Attachment C

Compiled State and Federal Agency 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

General Comments/Concerns

- The watershed model has been the biggest point of contention throughout the TMDL and WIP processes, with many stakeholders believing that [redacted] source loadings are overrepresented in the 5.3.2 model.
    - Available data from our non-tidal stations seems to validate overrepresentation concerns. It is very important for local stakeholders to accept the watershed model if continued/improved implementation is expected, particularly by non-regulated sources.
    - In the midpoint assessment process, [redacted] would like to cooperate with EPA to improve the modeling as best we can with the overall goal of model output that more closely approximates present day monitored loads at the WV non-tidal stations.
- Notwithstanding [redacted] desire to improve model representation, [redacted] is concerned that refinements may cause revision of state/basin caps even if the predicted pollutant loads necessary to achieve Bay and tidal tributary water quality standards remain constant. If watershed model improvements have the effect of a lowered WV modeled baseline and cap redistribution occurs, then lower [redacted] 2025 targets may result if the TMDL methodology is used. [redacted] will renew "equity" objections if WIP II actions are not predicted to achieve 2025 targets.

Funding Concerns

- As installation environmental compliance dollars are based on actual permit requirements, DoD installations are not receiving priority funding to meet TMDL requirements as most Jurisdictions have yet to revise MS4 permits to incorporate TMDL implementation requirements. DoD leadership is aware of this issue and we are working towards funding guidance.

Review Process

Model Review Process

- Provide clarification on the process and schedule for submitting the 2017 midpoint assessment model recommendations and refinement of model (accountability tool)
- Answers to the following:
    - How will issues be prioritized?
    - How will decisions be made?

- The schedule must allow for time to review and comment on outcomes of revisions, methods and tools, including both watershed and estuary models
    - Concurs and proposes jurisdictions to have a 6-9 month period of access and testing to the next version of WSM prior to Ph III WIP submission.
- Model results need to go through formal review
    - Concurs. Needs a critical, unbiased 3rd party reviewer or arbitrator to deal with contentions.
        - History of jurisdictional concerns not addressed by EPA.

Model Review Process

- Model Review Period
    - Peer Review and Verification
        - Ongoing Review as Changes are Made
        - Six Month Minimum - Post Calibration
- Validation
- Uncertainty Analysis
    - Multiple Geographic Scales
    - All Source Sectors
    - Cumulative Uncertainty from the Combination of all Bay Models
- Independent Arbiter for Evaluating Identified Issues

TMDL and Development of Phase III WIPs

TMDL Issues

- Modify and Reissue TMDL
    - Scale based on Uncertainty Analysis
    - Similar Methodology as 2010
        - Use 2025 Land Use
        - Consider Alternatives to No-action and E3
        - No-action Scenarios Should Have No BMP Actions Represented
            - *Eliminate Need to Back Out Land Use Change BMPs*
        - Develop and Use Basin/Regional Critical Periods
    - Reevaluate "Other Lines of Evidence"
    - Reevaluate James River ChlA and Associated Allocations
    - Reevaluate Clarity Standard Attainability
    - Establish Aggregate Allocations for [redacted] Phase 1 and 2 MS4's
- Explicitly incorporate local TMDLs into the tools and WIP
    - TMDLs with Implementation Plans
    - TMDLs that address nitrogen, phosphorus or sediment

303(d) Report Proposed Category 4D

- Allow Bay waters to stay on the 303(d) list for dissolved oxygen, while communicating when they meet assessed criteria.

- *Proposed Category 4D: Part(s) of a water quality standard are attained for a pollutant with a TMDL, but the remaining criteria were not assessed due to insufficient information.*

Development of Phase III WIPs

- Scale Based on Uncertainty Analysis
- Planning Targets
- Goal Date for Completion – 1/8/2018
- The WIP III development schedule is dependent upon timely delivery of final, tested, and approved tools.
  - Watershed Model v.6.x
  - Scenario Builder
  - M/C/VAST
  - Concurs and adds Ph6 Model must be fully tested by the partners, jurisdictions, etc. and ready for application before we start developing our Phase III WIPs.

Modeling Priorities

General

- Regional factors make working at a local scale challenging
  - There are significant unit load differences across [redacted]
  - Regional factors can create inequity in trading among counties and other source sectors (e.g. WWTP)
  - P5.3.2 vs. P5.3.0, in general EOF increased by more than 60% for phosphorus. In contrast the EOS loads increased by only 4%. This is because the regional factors corrected for the EOF differences.
  - Refined weights for calibration using top kriging concepts. This method develops weights by consideration spatial covariance but also considers watershed flow paths (i.e. not just as the crow files). Therefore the calibration would look within and outside of the up-steam watershed, but would consider similarity in response data. Look in literature under Skoien.
- Calibration to water quality data should consider flow in the quintiles
- BMP interaction with surface flow and groundwater flow separately. For example a stormwater pond is only treating surface flow and does not consider groundwater flow
- Remove nutrient management from HSPF and simulate as a regional BMP. This would simplify the watershed model and facilitate the transparent discussion of BMPs outside of the HSPF code and calibration.
- Incorporate geographically specific targets from site scale models. Use local data and modeling studies to set regional targets. The new targets then incorporate the more refined "subscale" information. This has been implemented to some extent but could be greatly enhanced. This also allows for the local TMDL models to contribute to the greater watershed model.
- Is extending the calibration time period going to be problematic due to lag in BMP response? Calibration replicates changes that occur on landscape but in-stream water quality response may not have been observed. This creates an internal lag in the model.

- Improvement in local calibration stations (e.g. Phosphorus in Monocacy is consistently over simulated in all versions of the model. Even more so in P5.3.2).
- Urban dry weather TN calibration concentration a problem due to confounding from septic systems or failing infrastructure.

General

- Correct AGCHEM Coding - 1 to 1 Input to Delivered Reductions from Agricultural Land Uses
- Consider Using PQUAL for Simulation of Agricultural Land Uses
- Coupling of Sediment and Phosphorus
- Utilize Annual Agriculture Statistics Where Ever Possible
- Simulate Septic Systems as Loading to Ground Water
- Evaluate Impact of Extreme Weather Events
- Reevaluate Delivery Factors and CDF Decision
- Reevaluate Stoichiometry of Nitrogen and Phosphorus Species
- Ensure Mass Balances for Nutrient
- Use Input Deck Format Consistent with v.5.3.2.

General

- Increase the number of modeling staff to provide more support and model evaluation assistance directly to the states (with more modeling staff, success would depend on regular, detailed coordination among modeling staff to ensure consistency across the jurisdictions).

General Watershed 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 10^{th} year of hydrology as an alternate run for temporal comparison.
- Verticalization of automatic calibration for headwater areas so split-basin counties have similar loading rates (example Adams County).
- The model should be adaptable to data available to each jurisdiction. BMPs should be designed to the lowest common denominator and mirror NRCS practice code definitions.
- 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.
- The nutrient reduction efficiencies given for nutrient management are not representative of actual implementation. This important topic is being considered by an active workgroup.
- Recognition of a BMP in the model is needed to address highly erodible lands within stream channels (Legacy Sediments from Mill Dams, etc.)

Estuary Model

- Improve simulation of "problem" Bay segments discussed in Appendix
- Improve simulation of estuarine wetlands
- Inclusion of BMPs that do not fit into the Watershed Model but along the interface between the Watershed Model and Estuarine Model – i.e. Living Shorelines

Airshed Model

- Evaluating the atmospheric deposition components of the model with other N deposition datasets/models, such as those developed by jurisdictions, to improve accuracy of N deposition estimates across all land uses (e.g., ag, forest, urban, suburban, etc.).

Model Scale

- Improve Federal Segmentation
- Utilize 12-digit Hydrologic Units in Segmentation
- Expand the Representation of Reservoirs
- Improve Representation of Perennial Stream Network
    - Simulate Stream Banks as Source of Pollutants

Calibration Process

- Scale
    - Include Monitoring Stations with Shorter Period of Record
- Limit Variability
    - Restrict Variation of Land Use Unit Loads from Literature Values
    - Restrict Variation of Land Use Unit Loads in a Geographic Area
    - Restrict Use of Regional or Sub-grid Transport Factors
    - Coupling of Sediment and Phosphorus
- Documentation
    - Document Calibration Protocol
    - Produce Hydrologic Review Statistics to Facilitate Evaluation

Hydrodynamics/WQSTM

- Multi-model Approach to Address Tidal Fresh Portions of Rivers and Shallow Bays.

Watershed Technical Priorities

Backout Procedures

- Ascertain the correct procedure to accurately show what the implementation levels; these should be in relation to land use change

Treatment of BMPs as a Land Use Change

- BMPs should be linked to efficiencies not land use changes, so practices may be more clearly compared to each other.
    - 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.

BMPs: Collective

- Nutrient Management
- Stackable CNT
- Manure Alternative Use
- Conservation Tillage on HOM
- Shellfish Restoration and Aquaculture
- Urban Grass Buffer
- Stackable Pasture BMPs
- Animal Mortality BMPs
- Urban equivalent of Hay without nutrients

- Algae biomass harvesting
- Septic Denitrification – 25%
- Septic Denitrification – 75%
- Harvested Treatment Wetlands
- No Discharge Zones or Marine Sanitation Pumpout Stations
- Allow Sufficient Time to Develop and Verify Pre-calibration BMPs

Nursery BMPs

- Water Capture and Reuse is the only BMP available to reduce Nursery loads. Because of the sequencing in the model the maximum load reduction, when applied at 100%, is a 10% reduction.
- If this the only BMP to apply to Nursery it is difficult accomplish targeted reductions
- Working to address with WTWG

Treatment of Biosolids

- Include data from all states or exclude data from all states

Treatment of Degraded Riparian Area Acres

- Repair assessment of degraded riparian area acres.

Revisiting Existing Scenarios

- Revisit the E3 scenario
    - Urban
    - Manure Disposal in Ag Scenario
    - Nursery (Converted to Hay?)

Regional Factors

- The "regional factor" protocol for the Upper Potomac watershed to ensure that [redacted] land use loading increases are supported by [redacted] monitoring data

MAST/CAST

- Consider CAST as the accountability tool instead of watershed model
    - Need for timely scenario results
    - Transparency
- MAST improvements
    - Improve agricultural estimates
    - Add cost module

VAST/CAST/BayTAS

- Modify Planning, Accountability and Reporting Tools
    - Update NEIEN
    - Update BayTAS
    - Update M/C/VAST

Modeling Tools Transparency

- Greater transparency in the model inputs, intermediary steps, and outputs is critical to ensure confidence by the states, counties, conservation districts, agribusiness, producers, and others. Producers and other local partners are turned off from the TMDL process when a model input or outcome cannot be explained or does not adequately match local data.
    - Work to provide the states with model inputs and outputs during the scenario development/running processes themselves so the states can confirm the numbers are correct prior to finalizing each scenario

    - It's been a challenge to determine what inputs were used and how they were determined, including animal numbers, riparian buffer acres, AFO/CAFO acres, etc.
    - Also need to better define and perhaps refine how land uses, animal numbers, applied BMPs, etc. are handled in counties partially in the watershed.
- Improve efficiency, user-friendliness of tools.
    - E.g. – question remains if CAST is delivering same data as Scenario Builder/WSM?
    - Update WSM and Scenario Builder documentation manuals.
    - CAST support has been very much appreciated, but need more technical staff supporting CAST and similar tools.

Improvement of Modeling Tools

- Currently there are inadequate modeling tools for use by federal facilities (i.e. CAST). The Phase 5.3.2 Chesapeake Bay Watershed Model aggregates all federal facilities, which does not allow DoD to utilize the tool at a facility level and understand an installation's fair share of the necessary reductions required to meet the TMDL.

Other Tools

- NEIEN
    - Make it less rigid at accepting information so that if there are minor mistakes say an extra comma or space in an entry that the entire submission is not rejected.
    - Make the error report more precise.
    - Reinstate the Testing Node
- Verification and Tracking
    - It would be helpful for EPA to provide a web-based tool to help track BMPs or at least support to provide a web based tool. The US Army Corp of Engineers has such a tool, but may need EPA support to help provide it to MD.
- BayTAS
    - The BayTAS reports from the watershed model need to be standardized at the basin and county scale to reflect progress in a way that is easier to compare previous model runs.
    - BMP reports are adequate, but it would be better to add in reasons for cut off and maybe acres of land available versus acres credit.

BMP Verification Priorities

Incorporate Verification Principals

- Additional Reporting Measures
- BMP Life Spans
- Mechanisms for BMP Renewal
- Reported BMP Cutoff Protocol

General Comments

- There is significant uncertainty associated with the ultimate outcomes of the verification process and how that process will affect evaluation of our performance. [redacted] generally concurs with the need for accountability and transparency but remains concerned that we may not be able to accomplish established protocols with limited resources, particularly within the midpoint assessment time frame. The final details of the various protocols will

ultimately determine our ability to comply. At this point, we recommend EPA consider a process that incrementally phases in verification protocols and avoid an approach of wholesale credit exclusion.

Agricultural BMP Tracking and Verification

- Future agricultural BMP tracking and verification can be facilitated by increased/improved data capture by federal agriculture cost share agencies. The lack of direct data capture limits our ability to comprehensively report BMPs and/or requires the use of state resources to obtain necessary information. Examples of current difficulties include: inability to delineate the portion of NRCS pasture fencing for livestock exclusion and associated buffers, lack of tillage method information on FSA crop reporting sheets, inability to delineate the alternative watering systems associated with streams, no information on the number of animal units or type associated with animal waste management systems.

Resources for Verification

- The effort to inspect or verify BMPs should not impinge upon resources for the installation of new/additional BMPs.

Land Use Characterization Priorities

Landuse Inputs

- Develop a spatially explicit landuse dataset. We need to move past the tabular data.
- Better incorporation of local jurisdiction information (both land-use and impervious data)
- Reviewing available acres – counties/agencies are submitted BMPs based on "real" acres but in some instances there aren't enough available "model" acres, limiting our crediting ability.
    - Particular BMPs affected: nutrient management, forest buffers, wetland restoration, grass buffers, pasture fencing
- Agriculture misclassified on federal lands (urban on Ag Federal Lands)
- Refine federal lands to more accurately discriminate the agricultural land
- Urban land uses need to be divided into more specific categories: commercial, industrial, high density residential, median density residential, low density residential, etc. similar to what agricultural land has, reducing urban loadings.
    - Need to differentiate between connected and disconnected impervious
- Improved spatial delineation of agricultural lands
    - Misclassifications with turf grass, forest, etc.
- Improved spatial specificity of agricultural lands
    - Ag. lands by specific crop type
- Example of disagreement:
    - Model 5.3.2 = 1.52 mil acres agricultural land in Maryland (pasture, cropland, hayland)
    - [redacted] Nutrient Management = 1.2 mil acres
    - 20% more acres of loads (300,000 acres)
    - Report Nutrient Management Implementation on actual acres or model acres?

General

- Improve Resolution
- Improve Federal Land Use
- Add Wetlands Land Use
- Rework HOM Land Use
- Do Not Treat Nutrient Management as a Land Use Change BMP
- Reevaluate Septic System Numbers
    - Commercial/Retail Systems
    - Mass Drain Fields
    - Failing Septic Systems (Surficial Runoff Loading)
    - Straight Pipes (Direct Discharges)
- Reevaluate the REX/NEX Land Uses
- Reevaluate Representation of Construction Activities
- Improve Animal Distribution (Sub-county)
- Develop a GIS Polygon Coverage Map with Final Land Use
- Use Local Land Use to Ground Truth Classification Methodology
- Improve Methods for Estimation of Growth In Urban Areas
    - Changes to Imperviousness.
- Reevaluate CSO/CSS Land Uses

Urban Land Use

- Refine urban land use extent.

Federal Land Use Characterization

- Federal land use assumptions in the model must be corrected to ensure the data accurately reflects current land use. We understand the WQGIT has formed a Land Use Workgroup to assist in this effort. DoD provided a representative to participate. We hope through our participation in this workgroup the federal land use assumptions in the model will be rectified.

Urban Stormwater Priorities

- Review Impervious surface measurement: accuracy impacts the accuracy of assessing stormwater management.
- Rural Residential Landuse and Loads
    - Target loads used for calibration reflect pervious urban in highly urban areas. In P5.3.0 these area were forest loads
    - Need refined loading rates to discriminate between EOS loads from rural residential pervious and more high density residential pervious.
    - Need to further improve the delineation of very low density/rural residential development, roads, etc., since these areas are still being underestimated, especially in rural counties.

- Erosion & Sediment Control: We need a deep understanding of how it works. It seems like the acres to which E&SC applied for a given year are much greater than the projected area of land developed.
- Growth
    - Stormwater Controls on New Development: Need to give states the option of replacing projected land use change with estimate of the actual change. Need to promote accounting and reporting procedures at the local level if they want credit for BMPs on new development. Could tie in with offset procedures for new development.
    - Annual growth predictions from the Bay Model are being used for offset analysis and there are new verification procedures for BMP implementation. There will need to be a verification procedure to ground-truth the model's prediction of growth on a set schedule (i.e. not waiting for a re-calibration which may not take place for many years)
    - SW BMPs may not receive As-Builts for 5 or 10 years but the Growth already occurred in the model; need a way to account for this so the Urban does not look to be uncontrolled.
- 2017 Update should allow for states to revisit previously submitted BMPs (pre-2012) with the new efficiency rates based on the expert panel's recommendations
- No action nitrogen loadings for construction land uses and the rationale for the much higher unit area loadings over no action pervious urban land uses
- Urban fertilizer representation and effects on [redacted] pervious urban land uses loadings – Fertilization activity is low in the rural areas that comprise the majority of the [redacted] Chesapeake Bay drainage

Wastewater Priorities

Septic Systems

- Improve model inputs to be consistent with local data
- Add distinction between Residential vs. Commercial systems
    - Should have different loads associated with each type

Wastewater Sector

- Accounting for physical processes of wastewater – inflow/infiltration
    - Under current approach, progress runs are confounded by the influence of rainfall-produced inflow and infiltration
    - Simulate point source flows such that there dry weather flow and wet weather contribution.

Onsite Systems

- Number of existing onsite systems ([redacted] data collection of public and private centralized sewer service area extents to be provided 2013).

Agricultural Priorities

Nutrient Management

- AGWG information provided on load reductions with nutrient mgt. (5%). CBP used <1.5%. Single efficiency value for Enhanced Nutrient Mgt.- A tiered approach would be more accurate

BMPs

- Crop Yields- Blended yield averages for state vs. county
- Stacking of BMP- Continuous No-till not available for other reductions by other BMPs (cover crops, nutrient mgt. etc.)
- Cover Crop Efficiencies- Cover crops lack P and suspended solids reductions. Also certain CC not recognized (triticale, spring oats, rapeseed/canola and forage radish)
- Capped out on available acres for these additional BMPs that were not already noted under "Landuse Inputs" - Animal Waste Management Systems, Barnyard Runoff Control/Loafing Lot Management, Mortality Composters, Conservation Tillage
- "Backout" procedure issues as it relates to buffers
- Additional BMPs with new efficiencies: [redacted] Plan had several BMP's that were used for Plan but are not currently in model and cannot be reported/counted. (Poultry litter treatment, Cropland Irrigation, Dairy Manure Incorporation, Poultry Litter Incorporation, Heavy Use Protection-Poultry, Horse Pasture Management, Mortality Composting, Vegetative Environmental Buffers, Shoreline Erosion, and Manure Transport (Wet Acres Conversion))
- Additional BMP options are necessary to full account for all conservation stewardship and changes in landuse – Traditional sediment control practices such as sediment control ponds, diversions and contour farming are not currently credited in the Bay Model even though they provide an environmental benefit by reducing soil erosion. Heavy use area protection on Poultry Operations should also be considered as an effective BMP for the mitigation of poultry manure in the Bay Model. Further, there is a current limitation on the number of BMPs that can be applied to nursery operations. In addition, certain fertilizer amendments can stabilize nutrients thereby reducing the impact of nutrient leaching from cropland. The Bay Model currently lacks a mechanism to account for the conversion of cropland to less intensive operations such as vineyards and Christmas trees.

BMP Review

- Ph6 Model/Scenario Builder needs to include the model changes finalized by the Ag Workgroup's BMP Expert Panels.
    - Recommend the significant differences between the states be fully reflected in the WSM (nutrient balances, animals/acre, soil test P levels, Land Grant University Guidelines, etc.).
    - Some BMPs and their efficiencies can be applied across all six states, but there are BMPs which need to be defined specific to a state.
    - While not finalized by the Nutrient Management Expert Panel, replacing the current suite of somewhat unrelated nutrient management practices with a progressive suite of related nutrient management practices that start basic and build in complexity and model credit (e.g., Basic Nutrient Management, Enhanced Nutrient Management, and Enhanced Nutrient Management with Continuous Improvement).

Lower Eastern Shore

- General
    - Increase in Lower Eastern Shore loads and problems with E3

    - Increase in EOF Targets, P5.3.0 vs. P5.3.2
- E3 Scenario and manure disposal greater then current progress
- Nutrient Management
- Correct for disposal – This relates to correct animal estimates.

Animals

- In [redacted] the "non CAFO animal #'s for Pullets and broilers have increased by 30% and 10 % respectively from 2009 to 2010
    - [redacted]It is our understanding that this is not based on NOI / CAFO information provided by [redacted] but some other method that has not been communicated to [redacted]
    - [redacted] is confident that no increase in Poultry #'s occurred in 2010
- Model 5.3.2 updated with state's file on CAFO's
    - CAFO file lists house capacity
    - Based on 2007 census and trend line to project growth which isn't occurring
- Animal numbers are those provided by the states. How are these numbers hindcast or is agr census applied?

Litter Production, Number of Birds and Nutrient Content

- University of Delaware study of current litter production per flock and Nutrient and Phosphorous content of Litter
- Model 5.3.2 utilizing book values from 1985 for poultry litter produced and nutrient content
- [redacted] study shows a 50% reduction in loadings vs. 1985 values
- Annual NASS survey lists production number of birds
- Poultry Numbers on a daily/yearly basis - It assumes no fluctuation or replacement, rather it is a snapshot in time. Scenario Builder assumes this number to be constant throughout the year, ie inventory x 365 = total animals present during the year. No consideration is made for time between poultry flocks.

Animal Number Trends

- Animal number trends to place more emphasis on the recent past, especially where the long term and more recent short term trend directions are different (ex. [redacted] poultry).

AFO/CAFO Loads

- Model assumes 15-20% storage loss – [redacted] does not agree with this

AFO/CAFO Loads

- Residual pollutant loading from afo/cfo land uses after the application of all available BMPs

Manure

- Application of manure on soybean acres (40% of acres in [redacted]). Not available for application making disproportionately higher load on other acres
- Manure mineralization not in model
- Three [redacted] counties had large increases in manure application rates ([redacted]). Increase in about 100%
- Wet Tons vs. Dry Tons – Under Study
    - Model 5.3.2 manure generated based on wet tons manure (1.9 mil tons)
    - [redacted] Manure Transport BMP tracking based on dry tons exported (85,000 tons)

- Chesapeake Bay Program to date has not provided a conversion calculation as requested

Manure

- Reevaluate Manure Production Estimates
- Reevaluate Manure Nutrient Concentration Estimates
- Reevaluate Mineralization Assumptions
- Simulate the Direct Deposition from Livestock into Streams
- Reevaluate Storage and Handling Loss and Volatilization

Manure and P Representation

- Manure distribution and fertilizer algorithms, especially in regard to the replacement of manure with commercial fertilizer and hopefully to allow greater and more accurate benefits from manure transfer. In [redacted], very little commercial P is applied and current fertilizer prices result in commercial N application rates that are much lower than the agronomic rates associated with maximum yield. The [redacted] Extension Service suggests direct representation of the P cycle with a soil P accumulation/leaching routine.

Animal Waste Management Systems

- Crediting (number and animal type) of past installations of animal waste management systems ([redacted] data collection effort to be provided 2013).

Area of TRP

- Area of TRP based on past [redacted] data collection effort.

Soil Considerations

- P modeling - "P" residuals in soil

Milestone Evaluation Priorities

Develop 2018-2019 Milestones

- Based on v.6.0.
- Date for Completion – 1/8/2018

Evaluating Progress

- 2016-2017 Milestones
  - Use v.5.3.2
  - Goal - 60% of Reductions Achieved?
    - *Programmatic Enhancements can Justify Shortfalls*
    - *Capacity Building Activities can Justify Shortfalls*
    - *Future Milestones Should Address Shortfall Make-up Plan*
- 2018 and Beyond
  - Use v.6.0
  - Evaluate Progress Using Actual Growth and Hydrology
  - Compare Progress with Monitoring Data
  - Compare Progress with Ecological Data
  - Use Input Deck Format Consistent with v.5.3.2.
  - Establish Lockdown Periods for Changes to Progress Reporting Format
  - Allow Interim BMPs Used in Planning to be Used in Evaluating Progress

Trading and Offset Priorities

Trading Program

- The Trading program is an important part of WIP implementation, requiring communication between EPA and the jurisdictions to help ensure the best possible reporting at the 2017 assessment. The following need to continue to occur between now and 2017:
    - Continue to refine how new technologies are recognized within the model
    - Ensure that Technical Memoranda are consistent with credit calculations/credit verification programs and model inputs, and allow for flexibility
    - Continuing role for the TOWG to facilitate and aid in development of technical memoranda and model inputs/assumptions