



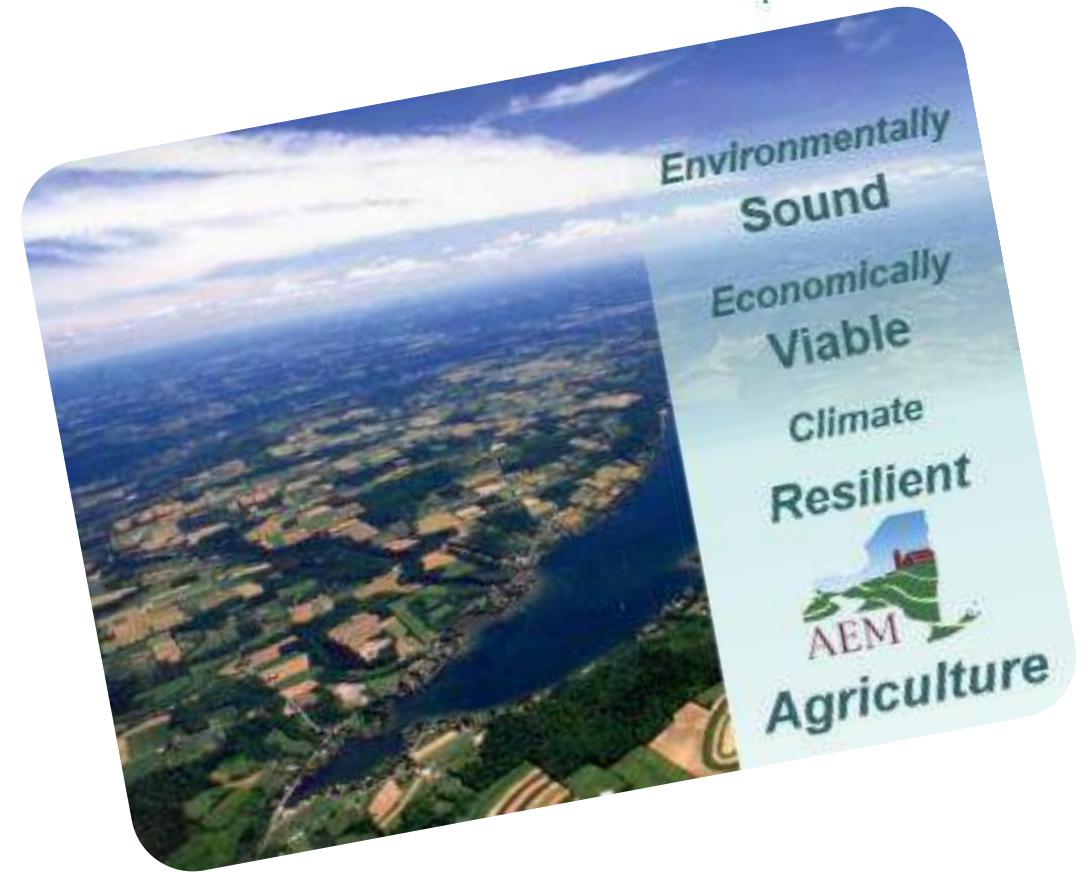
Department of
Agriculture and Markets



Soil and Water
Conservation
Committee

Agricultural Environmental Management

Cayuga Lake Watershed

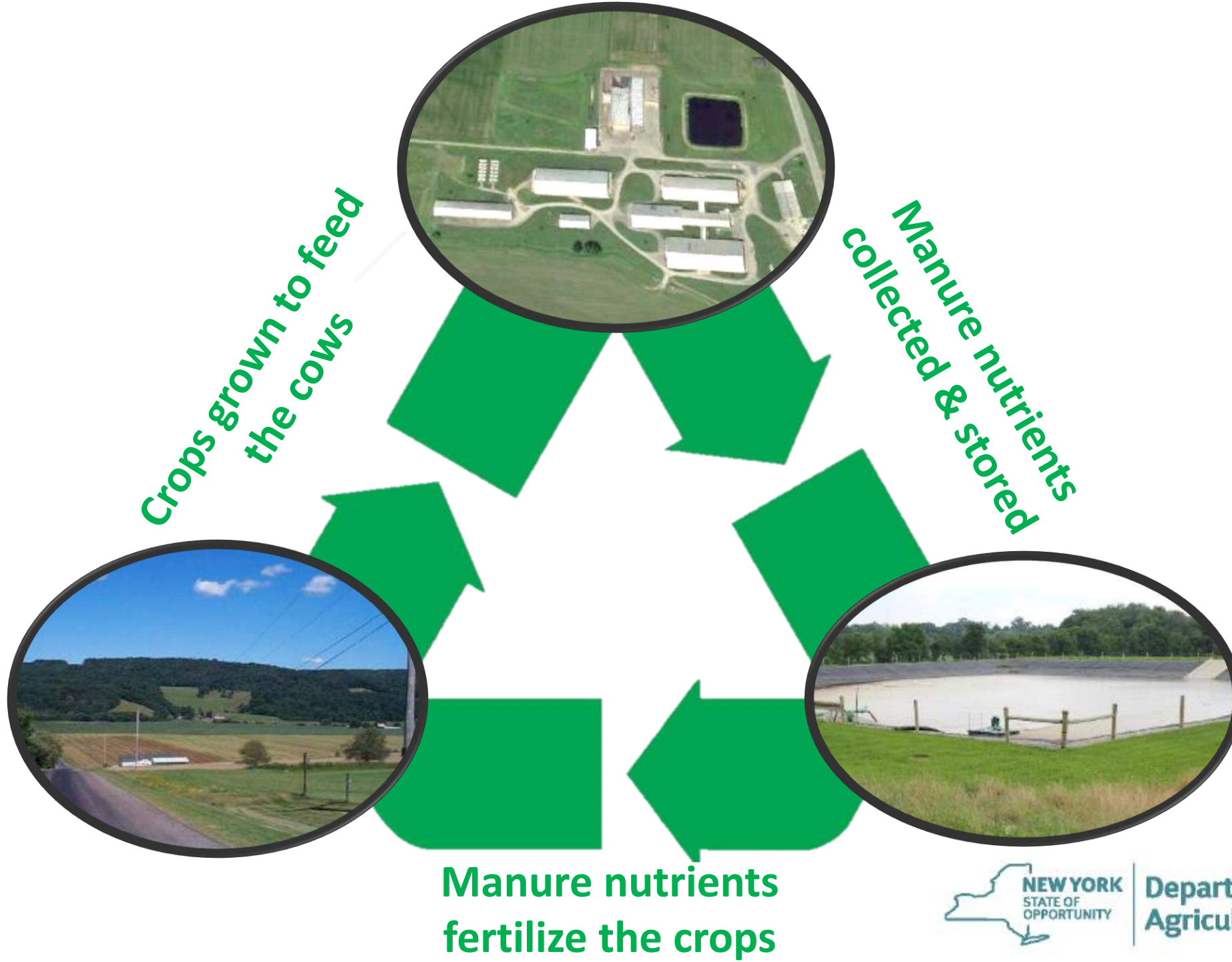


September 28, 2019

Andrew M. Cuomo
Governor

Richard A. Ball
Commissioner

Greg Albrecht
AEM Coordinator/NMP Specialist

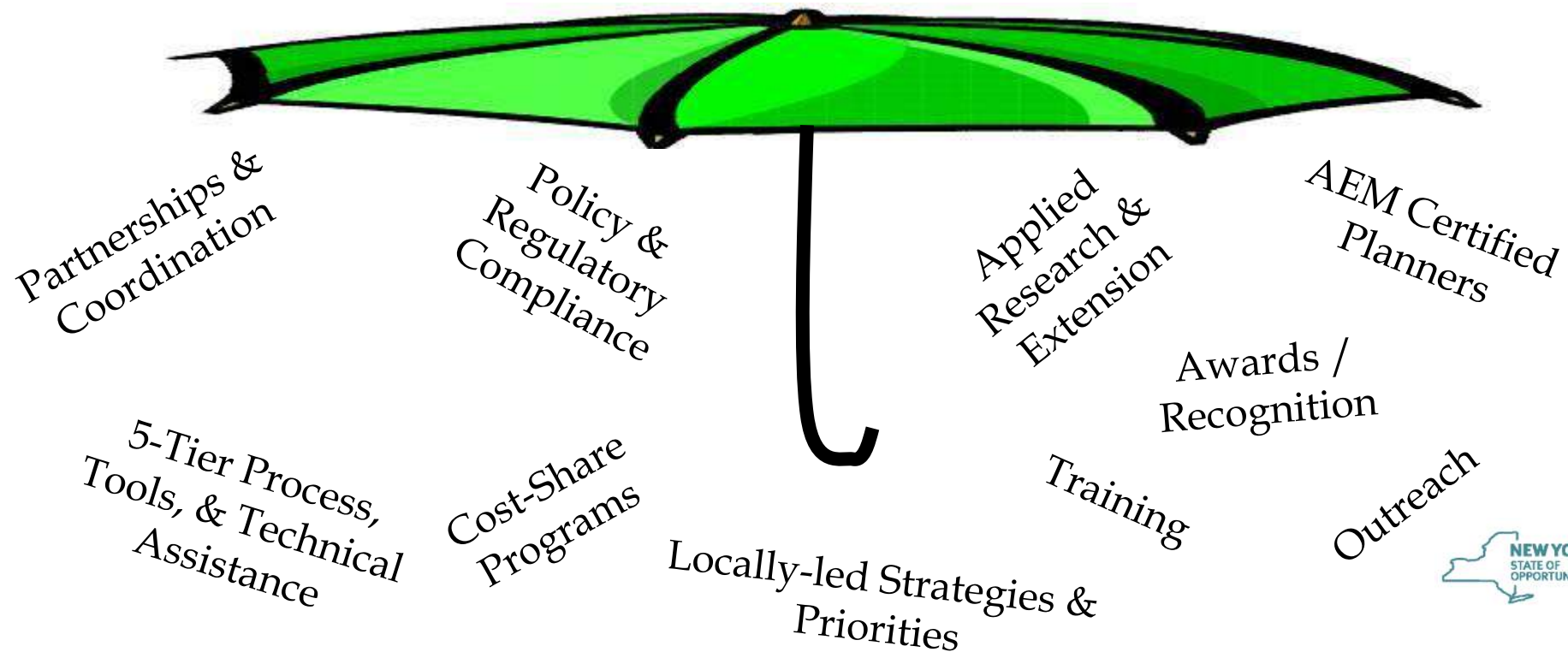


Agricultural Environmental Management (AEM)

locally-led by Soil and Water Conservation Districts

www.agriculture.ny.gov/soilwater/aem

Protect and enhance the environment and
the viability of agriculture in New York State.



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AEM 5-Tier Approach

| AEM Tier | Purpose | NRCS 9 Step Process |
|---|---|--|
| Tier 1 – Inventory (Questionnaire) | Basic farm info and interests | 1. ID Issues & Opps 2. Determine Objectives 3. Inventory Resources 4. Analyze Resource Data 5. Formulate Alternatives 6. Evaluate Alternatives 7. Make Decisions |
| Tier 2 – Assessment (“Tier 2 Worksheets”) | Identify existing stewardship, resource concerns, and opportunities | |
| Tier 3 – Planning | Develop conservation plans | |
| Tier 4 – Implementation | Implement conservation practices based on the plans | 8. Implementation |
| Tier 5 – Evaluation | Evaluate plans, practices, and programs | 9. Evaluation |



AEM Tier 2 Assessment Worksheets

Core

- Watershed Site Evaluation
- Agriculture & the Community
- Soil Management
- Manure & Fertilizer Mgmt
- Manure & Fertilizer Storage
- Waste Disposal
- Pesticide Use
- Pesticide Storage, Mix & Load
- Farmstead Water Supply
- Stream & Floodplain Mgmt.
- Petroleum & Oil Product Storage
- Forest Management
- Irrigation Water Management

Livestock

- Livestock Heavy Use Areas
- Silage Storage
- Process Wash Water
- Management of Feed Nutrients
- Water-Borne Pathogens
- Pasture Management
- Livestock Odor Management

plus

GHG Mitigation Opportunities

Equine

Greenhouse

Vineyard (www.vinebalance.com)

Fruits & Vegetables

Long Island

www.agriculture.ny.gov/soilwater/aem



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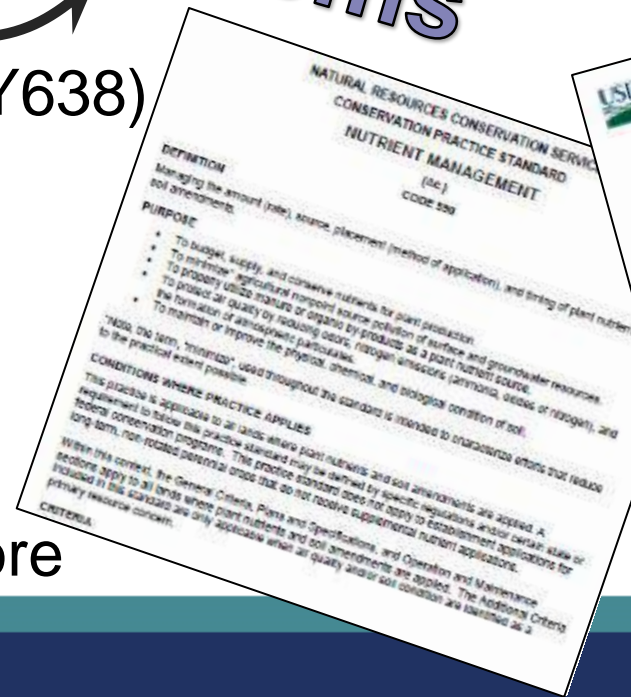


Many NRCS Standards are used in AEM Tier 3 Plans

www.nrcs.usda.gov/technical/efotg

- Nutrient Management (NY590)
- Cover Crop (NY340)
- Conservation Tillage Practices
- Buffer Practices
- Conservation Crop Rotation (NY328)
- Grassed Waterway (NY412)
- Water & Sediment Control Basin (NY638)
- Manure Storage Facility (NY313)
- Manure Transfer (NY634)
- Compost Facility (NY317)
- Heavy Use Area Protection (NY561)
- Vegetated Treatment Area (NY635)
- Prescribed Grazing (NY528) and more

**Planned and
implemented
as systems**



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Ag Best Management Practice Systems

| BMP SYSTEM NAME | BMP SYSTEM NAME |
|---|---|
| Access Control System | Pathogen Management System |
| Agrichemical Handling and Storage System | Petroleum and Oil Products Storage System |
| Composting System – Animal | Prescribed Rotational Grazing System |
| Erosion Control System – Structural | Process Wash Water Management System |
| Feed Management System | Riparian Buffer System |
| Integrated Pest Management System | Silage Leachate Control and Treatment System |
| Irrigation Water Management System | Soil Conservation System – Cultural |
| Livestock Heavy Use Area Runoff Management System | Stream Corridor and Shoreline Management System |
| Manure and Agricultural Waste Treatment System | Waste Storage and Transfer System |
| Nutrient Management System – Cultural | |

Funding Programs to Help Advance AEM on Farms

- Locally-led and sponsored by your **Soil & Water Conservation District**
 - AEM Base Program
 - Agricultural Non-Point Source Pollution Abatement and Control Program (AgNPS)
 - Climate Resilient Farming (CRF)
 - CAFO Waste Storage and Transfer System Program
 - Source Water Buffer Program
 - Conservation Reserve Enhancement Program (CREP)
 - State Aid to Districts
 - Other Programs from **NYSDEC, USDA-NRCS, USDA-FSA, Cornell, USEPA, and others....**
 - NRCS EQIP
 - Cornell/NYS Dairy Advancement Program
- + Significant, on-going investment by farmers.



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Progress Through the AEM Tiers

In the Cayuga Lake Watershed

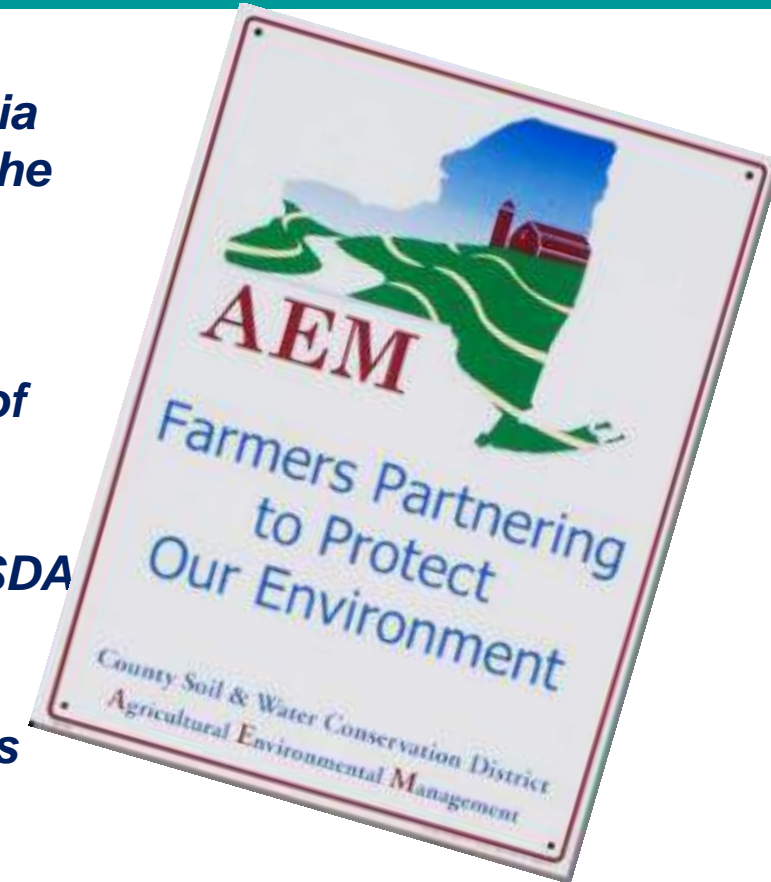
| AEM Tier Work in the Cayuga Lake Watershed | Total Completed |
|---|-----------------|
| Tier 1 Inventory | 208 |
| Tier 2 Assessments | 179 |
| Tier 3 Plans | 98 |
| Tier 4 BMP Systems (in addition to AgNPS, CRF, and CAFO Programs) | 53 |
| Tier 5A Assessment Updates | 25 |
| Tier 5B Plan/BMP Evaluations | 37 |

+ approx. 150 BMP implementation projects via the AgNPS, the CRF, and the CAFO Storage programs
~\$11.5M from NYS
~\$7M from farmers across the full range of BMP Systems

+ significant addition if USDA effort is included

+ all CAFO regulated farms implemented

+ education, outreach, partner activities, program evaluation, and reporting



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Farmstead Facilities Plan and Practices

Farmstead Facilities

The following addresses concentrated sources around the farmstead at Springfield Acres. The narrative is supported by illustrations, documenting the existing conditions and planned BMPs for the farmstead.

By the end of 2006, the farm will extend the west end of the freestall barn to accommodate a total of approximately 190 milking cows, 40 dry cows, and 100 yearling and freshening heifers. The milking parlor will be expanded to a double-8. The plan for concentrated sources has been developed in accordance with these future business expansion plans.

Barnyard - Plan Items 1, 3, and 7

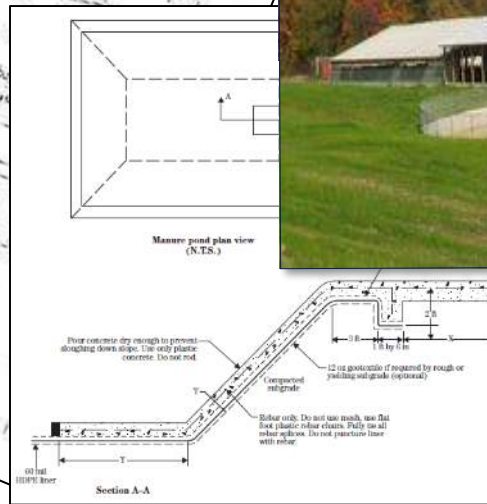
Existing Condition

The facilities at Simpsons were evaluated in April 2002 by Ned Flanders, NRCS, and Wayne Smithers, Flomere County SWCD, for an EQIP ranking. The milking and dry cows are confined year round in the freestall barn. Heifers are kept in the freestall barn. There are calf hutches between the barn and Evergreen Road. This area also has a concrete base and a feed bunk used to feed the animals.

Runoff from the heifer barnyard and Wayne Smithers' facilities is a major concern at the facility. Runoff from the heifer barnyard and Wayne Smithers' facilities is a major concern at the facility. Runoff from the heifer barnyard and Wayne Smithers' facilities is a major concern at the facility.



Manure Storage and Transfer System
Waste Storage Facility Standard (NY313),
Waste Transfer Standard (NY634), etc.



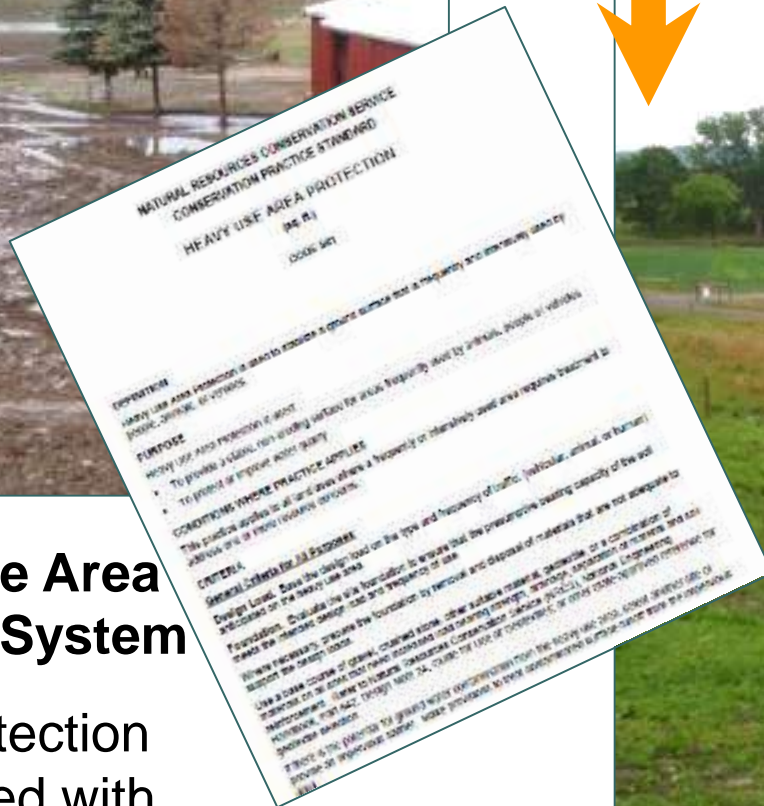
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**Silage Process Water Control and
Treatment System
Vegetated Treatment Area (NRCS 634),
Treatment Standard (NRCS 635), etc.**

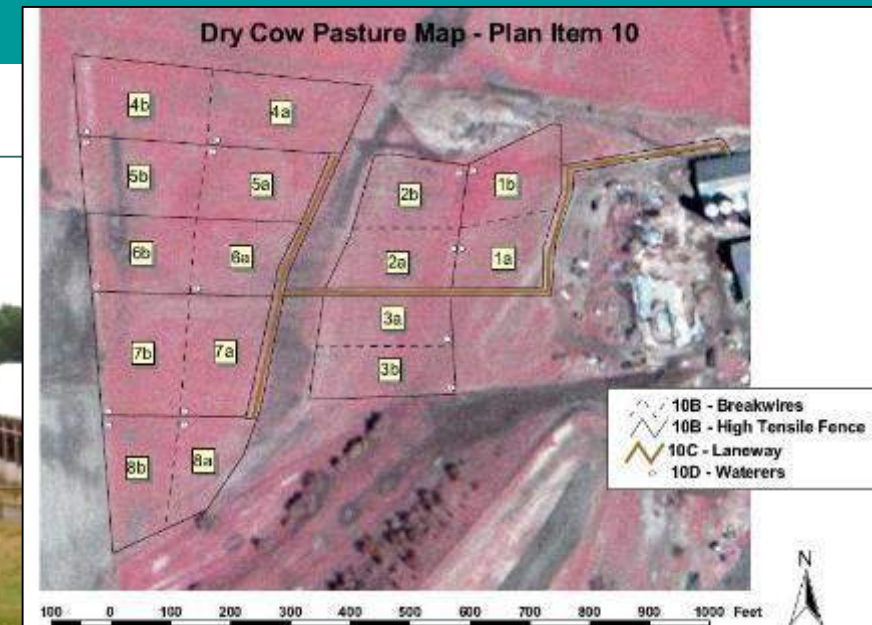


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Livestock Heavy Use Area Runoff Management System

Heavy Use Area Protection (NRCS 561) integrated with Prescribed Grazing (NRCS 528), Roof Runoff Structure (NRCS 558), etc.



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Soil Conservation & Nutrient Management Planning

Field Nutrient Balances, Manure Volumes, and Risk Indicators

| | Main Barn | Heifer Barn | Hutches |
|----------------------------------|---------------|--------------|-------------|
| Manure Available for Application | 1,066,908 gal | 1896.00 tons | 75.00 tons |
| Manure Allocated | 1,111,200 gal | 1896.20 tons | 88.00 tons |
| Manure Balance | -44,292 gal | -0.20 tons | -13.00 tons |

| Field ID | Field Name | Acres | 2006 Crop | Residual Sod N | Gross N Req. | Residual Manure N | Total Nutrients Required (lb/a) | | | Nutrients From Applied Manure (lb/a) | | | Nutrients From Fertilizer (lb/a) | | |
|----------|------------|-------|-----------|----------------|--------------|-------------------|---------------------------------|-------------------------------|------------------|--------------------------------------|-------------------------------|------------------|----------------------------------|-------------------------------|------------------|
| | | | | | | | N | P ₂ O ₅ | K ₂ O | N | P ₂ O ₅ | K ₂ O | N | P ₂ O ₅ | K ₂ O |
| 111.1 | H1 | 11.2 | COS3 | 13 | 123 | 16 | 107 | 0 | 0 | 44 | 95 | 180 | 68 | 0 | 0 |
| 111.2,6 | H2,6 | 28.9 | AGT5 | 0 | 40 | 16 | 24 | 15 | 0 | 30 | 70 | 138 | 0 | 0 | 0 |
| 111.3 | H3 | 32.1 | COS3 | 13 | 123 | 23 | 99 | 10 | 20 | 0 | 0 | 0 | 111 | 0 | 0 |
| 111.4 | H4 | 29.1 | SSH19 | 0 | 99 | 0 | 99 | 20 | 20 | 74 | 165 | 318 | 0 | 0 | 0 |
| 111.5a | H5a | 19 | COS1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 111.5b | H5b | 22 | AGT2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 111.8 | H8 | 3.5 | COS19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 111.9 | H9 | 4.5 | COS19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 111.10 | H10 | 22.4 | COS19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 111.11a | H11a | 19 | COS5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



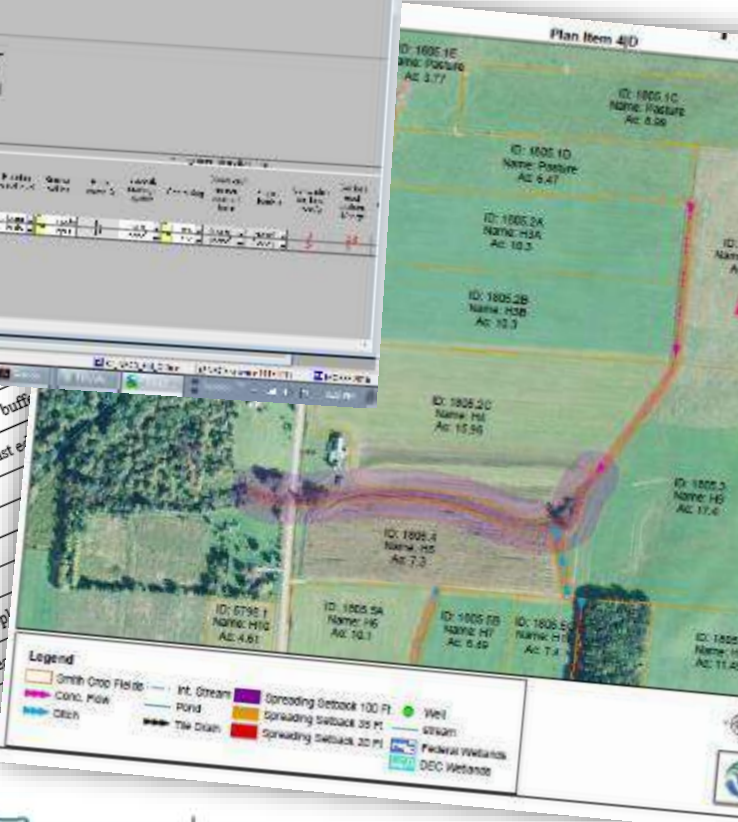
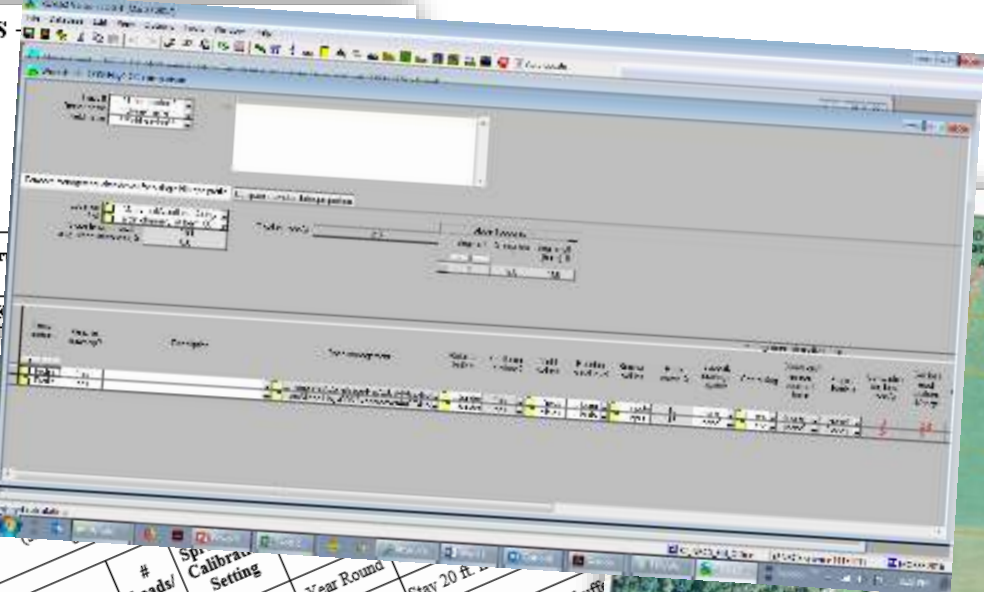
RUSLE2



Owner Name: Marge Simpson
Farm: Springfield Acres
Location: 742 Evergreen Rd., (Rt. 100)

| Tract / Field ID | Description |
|------------------|---|
| 111.1 | Continuous Corn Silage, Cover Crop |
| 111.2,6 | 2 Corn Grain, 5 Hay, 5 Corn Silage, 5 Hay, Cover Crop |
| 111.3 | BMR SxS with Triticale Spring Plow |
| 111.4 | 4 Corn Silage, 4 Hay, 4 Corn Silage, 4 Hay, Spring Plow |
| 111.5a | 5 Corn Silage, 5 Hay, Spring Plow |
| 111.5b | Continuous Corn Silage, Spring Plow |
| 111.8 | Continuous Corn Silage, Spring Plow |
| 111.9 | Continuous Corn Silage, Spring Plow |

| Acres | 2006 Crop | Manure Source(s) | # Loads/Field | Spreading Setting | Year Round | Stay 20 ft. from edge |
|-------|-----------|------------------|---------------|-------------------------------------|------------|------------------------------|
| 11.2 | COS3 | Main Barn | 11 | Houle / Corn Rate NH / Hay Rate | May-Jan | No spreading in grass buffer |
| 28.9 | AGT5 | Heifer Barn | 85 | NH / Corn Rate Houle / Corn Rate | May-Aug | Stay 100 ft. from east edge |
| 32.1 | COS3 | Heifer Barn | 28 | | | |
| 29.1 | SSH19 | Main Barn | None | | | |
| 19 | COS1 | None | | | | |
| 22 | AGT2 | None | | | | |
| 3.5 | COS19 | None | | | | |
| 4.5 | COS19 | None | | | | |
| 22.4 | COS19 | Main Barn | 19 | Houle / Corn Rate Houle / Corn Rate | May-Aug | Winter application |



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Multiple Barrier Approach



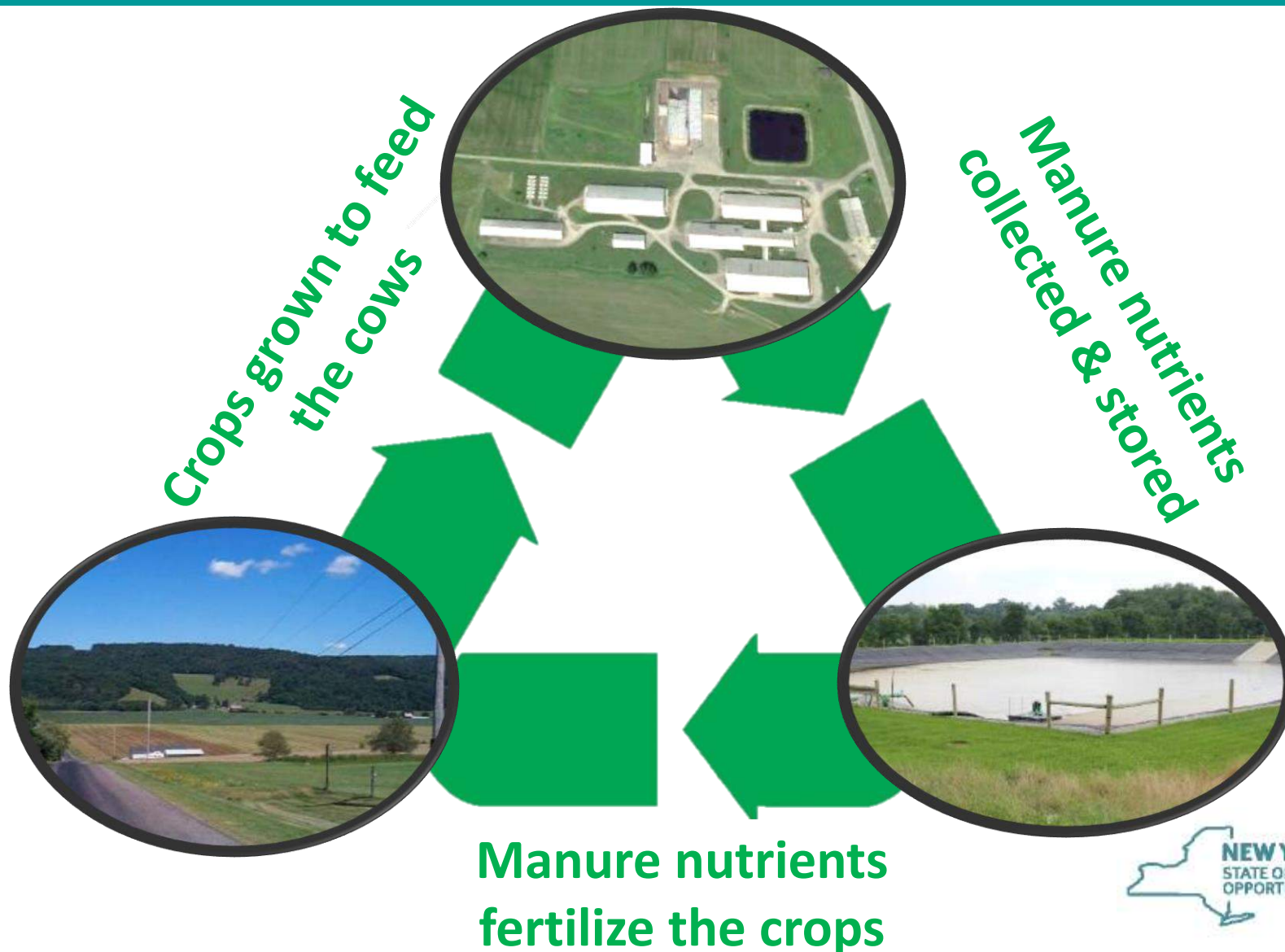
Nutrient

Management Systems

Conservation Tillage Practices, Strip Cropping (NRCS 585), Grassed Waterway (NRCS 412), Filter Strip (NRCS 393s), Cover Crop (NRCS 340), Nutrient Management (NRCS 590), Buffer Practices, etc.



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Agricultural Environmental Management

Protecting and enhancing the environment and the viability of agriculture in New York State.

Greg Albrecht

AEM Coordinator / NMP Specialist

Div. of Land and Water Resources

Dept. of Agriculture and Markets

NYS Soil and Water Conservation Committee

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