New York State Animal Agriculture Program Assessment

Final

Prepared by:
U.S. Environmental Protection Agency
Region 2
290 Broadway
New York, NY 10007-1866

February 2015

Page intentionally blank

Contents

Acronyms and Abbreviations

ACR	Annual Compliance Report
AEM	Agricultural Environmental Management
AFO	Animal feeding operation
ANSACP	Agricultural Nonpoint Source Abatement and Control Program
AU	Animal unit
BMP	Best management practice
CAFO	Concentrated animal feeding operation
CAST	Chesapeake Assessment Scenario Tool
CBP	Chesapeake Bay Program
CEDR	Centralized Electronic Document Repository
CFR	Code of Federal Regulations
CNMP	Comprehensive nutrient management plan
CO	Central Office (NYSDEC)
CPS	Conservation Practice Standard
CWA	Clean Water Act
ECL	Environmental Conservation Law
EPA	U.S. Environmental Protection Agency
EPF	Environmental Protection Fund
EQIP	Environmental Quality Incentives Program
FSA	Farm Service Agency (USDA)
FTE	Full-time equivalent
GP	General permit
ICIS	Integrated Compliance Information System
MOU	Memorandum of understanding
NA	Not applicable
NEIEN	National Environmental Information Exchange Network
NMP	Nutrient Management Plan
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service (U.S. Department of Agriculture)
NYCRR	New York State Codes, Rules and Regulations
NYS	New York State
NYSDAM	New York State Department of Agriculture and Markets
NYSDEC	New York State Department of Environmental Conservation
NYSDOS	New York State Department of State
PE	Professional Engineer
RO	Regional Office (NYSDEC)
SFY	State Fiscal year
SNC	Significant noncompliance
SPDES	State Pollutant Discharge Elimination System
SWCC	New York State Soil and Water Conservation Committee
SWCD	New York State Soil and Water Conservation District
TMDL	Total maximum daily load
USC	Upper Susquehanna Coalition
USDA	United States Department of Agriculture
WIP	Watershed Implementation Plan (Chesapeake Bay Program)

Page intentionally blank

1.0 Executive Summary

The U.S. Environmental Protection Agency (EPA) conducts periodic reviews of state programs as part of its oversight responsibilities under the Clean Water Act (CWA). As a continuation of this process, EPA is conducting assessments of animal agriculture programs in the six Chesapeake Bay (Bay) states as part of its oversight responsibilities under the Bay Total Maximum Daily Load (TMDL) and National Pollutant Discharge Elimination System (NPDES) Permit Program. This review also satisfies certain EPA commitments made in the settlement agreement that resolved the lawsuit Fowler et al. v. EPA, No. 1:09-cv-0005-CKK (D.D.C.). EPA will complete the six Bay state animal agriculture program reviews in 2015.

In 2014, EPA began to assess New York State's animal agriculture regulations and programs. This assessment report identifies successes and challenges within New York State's animal agriculture programs and regulations, evaluates the programs that are available to support the state's agricultural pollutant load reduction commitments set forth in New York State's Watershed Implementation Plan (WIP) to achieve the allocations in the Bay TMDL, and evaluates State Pollutant Discharge Elimination System (SPDES) permit program (including its implementation) for concentrated animal feeding operations (CAFO) against the federal NPDES CAFO requirements. The main goal of EPA's assessment is to determine whether the state's programs are consistent with CWA requirements and are implemented effectively to achieve New York State's animal-agriculture WIP commitments to reduce nitrogen, phosphorus, and sediment under the Bay TMDL.

This assessment briefly summarizes state environmental regulations applicable to animal agriculture operations as well as New York agencies with regulatory and technical responsibilities for animal agriculture operations. The report also includes EPA's analysis of how New York State is implementing its animal agriculture programs. The specific programs assessed are the Comprehensive Nutrient Management Plan Program, the SPDES CAFO Permits Program, and the Agricultural Environmental Management (AEM) Program. The purpose of EPA's assessment was to look at all of these programs and evaluate how well they work together to meet CWA requirements and the state's animal agriculture commitments made to meet the Bay TMDL requirements.

This assessment is based on responses from New York State Department of Environmental Conservation (NYSDEC) on an animal agriculture program questionnaire developed by EPA, information in 41 SPDES-permitted animal feeding operation files provided by NYSDEC, AEM materials provided by New York State Department of Agriculture and Markets (NYSDAM), interviews with NYSDEC staff, and program information available from agency websites. New York was forthcoming with a considerable amount of material, staff time, and information to support this assessment.

The observations outlined in this report provide a framework for New York to strengthen implementation of their animal agriculture programs and work toward improved water quality within New York State and the Bay watershed.

Animal Agriculture in New York State

Agriculture represents nearly 25 percent of New York State's Bay watershed land use and, according to a 2009 Bay watershed Model run, delivers approximately 42 percent, 55 percent and 40 percent, respectively, of the total nitrogen, phosphorus and sediment loads from New York State to the Bay watershed. Agriculture in the New York State's portion of the Bay watershed is primarily integrated livestock and forage crop farms (mostly dairies).

New York State's portion of the Bay watershed is estimated to contain approximately 247 animal feeding operations (AFOs), of which 68 are SPDES-permitted CAFOs. EPA acknowledges that there could be administrative and operational challenges associated with implementing nutrient and sediment reduction programs for such a large number of animal agriculture operations.

Watershed Implementation Plan Priority Best Management Practice Implementation

New York State's Phase I and Phase II WIPs detail how the state plans to meet Bay TMDL loading allocations for nitrogen, phosphorus, and sediment. New York submitted its Bay TMDL Phase I WIP on December 2010 and the Phase II WIP on January 7, 2012. New York anticipates that the agricultural strategies outlined in the Phase I WIP and Phase II WIP, particularly the effective funding and execution of its CAFO regulatory program, the development and implementation of comprehensive nutrient management plans (CNMPs), and the continued support to the AEM program, will provide significant opportunities toward meeting the load reductions for the agricultural sector.

EPA focused its assessment on five animal agriculture best management practices (BMPs) that, when implemented, will achieve a significant portion of New York State's nutrient and sediment reductions. EPA refers to these BMPs in this document as "priority BMPs." New York State is relying on these priority BMPs to reduce its agricultural loads to the Bay: enhanced nutrient management, livestock mortality composting, prescribed grazing, barnyard runoff control, and cereal and commodity cover crops. The state estimates that enhanced nutrient management can be applied to 100 percent of crop and hay land for CAFO acres and about 10 percent for AFO acres, or a total of 228,957 acres per year. By 2025, the state is planning to compost 80 percent of dairy mortalities and implement prescribed grazing on 90 percent of available pasture acres. By the same year, New York State's goal is barnyard and loafing lot runoff control on 35 percent of all AFOs and 100 percent of all CAFOs, for a weighted total of approximately 78 percent of AFO/CAFO acres, or 753 total acres. New York State's Phase II implementation goal is 31,357 acres planted in cereal and commodity cover crops by 2025.

In addition to the regulatory programs, New York State's voluntary CNMP program works to address water quality impacts from unpermitted AFOs. In addition, the state has a long history implementing and supporting the AEM initiative to encourage the development of farm viability and water quality protection strategies that originate at the local level. New York State has placed particular emphasis on increasing voluntary implementation of CNMPs. Currently, farmers must have a CNMP to be eligible for cost-share funding.

Comprehensive Nutrient Management Plans

CNMPs are the foundation of New York State's regulatory program to control potential water pollution from CAFOs. CNMPs specify structural and nonstructural BMPs to manage process wastewater, pathogens, and proper disposal of animal mortality. The New York State technical standards for nutrient

management are reviewed and revised by a Standards Committee consisting of technical staff from the Natural Resources Conservation Service (NRCS), NYSDEC, NYSDAM, Cornell University, and others. All New York State CNMPs must be prepared in accordance with NRCS Conservation Practice Standard (CPS) NY 312 and all applicable technical standards where invoked by NRCS NY 312. A CNMP can be voluntarily developed and implemented by any livestock farm but is required for farms that are CAFOs operating under the CWA or Environmental Conservation Law (ECL) Permit, or farms seeking federal or state cost-sharing to construct a manure management system. All CNMPs, voluntary and required, are updated annually by an AEM-certified planner and reviewed by the party responsible for implementing the CNMP.

New York State has 562 SPDES-permitted CAFOs (68 SPDES-permitted CAFOs in the Bay watershed) with AEM-certified CNMPs. New York State does not document the number of voluntary CNMPs implemented by nonpermitted AFOs unless they are developed using public funds. NYSDEC is responsible for compliance and enforcement of CNMPs maintained and implemented at SPDES-permitted CAFOs. CNMPs are evaluated during NYSDEC compliance inspections.

SPDES CAFO Program

NYSDEC's Division of Water administers the two SPDES General CAFO Permits: the ECL Permit and CWA Permit. The ECL Permit covers non-discharging Medium and Large CAFOs (with the exception of dairies with 200 to 299 stabled or confined mature dairy cows). The CWA Permit covers all Medium or Large discharging CAFOs. NYSDEC is authorized to designate smaller operations as CAFOs and operations of any size can voluntarily apply for SPDES permit coverage. NYSDEC reports that 267 facilities are covered under the CWA Permit (24 of those in the Bay watershed) and 295 are covered by the ECL Permit (44 in the Bay watershed).

ECL Permit holders are not allowed to discharge, except for agricultural stormwater, and must be designed, constructed, operated, and maintained to prevent discharge; these operations are actually considered AFOs. ECL Permit coverage is available to nondischarging, existing Small or Medium CAFOs, existing Large CAFOs, new Small or Medium CAFOs, and new Large CAFOs. The following generic BMPs must be implemented, as appropriate, at all ECL-permitted operations: prohibition on unauthorized substances, proper operation and maintenance requirements, waste application requirements (land application rates shall be in accordance with the CNMP), field setback requirements and other BMPs.

The CWA Permit is issued to discharging CAFOs, or others that choose to be covered, pursuant to the New York State's ECL and the federal CWA. The CWA Permit allows discharges of process wastewater from storms equal to or greater than the 25-year, 24-hour precipitation event and agricultural stormwater. The CWA Permit prohibits unauthorized substances in retention facilities and requires proper operation and maintenance of facilities used to comply with the permit. In addition, the regulatory language specifies 13 BMPs that must be implemented. Facilities covered by the CWA Permit have up to 2 years from the date NYSDEC receives the Notice of Intent to develop and certify the CNMP.

Agricultural Environmental Management

AEM is administered by the New York State Soil and Water Conservation Committee (SWCC). AEM supports farmers in their efforts to protect water quality and conserve natural resources, while enhancing farm viability by providing a framework to assess environmental stewardship and coordinate

technical and financial assistance from the federal, state and local levels to address priority water quality issues on the farm. AEM is implemented at the local level through soil and water conservation districts (SWCDs) who engage local partners such as Cooperative Extension, NRCS, AEM-certified planners, certified crop advisors, U.S. Department of Agriculture technical service providers, professional engineers and agri-businesses to work as a team to develop, implement and evaluate conservation plans on farms.

AEM is managed and implemented following a set of core concepts. AEM activities and approaches should be voluntary, watershed-based, customized farm-by-farm, team-based, cost effective, statewide, locally led and implemented, and tested and science-based. Farmers who participate in AEM work with a team of local AEM resource professionals to develop and implement comprehensive, site-specific farm plans using a five-tiered assessment. The AEM assessment process is structured to encourage the development and implementation of BMPs.

New York State reports that more than 1,300 agricultural BMPs were implemented statewide in 2013 to protect water quality and reduce pollution. In addition, in 2013 the SWCDs used $1.86 million from the AEM Base Program to provide technical assistance to farmers advancing through the five AEM tiers.

- **Tier 1** – Inventory current activities, future plans and potential environmental concerns.
- **Tier 2** – Document current land stewardship. Assess and prioritize areas of concern.
- **Tier 3** – Develop conservation plans addressing concerns and opportunities tailored to farm goals.
- **Tier 4** – Implement plans using available financial, educational and technical assistance.
- **Tier 5** – Evaluate to ensure the protection of the environment and farm viability.

More than 13,000 farms participate in AEM statewide, including all 562 New York State SPDES-permitted CAFOs. The AEM-participating farms in the Bay watershed include 68 New York State SPDES-permitted CAFOs and 2,285 unpermitted farms.

2.0 Introduction

The U.S. Environmental Protection Agency (EPA) conducted an assessment of New York State's animal agriculture regulations and programs to determine whether they are consistent with Clean Water Act (CWA) requirements and are implemented effectively to achieve New York State's animal agriculture Watershed Implementation Plan (WIP) commitments to reduce nitrogen, phosphorus and sediment under the Chesapeake Bay (Bay) Total Maximum Daily Load (TMDL). The assessment process began in fall 2013 when EPA provided New York State Department of Environmental Conservation (NYSDEC) with a detailed New York Animal Agriculture Program Review questionnaire (questionnaire). NYSDEC coordinated completion of the questionnaire with the New York State Department of Agriculture and Markets (NYSDAM), the New York State Soil and Water Conservation Committee (SWCC), the New York State Soil and Water Conservation Districts (SWCDs), and the Upper Susquehanna Coalition (USC). NYSDEC also supported the assessment process by providing EPA with electronic and hardcopy files for 41 concentrated animal feeding operations (CAFOs) permitted under the NYSDEC CWA State Pollutant Discharge Elimination System (SPDES) General Permit (GP) for CAFOs GP-04-02 (CWA Permit) and NYSDEC Environmental Conservation Law (ECL) SPDES GP for CAFOs GP-0-14-001 (ECL Permit).

In August 2014 EPA's contractor traveled to the NYSDEC Central Office (CO) in Albany, New York, to scan these files electronically for in-office review. NYSDEC provided responses to EPA's questionnaire in September 2014. NYSDAM, working through NYSDEC, provided Agricultural Environmental Management (AEM) materials to EPA's contractor on September 26, 2014, and provided additional clarification to NYSDEC questionnaire responses that pertained to NYSDAM. EPA provided the draft assessment report to NYSDEC on November 7, 2014. NYSDEC and Bureau of Water Compliance provided comments to EPA on December 9, 2014. EPA finalized the report on February 13, 2015.

The report is organized into the following sections: Section 3.0 (Animal Agriculture in New York State), Section 4.0 (State Agencies and Funding Sources, Animal Agriculture Programs), Section 5.0 (New York State and the Chesapeake Bay Total Maximum Daily Load), and Section 6.0 (New York State's Animal Agriculture Watershed Implementation Plan Implementation Goals) provide background information. Section 7.0 (Comprehensive Nutrient Management Plans), Section 8.0 (SPDES Permit Program), and Section 9.0 (Agricultural Environmental Management) discuss and evaluate implementation of the state's various programs applicable to animal agriculture operations. Each section includes a summary of program requirements and responsible agencies, and includes subsections addressing the universe of animal agriculture operations subject to each program, program staff and financial resources, data systems in place to track program activities, compliance and enforcement, and the role of the program in furthering the state's progress toward meeting the 2025 WIP implementation goals. Each section includes observations based on staff discussions, file reviews and New York State's questionnaire responses.

2.1 Purpose of Effort

EPA conducts periodic reviews of state National Pollutant Discharge Elimination System (NPDES) programs as part of its oversight responsibilities under the federal CWA. EPA discusses program goals and objectives with authorized states, such as New York, that are authorized to implement CWA program (e.g. NPDES permit programs) as part of annual CWA Section 106 grant negotiations.[1] Previously, EPA's program reviews have not focused on animal agriculture regulations and programs. EPA decided to conduct assessments of animal agriculture programs in the six Bay states[2] as part of EPA's oversight responsibilities under the NPDES program and the Bay TMDL. These reviews will also be used to fulfill EPA's commitment under the settlement agreement with the Chesapeake Bay Foundation (Fowler et al. v. EPA). As such, the New York review is one of six animal agriculture state program reviews that EPA will be completing by 2015.

The intent of the assessment is to identify successes and challenges within New York State's animal agriculture programs and regulations, evaluate the programs that are available to support New York's pollutant load reduction goals under the Bay TMDL, and compare the SPDES program with federal CAFO requirements. The goal of this assessment is to determine (1) how well New York State's programs align with the State's Bay TMDL WIP commitments, and (2) how effectively New York State's animal agriculture programs are implemented.

[1] http://water.epa.gov/grants_funding/cwf/pollutioncontrol.cfm
[2] Delaware, Maryland, New York, Pennsylvania, Virginia, and West Virginia

2.2 Program Review Approach

EPA Region 2 and EPA's contractor (EPA team) used NYSDEC and NYSDAM responses to the questionnaire, information in NYSDEC files for 41 ECL- or CWA- permitted animal agriculture operations, supplementary AEM information provided by NYSDAM, and animal agriculture program information available from New York State agency websites as the primary sources for this assessment report. The EPA team participated in conference calls with NYSDEC staff to arrange review of SPDES CAFO facility files and to ask questions about the state's animal agriculture programs. EPA's contractor also had informal meetings with NYSDEC staff while in Albany to scan the SPDES CAFO facility files.

The questionnaire specifically addressed four animal agriculture program areas:

1. AEM
2. Nutrient management
3. SPDES CAFO Program
4. New York's Phase I and Phase II Bay WIPs

For each of these programs, EPA Region 2 requested information about the New York State agency with implementation responsibility (number of full-time equivalents [FTEs] and State Fiscal Year [SFY] 2012 budget [April 1, 2011 through March 31, 2012]), the number of animal agriculture operations involved/enrolled in the program, compliance and enforcement activities, communication among agencies involved in each program, communication with farmers, data management, policies and training programs, and program strengths and challenges. The questionnaire did not include questions about federal programs, such as U.S. Department of Agriculture's (USDA) Environmental Quality Incentives Program (EQIP) or animal agriculture research programs at Cornell University (Ithaca, New York).

Review of NYSDEC SPDES CAFO files informed the EPA team as to how the NYSDEC CO and Regional Office (RO) staff implement the state's animal agriculture programs. EPA Region 2 focused on CAFOs in NYSDEC ROs 7 and 8 because these two ROs have a mix of animal sectors as well as facilities inside and outside the Bay watershed. NYSDEC provided EPA Region 2 with lists of all SPDES-permitted animal agriculture operations in NYSDEC ROs 7 and 8. EPA's contractor used a randomizing process to select 40 SPDES-permitted facilities for detailed file reviews.

EPA's contractor conducted the file review in two phases. First, NYSDEC CO sent copies of electronic CAFO files maintained in NYSDEC's Centralized Electronic Document Repository (CEDR) along with data from NYSDEC's Annual Compliance Report (ACR) database and compliance inspection information. EPA's contractor reviewed these documents and, through EPA Region 2, provided NYSDEC with a list of additional file documentation needed for the assessment process. NYSDEC CO coordinated with ROs 7 and 8 to have the hardcopy files for the 41 CAFOs[3] delivered to the CO for electronic scanning by EPA's contractor during the week of August 11, 2014. The 41 hardcopy CAFO files contained approximately 1,200 individual documents which were converted to electronic format. EPA's contractor renamed the

[3] The original EPA Region 2 CAFO list included 40 individual CAFOs. NYSDEC CO provided one extra CAFO file as an example, bringing the total number of reviewed CAFO files to 41.

electronic files using NYSDEC's file naming convention and gave a copy of all the electronic files back to NYSDEC to be uploaded to CEDR.

Each CAFO's file included information such as inspection reports, compliance and enforcement communications, annual compliance reports, permit application documents and other facility-specific information maintained by NYSDEC. Comprehensive nutrient management plans (CNMPs) were not scanned or reviewed for this assessment. EPA's contractor performed a detailed review of each file and logged the type and date of each document in each animal agriculture operation's file.

EPA's contractor recorded observations, including typical inspection findings, challenges with permit issuance or reissuance, and annual compliance report observations. These file review logs are not provided with this report.

To protect the confidentiality of the animal agriculture operations included in the file review, file review observations included in this report do not contain information that could be used to identify specific operations.

3.0 Animal Agriculture in New York State

Agriculture is an integral part of the New York State economy. About 23 percent of the state's land area, or 7 million acres, are used by the state's 36,000 farms to produce a variety of food products. The value of New York State agricultural production was more than $5.70 billion in 2012 (NYSDAM, n.d.).

- Dairy and animal production in New York provided $3.0 billion value of production to farmers in 2012.
- Milk is New York State's leading agricultural product and is produced all across the state. Milk sales account for one-half of total agricultural receipts. New York is the nation's fourth-leading milk producer.
- New York ranks 22nd among all egg-producing states in value of production.

Table 1 presents the primary statutes and regulations under which I York State's animal agriculture programs are administered. These statutes and regulations are discussed in the respective sections of this assessment report.

Table 1. New York State Animal Agriculture Programs, Statutes and Regulations

New York State Animal Agriculture Program	Law/Statute and Regulations
SPDES CWA Permit	New York State ECL and U.S. CWA
SPDES ECL Permit	Article 17, Title 7, Article 70 of the ECL
AEM	Article 11-A Section 150 of Agriculture and Markets Law and Article 2 Section 11-b of the Soil and Water Conservation Districts Law. Program guidance material can be found at http://www.nys-soilandwater.org/aem/index.html and http://www.nys-soilandwater.org/aem/forms/Guidance%20Manual.pdf .

Agriculture is nearly 25 percent of New York State's Bay watershed land use and, according to a 2009 Bay watershed Model run, delivers approximately 42 percent, 55 percent and 40 percent, respectively, of the total nitrogen, phosphorus and sediment loads from New York State to the Bay watershed.

Agriculture in the New York State's portion of the Bay watershed is primarily integrated livestock and forage crop farms (mostly dairies) characterized by low livestock density (0.43 animal units [AUs] per acre), low to optimum soil test phosphorus levels, low nitrogen and phosphorus balances (i.e., manure + fertilizer nutrient – nutrient removal by crops), low nutrient risk index ratings, and modest annual additions of nitrogen and phosphorus for crop production via fertilizer and manure (NYSDEC 2013a).

NYSDEC does not track the number of unpermitted animal agriculture operations in the state and the state's portion of the Bay watershed (NYSDEC 2014a). Tetra Tech (2011) estimated that New York State's portion of the Bay watershed contains approximately 247 animal feeding operations (AFOs), of which 68 are SPDES-permitted CAFOs (NYSDEC 2014a). However, the state's Phase II WIP identifies 2,285 unpermitted farms in the Bay watershed participating in AEM, but does not differentiate between animal agriculture AEM participants and crop agriculture AEM participants.

Table 2 estimates livestock populations in New York State's 19 Bay counties[4] using data published in the USDA's National Agriculture Statistics Service's 2007 and 2012 Censuses of Agriculture (Ag Census). All numbers represent animals within counties that share a border with the Bay watershed. The actual number of animals within the New York State's portion of the Bay watershed is unknown as the exact location of animal operations is not public information or available to EPA.

Table 2. 2007 and 2012 Ag Census Livestock Populations in the 19 New York State Chesapeake Bay Watershed Counties

Census Year	Cattle	Poultry	Swine	Sheep/Lambs
2012	494,109	579,216	19,083	34,286
2007	527,711	66,491[a]	20,188	26,657

[a] USDA withheld layer chicken population data for some counties.

Although poultry is not a significant portion of the State's agricultural sector, 18 of the 19 New York State Bay watershed counties saw poultry population growth between 2007 and 2012; only Livingston County saw a decline in poultry numbers. Onondaga County saw an increase from 61 to 65 poultry operations between 2007 and 2012. The 2012 Ag Census reported 434,176 layer chickens in 2012; the Onondaga County layer chicken population data was withheld from the 2007 reports, making a comparison impossible.

4.0 State Agencies and Funding Sources, Animal Agriculture Programs

New York State has six agencies involved with oversight, administration and implementation of the SPDES CAFO program and AEM: NYSDEC, NYSDAM, SWCC, SWCDs, USC and New York State Department of State (NYSDOS) (in a very limited role). The following sections provide an overview of each agency's responsibilities. The animal agriculture program sections describe lead and partner agency roles in more detail. These sections were drafted using questionnaire information provided by NYSDEC and publicly available information on New York State websites. NYSDAM provided clarification to some of NYSDEC's questionnaire response.

[4] Allegany, Broome, Chemung, Chenango, Cortland, Delaware, Herkimer, Livingston, Madison, Oneida, Onondaga, Ontario, Otsego, Schoharie, Schuyler, Steuben, Tioga, Tompkins and Yates counties

4.1 State Funding Sources

EPA's animal agriculture program questionnaire included questions about New York State agency and program budgets, and FTEs assigned to the state's animal agriculture programs. NYSDEC did not provide responses to these questions because New York State agency budgets and FTEs are not available in a format or with enough detail to estimate, for example, the number of FTEs and the budget allocated to the SPDES CAFO program in a given year.

EPA is unable to evaluate the sufficiency of New York State funding or FTEs for animal agriculture programs without budget and FTE information specific to the state's animal agriculture programs. EPA identified information on NYSDEC and NYSDAM overall budget appropriations and, although not specific to animal agriculture programs, this information suggests that NYSDEC and NYSDAM budgets are relatively stable. However, staff numbers, at least at NYSDEC, are declining.

The New York State Office of the State Comptroller (Comptroller) reports that the NYSDEC workforce declined 10.4 percent, from 3,256 FTEs in SFY 2003–2004 to 2,917 FTEs in SFY 2013–2014. NYSDEC is funded with appropriations from the State General Fund (primarily tax revenues), from special revenue funds generated by fees for licenses, permits and fines, and the federal government. NYSDEC's annual appropriations have ranged between $811.8 million in SFY 2005–2006 to $1.2 billion in SFY 2007–2008 (Comptroller 2014). NYSDEC's total appropriation for SFY 2013–2014 was $898.7 million.

Table 3 presents New York State Division of the Budget's SFY 2015–2016 recommended appropriations and change from SFY 2014–2015 for NYSDEC and NYSDAM.

Table 3. SFY 2015–2016 Recommended Appropriations to NYSDAM and NYSDEC

Agency	Total Recommended Appropriation SFY 2015–2016	Change from SFY 2014–2015
NYSDAM	$164,369,000	($7,709,000)
NYSDEC	$1,037,968,000	$119,916,000

Source: Division of the Budget 2015

New York State's Environmental Protection Act, Chapter 610 of the Laws of 1993, established the Environmental Protection Fund (EPF), a "pay-as-you-go" source of capital funding to support specified environmental programs and purposes. The Environmental Protection Act set aside sources of revenue to provide funding for the EPF, including revenues from the Real Estate Transfer Tax; proceeds from the sale, lease or permitting of underwater state lands; a portion of unclaimed bottle deposits; revenues derived from enforcement of the Bottle Bill; and revenues from the issuance of conservation license plates for vehicles. Programs funded by the EPF include storm water, waste water and aquatic habitat restoration projects; agricultural nonpoint source pollution control; and farmland preservation, among others. Over the life of the EPF, $2.8 billion has been appropriated, $2.1 billion has been disbursed, $254.8 million is encumbered for projects and $412.6 million in appropriation authority is available for future obligations (Comptroller 2014).

EPA was able to obtain total appropriations for the EPF and the EPF's Agricultural Nonpoint Source Account (Table 4). From SFY 2010–2011 through SFY 2013–2014 the Agricultural Nonpoint Source Account, which funds agricultural nonpoint source pollution control projects and best management

practice (BMP) implementation, has averaged approximately 10 percent of the total EPF appropriation, an increase from approximately 5 percent from SFY 2007–2008 through SFY 2009–2010.

Table 4. New York State Environmental Protection Fund, Total Annual Appropriation and Agricultural Nonpoint Source Account Annual Appropriations

State Fiscal Year	Environmental Protection Fund Total Annual Appropriation	Environmental Protection Fund Agricultural Nonpoint Source Account Annual Appropriation (% of EPF Total Annual Appropriation)
07–08	$250,000,000	$12,833,000 (5%)
08–09	$205,000,000	$9,500,000 (5%)
09–10	$212,412,000	$11,468,000 (5%)
10–11	$134,000,000	$13,297,000 (10%)
11–12	$134,000,000	$13,000,000 (10%)
12–13	$134,000,000	$13,000,000 (10%)
13–14	$153,000,000	$14,200,000 (9%)

Source: NYSDEC 2013c

In addition to EPF monies, New York State agencies and farmers have access to federal funds in the form of grants (e.g., EPA's Chesapeake Bay Implementation Grants [CBIGs]) and cost-share programs (e.g., USDA Natural Resources Conservation Service's [NRCS] EQIP and Conservation Reserve Enhancement Program). EPA is not, in this report, evaluating the sufficiency of federal program funding for New York State's WIP commitments because the state has no influence over the disbursement and year-to-year availability of federal cost-share funds.

4.2 New York State Department of Environmental Conservation

NYSDEC was created on July 1, 1970, to combine in a single agency all state programs designed to protect and enhance the environment. NYSDEC's goal is to achieve its mission through the simultaneous pursuit of environmental quality, public health, economic prosperity and social well-being, including environmental justice and the empowerment of individuals to participate in environmental decisions that affect their lives.

NYSDEC is headed by a commissioner, who is assisted by executive managers. The agency has 24 divisions and offices and is further organized into bureaus to fulfill the functions and regulations established by Title 6 of New York State Codes, Rules and Regulations (6NYCRR). Some programs, such as SPDES, are also governed by federal law. NYSDEC has a CO in Albany and nine ROs. Approximately 2,900 NYSDEC staff work in either the CO or the ROs.

NYSDEC administers and implements the state program for the control of wastewater and stormwater discharges in accordance with the federal CWA. New York State's SPDES program is administered according to New York State law. The SPDES program is broader in scope than the federal CWA in that it controls point source discharges to ground waters as well as surface waters. The two SPDES CAFO general permits are discussed below in Section 8.0.

NYSDEC regulations and policies are available on the NYSDEC public webpage.[5] Guidance documents, spanning a variety of topics from how to tell if one's operation needs a permit to a detailed categorization of engineering and conservation practices, have been developed by NYSDEC to facilitate implementation of the state's animal agriculture programs. In addition, NYSDEC has developed guidance documents (such as the NYSDEC CAFO Inspection Instructions) for use by its staff to ensure a consistent approach on compliance and enforcement activities for all of the SPDES programs (NYSDEC 2014a).

NYSDEC uses the Environmental Notice Bulletin to provide notice of significant public rule making and permitting activities as well as other outreach activities such as meetings with partner and interest group organizations, electronic notification and updates, and other general outreach (NYSDEC 2014a).

4.3 New York State Department of Agriculture and Markets

NYSDAM's mission is to foster a competitive food and agriculture industry that benefits producers and consumers alike. NYSDAM works to promote a viable agricultural industry, foster agricultural environmental stewardship and safeguard the food supply. NYSDAM houses the SWCC.

4.3.1 New York State Soil and Water Conservation Committee

The mission of the SWCC is to advance comprehensive natural resources management through the support of local SWCDs. The SWCC administers AEM, CNMP planner certification, and the Agricultural Nonpoint Source Abatement and Control Program (ANSACP). In addition, the SWCC establishes policy to guide the programs of New York State 58 SWCDs; helps the SWCDs organize, develop and carry out their programs; advises all agencies of government on matters relating to soil and water conservation; and serves as lead agency for New York State's agricultural nonpoint source pollution control programs.

4.3.2 New York State Soil and Water Conservation Districts

SWCDs work with landowners, organizations and government to protect soil, water quality and other natural resources; maintain resource productivity; and protect or improve profitability. AEM is administered and implemented at the local level through SWCDs.

4.4 New York State Department of State

NYSDOS' role in animal agriculture is limited to watershed planning activities that are similar to WIP development. This agency participates on the New York State Nonpoint Source Coordinating Committee and is actively involved with funding watershed projects (NYSDEC 2014a). Beyond these activities and fiduciary oversight of NYSDEC and AEM, NYSDOS is not involved with administration or implementation of New York State's animal agriculture programs.

4.5 The Upper Susquehanna Coalition

The USC is a network of 16 New York State SWCDs and three conservation districts in Pennsylvania. The USC was established in 1992 to work on nonpoint source water quality issues in the headwaters of the Bay. The USC's mission is to protect and improve water quality and natural resources in the Upper

[5] http://www.dec.ny.gov/65.html

Susquehanna River Basin by involving citizens and agencies through education, partnerships, planning, implementation and advocating for water resources.

A USC goal is to support "Environmental and Economically Sustainable Agriculture" by documenting farm statistics and BMPs, developing watershed- and site-specific agricultural plans, and implementing and evaluating practices. The USC follows the AEM approach for farm evaluations and follows the Chesapeake Bay Program's (CBP) approach for tracking BMP information to quantify nutrient and sediment loading from the agricultural sector. The USC believes data collection and support of nonstructural practices (such as rotational grazing) is a good regional approach that directly addresses water quality, stream sediment and farm viability issues (USC, n.d.).

The USC collects and coordinates all BMP data collection for WIP reporting to verify information and eliminate double counting. This is done by using a master list of farms that are geo-referenced to a GIS database. Each year county SCWD staff update the USC's BMP list.

The USC uses Chesapeake Assessment Scenario Tool (CAST) to demonstrate the implications of possible management decisions through an iterative process to model the suite of BMPs that, when implemented, provides the greatest nutrient and sediment load reduction benefit (NYSDEC et al. 2012). CAST allows the USC to evaluate on-the-fly estimates of load reductions associated with various management activities. These rapid estimates are designed to closely replicate the results of full CBP model runs.

5.0 New York State and the Chesapeake Bay Total Maximum Daily Load

On December 29, 2010, the U.S. EPA established the Bay TMDL, a historic and comprehensive *pollution diet* to restore clean water in the Bay and the region's streams, creeks and rivers. The Bay TMDL is the largest and most complex TMDL ever developed, addressing pollution sources throughout a 64,000-square-mile watershed that drains six states and the District of Columbia.[6] The Bay TMDL establishes waste load allocations (WLAs) for the watersheds and jurisdictions contributing to each of the 92 impaired segments that comprise the waters of the Bay and its tidal tributaries and embayments. The Bay TMDL is actually an assemblage of 276 TMDLs; individual TMDLs for each of the three pollutants (nitrogen, phosphorus and sediment) for each of the 92 impaired segments (EPA 2010). The Bay TMDL includes individual and aggregate allocations for nitrogen, phosphorus and sediment sufficient to achieve state clean water standards for dissolved oxygen, water clarity, underwater Bay grasses and chlorophyll *a*, an indicator of algae levels.[7]

[6] New York's portion of the Chesapeake Bay watershed is made up of the Susquehanna River watershed and the Chemung River watershed. Together these two watersheds form the northern headwaters of the Chesapeake Bay and cover much of New York's Southern Tier. In total, some or all of 19 New York counties are in the Chesapeake Bay watershed. New York's portion of the Bay watershed covers 6,250 square miles (NYSDEC 2013a). As of 2009, the CBP estimated that New York was the source of 4 percent of the nitrogen, 5 percent of the phosphorus and 4 percent of the sediment load delivered to the Chesapeake Bay.

[7] http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/FrequentlyAskedQuestions.html

New York and the other Bay jurisdictions[8] developed WIPs that detail each jurisdiction's plan to meet the Bay TMDL allocations for nitrogen, phosphorus and sediment. To date, WIPs have been developed in two phases. The Phase I WIPs, submitted in late 2010, proposed Bay TMDL pollutant allocations and laid out the plan for how each jurisdiction would meet its allocations. The EPA's Bay TMDL allocations were based almost entirely on the proposed allocations in the state's Phase I WIPs. Phase II WIPs, finalized in March 2012, provided additional detail on implementation actions, including actions by local partners to support achievement of the TMDL allocations. Phase III WIPs, when submitted in 2018, will provide the opportunity for the jurisdictions to make mid-course adjustments to pollutant reduction strategies, provide additional detail on implementation strategies and propose refinements to the Bay TMDL allocations. Each WIP includes detailed plans for reducing nutrient and sediment loads from agricultural runoff, including runoff from AFOs and CAFOs. The WIP process provides Bay watershed jurisdictions with the flexibility to substitute BMPs or shift BMPs across or within sectors to achieve the needed pollutant reductions in response to changing conditions.

The CBP, a regional partnership that includes EPA and New York State, leads and directs Bay restoration and protection activities, collects data from the Bay jurisdictions to track and model progress toward the 2-year milestones and Bay-wide TMDL implementation. The CBP collectively has adopted 2025 as the date by which 100 percent of the controls necessary to achieve the Bay TMDL allocations are expected to be in place. CBP has also adopted 2017 as an interim goal and the date by which practices should be in place to achieve 60 percent of the necessary reductions, as compared with the level of reduction achieved in 2009. BMP data are compiled by each jurisdiction and forwarded to the CBP as an electronic "input deck." Each input deck is entered into computer models maintained by the CBP to simulate nitrogen, phosphorus and sediment loads from all sectors and sources and the units (e.g., acres) of each BMP for any area in the Bay watershed.[9] Model output is used to track progress toward each jurisdiction's 2017 and 2025 WIP implementation goals (CBP 2012).

New York submitted its Bay TMDL Phase I WIP in December 2010 (NYSDEC 2010a) and the Phase II WIP on January 7, 2013 (NYSDEC 2013a). Specific to agriculture, including animal agriculture, New York State's pollutant reduction targets (Table 5) were set at levels achievable through significantly expanded implementation of BMPs. New York plans to achieve expanded animal agriculture BMP implementation through effective funding and implementation of its state and federal CAFO regulatory programs and its extensive voluntary programs managed under the umbrella of AEM. Developing and implementing CNMPs is a key part of these programs and is described in Sections 7 and 8. AEM, further described in Section 9.0, works to support farmers in their efforts to protect water quality and conserve natural resources, while enhancing farm viability (NYSDEC 2010a).

[8] Delaware, Maryland, Pennsylvania, Virginia, West Virginia and the District of Columbia

[9] CAST estimates load reductions for point and nonpoint sources including: agriculture, urban, waste water, forest, and septic loading to the land (edge-of-stream) and loads delivered to the Chesapeake Bay. CAST stores data associated with each BMP as well as the load for each sector and land use (http://casttool.org/About.aspx).

Table 5. New York State Agricultural Sector Target Loads by Milestone Period

Ending Year	2009 Progress	2013 Progress	2015 Milestone	2017 60% Target	2025 TMDL	% Reduction (2009–2025)
Nitrogen (lbs)	4,536,179	4,279,494	3,865,630	3,637,560	3,038,482	33%
Phosphorus (lbs)	526,821	470,489	401,279	429,365	364,394	31%
Sediment (lbs)	132,413,421	118,819,255	113,181,384	112,859,356	73,352,433	45%

Source: CBP, n.d.
Note: lbs = pounds

NYSDEC relies on the USC to collect data on agricultural BMPs in the Bay watershed for annual submittal to the CBP (NYSDEC 2013a). USC compiles BMP information reported through state, federal and SWCD cost-share programs, and through field collection of farmer-initiated BMPs implemented without cost share. AEM field assessments, discussed in Section 9.0, are the primary vehicle for collecting BMP implementation data, but other methods of data collection may be used, including NYSDEC regulatory inspections, regional AEM data collection meetings, phone surveys, farmer self-certifications, and the use of aerial imagery/dashboard surveying of cropland. USC uses GIS technology to place a data point on a map that identifies each recorded BMP and location. Aerial photography may be used to identify BMPs in inaccessible areas. USC also collects and reports USDA BMP data to the CBP (NYSDEC 2013a).

In evaluating whether New York State's CAFO and AFO programs are aligned with meeting the state's 2025 Bay TMDL WLAs, EPA focused this assessment on five priority animal agriculture BMPs identified in New York's Phase I WIP: nutrient management, livestock mortality composting, prescribed grazing, barnyard runoff control systems, and cereal and commodity cover crops. EPA chose these practices because they represent the core of New York State's plan to achieve the bulk of its animal agricultural nutrient and sediment reductions. EPA refers to these five practices in this report as *priority BMPs*.

Under the accountability framework adopted by the CBP and discussed in the TMDL, EPA is committed to evaluating the 2-year milestone commitments and the progress in meeting these commitments. According to data provided to the CBP by New York State, the state achieved its 2013 milestone targets for nitrogen and phosphorus, but did not achieve its milestone targets for sediment. New York State finished the 2012–2013 milestone period more than 219,000 pounds ahead of schedule for nitrogen reductions and more than 135,000 pounds ahead of schedule for phosphorus reductions. The state is more than 4.6 million pounds behind its target for sediment; however, EPA anticipates that if New York State can meet its 2015 sediment target it will still be on track to meet its 2017 and 2025 targets (EPA 2014b).

New York State's 2014–2015 milestone strategy for all point and nonpoint source sectors is to reduce phosphorus by more than 192,000 pounds and decrease sediment by more than 21.5 million pounds by the end of 2015, compared to the 2009 baseline. Nitrogen totals indicate an increase by more than 37,000 pounds over the 2009 baseline. Significant additional nitrogen reductions are needed to ensure New York State meets both its WIP and 2017 targets. New York has made more than enough progress in the agriculture sector to ensure implementation is occurring and will need to maintain its efforts in the agriculture sector to stay on track to meets its WIP and Bay TMDL commitments (EPA 2014b).

6.0 Watershed Implementation Plan Priority Best Management Practices

New York State is relying on both regulatory and voluntary programs to meet the state's 2017 and 2025 Bay WIP goals applicable to animal agriculture operations. Table 6 summarizes EPA's findings on the priority BMPs incorporated into each of New York State's programs, along with an estimated number of animal operations subject to each program. The facility universe for the voluntary programs is estimated to be the 2,285 AEM participants in the state's portion of the Bay watershed. EPA recognizes that some of these are pasture-based or crop operations, but 2,285 farms is the best approximation available at this time. Regulatory programs apply to the 68 SPDES-permitted CAFOs in the state's portion of the Bay watershed (NYSDEC 2014a). Although the discussion focuses on the implementation of priority BMPs at animal agriculture operations in the Bay watershed, voluntary and required BMPs are applicable to AFOs and CAFOs statewide.

Table 6. New York State Programs Contributing to Implementation of Priority Best Management Practices in the Chesapeake Bay Watershed

	Comprehensive Nutrient Management Plans	SPDES CAFO Program	Agricultural Environmental Management
Lead Agency	NYSDEC and NYSDAM	NYSDEC	SWCC
Estimated Facility Universe (Bay Watershed)	68[a]	68	2,285[b]
Watershed Implementation Plan Priority Best Management Practice			
Nutrient Management	Required	Required	Voluntary
Mortality Composting	Voluntary	Voluntary	Voluntary
Prescribed Grazing	Voluntary	Voluntary	Voluntary
Barnyard Runoff Control	Required	Required	Voluntary
Cereal and Commodity Cover Crops	Required	Required	Voluntary

Notes:

[a] SPDES-permitted CAFOs only. New York State does not document the number of voluntary CNMPs implemented by nonpermitted AFOs unless they are developed using public funds (NYSDEC 2014a)

[b] Includes SPDES-permitted CAFOs

The following sections summarize WIP priority practice implementation with respect to New York State's regulatory programs and voluntary incentive programs. In particular, EPA Region 2 is interested in whether New York State has regulatory programs in place to achieve the state's 2025 WIP implementation goals for the agricultural sector, or if the state is relying heavily on voluntary implementation to achieve these goals. For example, barnyard runoff control and enhanced nutrient management implementation goals appear achievable through SPDES CAFO permit requirements, supplemented by voluntary CNMPs. Mortality composting and pasture management, on the other hand, appear to rely entirely on voluntary implementation.

EPA (2014) evaluated progress by all New York State sources[10] towards meeting the state's 2012–2013 WIP milestones and its source-specific commitments for the upcoming 2014–2015 milestone period. EPA's evaluation determined that, when the source sectors were aggregated, New York State achieved its 2012–2013 load targets for nitrogen and phosphorus, and slightly exceeded its 2013 sediment milestone. The state's 2015 milestone load reduction commitment for phosphorus and sediment, as forecast by EPA, are on track to meet the 2017 target of having practices in place to achieve 60 percent of the reductions needed to meet water quality standards in the Bay (interim targets). However, New York State's 2015 milestones commitments for nitrogen are not on a trajectory to meet 2017 interim targets.

EPA (2014) reports the following items that New York State has done or will need to do to implement and maintain ongoing oversight and achievement of the state's milestones for the agricultural sector. The BMPs discussed below reflect the state's Phase II WIP. As mentioned in Section 4.0, New York State has flexibility to identify and substitute priority BMPs if alternate practices are determined to better achieve the state's 2017 and 2025 Bay watershed WIP nutrient and sediment reduction goals.

2012–2013 Milestone Achievements

New York State completed most of its 2013 programmatic milestones for agriculture, including:

- **Two rounds of New York State ANSACP funding were implemented to support BMP installation.**
- **The AEM online application was completed, providing a uniform approach to BMP reporting across the watershed.**
- **New York State Agricultural Nonpoint Source Abatement and Control (AgNPS) funding[11] and AEM base program funding totaled more than $11 million for the milestone period.**

2012–2013 Milestones Missed

- **New York State did not release amended drafts of the CWA or ECL CAFO general permits for notice and public comment in 2013 (as needed to make the permits consistent with federal CAFO rules).**

2014–2015 Milestone Strengths

- The USC and Cornell University staff provide extensive outreach to the farm community. These organizations provide the farm community with dozens of workshops and meetings to increase the understanding and use of state-of-the-art conservation practices.
- **New York State funds the Dairy Acceleration Program, which specifically targets farms with 200 to 299 dairy cows that are no longer part of New York State's SPDES CAFO program.**
- **New York State already exceeded its 2017 target for total animal waste management systems.**
- New York State is committed to developing a plan to verify annual BMPs, including cover crops, as part of annual reporting of voluntary practices.
- **New York State agreed to apply nutrient management BMPs to pasture land** (EPA 2014a). EPA sees that as a step towards addressing pasture management, but concerted effort to address

[10] Agriculture; urban/suburban polluted runoff; and wastewater/septic

[11] New York State has dedicated more than $125 million to the AgNPS Program since the Program's inception in 1993 (NYS 2014),

BMP implementation at the field level is still needed to accomplish significant nutrient and sediment reductions.

Enhanced Nutrient Management (Yield Reserve)

New York State plans to have 228,957 acres per year under enhanced nutrient management by 2015; this includes 100 percent of CAFO crop and hay land at SPDES-permitted CAFOs and a minimum 10 percent of crop and hay land at unpermitted AFOs (NYSDEC 2013a). As of 2011, New York State reported implementation of enhanced nutrient management on 26,341 acres (CBP, n.d.) or 12 percent of the state's 2025 goal.

New York State CNMPs developed in accordance with NRCS NY 590 incorporate Cornell's nutrient application guidelines, which were established to enhance nutrient management. The Cornell nutrient guidelines are based on applied research and are actively maintained through ongoing field trials with the goal of nutrient use efficiency; they do not include insurance factors that could increase fertilizer application rates upwards of 35 percent higher than agronomic needs. As a result, the state's Phase I WIP suggests that all CNMPs incorporating the Cornell nutrient management guidelines meet the CBP's definition of enhanced nutrient management (NYSDEC 2010b).

EPA understands that the CBP's definition of enhanced nutrient management will change. EPA Region 2 encourages New York State to verify that Cornell's nutrient application guidelines continue to meet the CBP's definition of enhanced nutrient management, when revised.

Mortality Composting

New York State's goal is to treat 80 percent of annual dairy mortalities through composting by 2025 (NYSDEC 2013a). EPA (2013) reports implementation of 145 animal units of mortality composting as of 2012. **NYSDEC's questionnaire responses and New York State's Phase I and Phase II WIPs do not include information about the incentives and programs in place to encourage mortality composting to meet the state's 2025 mortality composting goal.**

Prescribed Grazing

New York State's goal is to implement prescribed grazing on 90 percent of the available pasture acres (approximately 152,221 acres) by 2025. New York State has a number of voluntary grazing initiatives in place, supported through ANSACP grants, the Grazing Land Conservation Initiative (CLCI), the Graze New York program, the USC's Grazing Initiative, and the USC/NRCS Contribution Agreement. Sixteen counties in New York State's portion of the Bay watershed participate in one or more grazing incentives (NYSDEC 2013a).

New York State's June 2012 WIP progress assessment report indicates that 13 percent of the 2009–2011 commitment has been achieved for pasture grazing BMPs (such as stream protection with fencing), and that 45 percent of the 2009–2011 commitment has been achieved for pasture grazing BMPs and rotational grazing (NYSDEC 2014a).

This progress indicates that **New York State is tracking behind its interim goals for prescribed grazing**, a practice with a specific goal of reducing nutrient and sediment loads to surface water. This might be the

result of New York State's reliance on voluntary programs to meet the milestone goals for prescribed grazing.

Barnyard Runoff Control and Loafing Lot Management

New York State's goal is to install barnyard runoff control practices, including rotational loafing lot practices, on 35 percent of AFOs and 100 percent of SPDES-permitted CAFOs, for a weighted total of approximately 78 percent of AFO/CAFO barnyard acres. Barnyard runoff control practices are required under the state's SPDES CAFO permits and, assuming that 100 percent of the SPDES-permitted CAFOs are in compliance with this requirement, New York State should be able to demonstrate implementation of barnyard runoff control at all SPDES-permitted CAFOs.

New York State is behind on implementation of barnyard runoff controls. The state's reported 2013 progress for this priority BMP was 213 acres—slightly behind the 2013 milestone of 254 acres, but less than 20 percent of the 2025 goal of 1,133 acres with barnyard runoff control. Based on the current rate of implementation for barnyard runoff control, it does not appear that New York State is on track to achieve its 2025 targets for this BMP. EPA did not identify any programs to enhance implementation of barnyard runoff control.

Cereal and Commodity Cover Crops

New York State's goal is to implement cover crops on 31,357 acres of cropland per year through 2025. New York State's Phase II WIP presents an estimate of where this acreage will be found:

> [t]here is estimated to be approximately 70,000 corn silage acres or about 45% of the total row crop acreage…corn silage is the land use that has the most likelihood of successful cover crop implementation in New York. We [NYSDEC] are anticipating the implementation of 34,000 acres of cereal and commodity cover crops, which will be on approximately 15,000 of the total of CAFO corn silage acres (approximately 50% of CAFO corn silage acres). We anticipate another 5,000 CAFO acres of small grains to be planted in cover crops. Of the remaining row crop acres, approximately 14,000 AFO corn silage acres (35% of AFO corn silage acres) will be cover cropped by 2025. The 34,000 acres is approximately 22% of the total available row crop acreage and almost half of the potential cover crop acreage available.
>
> CAFOs are likely to be the first farms to implement cover crops because CAFOs are required to plant cover crops on marginal soils and soils that have a nitrogen leaching index of 10 or above. The remaining acreage will not be easily accomplished because of the types of crops that are grown, a shorter growing season in New York, and the NRCS standards that require planting dates which limit the ability of farmers to cost share cover crop implementation.

The USC is piloting a Cover Crop Initiative through an interactive outreach approach sponsored by an NRCS Conservation Innovation Grant. The USC is partnering with Cornell University to compare end-of-season nitrate capture and nitrogen release in spring and summer with planting different cover crop species, biomass, timing and method of cover termination, and to test various tools for nitrogen management in cover crop-based corn systems. Outreach will include field day demonstrations and an

annual workshop in November to highlight benefits and share ideas on how producers in New York State can overcome the challenges of cover crop implementation on their farms (NYSDEC 2013a).

Additionally, ANSACP expanded Cover Crop and Mulching BMPs from a 1-year funded practice to a 3-year funded practice to provide the farmer more time to evaluate BMP results and associated benefits, thus increasing chances of future adoption (NYSDEC 2013a).

The June 2012 EPA progress assessment report indicated that 160 percent of the 2009–2011 milestone commitment was achieved for cover crop planting (NYSDEC 2014a). In addition, the state's Phase II WIP (NYSDEC 2013a) reports that **New York State has adequate acreage in corn silage at SPDES-permitted CAFOs to meet the 2025 annual implementation goal for cereal and commodity cover crops without having to rely on voluntary programs and incentives**. New York State could exceed the 2025 annual WIP implementation goal if cover crops were planted on all 34,000 acres of corn silage at SPDES-permitted acres. Voluntary implementation, which would augment acreage at SPDES-permitted CAFOs, will support the ANSACP and the USC's Cover Crop Initiative to supplement cover crops at SPDES-permitted CAFOs for additional nutrient and sediment load reductions to the Bay.

Table 7 summarizes New York State's progress toward meeting the 2025 implementation goals, as reported by New York State to the CBP, for the five priority BMPs selected by EPA as specifically relevant to animal agriculture programs. Note that the data are not necessarily limited to animal agriculture operations.

Table 7. New York State's Progress Toward 2025 Watershed Implementation Plan Priority Best Management Practice Implementation Goals

Watershed Implementation Plan Priority Best Management Practice	Units	2009 Progress (% of 2025 Goal)		2013 Progress (% of 2025 Goal)		2025 Goal
Nutrient Management	acres	104,967	(20.3%)	115,368	(22.7%)	339,267
Mortality Composting	AUs	0	(0%)	390	(3.2%)	10,947
Prescribed Grazing	acres	0	(0%)	13,744	(7.7%)	152,221
Barnyard Runoff Control	acres	188	(12.3%)	213	(14.6%)	1,133
Cereal and Commodity Cover Crops	acres	717	(0.5%)	462	(0.3%)	31,357

6.1 Watershed Implementation Plan Priority Best Management Practices, Observations

1. New York State is relying on both regulatory and voluntary programs to meet the state's 2017 and 2025 Bay WIP goals applicable to animal agriculture operations.
2. Two rounds of New York State ANSACP funding were implemented to support BMP installation.
3. The AEM online application was completed, providing a uniform approach to BMP reporting across the watershed.
4. New York State AgNPS funding and AEM base program funding totaled more than $11 million for the milestone period.

5. New York State did not release amended drafts of the CWA or ECL CAFO general permits for notice and public comment in 2013 (as needed to make the permits consistent with federal CAFO rules).
6. New York State funds the Dairy Acceleration Program, which specifically targets farms with 200 to 299 dairy cows that are no longer part of New York State's SPDES CAFO program.
7. New York State already exceeded its 2017 target for total animal waste management systems.
8. New York State agreed to apply nutrient management BMPs to pasture land.
9. NYSDEC's questionnaire responses and New York State's Phase I and Phase II WIPs do not include information about the incentives and programs in place to encourage mortality composting to meet the state's 2025 mortality composting goal.
10. New York State is tracking behind its interim goals for prescribed grazing.
11. New York State is behind on implementation of barnyard runoff controls.
12. New York State has adequate acreage in corn silage at SPDES-permitted CAFOs to meet the 2025 annual implementation goal for cereal and commodity cover crops without having to rely on voluntary programs and incentives.

7.0 Comprehensive Nutrient Management Plans

CNMPs are the foundation of New York State's regulatory program designed to control potential water pollution from CAFOs (SILVESTRI, n.d.). New York State's animal agriculture programs use the NRCS-NY CNMP conservation process guideline, which serves as the standard for all regulated and voluntary New York State CNMPs.

The purpose of the CNMP for animal agriculture operations is to:

- Manage the production, handling, storage and/or treatment of manure and organic byproducts generated in the area(s) of animal concentration and fertilizers.
- Manage the amount, source, form, placement and timing of application of these materials to the land.
- Manage soil erosion. CNMPs identify BMPs to minimize degradation of the farm's natural resource base and reduce the potential for off-site impacts (NRCS-NY 2005). In addition, **SPDES-permitted CAFOs must implement erosion control to tolerable soil loss (T value) on all CAFO crop land** (NYSDEC 2010a).

New York State CNMPs specify structural and nonstructural BMPs to manage process wastewater including barnyard runoff, milk center wash water or egg wash, and silage leachate from storage areas. CNMPs clarify that clean surface water runoff and roof water should be directed away from production areas where contamination could occur. Pathogen management practices and proper disposal of animal mortality must also be addressed.

NYSDAM, NYSDEC, NY-NRCS, SWCC, SWCDs, coalitions (e.g., the USC), Cornell University, and Cornell Cooperative Extension have partnered since the 1990s to integrate, co-develop and update the state's CNMP elements, which include:

- NRCS Conservation Practice Standards.

- Nutrient management guidelines, including supplemental guidelines for critical areas such as regions with karst topography.
- AEM Planner and NRCS Planner Certification.
- AEM Tools (AEM Tier 1 inventory, Tier 2 assessment worksheets, AEM practice evaluation tools, etc.).
- CNMP process guideline and, its replacement, the CNMP Plan Review Checklist.
- Training for planners, inspectors, farmers and other conservation professionals.

The partnership develops tools, processes and requirements, but the individual technical requirements may be approved by one or more organizations only if they are the primary steward(s) of the end-product. For instance, AEM tools receive final approval by the SWCC, NRCS standards are approved by NRCS at the state and federal levels, and SPDES CAFO permit requirements are set by NYSDEC.

CNMP technical requirements and standards are the same for any livestock farm (regulated or voluntary) in New York State to ensure that consistency exists throughout the farmer and planner communities engaging in CNMP work. Consistency promotes implementation of high-quality conservation practice systems on all livestock farms operating under CNMPs, and prepares AFO-size farms for operation under a SPDES CAFO permit should they expand over time (NYSDEC 2014a).

The New York State technical standards for nutrient management are reviewed and revised by a Standards Committee consisting of technical staff from NRCS, NYSDEC, NYSDAM, Cornell University and others (NYSDEC 2010a). EPA periodically compares state technical standards against its expectations. The 2014 EPA review (EPA 2014a) determined that New York's Technical Standards meet EPA's expectations.

A CNMP can be voluntarily developed and implemented by any livestock farm (voluntary CNMP) but a CNMP is required for farms that are:

- CAFOs operating under the CWA or ECL Permit.
- Farms seeking federal or state cost-sharing to construct a manure management system.

All New York State CNMPs must be prepared in accordance with NRCS NY 312 and all applicable technical standards where invoked by NRCS NY 312 (e.g., NRCS NY 590). The minimum CNMP requirements are the same regardless of whether the farm is SPDES-permitted or is voluntarily developing a CNMP (NYSDEC 2014a). All CNMPs, voluntary and required, are updated annually by an AEM-certified planner and reviewed by the party responsible for implementing the CNMP.

AEM planners are certified through an extensive process that involves achieving and maintaining Certified Crop Advisor credentials and the completion of the CNMP Certification Training. Upon completion of the training, the conditionally certified individual must submit three CNMPs for review and acceptance to obtain full certification to develop CNMPs. As of this writing, New York State has 47 AEM-certified planners statewide with 22 AEM-certified planners working in one or more counties that are entirely or partially within the Bay watershed (NYSDEC 2014a). Once a planner is certified, the NYSDAM quality assurance/quality control (QA/QC) program reviews each planner's work on a continual basis to ensure quality planning (SWCC 2013); additional detailed information on this QA/QC process was not available to the EPA team.

Voluntary CNMPs are reviewed and approved by AEM-certified planners. USDA NRCS (when cost-shared by NRCS), SWCDs, SWCC and NYSDAM also perform reviews and in-depth quality assurance spot checks (NYSDEC 2014a). Additional information on agency review of voluntary CNMPs, such as the number reviewed each year and the scope of the reviews, was not provided to the EPA team. SPDES-required CNMPs are reviewed by NYSDEC during CAFO inspections.

NYSDEC reports that CNMP requirements are regularly communicated to the farming community through farm press, trainings and agency websites (NYSDEC 2014a). Additional CNMP communication includes bulletins and news releases from Cornell Cooperative Extension, SWCDs, NRCS and industry groups (e.g., Farm Bureau, Northeast Dairy Producers' Association, AEM certified planners); formal trainings and workshops offered by AEM partner groups; Northeast Region Certified Crop Advisor Annual Training; the annual weeklong Conservation Skills Workshop; the annual weeklong Water Quality Symposium; and individualized communication between AEM-certified planners and CAFO-permitted farms. AEM delivers CNMP news, training, guidance and tools for implementing revised nutrient management requirements.

7.1 Facility Universe, Comprehensive Nutrient Management Plans

New York State has 562 SPDES-permitted CAFOs (68 SPDES-permitted CAFOs in the Bay watershed) with AEM-certified CNMPs. New York State does not track the number of voluntary CNMPs implemented by nonpermitted AFOs unless they are developed using public funds (NYSDEC 2014a).

NYSDAM and the SWCCs are responsible for voluntary CNMPs, including oversight and review as a core part of CNMP cost-share contracts as well as responsibility for administering AEM planner certification. One or more of these agencies might know the number of voluntary CNMPs in place in New York State and the state's portion of the Bay watershed.

7.2 Resources Allocated, Comprehensive Nutrient Management Plans

NYSDEC resources allocated to SPDES CNMPs are not separated from SPDES CAFO activities (NYSDEC 2014a) (see Section 8.6). Information on budgets and FTEs allocated to voluntary CNMPs was not available to the EPA team.

7.3 Data Systems, Comprehensive Nutrient Management Plans

NYSDEC's questionnaire response did not identify data systems used to track and manage oversight of CNMPs (NYSDEC 2014a).

7.4 Compliance and Enforcement, Comprehensive Nutrient Management Plans

NYSDEC is responsible for compliance and enforcement of CNMPs maintained and implemented at SPDES-permitted CAFOs. All CAFO owners and operators must maintain a copy of the site-specific certified CNMP onsite, and records documenting the implementation of the BMPs and procedures identified in the CNMP. SPDES CNMPs are evaluated during NYSDEC compliance inspections (see Section 8.8). NYSDEC staff performs comprehensive reviews of CNMP records to assess compliance during inspections.

AEM-certified planners also use on-site records to perform CNMP updates and assess implementation, operation and maintenance of required BMPs (NYSDEC 2014a). AEM-certified planners are not required to participate in NYSDEC ECL or CWA compliance inspections, but most do at the request of the farmer. AEM-certified planners also assist permit holders with responding to potential areas of noncompliance identified during ECL or CWA compliance inspections.

NYSDAM is responsible for monitoring the quality of CNMPs developed by AEM-certified planners. NYSDEC staff told EPA's contractor that criminal action has been taken against AEM-certified planners for submitting false information in certified CNMPs.

7.5 Watershed Implementation Plan Priority Best Management Practices, Comprehensive Nutrient Management Plans

As previously stated, all New York State CNMPs must be prepared in accordance with NRCS NY 312 and all applicable technical standards where invoked by NRCS NY 312 (e.g., NRCS 590). Table 8 summarizes nonvoluntary priority WIP BMPs implemented through the CNMP process. Note that for voluntary CNMPs, an AFO would need to choose to develop and implement a CNMP before these priority BMPs would be designed and implemented at the farm. **The voluntary CNMP (i.e., non-SPDES) process adds uncertainty to estimating how many, and to what extent, non-SPDES AFOs will implement priority practices that count towards New York State's 2017 and 2025 WIP implementation goals.** As with the SPDES program, AEM and the Phase I and II WIPs do not identify incentives to encourage mortality composting systems.

Table 8. Watershed Implementation Plan Priority Best Management Practices in SPDES and Voluntary Comprehensive Nutrient Management Plans

Watershed Implementation Plan Priority Best Management Practice	SPDES Environmental Conservation Law Permit	SPDES Clean Water Act Permit	Notes
Enhanced Nutrient Management (Yield Reserve)	☑	☑	CNMPs must be developed to the NRCS 590 standard.[a]
Mortality Composting	☐	☐	
Prescribed Grazing	☐	☐	
Barnyard Runoff Control	☑	☑	NRCS 590
Cereal and Commodity Cover Crops	☑	☑	NRCS 590

[a] Nutrient application rates for nitrogen, phosphorus and potassium must not exceed Cornell University guidelines for the priority nutrient considering applicable risk assessments or industry practice when recognized by the University (NRCS-NY 2013). Cornell nutrient guidelines are enhanced to maximize the uptake of nutrients applied and do not include an insurance factor above calculated agronomic needs (NYSDEC 2010a)

AEM promotes, but does not require, prescribed grazing as part of sustainable farm planning. The USC's voluntary Grazing Initiative combines all buffer types, cow exclusion practices, and prescribed grazing to address stream bank erosion, habitat improvement and flooding (NYSDEC 2010a).

7.6 Comprehensive Nutrient Management Plans, Observations

1. New York State has 562 SPDES-permitted CAFOs (68 SPDES-permitted CAFOs in the Bay watershed) with AEM-certified CNMPs.
2. CNMP technical requirements and standards are the same for any livestock farm (regulated or voluntary) in New York State to ensure that consistency exists throughout the farmer and planner communities engaging in CNMP work.
3. SPDES-permitted CAFOs must implement erosion control to tolerable soil loss (T value) on all CAFO crop land.
4. Voluntary CNMPs are reviewed and approved by AEM-certified planners.
5. NYSDEC is responsible for compliance and enforcement of CNMPs maintained and implemented at SPDES-permitted CAFOs.
6. NYSDAM is responsible for monitoring the quality of CNMPs developed by AEM-certified planners.
7. The voluntary CNMP (i.e., non-SPDES) process adds uncertainty to estimating how many, and to what extent, non-SPDES AFOs will implement priority practices that count towards New York State's 2017 and 2025 WIP implementation goals.

8.0 SPDES CAFO Program

NYSDEC's Division of Water administers the two SPDES CAFO General Permits; the ECL Permit and CWA Permit. The ECL Permit covers nondischarging Medium and Large CAFOs (with the exception of dairies with 200 to 299 stabled or confined mature dairy cows). The CWA Permit covers all Medium or Large discharging CAFOs. NYSDEC is authorized to designate smaller operations as CAFOs and operations of any size can voluntarily apply for SPDES permit coverage. The SPDES CAFO size categories are consistent with size categories in the federal NPDES CAFO regulation (Table 9).

Table 9. Medium and Large CAFO Size Categories From the Federal NPDES CAFO Regulations, CWA SPDES CAFO General Permit, and ECL SPDES CAFO General Permit for Livestock Sectors Common to New York State.

	Federal NPDES CAFO Regulations		CWA SPDES CAFO General Permit		ECL SPDES CAFO General Permit	
	Discharging CAFOs		Discharging CAFOs		Nondischarging CAFOs	
Livestock Sector	Medium[a]	Large	Medium[a]	Large	Medium	Large
Dairy, mature dairy cows milked or dry	200-699	700+	200-699	700+	200-699[b]	700+
Cattle, other than mature dairy cows or veal calves	300-999	1,000+	300-999	1,000+	300-999	1,000+
Swine, 55 pounds or more	750-2,499	2,500+	750-2,499	2,500+	750-2,499	2,500+
Swine, less than 55 pounds	3,000-9,999	10,000+	3,000-9,999	10,000+	3,000-9,999	10,000+
Turkeys	16,500-54,999	55,000+	16,500-54,999	55,000+	16,500-54,999	55,000+

Table 9. Medium and Large CAFO Size Categories From the Federal NPDES CAFO Regulations, CWA SPDES CAFO General Permit, and ECL SPDES CAFO General Permit for Livestock Sectors Common to New York State.

	Federal NPDES CAFO Regulations Discharging CAFOs		CWA SPDES CAFO General Permit Discharging CAFOs		ECL SPDES CAFO General Permit Nondischarging CAFOs	
Livestock Sector	Medium[a]	Large	Medium[a]	Large	Medium	Large
Laying hens or broilers, if the AFO uses a liquid manure handling system	9,000-29,999	30,000+	9,000-29,999	30,000+	9,000-29,999	30,000+
Chickens (other than laying hens), if the AFO uses other than a liquid manure handling system	37,500-124,999	125,000+	37,500-124,999	125,000+	37,500-124,999	125,000+
Laying hens, if the AFO uses other than a liquid manure handling system	25,000-81,999	82,000+	25,000-81,999	82,000+	25,000-81,999	82,000+

[a] And either one of the following conditions are met: pollutants are discharged into waters of the United States through a man-made ditch, flushing system, or other similar man-made device; or pollutants are discharged directly into waters of the United States which originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation.

[b] Only nondischarging dairies that stable or confine 300-699 mature dairy cows must obtain ECL Permit coverage. 6 NYCRR Subpart 750-1 exempts dairies that confine or stable 200-299 mature dairy cows, milked or dry, from the Medium CAFO definition and, by extension, does not consider these operations to be point source discharges. Consistent with this, New York State's ECL Permit does not require permit coverage for nondischarging dairy AFOs with 200-299 mature dairy cows, milked or dry.

8.1 SPDES Environmental Conservation Law General Permit

The current ECL Permit (GP-0-14-001) became effective July 1, 2014, and expires on June 30, 2016. This general permit is an interim general permit that replaced the expired general permit, GP-0-09-001. NYSDEC issued the interim general permit, unchanged from GP-0-09-001, to allow adequate time to work with a diverse stakeholder group to consider potential future changes to the ECL Permit. Owners or operators with coverage under GP-0-09-001 continue to be covered under GP-0-14-001 (NYSDEC 2014b).

Although referred to as CAFOs, ECL Permit holders are not allowed to discharge, except for agricultural stormwater,[12] and must be designed, constructed, operated and maintained to prevent discharge. For

[12] The ECL Permit defines agricultural stormwater discharge as a precipitation-related discharge of manure, litter or process wastewater where the manure, litter or process wastewater has been applied in accordance with site-specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter or process wastewater, with site-specific conservation practices to control runoff, appropriate testing of manure, litter or process wastewater and soil, and adequate documentation and recordkeeping.

purposes of eligibility for federal 319 nonpoint source funding, because these ECL-permitted operations do not discharge, they are actually considered AFOs.

For Large CAFOs, "no discharge" means that the ECL Permittee has fully implemented all structural and nonstructural BMPs necessary to meet USDA NRCS CPS NY 312 (Waste Management System) as determined by an objective and certified assessment by an AEM-certified planner documented in the facility's CNMP.

For Medium CAFOs, "no discharge" means that the ECL Permittee has fully implemented all nonstructural BMPs necessary to meet NRCS NY 312 as determined by an objective and certified assessment by an AEM-certified planner, the permittee is complying with the CNMP implementation schedule requirements in GP-0-14-001 Part III.C, and all implemented practices are operating and maintained. NY 312 nonstructural BMPs include nutrient management, recycling waste through soil and plants, excluding clean water from concentrated waste areas, and adequate erosion control and other soil and water management practices.

The 2013 ECL CAFO rule revisions (Part 750 of Title 6 of the Codes, Rules and Regulations of the State of New York) no longer require dairy AFOs with 200 to 299 mature dairy cows to obtain coverage under the ECL Permit. The ECL CAFO rule was revised to support New York State's yogurt industry by encouraging expansion of smaller dairy farms. Although New York State removed the burden of ECL Permit coverage for these dairies, NYSDEC retains authority to require ECL Permit coverage if a dairy AFO is observed to be a risk to the environment. In one instance, a 296 cow dairy (Facility 30) wanted to terminate ECL Permit coverage. However, during NYSDEC's termination inspection (July 2014) it was documented that silage leachate was flowing into a roadside ditch and that cows had direct access to surface water. The NYSDEC inspector sent a Notice of Violation (NOV) to the facility for the silage leachate discharge and the cows having direct access to a creek. Facility 30 is not able to terminate its SPDES permit until the issues are resolved and the facility refiles a Notice of Termination (NOT) with NYSDEC. **EPA Region 2 commends NYSDEC for its careful attention to processing and screening NOTs from dairies with 200 to 299 mature dairy cows seeking to terminate permit coverage.**

In most instances, New York State expects that removal of ECL permitting requirements for dairies with 200 to 299 cows will encourage these smaller dairies to expand their herds and produce more milk (NYSDEC 2014c). **Although dairies with 200 to 299 cows are no longer required to hold ECL Permits, these dairies must apply nutrients at agronomic rates in accordance with the criteria for the agricultural stormwater discharge exemption and prevent any discharges that would require CWA Permit coverage.** Furthermore, these dairies are expected, but not required, to participate in the AEM (see Section 9.0) or other equivalent conservation programs (NYSDEC 2014c).

ECL Permit coverage is available to nondischarging, existing Small[13] or Medium[14] CAFOs, existing Large CAFOs, new Small or Medium CAFOs, and new Large CAFOs. To obtain ECL Permit coverage, Medium

[13] The ECL Permit defines a Small CAFO as an AFO that is designated by the Department as a CAFO or requests CAFO SPDES permit coverage and is not a Medium or Large CAFO.

[14] The ECL Permit defines a Medium CAFO as an AFO that stables or confines the type and number of animals that fall within the federal Medium CAFO size category.

CAFOs must submit a Notice of Intent (NOI) and CNMP certification to NYSDEC; Large CAFOs must submit an NOI and an Annual Nutrient Management Plan Submittal[15] to NYSDEC. Under the ECL Permit, the CNMP must be developed and certified within 6 months of NYSDEC receiving an NOI for Expanded Facilities (AFO to Medium CAFO), 15 days before operating a new CAFO, or before ECL Permit coverage for existing CAFOs. NYSDEC can require any owner or operator authorized by the ECL Permit to apply for and obtain an individual SPDES permit.

8.1.1 SPDES Environmental Conservation Law Permit Best Management Practices

ECL Permit, Part VI, specifies the following generic BMPs that must be implemented, as appropriate, at all ECL-permitted CAFOs.

- **Prohibition on Unauthorized Substances**. Sanitary waste, unless authorized pursuant to Part 360; unused pesticides; and any other material that cannot be properly handled at the CAFO, is prohibited from being stored in waste storage areas or conveyed through the waste storage transfer structures.
- **Proper Operation and Maintenance Requirements.** The facilities covered by this General Permit are required to document the attainment of the effluent limitations required in Part I, and all applicable Generic BMPs used to comply with the effluent limitations in this permit. Such documentation shall be included in the CNMP required by Part III of this permit.
- **Waste Application Requirements.** Land application rates shall be in accordance with the CNMP and NRCS 590. In no case shall land application rates or timing result in any runoff during any given application event that causes or contributes to a violation of water quality standards. Applications may not be made on saturated soils or at a rate that meets or exceeds the saturation capacity of that field at that time. In addition, all waste applications must be made in accordance with the following requirements:
    - **Adverse Weather Emergency Applications.** Emergency applications of manure, litter, food processing waste, digestate and process wastewater during adverse weather conditions must be made under the considerations of the 2005 Cornell Guide, *Supplemental Manure Spreading Guidelines to Reduce Water Contamination Risk During Adverse Weather Conditions*. The CNMP must identify specific fields to be reserved for these emergency applications.
    - **Protection of Groundwater and Artificial Drainage Flows.** Applications of manure, litter, food processing waste, digestate and process wastewater in areas with at-risk groundwater as defined in the 2004 Cornell recommendations *Manure and Groundwater: The Case for Protective Measures and Supporting Guidelines,* or in artificially drained fields must be done with caution and under the direction of an AEM-certified planner.
    - **Food Processing Waste.** As set forth in NRCS 590, land application of food processing waste shall consider any and all necessary measures to minimize odors, such as incorporation, injection and appropriate use of timing to avoid creating a nuisance.
    - **Food Processing Waste Containing Salt.** The land application rates of food processing waste shall not exceed a chloride loading of 170 pounds per acre per year.
    - **Waste Without Benefit.** Land application of undigested fats, oils and grease (FOG), or other waste with no quantifiable nutritive benefit to the soil or crop, is not allowed.

[15] NYSDEC's Annual Nutrient Management Plan Submittal is a list of items that must be submitted annually to NYSDEC by all SPDES-permitted Large CAFOs.

In addition, all **Large CAFOs** must meet the following requirement:

- **Manure Applicator Training. A minimum of two (2) individuals from each permitted Large CAFO facility must attend a NYSDEC- endorsed manure applicator training within the permit term.** All subsequent applications of manure, litter, food processing waste, digestate and process wastewater made by the CAFO must be done under the direct supervision of an individual who has attended this training. Direct supervision includes, but is not limited to, determining daily nutrient application rates, timing, spreading methods, field selections and adherence to required application setbacks. These individuals are responsible for the training of facility staff regarding the applicable requirements.

- **Field Setback Requirements.** Unless the CAFO exercises one of the options provided for in (a.) or (b.) of this section, manure, litter, food processing waste, digestate and process wastewater may not be applied closer than 100 feet from: (1) the top of the bank of any down-gradient surface waters of New York State, including both perennial and intermittent streams, (2) to a New York State Regulatory Freshwater Wetland with a surface connection to the field, or (3) to an open tile line intake structure, sinkhole, wellhead or other down-gradient direct conduits to surface or ground waters.
    - ***Vegetated buffer.*** As a compliance alternative, the CAFO may substitute the 100-foot setback described above with a 35-foot wide vegetated buffer to down-gradient waters as described in Part VI.D. (1), (2), and (3) above.
    - ***Alternative practice.*** As a compliance alternative, the CAFO may substitute the 100-foot setback described above with a 15-foot wide setback to down-gradient waters as described in Part VI.D. (1), (2), and (3) above when manure, litter, food processing waste, digestate and process wastewater is applied under the conservation practice of incorporation within 24 hours of the application as documented in the CNMP.
- **Other Best Management Practices.** The following BMPs shall be used by all ECL-permitted CAFOs *(Note that facility-specific BMPs must also be specified in the CNMP)*:
    - Retention facilities and structures must be designed, constructed and operated to prevent the discharge of all manure, litter, food processing waste, digestate, process wastewater and the contaminated runoff from a 25-year, 24-hour rainfall event for the location of the production area. Calculations may also include allowances for surface retention, infiltration and other site-specific factors. Retention facilities and structures must be constructed, maintained and managed so as to retain all contaminated rainfall runoff from open lots and associated areas, as well as manure, litter, food processing waste, digestate and process wastewater which will enter or be stored in the retention facilities or structure(s).
    - The maximum operating level for open waste storage structures, earthen and fabricated, shall be indicated by a depth marker and be the level that provides for the design storage volume less the volume contribution of precipitation and runoff from the 25-year, 24-hour storm event, plus one (1) foot of freeboard for all earthen waste storage structures and all fabricated waste storage structures with a contributing drainage area. The design storage volume includes the

volume needed for manure, litter, food processing waste, digestate and process wastewater storage as calculated in the CNMP in accordance with the NRCS NY 313 Standard Design criteria.

- Leachate collection and control facilities must be implemented, operated and maintained in accordance with all applicable NRCS standards to prevent overflow or discharge of the concentrated, low-flow leachate products. If an AEM-certified planner deems low-flow leachate collection unnecessary, a detailed description of the monitoring strategy necessary for this determination must be included in the CNMP. This monitoring strategy must be site-specific and, at a minimum, include documented inspections of the feed storage area to determine if low-flow leachate is leaving the pad. Furthermore, if an AEM-certified planner deems high-flow leachate treatment unnecessary, a detailed description of this consideration must be included in the CNMP. At its discretion, NYSDEC reserves the right to require leachate collection and treatment when determined applicable.
- Facilities shall not expand operations, either in size or numbers of animals, prior to amending or enlarging the waste-handling procedures and structures to accommodate any additional wastes that will be generated by the expanded operations, unless the existing facilities have been designed to accommodate such expansion.
- Barnyards and associated wastes shall be isolated from outside surface drainage by ditches, dikes, berms, diversions or other such structures designed to carry peak flows expected at times when the 25-year, 24-hour rainfall event occurs.
- New facilities shall not be built in a surface water of the state, including wetlands, and must be built outside of the 100-year floodplain (excluding agricultural fields). New structures on existing facilities shall not be built in a surface water of the state, including wetlands, and must be built outside of the 100-year floodplain unless protected from inundation by the 100-year flood as documented by a professional engineer currently licensed to practice in New York State. In addition, any newly constructed waste storage facilities or feed storage structures may not be built within 100 feet of a New York State classified stream or protected water body as determined by 6NYCRR Parts 608 and 800–941, or Title 5 of Article 15 of the ECL, as seen on the New York State Environmental Resource Mapper at http://www.dec.ny.gov/animals/38801.html.
- Animals confined in the animal feeding operation must be prevented from coming in contact with the surface waters of the state while in the confinement area.
- There shall be no water quality impairment to public or neighboring private drinking water wells due to waste handling at the permitted facility. New retention facilities and structures, holding pens or waste/wastewater treatment sites shall not be located closer to existing public or private water wells than the distances specified by state regulations or health codes or state-issued permits.
- Solids, sludges, manure or other pollutants, as defined in ECL 17-0105 (17), removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent pollutants from being discharged to waters of the state.

- The operator shall prevent the discharge of pesticides into waters of the state. All pesticide, herbicide and fungicide products used at the CAFO must be registered with New York State and applied in accordance with the label directions. Any use contrary to the legal label is a violation of federal and state pesticide law. Certification of pesticide applicators may be required (see http://www.dec.ny.gov/permits/209.html). All wastes from dipping vats, pest and parasite-control units, and other facilities used for the application of potentially hazardous or toxic chemicals shall be handled and disposed of in a manner such as to prevent pollutants from entering the waters of the state.
- Dead animals shall be properly disposed of within three (3) days unless otherwise provided for by NYSDEC. Animals shall be disposed of in a manner to prevent contamination of waters of the state or creation of a public health hazard. Facilities shall refrain from disposal of animal mortalities in any liquid manure or process wastewater treatment systems. Composting of dead animals must be conducted in accordance with the 2002 Cornell Waste Management Institute recommendations in *Natural Rendering: Composting Livestock Mortality & Butcher Waste* or the applicable NRCS standard.
- Collection, storage and disposal of liquid and solid waste must be managed in accordance with NRCS standards.
- Food processing waste may not exceed 50 percent of the annual stored volume in the manure storage facility covered by this General Permit. Manure storage facilities accepting greater than 50 percent food processing waste are subject to the permitting or registration requirements under Part 360. Nonfarm generated organics such as food processing waste and FOG may not exceed 50 percent of the annual volume of waste placed in the anaerobic digester. Sanitary waste shall not be accepted into the anaerobic digester. Anaerobic digesters accepting greater than 50 percent nonfarm-generated organics or any sanitary waste are subject to the permitting or registration requirements under Part 360.
- Transfer of manure, litter, food processing waste, digestate and process wastewater to other persons.
- In cases where CAFO-generated manure, litter, food processing waste, digestate and process wastewater is exported, sold or given away from a CAFO to any one recipient in amounts greater than 50 tons annually, the permittee must comply with the following conditions:
    - Maintain records showing the date and amount of manure, litter, food processing waste, digestate and process wastewater that leaves the permitted operation.
    - Record the name and address of the recipient.
    - Provide the recipient(s) with representative information on the nutrient content of the manure, litter, food processing waste, digestate and process wastewater as exported.
    - These records shall be retained on-site, for a period of 5 years, and shall be submitted to NYSDEC upon request.

Any applications not meeting the definition of export must be made in accordance with the CNMP of the permit holder.

The ECL Permit requires Large CAFOs to have implemented all necessary BMPs before acquiring permit coverage. EPA's contractor reviewed CNMP practice implementation status as reported on Facility 11's

ACRs and the CAFO's NOI; Facility 11 is the only Large ECL-permitted CAFO on EPA Region 2's CAFO file review list. Based on ACR and NOI information submitted by Facility 11, all structural and nonstructural CNMP practices were implemented before the NOI was signed and submitted to NYSDEC on March 10, 2010.

The CNMP practice full implementation date for Medium CAFOs was March 31, 2012, unless an extension was granted by NYSDEC. The ECL Permit does not allow extensions beyond June 30, 2014, for Medium CAFOs. EPA's contractor reviewed 27 CNMP implementation extension requests submitted by 14 ECL-permitted CAFOs. The majority of extension requests were the result of financial hardship and all were approved except one, which was denied because the CAFO was under enforcement action.

8.2 SPDES Clean Water Act General Permit

New York State's SPDES CWA General Permit (GP-04-02) is issued to discharging CAFOs, or to CAFOs that do not discharge but choose to be covered, pursuant to the New York State's ECL and the federal CWA. **The effective date of the CWA Permit was July 1, 2004, and the expiration date was June 30, 2009, but the permit has been administratively extended.** Owners and operators permitted prior to June 30, 2009, continue to be covered under the administratively extended SPDES CWA Permit; NYSDEC reports all CAFOs that need an SPDES CWA Permit are currently covered. EPA notes that federal NPDES regulations do not allow new facilities to be covered under an administratively extended general permit. As a result, NYSDEC will issue an individual SPDES CWA Permit to any new CAFO that submits an NOI before the permit is reissued.

The CWA Permit allows discharges of process wastewater from storms equal to or greater than the 25-year, 24-hour precipitation event and agricultural stormwater; under the ECL Permit only agricultural stormwater can be discharged. When a 25-year, 24-hour storm event occurs, CWA Permit holders are allowed to discharge process wastewater overflow to surface waters of the state if the facility is designed, constructed and operated to contain all process-generated waste waters plus the expected runoff from a 25-year, 24-hour rainfall event for the location of the point source.

CAFO owners or operators must submit an NOI for SPDES CWA Permit coverage to NYSDEC before discharging to waters of the state. The SPDES CWA Permit requires a site-specific CNMP developed or reviewed by an AEM-certified planner. All structures and practices identified in the CNMP must be designed, constructed and operated in accordance with NRCS NY 312, as discussed in ECL Permit section above. Although all SPDES CWA-permitted CAFOs must develop, certify and implement a CNMP, the CWA Permit assigns different CNMP deadlines depending on the CAFO's size category and operating status. **The SPDES CWA Permit allows (1) new Small CAFOs, (2) Medium CAFOs, and (3) AFO to Medium CAFO (i.e., AFOs that expand in size to qualify as Medium CAFOs) to have 2 years from the date NYSDEC receives the NOI to develop and certify the CNMP.**

- The 2 year CNMP delay is inconsistent with the SPDES CWA Permit requiring a certified CNMP in place when NYSDEC receives the NOI from an expanded facility, Medium CAFO to Large CAFO, or new Large CAFO.
- The federal CAFO regulation at 40 CFR 122.23 (h) requires the CAFO nutrient management plan (NMP) to be developed and submitted with the NOI.

The CWA Permit's delayed implementation schedule for production and land application area BMPs is less stringent than current and past federal CAFO rules. The federal CAFO rule requires production area BMPs to be fully operational on the date of NPDES permit coverage. The 2008 federal CAFO rule allowed delayed implementation of land application area BMPs, but the full implementation date of February 27, 2009, has passed. The current federal CAFO rule does not include a delayed implementation schedule for BMPs [40 CFR § 412.31(a)(2)(3) and (b)(3) and 40 CFR § 412.43(a)(2) and (b)(2)].

New York State CNMPs are considered confidential under N.Y. AGM. LAW § 151-g and, as such, EPA's contractor did not review CNMPs as part of the New York State animal agriculture program assessment process. CAFO CNMPs are also not submitted to NYSDEC staff for review, nor are copies filed with NYSDEC's staff or offices, unless obtained for compliance and enforcement purposes.

New York State's confidential treatment of CAFO CNMPs is not consistent with the 40 CFR § 122.23(h) federal CAFO requirement, which requires permit writer review of the CAFO's NMP and an adequate opportunity for public review of both a CAFO's NMP and the terms of the NMP incorporated into the draft permit. NMPs submitted for compliance with both individual and general NPDES permits must go through a public notice and comment period to give the public an opportunity to review the CAFO's site-specific NMP and comment on the terms of the NMP to be incorporated into the permit (EPA 2012a). As a result, New York State's position of not requiring permit writer review and public notice of CAFO CNMPs, and the 2-year implementation delay for some facilities, is not in accordance with the federal CAFO requirements.

8.2.1 SPDES Clean Water Act Permit Best Management Practices

The CWA Permit prohibits unauthorized substances in retention facilities and requires proper operation and maintenance of facilities used to comply with the permit. In addition, the following 13 BMPs specified at CWA Permit Part VIII.G must be implemented by all CWA Permit holders, in addition to any other site-specific BMPs identified in the CAFO's CNMP.

- Control facilities must be designed, constructed and operated to contain all process wastewater and the contaminated runoff from a 25-year, 24-hour rainfall event for the location of the production area. Calculations may also include allowances for surface retention, infiltration and other site-specific factors. Waste-control facilities must be constructed, maintained and managed so as to retain all contaminated rainfall runoff from open lots and associated areas, process wastewater, and all other wastes which will enter or be stored in the retention structure(s).
- Facilities shall not expand operations, either in size or numbers of animals, prior to amending or enlarging the waste-handling procedures and structures to accommodate any additional wastes that will be generated by the expanded operations, unless the existing facilities have been designed to accommodate such expansion.
- Open lots and associated wastes shall be isolated from outside surface drainage by ditches, dikes, berms, terraces or other such structures designed to carry peak flows expected at times when the 25- year, 24-hour rainfall event occurs.
- New facilities shall not be built in a surface water of the state, including wetlands.
- Animals confined in the animal feeding operation must be prevented from coming in contact with the surface waters of the state.

- New and expanded wastewater retention facilities may not be located in the 100-year floodplain unless the facility is protected from inundation and damage that may occur during that flood event.
- There shall be no water quality impairment to public or neighboring private drinking water wells due to waste handling at the permitted facility. Wastewater retention facilities, holding pens or waste/wastewater disposal sites shall not be located closer to public or private water wells than the distances specified by state regulations or health codes or state-issued permits.
- Solids, sludges, manure or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent pollutants from being discharged to waters of the state.
- The operator shall prevent the discharge of pesticide-contaminated waters into waters of the state. All wastes from dipping vats, pest and parasite-control units, and other facilities used for the application of potentially hazardous or toxic chemicals shall be handled and disposed of in a manner such as to prevent pollutants from entering the waters of the state.
- Dead animals shall be properly disposed of within three (3) days unless otherwise provided for by NYSDEC. Animals shall be disposed of in a manner to prevent contamination of waters of the state or creation of a public health hazard.
- Collection, storage and disposal of liquid and solid waste should be managed in accordance with NRCS standards.
- Appropriate measures necessary to prevent spills and to clean up spills of any toxic pollutant shall be taken. Where potential spills can occur, materials-handling procedures and storage shall be specified. Applicable regulations and procedures for cleaning up spills shall be identified and the necessary equipment to implement a clean-up shall be available to personnel.
- In cases where CAFO generated manure, litter or process wastewater is sold or given away to any one recipient in amounts greater than 50 tons annually, the permittee must comply with the following conditions:
    - Maintain records showing the date and amount of manure, litter and/or process wastewater that leaves the permitted operation.
    - Record the name and address of the recipient.
    - Provide the recipient(s) with representative information on the nutrient content of the manure, litter and/or process wastewater.
    - These records shall be retained on-site, for a period of 5 years, and shall be submitted to NYSDEC upon request.

Part VIII.C of the CWA Permit required the BMPs discussed above to be fully implemented on or before June 30, 2009, the last day for Medium CAFOs to have all structural and nonstructural practices fully operational.[16] Existing Large CAFOs were required to have all practices fully operational by December 31, 2006. Table 10 presents CNMP practice full implementation dates as identified from ACRs submitted by each of the Large CWA-permitted CAFOs on EPA Region 2's CAFO file review list. The Large CAFOs evaluated by EPA received extensions for full implementation of CNMPs; however, all Large SPDES CWA-

[16] The CWA Permit requires Medium CAFOs to have had all nonstructural BMPs fully operational on or before October 1, 2007, and practices addressing high risk conditions fully operational no later than October 1, 2008. The CWA Permit defines High Risk Conditions as conditions as identified by the certified AEM planner that have the high likelihood of significant water quality impacts.

permitted CAFOs reviewed by EPA fully implemented CNMP practices during or before the 2009 ACR reporting year.

Table 10. SPDES Clean Water Act Permit, Large CAFO Comprehensive Nutrient Management Plan Practice Implementation as Self-Reported on Annual Compliance Reports

Facility Name	Date of Coverage	Watershed	Year Comprehensive Nutrient Management Plan Practices Were Fully Implemented, Based on SPDES Annual Compliance Report Review
SPDES Clean Water Act CAFO Permit			
Facility 1	12/18/1999	Great Lakes	2009
Facility 2	7/16/1999	Great Lakes	Earlier than 2008
Facility 3	9/27/2000	Chesapeake Bay watershed	2009
Facility 4	2/25/2000	Chesapeake Bay watershed	2009
Facility 5	12/23/1999	Great Lakes	2009
Facility 6	5/10/2001	Great Lakes	2008
Facility 7	12/6/2000	Great Lakes	2008
Facility 8	1/11/2000	Chesapeake Bay watershed	2009
Facility 9	12/16/1999	Chesapeake Bay watershed	2007
Facility 10	7/12/1999 (NOI Received)	Great Lakes	Earlier than 2008

8.3 SPDES Nutrient Management

In addition to developing and implementing a CNMP, facilities covered under the CWA Permit must implement specific requirements consistent with the federal NMP CAFO requirements. Although ECL-permitted facilities are not subject to the federal NMP CAFO requirements like CWA-permitted facilities, ECL-permitted facilities NMPs do appear to meet these federal requirements. Table 11 compares the federal Large CAFO NMP requirements with both New York State CAFO general permits.

Table 11. Comparison of Federal Large CAFO Nutrient Management Plan Requirements with New York State SPDES CAFO General Permit Requirements

Federal Large CAFO Nutrient Management Plan Requirements	SPDES Environmental Conservation Law Permit (GP-0-14-001)	SPDES Clean Water Act Permit (GP-04-02)
Manure Storage	☒ (VI.E.a. and b.)	☒ (VIII.C.i. & VIII.B)
Mortality Management	☒ (VI.E.k.)	☒ (VIII.C.x.)
Clean Water Diversion	☒ (VI.E.e.)	☒ (VII.A.)
Prevention of Direct Animal Contact with Water	☒ (VI.E.g.)	☒ (VIII.C.v.)
Chemical Handling	☒ (VI.E.j.)	☒ (VIII.C.ix.)
Conservation Practices to Control Runoff	☒ (III.A.)	☒ (VII.A.)
Manure and Soil Testing Protocols	☒ (V.N.)	☒ (IX.M.)
Land Application Protocols	☒ (III.A.)	☒ (VII.A.)
Recordkeeping	☒ (V.)	☒ (IX.)[1]

[1] Section IX.F requires that records be retained for 5 years; Section IX.O specifies that large CAFOs must retain records of daily water line inspections, manure storage depth marker inspections, records taken to document actions taken to correct deficiencies, records of handling and disposing of dead animals, records of the design of the manure and litter storage structures, records of overflows from production area, weather conditions at time of land application and 24 hours prior to and following application, and dates of manure application equipment inspections.

Although many federal Large CAFO NMP requirements are covered under the New York State SPDES CWA CAFO general permit, there is one inconsistency, outlined below, between the SPDES CWA CAFO permit and the federal Large CAFO NMP requirements.

- The SPDES CWA CAFO permit and the federal CAFO rule require records to be retained for 5 years. However, the **CWA permit's recordkeeping requirements are not consistent with the federal CAFO rule recordkeeping requirements**. For example, for land application, the CWA Permit only requires Large CAFOs to keep records of the weather conditions at time of application and for 24 hours prior to and following application, and date(s) of manure application equipment inspections; the federal CAFO rule requires more extensive land application records, such as site-specific agronomic rate determination and actual land application data.

8.4 SPDES Annual Compliance Reports

SPDES CAFOs must submit an ACR each year, which describes changes to operational practices, CNMP revisions and states the compliance status of the farm. ACRs submitted under the two SPDES CAFO permits are nearly identical, the exception being Section V. Nutrient Imports for ECL-permitted CAFOs. **NYSDEC reports 99 percent compliance with ACR submittal** (NYSDEC, personal communication, July 24, 2014). EPA's contractor confirmed this high compliance rate with ACR submittal requirements in the CWA- and ECL-permitted facility file reviews.

Table 12 compares the federal CAFO annual reporting requirements with both ECL and CWA Permits' annual reporting requirements.

Table 12. Comparison of Federal CAFO Annual Reporting Requirements with SPDES CAFO Permit Annual Reporting Requirements

Federal CAFO Annual Reporting Requirements	SPDES Environmental Conservation Law Permit (GP-0-14-001)	SPDES Clean Water Act Permit (GP-04-02)
i. Number and type of animals in confinement or housed under roof	Annual Compliance Report, Section II; Annual NMP, Section I	Annual Compliance Report, Section II
ii. Estimated amount of total manure, litter and process wastewater generated by the CAFO in the previous 12 months	Annual Compliance Report, Section III	Annual Compliance Report, Section III
iii. Estimated amount of total manure, litter and process wastewater transferred to other person by the CAFO in the previous 12 months	Annual Compliance Report, Section IV	Annual Compliance Report, Section IV
iv. Total number of acres for land application covered by the NMP	Annual Compliance Report, Section VI	Annual Compliance Report, Section V
v. Total number of acres under control of the CAFO that were used for land application in the previous 12 months	Annual Compliance Report, Section VI	Annual Compliance Report, Section V
vi. Summary of all manure, litter and process wastewater discharges from the production area that have occurred in the previous 12 months, including date, time and approximate volume	Annual Compliance Report, Section VIII	Annual Compliance Report, Section VII
vii. Statement indicating whether the current version of the CAFO's NMP was developed or approved by a certified nutrient management planner	Annual Compliance Report, Section IX; Annual NMP, Section V	Annual Compliance Report, Section IX
viii. Actual crop(s) planted and actual yield(s) for each field; the actual nitrogen and phosphorus content of the manure, litter and process wastewater; results of calculations; the amount of manure, litter and process wastewater applied to each field during the previous 12 months; results of any soil testing for nitrogen and phosphorus taken during the preceding 12 months; amount of any supplemental fertilizer applied during the previous 12 months.	ECL Permit Section V.N;[a] Annual NMP, Section III.B	Not submitted in the Annual Compliance Report[b]

Notes:

[a] ECL Permit, Section V.N requires CAFOs to analyze each individual land-applied waste source (manure, litter, food processing waste, digestate and process wastewater) at least once annually for total nitrogen, ammonium, total phosphorus, total potassium, chloride and percent solids (if food processing waste is included in the waste) in accordance with NRCS 590, unless a more frequent sampling is deemed appropriate by the AEM-certified planner.

[b] The CWA Permit requires that CAFOs analyze manure annually for nitrogen and phosphorus content.

New York State's ECL Permit annual reporting requirements are consistent with federal CAFO annual reporting requirements (Table 12). **The CWA Permit annual reporting requirements are not consistent with federal CAFO annual reporting requirements.** The CWA Permit does not require annual submittal of nutrient management data including actual crop(s) planted and actual yield(s) for each field; the actual nitrogen and phosphorus content of the manure, litter and process wastewater; results of calculations; the amount of manure, litter and process wastewater applied to each field during the

previous 12 months; results of any soil testing for nitrogen and phosphorus taken during the preceding 12 months; and amount of any supplemental fertilizer applied during the previous 12 months (Table 12, Row viii).

The questionnaire indicates that all of the submitted CAFO ACRs are reviewed for completion and accuracy (NYSDEC 2014a). However, during a conference call with the EPA team, **NYSDEC CO staff stated that ACR data are only reviewed by RO staff before SPDES compliance inspections or site visits** (NYSDEC, personal communication, July 11, 2014). NYSDEC does enter data from ACRs into an electronic database which could be, and according to NYSDEC is, queried to identify noncompliant ACR responses and trends. Inspection data provided by NYSDEC demonstrates that SPDES-permitted CAFOs are not all inspected each year and, as a result, multiple years of self-reported noncompliance could occur between inspections without NYSDEC RO staff being aware of the potential compliance issues.

Each ACR includes a CNMP Completion Schedule. This CNMP Completion Schedule section of the ACR requires the facility to list specific CNMP practices included in the facility's CNMP, the estimated completion date, number of each practice planned, the number of each practice completed, whether the practice is nonstructural, whether the practice is a response to high risk conditions, and estimated CNMP practice costs. The specific practices listed in ACR Section VIII are:

- **Barnyard Runoff Management** (i.e., roof water management, diversion, heavy use area protection, underground outlet, fencing, critical area planting, filter area, other)
- **Silage Leachate Control** (i.e., filter area, pipeline, heavy-use area protection, other)
- **Storage, Transfer, & Treatment** (i.e., composting, anaerobic digestion, other)
- **Process Wastewater Treatment** (i.e., pipeline, filter area, organic matter filter bed, other)
- **Nutrient Management** (i.e., soil analysis; manure analysis; Nitrogen Leaching Index [N-Leaching Index]; Phosphorus Runoff Index [P-Index]; rate, timing and placement; feed/forage management; other)
- **Record Keeping** (i.e., facilities and BMP visual inspections, manure spreading records, equipment calibration records, rainfall records, other)
- **Erosion/Runoff Management** (i.e., filter strips, buffers, diversion, waterway, terrace, cover crop, conservation tillage, strip cropping, other)
- **Pasture Management** (i.e., prescribed grazing, pasture and hay land planting, other)
- **Other System**

BMP implementation information reported on ACRs is helpful for understanding the general types of BMPs planned for implementation, or fully implemented, at each SPDES-permitted CAFO. However, the CNMP practice information was not provided with enough specificity or detail for the data to be used for WIP reporting purposes. NYSDEC suggested that this information was not meant for detailed BMP implementation reporting (NYSDEC, *personal communication*, July 24, 2014); rather, its purpose is to identify when each operation comes into compliance with CNMP practice full implementation dates.

8.5 Facility Universe, SPDES CAFO Program

New York State's use of the ECL Permit for non-discharging Medium and Large CAFOs results in a significantly greater number of CAFOs operating under SPDES permits than would be achieved under the federal NPDES CAFO regulations. NYSDEC (2014d) reports that 267 facilities are covered under the CWA Permit (24 of those in the Bay watershed) and 295 are covered by the ECL Permit (44 in the Bay

watershed). Under the federal NPDES CAFO regulations only the 267 discharging New York State CAFOs would be operating with a permit.

8.6 Resources Allocated, SPDES CAFO Program

The state operating budget for SPDES-permitted CAFO program areas is divided among many agencies and other interest groups and could not be readily compiled by NYSDEC for its questionnaire response (NYSDEC 2014a).

NYSDEC maintains a CAFO field presence through its nine regional and five subregional offices, with additional staff support at its CO. In SFY2012–2013, NYSDEC had 1.5 CO FTEs and 3.6 RO FTEs dedicated to SPDES CAFOs, estimated from CAFO time and activity codes. Additional resources in SPDES permitting, compliance and management functions are also distributed to CAFO activities but covered in other time and activity coding. In addition, Bay watershed time and activity also covers CAFO activities, but was not broken down by NYSDEC in the questionnaire (NYSDEC 2014a).

The limited resource information provided by NYSDEC was not sufficient to draw any conclusions about whether New York State's animal agriculture programs are appropriately, or adequately, funded and staffed.

8.7 Data Systems, SPDES CAFO Program

Electronic data systems are used by NYSDEC staff at the CO to track and manage oversight of SPDES CAFO permittees. ECL and CWA NOI information, facility changes and new facilities, BMP and CNMP practice information, and ACR data are tracked with a CAFO database. Information is entered in the CAFO database daily. The CAFO database is queried for permitting and compliance information needs. Two other data systems, EPA's Integrated Compliance Information System (ICIS) and Watershed Integrated Compliance Strategy System (WICSS), are also used by the NYSDEC CO to track facility information, record the dates that NYSDEC received required reports, and enter compliance and enforcement data. WICSS is used to generate facility data reports as well as actual inspection reports and inspection summaries (NYSDEC 2014a).

According to the questionnaire, although ICIS has provided required data management support to SPDES functions, it has been unable to support all of NYSDEC's information needs. Therefore, the other state systems are used to fill gaps in the functionality provided by ICIS. Some of these systems are agencywide in nature, some are specific to NYSDEC's Division of Water, and some have been developed by individual employees to support their programs. Having several different, unconnected data systems that are not accessible to all staff poses a problem for data accuracy and consistency.

During its review of the requested facility files, **EPA's contractor found that information was not always consistent among NYSDEC SPDES CAFO data sources, especially between hardcopy files and electronic record keeping systems.** For example, EPA's contractor found several inspection reports (Facility 11, Facility 21, Facility 22, Facility 31, Facility 33 and Facility 37) that were included in the facility files and not reflected in the CAFO inspection spreadsheet summary provided by NYSDEC.

8.8 Compliance and Enforcement, SPDES CAFO Program

NYSDEC's SPDES compliance program relies on periodic self-reporting, NYSDEC and EPA Region 2 inspections, and citizen complaints to evaluate the compliance status of SPDES-permitted CAFOs. NYSDEC's Division of Water *Technical and Operational Guidance Series (TOGS) 1.4.2: Compliance and Enforcement of SPDES Permits* (*TOGS 1.4.*2 [NYSDEC 2010b]) establishes guidance for compliance and enforcement activities related to the SPDES program, and provides staff with enforcement options and operating guidelines to implement the compliance component of the program. ***TOGS 1.4.2* includes a compliance and enforcement response guide for individual and general SPDES permit requirements, penalty guidance, and base penalty tables to ensure consistent and transparent implementation of NYSDEC's compliance and enforcement policies across the NYSDEC regional offices.**

EPA Region 2 recognizes NYSDEC for the transparency provided by *TOGS 1.4.2*. If implemented consistently across the regional offices, the information and guidance provided ensures that SPDES compliance and enforcement activities are consistent, allowing operators to be on a level playing field statewide.

Specific to CAFOs, Table 13 presents NYSDEC's minimum response for violations of CAFO general permit requirements; Table 14 presents the base penalties for violations of CAFO general permit requirements. The Table 14 base penalty rates represent the minimum recommended penalties for specific violations and are to be used as a component in the calculation of the Total Base Penalty.

Table 13. Violations of SPDES CAFO General Permit Requirements

Violations	Circumstance	NYSDEC's Minimum Response
Failure to submit Annual Compliance Report which must include certification that the CNMP has been updated	i) 60 days overdue ii) More than 90 days overdue	i) NOV ii) Formal Enforcement
Failure to submit initial CNMP Certification	i) 60 days overdue ii) More than 90 days overdue	i) NOV ii) Formal Enforcement
Failure to apply for coverage under the CAFO General Permit	i) Large CAFO or Medium CAFO	i) Order on Consent with penalty and compliance schedule
Failure to implement the CNMP or significant permit requirements	i) Environmental health impact ii) Multiple substantive violations iii) Building an undesigned open waste storage structure iv) All others	i) Formal enforcement ii) Formal enforcement iii) Formal enforcement iv) NOV
Failure to meet consistent "annual progress" requirement of the permit	i) First offense ii) Second and subsequent offense	i) NOV ii) Formal Enforcement
Failure to amend the CNMP	i) First offense ii) Second and subsequent offense	i) NOV ii) Formal Enforcement
Failure to comply with deadline stipulated in NOV	All	Formal Enforcement
A significant unauthorized discharge (refer to draft EPA Wet Weather Significant Noncompliance [SNC] Policy et seq.)	All	Formal Enforcement. Consult with NYSDEC law enforcement or legal staff to assess potential criminal prosecution.

Table 13. Violations of SPDES CAFO General Permit Requirements

Violations	Circumstance	NYSDEC's Minimum Response
Failure to meet nonsignificant permit requirements	All	No minimum response is prescribed, but any of the compliance tools described in Section III may be used to achieve compliance.
Causing or contributing to a water quality standards violation	i) Demonstrated Water Quality Standards violation ii) Repeated Water Quality Standards violations	i) NOV ii) Formal Enforcement
Failure to meet major milestones or reporting requirements (including failure to respond to an information request) set forth in an administrative or judicial order	i) More than 30 days overdue ii) More than 60 days overdue	i) NOV ii) Formal Enforcement
Failure to comply with incident reporting requirements pursuant to Part 750-2.6 and Part 750-2.7	All	NOV
Reporting false information	All	Consult with NYSDEC law enforcement or legal to assess potential criminal prosecution or civil enforcement.

Source: NYSDEC 2010b

Table 14. SPDES CAFO General Permit Base Penalties

Violation	Base Penalty Rate
Failure to submit Annual Compliance Report	$3,000/event
Failure to submit CNMP Certification	$3,000/event
Failure to apply for and maintain appropriate (i.e., size) coverage under the CAFO General Permit	$5,000/event
Failure to file appropriate notice of change of ownership	$1,000/month
Failure to implement the CNMP or significant permit requirements, for example: • Environmental health impact • Multiple substantive violations confirmed (e.g., grossly inadequate record keeping, failure to maintain adequate freeboard for waste structure, etc.) • Building an undesigned open waste storage structure	$3,000/event
Failure to meet consistent "annual progress" permit requirement (second and subsequent offense)	$3,000/event
Failure to update the CNMP	$1,000/event
Significant unauthorized discharge (refer to draft EPA Wet Weather SNC Policy et seq.)	$3,000/event
Unauthorized discharge	$2,500/event
Causing or contributing to a water quality standards violation	$5,000/event
Failure to meet a major administrative or judicial order milestone	$250/day
Failure to meet other (nonmajor) administrative or judicial order milestone	$100/day
Failure to meet nonsignificant permit requirement	$500/event

Table 14. SPDES CAFO General Permit Base Penalties

Violation	Base Penalty Rate
Failure to submit required report (including failure to respond to information request)	$500/month
Failure to retain records as required	$500/event
Failure to allow inspection/sampling by the NYSDEC	$5,000/event
Unauthorized disposal of materials into the manure retention facility (other than discharges associated with proper operation and maintenance of a CAFO) or unauthorized retention (i.e., not specified in CNMP) of incidental food processing wastewater	$1,000/event
Falsifying information on NYSDEC submittal	$10,000/report
Failure to comply with other applicable requirements set forth in 6 New York State Codes, Rules and Regulations (NYCRR) Part 750-2, "Operating in Accordance with a SPDES Permit"	$100/day
ECL Article 17 violations not related to permit	$250/day

Source: NYSDEC 2010b

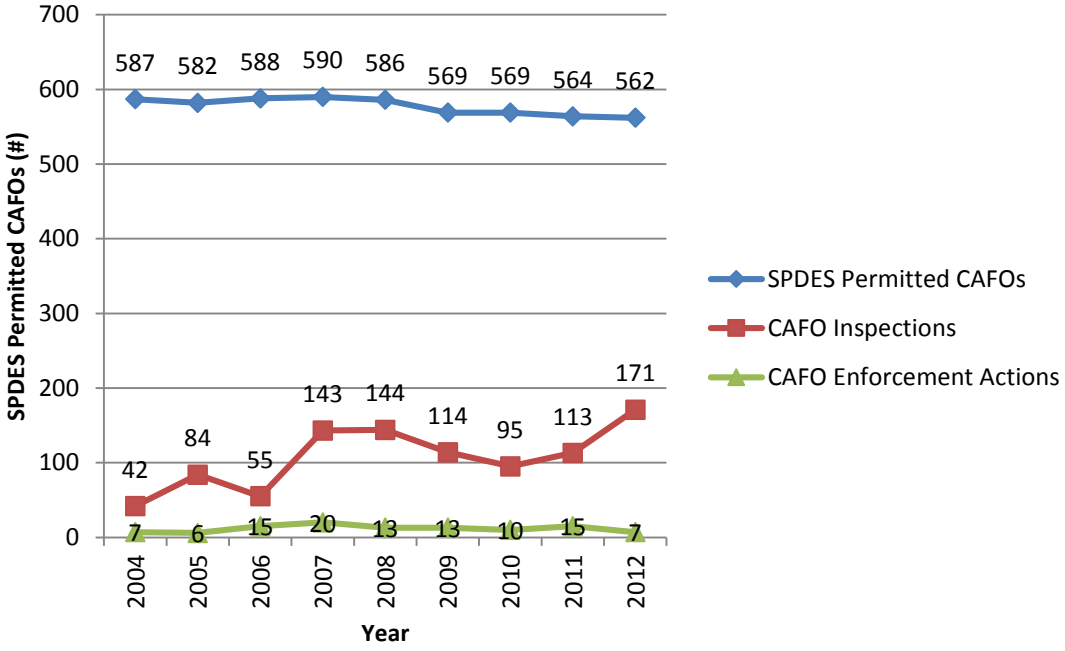
NYSDEC (2010b) notes that the Table 14 base penalty rates are subject to adjustment based on factors such as the duration of the event and an environmental significance multiplier. Environmental significance multipliers represent various degrees of potential harm or actual damage to the environment resulting from a SPDES permit violation. If the calculated penalty exceeds New York State's statutory limitation of $37,500 per day, the assessed penalty is the statutory limitation.

The base penalty rates for SPDES operation and maintenance violations (e.g., unauthorized discharges [$2,500/event] and unauthorized disposal of materials in a manure retention facility [$1,000/event]) are lower than the base penalty rates for SPDES paperwork violations (i.e., failure to submit annual compliance report [$3,000/event] and failure to submit CNMP certification [$3,000/event]). The EPA team recognizes that calculated penalties may be greater than these base penalty rates; however, at first glance, **the base penalty rates appear to emphasize problems with paperwork and reporting more than operation and maintenance.**

NYSDEC ROs take the lead role in SPDES CAFO inspection and enforcement while the CO oversees statewide implementation. NYSDEC conducted 171 SPDES CAFO compliance inspections in SFY 2012-2013, resulting in seven enforcement actions. According to the questionnaire, inspection deficiencies such as an unsatisfactory rating, or a failure to correct deficiencies in accordance with a schedule, results first in a warning letter with, if necessary, a schedule for correction. A NOV and formal enforcement are the next steps (NYSDEC 2014a). During the file review, EPA's contractor noted that failure to submit an ACR resulted in a NOV with a schedule for correction. If the facility submits an ACR by the schedule deadline, the NOV is resolved and closed without a penalty issued. This is not consistent with *TOGS 1.4.2,* which provides for a $3,000/event penalty for failure to submit an annual compliance report; however, this does not account for the fact that NYSDEC has enforcement discretion with regard to issuing financial penalties.

Figure 1 below presents NYSDEC SPDES compliance and enforcement activities from 2004 through 2012 (SFY 2012–2013). NYSDEC (2013) does not specify whether the enforcement actions were formal or informal. On average, 11 percent of the SPDES CAFO inspections result in enforcement actions.

Figure 1. New York State SPDES CAFO Compliance and Enforcement Activities, 2004 through 2012 Statewide (NYSDEC 2013a)



NYSDEC's Compliance Assurance Strategic Plan for CAFOs sets forth the goal of inspecting Large CAFOs once every year and Medium CAFOs every 3 years (NYSDEC 2014a). EPA's contractor reviewed inspection information provided by NYSDEC and observed that **SPDES-permitted Large CAFOs are not being inspected every year in accordance with NYSDEC's Compliance Assurance Strategic Plan for CAFOs.** Table 15 lists Large CAFO inspections for Regions 7 and 8 as reported by NYSDEC. As indicated by the data, none of the Large CAFOs reviewed by EPA's contractor were inspected annually over the past 5 years.

Table 15. SPDES-permitted Large CAFOs, NYSDEC Regions 7 and 8 Inspection Data Reviewed By EPA

Region	Facility Number	Watershed	Inspection Type	Inspection Date	Rating
7	Facility 1	Great Lakes	CAFO	9/23/2008	Satisfactory
7	Facility 28	Chesapeake Bay	CAFO	4/10/2012	Satisfactory
7	Facility 2	Great Lakes	CAFO	7/9/2009	Satisfactory
7	Facility 2	Great Lakes	Site Visit	6/29/2012	Not rated
7	Facility 2	Great Lakes	CAFO	10/7/2013	Not rated
7	Facility 9	Chesapeake Bay	CAFO	10/14/2008	Satisfactory
7	Facility 9[a]	Chesapeake Bay	CAFO	5/10/2011	Satisfactory
7	Facility 9	Chesapeake Bay	CAFO	7/15/2013	Marginal
7	Facility 9	Chesapeake Bay	CAFO	7/18/2013	Marginal

Table 15. SPDES-permitted Large CAFOs, NYSDEC Regions 7 and 8 Inspection Data Reviewed By EPA

Region	Facility Number	Watershed	Inspection Type	Inspection Date	Rating
7	Facility 10	Great Lakes	CAFO	9/12/2013	Satisfactory
8	Facility 15	Great Lakes	CAFO	5/22/2008	Satisfactory
8	Facility 17	Great Lakes	CAFO	8/6/2008	Marginal
8	Facility 3	Chesapeake Bay	CAFO	10/30/2006	Satisfactory
8	Facility 3	Chesapeake Bay	CAFO	5/2/2008	Marginal
8	Facility 3	Chesapeake Bay	CAFO	7/16/2012	Satisfactory
8	Facility 3	Chesapeake Bay	CAFO	8/21/2013	Marginal
8	Facility 4	Chesapeake Bay	CAFO	10/15/2008	Unsatisfactory
8	Facility 4	Chesapeake Bay	CAFO	1/11/2012	Marginal
8	Facility 4	Chesapeake Bay	CAFO	10/25/2012	Marginal
8	Facility 5	Great Lakes	CAFO	3/23/2004	Satisfactory
8	Facility 5	Great Lakes	Site Visit	5/16/2006	Satisfactory
8	Facility 5[a]	Great Lakes	CAFO	4/22/2008	Marginal
8	Facility 8	Chesapeake Bay	CAFO	6/29/2009	Satisfactory

Source: NYSDEC 2014a

[a] EPA Region 2 was the lead inspector, supported by NYSDEC staff.

A comparison of the NYSDEC inspection data with the EPA Region 2's list of CAFO files reviewed shows that since 2008, 17 of the 20 SPDES-permitted CAFOs (Large and Medium size) in the Bay watershed were inspected at least once, while only 8 of the 20 SPDES-permitted CAFOs (Large and Medium size) in the Great Lakes watershed were inspected at least once over the 5-year period of review.

CAFO file information reviewed by EPA's contractor indicates that NYSDEC ROs 7 and 8 have not been conducting annual inspections at SPDES-permitted Large CAFOs in New York State's portion of the Bay watershed; however, the available inspection data does indicate an increase in inspection frequency over the last 2 years.

NYSDEC ROs 7 and 8 have inspected all of the SPDES-permitted Medium CAFOs in New York State's portion of the Bay watershed at least once in the past 3 years. NYSDEC commented that Chesapeake Bay Regulatory and Accountability Program support has led to the increase in inspections and allows NYSDEC to have a stronger regulatory presence in the Bay watershed.

Inquiries and complaints by citizens and observations of possible violations assist NYSDEC's SPDES program compliance and enforcement efforts. NYSDEC investigates citizen complaints to determine impact on the environment or public health. In the case of a violation, NYSDEC seeks corrective action to minimize negative impacts and, if necessary, pursues formal enforcement (NYSDEC 2014a).

NYSDEC's Division of Water, Bureau of Water Compliance tracks SPDES inspections and reports, and takes enforcement action when necessary (NYSDEC 2011). NYSDEC follows EPA's *Interim Significant Noncompliance Policy for Clean Water Act Violations Associated with CSOs, SSOs, CAFOs, and Storm Water Point Sources* (*Interim Wet Weather SNC Policy* [EPA 2007]) when an enforcement action is necessary to address CWA violations at CAFOs. The *Interim Wet Weather SNC Policy* applies to both wet

weather and dry weather violations from "wet weather" sources or "wet weather" program areas; CAFOs are considered wet weather sources (EPA 2007).

The *Interim Wet Weather SNC Policy* (EPA 2007) identifies the following CAFO violations that may constitute SNC.

- Any significant unauthorized discharge.
- No NMP when one is required.
- Multiple discharges without an NPDES permit (and the failure to apply for an NPDES permit, when one is required) and/or multiple violations of permit requirements. For example, multiple deficiencies in implementing the permit and the NMP, such as failure to:
    - Maintain adequate storage capacity and containment
    - Implement buffer/setback requirements
    - Properly manage chemicals and other contaminants handled on-site
    - Properly manage mortalities
    - Conduct proper operation and maintenance
    - Properly handle manure, including land applying in accordance with NMP
    - Test soils and manure, as required
    - Meet record-keeping requirements
    - Keep the NMP up-to-date
- Failure to meet the major milestones required in an administrative or judicial order or in a permit by 90 days or more.
- Failure to submit annual report or other required report (including failure to respond to an information request), or a report is late by 90 days or more.

EPA (2007) suggests that the appropriate response to alleged SNC can be either formal or informal enforcement depending on the nature of the alleged violation and a facility's compliance history.

Formal Enforcement Action: an action that "requires actions to achieve compliance, specifies a timetable, contains consequences for noncompliance that are independently enforceable without having to prove the original alleged violation and subjects the person to adverse legal consequences for noncompliance." For purposes of this policy, EPA's definition of formal enforcement action is consistent with existing policy and includes: (1) unilateral administrative order (with or without a penalty) or administrative order by consent (with or without a penalty), and (2) civil judicial consent decree or court order (EPA 2007).

Informal Enforcement Action: an action that does not meet EPA's definition of formal enforcement action, and (1) is in writing, (2) informs the permittee of the violation(s), (3) identifies the actions necessary to achieve compliance, (4) specifies milestones and a final date to achieve compliance, and (5) provides notification of the possibility of escalated enforcement action if the violation is not corrected in a timely manner (EPA 2007).

EPA's contractor determined that NYSDEC's use of formal and informal enforcement action is consistent with EPA's *Interim Wet Weather SNC Policy* (2007).

8.9 Watershed Implementation Plan Priority Best Management Practices, SPDES CAFO Program

New York State's ECL and CWA Permits, as described above in Sections 8.1.1 and 8.2.1, contain BMP implementation requirements; many of these align with New York State's WIP priority practices for reducing agriculture-related nutrient and sediment loads to the Bay. Table 16 summarizes which of New York State's WIP priority practices are required by the ECL and CWA Permits. By including these practices in SPDES CAFO permits, New York State gains a measure of certainty when reporting practice implementation to the CBP. This certainty is not available for voluntary practices; these require other types of incentives, including financial and technical assistance, to encourage implementation. Conformance with the Prescribed Grazing Practice Standard (CPS 528) is one example of an incentive. Heavy-use areas managed according to CPS 528 that do not receive mechanically applied manure are not subject to the New York State P-index. The CWA and ECL Permits and New York State's Phase I and Phase II WIPs do not include information about the incentives and programs in place to encourage mortality composting at SPDES permitted CAFOs.

Table 16. Watershed Implementation Plan Priority Best Management Practices, SPDES CAFO Program

Watershed Implementation Plan Priority Best Management Practice	SPDES ECL Permit	SPDES CWA Permit	Notes
Enhanced Nutrient Management (Yield Reserve)	☑	☑	CNMPs must be developed to the NRCS 590 standard.[a]
Mortality Composting	☐	☐	
Prescribed Grazing	☐	☐	
Barnyard Runoff Control	☑	☑	Part VI.(E)(a) of ECL Permit and Part VIII.(C)(i) of CWA Permit
Cereal and Commodity Cover Crops	☑	☑	NRCS 590

[a] Nutrient application rates for nitrogen, phosphorus, and potassium must not exceed Cornell University guidelines for the priority nutrient considering applicable risk assessments or industry practice when recognized by the University (NRCS-NY 2013). Cornell nutrient guidelines do not include an insurance factor above calculated agronomic rates (NYSDEC 2010a).

In addition to BMP requirements in the SPDES CAFO permits, ACRs submitted by SPDES CAFO permittees must document progress toward full implementation of nine structural or nonstructural BMP systems, as specified in the permittee's CNMP. These BMP systems, as detailed in Section 6.0, are:

- Barnyard runoff management
- Silage leachate control
- Storage, transfer and treatment
- Process wastewater treatment
- Nutrient management
- Record keeping
- Erosion/runoff management
- Pasture management
- Other systems

These nine BMP systems reported in the ACR include four out of the five priority WIP BMPs evaluated for this assessment report (Table 16). The only priority WIP BMP not specifically included in the ACR is

mortality composting, although NYSDEC indicated this would be covered in the "other systems" category. For each practice reported in the ACR, the permittee must report the CNMP practice, estimated completion date, number of practices planned, number of practices completed, whether the practice is nonstructural, whether the practice is in response to high risk conditions, and the estimated CNMP practice costs.

Because the information is prospective rather than retrospective, NYSDEC stated that BMP information reported in the ACRs is not tracked or used for documenting progress toward 2017 and 2025 WIP implementation goals. The USC is responsible for collecting WIP priority BMP implementation data for CBP reporting.

8.10 SPDES CAFO Program, Observations

1. NYSDEC's Division of Water administers the two SPDES General CAFO Permits; the ECL Permit and CWA Permit.
2. New York State's use of the ECL Permit for non-discharging Medium and Large CAFOs results in a significantly greater number of CAFOs operating under SPDES permits than would be achieved under the federal NPDES CAFO regulations.
3. For Large CAFOs, "no discharge" means that the ECL Permittee has fully implemented all structural and nonstructural BMPs necessary to meet USDA NRCS CPS NY 312 (Waste Management System) as determined by an objective and certified assessment by an AEM-certified planner documented in the facility's CNMP.
4. For Medium CAFOs, "no discharge" means that the ECL Permittee has fully implemented all nonstructural BMPs necessary to meet NRCS NY 312 as determined by an objective and certified assessment by an AEM-certified planner, the permittee is complying with the CNMP implementation schedule requirements in GP-0-14-001 Part III.C, and all implemented practices are operating and maintained.
5. The 2013 ECL CAFO rule revisions (Part 750 of Title 6 of the Codes, Rules and Regulations of the State of New York) no longer require dairy AFOs with 200 to 299 mature dairy cows to obtain coverage under the ECL Permit.
6. Dairy AFOs with 200 to 299 cows are no longer required to hold ECL Permits but must apply nutrients at agronomic rates in accordance with the criteria for the agricultural stormwater discharge exemption and prevent any discharges that would require CWA Permit coverage.
7. EPA Region 2 commends NYSDEC for its careful attention to processing and screening NOTs from dairies with 200 to 299 mature dairy cows seeking to terminate permit coverage.
8. A minimum of two (2) individuals from each permitted Large CAFO facility must attend a NYSDEC- endorsed manure applicator training within the permit term.
9. New York State's SPDES CWA General Permit (GP-04-02) is issued to discharging CAFOs, or to CAFOs that do not discharge but choose to be covered.
10. The effective date of the CWA Permit was July 1, 2004, and the expiration date was June 30, 2009, but the permit has been administratively extended.
11. The CWA Permit allows discharges of process wastewater from storms equal to or greater than the 25-year, 24-hour precipitation event and agricultural stormwater.

12. The SPDES CWA Permit allows (1) new Small CAFOs, (2) Medium CAFOs, and (3) AFO to Medium CAFO (i.e., AFOs that expand in size to qualify as Medium CAFOs) to have 2 years from the date NYSDEC receives the NOI to develop and certify the CNMP.
13. The CWA Permit's delayed implementation schedule for production and land application area BMPs is less stringent than current and past federal CAFO rules.
14. New York State's confidential treatment of CAFO CNMPs is not consistent with the 40 CFR § 122.23(h) federal CAFO requirement, which requires permit writer review of the CAFO's NMP and an adequate opportunity for public review of both a CAFO's NMP and the terms of the NMP incorporated into the draft permit.
15. The CWA Permit recordkeeping requirements are not consistent with the federal CAFO rule recordkeeping requirements.
16. The CWA Permit annual reporting requirements are not consistent with federal CAFO annual reporting requirements.
17. NYSDEC reports 99 percent compliance with ACR submittal.
18. NYSDEC CO staff stated that ACR data are only reviewed by RO staff before SPDES compliance inspections or site visits.
19. EPA's contractor found that information was not always consistent among NYSDEC SPDES CAFO data sources, especially between hardcopy files and electronic record keeping systems.
20. *TOGS 1.4.2* includes a compliance and enforcement response guide for individual and general SPDES permit requirements, penalty guidance, and base penalty tables to ensure consistent and transparent implementation of NYSDEC's compliance and enforcement policies across the NYSDEC regional offices.
21. *TOGS 1.4.2* base penalty rates appear to emphasize problems with paperwork and reporting more than operation and maintenance.
22. SPDES-permitted Large CAFOs are not being inspected every year in accordance with NYSDEC's Compliance Assurance Strategic Plan for CAFOs.
23. NYSDEC ROs 7 and 8 have inspected all of the SPDES-permitted Medium CAFOs in New York State's portion of the Bay watershed at least once in the past 3 years.
24. New York State's ECL and CWA Permits require implementation of three priority BMPs: nutrient management, barnyard runoff control, and cereal and commodity cover crops.

9.0 Agricultural Environmental Management

AEM started as an initiative in 1996 and was codified in New York State law in 2000 (N.Y. AGM. LAW § 151). AEM supports farmers in their efforts to protect water quality and conserve natural resources, while enhancing farm viability by providing a framework to assess environmental stewardship and coordinate technical and financial assistance from the federal, state, and local levels to address priority water quality issues on the farm. AEM is also the cornerstone of the agricultural component of New York's Nonpoint Source Water Quality Management Strategy developed to meet requirements of the CWA, the Safe Drinking Water Act (SDWA), and the Coastal Zone Management Act (CZMA).

AEM is administered by the SWCC. SWCC's key AEM partners include the NYSDEC, NYSDOH, NYSDOS, NTCS, Cornell University, SUNY College of Environmental Science and Forestry, Cornell Cooperative Extension and the SWCDs. NYSDAM, SWCC and SWCDs enter into contract for both the AEM Base Program and ANSACP grants on roughly an annual basis.

NYSDEC and NYSDAM have a Memorandum of Understanding (MOU), MOU No. AM08174 (NYSDEC et al. 2012), in place to facilitate further AEM implementation (NYSDEC 2014a). The MOU between NYSDEC, NYSDAM and SWCC, effective through December 31, 2017, funds the USC work plan and the USC's support of the National Environmental Information Exchange Network (NEIEN) Node operations and related data reporting. EPA requires that nonpoint source data submissions from New York use the NEIEN node. This network node-based exchange of conservation practice data streamlines efforts by all data generating and tracking partners as well to further improve the consistency and confidence in the reported information.

Phase I of the USC work plan includes support of the NEIEN and related data reporting. The USC is the primary data tracking, verification and reporting entity for nonpoint source conservation efforts, BMP implementation and pollution reduction technologies in the New York State's portion of the Bay watershed.

Phase II of the USC work plan includes support of CAST, a Web-based tool for understanding and working with the suite of computer models that the CBP uses to help guide decisions for reducing pollution in the Bay watershed. CAST provides New York, and the other Bay jurisdictions, with opportunities for on-the-fly estimates of load reductions associated with various management activities. These rapid estimates are designed to closely replicate the results of full CBP model runs.

AEM is implemented at the local level through SWCDs, who engage local partners such as Cooperative Extension, NRCS, AEM-certified planners, certified crop advisors, USDA technical service providers, professional engineers and agri-businesses to work as a team to develop, implement and evaluate conservation plans on farms. The SWCDs also form coalitions that include other SWCDs, universities and organizations to promote cooperation, coordination and the sharing/pooling of resources to advance AEM (NYSDEC 2014a).

The AEM process at the county level begins with the SWCD forming an AEM Steering Committee made up of local resource professionals and stakeholders. AEM steering committees often include local representatives of NRCS, FSA, Cornell Cooperative Extension, county health and planning departments, Farm Bureau, environmental organizations, watershed associations, agri-business, farmers and interested citizens. The committee develops an AEM strategic plan meeting minimum criteria developed by the SWCC to guide the local AEM effort for the upcoming 5 years; NYSDEC is a nonvoting, advisory member of SWCC, along with eight other organizations.[17] Key to the strategy is targeting and prioritizing watersheds, identifying environmental concerns and opportunities, and determining the types of BMP systems needed to address concerns and opportunities (NYSDEC 2014a).

[17] College of Agriculture and Life Sciences at Cornell University; SUNY College of Environmental Science and Forestry; Cornell Cooperative Extension; New York State Conservation District Employees' Association, Inc.; NYSDAM; New York State Department of Health; NYSDOS; and NRCS-NY.

Technical information leading to the strategic plans is obtained from a wide range of sources, including federal and university studies, the New York State's Priority Waterbodies List and Source Water Assessment, and locally funded and generated studies and assessments. Each county AEM Steering Committee develops an Annual Action Plan (AAP), based on the strategic plan, outlining what will be done in the coming calendar year to advance the strategic plan. Coordination of AEM strategic plans and AAPs across watersheds containing multiple SWCDs can be addressed through SWCD coalitions, such as the Upper Susquehanna Coalition.[18] The USC coordinates the activities for the Susquehanna and Chemung watersheds not only in New York State, but also in three counties in Pennsylvania (NYSDEC 2014a).

AEM is managed and implemented following a set of core concepts. All AEM activities and approaches are:

- **Voluntary.** Farmers choose to participate. (Note: Large and Medium CAFOs are required to participate in AEM [NYSDEC 2013]).
- **Watershed-based.** The AEM approach is carried out within the context of a holistic watershed planning effort whenever possible.
- **Customized farm-by-farm.** Natural resource and business conditions unique to each farm are considered throughout the AEM process.
- **Team-based.** AEM coordinates technical assistance from state, federal and local government programs, as well as the private sector.
- **Cost effective.** AEM targets program, technical, and financial resources to farms with the greatest potential for impacting the environment.
- **Statewide:** NYSDAM and SWCC secure funding for AEM, oversee the educational and training program for Certified AEM Planners, and provide standards and leadership for the program statewide.
- **Locally led and implemented.** The statewide AEM initiative grew from counties and local watershed groups adopting and refining the planning and implementation process used in AEM. County-level groups have responsibility for directing and carrying out AEM in their counties.
- **Tested and science-based.** The AEM planning process is based on well-established environmental planning processes. Environmental protection measures are based on scientific principles and research. Procedures are also provided to use and develop new, innovative approaches where appropriate.

All SPDES-permitted CAFOs must participate in AEM. New York State's Phase I WIP (2010a) identifies the following incentives for AEM participation by unpermitted AFOs.

- Free technical assistance to identify and address environmental risks, watershed needs and farm goals through conservation plans.
- Technical assistance to implement conservation plans and practices that can improve farm profitability, including nutrient management; prescribed grazing; conservation tillage (e.g. no-till); cover crops; integrated pest management; composting; feed ration evaluation and balancing; buffers; and pathogen management.
- Eligibility for the ANSACP cost-share program.
- Eligibility to participate in New York State Farmland Protection Program.

[18] Other New York State SWCD coalitions include The Finger Lakes-Lake Ontario Watershed Protection Alliance and the Mohawk River Coalition (NYSDEC 2010a).

- Discounts for related SWCD services such as Soil Group Worksheets required for agricultural tax assessments.
- Eligibility for the Agricultural Water Quality State Revolving Loan Fund, which provides low interest loans to farmers implementing BMPs.

Farmers who participate in AEM work with a team of local AEM resource professionals to develop and implement comprehensive, site-specific farm plans using the five-tiered assessment approach outlined in New York State's Phase II WIP (NYSDEC 2013a). **The AEM assessment process is structured to encourage the development and implementation of BMPs.**

Tier 1. A resource professional collects farm contact information; inventories farm infrastructure, land use, and livestock; determines the farm's future plans; informs the farmer of their watershed(s) and watershed concerns; and identifies potential environmental concerns and opportunities.

Tier 2. A resource professional uses AEM Core Worksheets[19] to conduct on-farm environmental assessments based on resource concerns identified on Tier 1 questionnaires. The Tier 2 assessment records existing BMPs, educates the farmer, verifies environmental concerns, and flags issues for further evaluation. AEM uses Tier 2 assessments to prioritize farms for additional technical and financial assistance. Information on AEM's prioritization criteria and process was not available to the EPA team.

Tier 3. Priority farms, identified from Tier 2, develop a conservation plan. Conservation plan BMPs must be designed according to NRCS CPSs and Cornell University guidelines. Conservation plan components addressing nutrient management must be completed by an AEM- or NRCS-certified planner.

Tier 4. Tier 3 conservation plans are implemented, all engineered practices must be designed by New York-licensed professional engineers. Farms receiving state or federal financial assistance must implement practices according to strict technical requirements, and within the timelines set forth by contract.

Tier 5. Resource professionals evaluate conservation plans and catalogue BMP implementation. Conservation plans are updated as site conditions or technical standards change.

The 2013 AEM Annual Report (NYSDAM 2013) reports implementation of more than 1,300 agricultural BMP systems implemented statewide in 2013 to protect water quality and reduce pollution. Additionally, in 2013 the SWCDs used $1.86 million from the AEM Base Program to provide technical assistance with farmers advancing through the AEM Tiers, including

- 556 Tier 1 inventories.
- 341 Tier 2 resource assessments.
- 220 farm-specific Tier 3 conservation plans.
- 242 BMP systems implemented under Tier 4 to address nonpoint source pollution from farmstead facilities, pasture, and cropland.
- 327 Tier 5 evaluations of conservation plans and existing BMPs.

[19] AEM's 12 Core Worksheets include commodity specific worksheets for dairy, livestock, and field crops; equine; vegetables and fruit; vineyards; and greenhouses. AEM Core Worksheets are available from: http://www.nys-soilandwater.org/aem/techtools.html.

The numbers reported above are statewide; the AEM's 2013 Annual Report does not aggregate activities solely within the Bay watershed. New York State's Phase II WIP (NYSDEC 2013a) reports the following AEM accomplishments in New York State's portion of the Bay watershed between 2005 and 2010:

- 1,214 on-farm Tier 1 inventories.
- 863 on-farm Tier 2 assessments.
- 552 on-farm Tier 3 conservation plans.
- 244 farms implementing BMPs with SWCD technical assistance (this does not include implementation completed through ANSACP or implementation completed solely through NRCS).
- 345 on-farm Tier 5 conservation plans and/or BMP evaluation.

EPA recognizes that AEM contributes to nonpoint source success stories (EPA 2012b and n.d.)**.** AEM offers farmers a way to comply with stricter regulatory requirements, advance the state's water quality objectives, and meet business objectives on the farm at the same time.

9.1 Facility Universe, Agricultural Environmental Management

AEM participants include more than 13,000 farms statewide (SWCC 2013). The 562 New York State SPDES-permitted CAFOs, including the 68 SPDES-permitted CAFOs in New York's portion of the Bay watershed, must participate in AEM. Additionally, AEM is working with 2,285 unpermitted farms in the watershed (NYSDEC 2014a). The participation level (e.g., Tier 1, Tier 2) of these 2,285 voluntary farms was not determined, nor was it determined how many of these voluntary AEM participants are AFOs versus crop producers.

9.2 Resources Allocated, Agricultural Environmental Management

NYSDAM and SWCC are responsible for distributing approximately $14 million annually from the EPF to operate the statewide AEM Base Program and ANSACP; the local SWCDs sponsor priority projects with farmers. The AEM Base Program is an annual, noncompetitive fund to reimburse SWCDs for technical assistance to farmers to work through the AEM Tiers. ANSACP is a competitive cost-share program for SWCDs to contract with farmers on planning or implementation of BMP systems. In both cases, NYSDAM/SWCC formally contracts with SWCDs and then the SWCDs formally contract with participating farmers. NYSDEC reports that thorough fiduciary oversight, reporting, and QA mechanisms are in place and are rigorously applied to farms, SWCDs, and NYSDAM/SWCC to ensure quality work on priority projects for water quality improvement continues (NYSDEC 2014a).

Specifically, in SFY 2012 AEM was funded through the EPF for $14.2 million—this included $2.5 million in technical assistance for SWCDs and $11.7 million in direct cost-share assistance for BMP implementation. Note that this program addresses water quality resource concerns on all types of farms, not limited to animal agriculture.

New York State supports the implementation of each SWCD AAP by providing up to $85,000 for 2014–2015 AEM Base Year 10 in technical assistance funding from the New York State EPF to SWCDs supporting identified activities, including farm inventories, environmental assessments, conservation planning, BMP design, and BMP and/or conservation plan evaluations. Associated activities such as educational programs, outreach activities and data management may be funded, but emphasis is placed

on identifying and resolving priority concerns with the goal of continuous environmental improvement. AEM also supports BMP implementation by directing farms to the appropriate federal, state or local program for financial and technical assistance (NYSDEC 2010a).

9.3 Data Systems, Agricultural Environmental Management

The USC developed an AEM online application to create a uniform approach for BMP reporting across New York State's portion of the Bay watershed. The online tool is supported by an Ag BMP data sheet for SWCDs to record BMPs one-by-one and provide date of implementation and appropriate units. The USC provides outreach to SWCDs to educate them on how to evaluate BMPs and on what gets credit in the Bay watershed model (NYSDEC 2013a).

A complete list of information management systems used for administration and implementation of AEM was not provided by New York State.

9.4 Watershed Implementation Plan Priority Best Management Practices, Agricultural Environmental Management

The EPA team understands the AEM process is used to identify areas of resource concern (Tiers 1 and 2), catalogue existing BMPs (Tier 2), work with farmers to develop conservation plans that identify appropriate BMPs to resolve areas of resource concern (Tier 3), implement BMPs specified in the conservation plan (Tier 4), and catalogue and verify newly implemented BMPs (Tier 5). As indicated in Table 17 below, AEM does not require specific BMPs (it is a voluntary program), or priority WIP BMPs. It does, however, provide technical and financial assistance to encourage conservation planning and environmental stewardship (NYSDEC 2014a).

Table 17. Watershed Implementation Plan Priority Best Management Practices, Agricultural Environmental Management

Watershed Implementation Plan Priority Best Management Practice	Required Component	Notes
Enhanced Nutrient Management (Yield Reserve)	☐ NA	Manure and Fertilizer Management Worksheet
Mortality Composting	☐ NA	Waste Disposal Worksheet
Prescribed Grazing	☐ NA	Pasture Management Worksheet
Barnyard Runoff Control	☐ NA	Heavy Use Areas Worksheet
Cereal and Commodity Cover Crops	☐ NA	Soil Management Worksheet

The USC, using data from AEM reports and site visits, plays a significant role in documenting New York State's progress towards 2017 and 2025 WIP implementation goals. The USC uses AEM funds to conduct a full range of on-farm assessments and support BMP planning and implementation at more than half of all of the farms in the watershed.

The USC compiles and reports Bay watershed priority BMP implementation information to EPA using the NEIEN node. This network node-based exchange of practice data streamlines efforts by all data generating and tracking partners and improves the consistency and confidence in the reported information. The USC is the primary data tracking, verification and reporting entity for nonpoint source

conservation efforts, BMP implementation, and pollution reduction technologies in the New York State's portion of the Bay watershed (NYSDEC et al. 2012).

9.6 Agricultural Environmental Management, Observations

1. AEM is administered by the SWCC.
2. All SPDES-permitted CAFOs must participate in AEM.
3. The AEM assessment process is structured to encourage the development and implementation of BMPs.
4. EPA recognizes that AEM contributes to nonpoint source success stories.
5. AEM participants include more than 13,000 farms statewide.
6. NYSDAM and SWCC are responsible for distributing approximately $14 million annually from the EPF to operate the statewide AEM Base Program and ANSACP; the local SWCDs sponsor priority projects with farmers.
7. The USC developed an AEM online application to create a uniform approach for BMP reporting across New York State's portion of the Bay watershed.
8. The USC, using data from AEM reports and site visits, plays a significant role in documenting New York State's progress towards 2017 and 2025 WIP implementation goals.

10.0 Summary

This section summarizes the observations that EPA highlighted in each of the program sections above.

10.1 New York State's Animal Agriculture Watershed Implementation Plan Priority Best Management Practices

1. New York State is relying on both regulatory and voluntary programs to meet the state's 2017 and 2025 Bay WIP goals applicable to animal agriculture operations.
2. Two rounds of New York State ANSACP funding were implemented to support BMP installation.
3. The AEM online application was completed, providing a uniform approach to BMP reporting across the watershed.
4. New York State AgNPS funding and AEM base program funding totaled more than $11 million for the milestone period.
5. New York State did not release amended drafts of the CWA or ECL CAFO general permits for notice and public comment in 2013 (as needed to make the permits consistent with federal CAFO rules).
6. New York State funds the Dairy Acceleration Program, which specifically targets farms with 200 to 299 dairy cows that are no longer part of New York State's SPDES CAFO program.
7. New York State already exceeded its 2017 target for total animal waste management systems.
8. New York State agreed to apply nutrient management BMPs to pasture land.
9. NYSDEC's questionnaire responses and New York State's Phase I and Phase II WIPs do not include information about the incentives and programs in place to encourage mortality composting to meet the state's 2025 mortality composting goal.
10. New York State is tracking behind its interim goals for prescribed grazing.
11. New York State is behind on implementation of barnyard runoff controls.

12. New York State has adequate acreage in corn silage at SPDES-permitted CAFOs to meet the 2025 annual implementation goal for cereal and commodity cover crops without having to rely on voluntary programs and incentives.

10.2 Comprehensive Nutrient Management Plans

1. New York State has 562 SPDES-permitted CAFOs (68 SPDES-permitted CAFOs in the Bay watershed) with AEM-certified CNMPs.
2. CNMP technical requirements and standards are the same for any livestock farm (regulated or voluntary) in New York State to ensure that consistency exists throughout the farmer and planner communities engaging in CNMP work.
3. SPDES-permitted CAFOs must implement erosion control to tolerable soil loss (T value) on all CAFO crop land.
4. Voluntary CNMPs are reviewed and approved by AEM-certified planners.
5. NYSDEC is responsible for compliance and enforcement of CNMPs maintained and implemented at SPDES-permitted CAFOs.
6. NYSDAM is responsible for monitoring the quality of CNMPs developed by AEM-certified planners.
7. The voluntary CNMP (i.e., non-SPDES) process adds uncertainty to estimating how many, and to what extent, non-SPDES AFOs will implement priority practices that count towards New York State's 2017 and 2025 WIP implementation goals.

10.3 SPDES CAFO Program

1. NYSDEC's Division of Water administers the two SPDES General CAFO Permits; the ECL Permit and CWA Permit.
2. New York State's use of the ECL Permit for non-discharging Medium and Large CAFOs results in a significantly greater number of CAFOs operating under SPDES permits than would be achieved under the federal NPDES CAFO regulations.
3. For Large CAFOs, "no discharge" means that the ECL Permittee has fully implemented all structural and nonstructural BMPs necessary to meet USDA NRCS CPS NY 312 (Waste Management System) as determined by an objective and certified assessment by an AEM-certified planner documented in the facility's CNMP.
4. For Medium CAFOs, "no discharge" means that the ECL Permittee has fully implemented all nonstructural BMPs necessary to meet NRCS NY 312 as determined by an objective and certified assessment by an AEM-certified planner, the permittee is complying with the CNMP implementation schedule requirements in GP-0-14-001 Part III.C, and all implemented practices are operating and maintained.
5. The 2013 ECL CAFO rule revisions (Part 750 of Title 6 of the Codes, Rules and Regulations of the State of New York) no longer require dairy AFOs with 200 to 299 mature dairy cows to obtain coverage under the ECL Permit.
6. Dairy AFOs with 200 to 299 cows are no longer required to hold ECL Permits but must apply nutrients at agronomic rates in accordance with the criteria for the agricultural stormwater discharge exemption and prevent any discharges that would require CWA Permit coverage.

7. EPA Region 2 commends NYSDEC for its careful attention to processing and screening NOTs from dairies with 200 to 299 mature dairy cows seeking to terminate permit coverage.
8. A minimum of two (2) individuals from each permitted Large CAFO facility must attend a NYSDEC- endorsed manure applicator training within the permit term.
9. New York State's SPDES CWA General Permit (GP-04-02) is issued to discharging CAFOs, or to CAFOs that do not discharge but choose to be covered.
10. The effective date of the CWA Permit was July 1, 2004, and the expiration date was June 30, 2009, but the permit has been administratively extended.
11. The CWA Permit allows discharges of process wastewater from storms equal to or greater than the 25-year, 24-hour precipitation event and agricultural stormwater.
12. The SPDES CWA Permit allows (1) new Small CAFOs, (2) Medium CAFOs, and (3) AFO to Medium CAFO (i.e., AFOs that expand in size to qualify as Medium CAFOs) to have 2 years from the date NYSDEC receives the NOI to develop and certify the CNMP.
13. The CWA Permit's delayed implementation schedule for production and land application area BMPs is less stringent than current and past federal CAFO rules.
14. New York State's confidential treatment of CAFO CNMPs is not consistent with the 40 CFR § 122.23(h) federal CAFO requirement, which requires permit writer review of the CAFO's NMP and an adequate opportunity for public review of both a CAFO's NMP and the terms of the NMP incorporated into the draft permit.
15. The CWA Permit recordkeeping requirements are not consistent with the federal CAFO rule recordkeeping requirements.
16. The CWA Permit annual reporting requirements are not consistent with federal CAFO annual reporting requirements.
17. NYSDEC reports 99 percent compliance with ACR submittal.
18. NYSDEC CO staff stated that ACR data are only reviewed by RO staff before SPDES compliance inspections or site visits.
19. EPA's contractor found that information was not always consistent among NYSDEC SPDES CAFO data sources, especially between hardcopy files and electronic record keeping systems.
20. *TOGS 1.4.2* includes a compliance and enforcement response guide for individual and general SPDES permit requirements, penalty guidance, and base penalty tables to ensure consistent and transparent implementation of NYSDEC's compliance and enforcement policies across the NYSDEC regional offices.
21. *TOGS 1.4.2* base penalty rates appear to emphasize problems with paperwork and reporting more than operation and maintenance.
22. SPDES-permitted Large CAFOs are not being inspected every year in accordance with NYSDEC's Compliance Assurance Strategic Plan for CAFOs.
23. NYSDEC ROs 7 and 8 have inspected all of the SPDES-permitted Medium CAFOs in New York State's portion of the Bay watershed at least once in the past 3 years.
24. New York State's ECL and CWA Permits require implementation of three priority BMPs: nutrient management, barnyard runoff control, and cereal and commodity cover crops.

10.4 Agricultural Environmental Management

1. AEM is administered by the SWCC.
2. All SPDES-permitted CAFOs must participate in AEM.
3. The AEM assessment process is structured to encourage the development and implementation of BMPs.
4. EPA recognizes that AEM contributes to nonpoint source success stories.
5. AEM participants include more than 13,000 farms statewide.
6. NYSDAM and SWCC are responsible for distributing approximately $14 million annually from the EPF to operate the statewide AEM Base Program and ANSACP; the local SWCDs sponsor priority projects with farmers.
7. The USC developed an AEM online application to create a uniform approach for BMP reporting across New York State's portion of the Bay watershed.
8. The USC, using data from AEM reports and site visits, plays a significant role in documenting New York State's progress towards 2017 and 2025 WIP implementation goals.

11.0 References

CAST (Chesapeake Assessment Scenario Tool). No date. *Chesapeake Assessment Scenario Tool*. Accessed June 5, 2014.

CBP (Chesapeake Bay Program). 2012. *Modeling*.

CBP (Chesapeake Bay Program). 2013, May 22–23. *Agricultural BMPs Currently Simulated by the Chesapeake Bay Program's Scenario Builder Tool and Watershed Model.* Accessed June 4, 2014.

CBP (Chesapeake Bay Program). No date. *Water Quality: 2012-2013 Milestones*. Accessed June 5, 2014.

Comptroller (New York State Office of the State Comptroller). 2014, December. *Environmental Funding in New York State*. Accessed February 12, 2015.

Division of the Budget (New York State Division of the Budget). 2015. *2015–16 Executive Budget, Agency Presentations*. Accessed February 12, 2015.

EPA (U.S. Environmental Protection Agency). 2007, October. *EPA's Interim Significant Noncompliance Policy for Clean Water Act Violations Associated with CSOs, SSO, CAFOs, and Storm Water Point Sources*. Accessed June 13, 2014.

EPA (U.S. Environmental Protection Agency). 2012a, February. *NPDES Permit Writer's Manual for Concentrated Animal Feeding Operations*.

EPA (U.S. Environmental Protection Agency). 2012b, October. New York's Agricultural Environmental Management Program Helps Farmers Improve Water Quality. *Nonpoint Source News-Notes*. 92: 10–11. Accessed February 18, 2015.

EPA (U.S. Environmental Protection Agency). 2013, May 30. *EPA Interim Assessment of New York's 2012-2013 Milestones and WIP Progress.* Accessed June 5, 2014.

EPA (U.S. Environmental Protection Agency). 2014a, June 26. *Evaluation of New York's 2012-2013 and 2014–2015 Milestones*. Accessed September 30, 2014.

EPA (U.S. Environmental Protection Agency). 2014b. *EPA Evaluation of New York's 2012-2013 Milestone Progress and 2014-2015 Milestone Commitments to Reduce Nitrogen, Phosphorus and Sediment.* Fact Sheet. Accessed December 23, 2014.

EPA (U.S. Environmental Protection Agency). 2014c, March. U.S. Environmental Protection Agency, Chesapeake Bay Program Office Grant and Cooperative Agreement Guidance. Accessed January 5, 2015.

EPA (U.S. Environmental Protection Agency). No date. *Innovative State Programs New York*. Accessed October 29, 2014.

NRCS-NY (U.S. Department of Agriculture, Natural Resources Conservation Service, New York Field Office). 2005, February. *New York Conservation Practice Guideline: Comprehensive Nutrient Management Plan*. Accessed June 11, 2014.

NRCS-NY (U.S. Department of Agriculture, Natural Resources Conservation Service, New York Field Office). 2013, January. *Conservation Practice Standard: Nutrient Management (Ac.) Code 590*.

NYS (New York State). 2014, January 13. *Governor Cuomo Announces $12 Million Available to Protect Water Quality and Make New York's Farms Safer and Cleaner*. Accessed February 18, 2015.

NYSDAM (New York State Department of Agriculture and Markets). 2010. *Agricultural Environmental Management (AEM) Annual Report*. Accessed June 6, 2014

NYSDAM (New York State Department of Agriculture and Markets). 2013. *Agricultural Environmental Management (AEM) Annual Report*. Accessed November 6, 2014.

NYSDAM (New York State Department of Agriculture and Markets). No date. *Ag Facts*. Accessed February 11, 2014.

NYSDEC (New York State Department of Environmental Conservation). 2008, January 4. *FOIL Appeal Determination for 07-40-0A (Herman Lee)*. Accessed September 22, 2014.

NYSDEC (New York State Department of Environmental Conservation). 2010a, December. *Final Phase I Nutrient and Sediment Water Quality Improvement and Protection Plan for New York Susquehanna and Chemung River Basins and Chesapeake Bay Total Maximum Daily Load*. Accessed June 4, 2014.

NYSDEC (New York State Department of Environmental Conservation). 2010b, June 24. *Compliance and Enforcement of State Pollutant Discharge Elimination System (SPDES) Permits*. Technical & Operational Guidance Series (TOGS) 1.4.2: Accessed June 13, 2014.

NYSDEC (New York State Department of Environmental Conservation). 2011, September 2. *Quality Assurance Project Plan, Chesapeake Bay Regulatory and Accountability Program*. Accessed September 25, 2014.

NYSDEC (New York State Department of Environmental Conservation). 2012. *SPDES Compliance and Enforcement Annual Report for SFY 2012/13*. Accessed June 13, 2014.

NYSDEC (New York State Department of Environmental Conservation). 2013a, January 7. *Final Phase II Watershed Implementation Plan for New York Susquehanna and Chemung River Basins and Chesapeake Bay Total Maximum Daily Load.* Accessed June 4, 2014.

NYSDEC (New York State Department of Environmental Conservation). 2013b, December 31. *New York State Programmatic Two-Year Milestones January 1, 2012–December 31, 2013*. Accessed September 18, 2014.

NYSDEC (New York State Department of Environmental Conservation). 2013c. *New York State Environmental Protection Fund 20th Anniversary*. Accessed February 12, 2015.

NYSDEC (New York State Department of Environmental Conservation). 2014a, July 31. NYSDEC's responses to the EPA Region 2 questionnaire *Questions and Discussion Topics: New York Animal Agriculture Program Review*.

NYSDEC (New York State Department of Environmental Conservation). 2014b, July 1. ECL CAFO Fact Sheet. Accessed September 22, 2014.

NYSDEC (New York State Department of Environmental Conservation). 2014c. Regulatory Impact Statement for 6 NYCRR Parts 360 & 750. Accessed September 22, 2014.

NYSDEC (New York State Department of Environmental Conservation). 2014d, November 3. Email communication from Douglas R. Ashline, NYSDEC, to Andrea Coats, EPA Region 2, providing SPDES CWA and ECL CAFO numbers for New York State and New York State's portion of the Chesapeake Bay watershed.

NYSDEC, NYSDAM, and SWCC (New York State Department of Environmental Conservation, New York State Department of Agriculture and Markets, and New York State Soil and Water Conservation Committee). 2012, September 6. *MOU No. AM08174*.

Silvestri, Barbara. No date. *Agricultural Environmental Management It's Good Business!* Accessed June 6, 2013

SWCC (New York State Soil and Water Conservation Committee). 2007, December. *Agricultural Nonpoint Source Abatement and Control Grant Program Guidance Manual*. Accessed June 6, 2013

SWCC (New York State Soil and Water Conservation Committee). 2013, August 26. *AEM Certified Planner Directory*. Accessed June 11, 2014.

SWCC (New York State Soil and Water Conservation Committee). No date(a). Agricultural Environmental Management, Base Funding Program. Accessed September 18, 2014.

SWCC (New York State Soil and Water Conservation Committee). No date(b). Comprehensive Nutrient Management Plan Guidance for Planners. Accessed September 17, 2014.

Tetra Tech (Tetra Tech, Inc.). 2011, January 19. *Summary of AFO/CAFO Universe Estimates—New York*. Unpublished technical report prepared for EPA Headquarters, Office of Wastewater Management, Rural Branch, by Tetra Tech, Inc. Fairfax, VA.

USC (Upper Susquehanna Coalition). No date. *USC Ag Team*. Accessed January 16, 2015.