Appendix E. Compilation of partnership comments received, with summary responses

Comments received as of December 13, 2016 are provided below (verbatim for written comments).

Upon review of the comments, the Panel Chair and Panel Coordinator determined that no comments required significant overhaul or changes to the substance of the panel's recommendations, which would require feedback and discussion from the full panel. The Panel Coordinator provided responses below in red and made edits as described. Changes made by the Panel Coordinator to the report can be viewed in the "track-changes" version of the posted for the December AgWG in conjunction with this appendix. As such, revised sentences or sections are not re-stated here but a page reference is provided. However, the "track-changes" report will not be added as part of this appendix when the report and appendices are posted online.

To accommodate an expedited review and approval timeframe there are minor edits or non-substantive changes – pertaining to grammar, replacement of images, general formatting and formatting references specifically, etc. – that will be made following WQGIT approval of the report.

Please note that references in this appendix to page or table/figure numbers in the draft report may change slightly as the report is finalized. These references will not be corrected following WQGIT approval of the report.

Thank you to everyone who reviewed the report, and an even bigger thanks to those who contributed comments and questions.

Pennsylvania State Conservation Commission (SCC) and Department of Environmental Protection (DEP)

Overall, we find this report to be well written and the expert panels did a very good job describing model farms and determining recoverability rates. However, we do have a few comments and clarifications to add to the report:

Page 14, third bullet – "Dairy farms in Lancaster County with a milking herd size of 20-99 house 23% of the Pennsylvania milking herd. This indicates that a substantial number of dairy cattle are found on small, ***unregulated*** dairy farms owned by the plain sect community."

- Point of clarification – This is incorrect and misleading. These operations are regulated. They may not be permitted, but they are regulated in Pennsylvania. All farms that produce or import manure for land application are regulated, as per Pennsylvania Chapter 91 regulatory requirements. Even small farms, such as the type described above, are regulated. Thanks for pointing this out. Deleted the word "unregulated" so it now simply reads "…small dairy farms…"

Page 20-21 – "…most are subject to regulatory oversight by EPA as CAFOs and/or DEP as CAOs…"

- Point of clarification – DEP is delegated the permitting and regulatory oversight for CAFOs by EPA under the NPDES program. CAOs are regulated by Pennsylvania Chapter 83, Act 38, which the regulatory oversight is held by the Pennsylvania State Conservation Commission (SCC). Added parenthetical clarifications in the sentence.

Page 22 –"There is a large variance associated with nutrient retention in dairy waste because of the variety in waste management system types and farm management practices. The average nutrient content of recovered waste could perhaps be better characterized using state manure testing laboratory values."

- We strongly agree with this statement. Thank you.

Page 23 – Second bullet "Heavy use areas (HUAs) are farm locations that are protected from rutting with concrete."

- This should state Heavy Use Area Protection, as there are heavy use areas that are not protected by concrete or other stabilized structure. Good catch. Added "protection" after HUA in this description (we will probably catch more instances to fix following WQGIT approval).
- As per the NRCS 561 standard, HUA protection does not necessarily need to be concrete. However, if that is how it is going to be identified for this report and for these recommendations, then please provide detail that these are the assumptions that are being made, not necessarily what is stated in the practice standard. The report states they are "usually made with concrete" but that does not imply they are limited to that material (as that would be a determined by applicable state or federal practice standards). These Code 561 practices are not reportable as an AWMS BMP for CBP purposes, but are a part of the overall animal waste management system on animal operations and are part of the "2016 model farm" described for poultry.

Page 23 – Fourth Bullet and Page 29, second paragraph: "Poultry litter, after it is removed from production facilities, is now typically stored under roof prior to use as a fertilizer."

- The majority of the litter from the larger poultry operations (particularly broilers) in southeast PA (ie, Lebanon and Lancaster) is not land applied and is, instead, shipped via Certified Manure Hauler/Broker to the mushroom industry outside of the Bay watershed in Chester county. This should be mentioned somewhere in these sections. Added "either on nearby fields or following transportation elsewhere" at end of sentence. The AWMS panel's recommendations do not affect the ability to apply Manure Transport or other CBP practices for treatment, use or application of manure.

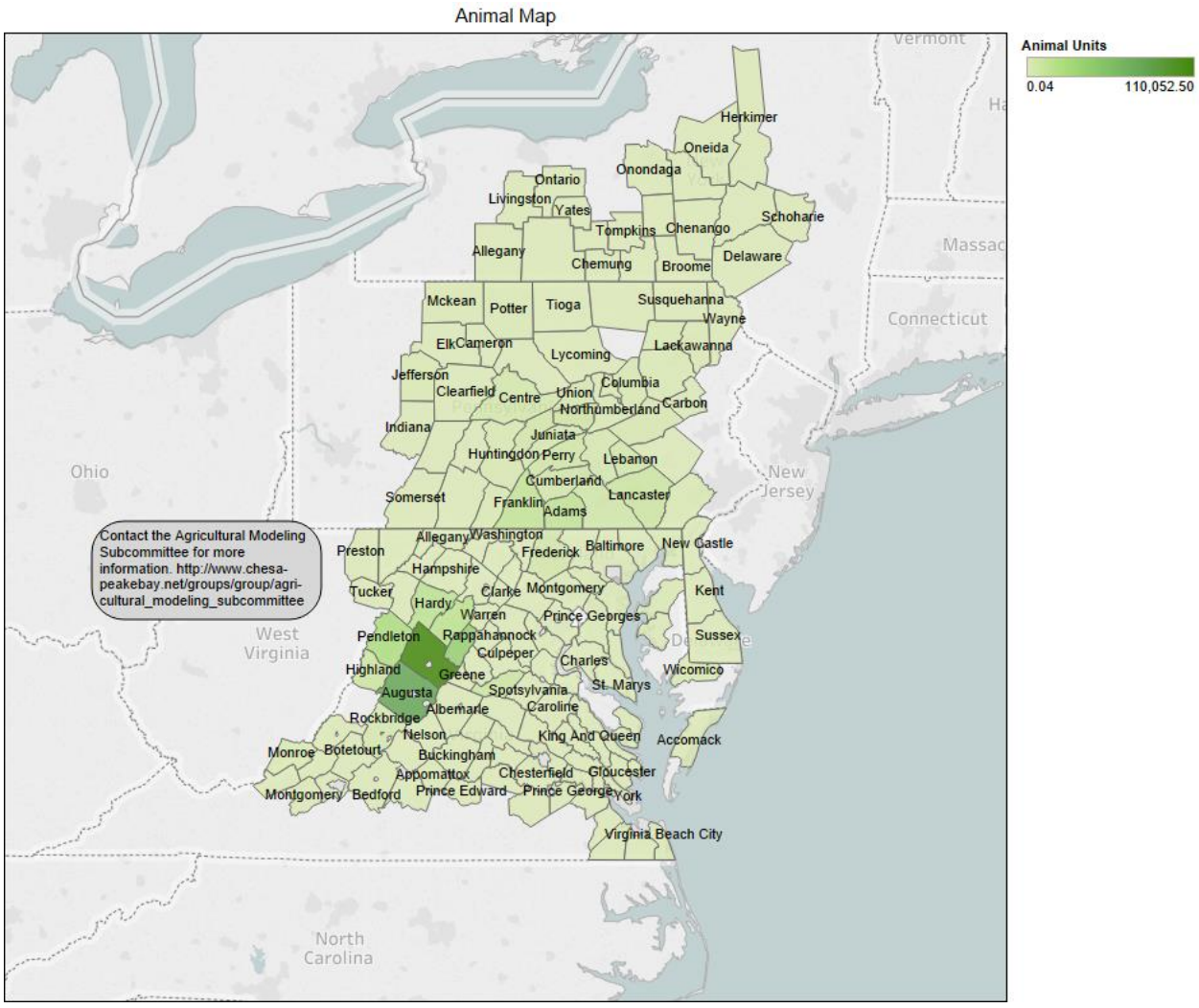
Page 25 – Final bullet – "New broiler farms now being constructed (MD, DE) are graded to collect stormwater and divert it through grass swales to a wetland."

- While this section is describing a model farm in Somerset County, MD, it also includes Delaware in this statement. We believe that we should add that Pennsylvania also has stormwater requirements that would affect construction of poultry houses. Pennsylvania requires NPDES permits for earth disturbance activities equal to or greater than 1 acre. This also includes implementation of Post-construction stormwater management (PCSM) BMPs. Pennsylvania does not specify what BMPs are to be utilized but does offer a Post

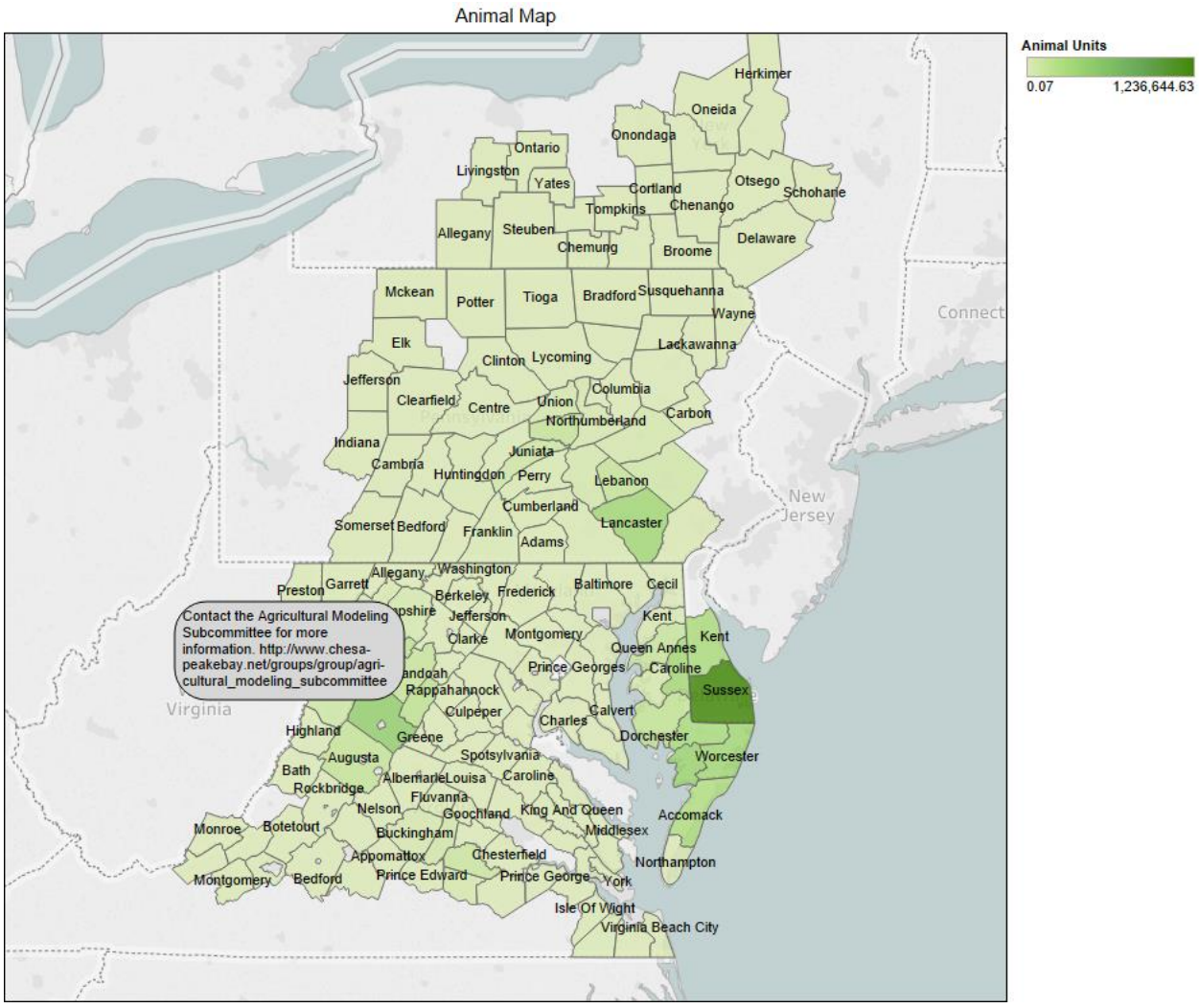
Construction Stormwater BMP Manual with a suite of BMPs, which includes vegetated swales for the applicant's consideration. Typically, when proposed and implemented, vegetated swales divert flow to surface waters, which is inclusive of wetlands or other BMPs. Other BMPs presented within the Post Construction Stormwater BMP Manual offer protections post construction, also. Additionally, we require PCSM plans, implementation of those plans, and operation and maintenance of the BMPs. This is a good point. Rather than adding specific details about PA in this bullet we've added language to clarify that jurisdictions have their own stormwater requirements in cases like this, noting that such stormwater practices are not part of the AWMS BMP but may be covered by the AgWG's (forthcoming) ag stormwater expert panel.

Page 26 – Table 7 and Page 30 – Table 9

- Why not include another table with the counties in Maryland and Virginia with the highest number of broilers and turkeys, respectively, as was done with Pennsylvania for dairy, layer, swine, and beef? We can add similar tables for broilers and turkeys if the AgWG agrees the information would be helpful. Due to time – and the confusion new tables would add by changing table/page numbers – we did not add the tables as of 12/14/16. It should be noted that the Panel Chair developed tables and charts used in the report for the other animal types, using 2012 Ag Census data and his own software. If we add new tables we will likely use the MPA data viewer to retrieve/download available animal data (https://mpa.chesapeakebay.net/AnimalData.html).
- Dairy, layer, beef and swine had pretty clear "hot-spots" often within two or three counties, which made was conducive for simple tables (Tables 4, 12, 16, 19, respectively for those four animal types). A quick look at the data visualization tool for turkeys in 2012 suggests we could do the same for two counties in Virginia (Rockingham and Augusta), the state with the largest portion of turkeys in the watershed as indicated by Figure 9 in the report.



- A similar table for broilers would be trickier to choose only two or three counties, with the largest population for a single county (Sussex County, DE) being split inside and outside the CBW.



- We can add the two requested tables to the report following WQGIT approval, if AgWG agrees with the change; we request the AgWG or PA DEP specify two or three counties to summarize in the table for broilers.

Page 40 – Page 43 – Beef Operation Pictures

- As was indicated by Tara Felix, Penn State University Extension Beef Specialist (page 46), "…there are currently very few, if any, open feedlots in Pennsylvania." The pictures on pages 40-41 are not indicative of how beef are raised in Pennsylvania, much less the Bay Watershed, and would lead the report reader to believe that this is common practice. The operations depicted in Image B on Page 40 and Image A on Page 41 would not meet Pennsylvania state regulatory requirements under Chapter 91.36 (Manure Management) or Chapter 102.4(a) (Erosion and Sediment Control). Either remove these images from the report completely or replace with pictures from Pennsylvania beef operations, not from operations in the mid-west. We will look for more representative pictures that we can use, but the pictures help illustrate the terms as described in the chapter. Even if feedlots are more prevalent outside the watershed, it is still important to define the terms for the reader and we can make further clarifications to distinguish which images are from outside the

CBW region. To start, we've added this statement to each Figure caption in the beef section: "Images are for illustrative purposes only and may not be representative of actual beef operations in the Chesapeake Bay watershed."

- Thanks to DEP for providing 3 suggested images for consideration:
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- (Photo credit: PA Beef Council, Bedford County, PA).
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- (photo credit: Drager Farms, Lancaster County, PA)

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- (Photo credit: Sugar Hill Farm, Elk County, PA)
- The images are excellent, but we want to be careful how many images of pastures we include in the report. Since the panel's focus is on the confined portion of manure that is recoverable, using too many images of cattle on pasture may cause confusion on that point. We are happy to use better images and we can make these changes following partnership approval in coordination with panel representatives and PA DEP).
- The following two images (photo credits: PA Beef Council) were found online and may also serve for the report, potentially in Figure 11, as a third image (11-C):
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Page 50 – "In fact, according to state level Ag Census data most Pennsylvania swine are on very large (***regulated***) farms with more than 2,000 head (65% of all hogs and pigs)."

- Point of clarification –The inclusion of the word "regulated" is misleading, as all operations that produce or land apply manure are regulated. These larger operations may be permitted as CAFOs and/or regulated as CAOs under NPDES CAFO permitting program and/or Act 38 Nutrient Management Program regulations. Good catch. Deleted the word "unregulated."

Page 54 – Table 20.

- Is there a reason why the % N and P recovered is identified for swine if it was not done for the other livestock types? No particular reason. The primary author for the swine chapter (Shawn Hawkins) included the values from NRCS (2003). The values are available for the other animal types as well in NRCS (2003), but the values were excluded in other chapters as the information ultimately has no impact on the panel's recommendations, which focus on the recoverability for manure itself, deferring to the partnership's existing assumptions for nutrients within the manure.

Thank you for the opportunity to comment.

EPA, Water Permits Division

p. 23, 1st bullet, line 6: Might be worth noting that more poultry operations are starting to have the houses set up to let the birds out to a yard periodically. (This is so that the farms can refer to the meat as being from animal friendly/open air type operations.) I'm not sure how prevalent this practice is in Delmarva, but it's starting to become more common elsewhere in the U.S. See next response.

P. 37, last paragraph: OK--now I see that outdoor access is being covered here. Maybe there could be some discussion of the prevalence of this practice in Delmarva? One issue that states have mentioned is that the operations they're seeing that offer outdoor access don't berm, roof or otherwise manage runoff from these outdoor areas. In its discussions the panel felt that outdoor access was far too minimal in the overall scheme of current production in the watershed to warrant more discussion in their report for purposes of describing manure recoverability. Other existing Bay Program practices might be more appropriate when discussing these areas – e.g., roof runoff controls, loafing lot management – but that would be a question for the AgWG, not this AWMS panel.

P. 23, 4th bullet, lines 7-8: To aid the claim that the losses are minimal, you could also mention that there's an NRCS practice standard for short-term storage--Might be worth noting that there's an NRCS practice standard for this-- https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1263507.pdf

Thanks for the suggestion; it is important to distinguish 318 practices from the practices (codes 313 and 359 that can be reported under the AWMS BMP. Added this statement following description of Manure Shed (NRCS Code 313), page 25 of revised report: "Short term storage practices are described under NRCS Conservation Practice Standard Code 318, but these temporary actions – though important to

protect against losses between collection and utilization – are not eligible under the AWMS BMP described in this report for the CBP."

Beth McGee, CBF (verbal question, 12/12/16 WQGIT): How is ammonia captured in here? Or is that outside the realm of your consideration?

The Ag Modeling Subcommittee and Modeling Workgroup have addressed volatilization, as the issue covers multiple BMPs. So there is documentation from those groups on how volatilization is treated, and the practices that affect volatilization. The AWMS panel's recommendations do not affect these procedures or assumptions for volatilization, since the panel focused on the mass of manure specifically, deferring to the partnership's methods for how to account for the nitrogen and phosphorus in the manure, and volatilization of nitrogen.

District of Columbia, Department of Energy and Environment

Hello,

This email is to state that the District of Columbia does not have comments on the Animal Waste Management System report.

Thank you for the opportunity to review the report.

Mary L. Searing, PE, DWRE, GISP, CFM
Chief, Planning and Permitting Branch
Department of Energy & Environment

MDA

[MDA informally requested clarification on how poultry heavy use area pads are addressed, as they were a part of the panel's initial charge.]

Poultry heavy use area concrete pads or other heavy use area protection (NRCS Code 561): As stated in the report (page 24, bottom paragraph of revised report) these pads or protected areas facilitate recovery of manure that can inadvertently be removed by equipment used to harvest birds for transport, or by equipment used to manage or recover litter from the production house. However, there is not sufficient information to estimate their specific impact to overall recoverability at this time, though they are quite common and are included as part of the model farm used to set the "after-AWMS" recoverability factor for poultry. Thus, while these practices are part of the overall animal waste management system on many animal operations, especially for poultry, the panel does not recommend these as a reportable practice under the Phase 6 AWMS BMP definition (which has now been added to revised report).