**Updated November 2016**
**Chesapeake Bay Program**
**Wastewater Facility and BMP Implementation**
**Data Submission Specifications and Requirements**

The Watershed Technical Workgroup and Wastewater Treatment Workgroup of the Water Quality Goal Implementation Team coordinate with the Chesapeake Bay Program's Technical Support and Services team and the Management Board to establish data submission requirements that meet the communications and management needs of the Chesapeake Bay Program. Implementation Grant or Work Plan deliverables must include schedules for submission of point source and nonpoint source nutrient reduction activities for use in Chesapeake Bay Watershed Model annual assessment scenarios. The following wastewater facility and BMP implementation data submission requirements were developed by the Water Quality Goal Implementation Team's Wastewater Treatment Workgroup and Watershed Technical Workgroup to meet Chesapeake Bay Program Watershed Model requirements. *With the exception of the EPA required dates for reporting stated on pages 11 – 12 of this Attachment, the following information reflects both workgroups' latest agreements and minimum data requirements.*

Jurisdictions are required to submit quality assured data by the established due dates. If necessary, base implementation grant funds should be used by the jurisdiction to ensure compliance with the due dates and data quality requirements. Recipients are to follow the output requirements stated in the General Guidance portion of this document.

QUALITY ASSURANCE PROJECT PLANS

Quality Assurance Project Plans (QAPPs) for the collection and use of environmental data are required from the seven watershed jurisdictions. These QAPPs document how jurisdictions are reporting implementation data for progress scenarios and need to be up to date to assist in facilitation of the grant monitoring process by CBIG and CBRAP project officers – as well as to accommodate work of the CBP BMP Verification Review Panel and CBP BMP Verification Committee, specifically each jurisdiction's BMP verification program plans. Additionally, jurisdictions are expected to update their QAPPs when new data sources become available which enable them to enhance reporting of existing or newly approved BMPs. QAPPs are required for all data described in this document.

WASTEWATER FACILITY, CSO, BIO-SOLIDS, AND SPRAY IRRIGATION DATA SUBMISSION

Facility Requirements:

Significant Facilities
Jurisdictions will submit wastewater facility Discharge Monitoring Report (DMR) data for all significant dischargers within their portions of the Chesapeake Bay watershed. A significant discharger is a facility that is on the significant facility list in a jurisdictional Watershed Implementation Plan and meets one of the following criteria:

- In West Virginia, Delaware, **Pennsylvania** and New York - Facility treating domestic wastewater and the design flow is greater than or equal to 0.4 million gallons per day (MGD).
- In Maryland - Facility treating domestic wastewater and the design flow is greater than or equal to 0.5 MGD.
- In Virginia - Facility treating domestic wastewater and the existing design flow is greater than or equal to 0.5 MGD west of the fall line or 0.1 MGD east of the fall line.
- In the District of Columbia – Blue Plains is the only significant facility located in the District.
- Industrial facilities with a nutrient load equivalent to 3,800 total phosphorus (TP) lbs/year or 27,000 total nitrogen (TN) lbs/year.
- Any other municipal and industrial wastewater facilities assigned with individual waste load allocations within a jurisdictional Watershed Implementation Plan.

Non-significant Facilities

Any wastewater treatment facilities reported by jurisdictions under non-significant category and not meeting the above definition are non-significant facilities. In the past, for jurisdictions that did not provide annual DMR data or state-specific default values for non-significant facilities, the estimated one time data have been added to the annually submitted datasets at the CBPO prior to the progress model runs. Starting with the 2014 progress data submission, jurisdictions are required to provide data, either measured DMR data or state-specific default values, for all their significant and non-significant facilities in their annual progress run data submission. If there are no annual DMR available for some or all non-significant facilities, the state estimated one time data or default state-specific values could be used for these non-significant facilities in the report. CBPO staff will provide the states with previous non-significant input decks to assist in this effort. This approach will let the jurisdictions have full control and understanding of what data are included in the wastewater input decks for each model run.

Data Requirements:

Jurisdictions are required to submit monthly concentration and flow data for all parameters listed below for each significant discharger facilities within their portion of the Chesapeake Bay watershed. The QAQC procedures listed in Figure 1 should be performed prior to data submission.

At Facility Level: Data must be provided for those municipal, industrial, and federal facilities as defined above as "significant dischargers" of total nitrogen and total phosphorus to the Bay watershed. The jurisdictions must annually update their facility list, especially for significant dischargers and identify the newly added or removed facilities in the annual data report. The location (county, latitude/longitude) of discharge point, significant or non-significant, facility type (municipal or industrial), ownership (federal or non-federal) and design flow (MGD) must be reported for newly added facilities using the wastewater data template accessible at:

**ftp://ftp.chesapeakebay.net/VT/WWTP_CSO_Biosolid_Irrigation_LargeOnsite_RIB_Input_Templates2016.xlsx**

At the Monthly Level: Concentration and flow data for the 10 identified parameters must be provided for each outfall. Jurisdictions will submit all parameters in each month's data record for each facility. Data for the following parameters will be submitted: average monthly flows and average monthly concentrations of NH3, TKN, NO23 (or NO2+NO3), TN, PO4, TP, CBOD5 **(**preferable) or BOD5, DO and TSS. All nitrogen species need to be reported as nitrogen; all phosphorus species need to be reported as phosphorus.

In the absence of monthly monitored concentration data for one or more of the above listed 10 parameters for a facility, the jurisdiction will submit the CBP Water Quality Goal Implementation Team's Wastewater Treatment Workgroup agreed to default concentration data or calculated data based on the species relationship listed in Table 1. All default or calculated data must be flagged with an appropriate description such as:

- Average of reported monthly data;
- Default value agreed by the workgroup;
- Default value based on state specific information;
- Default value based on SIS database;
- Calculated as 67% of TP by CBP species ratio;
- Calculated as NO23=TN-TKN; and
- Net Value (the influent concentration or load is subtracted).

The loading data of industrial facilities with river/stream water uptake should be reported as net loads with average monthly flow and net concentrations for that respective month, as quantified. **Jurisdictions not having some of these parameters should report what's available and missing elements will be defaulted according to rules established by the CBP Wastewater Treatment Workgroup. CBPO expects jurisdictions to continue to improve tracking and reporting of data so that currently missing parameters are captured and reported in the future**.

Wastewater Data Reports:

Each Bay Jurisdiction is required to submit the following wastewater data report tables for annual progress model run:

1. DMR Data Table: This report is traditionally used for significant facility data. However, thanks to the efforts of many jurisdictions to require nutrient monitoring for some of their non-significant facilities, more and more non-significant facilities have nutrient DMR data. Although DMR data are required only for significant facilities, we encourage the Bay jurisdictions to report any available nutrient DMR data for non-significant facilities.
2. State-Specific Default Table: This report is used to submit the estimated or default values for those non-significant facilities that do not have any

nutrient DMR data or are decided by the jurisdictions to use the state default values.

3. Facility Information Update Table: This table is for reporting any changes or updates to the facility information. Any facilities that are newly added to the data report or closed during the progress year should be reported in this table. Any changes on SIG/NONSIG for a facility between significant and non-significant status should also be included.
4. CSO Reduction Tables: The CSO tables are for reporting any CSO control progresses in term of the percent load reduction achieved and the acreages of separation completed.

Each jurisdiction MUST review all wastewater facility data for accuracy prior to submission to EPA CBPO. The required quality assurance and quality control procedures are listed in Figure 1.

Transition to Reporting through ICIS and a CBPO tool

Since 2014, EPA has been working through the Water Quality Goal Implementation Team's (WQGIT) Wastewater Treatment Workgroup and directly with the six states and the District of Columbia on leveraging ICIS-NPDES to report wastewater facility data. The recently finalized national NPDES E-Reporting rule will bring additional changes and requirements, which will affect how jurisdictions submit their wastewater facility data. CBPO has developed a "hybrid" reporting solution that will pull data directly from ICIS-NPDES but also allow states the opportunity to review, supplement, and quality assure their data through a separate tool and interface managed by CBPO. DMR data or state specific default values of non-significant facilities that are reported to ICIS will be submitted to CBPO through this tool. Development of this tool is anticipated to be complete in 2017.

**Following the completion of this tool, CBPO will ask the jurisdictions to begin transitioning to this new approach (which includes reporting of data in ICIS-NPDES) for submitting their wastewater treatment facility data**. The specific requirements and guidelines for these submissions, including how non-significant facilities will be addressed, will be reviewed and finalized with the jurisdictions' input working through the WQGIT's Wastewater Treatment Workgroup.

Bio-Solids, Spray Irrigation**, Large Monitored Onsite System and Rapid Infiltration Basin Data**

**As requested by the CBP partnership, the partnership's Phase 6 Watershed Model has been built to include and track nutrient loads from these new wastewater sources**. CBPO expects jurisdictions to provide available bio-solids, spray irrigation**, large monitored onsite system and rapid infiltration basin** data where these nutrients are applied to the land. The data is to include, where available, the location **(county, latitude and longitude)** of application, mass of bio-solids or volume of irrigation**/large onsite system/rapid infiltration basin,** concentrations of nutrients, and the **year** of applications. **The data specifications are detailed in the data template listed in next section.**

States not having spray irrigation**, large onsite system and rapid infiltration basin data in databases** may rely on the initial determination of nutrient loads for progress runs but, like bio-solids, are expected to capture and report data in the future.

It is expected that jurisdiction will annually submit updates to their bio-solids, spray irrigation, **large onsite system and rapid infiltration** data by December 1st.

Data Table Template:

The data table templates for wastewater, CSO, bio-solid, spray irrigation, **large onsite system and rapid infiltration** data are included in the excel file found at: **ftp://ftp.chesapeakebay.net/VT/WWTP_CSO_Biosolid_Irrigation_LargeOnsite_RIB_Input_Templates2016.xlsx**

These templates will be updated in late **2017** when the wastewater data reporting system is ready.

**Figure 1: Wastewater Facility Nutrient Data Processing Flow Diagram**

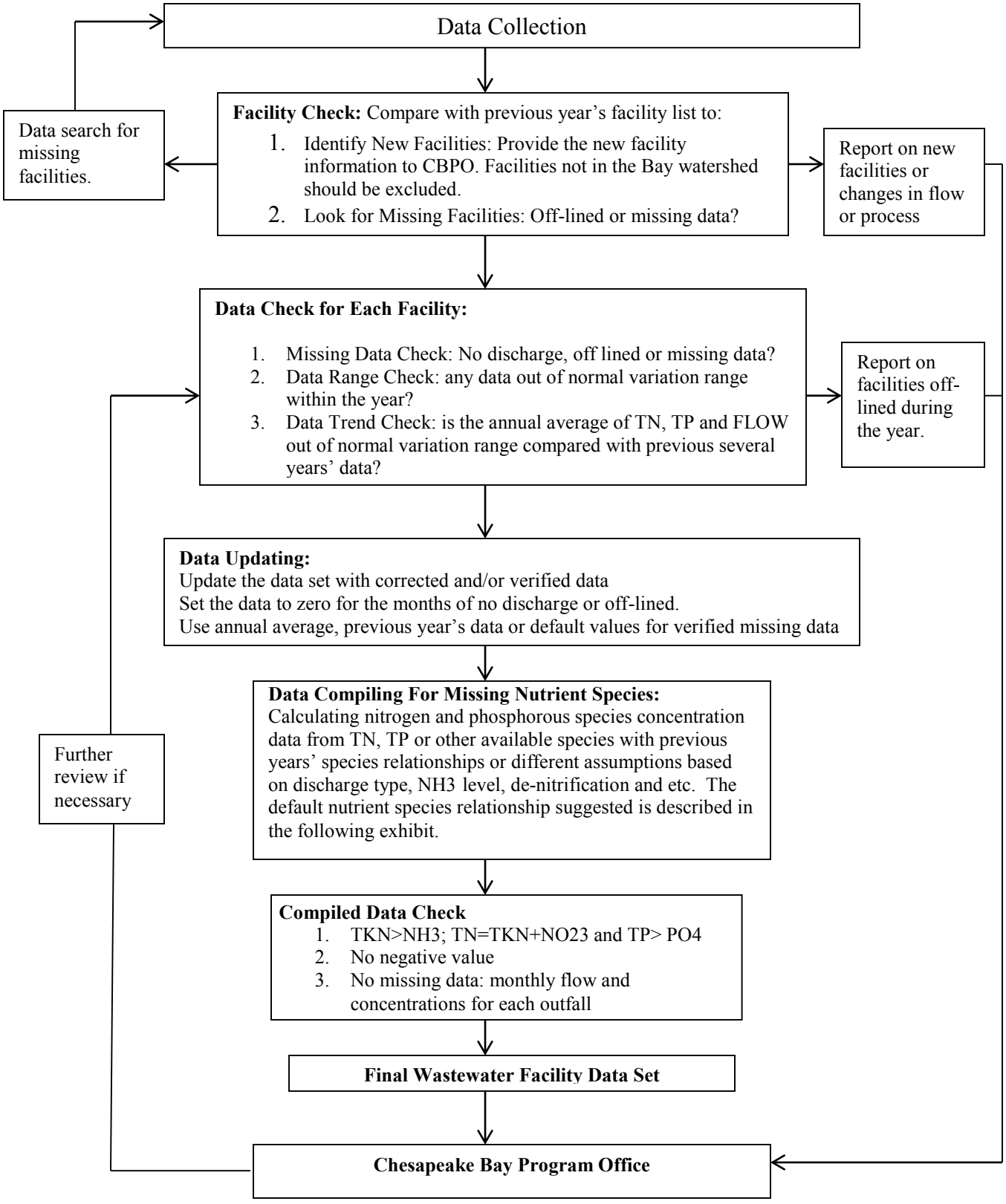

**Table 1: Species Relationship**

| Type of Facility | | **$NH_3/NO_{23}$/TON** (w/o Nitrification) | **$NH_3/NO_{23}$/TON** (w/ Nitrification)++ | **$NH_3/NO_{23}$/TON** (w/Denitrification) |
|---|---|---|---|---|
| Municipalities (phase IV) | | 80/5/15(1) | 7/85/8 | 12/73/15 |
| Municipalities (phase V) | | 80/3/17** | 7/80/13** | 12/73/15(2) |
| Industries | Chemical | 7/85/8+ | | |
| | Pulp & Paper | 1/0/99** | | |
| | Poultry Facilities w/BNR | | | 8/75/17** |
| | Nonchemical (includes seafood, poultry, & food processors w/out BNR) | 80/3/17** | 7/85/8+ | 8/75/17** |

(1) Stearns and Wheler recommended 80/0/20; however, the PSWG felt that there would often be minimal (5%) NOx present.

(2) Unchanged from the ratio recommended by Stearns and Wheler in Phase IV.

++Apply this relationship wherever NH3 limits apply

+Assumed by performing an analysis of MD chemical industry wastewater effluents which showed it is very close to the relationship for nitrifying sewage. This would apply to all chemical discharges and assumes that wastewaters are treated chemically and thus would not vary as for sewage relationships

** Updated, as based on an analysis of actual data from plants operating in Virginia.

| Type of Facility | Facilities w/out TP Control $PO_4$/TOP ratio | Facilities With TP Control $PO_4$/TOP Ratio |
|---|---|---|
| All | 71/29[a] | 67/33[a] |

[a] determined by averaging the actual data from MD and VA plants (including Blue Plains for "with TP Reduction".

Facility with TP Control is defined as a facility having a permit limit for total phosphorus.

| Period | TSS Default (All jurisdictions) | TSS Default w/out NRT | TSS Default w/ NRT |
|---|---|---|---|
| 1985-1990[b] | 45 | | |
| 1990-2000 | 25 | | |
| 2000-2010 | | 15 | 8 |

| Type of Facility | DO concentration 1985-1990 | DO Concentration 1990-2010 |
|---|---|---|
| All | 4.5 mg/l (b) | 5.0 mg/l |

(b) takes into account a number of NMP facilities operating across the watershed.

BMP IMPLEMENTATION DATA SUBMISSION

BMP implementation information is used to create annual progress scenarios using the CBP Watershed Model (WSM) and to make assessments and report out restoration efforts. Practice and program implementation data – outside of wastewater concentration and flow data – must be submitted independently via the National Environmental Information Exchange Network (NEIEN), creating XML formats and using the BMP schema.

EPA CBPO will not accept data in formats of Microsoft Excel, Access, or ASCII for practice implementation data submissions, unless specified by one of the Water Quality GIT workgroups. Also, jurisdictions are responsible for re-submitting data through NEIEN for corrections and additions, not CBPO personnel.

The NEIEN BMP data exchange is capable of accepting current and historical BMP data submissions. At a minimum for annual model progress assessments, recipients should submit BMP data for the period of July 1– June 30 for the model year of the June date. Data outside these temporal ranges can be accepted through NEIEN and used by the Chesapeake Bay Program based on guidance of CBP subject matter experts and the Watershed Technical Workgroup.

BMP projects and/or verification are to specify new implementation, inspection, maintenance, or retirement wherever the information is available. For establishing baseline landuse conditions, jurisdictions are to furnish to CBPO annual data for 1) permitted forest harvest acres, 2) continually disturbed and permitted construction acres – including estimates of any unpermitted acres, and 3) CAFO/AFO animal splits by county. **For jurisdictions that have jurisdictional-specific land uses, load source and land acres also must be provided for all years including projected years.**

For accounting for benefits of animal feed/diet for poultry **and swine,** jurisdictions are to provide to CBPO manure**/litter data in the format described in the poultry litter and swine manure reporting templates which can be found at: http://www.chesapeakebay.net/channel_files/24341/poultry_and_swine_nutrients_reporting_template_09152016.xlsx. Data should be provided for the last three years if possible, and updated each year to reflect new litter/manure samples. Jurisdictions who don't report volume data will receive default values according to rules established by the CBP Agriculture Workgroup.** This data will be reviewed by the Partnership for use in estimating manure nutrients in the Phase 6 Watershed Model.

Also, jurisdictions are to continue to furnish quality historical BMP data through NEIEN – with the year or date each practice was implemented – for use in the mid-point assessment modeling tools. The most current Codes List and NEIEN Appendix should be used. The most current Phase 5 and Phase 6 versions of these documents are available at: **http://webservices.chesapeakebay.net/schemas/.** The historical BMP data is to be submitted on the most specific geographic and land use scale possible with the understanding that the level of detail available could vary going back in time.

Jurisdictions should continue to focus on collecting and submitting detailed historic data for BMPs implemented from 2000 through the present, but data for BMPs implemented from 1985 through 1999 are needed as well. Along with the historical BMP data, jurisdictions are to provide up-to-date documentation explaining methods for estimating and reporting historical BMP implementation. Jurisdictions should refer to the document titled, "Historic BMP and Wastewater Data Cleanup" for more details regarding historical BMP data submission**. This file is available here: http://www.chesapeakebay.net/channel_files/22163/ii.a._-_historic_bmp_and_wastewater_data_cleanup_01212015.pdf**.

Nutrient and sediment reduction activities that are new to reporting or not currently modeled will not be credited in the tools until the BMPs (definitions, pollutant removal efficiencies and methods, basis or recommendations, etc.) have been documented and approved according to the Water Quality Goal Implementation Team's "Protocol for the Development, Review and Approval of Loading and Effectiveness Estimates for Nutrient and Sediment Controls in the Chesapeake Bay Watershed Model" located at **http://www.chesapeakebay.net/publications/title/bmp_review_protocol**.

Jurisdictions are to report BMPs as they occur on the landscape at the most site-specific scale that conforms with legal and programmatic constraints, and at a scale compatible to data input for the Chesapeake Bay Program partnership modeling tools. Other key elements of reported BMP data are accurate implementation dates, BMP names as tracked by jurisdictions, and relevant attributes of each project like the source of data (e.g., agency). All required fields for NEIEN-reported BMPs need to be complete. Jurisdictions should also utilize the latest versions of the following NEIEN technical documents: NPSBMP_DET; NPSBMP_Codes_List;NEIEN_NPS_BMP_CBP_Data_Flow_Appendix; and SRS NEIEN NPS BMP CBP Data Flow.

BMPs reported for credit need to adhere to the definition of the BMP as approved through the Water Quality Goal Implementation Team or higher or formalized by the CBP Partnership prior to establishment of the "Protocol for the Development, Review and Approval of Loading and Effectiveness Estimates for Nutrient and Sediment Controls in the Chesapeake Bay Watershed Model." **Definitions for all BMPs can be found by downloading the "Source Data" from the CAST documentation page located at: http://casttool.org/Documentation.aspx.**

BMPs that were formally "interim" that have been approved by relevant CBP groups are available for credit in the upcoming progress assessment. Interim BMPs – or those that have not been approved through the Water Quality Goal Implementation Team or higher by November 1 – are not available for credit in the progress assessment for that year.

Jurisdictions often track BMPs or units under different names than those used by the CBP. The NEIEN_NPS_BMP_CBP_Data_Flow_Appendix is a document intended to allow jurisdictions to continue to track BMPs and units in unique ways and be able to submit this information through NEIEN and to Scenario Builder. Any requests for changes to the

NEIEN Appendix should be made to the Watershed Technical Workgroup by August 31 for that year's model progress assessment. The Watershed Technical Workgroup is responsible for approving the NEIEN Appendix by August 31.

Jurisdictions may also request a review of their unique resource improvement practices for inclusion in the NEIEN Appendix and availability for progress reporting. These practices include BMPs that offer scientifically similar nutrient and sediment benefits as currently approved Chesapeake Bay Program or NRCS practices, but may be designed and/or operated differently. To request review of functionally equivalent practices, jurisdictions must provide a written report that describes the technical specifications of the functionally equivalent practice(s) to the appropriate Chesapeake Bay Program sector workgroup (Agriculture, Forestry, Stormwater or Wastewater) by June 1 of the progress assessment year. The sector workgroup and Watershed Technical Workgroup will then review the report and recommend accepting or rejecting the functionally equivalent practice(s) for that year's progress reporting.

BMP implementation reporting is for changes in management as the model simulates and estimates conditions based on inputs and assumptions. Changes in management action include: implementation of a new BMP; maintenance of an existing BMP (not to be reported as a new practice); or renewal of practices such as nutrient management plans. Reporting existing practices in a new year under a new BMP name due to a reinterpretation of the BMP definitions is not a change in management, nor is reporting historical practices as if they were implemented in data year of the progress assessment. The expectation is that new BMPs are tracked, not estimated (for example) by looking at available acres in the model and determining a percent implementation – which is, in turn, converted to acres and submitted as if tracked. It is understood that historical BMPs may be estimates based on best-available program data.

The progress model assessment will use background conditions for crops, land use acres, animal populations, septic systems, etc. projected out to the relevant model year according to methods approved by CBP Goal Implementation Teams and Workgroups – unless the use of annual data is authorized by relevant CBP groups.

Jurisdictions are expected to QA/QC implementation data for multiple counting where possible and missing data prior to submission for all sources of data, including but not limited to: NRCS and FSA; federal agency data; state agency and local data. Part of the QA/QC process is careful review by jurisdictions of the following reports:

- NEIEN – comparing what was submitted to NEIEN and what validated.
- ScenarioBuilder reports – comparing outputs of NEIEN and what goes to the Watershed Model, a.k.a. submitted versus credited.

Jurisdictions should document in their QAPPs the specifics of how they address multiple counting. This and other essential elements of a QAPP for environmental data and reference material can be found at

**http://www.chesapeakebay.net/channel_files/19138/sweeney_qapp-wtwg_040113.pdf**.

For information on the Chesapeake Bay Program partners' verification of practices and control programs, see **http://www.chesapeakebay.net/bmpverification**.

The most recent versions of each jurisdiction's approved QAPP **(BMP Verification Program Plans) are at CBP BMP Verification: Additional Resources at http://www.chesapeakebay.net/about/programs/bmp/additional_resources**.

For both historic and annual progress BMP data submissions, active communication between CBPO and jurisdictions is expected to ensure accurate data that's processed on schedule. The expectation is to proactively identify possible problems and address them.

WASTEWATER FACILITY AND BMP IMPLEMENTATION REPORTING FREQUENCY

Annual progress reporting of wastewater data and non-wastewater BMPs are an output of CBPO grants. Grant recipients are expected to provide CBPO with complete, quality-assured data in the proper formats. This will enable CBPO to begin immediate processing as a CBP Partnership Chesapeake Bay Watershed Model annual progress scenario. It is expected that the following schedule and deadlines are followed:

- July 31 of the relevant model year – BMP listing, descriptions, and mapping due from jurisdictions for any proposed BMPs that will be submitted for that year's progress assessment that are NOT included in the NEIEN Appendix.
- July 31– Requests to modify the NEIEN Schema or Plug-In due.
- August 31– Final requests for changes to the NEIEN Appendix due to the Watershed Technical Workgroup. The Watershed Technical Workgroup is responsible for approving the NEIEN Appendix and codes list by August 31 of the relevant model year.
- August 31– Data submissions and descriptions due for: 1) permitted forest harvest acres, 2) continually disturbed and permitted construction acres – including estimates of any unpermitted acres, 3) CAFO/AFO animal splits, **and 4) load source and land acres for all load source and land acres in jurisdictions where there are jurisdictional-specific land uses for all years including projected years.**
- **September 1 – Jurisdictions are encouraged to begin submitting their BMP implementation to NEIEN. Ongoing review of submissions will occur between September and December, with the expectation that December 1 submissions are final.**
- October 1 Animal and land use projections for that year's progress assessment and for 2017 to facilitate development of 2016-2017 milestones are **made** available **by** the CBPO.
- December 1 – **Final** BMP submissions for the previous July 1 to June 30 data period due from jurisdictions for that year's model progress assessment – both wastewater data and non-wastewater BMPs.

- February **13**– Final progress run information for the relevant model year available to jurisdictions – needed for outside reporting of progress on commitments and to keep results relevant.

This schedule may not apply to the wastewater sector for the Commonwealth of Virginia, which may submit its data in accordance with the Nutrient Allocation Compliance and Reporting requirements under Section 62.1-44.19:18 of the Virginia Code.

In addition, this schedule does not apply to the wastewater sector data for the District of Columbia due to a combination of factors, including the report schedule for DC Water's DMR reports, and the Metropolitan Washington Council of Government's role in support of DC Water and the District of Columbia to prepare the flow/load allocation reports.

The Virginia and DC wastewater sector data will be submitted using the following schedule:

Due January **31**, **2017** for data covering the period January 1, **2016** – December 31, **2016**

In the event that data are not submitted in time, are inaccurate, or do not use the appropriate NEIEN or wastewater formats for the CBPO to calculate annual progress, **Milestones, or other scenarios,** CBPO will use the previous year's data submitted by the jurisdiction or will not account for implementation of the BMP or control measures **or reassign acres to other land uses in the segment.**

Grant recipients are expected to submit data as necessary for midpoint assessments by specified dates. Grant recipients can use CBIG/Headwater State and CBRAP grant funds to support these data submission activities.

BMP reporting of **progress** wastewater data and non-wastewater BMPs **for the Phase 6 version of the models** are also an output of CBPO **2017** grants. Grant recipients are expected to provide CBPO with complete, quality-assured data in the proper formats through NEIEN for non-wastewater BMPs and through CBP Wastewater
Treatment Workgroup direction for bio-solids and spray irrigation data – to enable **model assessment of progress for model years 2014, 2015, 2016 and 2017. For each of these model years, BMPs cover the period July 1 of the previous year to June 30 of the model scenario year. The historic BMP and wastewater data for calibration of Phase 6 covered the period through model year 2013.**

It is expected that the following schedule and deadlines are followed:

Final Submission **of Phase 6 model year 2014, 2015 and 2016 data: April 1, 2017**
**Final Submission of Phase 6 model year 2017 data: December 1, 2017**
**It is expected that QAPPs are up to date by December 1, 2017 describing new data sources, methods, and verification that pertain to the new BMP and wastewater data.**