems Career Pathway

Secondary Pathway: Natural Resource Management

Postsecondary Program: Urban Forestry

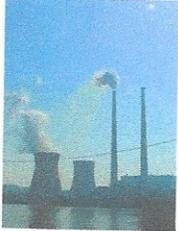
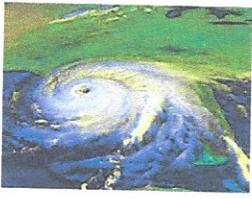
An Example of Courses with Secondary and Postsecondary Credits

	7	8	9	10	11	12			
Secondary	English I	Algebra I	Science	Social Studies	Fine Arts	Ag, Food, & Natural Resources			
	English II	Geometry	Biology	World History	Health (.5) PE (.5)	Environmental Science	Natural Resources		
	English III	Algebra II	Chemistry	U.S. History	Forestry & Woodland Ecosystems	World Languages		World Languages	
	English IV	Trigonometry/Calculus	Physics	U.S. Government	Urban Forestry	Environmental Systems Management			
		College Algebra	Computer Systems	Intro to Horticulture	Horticultural Botany	Humanities Elective			
		Algebra II	Arborticulture	Plant Identification & Selection I	Landscape Construction	Tree Care Co-Op I			
		Intro to Business	Soil & Horticulture Management	Plant Identification & Selection II	Occupational Regulations & Safety	Irrigation Design & Maintenance			
		Environmental Earth Science	Urban Forestry	Principles of Pest Management	Social Sciences Elective	Tree Care Co-Op II			
		Professional Selling Techniques							
		Communication							
		Chemistry							
		English Composition							
Postsecondary	Year 1 1st Semester								
	Year 1 2nd Semester								
	Year 2 1st Semester								
	Year 2 2nd Semester								
High School Career-Technical Education Program Courses									
High School Courses for Postsecondary Credit (Including Apprenticeship Hours) and the Corresponding Postsecondary Courses									
Required Courses									
Recommended Electives									

Visit education.ohio.gov/CareerConnections for reference information.
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5/2016

B I N G O

<p>Civil Engineer</p> 	<p>Corporate Sustainability Coordinator</p> 	<p>Marine Biologist</p> 	<p>Environmental Scientist</p> 	<p>Conservationist</p> 
<p>Arborist, Urban Forester</p> 	<p>Forester</p> 	<p>Environmental Inspector</p> 	<p>Biologist</p> 	<p>Energy Consultant</p> 
<p>Environmental Engineer</p> 	<p>Atmospheric Scientist</p> 	<p>Free Space</p>	<p>Geologist</p> 	<p>Certified Operator</p> 
<p>Fish and Wildlife Technician</p> 	<p>City/County Recycling Coordinator</p> 	<p>Biological Laboratory Technician</p> 	<p>Communications Specialist</p> 	<p>Hazardous Material Removal Worker</p> 
<p>Chemical Laboratory Technician</p> 	<p>Environmental Health and Safety Manager</p> 	<p>Game Warden, Wildlife Officer</p> 	<p>Emergency Responder</p> 	<p>Epidemiologist</p> 

TCTC College Fair October 26, 2018





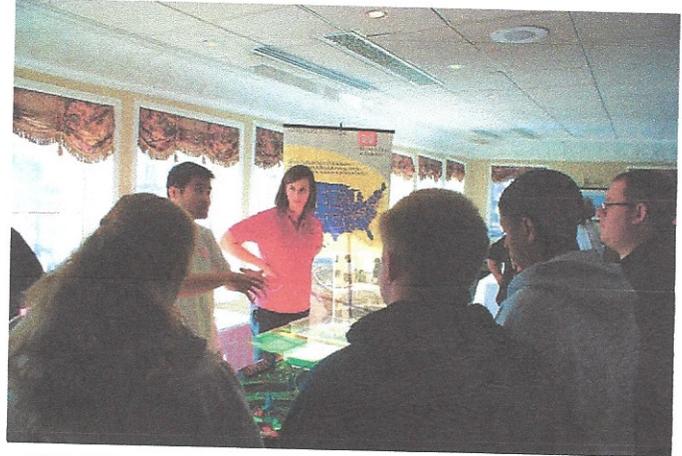
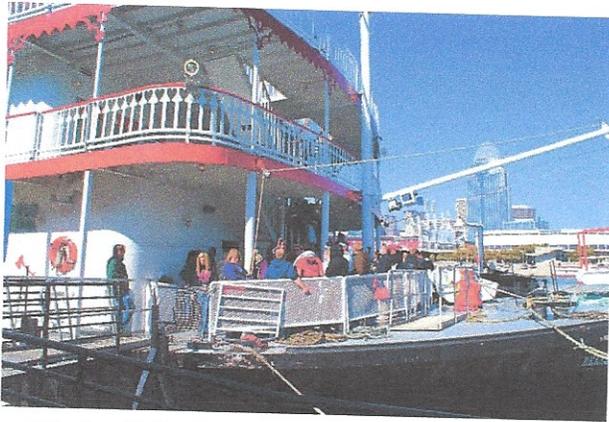
Careers roundtable for college students at the Water Management Association of Ohio 2015 annual conference



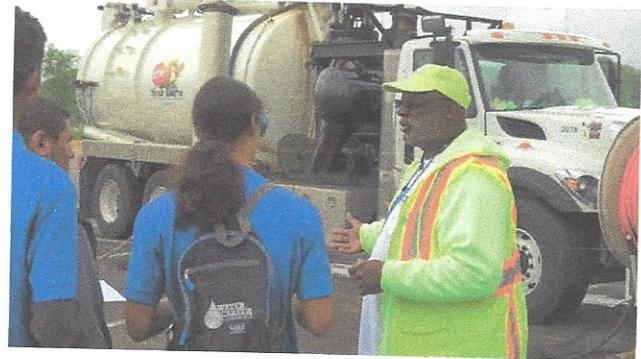
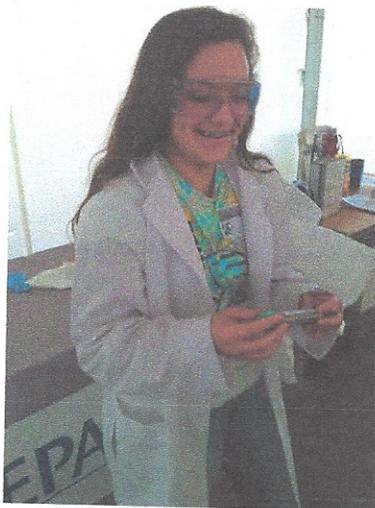
Career Ambassadors from Alloway environmental laboratories.



Ohio EPA hazardous waste inspector Dan DiMeo discusses his career with students at Licking County's combined career fair for all high school sophomores, at Denison University.



Students learn about environmental careers from the US Army Corps of Engineers, U.S. Coast Guard and Metropolitan Sewer District of Greater Cincinnati, aboard BB Riverboats, at Riverworks Discovery's "Who Works the River?" career fair for Cincinnati area high school students.



Students learn about careers in drinking water treatment and safely managing nuclear waste, at the City of Dayton Water Department's High School Water Career Conference and the "Science Alliance" Career Exploration Day at the Fluor-BWXT Gaseous Diffusion facility near Portsmouth.

