The Chesapeake Bay TMDL's Midpoint Assessment
WQGIT Meeting Summary
October 7-8, 2014
Liberty Mountain Resort

Tuesday, October 7

Meeting Convened: 9:02 AM

Goals for the Meeting

James Davis-Martin (VA DEQ), WQGIT Vice-Chair, reviewed the goals for the meeting:

A. Clarify overall priorities, identify steps to move forward, and outline schedule
B. Clarify overlaps and intersections among Midpoint Assessment (MPA) work efforts
C. Decisions needed during this meeting
    1. New Phase 6 Land Use Classifications
    2. Land use projections for 2014 progress
    3. Confirmation of MPA Priorities: Agreement on overall MPA schedule and decision making process; refinements to be identified and agreed upon

James asked for any questions or comments, none were raised.

Midpoint Assessment Timeline, Major Elements, and Related Work

Lucinda Power (EPA), WQGIT Coordinator

A. Watershed-wide Progress Snapshot: 1985-2025 and where we are today
B. Review of 2012 WQGIT Face-to-Face Meeting Decisions, Schedule, and Actions
C. Schedule and Timeline of Midpoint Assessment Priorities and Related Work (Management Strategies & Verification)

For more information please see Lucinda's presentation: Attachment

Discussion:

- Dave Montali (WVDEP) requested clarification regarding the PSC request for a briefing on short descriptions of major issues, timeframes, options, analyses, and implications for the partners (e.g. increased or decreased effort, minimal or no change of effort).
    - Lucinda Power (EPA/CBPO) and Rich Batiuk (EPA/CBPO): The WQGIT will not have specific answers on the increased or decreased effort, but should include the overall effect that the different issues will have on the level of effort. For example, whether or not the effects of the Conowingo Dam will lead to an increase in the level of effort necessary to achieve the Bay TMDL targets.
- Ann Swanson (CBC) requested clarification regarding the management of federal lands and whether the development of federal facility targets will be site specific for the different agencies (i.e. based on specific facilities).
    - Batiuk: The Chesapeake Bay Program (CBP) is working with the states to determine priority facilities.

Modeling Workgroup, WQGIT & STAR: Roles and Responsibilities in Midpoint Assessment

James Davis-Martin (VA), WQGIT Vice-Chair and Lee Currey (MD), Modeling Workgroup Co-Chair, Scott Phillips (USGS), STAR

For more information, please see their presentation: Attachment

To see a complete description of MPA roles and responsibilities, please see the following document: Attachment

A. Clarify role of WQGIT, Modeling Workgroup, and STAR in midpoint assessment decision-making process
B. Understand what decisions will be provided by whom
C. Articulate clear communication and coordination processes

Discussion:

James Davis-Martin (VADEQ/WQGIT Vice Chair): As well as driving the inputs, the WQGIT is also essential in communicating and understanding the outputs, which drive policy implementation strategies. Need to understand what the model results are telling us because it could have (in)significant impacts on the policy.

Discussion Question #1 on the relationship between the Ag Modeling Subcommittee and the Modeling Workgroup:

- Lee Currey (MDE/Modeling WG Co-Chair): Although there is "no overlap" in the tasks, Modeling Workgroup members attend the meetings and are aware of the tasks of the Agricultural Modeling Subcommittee. The Agriculture Modeling Subcommittee focuses on the inputs, but there is an additional responsibility of the Modeling WG to maintain the integrity of the modeling aspects of the process.
- Dianne McNally (EPA Region III): "Neither is charged with BMPs which are the WQGIT's purview." Why are they not responsibility of the Modeling Workgroup even though some affect the models?
    - Davis-Martin, Gary Shenk (EPA/CBPO), and Currey: The BMP Expert Panels include technical experts along with modelers. Modeling Workgroup and Modeling Team members are a part of the process and give feedback/recommendations, but the final decision is at the WQGIT level.
- Currey: The Modeling Workgroup, particularly the CBPO modeling staff, is working between the different groups in order to keep timelines and inputs in line.

Discussion Questions #2 on the relationship between the Modeling Workgroup and the Watershed Technical Workgroup.

- There were no questions or comments.

Discussion Questions #3 on the relationship between STAR and the Modeling Workgroup.

- Scott Phillips (USGS): The Conowingo Dam is another MPA effort that is being coordinated by STAR, led by Bruce Michael (DNR), UMCES, USGS, and others.
- Davis-Martin: Does STAR membership contain full representation from the signatory jurisdictions?
    - Phillips: STAR requested, through the Management Board, a call for representation and only a few jurisdictions responded with interest. Currently, the membership of STAR is comprised of the coordinators of the GITs and STAR WGs, and STAR is considered a coordinating body not a decision making body.

- Melanie Davenport (VADEQ) and Davis-Martin: If the Modeling WG is a workgroup under STAR, does the Phase 6 Watershed Model have to be approved by STAR before it is presented to the WQGIT? What is the chain of authority on who is making the decisions on the modeling products?
    - Dave Montali (WVDEP/Modeling WG Co-Chair): One of the tasks of STAR is to provide scientific resources to the GITs. The Modeling WG focuses on modeling products for the WQGIT, but will be reviewed by the WQGIT, jurisdictions, and STAC. It is a GIT directed charge, but it is in line with STAR's purpose.
    - Lewis Linker (EPA/CBPO): The Modeling WG puts together the modeling tools and applies the tools for specific tasks such as Climate Change, Conowingo, and other issues that will affect water quality and the Bay TMDL. STAR has a broader responsibility outside of the TMDL and water quality issues. The Modeling WG brings the tools to the WQGIT to make final decisions.
    - Currey: The Modeling WG is responsible for producing modeling products, which are used to elevate water quality issues. STAC reviews many of the products/analyses produced by the Modeling WG. The WQGIT is the decision making body.
    - Phillips: STAR is a coordinating body, not a decision making body. The STAR WGs answer to the GITs for charges and decisions. The Modeling WG provides the modeling products directly to the WQGIT for approval.

DECISION: The WQGIT approved the proposed set of roles for STAR, Modeling Workgroup, and WQGIT.

ACTION: STAR Co-Chairs will go back to the Management Board and seek approval for an expanded STAR membership with a focus on getting more jurisdictional representatives on the Team's membership.

Discussion Question #4 on ways to strengthen communication and information exchange between GIT's and Workgroups.

- There were no questions or comments.

Use of Monitoring / Factors Affecting Trends

Summary: Scott Phillips (USGS), Jeni Keisman (USGS), and Joel Blomquist (USGS) from *STAR and the CBP monitoring team discussed progress to date and next steps on the use of monitoring data in nontidal streams and in the estuary to measure progress and work underway to analyze trends of nitrogen, phosphorus, and sediment in the watershed. View the workplan here, and the presentation here.*

Discussion:

- Presentation concluded with the question: What will be most useful for you for Midpoint Assessment and Phase III WIP preparation:
    --focus on how water quality responds to WQ practices in specific source sectors?
    or
    --explain trends in major basins down to the most localized level within those basins?
- Karl Berger (MWCOG/LUWG Co-Chair): Is there a task force to look at the long term future of the funding networks?
    - Joel Blomquist (USGS): The BASIN process under STAR has been working for the past year. The team has been pulling together monitoring network recommendations for the future. STAR will update the WQGIT on the BASIN review process in the coming months.
- Ann Swanson (CBC): Recommend strategically picking locations to look at both questions at a more local level. Keep at the larger river basin scale and strategically select a set of more local scale focus areas on which you would drill down deeper. Make sure the local governments and citizens are at the table.
- Jim Edward (EPA/CBPO): Most monitoring stations are typically mixed land uses – could you add more stations targeting specifically urban and agricultural land uses?

    - Blomquist: There are moderately sized watersheds dominated by agriculture.
- Beth McGee (CBF): Recommend focusing efforts where you have the best chance of contributing to a Management Strategy.
- Blomquist: How do we best communicate the negative trends?
    - Marel King (CBC): Recommend looking at areas that are improving, and also areas that are degrading (such as one per state). This would help with public communication in making the connection with how decisions on the land are impacting water quality.
- Edward: What happened with the showcase watersheds in which USGS was targeting monitoring based on where NRCS was focusing agricultural conservation practice implementation?
    - Blomquist: For the MPA, we will have a good assessment of the processes influencing the showcase watersheds, but it will take longer than the MPA period to establish the effectiveness of the BMPs implemented within each showcase watershed on local water quality conditions.
- Dave Montali (WVDEP/Modeling WG Co-Chair): In WV, we have four stations which we started in 2005, what can we do at these stations?
    - Phillips: When you hit the ten year mark, we will be able to more rigorously evaluate the long term trends.
    - Montali: We would expect significant downward trends due to wastewater upgrades.
- Lee Currey (MDE/Modeling WG Co-Chair): Across our many monitoring stations, where would you select to explain trends and where would you see the most utility to enhancing the Bay Watershed Model?
    - Blomquist: This feedback is really helpful; we will work through this incrementally and get back to you.
- Bruce Michael (MD DNR): There are many examples of areas where we're seeing improvements. We implemented new stations in 2004-2005 and will start evaluating that data. We have an opportunity to better explain and communicate that information to as many stakeholders as possible.
- James Davis-Martin (VADEQ/WQGIT Vice Chair): Recommend that the explaining trends products and timing align with the larger schedule in terms of the MPA, as well as the milestone development/evaluation. Recommend focusing first on the overall watershed load trends and then comparing these load trends with the existing Watershed Model output trends and explaining differences.
- David Foster (Phoenix Initiatives): When we talk with local elected officials about cost effectiveness, we can focus their attention on where they can take the most cost effective actions for the most environmental benefits.

ACTION: Joel Blomquist will share the URL address for accessing the USGS Chesapeake Bay nontidal water quality monitoring network web site.

ACTION: STAR will provide the WQGIT an update of the phased BASIN review process at an upcoming WQGIT monthly conference call.

ACTION: STAR will continue to work closely with the WQGIT on the following next steps on expanding the use of monitoring data within the midpoint assessment, with a focus on factoring in new understandings from work underway on explaining monitoring trends.

- Further discussion with WQGIT members is needed on where to focus the explaining monitoring trends work—e.g., specific source sectors or at the local level—and exactly how members would like to see the results presented
    - **NOTE:** WQGIT and STAR will work together to schedule future discussions to explore moving forward with one/both/other options
- The jurisdictions need to help prioritize geographic areas where progress is being made and where further improvements are needed so changes can be made/resources can be targeted.

- Identify ways to use monitoring data to more clearly illustrate the connection between implementation of practices and the impact of those actions**.**
- Strengthen communication of monitoring success stories as well as areas where the trends are heading in the wrong direction and need improvement (e.g., the Insights Report).

Revising Modeling System Structure – Phase 6

Summary: *Dave Montali (WV), Modeling Workgroup Co-Chair and Gary Shenk (EPA) from the Modeling Workgroup and the CBPO Modeling Team discussed efforts to date in transitioning to a PQUAL Model and improving model accuracy of the hydrologic network, with the overall objective being to ensure the land use input load/export sensitivities are set in a reasonable manner and it provides loads to the tidal Bay and state-basin loads similar to Phase 5.3.2. The ways in which enhancing these decision support tools will improve transparency, accuracy, and confidence were also discussed. View the presentation here.*

Discussion:

- Matt Johnston (UMD/CBPO): Does the WQGIT want to see documentation on the various sets of models at the start of 2016?
    - Gary Shenk (EPA/CBPO): Materials would be posted on the MPA webpage, which is where everyone can stay up to date. Is the group comfortable with that approach?
    - Shenk: Full documentation prior to 2017 would be possible. The tradeoff is that we won't be able to do as much in terms of development.
    - James Davis-Martin (VADEQ/WQGIT Vice Chair): Recommend good documentation of changes, decisions and assumptions, until we develop a more complete set of detailed model documentation in 2017.
- Katherine Antos (EPA/CBPO): How else is the monitoring work enhancing the models and is their timeframe aligning with the Modeling Workgroup's schedule?
    - Shenk: We will be using the SPARROW model to estimate land to stream and stream to river factors as well as land use loading rate targets. The timing is aligned. What we are less sure about is the direct comparison of WRTDS and Phase 5.3.2 Watershed Model results and working to explain the differences observed between the two.
- Beth McGee (CBF): How does PQUAL relate to sources of information in other models?
    - Shenk: PQUAL is a generic name for a model that doesn't make a prediction for the results. Other models such as AgChem, SPARROW, and APEX do make a prediction. We are taking a multiple model average of those empirical models.
- Marel King (CBC): You have a lot of questions listed on your slides in regards to the Phase 6 model—do you have answers to those questions now?
    - Shenk: These are questions that the Modeling Workgroup is focusing on in the 2014 and 2015 timeframe. We have a number of analyses planned which should yield answers to these questions or provide insights into how we can proceed.
- Dianne McNally (EPA Region III): Is the uncertainty analysis too complex to conduct?
    - Shenk: The first step was to ask WQGIT members what they want to know about uncertainty. The analysis can be done and it is complex.
- Davis-Martin: We need to be able to quantify the uncertainty in the attribution of loads to specific sources.
    - Lee Currey (MDE/Modeling WG Co-Chair): As managers, we can think more broadly about where the uncertainties are within our model. BMP expert panels recommend one efficiency value for each BMP, when in reality there are a range of values.
    - Ted Tesler (PADEP/WTWG Chair): Data quality is another aspect of uncertainty. The quality of the data that goes into the model (related to matters of scale) could have even more influence on the outcomes than the uncertainty of the models.
- Currey: The Modeling Workgroup wants to make sure the full Partnership understands how the tools will work. Is it enough for us to bring this information to the WQGIT through meeting minutes or updates to the

WQGIT? While WQGIT members are reviewing the documentation, the Modeling Workgroup will be revising the more comprehensive documentation. Or is the full documentation necessary for the WQGIT before 2017?

- Davis-Martin: Don't need the detailed documentation, and also don't want to search for documentation of decisions and changes. Recommend a simple decision list with dates the decisions were made.

ACTION: To help ensure the Modeling Workgroup will be successful in quantifying uncertainty in the 2016 timeframe, WQGIT members are asked to draft up their questions/needs in regards to uncertainty analysis and provide them to the Modeling Workgroup co-chairs.

DECISION: Updates, decisions, and assumptions of the Modeling Workgroup will be documented and posted online (WQGIT's midpoint assessment website: http://www.chesapeakebay.net/groups/group/water_quality_goal_implementation_team)

Improve Land Use:

Summary: *The Land Use Workgroup has developed a master list of proposed new land uses for Phase 6. This involves backcasting land use over the calibration period for the Watershed Model and forecasting land use to 2017. An update on local land use information received to date; future land use projections; and progress on developing federal land boundaries will also be provided. This work has significant implications for assisting state and local jurisdictions with WIP implementation (states/locals sharing and confirming data) and reporting of progress (improved accuracy of data).*

Karl Berger (MWCOG), Peter Claggett (USGS), and Jenny Tribo (HRPDC)

For more information, please see their presentation and the proposed list of new land use classifications.

Discussion:

- Evelyn MacKnight (EPA Region III): Will additional land use classifications shed light on whether or not areas will be regulated for MS4 permits? The overlay does not provide enough information.
  - Jenny Tribo (HRPDC/LUWG Co-Chair): The land use work group is not developing new data on what are going to be regulated areas. There will be an MS4 overlay that will only be what comes in as regulated by the jurisdictions. We will have a separate MS4 land use.
- James Davis-Martin (VADEQ/WQGIT Vice-Chair): How do the land uses and overlays compare with what was before referred to as segmentation and what happens when the overlays overlap each other?
  - Peter Claggett (USGS/CBPO): The only thing that changes with segmentation is that federal property is coming out of segmentations. Federal properties will now be an overlay instead. In a GIS environment, it is easy to sort out overlapping overlays. For reviewing land uses and showing jurisdictions, it is simpler to have one land use/land cover map, and a second map that has the overlays.
- Davis-Martin: If the overlays are essentially a mechanism to break down acres, how do we address unique loads from stream corridor land uses?
  - Claggett: Stream corridors are lines on a map that do not take up space, but they are a source. Kind of like a septic system.
- Gary Shenk (EPA/CBPO): As far as BMP tracking in these different land uses, at some point the group will have to report at that level, or be okay with certain disaggregations. We can handle that complexity within Scenario Builder, but within the Watershed Model, there could be a very complex output.

- Katherine Antos (EPA/CBPO): Would the stream corridor overlay only address the 4th order or greater streams?
    - Claggett: Right now we are contemplating using the highest resolution data set we have, which could capture down to zero order streams.
- Ann Swanson (CBC): Can conserved/protected land be considered as an overlay?
    - Claggett: We can do that because we do keep that data. We have not made that determination yet for the Phase 6 inputs.
- Swanson: I request a protected land overlay.
- Lew Linker (EPA/CBPO): Have we thought about management implications of including stream corridors as a source?
    - Claggett: We haven't done that in a lot of detail. One issue that has been raised by the Chesapeake Bay Foundation is in relation to stream corridors and how treating them as a source would affect how we treat runoff reduction BMPs in the upland. The concern is that it would inadvertently disincentivize upland BMPs.
    - Tanya Spano (MWCOG/WWTWG Chair): For local governments, those considerations are very important. Stream restoration is considered a very important tool and we ought to be looking at Total Nitrogen and Total Phosphorus from stream segments.
- Beth McGee (CBF): Our concern is that creating a new land use would encourage more stream restoration, which could be wiped out in one storm event. My question is in regards to forecasting: how long would you go back in history when infilling land use data? What is the scale?
    - Claggett: Infilling is at the finest census block scale available. We look at change from 2010, we will do the same for 1990-2000. We can't go older than that, the data is not good enough. There is also ancillary building permit data that can affect infilling.
- Jim Edward (EPA/CBPO): What is the distinction between overlay and data layer?
    - Claggett: They are all data layers. Land use is a place in space, while an overlay is some secondary characteristic you want to attribute to that land use.
- Rich Batiuk (EPA/CBPO): We need to get suggestions for how to direct staff and workgroup time and resources.
- Jenn Volk (UD/WQGIT Chair): Can we proceed further with the proposed set of land uses knowing these are provisional, recognizing trampled riparian pasture may be added back on the list of ag land uses and continue be considered a possible land use along with the other listed ag land uses? This is the maximum list of land uses from which the Land Use Workgroup and the Source Sector Workgroups will continue to work.
- Lee Curry (MDE/Modeling WG Co-Chair): In the short term, we need to continue to develop our understanding of the contributions of sediments and nutrients from small streams. However, to account for them in our management practices, it would require some fundamental changes that might have to be a decision for later.

DECISION: The WQGIT decided to add a protected lands overlay to the current list of overlays.

DECISION: The WQGIT approved moving forward with the proposed land uses, including trampled riparian pasture as a possible land use, as the maximum list of land uses. Forthcoming decisions by the Modeling Workgroup on each set of land use's associated loading rates may lead to modifications in the final Phase 6 land use classifications.

DECISION: The WQGIT agreed to support continued development of the stream corridor land use/overlay by the Land Use Workgroup through USGS by applying the results of the West Virginia University pilot study across the entire Chesapeake Bay watershed. A final decision on exactly how to apply the stream corridor lands within the

Phase 6 Watershed Model—either as an actual land use or as an overlay—will be decided by the WQGIT at a later date.

ACTION: The WQGIT charged the Urban Stormwater Workgroup with updating the 2011 MS4 overlay with the most recent sets of data.

Proposed Agricultural Land Uses

Curt Dell (USDA) reviewed the proposed Agriculture land uses.

- Bill Keeling (VADEQ): When will we see the final list of land uses?
    - John Rhoderick (MDA/AgWG Co-Chair): This is a fairly comprehensive list, but we are waiting on feedback to see how much we can fill in as far as loadings. We are trying to be specific, but we do not expect these to all be part of our final list.
- Ann Swanson (CBC): What time frame are these land uses based off of? Does the farmer report what he anticipates planting, or what he planted the previous year?
    - Chris Brosch (VT/VADCR): Land use data comes from Ag census every 5 years and we interpolate between those.
- Jenn Volk (UD/WQGIT Chair): We will have these main Ag land use categories at the minimum. Loading rates will be done by the spring of 2015. We could possibly have the finer levels of detail by the spring based on whether or not those loading rates are available.
- James Davis Martin (VADEQ/WQGIT Vice Chair): If we have agriculture land use at this fine of a scale, does this require BMPs to be reported by each of these very detailed land uses.
    - Volk: No, that is not the case. States can report their BMPs on the broader scale or more detailed land uses.
- Davis-Martin: Why be at such a small scale if they don't have to report at that level?
    - Curt Dell (USDA/AMS Chair): States can choose which level is more typical of what they're doing. We can lose flexibility if necessary, but we can't gain it if we don't put those possibilities in now.
- Volk: Do we continue to pursue the development of a stream corridor land use based on findings from the pilot study conducted by West Virginia University and come back for a final decision? Can we consider just going with an overlay as opposed to going with a separate land use as an alternative?
- Keeling: We need a solid set of agreed to Phase 6 Watershed Model land uses by spring 2015 in order to complete work on historical BMP data bases by fall 2015—need a 6 month window in order to complete this work.
- Davis Martin: What is our fallback position if we are not successful with the proposed watershed wide application of the results from the WVU pilot study?
- Gary Shenk (EPA/CBPO): We fall back to how we calculate sediment loads in the Phase 5.3.2 Watershed Model which we know is not correctly attributing the delivered sediment loads to the actual upland and stream corridor.
- Davis-Martin: The 5.3.2 approach was identified as our top priority to fix in the October 2012 WQGIT Face-to-face. I do not see that as a viable fall back.

Day 1 Wrap Up:

Jenn Volk (University of Delaware, WQGIT Chair) summarized the major questions on land uses and asked for final feedback:

1. Can we add a conserved/protected lands overlay to our current list of overlays?
    a. Peter Claggett (USGS): Yes, it is easy to add.
    b. Volk: Is there interest?
        i. There was interest. None were opposed.
2. Do we continue to pursue development of stream corridor of land use as a potential source of sediment?
    a. Dianne McNally (EPA Region III): There is a concern about timing. Will we be able to incorporate this by 2016?
    b. Claggett: By the summer of 2015, we should have enough information to informatively move forward. This could be either in favor of, or not in favor of adding it as a source.
    c. Tanya Spano (MWCOG/WWTWG Chair): If we need to look at it, we need to advance it forward now.
    d. James Davis-Martin (VADEQ/WQGIT Vice Chair): With Ag land uses, we have a detailed fallback position. What is the fallback if we hit a glitch in the 6 month process moving forward? How do we account for stream loads sediments and nutrients?
        i. Gary Shenk (EPA/CBPO): it is a complicated issue, and we don't really have an answer yet.
    e. Bill Keeling (VADEQ): There has to be a drop dead date for these land uses. We need them by April or else we can't do the historic data cleanup.
        i. Volk: We need to make sure that happens, April must be the deadline.
3. Can we proceed forward?
    a. Dave Montali (WVDEP/Modeling WG Co-Chair): Yes, with the provision that there is additional work going on with trampled riparian pasture.
        i. Davis-Martin: Why can't that be a pasture within a riparian area overlay?
        ii. Mark Dubin (UMD/CBPO): We are looking at that possibility. Right now, it most likely will not be a land use.
    b. Katherine Antos (EPA/CBPO): Can we charge the Urban Stormwater Workgroup with updating MS4 overlays?
        i. Volk: Yes, we will ask them to do that.

- Rich Batiuk (EPA/CBPO): Let's get more excited about monitoring data and provide Joel and Jeni with a little more feedback.

Meeting Adjourned: 5:14pm

Wednesday, October 8

Meeting Convened at 9:04 AM

2014 Land Use Projections

Matt Johnston (UMD, CBPO, Agricultural Modeling Subcommittee Coordinator)

For more information, please see Matt's presentation.

Discussion:

- James Davis-Martin (VADEQ/WQGIT Vice Chair): Does the variability increase when you look at a finer scale?
    - Matt Johnston (UMD/CBPO): Yes, it definitely does. At the county level, things can move around a lot.
- Dave Montali (WVDEP/Modeling WG Co-Chair): What is the status of new septic projections?
    - Peter Claggett (USGS): We are still working on those, we will send them out for approval when we have them.
- Mark Dubin (UMD/CBPO): The Ag Workgroup asked for more projections. The takeaway is that the trends are the same even though there are a few data corrections.
- Melanie Davenport (VADEQ): I have concerns about the implications of making the updates to the 2014 land use projections in the middle of a milestone period (2014-2015), rather than prior to the beginning of the next milestone period so the 2014-2015 milestone is evaluated on the same land use that it was developed. Is there a possibility that I will have to explain to the governor's office that we haven't met milestones because of changes in projections and land uses?
    - Suzanne Trevena (EPA Region III): Changes in projections and land uses may make it easier or harder to hit milestones targets, but we compare to a trajectory line, and you are still aiming for the same trajectory point.
    - Johnston: Land uses alone will not move the needle. The main change is that we now have better data.
    - Bill Keeling (VADEQ): But the burden still lands on the jurisdictions.
- Ann Swanson (CBC): At the technical level we can say we have better data. But at the policy level, the estimates are changing and it affects the jurisdictions. We need to explain any changes carefully.
- Johnston: The debate is that you either have a course correction now, or you have a bigger one down the road.
- Swanson: Could you actually introduce all of this in 2017 because there will be a big change in the model anyways, rather than at these 2 year milestones?
    - Trevena: We need to consider that. The question is whether we want better data now, knowing things will change.
- Lee Currey (MDE/Modeling WG Co-Chair): We want to be evaluated on a consistent basis. We want to know that our changes made the difference. If changing information keeps you from making it, that is tough, but we want to be evaluated on the same set of data as the milestones. We could rerun our WIP on new information.
- Claggett: Why don't we track implementation from the jurisdictions? Did you do what you said you were going to do?
    - Jenn Volk (UD/WQGIT Chair): Because jurisdictions never do exactly what they say they're going to do.
    - Davis-Martin: I agree with Jenn. That would be evaluating jurisdictions ability to forecast.

- Jim Edwards (EPA/CBPO): From an oversight perspective, we will note if a changing BMP efficiency is the reason why you didn't meet your milestone commitment, and you will not be dinged for that. We have done that in the past for Delaware.
- Dianne McNally (EPA Region III): We have to also consider the BMP efficiency changes that may happen. While we may not have land use changes in the next two years, we will have other changes to consider.
- Dubin: The Agriculture Workgroup lobbied the WQGIT hard for factoring in the 2012 Ag Census data into the 2014 land use projections and asks the WQGIT to approve the new land use projections.
- Sally Claggett (USFS/CBPO): We have to consider the changing loading rates in the future as well.
- Montali: If we look at these projections and find something wrong later, can we still adjust them?
    - Johnston: It is not a review of whether or not you like the numbers, it is just for finding something that looks really wrong. So the answer is yes, but we just have a tight deadline. The drop dead date is December 1, 2014.
- Currey: What happens to our current 2015 milestone with this information? Does it get re-run?
    - Trevena: We are talking with the Milestones Workgroup about how to update and change your milestone commitments if necessary.
- Volk asked for any objections to approving the 2014 Ag Land Use projections as presented.
    - No objections were raised.

DECISION: WQGIT approved adopting the updated 2014 land use projections. The jurisdictions have a two week period, through October 20, to review their updated 2014 land use projections and identify any questions or significant changes that they need Chesapeake Bay Program Office staff to further investigate.

Trapping Capacity of Dams and Local Impounds

Summary: *Lew Linker discussed the status of the Modeling Workgroup's collaboration with the U.S. Army Corps of Engineers Lower Susquehanna River Watershed Assessment study for the assessment of trapping capacity behind dams, especially the Conowingo, as well as greater representation of local impoundments and reservoirs throughout Phase 6 Watershed Model domain.*

Lew Linker (EPA, CBP, Modeling Workgroup Coordinator)
For more information, please see Lew's presentation.

Discussion:

- Dianne McNally (EPA Region III): The additional studies will be completed in 2016? When will the decision point be?
    - Lew Linker (EPA/CBPO): 18 months after their initiation, the studies will be done. As they finish, we will bring them to the Modeling Workgroup and we will apply the new data as soon as it is available.
- James Davis-Martin (VADEQ/WQGIT Vice Chair): In terms of the Watershed Model development, we don't have to make any changes to the model because of the Conowingo Dam, but the calibration changes, right? Do we have to make any specific changes to the Watershed Model?
    - Linker: The Conowingo really can be refined, and we will be looking at the representation of the 1996 storm in the model, and we have a simulation that goes through 2011. So as well as we can, we will be using the new data.
- Davis-Martin: But we will not have the new studies in time for those decisions in October 2015?
    - Linker: We would have the benefit of the 2011 storm to calibrate to, as well as several others, but the study will not be complete.

- Davis-Martin: If you are going to make changes to the model after the review period in 2016, doesn't that necessitate another review period?
    - Linker: Yes, I think that could be another decision point for this group.
- Davis-Martin: Should we make a decision to just target a set of reservoirs? When and how will those decisions be made?
    - Linker: With respect to the SPARROW analysis, we would be able to use information pretty globally. We would want to get as many reservoirs included as possible. Whatever we can do to get that information from the appropriate agencies, would be most welcome.
- Karl Berger (MWCOG/LUWG Co-Chair): The Conowingo sort of functions as a BMP whose behavior changes overtime, so is the goal to do a dynamic simulation?
    - Linker: Yes, I think that would be a natural evolution of the knowledge.
- Ann Swanson (CBC): It appears we have a choice between addressing the load through the Susquehanna, or through spreading it out?
    - Linker: Yes, but there are also other decision points that could be explored, and I think we should look into those alternative scenarios.
- Jenn Volk (UD/WQGIT Chair): So looking at our Midpoint Assessment schedule, they will need to fast-track those studies because we are supposed to be in the review phase by the time that report with new information becomes available.
- Dave Montali (WVDEP/Modeling WG Co-Chair): We should have a decision point in October 2016 about whether or not we want to include the new information. I think we should consider all options now, and look at this again once the information is available and we have had the opportunity to evaluate it.
- Rich Batiuk (EPA/CBPO): It is not just about the Bay TMDL, but we have an active relicensing of the dams, and we got that because of our commitment to look at these loads. I agree with Dave that we need to keep our eyes on this issue and come back with another decision point once we have all the information.
- Bruce Michael (MD DNR): The studies are ongoing, and while the report may not be completed until 2016, we may have some more good information available to us earlier.

ACTION: The Modeling Workgroup will work to refine the schedule of needed actions and decisions related to enhancing both the Phase 6 Watershed Model and the Chesapeake Water Quality/Sediment Transport Model with new data and information on the lower Susquehanna River watershed's three dams and reservoirs and the transport and fate of nutrients and sediment from the lower Susquehanna River watershed and dams/reservoirs in the upper Chesapeake Bay. The Modeling Workgroup will ensure all these refinements can be made in the context of the overall agreed to schedule approved by the WQGIT.

ACTION: The Modeling Workgroup will further develop options for how it can address the thousands of impoundments mapped throughout the Chesapeake Bay watershed within the Phase 6 Watershed Model.

ACTION: The jurisdictions will respond to the Modeling Workgroup's forthcoming data call for more information on the mapped small impoundments.

FUTURE DECISION: What does the new information suggest and how will it be incorporated into the Phase 6 Watershed Model? What is the impact to the TMDL and WIPs?

Tidal James River Chlorophyll-a Water Quality Standards Reevaluation

Summary: *Arthur Butt provided an update on the status of the James River Chlorophyll-a criteria assessment. This assessment will determine the criteria necessary to meet water quality standards in the James River.*

Arthur Butt (VADEQ)

For more information, please see Arthur's presentation: *Attachment*

Discussion:

- Dianne McNally (EPA Region III) and Jennifer Volk (UD/WQGIT Chair): How does this schedule fit into the Phase 6 Watershed Model schedule?
- Arthur Butt (VADEQ): CBPO and James River modelers will meet next week to discuss modeling needs, possibilities on how this model will be used to inform the Phase 6 Watershed Model, and what the timeline will be.
- James Davis-Martin (VADEQ/WQGIT Vice Chair): These James River modeling results seems like they will have more of an effect on the WQSTM, than the Watershed Model development.
    - Lewis Linker (EPA/CBPO): Yes, and the CBPO modeling team will be discussing boundary conditions with the James River modelers next week.
- Rebecca Hanmer (Retired/Citizens Advisory Committee): When results of this study are finalized, are there other segments or areas that would benefit from this type of study or could benefit from these results?
    - Butt: Yes, the relationships developed during the James River Study will very likely be applicable in other areas of the Chesapeake Bay.
- Lee Currey (MDE/Modeling WG Co-Chair): Framework of the Watershed Model can support information from multiple models and as Lewis Linker (EPA/CBPO) stated, the CBPO and James River modeling teams will be meeting next week to discuss boundary conditions in order to work this information into the WQSTM. Maryland will be reviewing this study, which covers how to set effective and scientifically defensible Chlorophyll *a* criteria and Maryland plans to use it to help inform their decisions in the future.

DECISION: The WQGIT approved the standing request for a STAC sponsored independent scientific peer reviews of the proposed revised chlorophyll a criteria for the tidal James River, the James River watershed model, and the James River tidal water quality model.

DECISION: The WQGIT agreed to continue to proceed forward with the schedule and process as presented, recognizing more work needs to be done by the Modeling Workgroup in firming up exactly how the set of James River watershed/tidal James River water quality models will 'communicate' with the Partnership's Phase 6 Chesapeake Bay Watershed Model and Chesapeake Bay Water Quality/Sediment Transport Model.

FUTURE DECISION POINTS: Rich Batiuk (EPA/CBPO):

(1) Virginia has agreed to have the James River analysis (criteria and models) through STAC independent peer review.

(2) Virginia will review the results of the study and make a decision on whether or not to change the criteria for the James River. If there is a change, the Chesapeake Bay Program Partnership will have to determine how this will affect the balance of loads.

(3) Decision on if and how the models/results will be incorporated into the current CBPO modeling system.

(4) CBPO state partner decisions on how this information will be used outside of the James River (new/changes in other criteria in different parts of the watershed)

Model Data Processing & Modeling Baseline

Summary*: The Ag Modeling Subcommittee (AMS) of the Agriculture Workgroup is working on the development of new datasets to enable and support enhanced analyses and decisions. Updates to fertilizer and manure application are areas of particular focus. The AMS has prioritized the list of potential updates to Scenario Builder based on their impact on modeled nutrient and sediment loads and are currently discussing land use definitions. View the presentation by Curt Dell (ARS) and Matt Johnston (UMD/CBPO), Chair and Coordinator of the AMS here.*

Discussion:

- James Davis-Martin (VADEQ/WQGIT Vice Chair): Does AMS need the manure data to be in place before the manure spread process can be developed?
    - Curt Dell (USDA/AMS Chair): We are going to start addressing the conceptual part of the manure spread process as we continue to work out the data source issues.
- Scott Phillips (USGS): What scale will the data be available?
    - Dell: Census of Agriculture data is published at the county scale. There are confidentiality issues with smaller scales.
- Rich Batiuk (EPA/CBPO): What additional help do you need from: CBPO staff, other workgroups, WQGIT, and the jurisdictions?
    - Matt Johnston (UMD/CBPO): AMS does not have access to biosolids data and we have asked the Wastewater Workgroup to help with data collection. If WQGIT members think biosolids data is a priority, please identify it as a priority.
    - Jenn Volk (UD/WQGIT Chair): Recommend offering help to the states on compiling the data needed for AMS.
- Tanya Spano (MWCOG/WWTWG Chair): Wastewater Workgroup did discuss collection of biosolids. Are the biosolids a higher priority than other projects?
- John Rhoderick (MDA/AgWG Co-Chair): Is AMS collaborating with those working on the airshed model to determine influences of volatilization?
    - Dell: AMS has not yet discussed volatilization, and will discuss in the future.
- Ted Tesler (PADEP): Volatilization will become increasingly important over time with more focus on manure technologies and other treatment and practices that are effecting this as a source or a place of reduction of load.
- Davis-Martin: Recommend only including biosolids data if it is available from all states.
- Beth McGee (CBF): As we upgrade Wastewater treatment systems we'll continue to get more questions about biosolids. Recommend including biosolids for all states.
- Gary Shenk (EPA/CBPO): In Phase 6 we are considering a shift toward defining the total mass manure nutrients and the total mass of fertilizer nutrients. Recommend that we consider the total mass of all sources including biosolids.
- Mark Dubin (UMD/CBPO): Support including biosolids data.
- Tesler: PA may have difficulty providing the biosolids data in a timely way.
- Volk: What will be the deadline for biosolids data?
    - Johnston: September 2015 is the data deadline for all sources.
    - Volk: Recommend EPA support to help states who have trouble collecting the data.
- Davis-Martin: Consider backing up the deadlines for receipt of the critical data sets—biosolids, manure, fertilizer data—into the June timeframe from the September deadline so that we have the needed data in hand when the Subcommittee is determining the collective effect of all that new data on each of the watershed counties.
- Dianne McNally (EPA Region III): EPA Region III has some biosolids data.
- Volk: Are there any objections to including obtaining biosolids data as a Midpoint Assessment Priority?

- There were no objections.

DECISION: The WQGIT decided that obtaining biosolids data from wastewater treatment facilities is still a midpoint assessment priority and that June 2015 is the deadline for providing that data to the Chesapeake Bay Program Office's Modeling Team. Tetra Tech contract support is available to the jurisdictions if they need assistance to collecting that data.

ACTION: Curt Dell, Matt Johnston, and Gary Shenk will meet to review the schedule of work for the Agriculture Modeling Subcommittee is meeting the scheduled needs of the Phase 6 Watershed Model Team.

ACTION: The Agriculture Modeling Subcommittee will determine if and where it could use additional resources—staff, contractor, and funding—to better ensure it can deliver on its lengthy list of products and delivered as presented at the meeting. Curt Dell, Chair, and Matt Johnston, Coordinator, will work directly with Rich Batiuk, EPA CBPO, on addressing those resource needs.

ACTION: The WQGIT requested additional definitions of volatilization.

Watershed Model Calibration Methods

Summary: *The Modeling Workgroup discussed revisiting the Watershed Model calibration methods with the goal of improving local watershed results, including revisiting regional factors. This work also includes activities to extend the simulation period and to revise the Airshed and Water Quality Sediment Transport Models.*

Lee Currey (MDE, Modeling Workgroup Co-Chair), Gopal Bhatt (Penn State), Gary Shenk (EPA)

For more information, please see their presentation: *Attachment*

Discussion:

- Gary Shenk (EPA/CBPO): Programming logic will need to be finalized early (spring 2015). These are the concepts of how things are going to be logically put together (not the final data), for example how the manure spread is handled. The Modeling Workgroup will be continually updating the prototype as information is provided to them, so the sooner the information is given to them the sooner it can be incorporated and tested. This way the model will begin to look more and more like the 2016 Phase 6 final model product over time. If all of the information is dumped on the model at the last minute, then there will be significant and major changes to the model all at once. Although the partners will still have the year to review the model, they will have less time to review the individual differences that the changes will cause.
- Lee Currey (MDE/Modeling WG Co-Chair): This is not a new timeline. It was brought to the WQGIT in February 2014.
- Jennifer Volk (UD/WQGIT Chair): This timeline should be considered the main timeline and all others need to fit into this schedule.

DECISION: The WQGIT decided that the Phase 6 Watershed Model calibration and review schedule will form the core schedule on which the rest of the midpoint assessment schedule will be based on.

ACTION: Lucinda Power will take the lead in working with the WQGIT's workgroups and the Modeling Workgroup to ensure their respective work and deliverable schedules match up with the Phase 6 Watershed Model calibration and review schedule. She will work incorporate all other midpoint assessment deadlines and decision points into the calibration/review schedule.

ACTION: The Modeling Workgroup requested that all data be submitted as soon as possible. The sooner the data is received for incorporation into the Phase 6 Watershed Model's version of Scenario Builder, the more similar the prototype working versions of the watershed model and scenario builder will look like the 2016 versions of the model/Scenario Builder.

Historic Data Cleanup

Summary: *The Bay jurisdictions, under the leadership of the Watershed Technical Workgroup and the CBPO Modeling Team, are actively working to clean up the historical record of BMP implementation. Ted Tesler provided an overview of the schedule driving this work, and how it relates to the schedule for the Phase 6 calibration.*

Ted Tesler (PA DEP, Watershed Technical Workgroup Chair)

For more information, please see Ted's presentation.

Discussion:

- James Davis-Martin (VADEQ/WQGIT Vice Chair): Is it possible to just ignore pre-calibration data and calibrate the model to current water quality monitoring data?
    - Gary Shenk (EPA/CBPO): If we assume there are no BMPs at all before 2005 we can get a reasonable calibration, but you run the risk of over-allowing BMPs on the landscape because there is a saturation point. So it is not really a viable alternative.
- Davis-Martin: Is it a workable alternative to start reporting for calibration in more recent progress years?
    - Shenk: If you didn't start recording BMPs until 2010 or some other recent year, most of what we'd be calibrating to would be the no-BMP state, which is not a great option either. A better option, though also not ideal, is to assume zero BMPs in 1985 and ramp up linearly.
- Davis-Martin: What about picking a year a little further back, perhaps in the middle of the calibration?
    - Shenk: I understand that it will be really hard to go back to 1985 to find out what BMPs were in the group, but we need to push it back as far as we can in order to get really good data. Maybe start at zero in 1985 and linearly ramp up to the year 2000.
- Dave Montali (WVDEP/Modeling WG Co-Chair): How do we verify those BMPs that we are linearly ramping up?
    - Shenk: We wouldn't, but it would be better than zero all the way until 2010.
    - Montali: You need to find a way to ramp up to the year when you think you have good data, whatever that year may be.
- Rich Batiuk (EPA/CPBO): If you look at our guiding schedule, we need historical data in 0ctober 2015 in order to move forward. We need to use the next year to get the best data we can.
- Dana York (Green Earth Connection, LLC): Maybe look at cost data to see what was being paid for, which might help with estimates and trends at least back to 2002.
- Mark Dubin (UMD/CBPO): We will still be using all the background data, but if we are just using a straight line projection of BMPs, it will not fit with the flexibility of all the other data.
- Matt Johnston (UMD/CBPO): Can we get direction from everyone for the Watershed Technical Workgroup on what time period to focus on? When do the states feel comfortable with providing data?
- Davis-Martin: We also need to consider the lifespans of practices. All of those early-year BMPs will likely expire out of the modeling system before the end of the calibration period.

- Tanya Spano (MWCOG/WWTWG Chair): How much accuracy do you gain by adding BMPs from 1985? You need to have boundaries. What guidance can this group provide for how to rationally bind this data?
- Montali: I like Matt's idea, but I wouldn't bind it to 2002 for everything, we can maybe go earlier on some elements.
- Jenn Volk (UD/WQGIT Chair): The WQGIT requests for states to focus their historic BMP data collection on 2000-present, but to try to go back as far as possible.
    - Beth McGee (CBF): If you do that, you still have a screwed-up baseline. Can we pay attention to the fact that the foundation of what we are building on is messed up? At least clean up data snafus that you are aware of.
- Volk: Could the modeling team handle if a state submitted a BMP back from 1990? Can you mix and match real data versus interpolation?
    - Shenk: Yes, we can do that now.
- Montali: Zero BMPs is wrong, and if you can't really figure it out past a certain period of time, maybe we should use what is already in Phase 5.3.2 of the Watershed Model.
- Davis-Martin: Will we apply lifespans for BMPs reported through the calibration?
- Volk: That is an item for a potential future meeting. We will combine it with a discussion on BMP verification at the October 20th meeting.

DECISION: The WQGIT agreed that the seven watershed jurisdictions will focus their historic BMP database clean-up from 2000 to the present, while still encouraging each jurisdiction to clean-up their entire BMP data record to support both Phase 6 Watershed Model calibration and ongoing work on explaining the long term monitoring data trends in the watershed and tidal waters.

ACTION: The Watershed Technical Workgroup will identify what resources are needed to ensure all seven jurisdictions will have their respective historic data cleanups done and complete by October 2015.

ACTION: The Watershed Technical Workgroup will revisit BMP lifespan considerations at a future WQGIT conference call.

Atmospheric Deposition

Summary: *The Phase 5 precipitation, meteorology, and atmospheric deposition data covered the period 1984-2005. In order to take advantage of intensive shallow water estuarine data, new watershed stations, and recent Conowingo dam data, Lew Linker gave a brief summary of how the watershed and airshed simulation will need to be extended.*

View Lew's presentation here.

Discussion:

- Ted Tesler (PADEP/WTWG Chair): What is the total mass of nitrogen reduction?
    - Lew Linker (EPA/CBO): There are a couple ways to get at the total mass. Generally it is about a 45% reduction. You could apply this directly to the deposition rates to get at the delivered rates, however there is attenuation between deposition and delivery to the Bay.
- Mark Dubin (UMD/CBPO): Note that even though emission regulations are in place now, there will be a time period until agricultural vehicles are fully switched out.
- Tanya Spano (MWCOG/WWTWG Chair): When will you know whether EPA's atmospheric deposition commitments under the Bay TMDL will be met?
    - Linker: Based on the Phase 5.3.2 Watershed Model, WQSTM, and CMAQ model it looks like EPA is on track. Re-evaluation will occur in 2017 as with all allocations.

Decisions/Next Steps

- Jenn Volk (UD/WQGIT Chair) reviewed the action items, decisions, and next steps from the meeting.
- Katherine Antos (EPA/CBPO): Recommend sharing a detailed agenda of WQGIT agenda items for the coming year with updates to the Management Board and Principal's Staff Committee.

ACTION: CBPO staff will work with the WQGIT Chair and Vice Chair to incorporate a detailed scheduled for the topics for the upcoming monthly WQGIT conference call into the detailed MPA schedule to be developed as an action item from this meeting.

Meeting Adjourned: 3:11pm

In-person participants:

Participant Name	Affiliation
Alisha Mulkey	MDA
Amanda Pruzinsky	CRC
Ann Swanson	CBC
Beth McGee	CBF
Bill Keeling	VADEQ
Bruce Michael	MD DNR
Chris Brosch	VT/VADCR
Chris Day	EPA
Curt Dell	ARS
Dana York	Green Earth Connection
Dave Montali	WV DEP
David Foster	Phoenix Initiatives
David Wood	CRC
Dianne McNally	EPA
Dinorah Dalmasy	MDE
Doug Moyer	USGS
Emma Giese	CRC
Evelyn MacKnight	EPA
Gary Shenk	EPA/CBPO

George Onyullo	DDOE
Gopal Bhatt	Penn State
James Davis-Martin	VADEQ
Jamie Mitchell	HRSD
Jason Keppler	MDA
Jeff Sweeney	EPA/CBPO
Jen Sincock	EPA
Jeni Kiesman	USGS
Jenn Volk	U Delaware
Jenny Tribo	Hampton Roads PDC
Jeremy Hanson	VT
Jim Edward	EPA/CBPO
Joel Blomquist	USGS
John Rhoderick	MDA
John Schneider	DNREC
Karl Berger	MWCOG
Katherine Antos	EPA/CBPO
Kelly Gable	EPA
Kristen Saacke-Blunk	Headwaters LLC
Kristen Wolf	PA DEP
Lee Currey	MDE
Lew Linker	EPA/CBPO
Lucinda Power	EPA/CBPO
Marel King	CBC
Mark Bennett	USGS
Mark Dubin	UMD
Mary Searing	DDOE

Matt Johnston	UMD
Melanie Davenport	VADEQ
Mike Langland	USGS
Ning Zhou	EPA/CBPO
Olivia Devereux	Devereux Consulting
Pat Gleason	EPA
Peter Claggett	USGS
Peter Tango	USGS
Rachel Rhodes	MDA
Rebecca Hanmer	Forestry Workgroup Chair
Rebecca Murphy	UMCES
Reid Christianson	CWP
Rich Batiuk	EPA/CBPO
Ross Mandel	ICPRB
Sally Claggett	USFS/CBPO
Scott Phillips	USGS
Suzanne Trevena	EPA
Tanya Spano	MWCOG
Ted Tesler	PA DEP
Teresa Koon	WV DEP
Thomas Wenz	EPA/CBPO
Whitney Katchmark	Hampton Roads PDC
Will Hunley	HRSD

Participants on the phone 10/7
Ruth Izraeli, EPA Region II
Ben Sears, NYSDEC
Matt Monroe, WVDA
Lindsay Dodd, MASCD

Sheryle Quinn, Dept. of Navy
Andy Zemba, PADEP
Mukhtar Ibrahim, MWCOG
Mark Bennett, USGS
Bill Angstadt, DMAA
Neely Law, CWP
Mary Gattis, LGAC
Heidi Bonnafon, MWCOG

Participants on the phone 10/8
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Ben Sears, NYSDEC
Ruth Izraeli, EPA Region II
Bill Angstadt, DMAA
Lindsay Dodd, DMAA
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Heidi Bonnafon, MWCOG
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Alana Hartman, WVDEP