

MEETING NOTES
Public Engagement Working Group
Water Sustainability Commission
June 4, 2012, 1:00 – 2:45 PM

The meeting was held at the Department of Environmental Services, Concord, NH.

Commission members present: Denise Hart, John Gilbert, Amy Manzelli, (Alison Watts by phone)

Guests: Tom Broderick (Baldwin & Callen), Alicia Carlson (DES), Judy Silverberg (NH Fish and Game Department), Paul Susca (DES)

1. Review of previous meeting notes was postponed to allow the guest speakers to proceed.
2. Dr. Judy Silverberg, outdoor educator, NH Fish & Game Department, addressed the subject of environmental education in N.H. and the N.H. Environmental Literacy Plan. Dr. Silverberg's slides are attached. (The draft Plan was the subject of a March 5, 2012 memo from DES's Alicia Carlson to the PE Committee.)

N.H. has a fairly robust environmental education (EE) program, between Fish & Game, DES, and numerous environmental/outdoor education centers throughout the state. Many terms can be substituted for EE: conservation education, outdoor education, place-based education among them. The goal is to increase students' understanding of the natural world. Among the benefits of EE, according to research, is that it is associated with increased test scores in other areas, including engagement and motivation; and critical thinking and problem-solving to name a few.

N.H. is one of 12 states with an Environmental Literacy Plan (ELP) endorsed by the state Board of Education. (The BOE endorsed rather than adopted the plan because there is no mandate for such a plan in N.H.) The U.S. House of Representatives passed an amendment to the Elementary and Secondary Education Act (Title IV) that would have called for states to develop ELPs, but the amendment was not enacted. N.H. started working on its ELP in 2009, with Dr. Silverberg as the convener of a group initially including the N.H. Environmental Educators, N.H. Children in Nature Coalition, and N.H. Department of Education, and eventually including many of the state's colleges and universities (Plymouth State University, UNH, Antioch University New England, and Southern N.H. University) plus other organizations and individuals.

A crosswalk of the N.H. science and social studies curriculum frameworks with the North American Association for Environmental Education's (NAAEE) "Excellence in Environmental Education: Guidelines for Learning (Pre K-12)" found that all of the latter's elements were already incorporated into the N.H. curriculum frameworks, although that does not ensure that those elements become part of actual curricula, since the latter are locally controlled in New Hampshire.

A committee of 25 worked on the plan. They held 5 community forums around the state and three focus groups.

The emphasis placed on science education at the elementary level is very uneven throughout the state. In many schools, science and social science are taught once a week or not at all. Starting in the early 1980s there has been a shift to all math and language arts on the elementary level in many schools as a result of federally mandated standardized testing. The N.H. Department of Education has not had a science curriculum consultant for the past two and a half years (the position remains vacant and unfilled), and therefore no official advocate for science education in New Hampshire schools.

At the same time, there has been a movement in N.H. towards “competency-based” graduation requirements, so the ELP calls for the inclusion of environmental literacy competency components. The hope of the ELP committee (including representatives of the state’s colleges and universities) is also to include EL components in teacher certification requirements for New Hampshire.

The NH ELP encourages partnerships between schools and the business community.

The goal of the NHELP is that every student will have a meaningful outdoor education experience each year. N.H.’s science framework has had a stronger emphasis on field (outdoor) based science education than other states, but it still takes a back seat to laboratory-based science. Field science deals with observational data not control groups. The “Next Generation of Science Standards” draft has incorporated more field-based science studies than previous national standards.

Now that the N.H. Board of Education has endorsed the NHELP, the ELP Planning Team is turning its attention to implementation of the Plan. The ELP implementation is broken down into short, medium and long-term goals. One of the first steps will be development of tools including an online database of EE resources in New Hampshire. The implementation agenda is outlined in the Plan’s logic model. Implementation activities will be prioritized in the coming months by the ELP implementation team. She referred us to Appendix A for the model implementation goals.

Dr. Silverberg noted that Vermont has a sustainability component in its state criteria for student competency.

Despite the large number of EE centers throughout the state, if students don’t get EE in school, they are not likely to get it, so it must be provided through schools or through partnerships between schools and EE centers.

Alison Watts noted that she is working on a USDA grant that calls for a youth education component; is there an opportunity for that to be something with more than a local impact? She will follow up with Dr. Silverberg.

Dr. Silverberg noted that N.H. does not need additional EE curricula since there are ample options already available; rather, there is a need to change the educational system so that gains (such as teachers having been trained in EE) aren’t lost when teachers move on. Currently, most

teacher professional development occurs at an individual level; those who are interested in EE participate in trainings. Moving to a system of training multiple teachers from a school or district will be more fruitful.

Alicia Carlson noted that there are 13 organizations in N.H. whose primary focus are water-related education and many (30-35) others that have some water education focus. Those organizations would be good candidates to work with on water education, but they do not currently have the resources to get out and work with many schools. It would be helpful for area businesses to sponsor EE organizations to work with local schools.

Dr. Silverberg notes that the biggest water EE programs in N.H. state government are Fish & Game's Watershed Education Program (one FTE since 1989, with 60 middle and high schools involved) and DES's (1/2 FTE). The WEP tends to be limited by available equipment. She mentioned Ina Ahern as a teacher with an exemplary watershed education program (Plymouth Regional High School).

DES's Project WET (Water Education for Teachers) has suffered in recent years because of the declining emphasis on science and social science and because its 6-hour teach training model no longer fits with what is considered best practice in continuing education for teachers. Furthermore, K-6 teachers are not currently required to have any science content in their education. There are about 13,000 teachers in N.H., about 3,500 who have been through WET or its related programs, Project WILD and Project Learning Tree.

Asked how the system could be changed, Dr. Silverberg said that getting a full-time science curriculum consultant back at the Department of Education would be a good step. Also, there is plenty of water content in the N.H. science and social science curriculum frameworks, so she would encourage continuation and use of those frameworks. She would also encourage:

- ◆ Increased support for water education at DES;
- ◆ Development of a statewide plan for water education.
- ◆ There is power in getting everyone on the same page to identify where the gaps are (funding, regions of the state), and getting beyond your own site or school.
- ◆ Our state needs to adopt the NEXT generation of science standards (decreased content, more systems interaction emphasis).

Amy Manzelli noted that students in K-12 now would be roughly 28-35 years old in 25 years.

3. The draft meeting notes from the May 15th meeting were approved.

4. Action Items

- ◆ Amy will follow up with Michael Licata regarding turnout of business interests with a stake in water on July 9th, and regarding language for the recommendations that will resonate with the business community.

- ◆ Denise will consult with Michele Holt-Shannon and Marcy regarding planning for July 9th

5. The next meetings were scheduled for:

- ◆ June 13th, 2:00 – 3:30 at Baldwin & Callen in Concord
- ◆ June 27th, 2:00 – 3:30 at Baldwin & Callen in Concord

6. Working on the Commission's final report and recommendations: John plans to form two teams, one to focus on the form and writing of the report and one on the public rollout of the report. This will be a major topic of discussion at the June 19th Commission meeting. It was noted that the Information work group is not meeting regularly but serves more as a resource when there is a question. Work of the Johnson Foundation at Wingspread was mentioned as of interest, particularly their "One Water" initiative.

Amy briefly mentioned speaking at the Sustainability Congress convened by New England Water Works on May 31st; N.H. is just about the only state in the region without a water resources planning board.

John noted that Colorado set up a process with regional water advisory boards that then go to a state level board. He mused that it might be possible for the Water Council to evolve into such a role in New Hampshire, although it might require additional legislation.

The meeting adjourned at 2:45 p.m.

Respectfully submitted,

Paul Susca (with assistance from Alicia Carlson)

Attachment: (PowerPoint slides) (*see [20120604-silverberg-slides.pdf](#)*)

NOTE: Text of images on slides 13 and 14 difficult to read.

Slide 13: Positive Comments Themes: School/community partnerships (9); Working across content domains (6); Enhancing curriculum (5)

Negative Comment Themes: Not real science (1); Hidden costs (2)

Slide 14: Public Comments (N.H. ELP) Useful (44%); Necessary (35%); Not useful (17%); No basis (4%)

New Hampshire Environmental Literacy Plan



Presentation to
NH State Board of
Education March 2012

1

Environmental Literacy

Definition

- Understanding of the natural world and its systems
- Ability to make decisions about the environment based on scientific, social, economic and aesthetic considerations.



2

Research Findings

Environmental Education:

- Increases overall student engagement and motivation.
- Increases critical thinking and problem solving.
- Increases academic achievement and performance on assessments.
- Increases physical and mental health.
- Increases positive collaboration among educators.



3

Proposed Federal Legislation

Environmental literacy is included in the proposed definition of a well-rounded education-Title IV of Elementary and Secondary Education Act.



4

New Hampshire's Planning Effort

- Gap analysis and curricula crosswalk
- Community Engagement-- forums, stakeholder groups, teachers
- Time Line
- Strong communication across populations
- Implementation of writing process



NH ELP Online Focus Group hosted on OPEN NH.
<http://opennh.net/course/view.php?id=200>

NH Environmental Literacy Plan Website
<http://nhenvironmentalliteracyplan.wordpress.com/>

5

NH Environmental Literacy Plan

Key Areas of Strategic Planning for Environmental Literacy

- Standards
- Graduation Requirements
- Professional Development
- Assessment
- Funding and Support
- Community Connections



6

Strategic Planning for Environmental Literacy

Connecting to Standards

- Demonstrates existing connections between science and social studies curriculum frameworks and the *Excellence in Environmental Education Guidelines for Learning*.
- Encourages the development of an online data base of local NH environmental education resources for teachers.
- Encourages the establishment of student-learning outcomes and competencies in Environmental Literacy.
- Encourages interdisciplinary approaches for inclusion of environmental literacy across the curricula.

7

Strategic Planning for Environmental Literacy

Connecting to Graduation Requirements

- Encourages the increase in extended learning opportunities that include opportunities for environmental literacy.
- Builds on existing work with schools to meet science and social studies curriculum framework requirements.
- Encouraging the development of alternative pathways to environmental literacy.

8

Strategic Planning for Environmental Literacy

Connecting to Professional Development

- Encourages the establishment of a network of field-based training organizations and opportunities to enhance educator competency in environmental literacy.
- Encourages the incorporation of environmental literacy competency into high quality professional development offerings.
- Encourages colleges and universities to include competencies in environmental literacy for in-service and pre-service teachers.

9

Strategic Planning for Environmental Literacy

Connecting to Assessment

- Encourages the development of a strategic plan for how NH will measure student competency in environmental literacy.
- Encourages local schools to include competency in environmental literacy as a graduation requirement.
- Encourages non-formal education partners to develop instruments to determine student learning.



10

Strategic Planning for Environmental Literacy

Connecting to Funding and Support Streams

- Encourages the formation of formal and informal partnerships to seek funding for environmental literacy.
- Encourages partnerships with the business community to provide work study opportunities involving green initiatives and the environment.
- Encourages partnerships and connections to other funded initiatives, such as STEM, that can incorporate environmental literacy into learning outcomes.

11

Strategic Planning for Environmental Literacy

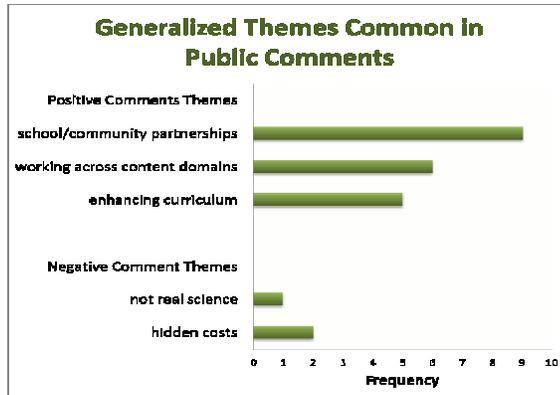
Connecting to Community

- Encourages the development of an Environmental Literacy Advisory Committee comprised of representatives from a wide variety of agencies, organizations, and individuals.
- Encourages the inclusion of meaningful outdoor learning opportunities and experiences for all New Hampshire students.
- Encourages the utilization of place-based and service learning projects that incorporate environmental literacy into learning outcomes.
- Encourages schools to develop of local projects that involve citizens in the decision making process.

12

Public Comments on the Plan

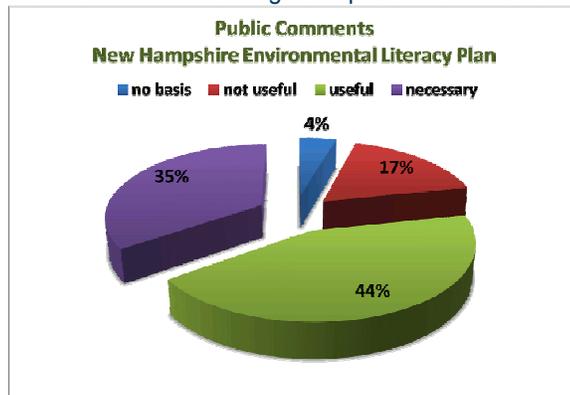
Positive comments outweighed the negative by nearly 7 to 1.



13

Public Comments on the Plan

79% of those who commented thought the plan was useful or necessary.



14

NH Planning Team Partners

- New Hampshire Environmental Educators
- NH Children in Nature Coalition
- NH Fish and Game Department
- NH Department of Environmental Services
- NH Division of Forests and Lands
- NH Department of Education
- Squam Lakes Natural Science Center
- Southern NH University
- The Margret & H.A. Rey Center
- Plymouth State University
- Antioch University New England
- NH Sierra Club
- Appalachian Mountain Club
- United States Forest Service
- University of NH, Durham