



Joint Meeting of the Estuary Implementation Committee (EIC) and the Science & Technical Advisory Committee (STAC)

September 11, 2014

EPA Region 3 Office, 1650 Arch Street, Philadelphia, PA

Attendees:

EIC

Jen Adkins, PDE (EIC Chair)
Ed Ambrogio, EPA III
Greg Breese, USFWS
Sarah Cooksey, DNREC
Tom Fikslin, DRBC
John Kennel, DNREC
Amy Liu, PWD
Megan Mackey, EPA III
Irene Purdy, EPA II (phone)
Janice Rollwagen, EPA II
Jay Springer, NJ DEP
Leslie Sarvis, PA DEP (phone)
Dave Jostenski, PA DEP (phone)
Alyssa Arcaya, EPA II

STAC

Greg Breese, USFWS
David Burke, PA DEP
Lance Butler, PWD (phone)
Laura Craig, American Rivers
Thomas Fikslin, DRBC
Dorina Frizzera, NJDEP (phone)
Heather Jensen, US ACOE
Moses Katkowski, TNC
Danielle Kreeger, PDE
Jerry Kauffman, UD-WRA
Sue Kilham, Drexel (STAC Chair)
Alison Rogerson, DNREC
Renee Searfoss, EPA III
Ken Strait, PSEG Power

Others

Priscilla Cole, PDE
Jeanna Henry, EPA III
Chris Kriegner, Obrian & Gere
Angela Padeletti, PDE

I. Welcome & Introductions

- Sue Kilham (STAC Chair) kicked off introductions by announcing the outcome of STAC elections and introducing new STAC members. Welcome new members;
 - Laura Craig
 - Heather Jensen
 - Allison Rogerson
 - Pete Rowe
- Jen and Sue presented minutes for review and approval (Jen for May EIC/Board meeting; Sue for April STAC meeting). Drafts for both sets of minutes had been circulated by email for review prior to the meeting.ⁱ
 - EIC: No objections or edits were noted for the draft minutes; hearing no changes, they were accepted.
 - STAC: Des Kahn suggested that we include definitions of acronyms to clarify the draft minutes. Danielle Kreeger agreed to amend the minutes by including an

attached list of acronyms and their full descriptions. Contingent on this action, the minutes were approved.

II. PDE Board Report

Jen Adkins gave a brief report on Board activity:

- Updates on PDE marketing/communications planningⁱⁱ
 - Lisa Wool is the lead from PDE, and a recent presentation by Lisa was sent out to the group before the meeting.
 - One of the elements that came out of our PDE strategic planning effort was that PDE should be more deliberate in our communications. As a result, PDE has contracted with the Wellyn Group to do a brand audit, along with interviews, focus groups and surveys to develop marketing & communications strategies/recommendations for us.
 - That work is not yet complete, but initial findings include that PDE has a positive reputation, but widespread awareness of PDE is low with the public. Initial findings also suggest that we refresh our branding (such as by updating our logo and website) and consider changing our name.
 - Regarding our name, we learned that the word “partnership” resonates with people, but “estuary” does not; that our name is long/complicated; and that “Delaware” implies working in the state of Delaware (and not other states). Discussion followed, including these key points:
 - Trouble with the difference between PWD/PDE.
 - Something more definitive would be helpful. An example is the New York/New Jersey Harbor.
 - If this were to be pursued, it would be important to do focus group testing. “Estuary” – it is not a deal breaker if it is not in the name. But a sense of geography is important. Out of the other 27 National Estuary Programs, 5 do not have “estuary” in their names. However, all of them have names of the water body or region (for example, Long Island Sound.)
 - There were no strong objections to some additional research to see if a name change would be worthwhile. Everyone agreed however that finding a better name that doesn’t use the words “Delaware” or “Estuary” would not be simple.

- A name change could also have at least a temporary negative effect on funding and credibility, since many funders may think a new name is a new program.
 - Finally, some commented that the “Delaware River” is widely perceived as being dirty, and not approachable.
 - Updates on PDE office expansion feasibility study:
 - PDE is outgrowing its current office space in a number of ways, and has begun evaluating alternatives for expanding, including another site in Wilmington (on Walnut Street near the Brandywine River). A sub-committee of current/past board members is working with Jen and Gus Wolfe on this and has engaged an architect to conduct a feasibility assessment. The result of that assessment is an estimated cost of renovating the target site of \$2.3 million, which is higher than we hoped it would be. We are continuing to look at options with this site, and exploring other options, including taking on more space in our current building, or augmenting with nearby spaces.
 - Another thing we are beginning to look into for the future is opportunities for satellite offices. We’ve talked with PWD, the Rutgers Haskin Lab, etc. to explore these possibilities.
 - The lease at our current building will be up in the middle of 2015.
 - Updates on PDE staffing and development:
 - We will have two new staff in the next month. One will be a new grants coordinator that will start on Monday, Dee Durham. A new Schuylkill fellow is slated to start in October who will work with Tom Davidock.
 - Janice Rollwagen, an EPA Region 2 EIC member, is planning to retire at the end of the month. Janice has been with the estuary programs for more than 18 years. We have planned a celebration at lunch to honor her hard work with PDE and several other estuary programs.

III. 2014 Projects and Results

- Danielle Kreeger gave a report on recent/upcoming PDE projects and programs.ⁱⁱⁱ
 - Wetlands: This year, we assessed the health of coastal wetlands at 45 new places, and we worked with partners to monitor conditions at all 10 of our long term stations (including the new Broadkill station in DE). This fall/winter, we plan to convene meetings to look at all data collected to date and discuss ways to streamline programs to hopefully make them more sustainable while also

translating findings to address key management questions. This year we also launched a new “Marsh Futures” program aimed at providing detailed restoration plans for specific wetland sites based on local conditions.

- Living Shorelines: We led the installation of multiple cells at each of four locations: Money Island, NJ; Lewes, DE; Indian River Inlet, DE; and Mispillion River, DE. The Mispillion project was our first hybrid, which included an oyster reef. All projects are multi-phase and will require plantings next spring. All sites are being well monitored, which started before projects commenced and which include untreated controls for comparison.
 - Question: For wetland restorations, how long will they sustain themselves?
 - DK: Living shorelines will almost always require some maintenance, and the degree of adaptive management varies widely depending on local conditions.
 - As one example, in our past project at Matt’s Landing (from 2010), the living shoreline showed no apparent damage from Hurricanes Irene and Sandy despite significant damage to nearby hard infrastructure; but we had to finally augment it in 2014 to repair for some ice damage from last year’s harsh winter.
 - This repair took one day and at a fairly nominal cost (7 coir logs). Meanwhile, the nearby hard infrastructure damage from Sandy was still not repaired and landward buildings were torn down.
 - The initial costs and maintenance costs of living shorelines versus hard infrastructure should be analyzed over long time periods and compared.
 - It is also important to remember that our projects do not solely seek to stabilize erosion, and the science is clearly showing that bulkheads degrade the ecology whereas you get ecological uplift from living shorelines. Simple comparisons of cost:benefit ratios based on dollars fail to capture ecological outcomes because ecosystem services are not yet monetized.
 - Another interesting observation we made this year is that at some areas of high energy where our first treatments in 2008 “failed”, landward erosion appears to be at a slower pace than nearby untreated areas. This needs more careful study (no funding), but if confirmed that even a “temporary” or “skeletal” living shoreline might still have some long term benefit.

- Freshwater Mussels: This summer, we performed quantitative surveys in the Delaware River between Philadelphia and the PA/DE state line, designed to find the seaward extent of their distribution (salt line). We also electro-tagged ~450 animals in DE and PA and used them to reintroduce mussels into 5 streams from which mussels had become extirpated (11 streams total reseeded 2011-2014). We also worked with the EPA R3 dive unit to explore deep water mussel communities at some of our previous study sites. Numerous mussel outreach workshops have also been held this year.
- Other projects:
 - PDE assisted EPA R3 in a study of coastal acidification and nutrients in the Delaware River and Bay. We are now working together to plan how to develop a benthic Index of Biological Integrity (B-IBI) for the Delaware Estuary, something we have sought to do since the end of the large 2008-2009 Benthic Inventory project (DEBI). There is a possibility of doing more sampling in 2015.
 - Graduate student research continues strong. Surveys of Asian clam populations, feeding processes, and ambient water quality are being performed seasonally this year, forming the bulk of data needs for Kurt Cheng's Masters work at Drexel. Josh Moody's PhD work on nutrient removal services by ribbed mussels is moving into its final stages as well. Results of both of these studies will improve our understanding of how dominant filter-feeders benefit water quality in the Delaware Estuary.
- Education & Outreach:
 - PA Coast Day was held in early September and was very well attended, although a bit hot this year.
 - The summer teachers workshop was extremely successful. This was new Program Specialist Melissa Bittner's first one.
 - The Philadelphia Water Department and Spokes Dog Competition was also very successful. Judging opportunities will be in October.
 - Other strong programs this summer and fall include the Wilmington Green Jobs program, Phillies Red Goes Green Recycling, and about five separate Freshwater Mussel volunteer training workshops.
 - For the William Penn Cluster work, PDE is involved in three of the clusters. This work is just getting off the ground.
- Look at the PDE activity updates (handout) and website pages for more information on any of these programs.

- Tom Fikslin (DRBC): In May and Early August, the eutrophication model work was completed. Yesterday, the DRBC Commission approved work to do studies on dissolved oxygen tolerance of early life stages of Sturgeon (which was recommended in the STAC Brief from earlier this year) and PCB tolerance.

IV. NEP Reporting

- Priscilla Cole and Jen Adkins reported on GPRA/NEPORT data collection results for discussion and input for improving the process moving forward:
 - Jen and Priscilla presented a Powerpoint showing results of the data collected this year.
 - PDE got all of the needed info in a week before it was due. We have until Sept 22nd for review with EPA.
 - Most of these data were furnished by the states, not necessarily representing restoration and protection actions directly done by PDE. PDE's projects are included.
 - This year, much of the leveraging was from the private sector (48%). If you look at 2006 and 2014, leveraging amounts were low in these years. Some of the other years had specific projects such as NFWF in 2007 and in large NJ land acquisitions in 2009, which were worth \$143 million alone. So although this year was lower, the tallies might not be abnormal if you subtract the larger projects. Most of this is dependent on state budgets, which is not controlled by PDE.
 - Our habitat goal was 2,250 acres. We came in at 2,170 acres. Again the largest portion was from the private sector.
 - The goal is re-established each year between PDE and EPA.

V. CCMP Updates/Revisions^{iv}

- Danielle Kreeger presented the draft new language for the Regional Sediment Management action item, for review and EIC approval.
- DK: CCMP W7.5 is a new proposed action to the CCMP.
 - To review, the Steering Committee in their 2013 meeting gave their approval to supporting implementation of the Regional Sediment Management Plan (RSMP).
 - As part of CCMP updating, which Priscilla discussed, we first considered ways to amend or modify existing CCMP action W7.4. In consultation with other program partners, we decided not to update W7.4 because it was really meant to cover a piece (dredging) of what the RSMP addresses (whole system sediment management). Instead, we agreed to add a new action W7.5.

- Recent discussions have focused on specific language for new W7.5, and it was agreed that words such as “adoption” and “implementation” can be misconstrued. Based on suggestions from New Jersey and EPA, “support” was chosen instead. Renee Searfoss and Jay Springer facilitated these discussions.
- New language for W7.5 was discussed and slightly modified, resulting in the following:
 - **W7.5 - Support the Regional Sediment Management Plan**

A Regional Sediment Management Plan for the Delaware Estuary was completed in 2013 to link interests regarding navigation/commerce, flood control, and ecosystem restoration for the watershed. It recommends numerous actions to also improve communication amongst stakeholders and the public, develop better technology to manage impacts from dredging, develop a better understanding of the processes that impact the sources, transport and fate of sediment in the system, and to promote the sustainable beneficial use of dredged material in ecological restoration projects. Implementation of the RSMP will be facilitated by the RSM workgroup whose focus is to work collaboratively on projects that align with regional sediment management.
- Discussion followed on what is currently happening already pursuant to this action. The ACOE is now “working with nature” and considering strategic placement of dredged material. The ACOE is also considering where and how to work on “softer,” more natural projects. Although these efforts are evolving, at this time the ACOE is not comfortable with taking actions that might be perceived to be in conflict with what they are mandated to do by Congress.
 - For example, activities by the ACOE are limited based on some of its federal standards. There may be other options for helping to support RSMP implementation, such as decisions about how and when to use beneficial placement for ecological restoration, actions that are outside of the typical navigation support interests.
 - One current issue is that new thin-layer sediment placement projects might be proceeding without much monitoring or studies. Since these are new to our area, it would be helpful to track outcomes and learn lessons to guide future projects. Because what the ACOE has to do is prescriptive, logistics and timing issues often supersede the ability to monitor before they do work. If we could encourage monitoring before work goes forward, that would be very helpful.

- Both the STAC and EIC agreed to accept the new language, as stated above, with one caveat: Heather Jensen (ACOE representative to STAC) will seek concurrence with the new language from the ACOE Philly District.
- Outcome: Contingent on approval to proceed from the ACOE, this new draft language will be presented to the Steering Committee for final approval at the upcoming October meeting. Hence, this will serve as a follow up action from last year's Steering Committee meeting regarding working to support RSMP implementation.
- One final note from EPA regarding the current CCMP W7.4: when we update the CCMP, we need to note that EPA is not a responsible entity with regard to this action.
- Priscilla Cole next presented new language on the CCMP Updates web pages for discussion and EIC approval. A Powerpoint was presented and will be made available.
 - The current draft website pages have tabs for "progress" and for "updates". These pages are currently hidden from the public.
 - In the "Progress" tab, all CCMP implementation examples are now up. These resulted in part from the earlier STAC-EIC workshops to tally CCMP progress.
 - "Updates" reflect last year's outcomes and had been approved by the Steering Committee in fall 2013. Some descriptions now give more information than before.
 - Current link to hidden pages is: <http://delawareestuary.org/plan>
 - DRBC: has finished some of the toxins work. How can we promote and recognize DRBC and partners involved in this?
 -

VI. 2015 NEP Work Plan

- Jen Adkins highlighted new elements of EPA's National Estuary Program Guidance^v with impacts to PDE's work plan, and she then sought input and approval for modifications to address them.
 - This new guidance was finalized after the FY15 work plan was developed and approved by the EIC, but the new requirements need to be started in the current 2015 plan. So PDE is working with EPA to revise the work plan to address this.
 - Of particular note, CCMP updates are now recommended as follows: update CCMP every 3-5 years, and fully revise CCMP every 10 years.

- For NEPs that have never done an update such as PDE, we need to begin this process by September 30, 2015, and complete the update by September 30, 2018.
- The revised CCMP must be for all sections: monitoring plan, financial, education, and habitat plan. It will need new priorities, goals and objectives.
- EPA Regions 2 and 3, plus Headquarters, must concur on revisions.
- Discussion: there may be portions of the CCMP that may not need to be updated, but this may be an opportunity to fully update sections that are clearly outdated.
- Knowing how much effort went into the original plan development and concurrence, this effort will require significant re-directing of PDE's NEP resources as well as a significant commitment of staffing and resources from program partners.
- PDE proposes: Modify our existing work plan for this year to form and direct a CCMP workgroup/committee. The initial task of this workgroup will be to develop the process for updating the CCMP. The following outcomes and milestones summarize the efforts now through next fall:
 - Fall 2014 - convene CCMP committee, review examples
 - January/February 2015 - formulate process/plan, recommend to EIC
 - March/April - finalize details of process/plan
 - May/June - include in FY 2016 work plan
 - July - begin implementing process/plan
- Discussion: Long Island Sound just updated their CCMP. Mark Tedesco might be a helpful participant in the workgroup and we should consider inviting his participation on some level. The Center for Inland Bays also re-did theirs. So we could look at their processes, and draw lessons learned from them. Dave Wilson from Maryland Coastal Bays also might be helpful.
- We recently set goals for the program too. So should we be setting the CCMP update up to directly link to and address these goals?
 - Irene Purdy suggested that we do link to the goals.
 - But note that there might be goals that we don't have actions for, and some actions might be needed for which we don't have direct goals.
 - Danielle Kreeger: the goals were fairly limited in number, focusing on drivers of ecosystem restoration/protection. They can be linked or cross-referenced, but are not as comprehensive as current CCMP, unless we make the new CCMP much more driver-focused and succinct.

- PDE proposes: Set aside NEP work plan items for regional restoration, such as the PDE Alliance, Project Registry, and Regional Restoration Workgroup activities, to allow for some reallocation of resources to support the CCMP update planning.
 - Priscilla would be main PDE staff lead for workgroup. Jen Adkins and Danielle Kreeger would also be involved. Plus use ~\$3,500 for contractual costs.
 - PDE would need commitment from primary partners that they could work on the workgroup to move this forward.
 - This is a change to the work plan that the EIC needs to approve.
 - No objections or concerns were raised. No grant amendment was deemed necessary because the NEP grant to PDE has not been awarded yet.
- Other Work Plan Items: More detail is needed on how the STAC might advance measurable goals. What are the short and long term goals for this?
 - Annual check in at joint STAC/EIC meeting in September.
 - Plan is to engage both the STAC and EIC to work on various goals, pursuant to their expertise. Where possible, existing STAC-affiliated subgroups formed for State of Estuary efforts can also be engaged. These groups will be tasked to help devise recommended actions to address goals and ways to measure progress towards goals. Specific milestones could probably be set.
 - A huge amount of time was spent with the STAC on developing the goals themselves, and this next step will arguably be more time intensive because of limited resources and capacity to achieve goals. For example, how can we stem current loss rates of wetlands when we are losing support to even track the losses, much less intervene on the ground? Much will depend on funding.
 - The STAC will need significant help from the EIC since many of the goals will require management actions and so much of the needed knowledge rests with managers. Therefore, subgroups will need to be formed drawing from both STAC and EIC and others.
 - Discussion: would it make more sense to focus STAC (and EIC) on CCMP updates rather than on further developing the “goals plans”? Which is more important?
 - The STAC is a voluntary body and already has deliverables in the work plan. The STAC will need to look more closely at the work plan and then say “here’s what we can try to do with limited or no resources” and also “here’s what we could do if we had further funding.”

- Action Item: Danielle and Jen will gather and share information on 2015 work plan needs for the STAC, and then at the next STAC meeting the group will discuss options and plans for how best to address these needs. We will also work to delineate which goals are appropriate for STAC to focus on, versus those where the EIC or others should tackle. We will also attempt to add more details/milestones for STAC (and EIC) activities in 2015 to advance measurable goals, monitoring, CCMP planning.
- NEP Work Plan Additions: Jen Adkins provided an overview of two new elements added to PDE's work plan for 2014 and 2015, thanks to other/additional EPA funding.
 - Waters of the U.S. – added to our 2014 work plan to 1) promote appreciation and awareness of waterways via workshops, and 2) fill data gaps via new scientific and volunteer-based surveys of freshwater mussels.
 - Living Shorelines – added to our 2015 work plan to 1) promote greater awareness and implementation of living shoreline tactics via Contractor Training workshops in coordination with the Center for the Inland Bays, and 2) to support augmentation and monitoring of existing living shoreline demonstration projects.

VII. New Memorandum of Understanding (MOU) for the Delaware Estuary Program

- Megan Mackey reported on the status of efforts to develop a new/updated document to replace the 2007 MOU that expires in December.^{vi}
 - The main goal was to bring the earlier MOU up to date, correct some simple naming changes, add more clarity, and not to start from scratch.
 - Preliminary wording was sent to the Steering Committee and has been through legal review. We have had multiple calls to discuss a few issues.
 - Earlier, we had hoped to be ready for signing at the Steering meeting on October 9th. Now, the current plan is to have a dedicated signing ceremony later.
 - One challenge has been how to articulate roles and responsibilities regarding the PDE Strategic Plan, including whether the plan requires Steering Committee approval. This is not what happens now since the PDE Board and EIC approves currently. The Strategic Plan mainly focuses on PDE activities, whereas the MOU is intended to delineate roles and responsibilities of partner organizations in the Delaware Estuary Program.
 - PDE is concerned that getting Steering Committee engagement on the PDE Strategic Plan could be a challenging process since the committee only meets once per year and agency review can be very time consuming. There was some discussion about this, including the following key points:

- It was suggested that the Steering Committee delegate this to the EIC, since there hasn't been great Steering Committee participation now or in the Alliance. The concern is that Steering Committee approval could make more work for PDE, and that the EIC would likely be reviewing any PDE plans anyway.
- The importance of keeping government agencies out of the fundraising part of the NGO was noted, and the idea of having a Strategic Plan that is separate from the CCMP was suggested.
- It was noted that since the plan guides what PDE does with EPA funds, there is a connection between the plan and NEP funds that EPA and program partners should have a say in.
- As noted earlier, the NEP work plan moving forward will need to include more administrative actions, such as updating the CCMP, and addressing these other Strategic Plan approval needs (beyond just the Board).
- NEP Funding is about 1/4 to 1/3 of the base funding of PDE. If the Strategic Plan covers all that PDE does, it may be worth considering whether PDE is the host of the Estuary Program or whether PDE is the program (DELEP) (potentially a good topic for a clarifying conversation at some point). Jen Adkins expressed willingness to have both Steering Committee and Board approval required for the Strategic Plan with the understanding that it might require allocating NEP resources to cover any additional administrative needs related to getting Steering Committee approval.
- Another outstanding issue with the MOU is whether and how to consider a name change. Pennsylvania does not sign MOU's with groups outside of the Commonwealth.
 - Decision: Rather than a MOU, this will henceforth be called a Memorandum of Agreement (MOA), or "Agreement," and not a MOU.
- The next step is for everyone to go to brief their Steering Committee member for approval in advance of their October 9th meeting.

VIII. October 9th Steering Committee Meeting Agenda

- Jen Adkins presented ideas for this year's Steering Committee meeting on the afternoon of October 9th at the Independence Seaport Museum in Philadelphia.
 - Just to refresh, last year we covered the following topics:
 - Trust/Fund Concept: reported results of the Alliance meeting on sustaining/growing funding.

- RSMP: updated on plan for including in the CCMP.
 - Goals: the Steering Committee approved the goals, and provided more details for some goals. We showed how our website has more info now.
 - Project Updates: PDE presented the freshwater mussel work and the SC asked for a watershed strategy, which we finished last spring.
- Agenda for October 9th, suggested topics:
 - Results of program evaluation.
 - MOU/A: review progress, develop plan for approval.
 - Update on FY14/15 NEP work plan additions and changes.
 - New CCMP Revision requirements.
 - Project Updates: Mid Atlantic Coastal Wetland Assessment (MACWA) and use of data to address key management questions
- Any other ideas?
 - Perhaps present an update on living shoreline work, since PDE did so much this year. This could tie into wetlands as well as Marsh futures. Steering Committee likes the technical presentations. Action: PDE will do a brief update on these in context of MACWA.
 - Give an update on where we're at with measurable goals, since they have been focusing on that over the last two years.
 - Update on results from the Communications Plan? Share same level of detail like did at this STAC/EIC.
 - Reminding them of their new roles under the new agreement, including approving the PDE Strategic Plan, and holding a mid-year conference call in addition to the annual meeting. When talking about MOU, bring this up, and express the timeliness of the need to get it approved.
 - Updates on the Delaware Estuary Science Summit.
- Agenda Plan Agreed to:
 - Steering Committee review/approval of MOU, seeking commitment for signing ceremony.
 - New CCMP Update Requirements/Plans, seeking commitment for partner participation.
 - Mid-Atlantic Coastal Wetland Assessment, seeking ideas for sustainable funding, and commitments of partnership.
 - Update on PDE FY14 and FY15 NEP Work Plan additions/changes.

IX. Requests for STAC Input

- PDE and/or partners have raised the following issues/topics for discussion, and potential STAC analysis/briefs were discussed.
 - Draft EIS for Early Site Permit at the PSEG Salem Plant¹
 - Sarah Cooksey: PSEG Power has requested that the Nuclear Regulatory Commission review plans for the addition of two new reactors at the Artificial Island Salem plant. It's not a permit application, but a request for review of an environmental impact statement (EIS). They met with the State of Delaware. There will be public meetings in NJ in October.
 - There is a good executive summary available online.
 - Ken Strait: PSEG is not sure if they will build it right now, but in the next 20 years. They want to learn if there are any large stumbling blocks that might stop the process.
 - There is also dredging associated with this, to bring in the materials.
 - There is also a land swap planned between PSEG and the ACOE, involving confined disposal facilities next to the site and at another location.
 - Hope Creek and Salem are reaching the end of their life time (2036/2040), but they can be renewed in Salem.
 - Any new facility must have a cooling tower.
 - PSEG is subject to DRBC's review and docketing, but not much detail yet as it is at an early stage.
 - Would need NRC approval of the DEIS, then would need to go for an actual permit with another round of environmental review.
 - Danielle Kreeger: Does the EIS take into account climate change, such as changes in future habitat needs of key biota (e.g. oysters)? Ken: it does address sea level rise, and certain flooding levels. But it does not specifically examine ecological issues such as related to oyster populations that might need to move up bay because of climate change.
 - There is a causeway proposed across a tidal marsh, elevated.
 - The transmission company wants competition for building power lines. So there is also a proposal to construct high voltage lines across Artificial Island using the existing right of away, parallel to the one that is there now. Or, they could opt to go under the bay. Around December, they will

¹ The 75 day comment period on the EIS opened on Friday, August 22, 2014. Please search <http://www.regulations.gov> under The Docket ID: NRC-2014-0149 for more information.

announce what they intend to go for, and then there would be an EIS once it decides.

- Action Item: if anyone on the STAC has comments on both of these things (reactors, transmission lines), please send comments to Danielle by October 1 so that she can consolidate for Jen.
 - November 6th is when the public comment period ends.
 - A final EIS would be done at the end of next year to incorporate all the comments
- Oyster Aquaculture/Restoration
 - STAC wants the EIC to be aware of this emerging issue.
 - Presentation by Dave Bushek
 - Currently, Delaware Bay still has significant oyster habitat, and the fishery is still an economic engine. But it is just a sliver of what it used to be.
 - Oyster farm development is on the rise. But economic production is still largely centered on the fishery oyster (harvesting wild stocks).
 - The fishery has a stock assessment each year, and recent harvests impact about 4% of the total population. This population has stabilized in response to sound management.
 - Overall production could be increased, but to do this shell planting is needed. Shellplanting is an efficient tactic with high benefit to cost ration, but funding is still needed.
 - Aquaculture, oyster farming, is another way to increase production and support jobs.
 - Unfortunately, the triploid stock was wiped out this winter, and 98% of individuals were killed by ice. A new issue has surfaced with where these broodstock animals can be overwintered, but we're working with officials to figure it out.
 - It's going to take 2 years to re-build new tetraploid lines and triploid stocks; we get 90% better survival with these lines.
 - An oyster renaissance is underway; festivals have become popular.
 - We currently have 11 farms in NJ, and they sell enough product to account for 1/10th of the total fishery. But they do this in a fraction of the space.
 - Farming oysters also puts baby oysters back into the natural system and can furnish ecosystem services, while also providing an economic boost.
 - Delaware has passed legislation to allow some oyster farming in the Inland Bays.

- “Farm to Table” is really positive for this type of work. It’s a fledgling green industry, with no fertilizer used; oysters actually clean the water.
- Despite these positives, a number of regulatory issues have surfaced that are current impediments. Shellfish gardening is basically banned in NJ. A number of other issues were discussed (see Bushek power point). Multiple agencies have been involved, up to 11. So it’s very confusing and daunting for the growers.
- Other states have consolidated regulatory agencies to streamline and clarify policies, and that has worked. Another approach has been top down (from the Governor), and that has also worked in some other areas.
- In NJ, there is no recreational fishery, but there is in NC.
- Living Shorelines; this is another regulatory issue because many types of LS can benefit from oysters, but this is not allowed in closed waters. This is a touchy issue right now. But they install oyster-based LS in closed waters in other states.
- Many weird old laws are still on the books that need to be reexamined.
- Discussion: the STAC should capture some of these issues, possibly in a brief, especially those that impede the fishery and living shorelines.
- How much is science and how much is regulatory? Split evenly. Science issues include need to assess *Vibrio* risks for human health, for example.
- There will be a special panel session at the science conference on this.
- Action Item: After that discussion at the summit, the STAC will discuss whether to draft a brief or supply comments.

X. 2015 Delaware Estuary Science & Environmental Summit

- Danielle Kreeger provided an update on the status of the Summit program, abstracts, moderators and sought input on additional program elements.
 - The abstract deadline was early August, and these are now being sorted.
 - We received a record number of abstracts, 122. Of these, about 50 are posters.
 - Special sessions are expected to be Hurricane Sandy, Shellfish, and Novel Ecosystem Services.
 - Large number of submissions for topics related to water quality and monitoring
 - The draft program should come together by end of October.
 - This will be the 10th anniversary of the conference.
 - Bruce Stutz will be the keynote speaker. He wrote a book about the Delaware Estuary.

- Possibly also a “funders” panel.
- Sponsorship is tracking lower than usual. Please let PDE know if you or another group can sponsor.
- For evening activities, still being discussed - possibly a goals focus instead of polling, or a special presentation format. Dinner will be furnished one evening, and the other will be on own.
- PADEP: reported that they are working on paperwork for sponsorship.

XI. Other Business

- NEP Review letter. Jen Adkins noted that the review was generally very positive.
 - Progress and Strengths section was much more extensive than the Challenges section.
 - Progress identified were our efforts to advance measurable goals and in CCMP tracking. Also the extensive work on storm water.
 - Strengths identified were our work on the State of the Estuary reporting and general tracking of status and trends; also noted, the entire science program, work on climate change, and freshwater mussel program.
 - Challenges identified were our communication and meeting preparation. Also MOU revision, and revising CCMP.
- STAC minutes after circulation: some small typo edits were identified and marked up on the hardcopy; STAC voted to accept contingent on corrections of typos and inclusion of an acronym list.
- Next STAC meeting. After discussion, was set for December the 11th.

Adjournment

ⁱ See May Board/EIC Minutes and April STAC Minutes

ⁱⁱ See L Wool 9/4 Presentation

ⁱⁱⁱ See PDE Program Updates document

^{iv} See hidden CCMP Updates web page (<http://delawareestuary.org/node/227>)

^v See 2014-2015 EPA NEP Guidance document

^{vi} See MOU Revisions document and DELEP/NEP Policies/Guidelines document

List of Acronyms:

ACES	Alliance for Comprehensive Ecosystem Solutions
ACOE RSM	Army Corp of Engineers Regional Sediment Management
AERS	Atlantic Estuarine Research Society
ANEP	Association of National Estuary Programs
ANJEC	Association of New Jersey Environmental Commissions
ANS/ANSP	Academy of Natural Sciences
AWRA	American Water Resource Association
BMP	Best Management Practices
CBCWP	Christina Basin Clean Water Partnership
CBTF	Christina Basin Task Force
CCMP	Comprehensive Conservation and Management Plan
CDRW	Coalition for the Delaware River Watershed
CERF	Coastal and Estuarine Research Foundation
CESP	Corporate and Community Environmental Stewardship Program
CIB	Center for the Inland Bays
CWA	Clean Water Act
CWAC	Clean Water Advisory Council
DAEE	Delaware Association for Environmental Education
DelDOT	Delaware Department of Transportation
DELEP	Delaware Estuary Program
DELSI	Delaware Estuary Living Shoreline Initiative
DNREC	Delaware Department of Natural Resources
DPA	Delaware Press Association
DRBC	Delaware River and Basin Commission
DRPA	Delaware River Port Authority
DVRPC	Delaware Valley Regional Planning Commission
EIC	Estuary Implementation Committee
ELS	Environmental Laboratory Section
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FMCS	Freshwater Mollusk Conservation Society
FMRP	Freshwater Mussel Recovery Program
FT	Full-time
FWWIC	Fairmount Water Works Interpretive Center
IT	Information Technology
JCNERR	Jacques Cousteau National Estuarine Research Reserve
MAC	Monitoring Advisory Committee
MACWA	Mid-Atlantic Coastal Wetlands Assessment
MARACOOS	Mid-Atlantic Regional Association Coastal Ocean Observing System
MOU	Memorandum of Understanding
NEP	National Estuary Program
NEPORT	National Estuary Program On-Line Reporting Tool
NFWF	National Fish and Wildlife Foundation
NGO	Non-government organization
NJDEP	New Jersey Department of Environmental Protection
NOAA	National Oceanic & Atmospheric Administration
NSA	National Shellfisheries Association
NVSC	National Vegetation Classification System
PACZM	Pennsylvania Coastal Zone Management Program
PADEP	Pennsylvania Department of Environmental Protection

PADEP DWSRF	PADEP Drinking Water State Revolving Fund
PDE	Partnership for the Delaware Estuary
PEC	Pennsylvania Environmental Council
PT	Part-time
PWD	Philadelphia Water Department
RAE	Restore Americas Estuaries
RSMP	Regional Sediment Management Plan
SAN	Schuylkill Action Network
SAN ESC	Schuylkill Action Network Executive Steering Committee
SJBC	South Jersey Bayshore Coalition
SP	Strategic Plan
SRRF	Schuylkill River Restoration Fund
SSIM	Site Specific Intensive Monitoring
STAC	Science Technical Advisory Committee
SWS	Society of Wetland Scientists
TAC	Technical Advisory Committee
TMDL	Total Maximum Daily Load
TNC	The Nature Conservancy
TREB	Technical Report for the Estuary and Basin
USACE	U. S. Army Corps of Engineers
USFS	U. S. Forest Service
USFWS	U.S. Fish and Wildlife Service
WAS	World Aquaculture Society
WQAC	Water Quality Advisory Committee
WREN	Water Resource Education Network