Maryland Water Quality Trading Advisory Committee
Meeting Summary
Maryland Department of the Environment, Baltimore, MD
December 12, 2016

Committee Members in Attendance:

Tom Ballentine	*NAIOP Maryland Commercial Real Estate Development Association*
Lynn Buhl	*Maryland Department of the Environment*
Jim Caldwell	*Howard County Office of Community Sustainability*
Valerie Connelly	*Maryland Farm Bureau*
Lisa Feldt	*Montgomery County Department of Environmental Protection (Alternate* – Patty Bubar*)*
Patricia Gleason	*US Environmental Protection Agency, Region 3*
George Kelly	*Resource Environmental Solutions*
Les Knapp	*Maryland Association of Counties*
Steve Lafferty	*Maryland House of Delegates*
Kate Maloney	*Maryland State Builders Association*
Erik Michelsen	*Anne Arundel County Department of Public Works*
Shannon Moore	*Frederick County Sustainability & Environmental Resources Office*
Doug Myers	*Chesapeake Bay Foundation (Alternate: Eric Fisher)*
Susan Payne	*Maryland Department of Agriculture*
Chris Pomeroy	*AquaLaw, Maryland Association of Municipal Wastewater Agencies, Maryland Municipal Stormwater Association*
Phillip Stafford	*Maryland Department of Natural Resources*
Rob Shreeve	*Maryland State Highway Administration*
Joe Tassone	*Maryland Department of Planning*
Lindsay Thompson	*Maryland Association of Soil Conservation Districts, Maryland Grain Producers Association*
Al Todd	*Alliance for the Chesapeake Bay*

Facilitator:

Kathy Stecker

Other Attendees:

Vimal Amin	*Maryland Department of the Environment*
Andrea Baker	*Maryland Department of the Environment - Attorney General's Office*
Peter Bouxsein	*Chesapeake Bay Foundation*
Brian Clevenger	*Maryland Department of the Environment*

Michelle Crawford	*Maryland Department of the Environment*
Lee Curry	*Maryland Department of the Environment*
Chandler Denison	*Johnson Mirmiran & Thompson, Inc.*
Clay Detlefson	*National Milk Producers Federation*
Brenda Dinne	*Carroll County Department of Land & Resource Management*
Jacob Dorman	*Contech Environmental Solutions*
Aris Evia	*Maryland Department of the Environment - Attorney General's Office*
Jim George	*Maryland Department of the Environment*
Ridge Hall	*Chesapeake Legal Alliance*
James Hearn	*Washington Suburban Sanitary Commission*
Christine Holmburg	*Maryland Environmental Service*
Jason Keppler	*Maryland Department of Agriculture*
Marya Levelev	*Maryland Department of the Environment*
Steve Levitsky	*Perdue Farms, Inc.*
Karen McJunkin	*Elm Street Development; SOSystems*
Kevin Nash	*RK&K*
Julie Pippel	*Washington County Division of Environmental Management*
Dusty Rood	*Rodgers Consulting*
Matt Russell	*Rodgers Consulting*
Steve Shofar	*Montgomery County Department of Environmental Protection*
Jennifer Smith	*Maryland Department of the Environment*
Martin Stewart	*Perdue AgroBusiness Inc.*
Rosewin Sweeny	*Venable LLP*
Maggie Witherup	*Gordon Feinblatt LLC*

Action Items:

- Committee to receive the revised BRF Issue Paper and presentations
- Committee to provide feedback on meeting topics by January 13

Meeting Minutes:

1. WELCOME & INTRODUCTIONS

Ms. Stecker welcomed the meeting attendees, and everyone introduced themselves.

2. REVIEW OF THE NOVEMBER 17 MEETING MINUTES

Ms. Stecker asked the Committee members for corrections or comments on the November 17 meeting minutes. Ms. Payne stated that there were corrections to be made regarding the bullet points on page 3 and 4 since they had run in to each other and needed to be separated out. The minutes were approved as corrected.

3. REVIEW OF MEETING GOALS

Ms. Stecker stated that the discussion would continue to focus on the Bay Restoration Fund (BRF) legislation and the Aligning for Growth (AfG) proposal. There will also be two proposals presented to the Committee: Perdue AgriRecycle litter treatment and BAT Systems as Best Management Practices (BMPs).

4. BRF LEGISLATION – ISSUE PAPER UPDATE

Dr. George stated that a revised draft version of the BRF proposal will be sent out this week. All of the comments received have been placed in to an appendix (Appendix B) and are very clearly identified. MDE is making a bold proposal regarding how to distribute the credits, which will simplify the initiative and give it a better chance of succeeding in the beginning. The original proposal had credit reductions being distributed to the local jurisdiction in proportion to the combined Sewer and Septic fees generated in a preferential order (Septics, Non-MS4 Stormwater, and MS4 Stormwater). The revised proposal distributes the credits to local jurisdictions in proportion to what is generated from the septic system fee only and credits reductions solely to septic system reduction obligations.

The proposal compensates the septic system sector since 40% of their fees each year are directed to cover crops and the septic system sector is not receiving reductions for those actions. The proposal also avoids complications of having the BRF reductions credited to permitted activities (i.e., MS4 activities), which carry many compliance requirements, verifications, etc. Distributing the credits solely to the septic systems addresses the view of some stakeholders that MS4 programs should use their own resources to purchase credits in the trading concept rather than BRF funds. The new proposal requires that only nitrogen credits be purchased via the BRF, which avoids the complication of figuring out how to purchase both nitrogen and phosphorus credits.

The US Environmental Protection Agency (EPA) asks every year how MDE is going to handle nutrient reductions for septic systems and non-regulated sector. This new proposal addresses concerns about septic system reductions. Although the proposal directs sewer fees from urbanized jurisdictions to more rural systems, it can be seen as balancing past trends. In the past, fees from the rural jurisdictions with smaller Waste Water Treatment Plants (WWTPs) have been funding the upgrades of the major WWTS in the urban areas. Delegate Lafferty asked why the septic system reductions were a priority when the pollutant load is so small. Delegate Lafferty also stated, regarding the unbalanced past trends to urban WWTPs, that the largest pollutant loads are coming from the largest WWTPs, which is why more resources were applied. Delegate Lafferty is unsure why septic systems are the singular focus of the investments. Dr. George replied that since 2004, the State has prioritized reductions from the largest sources of pollution,

that is, from WWTPs. However, the major WWTP upgrades are coming to an end and it is time to ask what is the next priority for using the resources. Delegate Lafferty stated that it is not an imbalance due to the overall obligation to address the Total Maximum Daily Load (TMDL); it is the next wave of minor WWTPs already online for upgrades which should be taken care of. Dr. George replied that the minor WWTPs have precedence on use of the $60 million in funding available in Fiscal Year 2018. If minor WWTP upgrades in the amount of $60 million need the funding in a given year, then all $60 million will go to minor WWTPs and they will be prioritized ahead of the BRF purchase of credits.

The reductions being called for, in terms of the States allocation responsibilities among the sectors, from the septic sector is 1.2 million pounds (roughly 10% of the total reduction). The proposal is intended to simplify the administration of the initiative and to address one of the non-permitted activities for which MDE has no means of compelling reductions. Dr. George requested comments on the proposal. Ms. Moore asked if funds from septic users would go to the BRF and could be applied for many different purposes but the credits purchased would go back to the septic system sector. Dr. George stated that the proposal is using the sewer side of the funds, but using the proportion of what is paid into the fund by the septic sector as the way of apportioning credits back out. Ms. Moore asked where the septic sector funding goes. Dr. George replied that 60% of the septic funding goes to septic upgrades or septic connections and 40% of it goes to cover crops. Ms. Moore asked where the credits will go for the septic sector. Mr. George replied that currently, that the credits for septic upgrades go to the septic sector while the credits for the cover crops go to the agriculture sector. Ms. Moore asked why funds would not just be taken from the septic side. Dr. George replied that option was contemplated but there are individuals who are uncertain about the major changes that would be required to legislation. Dr. George stated that enabling legislation is required, but the proposed amendment would not change the existing statute as much.

Mr. Kelly asked for an explanation of why only purchasing nitrogen would be a more simple approach. Mr. Kelly expressed a concern for the loss of phosphorus trading from the program. Mr. Michelsen agreed with Mr. Kelly and stated that even if the State is not going to incorporate phosphorus and sediment into the program, there should be some language written that states that the State reserves the right to all of the ancillary environmental benefits. Ms. Payne stated that the State is not purchasing a practice, but purchasing a credit generated by that practice. The Maryland Nutrient Trading Tool (MNTT) determines the reduction amounts of the three recognized pollutants (nitrogen, phosphorus, and sediment) which the practice generates and can be sold separately. Ms. Payne stated that Mr. Kelly was correct, if a buyer is limited to nitrogen purchases, then it is likely that they would pay more because of the lack of use of the other pollutant reductions generated. Dr. George stated that an alternative option could be for the State to buy all types of the pollutant reduction credits generated by the practice as part of the policy and then determine how to distribution the credits to local jurisdictions.

Mr. Michelsen asked if the State would want the ancillary benefits sold out from under them because they did not think to buy all of the rights at the time of purchase. Ms. Payne reiterated that the credits are being bought, not the practice. What Mr. Michelsen suggested has been done in Virginia, where their program is based on phosphorus. The reason their credits cost between $20,000-$30,000 a pound is because the State takes all of the nitrogen credits and retires them. The State is paying for both pollutants, but only one is part of the pollutant offset accounting. Mr. Pomeroy asked if the intent is to buy all three types of pollutant credits. Mr. Payne stated that is not the intent. The phosphorus and sediment would be left with the seller to do with as they choose. Mr. Kelly stated that the State could be buying phosphorus and sediment for a cheaper price and not have all of the cost loaded on to the nitrogen. Ms. Payne stated that the proportions of how the credits are generated are significantly different between the pollutant types; currently there is no market for sediment.

Mr. Tassone stated, regarding paying more for nitrogen credits, if phosphorus and sediment are also purchased, would the seller then price each separately. Mr. Kelly stated that a practice may generate all three types of credits, but if only nitrogen is being bought, then the seller may put most of the price on the nitrogen; if all three pollutants are purchased, then the cost could be allocated based on the amount of pollutant credit generated. Mr. Tassone asked if that was done, why Maryland would have to suffer the same consequence as Virginia (i.e., not being able to credit one of the constituents to a reduction). Ms. Payne stated that the constituents are credited through retirement; the nitrogen is retired and the phosphorus is traded. Maryland is not retiring the credits, but using them to towards achieving septic load reductions; usually when a credit is retired, it is not assigned to a sector but retired for the good of the Chesapeake Bay across all sectors. Mr. Tassone stated that in order to parallel the allocation of the nitrogen reduction to the septic systems, the State would have to come up with an analogous allocation for the phosphorus and sediment reductions.

Ms. Payne stated that in this proposal the State is only interested in nitrogen, which may not be applicable to other sectors or other possible trades. Mr. Knapp stated that the biggest complaint of the BRF, even though it was very successful, was the unbalanced past trends of allocation. Mr. Knapp expressed a concern regarding possible future problems from excluding phosphorus and sediment.

Dr. George brought up the issue regarding review of the program for discussion. The current proposal has the program being reviewed three years after commencement, and at that time, it could be determined whether to add phosphorus to the program. Alternatively, phosphorus could be added in the beginning with the focus on septics and non-MS4s. Another option is that the State could buy the least cost package of nitrogen and phosphorus from any bidder and distribute the credits in a manner determined by the Committee.

Mr. Michelsen asked if there has been any consideration given to the locations of the practices which would generate the credits versus where the revenue was coming from. There are some concerns about potentially leaving hot spots in place at the local level. Mr. Michelsen asked if that issue was addressed. Dr. George replied that it was, but it will be monitored and considered through the evaluation process. The State is buying in the most cost-effective geographic areas and distributing the credits to where the revenues were generated; it is the intent to have the trading opportunity where credit generation is from the least cost supplier and the allocation is more broadened. Mr. Michelsen asked if the program would align with the three trading geographies or if it would not be aligned with that concept. Dr. George replied that the BRF program would not be subject to the three trading geographies. The goal is to make the program more cost-effective. Mr. Tassone asked if it does not matter if the credit was generated in one area and applied in another because it is all measured relative to delivery to the Bay. Dr. George replied broadly speaking that is true, but the proposal is a pilot level project and the geographic distribution issue at this scale of implementation is minor. Any geographic problems which arise can be addressed with policy change at the time of the three-year review.

Ms. Moore stated that there are unintended consequences. The good consequences put the reduction for the Bay first in terms of timing, but it could create separate market places for the Bay as a whole versus the local jurisdictions and MS4 TMDLs. In moving a credit from one basin to another for the Bay, it cannot be accounted at the local level; local jurisdictions do not get the benefit of those reductions because there is no way to attribute them. Something to consider would be how to address that issue to prevent duplicate reduction and equity issues.

Dr. George moved on to the next topic regarding how credits are purchased. There were three options: competitive bids, the State determines the spark price, and the State determines the floor price (i.e. buyer of last resort). The Committee favored a competitive bid process (reverse auction).

Regarding verification, the original proposal implied that the cost and independent verification of control practices be borne by the party selling the credits to the BRF. The revised version is more explicit that the seller is responsible for the verification prior to receiving payment from the State. The notion is that the State wants to have the assurance as it makes the payment each year that the practice is still there. This was recognized as being opposite of the Trading Manual which states that the buyer is responsible for verification of BMPs. There are a couple of other suggestions that went along with this change, including considering if the cost is too high for annual verification, some practices could be subject to less frequent verification. There also is a BMP verification document which will provide guidance. Another add-on is that the State could consider subsidizing the cost of the verification to the seller by using the BRF for other State resources to pay for the verification on behalf the sellers.

Ms. Payne reiterated that the BRF proposal is the opposite of what every other sector would have to do and every time an exception is made for the BRF program then the argument is weakened for what is proposed in the trading program. There are individuals who are concerned over the validity of the credits. The burden was originally placed on the buyer because the seller is required to pay for the operation and maintenance costs of the credits. All of the costs associated with generating a credit will be present in final cost of the credit. The State will pay for the cost of verification in one way or another and stated that it might be better to have consistency between the two programs. Mr. Kelly stated that in other markets the seller is responsible for the operation and management as well as the verification of the credit. By bifurcating the verification, a management dynamic is created which brings complications. If there is concern over the seller verification of the credits, then the State could reserve the right to review and determine if an inspection is needed. Another issue is identifying the true cost of a credit which will include verification; the more something is bifurcated the harder it becomes to make that determination. Ms. Payne reminded the Committee that in the Agriculture Certification Regulations and Program there is the requirement that a State-approved independent, third party be the only party who can verify credits. Mr. Tassone agreed that consistency was needed and stated that the seller should be responsible for verification.

Dr. George stated, regarding the annual funding cap, that the cap in the proposal was revised to equal the amount of revenue used each year to pay for cover crops to the septic system funds. [This might be moot if the legislation hard-wires the funding at $10 million/yr]. Cover crops would still continue as a very cost-effective way of achieving our goals. Mr. Caldwell stated that the price of cover crops has been fairly consistent over the years. Dr. George stated that a question was raised regarding the minimum number of credits that could be purchased; a 1,000 minimum was proposed as many small transactions become administratively cumbersome. The Committee felt that in order to stimulate the trading program, participants should not be excluded and such a high number might exclude farmers who do not want to deal with an aggregator. The revised proposal lowers the threshold from 1,000 to 250 credits of nitrogen. For phosphorus, if it is used, it was proposed that the limit be lowered from 100 credits to 35. All of these limits are proposals and MDE is looking for feedback.

Ms. Moore asked if the BRF would be buying from a limited pool or from the entire pool. Dr. George stated that the State would be buying credits through Maryland's part of the CBNTT platform. Ms. Moore stated that size does matter as the State would get a better price from a larger lot; or there is the possibility of shutting others out of the marketplace if too many credits are bought at once. Ms. Payne stated that another issue is that the number is fairly typical; 250 credits is an average number for farms in Maryland, which would enable individual farmers to participate. Ms. Connelly asked if the 250 was the minimum or maximum. Ms. Payne replied that it is the minimum number of credits that the State would buy from a single bid package. Mr.

Michelsen stated that there should be no minimum or maximum for trading. Ms. Payne stated it could become an administrative issue with all of the contracts which would need to be signed.

Ms. Moore expressed a concern regarding MDE being able to buy an unlimited amount of credits because of the possible market distortions which could be created. Ms. Payne stated that the maximum number of credits purchased by the BRF will be limited by the $10 million divided by the cost for the credits. Ms. Moore explained that as the largest buyer the State could purchase all of the cheapest credits and be the preferred entity for a purchase. Ms. Moore also asked if all of the credits purchased would be retired or if the State would still be used as the buyer of last resort in some instances. Ms. Thompson stated that if the goal is to jump start the market, then it should be made available to as many potential sellers as possible. Part of MDE's evaluation criteria could be to determine if it is cost effective to administer multiple small size credit contracts.

Ms. Connelly stated that in order for farmers to sell their credits they are going to have to give all of their documents to the public and there is not a single farmer who would make their documents public for three credits. There is going to be some level at which a farmer is going to have to be paid enough for them to be willing to release their documents. Mr. Shreeve stated that the price point is unknown. If it is limited to the State purchasing blocks of 250 pounds or better, then as long as it is not a limitation on MS4s or other entities, the State can buy any quantity available. Mr. Shreeve is concerned about the BRF program competing for credits with the State Highway Administration (SHA). Dr. George asked the Committee if the group had an opinion on a maximum or recommendations to some of the issues brought up. Ms. Payne stated that the State has the right to reject any and all offers. Mr. Michelsen stated that the State will most likely not get anywhere close to using the full $10 million and stated that is does not make sense to put a cap on the program.

Dr. George stated, regarding trading geographies in the section entitled "Where to purchase credits relative to where credits are applied," it has been edited to explicitly state that the trading geography is the statewide area draining to the Chesapeake Bay. There should be natural balancing between locations of credit purchases and applications; a mix. Mr. Fisher stated that as the BRF program becomes less and less like the trading program, the less useful it becomes. Dr. George stated that specific credits will not be assigned to specific jurisdictions and the BRF funds will buy a pool of credits, and that pool will be credited out to the local jurisdictions towards their progress to the Chesapeake Bay. Mr. Knapp stated that the BRF program may be a way to test the wider geography since it is a statewide program. Mr. Knapp suggested having a review one year in to implementation and then begins a three-year review cycle to quickly correct any issues. The earlier review could alleviate stakeholder concerns regarding geography balances. Delegate Lafferty asked if redistribution will be based upon the relative proportion of

fees which are recovered from each jurisdiction. Dr. George replied that is the case in the current version.

Dr. George stated that the review period will be adjusted based on Mr. Knapp's recommendation of an initial one-year review. Mr. Kelly cautioned that a representative snapshot of the program might not be available after one year and recommended keeping the review at two or three years with annual reporting. Dr. George stated that obvious flaws were going to be corrected with the one-year review.

Dr. George stated, regarding the sunset provision, that the entire BRF has a sunset date of 2035. The Committee did not have a consensus regarding a specific sunset provision for this program; therefore, the negotiations during the legislative process will most likely determine a sunset provision. Mr. Hall stated that some individuals were in favor of a sunset of 2025. Mr. Kelly stated that the program should at least go the length of the contracts. Dr. George stated that that the program will go as long as the contracts, but the program may stop buying contracts at an earlier sunset.

Dr. George stated that the Committee wanted the policy and procedures for the BRF program to be written in to the trading manual. There was a question regarding limiting the contracts to 5, 10 or 15 years or allow a range of contract lengths. It was decided to allow contract lengths to be variable. Ms. Moore expressed concern for marketplace distortion if MDE purchased credit with a 15-year contract. Because the program has multiple goals, it is going to act in its own self-interest (i.e., overall reductions to the Bay). Mr. Kelly stated that the market can be distorted due to structural practices being limited to only 5-year contracts. Mr. Kelly stated that the Committee should try to maximize the benefit of the most cost-effective credits for the State.

5. ALIGNING FOR GROWTH

Dr. George stated that as land use changes, the allocation of loads to that land need to be reassigned by the State. MDE is looking for feedback on the AfG program from the Committee. MDE is following EPA guidance, which states that as long as Maryland is meeting the basin targets for the Chesapeake Bay, then Maryland will meet its Chesapeake Bay water quality requirements. This motivates the assessment of offsets at a major-basin scale.

The current way in which loads are reallocated when land use changes is a default process. An explicit policy is needed to assure nutrient loads to the Chesapeake Bay are not increasing while economic growth continues. The EPA has identified the major basin geography as the appropriate scale for managing Bay water quality. MDE projects that load reductions at the major-basin scale, if the State reassigns all of the allocations from the land which is converted to new development, will decrease. Whether or not an offset policy is needed is dependent on how the existing allocations are reassigned by the State. For example, if the State reassigns all of the

existing allocations to new development, then no offsets would be needed. If the State takes the existing allocations and credits them to Bay restoration, then developers will have a lot to offset. Another option could be somewhere in between. If offsets are needed, then the offset calculation approach determines the amount of offset based on the development site characteristics. The proposal presented compares the post-development load to a common threshold, one for each of the five major basins in Maryland. Land use changes and changes in loads will be investigated first. MDE will present the reallocation method being proposed to the Committee. MDE will also assess the need of offsets at the major-basin scale.

Regarding land use projections and changes in the land use over time, MDE considered projections from the Maryland Department of Planning (MDP) out to 2025. The projections account for applicable land use laws, local zoning, protected lands (i.e. forest, and agriculture), and other environmental constraints. Using the change in land use in the Chesapeake Bay model, loading rates at the Watershed Implementation Plan (WIP) implementation level were used to calculate the loading change. As the land use is converted, the loads in pounds decrease for both nitrogen and phosphorus when averaging all development at the major-basin scale. This is because a fair amount of higher-loading agricultural land is replaced by lower-loading urban/suburban land.

The reallocation policy will determine how much of the reallocation is reassigned to new development and sets the foundation for the offset which would be needed. Major basin projections identify the non-point source (NPS) loads associated with the lands that are likely to be developed. MDE is proposing from those loads that 30% be set aside by the State (10% for uncertainty and 20% reserve), and the remaining loads be available for reallocation to new development. If there is enough remaining load allocation, then no offsets are needed. Any load remaining after the reallocations are made to new development would be credited to Bay reductions on behalf of the sector from which the loads originated, which will mostly be from the Agricultural sector. Mr. Michelsen stated that land conversion was a significant component of the expected load reduction for the agricultural WIPs and asked if AfG was double counting loads. Dr. George replied that there is a practice of agricultural retirement which is different from land development. There was some accounting within MDE from MDA's strategy in the Phase II WIP, which accounted for some land conversion, but that has already occurred and should not be in the Phase III WIP.

Dr. George reminded the Committee that as the land converts, the load allocation to that land use reverts to the State to be reallocated. Dr. George stated that this is analogous to what happens when a Point Source (PS) discharger terminates operation. The 10% uncertainty figure is a safety margin for the NPS, which is set aside and cannot be used by the State for allocations. The 20% reserve is motivated by public interest and the wish to foster economic growth. When the reserve is used, it is through a public process so that there are multiple voices and views in

how it is used. The remainder after the allocation has been made to new development will be credited towards Bay reduction, which is a cost-free way to reach Bay reduction goals.

Regarding assessing the needs for offsets, in most of the major basins there is a sizable remainder. MDE believes that offsets will not be needed based on the current Chesapeake Bay 5.3.2 model at the major-basin scale. The remainder can also be used to address the loads from certain development practices which place them above the threshold. The recalculation approach is being presented as good public policy in the event that either the numbers change requiring the need for offsets or MDE decides to change the scale at which MDE is operating. Mr. Hall asked where the reduction numbers came from and where it would create loads available to use as offsets. Dr. George replied that the load associated with the number of acres being developed (agricultural lands on which the WIP has been fully implemented) is calculated to give the reduction numbers.

Mr. Hall asked what the basis was for assuming that the WIPs were going to be fully implemented. Dr. George replied that MDE is not assuming that the WIPs are fully implemented, but if the loading rate stays below the full WIP loading rate on the land that is converted, then MDE is assured that the Bay load limit for that land will not be exceeded. The threshold method can operate at a spectrum of scales, from statewide to an individual development site. MDE is proposing that it operates at the scale of the five major-basins. MDP land-use projections provide an initial assessment to determining the proportions of future agricultural and forest lands likely to be developed in each major basin. To set the threshold loading weight, the area weighted average unit load of forest and agricultural land at WIP implementation levels for each major basin is calculated. As long as new development stays below the threshold, MDE is ensuring loads are not increasing at that geographic scale. Ms. Moore asked if the loads were based on delivered or edge-of-stream loads. Dr. George replied that it was edge-of-stream loads, but that issue will be further investigated. [Note: If the edge-of-stream loads remain below the WIP edge-of-stream loads, then the loads delivered to the Bay will also remain below their associated limit.] At the site scale, the threshold is the load for pre-developed land at full WIP implementation for an individual project. At the basin scale, the threshold is the load averaged across all of the pre-developed land that is likely to be developed in the future at full WIP implementation.

The threshold loading rates are affected by a number of things; there is some variability. They are affected by the ratio of agricultural to forest. Within agriculture, the ratio of cropland to pasture also has an effect on the threshold and there is regional variation in the loading rates of the Chesapeake Bay model. The land-use projection approach and Chesapeake Bay model also affects the threshold results. One benefit of the threshold method is that it does not incentivize the development of agricultural land in order to capture allocations at the site level. Mr. Michelsen asked if it were preferential to have a developer develop on the agricultural portion of

a property rather than forested. Ms. Wainger asked if in that instance the forest conservation requirement would activate anyway. Mr. Michelsen stated that it would for a portion. Dr. George stated that the State does not want to incentivize either; the ideal policy would be neutral.

Dr. George stated that the threshold approach does not require the determination of the pre-land use conditions; it entails simpler calculations and simpler reporting. Reallocation under the threshold approach would need to be under periodic analysis using remote sensing information. The threshold approach can also scale over geographies. Dr. George gave examples of different types of developments. Ms. Moore suggested stratifying the different types of developments in terms of geography and stated that both edge-of-stream and delivered loads should be investigated because the calculations will produce drastically different numbers depending on the type of load used. Preliminary findings show that sufficient allocation capacity is available to protect water quality, which obviates the need for offsets when averaged across different types of developments. The findings show that moderate density development on septic systems could exceed the threshold for nitrogen. However, these slight exceedances of the threshold are counterbalanced by net reductions associated with other types of development.

Regarding data needs, regardless of whether the data is collected by a site-by-site process, the land use change information is needed. Also better reporting of stormwater BMPs on new development is needed as is information regarding new septic systems. For data reporting options on the stormwater side, there is the MDE Water Management SSDS Geo-Database and the MDE Water Management Compliance eNOI system. On the septic system side, there is the MDE Water Management Online Septic Reporting System. Mr. Rood stated regarding the eNOI system, that it is a process and system which all new development projects are required to submit prior to starting construction and during the final planning review process to provide information to the State on the project.

Dr. George asked the Committee for comments on the AfG proposal. Dr. George reiterated that the proposal is to adopt the five major basins as the geographic scale at which the AfG policy will be implemented. This scale can be refined in the future if warranted. Loads at the basin scale are projected to decrease as land use is converted, even if 30% of the pre-development WIP-level load is set aside and the new development is given an allocation. Therefore, baring new information or adoption of a more refined geographic scale, water quality is protected without the need to perform offset calculations. Regarding reallocation, MDE will set side 30% of existing land use allocation load, and provide the allocation to new development. The remainder reverts to original source sector for reduction to the Bay. Preliminary findings suggest sufficient allocation will be available to obviate the need for offsets.

MDE is proposing the adoption of the threshold calculation approach. Although preliminary findings suggest no need to perform offset calculations at the present time, the proposal is to

adopt the Threshold Approach at the major basin scale as part of the State's initial AfG policy. The Threshold Approach would be used if future changes in data or analytical tools suggest the need or if the State is compelled to adopt a refined geographic scale of analysis.

One outstanding policy question not addressed is whether septic and stormwater should be assessed together or separately. If separately, what allotment of load should be given to them. Because time ran out on this agenda item, options regarding the separation of septic system loads from stormwater were not presented. The options were sent to the WQTAC via email following the meeting.

Dr. George asked the Committee:
Question 1: The threshold approach precludes the need to assess pre-land cover information. Should we strive to collect it anyway?
Question 2: The eNOI system has promise for managing information associated with AfG? Should we investigate that potential?
Question 3: Regardless of whether septics are combined or separated from stormwater, should we consider requiring installation of all septic systems to be reported by service providers to the State via the existing online system?
Question 4: Are there other data issues we should be considering?

Ms. Stecker requested that the Committee submit comments and questions to Mr. George on the BRF Issue Paper and AfG proposal through email by January 13.

6. AGRIRECYCLE PROGRAM

Mr. Levitsky gave a presentation on Perdue's AgriRecycle program. Mr. Levitsky stated that the Perdue AgriRecycle Facility was opened in 2001 in Seaford, Delaware. Approximately one million tons have been processed to date, and approximately 50% of the material is shipped outside of Chesapeake Bay basin. Perdue will pick up the litter for free from the growers. There is a scrubber system which takes care of odors and particulate matter. The litter is run through a process which kills bacteria and weed seed, which is very important for organic growers. The final product is pelletized and shipped out to buyers. Perdue has spent over $60 million on constructing and operating the facility, which has never been profitable. Approximately 66 million pounds of Nitrogen and Potassium and 44 million pounds of Phosphorus have been moved through the facility. Last year 72% of the material was shipped outside the Chesapeake Basin. The facility is permitted for 80,000 tons of poultry litter annually, but Perdue typically runs approximately 40,000 tons through the facility annually. The MicroSTART60 organic fertilizer has a nutrient analysis of 3-2-3 NPK and MicroSTART60 Prilled Plus has a nutrient analysis of 7-1-1 NPK. Perdue AgriBusiness products are compliant with USDA National Organic Program (NOP) for use in organic crop production.

Regarding Seaford AgriSoil, the facility was opened last week. The building cost $12 million to construct and is a large receiving/mixing building with windrow bunkers, covers for compost, and large curing area. The facility was constructed adjacent to the Perdue AgriRecycle building. The facility receives poultry litter, diffuse air flotation (DAF) material from other processing facilities, hatchery waste, and Perdue AgriRecycle scrubber water. The material is mixed, composted and put under cover to reduce. Final compost will be sold to landscaping companies, bagged and sold in retail, and used as soil amendment. The plan is to eventually expand the facility, and there is potential to add approximately 40,000 tons of poultry litter and DAF material in the future.

Regarding the nutrient trading potential, currently there are 40,000 tons of poultry litter which contain 1,200 tons of nitrogen and 800 tons of phosphorus and over 50% is moved out of the Chesapeake Bay watershed. Seaford AgriSoil currently will take 45,000 tons of land-applied nutrients. A question which was raised was since the total number removed from the land is known, what is the percentage that would reach the Bay if the material is land applied. Perdue will work with WQTAC, MDA, and MDE to identify best N and P avoidance calculations. Perdue will continue to track nutrient data and location data for Seaford AgriSoil. Ms. Buhl asked about verification for tracking that the nutrients have left the watershed. Mr. Levitsky replied Perdue will investigate verification methods, especially for areas which are just outside of the watershed. Ms. Moore asked if the plants were designed to be able to take other types of feed stocks. Mr. Levitsky replied not currently, and the focus is on the start-up of the AgriSoil facility. The plan is to eventually take hatchery waste from other integrators. Ms. Moore asked about composting waste from other feed stocks, specifically Municipal Solid Waste (MSW). Mr. Levitsky stated that one issue with that are contaminants (e.g., plastics).

Mr. Kelly asked if farmers' application of fertilizer after poultry waste removal has been calculated. Ms. Levitsky stated that has not been investigated. Currently the Chesapeake Bay Foundation takes the tonnages which Perdue removes and assumes complete removal in the model. Ms. Payne stated that there needs to be an adjustment for replacement fertilizer. Also, Perdue currently receives a State subsidy for manure transport, which would have to be balanced against what would be gained from participating in the trading program since both would not be allowed. Ms. Thompson stated that there is potential in determining a delta within the Chesapeake Bay Program in the loading rates of acres which receive manure versus those which receive commercial fertilizers. This could be used to determine the ability to generate credits. Mr. Levitsky asked the Committee if the discussion of trading internally had arisen. Ms. Moore stated that it would not be considered trading; it is more like a trading bubble. Ms. Buhl stated that the MDE Wastewater Department would have to be contacted.

7. BAT SYSTEMS AS A BMP

Although Ms. McJunkin's presentation identified her company's BAT technology as a trading tool, Ms. Payne clarified that the RecoSept™ System is not a trading tool, but a BMP. Trading tools are components of the trading platform (e.g., calculation tool or registry). The Best Available Technology (BAT) systems are management practices. Ms. McJunkin agreed that the RecoSept™ System is a BMP which could be used for trading.

Ms. McJunkin has begun a Maryland start-up called SOSystems Wastewater Technologies, which is a platform for testing, producing, and marketing a nutrient reducing septic system. The goal was to design a nitrogen reducing septic system that is technically simple, easy to operate, and extremely robust in removing nitrogen. A patent was received for the RecoSept™ System. The system went through six months of testing at NSF and has been certified. SOSystems will begin in-field testing in Maryland. The RecoSept™ System takes an anaerobic system and turns it in to an aerobic system. The RecoSept™ System adds an additional underground septic tank and recirculates through a BioFilter™ cabinet. RecoSept™ System is the only system which has a BioFilter™ cabinet which is above ground. Currently there are eight systems approved in Maryland which reduce nitrogen about 70% compared to a standard system. The RecoSept™ System is achieving about 80% reduction.

Ms. McJunkin explained why MDE-approved BAT systems as replacements for existing On-site Disposal Systems (OSDS) would be a credible and reliable source of nitrogen credits. The systems go through rigorous testing protocols and there are long-term operation and maintenance requirements, which help to ensure that the nitrogen-reducing components continue to work. SOSystems believes that BAT systems will provide one of the lowest cost BMPs available. The average cost over 10 years of an MDE-approved BAT system is $13,500, with a Total Nitrogen reduction between 8 pounds and 14.4 pounds. The cost per pound reduction on nitrogen is between $94 and $169.

Ms. Moore asked if the reductions were EOS or delivered. Ms. McJunkin replied EOS. Ms. McJunkin stated that the baseline is already determined. Mr. Kelly asked if the 8-14.4 pounds was on a yearly basis, to which Ms. McJunkin replied, "Yes." Mr. Kelly asked about the lifespan of the system. Ms. McJunkin replied that it was longer than 10 years. Ms. McJunkin stated that the $94-$169 is the estimated price per pound per year and the system is approved by the Chesapeake Bay model. Ms. McJunkin stated, regarding the market potential, is that there are currently 420,000 standard OSDS in Maryland and 52,000 standard OSDS in the critical area. There are 2.4 million pounds of nitrogen credits needed to meet all MS4 requirements. Retrofitting about 50% of Maryland's existing OSDS to BAT systems would meet the entire MS4 offset. Retrofitting all of the critical area OSDS would offset almost one-third of the required offsets. Ms. Wainger asked if the costs shown were retrofitting costs. Ms. McJunkin

stated that analysis was performed on only retrofitting systems; there is not a great demand for new systems.

Ms. McJunkin stated that homeowners and businesses need to be incentivized to retrofit their existing systems. System benefit to the homeowner includes the removal of the total suspended solids. The goal is to target areas with a significant number of failing leach fields. Ms. McJunkin recommended the requirement of aggregators and stated that a streamlined permitting process was also needed. Mr. George asked for clarification of aggregator bundling. Ms. McJunkin replied that it would be similar to wetland mitigation banking, where bankers go out and find locations for wetlands that can operate in the credit arena; an aggregator can identify areas which contain soils which could lead to failing leach fields and begin targeting those fields. Mr. Kelly stated that it would be a great market if there is a market for it. Currently there is no market for AfG and WWTPs are selling performance credits for MS4s. Ms. Buhl supported anything that can be done to encourage the septic sector and to encourage those who are wavering and not required to install BAT systems. Ms. Buhl requested that the Committee come up with ideas to engage residential homeowners.

8. UPDATES

There were no updates.

9. PUBLIC COMMENT

There were no public comments.

10. UPCOMING MEETINGS

Monday, January 23, 1-4 p.m., MDA, Annapolis
Monday, February 27,1-4 p.m., CBF, Annapolis
Monday, March 20, 1-4 p.m., MDA, Annapolis