Attachment D

Compiled Workgroup, Local Government, and Non-Agency Organization Priorities for 2017 Midpoint Assessment

Please note that jurisdictions, place names and agencies are occasionally, if not always, blacked out in the document to keep the original comments intact and the contributors anonymous.

General Comments

- Need to account for actual trading of loads (whether permanent or for a set period/temporary) vs. offsets (similar to TOWG comments) – and this applies to WWTPs not just others seeking trading opportunities
- Need to reconcile WIPs/stormwater permit 'progress' with how such progress is accounted for in terms of TMDL 'progress'
- Need to account for groundwater and other 'lag time' when assessing load reduction progress (vs. implementation progress)
- Need to establish some sort of 'de minimus' load level so that 'feeding the WSM' is not the driver for collecting all data
- Need to demonstrate actual progress through monitored load data, especially for a range of practices over a large enough land area to be detectable (vs. BMP by BMP accounting approach) - a high priority
- Need to prioritize reduction efforts in defined watersheds to demonstrate progress and confirm that reductions can be achieved/wide-spread practices do achieve results – to get buy-in/support
- Need to acknowledge realistic timeframes for getting suite of practices actually accomplished (vs. politically driven goals)
- Need to acknowledge time and money links, and broader environmental implications (benefits and impacts) of making certain policy choices
- WSM Ph6 needs to have across the board reliability and use annual inputs, in order to show agricultural contributions in a meaningful, accurate way.
- Model world vs. implementation: need to focus on actual restoration.
    - Implementation: Need increased funding, technical assistance staff, and consistent, realistic criteria.
    - Need time and patience in getting the job done.
    - Need a constructive relationship with EPA and the other states.
- Ph6 WSM needs to be functional for both state and local governments at the respective scales they work at and make decisions on.
    - Hesitant to promote increased fine-tuning because feels the WSM is not intended for local/individual farm scale.
    - Other tools need to be available for local level managers that are compatible with the WSM.
- How the Bay Watershed Model works needs to be transparent and easily communicated to localities and local partners, particularly when you/we are asking them to significant environmental improvements.
    - Public needs to better understand the WSM and how it works.

- Allow for new technologies to continue to be incorporated in the WSM as well as the partners' tracking, verification and reporting systems.
    - E.g. manure technologies.

- Maintain flexibility for incorporating new practices.
- Recognition of lag time lacking in the Model. When water quality improvements are not seen as simulated, this must be explained to the public.
- Need to foster continued discussion of multiple models:
    - Consider a host of local models feeding into the WSM
        - Method to include local data, increased specificity.
    - Multiple modeling approach is worth examining, just need to be careful.
- Helpful at the October WQGIT meeting to have an agenda item related to application of the CBWM at different scales. Specifically, is it worthwhile to try and take the CBWM to a smaller scale, or would it be more helpful to integrate other modeling/decision-support tools that were designed for community or field scale applications? If so, how can those tools better share information or otherwise enhance compatibility with the CBWM?
- Also, we are now using the CBWM as both a planning tool and an evaluation tool. Are these purposes compatible? Do any modifications need to be made to reconcile these purposes?
- Strongly recommends that the state and EPA consider the number and magnitude of gaps in information and resources and dedicate more staff and funding resources to the Chesapeake Bay TMDL implementation.
- Expand the Chesapeake Bay Preservation Act to include all localities within the Chesapeake Bay Watershed.

<u>Initiatives for Policy Support</u>

- The region supports policy efforts to realize cost effective nutrient reductions. The following nine initiatives are discussed in this section:
    - Expand the Nutrient Credit Exchange program;
    - Expand the Chesapeake Bay Preservation Act (CBPA) to the entire Chesapeake Bay watershed;
    - Expand septic system pump-out requirements statewide, require retrofits for failing systems, and grant counties the authority to require sanitary sewer system connections where appropriate.
    - Amend the [redacted] to allow all [redacted] localities to adopt an ordinance containing a set of tree canopy preservation requirements based on development density.
    - Provide permit controls for stormwater runoff from currently unregulated urban lands;
    - Define and encourage redevelopment;
    - Streamline the Resource Protection Area (RPA) process to facilitate BMPs that provide nutrient reductions from urban waterfront or coastal areas;
    - Encourage voluntary stormwater reuse in appropriate areas;
    - Partner with non-governmental organizations (NGOs) to promote private property BMP retrofits; and

Review Process

WTWG:

Model Review Process

- Desire to improve the model review process and its transparency.
    - Clarification on how modeling issues are prioritized
        - WTWG should prioritize modeling recommendations before they are sent for WQGIT approval.
- Minimum of six months of testing before a Phase 6 model is finalized.

AgWG:

Model Review Process

- Timeframe: present until 2016 to develop Phase 6 of the Model. Phase III Watershed Implementation Plans (WIPs) to be completed by 2017.
    - This does not leave sufficient time to identify and fix likely problems that exist in the Phase 6 of the Chesapeake Bay Watershed Model (WSM) to accurately evaluate next WIPs.
    - Jurisdictions will need 6-9 month period of access and testing to the next version of WSM prior to Ph III WIP submission.
    - As jurisdictions are developing Ph III WIPs, need to be satisfied that the correct actions are occurring and accounted for.

Model Review Process

- Ensure sufficient time for trials, groundtruthing of WSM Ph6 using land river segment scale data from those subwatersheds where we have more detailed input data/water quality monitoring data available—[redacted]

Model Review Questions

- Can we build a timeline that provides for sufficient testing of data and assumptions earlier in the process before we get too far down the road, forcing last minute changes and quick fixes? We as partners also need sufficient time to understand the Model sufficiently to be able to explain it to our members/constituents and other stakeholders, building confidence in the process.

Modeling Priorities

- Improved characterization of pervious areas in the model in regard to fertilization status and risk factors for N and P loss
- Improved simulation of urban sediment dynamics
    - Sediment loadings: There appears to be a disconnect between sediment loadings and the work being done by the stream restoration expert panel on the amount of sediment input into the system (Piedmont stream erosion would suggest there is

more sediment). This could be due to sediment deposition in the larger scale watershed above the calibration points. Greater inclusion of explicit stream erosion in head water streams needs to be included; much of the sediment and phosphorus may be coming from headwater stream erosion versus land surface washoff.

- From our perspective, the highest priority for the Urban Sector in Delaware is revisiting the sediment loading module in the model. As we noted in our Phase I and Phase II WIP, the sediment loading that's allocated to the urban sector is about 1/3 of the total Delaware allocation. Since the urban land classes only constitute about 10% of the total [redacted] land area draining to the Chesapeake Bay, this appears inordinately high. In addition, about 75% of the urban land is classified as low density residential with mostly disconnected impervious areas. I haven't gone through in detail to check the loadings for the [redacted] Coastal Plain segments, but I suspect they are similar. I'm not sure if the problem is a Piedmont vs. Coastal Plain issue or whether the methodology used in the model is not reliable at these low levels of imperviousness, but in either case we would request that the modeling team take another look at this to verify the results.

- Better characterization of illicit discharges/SSOs/Septics and other sources of N and P during dry weather conditions
  - How will future sewer and water infrastructure improvements/funding affect loading rates and monitoring data?
  - The number of On-Site Sewage Disposal Systems seem to be over-estimated in the Watershed Model. This needs to be corrected in some fashion.
- Better characterization of the effects of local reservoirs/impoundments on load delivery
- Dealing with the enormous variability in urban loadings from segment to segment and state to state in Phase 5.3.2 of model
  - Increase the size of watershed model segments to reduce error caused by linear averaging/splitting of data.
  - Use the current year rainfall for the 10th year of hydrology as an alternate run for temporal comparison.
  - Virtualization of automatic calibration for headwater areas so split-basin counties have similar loading rates

<u>Incorporation of Local Data</u>

- The Bay Program should develop a process for incorporating local land use data into the Bay models as soon as possible and, at a minimum, ensure that the information is incorporated into the 2017 model calibration. As part of the Phase II WIP process, many localities have mapped their land use/land cover. This information is more appropriate for implementation planning and tracking progress than using the current methodology for estimating land use throughout the Bay watershed. The Bay modelers should provide criteria for the type and format of land use data that they can use in the models. [redacted] should develop a framework for collecting local data and issuing BMP guidance and updates on the Bay program's modeling efforts. The lack of a framework and clear expectations has frustrated local planning efforts and development of implementation strategies. Specifically, the state should provide:
  - Template for tracking BMP data and schedule for submitting the data.
  - Frequently asked questions for Urban BMPs.

- Updates describing recently proposed BMPs, approved BMPs or revised modeling assumptions.
- Process for localities to request addition of alternate BMPs to the Chesapeake Bay Watershed Model.
- Assumptions regarding the redistribution of locality target reductions based on the implementation of the fertilizer ban, additional L3 level of reductions on federal lands instead of L2, and changes to air deposition due to the construction or closure of stationary sources.
- Schedule and process for incorporating locality corrections for pre-2006 BMPs.

Implement Water Quality Monitoring in Coastal Virginia to Estimate Urban Loads

- The Bay Program does not collect and calculate nutrient and sediment loads for the tidal areas of [redacted]. The technology and equipment exists to measure the water quality and flowrates but it is expensive and more difficult than gathering data in non-tidal areas. The Bay Program should gather data from tidal zones to validate loading rates and measure the ratio of nitrogen, phosphorus, and sediment in urban runoff from [redacted] Coastal Plain. [redacted] should consider partnering with localities to provide financial assistant to expand water quality monitoring in tidal areas.

Evaluate Impact of Extreme Weather Events

- This year the impact of major storm events on water quality in the Bay attracted media attention and scientific interest. However, the research remains incomplete and fails to provide assessments on whether extreme weather events have a more significant impact on the long-term water quality in the Bay than the day-to-day nutrient reductions. Given the significant investment of funds required to meet the TMDL by 2025, the Bay Program should focus research on evaluating the potential need for BMPs designed to minimize the impact of extreme storm events.

Revise Segmentsheds in Each Basin to Reflect Hydrodynamics

- Several segmentsheds in the Hampton Roads region may have been incorrectly assigned to drainage basins. The localities request that the state or Bay modelers provide the justification to support basin assignments for segmentsheds, specifically, the assignment of the Lynnhaven River to the James River basin and the assignment of portions of the City of Poquoson to the Mobjack Bay basin, and consider model revisions to accommodate all segmentsheds that discharge directly to the Chesapeake Bay.

AgWG:

General

- Refine methods to evaluate progress.
  - Rather than project growth rates, use actual growth rates on an annual basis.
  - Use actual hydrology, not 10 year averages, to run future progress model runs.
    - This will indicate how predictive the Model is of monitoring results by making direct modeling/monitoring comparisons possible.
- Make the Bay watershed model and Scenario Builder directly availability directly to the community.
  - State and local partners should be in a position to run both ourselves.

    - Community model must be consistent with the WSM.
    - Scenario Builder should also be available to the community as it is an integral component of the Model.
- Improvement of the Watershed Model's calibration methods.
    - Ensure tighter bounds on unit loading rates of land uses so that we prevent loads from varying so widely within a single county.
- Modeling trend of increasing granularity, but data is not there without making assumptions.
    - Need to fit model to available data, not vice versa.
        - Need to consider development of an algorithm takes into consideration the available data and determines the scale at which we can model.

BMP Sequencing

- BMP sequencing on different land uses needs to be resolved.

Watershed Technical Priorities

WTWG:

Backout Procedures

- Resolution of "backout" procedure issues (deals with no action land use).
    - CBP staff will ask for recommendations to accompany the refinement requests.

Progress Reporting Methods

- Review of Kenn Pattison's (PA DEP) suggested changes to progress reporting [several years ago]

Treatment of Litter

- Resolution of lingering questions over how the model handles litter as-excreted vs. as-applied-to-fields.

AgWG:

Treatment of BMPs as a Land Use Change

- Clarify that BMPs are not a land use change.
    - Concurs. Land Use Change BMPs complicate area loads.
    - BMPs should be linked to efficiencies not land use changes, so practices may be more clearly compared to each other.
- Disagrees with notion that BMPs should not be classified as land use changes.
    - Irrigated cropland vs. corn-soy rotations vs. alfalfa: differences require separation of land uses.
        - Current agriculture land uses need to be at least tripled for improved accuracy in the Model.
        - Increase number of land use categories, but stop changing BMPs to land uses.

VAST

- Scrap VAST. Contains too much error, different orders of magnitude than WSM. Poor tool for localities to depend on it as a planning tool.

CAST

- Importance of developing a user interface: develop a lighter version, similar to CAST.

Scenario Builder

- Need a systematic review of the Scenario Builder to update the input data, assumptions, and documentation.
    - Policy and management changes negate the older data.
    - Four specific areas of potential improvement:
        1) Manure volume and analysis.
        2) Fertilizer applications based on real, current data.
        3) Scale: basin TMDLs necessitates basin yield data.
        4) Nitrogen based Nutrient Management (NM) plans included, but does not consider Phosphorus-based NM plans.
            - N-based plans overestimate amount of P; therefore, P-based NM plans must be considered.
    - Manure distribution sequence; yield information; nutrient spread post-manure: all need to be retooled to indicate individual crops within land uses.

BMP Efficiencies

- More dynamic BMP efficiencies: Creating a simple model is well-intentioned, but a simple programming of efficiencies can achieve robust change in terms of reflecting reality.
- Dynamic efficiencies: ability of cover crops to scavenge depends greatly on residual nitrate.
    - Model cannot currently show residual nitrate.
    - Site variables need to be shown.

Treatment of Streambank Erosion

- Streambank erosion needs to be better accounted for in the WSM
    - Loadings may be higher than currently estimated; therefore, include more monitoring data.

Evaluate BMP Effectiveness to Reduce Bacteria Impairments

- In Hampton Roads, many waterways are impaired for bacteria. Localities would like to select BMPs that would address bacteria impairments as well as reduce nutrients. The region requests that [redacted] dedicate approximately $50,000 of the funds for development of TMDL implementation plans to provide an assessment of BMPs that provide nutrient and bacteria reductions.

Evaluate BMP Effectiveness to Reduce Flooding

- Many localities experience extensive flooding and would like to select BMPs that alleviate flooding as well as reduce nutrients. The region requests that [redacted] dedicate approximately $50,000 of the funds for flood control and emergency planning to provide an assessment of BMPs that provide nutrient removal and flood control.

BMP Verification Priorities

AgWG

Agricultural BMP Verification

- Limited producer cooperation causes difficulty in tracking and verification.
    - Priority of locating producers to cooperate with.

Agricultural BMP Verification

- Need to balance the level of effort we invest in generating important input data vs. seeking farm scale BMP tracking and reporting.
    - Remote sensing and other technologies need to be incorporated.
    - 40,000 [redacted] farms in the watershed; therefore, boots-on-the-ground verification for all farms is not possible.

BMP Verification Protocols

- When considering 95% confidence intervals: importance of studies and data points.
    - Scientific defensibility needed.

Land Use Characterization Priorities

Characterization of Pervious and Impervious Area: Current and Future

- The model fails to adequately differentiate between different classifications of urban land use
    - Low-density and high-density urban areas have the same loading rates, despite different hydrologic characteristics
- Part of the increase in urban loads between versions of the Phase 5 model resulted from new methodologies to estimate impervious/pervious lands in rural, suburban/exurban areas; the loads from these areas are not necessarily equal to urban areas even though the model assumes they are, and this could be a potential improvement in the Phase 6 model
- Land use change BMPs, while helpful for modeling, complicate understanding the available land acreage for planning and implementation. BMP efficiencies are much easier to conceptualize
- This work needs to occur before or at least in tandem with examination of methods for finer-scale differentiation of urban land use by the new CBP Land Use Workgroup, since there would appear to be no value in parsing among classes of urban land that all load at the same rates
- Re-examination of the basic setting of N, P and TSS loading rates/calibration process for urban pervious and impervious land use in the watershed model (several folks).
- Land use distribution issues: more urban land than is represented by local data
- Land use loading issues: no differentiation between low density and high density loading rates; low density urban has many features that mimic ESD, disconnected impervious, sheet flow to buffers, etc. There should be differential loading rates for these categories
- Urban tree canopy effects need to be included in the model

Better Characterization of Federal Lands in the Model

- Federal lands can be refined in the next phase of the model

Verification and Ground "Truthing" of Model Land Use Projection

- Annual growth predictions from the Bay Model are used for offset analysis and there are new verification procedures for BMP implementation; will there be verification procedures to ground-truth the model's prediction of growth?

WTWG:

Land change modeling

- Delaware is pleased a land use workgroup is being formed to help ensure that appropriate local data and resources are considered in both current and projected future land use and population (septic vs sewer) data sets.

Designate Wetlands as Land Use Category

- The current land use framework tracks wetlands under the forest category. This causes confusion and suspicion that the wetland loading rates do not reflect the capacity of wetlands to reduce the quantity of runoff and reduce nutrient and sediment loads. The Watershed model should be revised to track wetlands as a separate land use category with an appropriate loading rate.

Urban Stormwater Priorities

USWG:

BMP Assessment Concerns

- Recognition of a BMP/BMP system in the model is needed to address highly erodible lands within stream channels (Legacy Sediments from old Mill Dams, etc.) and other resource restoration activities
- Continue to refine how new technologies or innovative approaches are recognized within the model.
    - Will the 2017 model update allow States to revisit previously submitted BMPs (pre-2012) with the new efficiency rates based on the expert panel's recommendations in 2012
    - The BMP review process is daunting for vendors of proprietary systems

Improving Local Tools

- Local managers desire better tools to show the progress they are making locally through their implementation efforts

Lag Times, BMP Crediting, and Uncertainty

- Many stormwater BMPs may not receive as-built (completion inspections) for 5 or 10 years down the line, so the BMPs are in place but have not been accounted in the bay model. This can make the urban sector look as if it's growing with no BMPs, which is not totally accurate. How can BMPs for new development that are not complete be counted?
- The suite of models should be more upfront in discussion of error/variance within each component and include discussion of sensitivity of input variable so that resources can be matched to correctly address uncertainty.

- Calibration should account for practices that may take years to result in an improvement to water quality. As examples, nitrogen nutrient management may take a decade or longer to show up in baseflow of streams depending on groundwater residence time; and reforestation, riparian buffer planting are given full credit at the time of planting, but will not be fully effective until maturity

WTWG:

General

Land use classification data for the urban sector (we believe urban lands may still be under counted in Delaware - see below)

- Stormwater runoff estimates for the urban sector (we believe the TSS loads from this sector may be higher than in reality)
- Urban stormwater BMP data
    - Currently, stormwater BMPs are grouped into several broad categories and modeling of more specific types of practices may be more appropriate;
    - Source reduction (hydrology) BMPs for the urban stormwater environment, which are promoted as environmentally best, should be more specifically modeled
    - Finally, the following BMPs are not currently captured in Scenario Builder and the model and Delaware plans to work to ensure these practices are appropriately credited by 2017:
        - Rainwater Harvesting
        - Impervious Disconnection
        - Soil Amendments
        - Vegetated Roofs
        - Spill Prevention and Response
        - Educational BMPs

Urban fertilizer usage

- Delaware has provided data demonstrating the substantial decrease in non-farm phosphorus fertilizer sold in the state over the last 10 years. The Urban Fertilizer Management Panel is investigating if and how to appropriately provide credit for Delaware and other jurisdictions without a P Ban but where all available lawn fertilizers comply with standards set by surrounding jurisdictions with P Bans.

Wastewater Priorities

WWTWG:

Wastewater

- Methodologies used in developing Annual Point Source progress runs:
    - Wet weather impact on modeling Point Source Annual Nutrient Reduction Progress
    - Inconsistency in evaluating Point and Non-point Source progress
- Nutrient loads from Minor Industrial Point Sources
- Changes to Point Source WLA due to permanent trades such as Septic Connections
- Accounting for changes in WLA and Offsets both permanent and annual

- Nutrient loads from industrial plants with river uptakes
    - Reporting the net contribution
    - Defining no-net-contribution dischargers
    - The negative net contribution issue

WTWG:

<u>On-site Wastewater</u>

- Onsite wastewater treatment and disposal systems are assumed to be individual standard systems. This can greatly increase wastewater loads.

WWTWG

<u>Septics</u>

- Use of local septic information to improve Bay model - Reconciling local and Bay Program data
- Identifying load from commercial and residential systems
- Accounting for offsets -Septic upgrades/connections
- Affordability issues associated with onsite/septic upgrades for nutrient removal and potential funding sources. We are hearing that concern more from Virginians as we move forward in the process.
- Finally, we offer some comments on septics we recently supplied to EPA through another channel for the Sector Growth Demonstration. These comments are in regards to how the expected load is calculated to demonstrate that a sector is flat or increasing:
    - The last 20 census years are 2000 and 2010; in those years data was not collected on septic systems as it had previously been done. Therefore, looking back over the last 20 years of census data in 10-year increments would not provide the relevant data.
    - Any projections should include commercial as well as residential systems.
    - Virginia has data on the actual number of septic construction permits issued for the last eight years. Using this actual data instead of a estimate from census would give a much more accurate accounting of the number of new systems anticipated. The period of record for construction permits covers both an economic boom and bust period so an average of construction permits issued over that time frame would give a realistic estimate of projected growth through 2025.
    - BMPs are being developed for the onsite sector that will allow credit for nutrient reduction from various system configurations. When those BMPs are finalized and applied, a more accurate load accounting for new growth can be obtained.

<u>Wastewater Upgrades Funding</u>

- Issue a $300 million state bond measure to finance wastewater upgrades, taking advantage of low interest rates

<u>Septic Upgrades Funding</u>

- Expand the Virginia Agricultural BMP Cost-Share Program or establish a new Septic System Cost Share Program to provide 50% of the projected total average annual cost of $114 million to assist required septic system upgrades or replacements, to incentivize denitrifying upgrades to non-failing septic systems, and to allow cost-share funds to be used for connecting septic systems to sanitary sewer systems in sewered areas.

Agricultural Priorities

AgWG:

General

- Climatic impacts on agricultural yields:
  - Highly variable impacts in [redacted] of current drought.
  - Variable needs of farmers and actual production needs to be recognized; need to factor in the effects of drought occurrences and other factors that influence yield.
- Focus on percent changes/Ag census is not reliable.
  - Never considered Ag Census data as a reliable source of data.
  - Need the ability to provide annual data inputs--this includes urban land use data which should not be based on dated projections (e.g. urban growth).

General

Significance of the Farm Bill, especially considering potential effects on NRCS funding/support.

- Accuracy of data (e.g. animal unit estimations, manure generation).
  - Best generalizations need to be determined.
- Consideration of the loss of farmland across the Bay watershed along with the increasing human footprint needs to be fully factored into the WSM.
  - Decreasing farm footprint, increasing human population impact.
  - Approaching time when human animal units > other animal units.

General

- Poultry litter volumes are important to assess, but also look at management changes (e.g. in-house composting) which are changing the actual volumes.
- Scenario Builder on manure application does not consider mineralization; therefore, underestimates nutrient concentrations in manure.

Nutrient Management

- Ph6 WSM needs to be functional for both state and local governments at the respective scales they work at and make decisions on.
  - Hesitant to promote increased fine-tuning because feels the WSM is not intended for local/individual farm scale.
  - Other tools need to be available for local level managers that are compatible with the WSM.
- How the Bay Watershed Model works needs to be transparent and easily communicated to localities and local partners, particularly when you/we are asking them to significant environmental improvements.
- Allow for new technologies to continue to be incorporated in the WSM as well as the partners' tracking, verification and reporting systems.
  - E.g. manure technologies.

Irrigated Cropland Placeholder

- Differences from non-irrigated cropland in mass balance—this is really a land use change.

Farmland Protection

- Farmland protection policies need to be factored into the WSM and its scenarios
    - Land use perpetuity affected by land use and model.

Residual P Issue

- Need to factor in Judy Denver's (USGS-Delaware Office) research on the P life cycle with a focus on the age of P and its availability to stream, ditches on Eastern Shore.
    - Persistence of P in ditches can cause significant difference between monitoring results vs. Model simulations.
        - Important for Model calibrations.
    - Model does not carry P from year to year. Thus, residual soil P cannot be evaluated in Model.

WTWG

P-storage

- The model assumes the P applied is either utilized by plants or lost to the water and does not consider storage in soils; this issue should be examined further.

Phosphorus Based Nutrient Management Plans

- model is not currently able to accurately reflect P-based planning.

Decision Agriculture

- The Nutrient Management Panel is currently reviewing definitions for the various types of nutrient management and the model should consider giving credit to current plans meeting state requirements.

AFO/CAFO Breakout

- What is the accuracy of the method used to determine the AFO and CAFO breakout? and would like this process to be clearly defined and allow for additional modifications based on state level information.

Manure Volume and Nutrient Content

- The Poultry Litter Subcommittee is currently working on assessing the appropriate values to use for poultry litter volume and content and this issue should be resolved prior to 2017.

Crop need assumptions

- The assumptions regarding crop nutrient needs should also be reviewed for potential updates due to genetics and management practices to ensure that the model is not over-assuming nutrients applied to ag lands.

Forestry

WTWG:

Wetland Restoration on Forested Lands

- Forestry workgroup to examine and propose a credit for a practice - reconnecting hydrology to previously drained forested wetlands.

Trading and Offsets Priorities

USWG:

Developing Technical Memoranda [redacted]

- Ensure that Technical Memoranda are consistent with credit or offsetting calculations/credit or offsetting verification programs and model inputs, and allow for flexibility.

TOWG:

Use of PS or NPS Credits to Achieve Compliance

- That, in 2017, jurisdictions could be using PS or NPS credits to achieve the goal of a 60 percent load reduction compared to the 2009 TMDL baseline, assuming that current trading policies remain in place. This means that WWTPs could be using credits to comply with NPDES permits. Sectors beyond wastewater (e.g., stormwater, agriculture through CAFOs) may also be using credits for compliance if trading policies extend to them before 2017.

Developing Offset Policies and Projections

- That, in 2017, jurisdictions could be offseting new loads (e.g., from development, WWTP expansion, new onsite disposal systems) in line with the expectation of TMDL Appendix S. Depending on how offset policies evolve, the traded commodities could be pollutant-based (e.g., N, P, S) or flow-based.
- Building upon the suggested MA discussion topic in a recent Stormwater Workgroup meeting, having jurisdictions reassess their projected numbers for population growth, by developing a protocol to estimate future offset demand. EPA or the states could also release demand estimates periodically based on that protocol.

Additionality

- Evaluating additionality in trading programs, ensuring that purchased credits and offsets constitute reduced loads to both local and mainstem waters.

Incorporating new Technologies

- Continuing to refine how new technologies (for generating credits and offsets) are recognized within the Bay model.

Development of Technical Memoranda

- Ensuring that Technical Memoranda are consistent with credit calculations/credit verification programs and model inputs, and allow for flexibility.
- Continuing a role for the TOWG to facilitate and aid in development of technical memoranda and model inputs/assumptions.