

MINUTES
Chesapeake Bay Program
Watershed Technical Workgroup (WTWG)
Meeting and teleconference
Monday, March 4th, 2013
10:00 AM to 3:00 PM

<http://www.chesapeakebay.net/calendar/event/19137/>

SUMMARY OF DECISIONS & ACTION ITEMS

DECISION: The February minutes were accepted as written.

DECISION: The five proposed experts will be invited to join the Algal Turf Scrubbers panel.

DECISION: The Urban Stream Restoration panel report was not approved by the workgroup; it will be revisited during the April meeting.

DECISION: The Urban Nutrient Management expert panel report was accepted as amended without the alternative outreach credit, but with the language in section 7 on innovative outreach methods retained.

DECISION: The WTWG supports the Urban Stormwater Workgroup's recommendation of a default rate of zero for new performance standards or retrofit BMPS, with the understanding that BMPs can still be submitted using the old way.

DECISION: The WTWG approved the reporting requirements.

DECISION: The WTWG approved 2018 as a deadline for reporting all new and retrofit projects using the new state stormwater performance standards, with the understanding that the date can be adjusted as necessary.

ACTION: The WTWG will draft a request to the sector workgroups to describe why each land use is included on the list. Johnston will send the request to Peter Claggett so it could be a joint request from WTWG and the LUWG.

ACTION: Sweeney, Johnston, and Rigelman will provide a file that lists the submitted vs. credited practices and the geographic scale of submission.

MINUTES

Welcome and Introductions –

- Alana Hartman (WV Department of Environmental Protection; WTWG Chair) convened the meeting at 10:00AM, reviewed the day's [agenda](#), and verified participants.

- Announcement: the April 1 meeting, although a teleconference, will be longer than 2 hours. No conflicts were raised.

Approval of February meeting minutes ([Attachment A](#))

- Hartman asked for comments or changes to the minutes.
 - None were raised; the minutes were accepted.
- **DECISION:** The February minutes were accepted as written.

Approval of additional Algal Turf Scrubbers Panel members

- Matt Johnston (University of Maryland, Chesapeake Bay Program Office) explained that some invited panelists recommended substitutes or additional experts to serve on the panel. Johnston asked for the workgroup's approval to invite the additional experts:
 - Dr. Walter Boynton, UMCES-CBL
 - Dr. Mark Brush, VIMS
 - Dr. Tom Fisher, UMCES-HPL
 - Dr. Karen McGlathery, UVA
 - Dr. Margie Mulholland, ODU
- Hearing no objections, Johnston will invite the five experts to join the panel.
- **DECISION:** The five proposed experts will be invited to join the Algal Turf Scrubbers panel.

Stream Restoration Expert Panel Recommendations ([Attachments B, C, K and L](#))

- Tom Schueler (Chesapeake Stormwater Network) noted that additional documents, including a full list of comments received, are available on the [February 19th USWG calendar entry](#).
 - He noted that the stream restoration panel is being transitioned to Bill Stack and Lisa Fraley-McNeal from the Center for Watershed Protection (CWP), who have both contributed significantly as panelists.
- Bill Stack (CWP) explained the proposed three protocols for stream restoration projects (prevented sediment, in-stream denitrification, floodplain reconnection), plus the fourth protocol (dry channel regenerative stormwater conveyance as a retrofit). He summarized issues raised in comments on the report and the responses to those issues.
 - View his [presentation \(Attachment J\)](#) for more details.
- Stack mentioned there were over 150 pages of total comments received; most of the issues were already debated by the panel.
 - He explained PA DEP's concern over the removal efficiency for floodplain reconnection, citing the Big Spring Run project as an example for higher rates. When DEP has finished data collection on the project, they will be invited to present their findings at a workshop, at which time the Panel will consider revising the efficiencies based on the new information.
- Stack: there are specific design examples for each protocol [slide 8]. The interim rate applies a higher sediment removal rate for the design examples, but the proposed protocols have higher nitrogen and phosphorous [slide 9]. The rates and reductions will vary by site.
- Schueler noted that the Virginia Department of Conservation and Recreation (VA DCR)

suggested dropping protocol 4 for dry channel RSC. He explained the retrofit expert panelists felt comfortable with using the retrofit efficiency curves for RSC projects. RSC projects are an in-between type of project that were not included in the retrofit panel's charge.

- Bill Keeling (VA DCR): So protocol 4 would be reported as a retrofit BMP, not a stream restoration BMP? Not sure if that's clear in the current document.
 - Schueler: Correct, and we would indicate that in our subsequent outreach. The current document includes this.
- Keeling: concerned that there is not an appendix that lays out where each BMP Protocol requirement is addressed in the document; also did not see discussion of conditions when the BMP fails.
 - Schueler: there is a section on BMP longevity that addresses BMP failures. The first draft of the report includes an appendix that identifies where each part of the protocol is discussed. We'd be happy to update this appendix before the report goes to the Water Quality Goal Implementation Team (WQGIT).
- Keeling: It was mentioned that states would have the option to report sediment removal as a mass reduction (for monitored streams). How would that work for streams that are not simulated in the Watershed Model (e.g. first- or second-order)?
 - Schueler: the panel acknowledged the model does not include all streams. There is an effort to include lower order streams in the next version of the Watershed Model.
- James Davis-Martin (VA DCR): was there any discussion of what happens if the protocol reductions are higher than the total modeled loads?
 - Schueler: that should not occur under the protocols, since they are written to be conservative. There is a six month "test drive" period, so when the panel reconvenes it can address the problem if it arises.
 - Davis-Martin was skeptical on this.
 - Jeff Sweeney (EPA, CBPO) and Matt Johnston were unsure what would happen if the mass reductions exceeded the sediment from the drainage area; they would look into this question more.
 - Davis-Martin felt this might occur in drainage areas with mixed land uses.
 - Schueler: that's a good point. The agricultural or rural application of these protocols would be at the discretion of the Agriculture Workgroup (AgWG). Have been to the AgWG three times; they seem generally supportive, but they note the different hydrology and other considerations. They can decide to modify or accept these urban protocols as appropriate. The previous urban stream restoration efficiency was applied to the agriculture sector.
- Sweeney: under these protocols, is it correct that the BMPs are dropped out after five years unless they are re-inspected? Previously the states were responsible for dropping out old BMPs, but now if the states are only reporting new implementation into NEIEN, it seems that old BMPs will need to be automatically dropped at some point; the WTWG needs to be clear about what happens with these old BMPs.
 - Schueler: the panel looked at new BMPs going forward, and did not discuss historical practices.
- Davis-Martin: don't think all historical stream restoration practices should be dropped because they are older than five years. This would be different than just requiring

periodic verification for new projects going forward.

- Jennifer Volk (University of Delaware): the jurisdictions are developing their verification programs, so there should be some flexibility.
- Sweeney: we need a recommendation on what to do with the history, and what to do every five years, considering states have been asked to clean up their historical data. It would be problematic to make this decision in house. We need direction from this group on what to do with the tools.
- Johnston: the discussion or decisions of how to incorporate the reports into the tools does not prevent the workgroup from approving the panel's recommendations and returning to the reporting specific details later.
- Davis-Martin asked clarifying question: these urban stream restoration protocols apply to any project where the drainage area is 5% impervious or more?
 - Schueler: that is the panel's recommendation, but the panel acknowledged that the states or regulatory agencies may propose and the CBPO may accept alternative definitions.
- Davis-Martin: if a drainage area is composed of mixed land uses – part of it is regulated, but part of it is not – how does it affect the loads and reductions?
 - Schueler: the load to the project would be determined by the land uses and loading rates from the given area. The protocols are somewhat independent of the loading rate.
 - Davis-Martin: Which source sector's load would be reduced by the application of this BMP?
 - Sweeney: It depends how the states report it and which land uses the project is treating. Currently, urban stream restoration would only apply to urban land in the drainage area. This group will need to decide how the BMP is applied once it is in the tools.
 - Johnston: Like other BMPs, you could report the acres being treated, or report the location and make a rule for how to treat all the acres within the stream's subwatershed.
- Davis-Martin: not comfortable with approving a protocol without hashing out exact details of how states will report data and how reporting rules will allow for those rules.
- Schueler: there are a lot of issues, but they are not expert panel issues. Do not think these should hold up the expert panel process.
- Hartman: We've heard a lot of concerns. Any other outstanding issues?
 - Keeling: Concerned about moving it forward until we have better answers for Davis-Martin and the WQGIT.
 - Johnston: it would take a few meetings or so before we define exactly
 - Davis-Martin: Thought that's what the protocol already requires.
 - Schueler: the report includes specific reporting requirements now.
- Davis-Martin: Don't feel the report ought to be approved until we know we can simulate it accurately and include it into the tools.
- Schueler: the group can grant a contingent endorsement or wait until the issues are fully resolved.
 - Hartman asked for the jurisdictions' thoughts, noting that Virginia did not support approval until the discussed issues are resolved.
 - Beth Horsey (Maryland Department of Agriculture): think it should all be in one

- package.
 - Volk: See both sides. It makes sense to know what the requirements are before approving the report. Perhaps a contingent endorsement would make sense.
 - Davis-Martin: Important to recognize that this is a significant change from the older BMP. Requiring site specific information for reporting is major shift.
- **DECISION:** The Urban Stream Restoration panel report was not approved by the workgroup; it will be revisited during the April meeting.

Urban Nutrient Management Expert Panel Recommendations (Attachments [D](#) and [E](#))

- Schueler described issues raised in comments on the report and the responses to those issues. He explained some of the changes made to the report in response to the comments.
 - View his [presentation \(Attachment M\)](#) for more details.
- Alternative outreach credit discussion
 - Keeling: concern was that there was no scientific basis for the 3% reduction. Ag nutrient management has firm numbers and continually runs into hurdles from EPA and others.
 - Schueler: would like to continue to work with AgWG on verification issue in the future.
- Horsey: how did the panel address the setback issue raised by Maryland?
 - Schueler: Believe the final language was 10-20 feet, which places Maryland's 15-ft setback in the middle of the range.
- Hartman asked for other outstanding questions or comments.
 - None were raised.
- Schueler asked for the jurisdictions' thoughts on the options, noting that Virginia supported Option 2.
 - Hearing no other comments, Option 2 was accepted: drop the Alternative Outreach Credit, but retain some of the discussion on Innovative Outreach Methods in Section 7.
- Davis-Martin question on high-risk versus low-risk aspect.
- Schueler responded that there are essentially three rates: high, low, and blended (for states that are unable to distinguish between low and high due to their urban nutrient management program). From the reporting standpoint, a jurisdiction can report the blended rate, or the higher high-risk rate if they are able to document the factors.
- Hartman called for objections to submitting the Urban Nutrient Management report to the WQGIT, as amended with option 2.
 - None were raised; the report was accepted with the amendment to the alternative outreach credit (Option 2)
- **DECISION:** The Urban Nutrient Management expert panel report was accepted as amended without the alternative outreach credit, but with the language in section 7 on innovative outreach methods retained.

Stormwater Performance Standards Flow Charts, Defaults and Reporting Requirements

- Matt Johnston presented a flow chart ([Attachment F](#)) that describes options for how states can report BMPs under old and new performance standards. He explained the USWG, at its [February 19th meeting](#), decided that no default value is appropriate, i.e.

default = zero credit.

- View his [presentation](#) for more details and a breakdown of the flow chart.
 - “BMP name” refers to the prominent BMP at the site
- Sarah Diebel (Dept. of Defense): does “multiple BMPs” refer to just structural practices, or structural and non-structural?
 - Johnston: It refers to all types defined in the reports.
- Marty Hurd (Tetra Tech): would encourage jurisdictions submit as much detailed information as possible through NEIEN, and check to ensure those details are handled properly.
- Johnston: Would it be a problem to add lat/long as a requirement for conversion retrofit projects?
 - Keeling: Yes. Adding lat/long would result in a lot of projects being cut off.
 - Johnston: perhaps another unique identifier could still be used.
- Davis-Martin: so retrofit projects replace existing reported practices?
 - Johnston: Correct. To add a retrofit project, we’ll need to remove the existing practice that is being retrofitted. This is why we need lat/long or a unique identifier.
- Johnston asked for comments or questions on the reporting requirements.
 - Sheryle Quinn (U.S. Department of Navy): how do non-structural practices like street sweeping fit in?
 - Schueler: non-structural practices like street sweeping or nutrient management follow separate protocols.
 - Johnston: there is a table in the reports that list all the practices.
 - Olivia Devereux (Devereux Environmental Consulting): In NEIEN you can report prominent BMP and still keep the supporting BMP information.
 - Hurd: concurred and said they are considered “components” in the BMP schema
- Johnston: At request of WTWG, asked the Urban Stormwater workgroup (USWG) to consider 0.5” and 1” default values. At its February 19th meeting, the USWG recommended a default of zero, with understanding that BMPs can still be submitted using the old way.
- Johnston asked the workgroup if they would like to concur with the USWG’s recommendation.
 - Hartman seconded the USWG’s recommendation.
 - No further objections or comments were raised.
- **DECISION:** The WTWG supports the Urban Stormwater Workgroup’s recommendation of a default rate of zero for new performance standards or retrofit BMPS, with the understanding that BMPs can still be submitted using the old way.
- Quinn: to clarify, we will be able to continue reporting using the old system, without a consequence of reporting the items in blue?
 - Davis-Martin: under old method, the practices are mutually exclusive and cannot be applied to the same acre. So the consequence of continuing to use the old method is that you don’t get credit for the whole sequence of practices.
 - Schueler also noted the old rates tended to be lower than the new curves.
- Johnston: the next question is do we set a deadline for reporting all new or retrofitted BMPs after a point. He suggested 2018.
 - Keeling: What if it’s a practice in a non-regulated area that does not follow

performance standards?

- Johnston: That would be a non-conforming project, as outlined in the charts.
- Volk (DE) and Bob Capowski (NY State Department of Environmental Conservation) felt comfortable with the suggested deadline.
- Robin Pellicano (MDE): want to ensure that we note that we can revisit the 2018 deadline in future.
- No objections were raised; the reporting requirements and tentative 2018 deadline were accepted.
- **DECISION:** The WTWG approved the reporting requirements.
- **DECISION:** The WTWG approved 2018 as a deadline for reporting all new and retrofit projects using the new state stormwater performance standards, with the understanding that the date can be adjusted as necessary.

Phase 6 Land Uses ([Attachment G](#))

- Peter Claggett (U.S. Geological Survey, CBPO) described the current land uses and status of the Land Use Workgroup's process of developing the final Phase 6 land uses. The Land Use workgroup has been working with Attachment G. There will be a separate data call regarding federal facilities delineation.
- Claggett asked the WTWG to provide feedback to the Land Use Workgroup and source sector workgroups regarding the feasibility of placing BMPs on the draft Phase 6 land uses in the past and in the future.
- Keeling: how will you identify low risk versus high-risk turf? Are we delineating all floodplains or just forested riparian areas?
 - Claggett noted the list is still open and subject to change. Further discussion is needed.
 - Keeling: there are limitations to soil survey data in a disturbed urban situation.
 - Claggett: The floodplains could be separated from other land uses, too.
- Johnston: There hasn't yet been a decision made about whether we will be mapping smaller streams, or at which scale they would be mapped if that decision is made.
- Claggett: There is still a question about what scale to use. The finest scale available would be 1:24,000.
- Devereux: we should consider what BMPs would go on which land uses, e.g. floodplain.
- Keeling: with a large, regional model not sure if the next version of the model will be at a scale to justify demarcating the floodplain.
- Keeling: maybe the forestry workgroup can draft a written description for the justification of the forested floodplain or other natural land uses. Not clear what the reasoning is right now.
- Sweeney noted we have a 20 or 25 year BMP record and would be very difficult to place these historic BMPs arbitrarily on these acres.
- Devereux noted Trampled Riparian Pasture (TRP) is not on the list. We need to be aware that this will affect the loads. What would we do with the BMPs and manure that were on it?
- Keeling suggested a method. However, we didn't have the math to inform TRP before; it was created as a way to mimic what credit fencing had received in Phase 4.

- Hurd: if people are putting BMPs on the ground, wouldn't they know if they are installing within a certain distance of the stream, or within the floodplain? Not sure if we need a huge layer or not.
- Devereux: how would we map plasticulture, particularly in VA where there is a lot of it? Covered and uncovered nurseries are on the list. There aren't any specific BMPs associated with plasticulture. There are limited BMPs (capture and reuse) for nurseries, at least for now. Plasticulture is not in the Ag Census; covered and uncovered nurseries are captured in the Ag Census.
 - Keeling: Virginia has had some issues on this in the past. Will dig up some of that information and share it. Would personally suggest that we eliminate the nursery land use.
 - Claggett: There is a sense that there are different background loading rates for nurseries. So if it is possible to differentiate them spatially, it would make sense to do so. He noted that Mark Dubin (UMD; AgWG Coordinator) felt the nursery industry would have data to help identify the areas.
- Pellicano: do these land uses in the next version of the model need to be hindcasted or connected to the past?
 - Keeling: if the new land uses cannot be connected to the past, then how do we justify using them in the calibration? You have to be able to relate them to the TMDL landuses.
 - Claggett response: we have some datasets going back through time. We would make some assumptions, e.g. that some of the land uses reflect current circumstances.
- Keeling noted that any future panel would have to consider floodplain area loading rates across all the sectors.
- Hartman said our comments so far show a desire to reduce the number of landuses, but not to be sorry later on when we need to apply a BMP to something we eliminated from this list. She asked for other observations before moving on.
 - Sweeney: We need to avoid having land uses that you cannot place BMPs on like nursery. Someone needs to decide how to place BMPs on farmsteads, nurseries, orchards, sod farms, high risk, low risk, etc.
 - Chris Brosch (Virginia Tech, VA DCR): need to be careful about potential overlap between urban and agriculture regarding "farmsteads." For example farm houses with rain barrels or other homeowner BMPs.
 - Devereux: remember you'll have to project back and forth on all of these
 - Claggett: some of these were suggested in order to match better with local landuse data
 - Devereux: in my experience, MAST users realize they could do without some landuses they thought they needed, once they realize they all get equal credit.
- Claggett: after WTWG and others comment on this list, it may shrink if we are not able to find some of the needed information, or if we can't map local landuses to these. Then we will let the relevant sector workgroup know.
- Sweeney: the WTWG should convey to stakeholders that the model is a planning tool to try to hit goals.
- Keeling: Maybe "tidal mudflats" would be better to include in the estuarine model, instead.

- Hartman: so for now, we will continue the discussion and document our conclusions as they are made, so we don't bring the same issue up later unnecessarily, or unknowingly reverse a decision that was made before.
 - Claggett: would like the workgroups to provide written thoughts, concerns, or justification for the land use classifications.
- **ACTION:** The WTWG will draft a request to the sector workgroups to describe why each land use is included on the list. Johnston will send the request to Peter Claggett so it could be a joint request from WTWG and the LUWG.
- Claggett, in response to question from Diebel on federal lands effort: we have had federal land boundaries included in segmentation in the past, which can be problematic for really small, fine-level properties like post offices within larger segments. We're developing a separate approach for federal facilities. Considering a password-protected website with the boundary data where federal agencies can access and correct the dataset during a specified timeframe.
 - Johnston: if federal facilities are allowed to do that, why not allow localities to do the same thing?
 - Sweeney: so the federal facilities would not only specify their boundary, but also their land use/land cover within that area.
 - Claggett: the ownership information would also be there.
- Diebel: what happens if not all federal facilities do not participate?
 - Claggett: We do have some data to help identify some federal land, e.g. protected areas.
 - Diebel: seems there has been a lot of discussion already, would like CBPO staff to ensure that the federal partners, especially DoD, are included. DoD has appointed someone to serve on the LUWG. Perhaps the federal facilities discussion could be consolidated through the LUWG.
 - Pellicano: at least from an allocation perspective, this could be very problematic and complicate the analytical workload for the jurisdictions.
 - Sweeney: That is a great point. It is very difficult to take an allocation from a federal land-river segment down to a finer scale like a facility.

Recap of 2012 Progress

- Olivia Devereux (Devereux Environmental Consulting) explained the jurisdictions should be receiving their progress results very soon, if they have not already done so. She explained the Appendix updates.
- Devereux asked states to share how they are converting XML files.
 - Hartman: WV now has a stormwater database. Tetra Tech assisted with that database submission this year. WV uses NodeClientLite2 to submit the remainder of the NPS BMP data to NEIEN node. It is fast and doesn't depend on others being available.
 - Sandi: MD uses the same software for submitting the XML. Sandi actually creates a database from MS Access and converts it to XML using Altova software. He manually adds headers and footers. Sandi's process takes about 5 minutes. This speed might be due to the fact that he eliminates all the empty tags. Sending all the empty tags results in a large, slow, submission. MD is looking to use Tetra Tech to develop one-button XML tools.

- Volk: DE DNREC staff has been handling stormwater and on-site data, and have been using contractor (Tetra Tech) support for non-NRCS agriculture practices.
- Keeling: VA gets data from various sources. Keeling creates a database table, uses node client software to produce XML. It takes a little bit of time for Beverly Quinlan to do this; she would have to describe her process.
- Chris Yearick: Upper Susquehanna Coalition (USC) collects all the agriculture data; DEC sends all the stormwater. NY runs a SQL server based app that maps GIS data to an XML.
 - Hurd suggested that NY use NodeClientLite2.
 - Aaron Ristow (USC) said the USC will not be reporting via NEIEN next year. They will be submitting data to DEC, and they can submit to NEIEN after that.
 - Devereux: So DEC does not have a node either?
 - Ristow: They don't have a Bay node, but they have a node for other purposes.
 - Hurd and Sweeney noted there was a long story behind this.
- Devereux: there are variations between the jurisdictions. Would welcome thoughts from the states given the different approaches they can take.
- Sweeney: would be helpful to open next month's "lessons learned" discussion to the states, not just CBPO staff.

Agriculture Modeling Sub-Group

- Johnston explained the planned formation of an agriculture modeling sub-group within the Agriculture Workgroup. Many issues face the source sector workgroups in the mid-point assessment process, and we will continue to determine the best fit for our WTWG's expertise and voice regarding data tracking and reporting issues related to any changes to Scenario Builder and the Watershed Model. The group will launch this spring or summer. Johnston will keep the WTWG posted.
- Johnston asked for questions.
 - Brosch: will the subgroup connect directly to the WTWG on its own or will it communicate via the AgWG?
 - Keeling: A little confused. A lot of the extension staff or AgWG members do not have modeling experience.
 - Ristow: curious about status of the expert panels (e.g. nutrient management) and their potential overlap with the modeling subgroup.
 - Johnston assured the WTWG that the staff are sensitive about duplication of effort and do not plan to allow any.
 - Brosch noted he will be serving as the new chair for the ag nutrient management expert panel.

Jurisdictions Request More Information for BMP History Clean-up

- Hartman: reminded the WTWG of Johnston's February 4 meeting slide presentation where Johnston listed next steps for the jurisdictions to be able to finish planning their historical BMP cleanup efforts. One of these next steps was "products from the CBP staff needed to complete the work." WTWG members should specify what products you need, so the April meeting could possibly deliver those and we can make headway on

this task.

- Johnston had mentioned PA's plans to start by analyzing geographic areas and BMPs with the most cut-off. Perhaps CBP could jump start that by providing such an analysis for each jurisdiction.
- Hartman had asked for a complete list of BMPs currently being used in the model by year per specified geographic scale
- Sweeney explained we could give the states BMP history for every year, but it would likely be output from Scenario Builder, reflecting cut-off, so misleading.
- Jess Rigelman (J7 LLC): we could also give input files to Scenario Builder. If we need to help out and work through it for one state, it would be the same or a similar process for the others. Sure that we could provide a file that lists the submitted vs. credited and at the geographic scale of submission.
- Sweeney: we're trying to improve the accuracy of attributing a past load at a gauging station to a source.
- **ACTION:** Sweeney, Johnston, and Rigelman will provide a file that lists the submitted vs. credited practices and the geographic scale of submission.

Adjourned

Next conference call:

Monday, April 1st, 2013

9:30 AM – 12:30 PM

<http://www.chesapeakebay.net/calendar/event/19138/>

Participants

<u>Name</u>	<u>Affiliation</u>
Alana Hartman	WV DEP
Matt Johnston	UMD, CBPO
Jeremy Hanson	CRC, CBPO
Peter Claggett	USGS
Olivia Devereux	Devereux Consulting
Marcia Fox	DE DNREC
Beth Horsey	MDA
Jess Rigelman	J7 LLC
Tom Schueler	CSN
Bill Stack	Center for Watershed Protection, CBPO
Jeff Sweeney	EPA, CBPO
Jenn Volk	U. of Delaware
Chris Brosch	Virginia Tech, VA DCR
<i>Via teleconference</i>	
Bryan Bloch	DE DNREC
Robert Capowski	NYS DEC
James Davis-Martin	VA DCR
Sarah Diebel	U.S. Dept. of Defense
Steve Gladding	NYS DEC
Marty Hurd	Tetra Tech
Bill Keeling	VA DCR
Neely Law	CWP, CBPO
Marya Levelev	MDE
Robin Pellicano	MDE
Sheryle Quinn	U.S. Dept. of the Navy
Aaron Ristow	Upper Susquehanna Coalition
Greg Sandi	MDE
Chris Yearick	Cornell Extension/USC