Chesapeake Bay Committee, Subcommittee, and Work Group Activities for STAC

Topics of Interest for STAC Members:

Urban Storm Water Workgroup (USWG) October 25, 2005

Reggie Parrish (EPA CBPO) recapped the Urban Summit, which occurred May 11-12, 2005 and updated the group on the discussions and highlights from the Implementation Committee meeting, including next steps for the Principals Staff Committee.

The Urban Summit produced seven priority recommendations; the top three in order of rank were:

- Establish regional performance standards for storm water on new development projects
- Identify and facilitate targeted training and educational opportunities for professional storm water staff, elected officials, and the various sections of the public
- Build local government capacity to implement effective storm water management

In June, the work group decided through a conference call to focus on the number one priority (minimum standards) by compiling and evaluating state programs using a matrix sent out to each jurisdiction. The NSC endorsed the formation of a task force that would further define the standard. The IC concurred with the NSC at their September meeting.

Rebecca Hanmer (EPA, CBP Director) gave a presentation to the group during which she discussed the importance of the stormwater issue and the follow-up to the Summit.

This power point presentation can be viewed at:
http://www.chesapeakebay.net/calendar.cfm?EventDetails=5753

- Urban loads are the only ones increasing in the Bay watershed.
- Half the Blue Ribbon Panel's estimated price tag of $28B for Bay restoration was stormwater with $9B of that for retrofit alone. The Panel concluded that the cost of stormwater management should be internalized.

Rebecca proposed expanding the purpose of the ad hoc task force role:

- Consider regional principles and standards for new development in context of overall approaches to drive more preventative, cost effective stormwater approaches,
- Ad hoc core management by this workgroup, but reach out to local governments, development communities, and watershed groups,
- Consider facilitated process of four panel meetings with up-front preparation,
- Ad hoc task force will assist Bay Program in creating a 2006 work program to meet EC Directive,
- Ad hoc task force will help reach (and sell) regional consensus on principles and standards for new development.

The Urban Stormwater Work Group's role:

- Synthesize approaches to new development in Bay watershed,
- Draft the standards,
- Articulate 2006 program to meet EC directive,
- Lay the groundwork for ad hoc task force discussion,
- Coordinate the Forestry, Wetlands, Watershed Assistance Work groups using the Bay Program structure to achieve goal.

This is a critical opportunity to address how the CBP attains/maintains water quality in developing areas.

Rebecca Hanmer (EPA, CBP Director) and **Norm Goulet (NOVA, USWG Chair)** updated the workgroup on proposals for the reorganization of the LGSS, which has significant implications for the stormwater workgroup.

- LGSS would be reconstituted as the Landscapes and Watershed Protection Subcommittee, in addition to retaining all the previous LGSS workgroups, would pick-up the Forestry Workgroup from the NSC and co-chair the Urban Stormwater Workgroup with the NSC.
- The Urban Stormwater Workgroup would increase focus on preventive, innovative measures under existing regulatory programs, such as LID and ESD.
- Re-organization is an attempt to partner Urban Stormwater Workgroup with the wetland/watershed/forestry groups.
- The consolidation's intention is to facilitate operations by streamlining the CBP.

Reggie Parrish (EPA CBPO) updated the group on the state program draft matrix and Urban Summit follow-up. CBPO staff developed and forwarded to state/district storm water representatives a draft matrix for state storm water programs.

- NY and other jurisdictions commented that most of their information for the matrix can be found on their respective websites.
- The matrix doesn't differentiate between general and individual permits.
- Shoreline erosion programs might be housed separately within jurisdictions, so the information is not as readily available.
- Floodplain and shoreline erosion should be separated.
- There might be jurisdictional similarities since floodplain programs would be tied to national flood insurance.
- Separating storm water management programs into construction and industrial might be an option.

BMP Placement, Stormwater, and Watershed Management Models

Over the last few months, the Bay Program has discussed modeling approaches with Anne Arundel, Prince George's, Arlington and other counties. In continuing to promote low impact development and buffer preservation, the Bay Program is interested in ways to promote and provide technical assistance to local governments about modeling approaches that encourage these landscape practices.

- Prince George's model is focused on low impact development and the impact of different BMP's on the watershed.
- Center for Watershed Protection has a spreadsheet model.
- VA may redo their BMP handbook.
- Overall consensus is that there's not a lot of work being done with BMP models but the tool is desperately needed.

Tidal Monitoring and Analysis Workgroup Minutes (December 1, 2005)
Symposium on Ecological Forecasting:
All power point presentations can be viewed at:
http://www.chesapeakebay.net/calendar.cfm?EventDetails=5801&DefaultView=2

Bill Dennison (UMCES, TMAW Chair) stated that the objective of this symposium is to review this year's forecasting efforts, determine what else is being done in terms of ecological forecasting on the Bay and elsewhere, and to see if there other forecasts that may be included with our current forecasts for the Chesapeake Bay.

Dave Jasinski (UMCES CBPO) discussed additional factors for the anoxic volume forecast for the Bay as magnitude of spring bloom, spring deep-water temperature, summer wind, summer deep-water temperature, and stratification may help explain inter-annual variability of anoxia.

Peter Tango (MD DNR) discussed the harmful algal bloom forecasting/prediction efforts for *Microcystis* and *Prorocentrum* for this year. He also reviewed an alternative *Prorocentrum* forecast model by Tyler and Seliger (1981) and could not be replicated using more recent data.

Bob Orth (VIMS) and **Ben Longstaff (UMCES NOAA)** discussed the aquatic grass forecast and preliminary summer survey results. An alternative approach to forecasting may be to look at relationships on smaller spatial scales (e.g., Upper Bay and Potomac). The aerial extent of SAV in Susquehanna flats increased dramatically in 2005 and Picataway Creek had a large change in SAV species composition.

Don Scavia (Univ. Michigan) discussed the forecasting Bay hypoxia. He described an alternative DO forecasting model that could be compared to what we have already. He used the "Sweet-Spot Model" which is a classic river input model (Streeter-Phelps DO-Sag).

Raleigh Hood (UMCES) discussed the nowcasting and hindcasting sea nettle and HAB populations in the Bay and ecological nowcasting in the Chesapeake Bay. He described a hybrid statistical-mechanistic approach used to develop multivariate empirical habitat models that are driven by real-time data. These models identify the geographic locations where ambient conditions coincide with the preferred habitat of a target organism (*Karlodinium* and *Chrysaora*). This is accomplished using salinity and temperature fields and applying a habitat to determine the distribution of these species. Nowcasts are available on a website and there was discussion of the possibility of turning this into a forecasting model.

Tom Gross (CRC CCMP) discussed HAB forecasting and what is necessary to run an operational forecast system from a NOAA perspective. He described the Chesapeake Community Model Program and expressed a need for open source science models for management. Integrative modeling systems are a necessary part of future open source models. The HAB and sea nettles tools are made possible by sharing existing model results.

Ming Li (UMCES) discussed the development of a new hydrodynamic/biogeochemical model for ecological forecasting in Chesapeake Bay. He showed results from a hydrodynamic model of storm surge from hurricane Isabel. The Regional Ocean Modeling System (ROMS) is capable of

simulating estuarine dynamics not only at short event scales but also over seasonal and inter-annual time scales. The biophysical model provides realistic simulations of seasonal plankton cycles and regional plankton distributions and is capable of capturing inter-annual fluctuations of plankton production driven by climate variability.

Xinsheng Zhang (UMCES NOAA) presented an ecosystem approach based on modeling menhaden recruitment. Biological interactions of striped bass predation could be a major determinant of recruitment variation in Atlantic menhaden in Chesapeake Bay. To prevent striped bass and Atlantic menhaden from destabilizing each other's stocks, co-management strategies should be included in ecosystem-based fisheries management plan in Chesapeake Bay. The stock recruitment Ricker model, which incorporates the potential effects of biological interactions and hydro-climatic forcing, will help to establish a more reliable Atlantic menhaden harvest cap.

Dave Kimmel (UMCES) presented the regional scale climate forcing on Bay trophic dynamics. Is the variability in freshwater input the result of climate variability? What is the link between climate, freshwater input and trophic dynamics in the bay? His answer is that a regional climate signal clearly forces Chesapeake Bay trophic dynamics largely through freshwater input and he showed examples of this with the different trophic dynamics of various fish species in wet and dry years.

Forecasting/nowcasting/hindcasting is a valuable research tool that will help us to better understand the Chesapeake Bay ecosystem. Various efforts, some of which were presented at this symposium, have the potential to be included in our annual forecasting efforts at the Bay Program and several people expressed an interest in participating.

<u>Living Resources Analysis Workgroup</u> (LivRAW) December 2, 2005
Restoration Progress Products:
Living Resources restoration table is awaiting further feedback for oysters and the table must be incorporated with the fisheries management index. The fisheries management index highlights three major steps: single species management plans; single species management plans with multi-species considerations; and ecosystem-based fisheries management plans. This proposed plan sequences scoring the five targeted species on an academic scale.

Stream miles opened to migratory and resident fishes
Goals:

- By 2014, open 2,807 miles of habitat to migratory and resident fishes.
- Between 2005-2014 complete 100 projects and open 1,000 miles of river and stream habitat.
- Dam removal projects opening high quality habitat are a priority.

Status:

- The removal of dams and fishway construction from 1988 through 2005 reopened 1,838 miles of historic habitat to migratory and resident fishes. (In 2005, five projects opened 31 stream miles)

SAV acres planted

Goal:

- By 2008, 1,000 acres planted in Chesapeake Bay.

Status:

- Cumulative planting through 2005 was 115 acres (11% of goal), with about 55 acres planted per year for the past two years. (These were all large scale projects planting from seed; numerous small scale projects are also done)

Meeting the Goal:

- The acres planted would need to increase 6 fold in 2006, to 300 acres per year and remain at that level for three years to achieve the goal by 2008. Funding is not currently available to achieve this rate of planting.

Wetlands

Goal:

- By 2010, wetland gain of 25,054 acres.

Gain in Wetland Acreage:

- Have achieved 40% of the wetland acreage gain goal through non-regulatory programs, cumulative acres gained by establishment (create wetland that did not previously exist) and re-establishment (restore historic functions to a former wetland).

Gain in Wetland Function:

- Have achieved 55% of the wetland function gain goal through non-regulatory programs, cumulative acres gained by enhancement (improvement of one or more selected functions (i.e., water quality, flood water retention, or wildlife habitat) and rehabilitation (repair of the natural/historic functions of a degraded wetland).
- States agreed to report rehabilitation projects beginning in 2005.

No net loss of wetlands via regulatory programs.

Update on Bay Health Indicators (progress for March report)

Presentation can be viewed at:
http://www.chesapeakebay.net/pubs/calendar/LIVRAW_12-02-05_Presentation_6_6841.pdf

Phytoplankton IBI status

- Documentation of methods is ongoing.
- Communications staff will be made aware of misconceptions surrounding this indicator.
- A goal needs to be decided (P-IBI $\geq$ 4.0 recommended)

Benthic IBI status

VA data will not be completely ready before March, but a provisional forecast could be calculated with a percentage of the data. This appears to be a problem for this year only, and the states should be in a position to report all data before the 2007 March report. A goal line is also needed.

Shad
Shad passing the Conowingo Dam is the indicator available at the moment, but the ongoing stock assessment will provide data for a more accurate indicator of shad habitat opened 2007.

Monitoring and Analysis Subcomittee (MASC)
Indicator Workgroup Meeting Minutes (December 8, 2005)
Communication and Data Questionnaires
John Wolfe (EPA CBPO) has incorporated everyone's feedback. This questionnaire will provide insight for the long-term goals of having linkages to the geographic information and diagnostic indicators. The workgroup discussed the value of completing a data quality questionnaire and by completing these questionnaires, data gaps can be found by each subcommittee. The person responsible for filling out the questionnaire is the same person who developed the reporting level indicator. After it is filled out, they will circulate it through their subcommittees for any comments and final approval. One questionnaire for each reporting level indicator will need to be completed. As time permits, one for each diagnostic level indicator will eventually need to be filled out for next year assessment.

Review status of reporting level indicators for the January report

- Jeff Sweeney (UMD CBPO) has requested a meeting due to some concerns raised by the Nutrient Subcommittee concerning how to report urban storm water practices.
- Rich Batiuk (EPA CBPO) has agreed to work with Jeff to construct a narrative for the air quality reporting indicator.
- The Wetlands and Forest Buffer indicators will be reported with both the percent achievement of the CBP goals and the individual state tributary strategy goals.
- Whether or not this report will include an integrated assessment is to be determined, may be more of a red (poor), yellow (average), and green (good) scenario instead of an actual number.

Review status of reporting level indicators for the March report

- The Tidal Monitoring and Analysis Workgroup needs to discuss how the annual data for DO, chlorophyll, and clarity will be related to a goal.
- The non-tidal workgroup has been struggling to come up with an indicator to relate nitrogen, phosphorus, and sediment loads to a goal. Troy Keller (UMCES CBPO) has been working on this and it has been agreed that this indicator does not need to be linked to a goal for the purposes of the upcoming March report section devoted to stressors. Gary Shenk (EPA CBPO) will be leading an effort to develop a relative assessment of stressors (not related to a goal but perhaps related to top, middle, or bottom third of the current data in relation to the long-term data set).

Chris Conner (ACB CBPO) provided an outline of the vision plan he is to create for the long-term goals of this indicator redesign effort. He would like a peer review of the communications effort to determine if the products are effectively communicating information to the public.

Budget Steering Committee Meeting Minutes (December 12-13, 2005)

Diana Esher (EPA, BSC Chair) discussed the most difficult task for this committee would be to prioritize their activities budget projects in light of budget cuts. She went over the budget spreadsheet and identified a cut off line at $16.5 million, after which projects would have to seek alternative funding or no funding at all. The purpose of this two day meeting was to review and finalize the FY06 budget, a process that included a review of the base and activities budget spreadsheet and an explanation of the results of the RFP review process.

RFP Evaluation and Review

1. *Local implementation of tributary strategies through changes in local codes and ordinances* (sponsored by Land, Growth, and Stewartship Subcommittee).
2. *Statistical and hydrologic analysis of sediment data* (sponsored by Nutrient Subcommittee).
3. *Assessing nutrient reductions from precision agriculture* (sponsored by Nutrient Subcommittee)
4. *Estimating loads in rural lands from failing riverbanks* (sponsored by Nutrient Subcommittee)
5. *Calculate the water quality co-efficiency of urban trees* (sponsored by Nutrient Subcommittee)
6. *Chesapeake Club Initiative* (sponsored by Communication and Education Subcommittee)
7. *Chesapeake Bay Education Summit* (sponsored by Communication and Education Subcommittee)
8. *Communications assistant/media relations associate* (sponsored by Communication and Education Subcommittee)
9. *Sediment trend analysis of the Elizabeth River* (sponsored by Toxics Subcommittee)
10. *Financing Network*
11. *Nutrient Subcommittee Coordinator*
12. *Nutrient and sediment reduction efficiencies for conservation practices found in tributary strategies* (sponsored by Nutrient Subcommittee)

Finalize RFP ranking and agree to BSC planning process for FY06

- Nutrient Subcommittee recommended the nutrient and sediment reduction efficiencies for conservation practices found in tributary strategies as their number one project.
- Living Resources Subcommittee recommended fish passage as their top priority.
- Monitoring and Assessment Subcommittee's top request was non-tidal monitoring.
- Communications and Education Subcommittee recommended the communications assistance/media relations associate as their top funding priority.
- Land, Growth, and Stewartship Subcommittee recommended local implementation of local codes and ordinances as their number one item.
- Local Government Advisory Committee recommended Bay Login as their number one priority.

The top five proposals ranked were:

1. Nutrient and sediment BMP efficiencies
2. Non-tidal monitoring

3. Food web monitoring
4. Communications associate
5. Fish passage

Budget planning for FY07
Danielle Algazi (EPA, BSC Coordinator) led a discussion on next year's activities based on the planning proposal that was handed out.

- BSC agreed to only discuss the base budget if reorganization will impact the base budget, as of now there is no consensus on the scope of reorganization. There is a lot of uncertainty in this next year.
- Between PART, GAO and other pressures may change our priorities.
- Need to look at the Manure Strategy adoption in support of the tributary strategies.
- Bay Program should move from indicators redesign to tracking progress within the indicators framework.
- BSC agreed to keep this year's theme the same as last years.
- Is there an opportunity to use neutral committees which are not budget dependent.
- We have advisory committees (CAG, LGAC, and STAC) that are doing a similar process and we should take advantage of their example.
- Should stick to the subcommittee level because that is where you get the expertise to make those technical needs decisions.
- STAC is attempting to help the budget process by aligning how they get their funding with Bay Program priorities.

Summary:

- For FY07, we have a number of concerns, such as reorganization and alternative funding.
- Should use the same theme as last year for activities budget FY07.
- Maintain criteria.
- Ask subcommittees and workgroups to use this theme when putting together proposals.

<u>Water Quality Steering Committee Conference Call</u> (December 19, 2005)
The purpose of the proposed schedule and work plan is to follow-up from the Reevaluation Workshop meeting in September where there was concern on how to maintain nutrient reduction in the face of urban growth. The plan is to integrate land use projections to the year 2030 using urban growth models (GAMe and SLEUTH) with the phase 5 watershed model. The proposed timeline is scheduled for February 7, 2006 and the Land, Growth, and Stewardship Subcommittee are the lead for organizing this kick-off meeting.

At the reevaluation workshop in September, the partners agreed to having a long-term timeline to address issues that needed attention by 2010. The timeline indicated that the Phase 5 model would be available in April 2006 for running scenarios and partners review. Partners will have until July 2007 to provide input and suggest changes to the Phase 5 watershed model. The Phase 5 model will be ready to evaluate the nutrient load effects from future land use scenarios by the beginning of 2008. The Bay Program also plans on having a simplified "desk-top" version of the watershed model for partners application.

- Land use is currently not part of the tributary strategies in PA but projections would useful for their state water plan initiative.
- Scale of spatial detail would be different for urban growth and watershed models. Both urban growth models have a much finer resolution than the Phase 5 watershed model.
- Urban models will use the same land cover imagery as used in the Phase 5 watershed model.
- PA doesn't have an official land use database. Data sets for both urban models will be generic across all states.
- Partners will have a chance to review the data that will be inputted into the model.
- In response to concerns raised about the states/localities being in a position to correct possible errors in the land use data used in the Phase 5 watershed model, it was stated that all the partners will have between April 2006 and July 2007 to review and provide comments/request changes to the watershed model.
- County scale is being used to evaluate inconsistencies between urban, agriculture, and forest projections because that is the analysis unit for the USDA Agricultural Census and population projections, and county sizes are relatively consistent region-wide.
- There was a concern raised about misattributing counties that straddle the Bay watershed boundary and contain metropolitan areas outside the boundary. Peter Claggett stated there was no reason for concern because the county data will be disaggregated to smaller sized units based on fine-scale information (land cover, roads, census blocks)
- In response to a question about the source of the data to be used in the 2030 projections, it was clarified that the same land use data used in the Phase 5 watershed model along with other currently available data will be used in making these projections. The watershed states are not expected to collect any new data to support making the 2030 projections.
- The 5 year time intervals were chosen for the projections as to provide the states with a variety of out-year options and to provide sufficient points to effectively illustrate trends over time.
- Alternative future scenarios will be based on a set of plausible future policies whereas baseline projections will be based on existing policies.
- The watershed and Bay water quality/sediment transport models require a base land use beyond 2010 in order to be run for management applications starting in January 2008 to meet the 2010 deadline for new cap allocations.
- Land, Growth and Stewardship Subcommittee intends to coordinate with other subcommittees and partners on sector projections for urban, animals, etc. Work groups will be formed after the first kick-off meeting.
- The Landscape Assessment Technical Team (LATT) being formed under LGSS will be responsible for the sector projections and obtaining data. Peter Claggett has been obtaining members from states over the past 6 months, they will meet for the first time at the kick-off meeting in February.

Recommendation:
Make comparisons between local-based growth projections made by a select number of counties throughout the watershed with the Bay Program based 2030 projections. Specifically, the partners should compare GAMe and SLEUTH projections with the projections currently produced in major metropolitan regions.