FY15 GIT Funding Project Form

Goal Implementation Team: Water Quality via Agriculture Workgroup

GIT Priority Ranking:

Proposal Tracking Number: (assigned prior to RFP release)

Table 1: Project Description

Project Title	Development of Commercial Turkey Production and Litter Database for Model Data Input into the Chesapeake Bay Program Phase 6.0 Modeling Tools
Project Category	Workplan Development; Metrics; Implementation Projects; Other
Goal/Outcome	Develop and provide access to a new source of verified commercial turkey production and litter information for model input data into the final version of the Phase 6.0 Modeling Tools. The subsequent data analysis and recommendations will be used to develop a new Phase 6.0 model representation of commercial turkey production within the Bay region, and enable future reporting by all six-states for determining annual turkey litter nutrient generation and availability. The project will identify the different types of commercial turkey production systems, and the litter analysis and volumes associated with each production system, and long with bird numbers produced of each type annually in Virginia. The project is based on a similar effort successfully achieved for commercial broiler production for the Phase 6.0 modeling tools.
Estimated Cost	$30,000
Justification: Description of why this work is needed in support of a management strategy?	The partnership approved Poultry Litter Subcommittee recommendation report (April, 2015) , sponsored by the Agriculture Workgroup, identified the existence of limited information on the commercial turkey industry in the Bay Watershed, and even less availability of data on the brackets of nutrient content and volumes associated with the litter-manure analysis with each bird type. This project will identify each type of commercial bird production group with the assistance of academic and industry partners, and provide a recommendation for representative bird populations, litter analysis and volume of each production system for incorporation in the final version of the Phase 6.0 modeling tools. The Virginia-focused project will enable the remaining Bay states to utilize the new model representation to report commercial bird populations, litter analysis, and litter volume data in the future for generating a more accurate turkey litter nutrient generation and availability on annual basis.

Cross-Goal Benefits: What other goals may be advanced through this work?	The Virginia-focused project will establish a new approach to engage academic, private industry, and agency partners in developing state-based annual data on commercial turkey production systems, and the resulting litter nutrient and volume generation. The subsequent development of new model representations of commercial turkey production in the final version of the Phase 6.0 modeling tools, will enable the remaining five Bay states to develop and utilize similar approaches to report commercial bird populations, litter analysis, and litter volume data for generating a more accurate turkey litter nutrient generation and availability on annual basis. The project will identify and define commercial turkey production systems being implemented in the region, and provide the basis for other Bay states to characterize the industry in their state through data collection and analysis. The information gleaned from the project will also provide a protected repository of data that can be used to update university turkey litter nutrient standards ("book values") for nutrient management planning, and other academic studies and extension support to the industry and producers. The data repository will also be available for future supplemental data collection and reporting of model input data for the CBP modeling tools, agricultural BMP expert panels, the Agriculture Workgroup, and the WQGIT where needed.

Table 2: Project Details

Technical Lead	
Detailed Statement of Work [(1),(2)]	The collection and analysis of verified production and litter data on Virginia-based commercial turkey production systems, which will be housed in a secured repository at Virginia Tech for analysis and reporting of county-scale aggregated data on an annualized basis for Phase 6.0 modeling tool development and future annual reporting. The project will directly involve the following partners: • Virginia Tech staff, interns, and selected extension agents • Virginia commercial turkey industry representatives and producers • Virginia state agency staff from DCR and DEQ • Virginia county agency staff from selected counties • Chesapeake Bay Program Modeling Team staff • Agriculture Workgroup staff The project will implement the following data collection and analysis: • Identify and define a characterization of commercial turkey

	production systems (toms, hens, growers, finishers, etc.) • Identify Virginia commercial turkey production operations and categorize their production system type(s). • Obtain annualized flock-scale bird production data for each commercial production operation where available through industry records. • Obtain and associate litter nutrient analysis data for each commercial production operation where available through farm and state agency records. • Obtain verified litter samples for analysis from a standard subsampling of operations within each categorized commercial production system. • Obtain litter mass volume data from state agency records, and verified data from a standard subsampling of operations within each categorized commercial production system. • Conduct analysis of collected data to develop recommendations on categorization of commercial turkey production systems in the region, and their associated litter nutrient concentrations and mass volumes. • Compare the University of Delaware broiler equation for estimating litter mass volumes from bird harvest weights for turkey category types, and provide a recommendation on its potential use for turkeys. • Provide an annualized county-scale database and tables identifying bird populations by category types, bird harvest weights for meat birds or average bird weights for breeding birds, litter nutrient concentrations by bird type, and litter mass volumes by bird type. • Develop a CBP model input recommendation report for submission to the Agriculture Workgroup and CBP partnership for review and approval for creating a new Bay region representation of commercial turkey production and litter generation in the final version of the Phase 6.0 modeling tools. Additional financial support is being applied for under a separate CBP technical assistance grant with Virginia Tech, as well financial and technical assistance from VADCR under the Commonwealth's Nutrient Management Program. The development of new commercial turkey production and litter data will subsequently enable the development and implementation of a new and more accurate representation of turkey nutrient

	generation by the Phase 6.0 modeling tools for the partnership. Improving access to agricultural model input data for the Phase 6.0 tools is an identified priority for the Agriculture Workgroup (AgWG), and the WQGIT assigned the AgWG to be a lead sector workgroup on this task. The ability to implement a new approach to turkey nutrient generation from the present reliance on USDA-NASS Agricultural Census available every five years, and ASABE's national average excreted values, to verified annualized county-scale production and litter data, will have some level of effect on every state's management strategy within the partnership. Those jurisdictions who have larger populations of commercial turkeys will receive the greatest value from the effort. The proposed turkey data project will utilize the data collection and analysis process previously developed and approved by the CBP partnership for representing commercial broiler production in the Phase 6.0 modeling tools, and will adhere to the partnership's approved model data review and approval procedures.
Outputs and Due Dates	• Assist with the development of a new secured commercial turkey production database at Virginia Tech to provide model input tables characterizing the production types, annual bird population numbers and associated litter analysis and volumes for each commercial turkey production type in Virginia, along with a detailed report that fully explains the same. • Assist with the development of a draft project report, including group definitions, data analysis and tables, and model input recommendations with a technical appendix for Phase 6.0 implementation, will be prepared by the project partners with assistance from the CBPO modeling team by February 15, 2016. • Ensure the draft recommendation report will be submitted to the Agriculture Workgroup, Watershed Technical Workgroup, and the Water Quality Goal Implementation Team for review and approval following the approved protocols and following the required timelines. • Ensure partnership review questions and comments will be addressed, including answers to questions, by March 15, 2016 in a final draft of the recommendation report for partnership approval by April 15, 2016.

	• Ensure the subsequent approved recommendations can be used for input into the final version of the Phase 6.0 Modeling Tools in 2016. • Incorporation of the recommendations and data will enable a more accurate representation of commercial turkey production systems across the six-state Bay region than is currently available.
Description of Skills and Experience Required of awardee	The lead in this project will need to have the following skills and experiences to successfully complete the project: • Currently manages existing cooperative fiscal agreements with Virginia Tech's College of Agriculture and Life Sciences which can be modified to add the proposed project. • Has direct and full access to the Virginia's Nutrient Management Program for specific Nutrient Management Plan data and producer information, as well as NMP certified planning staff. • Has direct access to turkey litter nutrient concentration analysis data developed by Clemson University and Virginia Tech for Virginia commercial turkey production operations. • Has extensive experience in working with Virginia academic and private industry partners and state agency staff to deliver results in a timely fashion, and provide the resulting data in a concise and accurate manner that it can be understood and utilized by all stakeholders. • Has experience with the Chesapeake Bay Program (CBP) partnership, the CBP Agriculture Workgroup, and the CBP modeling team to assist in the development of approvable technical recommendations.

(1) Provide a description of background information, stakeholder participants, the sequence and purpose of work activities, and how the outputs are to be used in implementing CBP management strategies

(2) Indicate whether environmental data will be generated and whether a quality assurance plan will be required