

Appendix G. Tracking and Reporting Protocol (Agriculture)

The WVDA is committed to tracking and reporting non cost-shared BMPs as well as formerly cost-shared/expired cost-shared BMPs in order to credit farmers who have installed practices without federal or state cost-share dollars and use the data collected in the CBWM. However, the development of a protocol and database for this purpose does not yet exist in WV. Collaboration with various agencies such as the National Association of Conservation Districts (NACD), USDA, US EPA, WVCA, WVDEP, and other state departments of agriculture has taken place over the past several months to develop a protocol that collects information accurately and consistently within the state.

The WVDA has hired a Tracking and Reporting Specialist to focus on tracking and reporting of BMPs. In particular, this person is developing protocols for capturing the details of previously unreported or non-cost-share BMPs that contribute to water quality; this was identified as a high priority action in the Phase I WIP. The WVDA also plans to utilize currently employed nutrient management planners to take part in tracking and reporting activities while they are in the field. Development of a tracking and reporting protocol has already been accomplished with the help and direction of the NACD, the University of Maryland Agricultural Technical Coordinator and EPA staff. The collection method that is being utilized in West Virginia is a farm by farm voluntary approach. This method will accurately gather as much BMP data as possible in a consistent way and foster farmer cooperation in the future with this program.

Protocol

The development of the program began in December 2010 with the addition of a Tracking and Reporting Specialist stationed in Berkeley County to focus on Morgan, Berkeley and Jefferson counties. The Tracking and Reporting Specialist worked with the direction of NACD to begin working with 4 pilot farms in the watershed to develop a consistent protocol and determine what information needed to be collected on BMPs. A simple Excel spreadsheet was used on the pilot farms that included date, county, latitude, longitude, who verified the practice, practice name, description, condition, size, planting date, pre-2005, "full standard", "substandard" and percent reduction in efficiency columns. It became clear that the existing spreadsheet would not capture all the information that needed to be collected efficiently.

The Tracking and Reporting Specialist also noted that there were some inconsistencies between the Chesapeake Bay Program BMP name and definition and what farmers called a practice. As a result, the Tracking and Reporting Specialist developed a Reference Book that consists of the Bay Program BMP name, definition, reduction efficiency, the corresponding NRCS practice standard and an example picture. The Tracking and Reporting Specialist returned to the pilot farms with the Reference Book and was able to better communicate with the farmer about the BMPs and collect more information. At this time, the Tracking and Reporting Specialist moved to a Nutrient Management Specialist position within the WVDA and a new Tracking and Reporting Specialist was hired.

The Tracking and Reporting Specialist continued the work with NACD to develop a detailed protocol of tracking and reporting non cost-shared and expired cost-shared BMPs. The key points of the tracking and reporting protocol are as follows:

1. Working with 4 pilot farms to develop a tracking sheet and Reference Book.
2. Testing of the tracking sheet and Reference Book on the pilot farms to make adjustments.
3. Reliability and validity testing of the information collected on the pilot farms by a third party. The University of Maryland Agricultural Technical Coordinator provided assistance at this stage.
4. Adjusting the protocol such as modifying pre-planning tasks, how to ask questions to get all the data needed, and how to determine the level of function of each BMP.
5. Training of WVDA staff to collect data in a consistent manner from farm to farm and staff member to staff member.
6. Working with Tetra Tech to develop a database to store the data and submit to the CBWM.
7. Outreach to farmers to let them know that the program is up and running so they can volunteer their information.
8. Collecting data. All data collected is submitted to the Tracking and Reporting Specialist to enter into the database.
9. Re-checks of farms will be performed every 10 years and will be done through a mailer survey that will list the BMPs found on the farm and ask the farmer if the practice is still in existence, has been modified, or if new BMPs have been added to the farm.
10. Data will be aggregated on the county level by the database and be sent to the WVDEP BMP reporting database to be submitted to the NEIEN.

A new spreadsheet, the Farm Assessment Sheet (FAS), was developed for purposes of gathering the necessary information in the field needed to properly credit the BMP. The BMPs being collected include all those approved by the Chesapeake Bay Program and interim BMPs. The Field Assessment Sheet includes basic contact information, a list of the BMPs being tracked and/or credited by the Bay Program and cells to enter the practice name, tract and field number, number of units or systems, level of function (see below), the year it was installed, the latitude and longitude, notes and who verified the practice. The FAS also includes a decision tools list to help the field staff think through the necessary standards a practice must meet to determine its level of function. The levels of function were decided with the direction of NACD. These are the definitions that the WVDA is using on the farms to assess BMPs:

Meets NRCS Standard and Specifications- practices that comply with all the requirements in the State Technical Guide and Engineering Field Manual.

Functional Equivalent- practices that provide nutrient and sediment reductions equal to practices that fully meet NRCS Standards and Specifications but do not meet the rigorous criteria. Deviation from a NRCS CP technical standard in construction materials may still provide the same annual water quality benefits but may have a shorter physical

lifespan. An example would be a grassed buffer strip along a stream that is correct width, species compositions, etc., to meet NRCS Standards and Specifications but the fence keeping livestock out of the area does not meet the criteria.

Almost Functional Equivalent- practices that do not meet NRCS Standards and Specifications, yet provide some degree of nutrient and sediment reduction. This may include practices that don't meet the NRCS CP standard due to design factors. An example would be a grassed buffer strip along a stream that is less than correct width, or not the correct species composition, etc. to meet NRCS Standards and Specifications.

Expired Cost-shared Practices- are those beyond the contractual lifespan. The practice was originally cost-shared, installed and met NRCS Standards and Specifications. The farmer is voluntarily continuing maintenance of the practice as it continues to provide sediment and nutrient reduction benefits. It now becomes a functional equivalent reported by the state.

While currently, EPA staff are not crediting practices that meet the "almost functional" standard, the WVDA will continue to collect information on these BMPs in order to present them to the Chesapeake Bay Program's Agriculture Workgroup for scientific review with the hopes that they will be approved and then can be credited and used in the CBWM.

The Tracking and Reporting Specialist has also been working to update the Reference Book as new BMPs are approved or revised and interim BMPs specific to West Virginia are identified. The WVDA is looking to the CBP's Agriculture Workgroup to provide the official approval or revisions of BMPs and the Tracking and Reporting Specialist will make adjustments to the Reference Book accordingly. The Tracking and Reporting Specialist will also be making recommendations to the CBP's Agriculture Workgroup of proposed BMPs for review that are unique to West Virginia.

With an updated Reference Book and new Field Assessment Sheet, the Tracking and Reporting Specialist returned to a pilot farm to test the documents and the protocol for tracking in the field. It became clear that the FAS needed to be adjusted to take additional field notes and that the NRCS standards needed to be consulted on every BMP. Therefore, in the future, funding for some type of electronic device such as a field computer, iPad or smartphone that would allow access of the database in the field, would help to make the tracking process more time efficient and the reporting process more accurate as field notes are difficult to transfer to a database at the office. Time was also an issue for completing this round of testing of the pilot farm and it was recognized that it might be difficult and costly to collect information on all BMPs.

The Tracking and Reporting Specialist then completed a reliability and validity test of the pilot farm with the University of Maryland Agricultural Technical Coordinator (ATC). This pilot test revealed several issues with the tracking system that have since been addressed. One of the main issues that came from this test is the importance of calling a practice the same Bay BMP

between staff as well as recognizing the differences between the functional equivalent and almost functional equivalent. The ATC was also able to help address the concern of farmers about collecting GPS coordinates for every BMP by suggesting taking a central GPS coordinate for a farm or field. This method will be utilized.

As a result of the new tests on the pilot farm, slight adjustments have been made to the tracking and reporting protocol. The WVDA will still utilize the five Nutrient Management Specialists to collect non-cost-share BMP data. However, when they are in the field mainly for collecting nutrient management information, they will only focus on collecting information on the BMPs that have the highest reduction efficiency, have the greatest effect on scenarios, and are some of the more common/easily identifiable practices on West Virginia farms. The BMPs that the Nutrient Management Specialist will focus on are: animal waste management systems, riparian forest buffers, grass buffers, cover crops, stream protection with fencing, and conservation tillage. When the Tracking and Reporting Specialist is on a farm, they will gather information on all BMPs.

The Tracking and Reporting Specialist is working to begin training of the WVDA staff to track and report. Training will consist of explaining the purpose and objective of the program, how to use the FAS and Reference Book, how to prepare for a visit and what questions to ask the farmer. Then the staff will be brought to one of the pilot farms and to fill out the FAS together for a few BMPs so the thought process can be better explained. Then the staff will be instructed to fill out the FAS on their own in a different section of the farm. The group will reconvene to compare notes and identify and fix inconsistencies in reporting.

After training of staff is complete, the WVDA will begin the farm by farm voluntary tracking and reporting program. Farmers will be made aware of the program through education and outreach as described below in the education and outreach section and will call the Tracking and Reporting Specialist to begin participation in the program. A WVDA staff member will make an on-site visit and collect all necessary data and submit it to the Tracking and Reporting Specialist who will then enter the data into the database.

Concurrently, the Tracking and Reporting Specialist is working with Tetra Tech to develop a database that will store the information collected. It will be the responsibility of the Tracking and Reporting Specialist to enter all the data collected into the database. Tetra Tech is designing the database to reflect the Field Assessment Sheet. The database will aggregate the data on a county level basis when the report is needed to report to the WVDEP database that serves as the node to the NEIEN. Generating county level data reports for decision makers will also be a feature of the database. The database will also be able to generate farm by farm reports solely for the purpose of re-checking a farm after ten years to verify practices are still in place and to account for any new BMPs a landowner may have installed or the Chesapeake Bay Program may have approved.

The other side of the tracking and reporting program includes reporting those practices that have lived their contractual lifespan with NRCS or FSA and therefore the agency no longer

reports them and the CBWM will drop them out of the system. However, the WVDA will try to re-check and verify that the practice is still in place and functioning. This will require cooperation with NRCS and FSA to be able to identify these practices. Such cooperation is already in development between NRCS and USGS to extract the data so that the practices can be verified. The WVDA looks forward to the result of that cooperation in order to continue to use the expired BMPs in the CBWM.

The WVDA Tracking and Reporting Specialist has also been working with NRCS, FSA, WVCA and WVDEP to develop a Cost-share Tracking Sheet (CSTS) that reporting agencies can use when they report their BMPs for purposes of the CBWM. The CSTS lists the NRCS practice standard and code with the corresponding Chesapeake Bay BMP name so that the agency can report their BMPs properly and include information such as the CB units, sizes, and landuse. The purpose of creating the CSTS is to streamline the process of taking the data given to WVDEP staff to input into the WV node of the NEIEN. The CSTS also aims to capture the information of real life data, such as buffer sizes and stream fencing, to substitute for the assumptions being made in the CBWM. In the future, the CSTS will be reported on the county level by each county field office and will cover the appropriate reporting period.

Education

The Tracking and Reporting Specialist has been working to promote why the WVDA is conducting this program and what it means to landowners through displays at county fairs, meeting with the Conservation District Board members, and attending the WVU Extension sponsored Farmer Feedback Nights. Once the program is off the ground, the Tracking and Reporting Specialist will utilize news articles in local newspapers, Conservation District newsletters, and extension newsletters to spread the word about this program. The WVDA sees the success of this program being linked to efficient execution of the protocol when staff are on the farm so that the farmer will recommend participation to other farmers.

Future of Program & Alternative Plan

This type of program has never been attempted before by the WVDA, therefore, an adaptive management approach will be utilized to make adjustments to the protocol or database in order to accurately and efficiently collect and submit data. This technique will also be useful as BMPs are revised by the CBP's Agriculture Workgroup. The WVDA will be evaluating the program effectiveness and cost/benefit at the end of each year to determine areas of the program that need to be adjusted or determine if the farm by farm method is effective. The WVDA is committed to making the process, especially the voluntary process on the farm, as efficient as possible as the Department recognizes that this program is a major undertaking for its staff and West Virginia's farmers. The initial cost analysis for this program is \$950,000 which includes employee travel and wages, database development and inputting and maintaining the data for each farm. Funding is made possible through the Chesapeake Bay Regulatory and Accountability Program.

The alternative plan to collect non-cost-share BMPs if the farm by farm approach is not effective, is to use the farmer self-certification method with a 10-20% spot check of farms as outlined by NACD. At this time, the WVDA will work with EPA and appropriate NACD staff to develop a protocol for implementing the farmer self-certification method. This method was preferred by local stakeholders at the Farmer Feedback Nights over the farm by farm method. However, the WVDA needs to be assured that information collected is accurate and follows the standards outlined by NACD that were developed in conjunction with EPA. The WVDA believes the farm by farm method will achieve the most accurate results and that by re-checking farms in ten years through a survey of BMPs found on the farm previously, the WVDA will be able to meet the desires of the farmers to have a self-certification program.