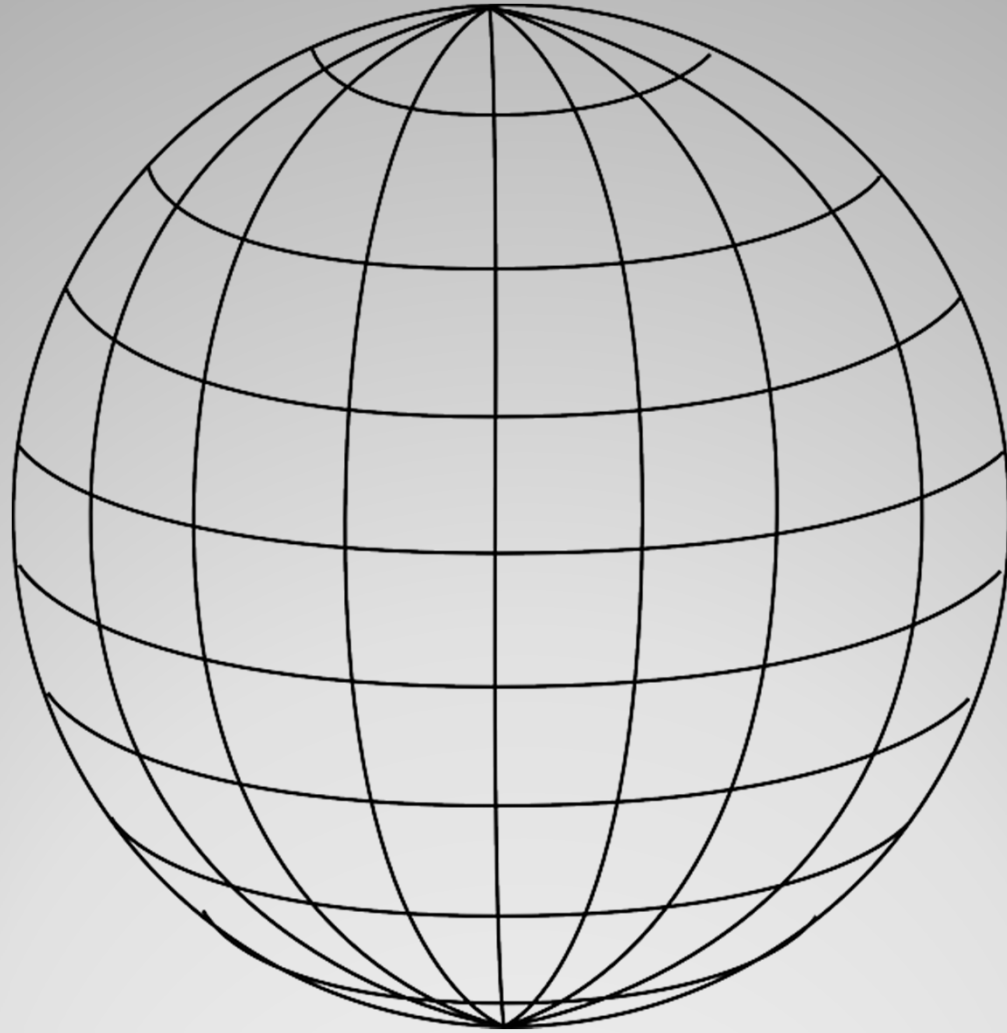


How Do You Know Credits Are Real?

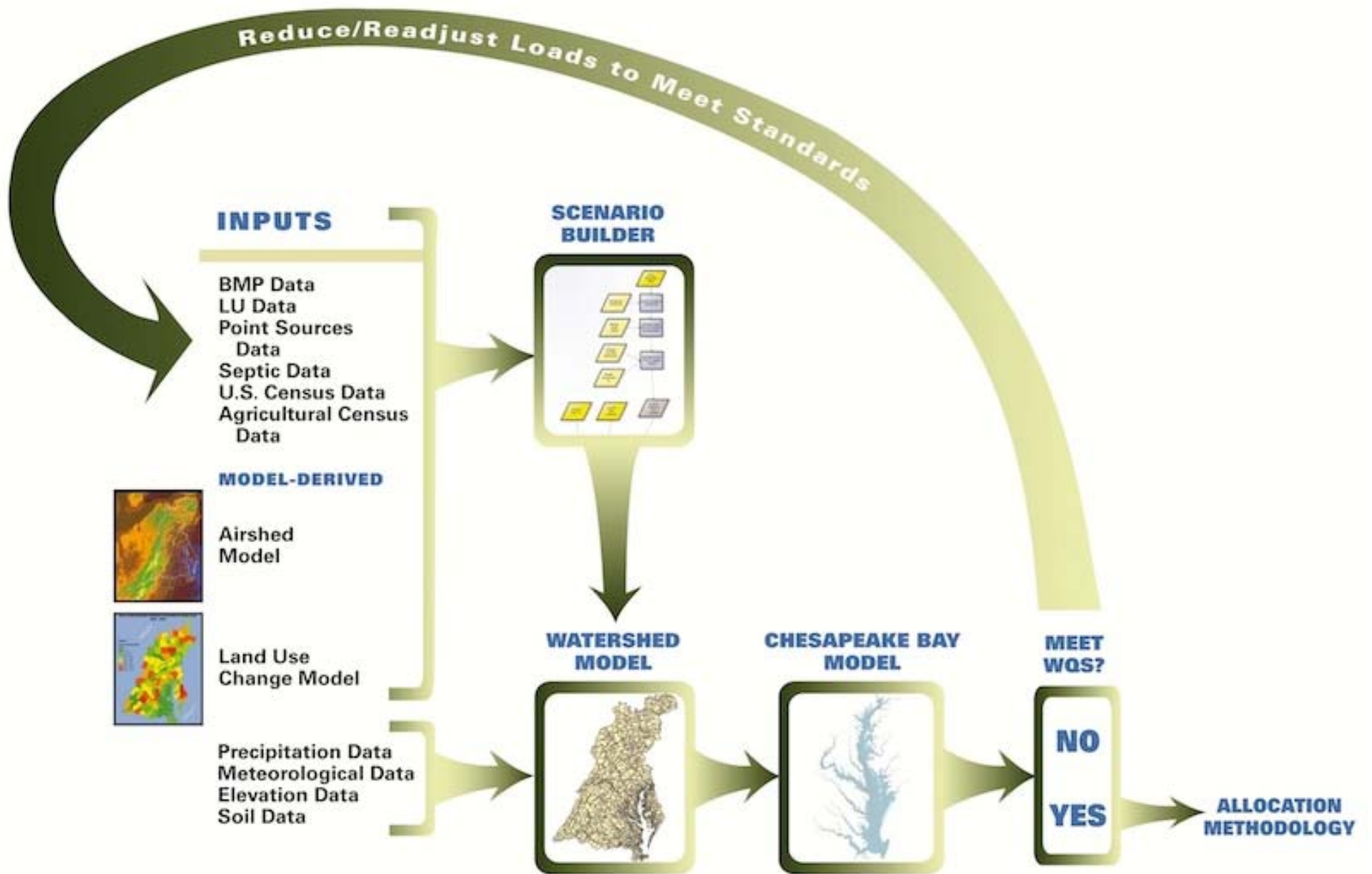
**The Maryland Version
Trading Between Point and Nonpoint Sources**



**Susan Payne
Maryland Department of Agriculture
September 16, 2015
Lincoln, Nebraska**






MODEL WORLD

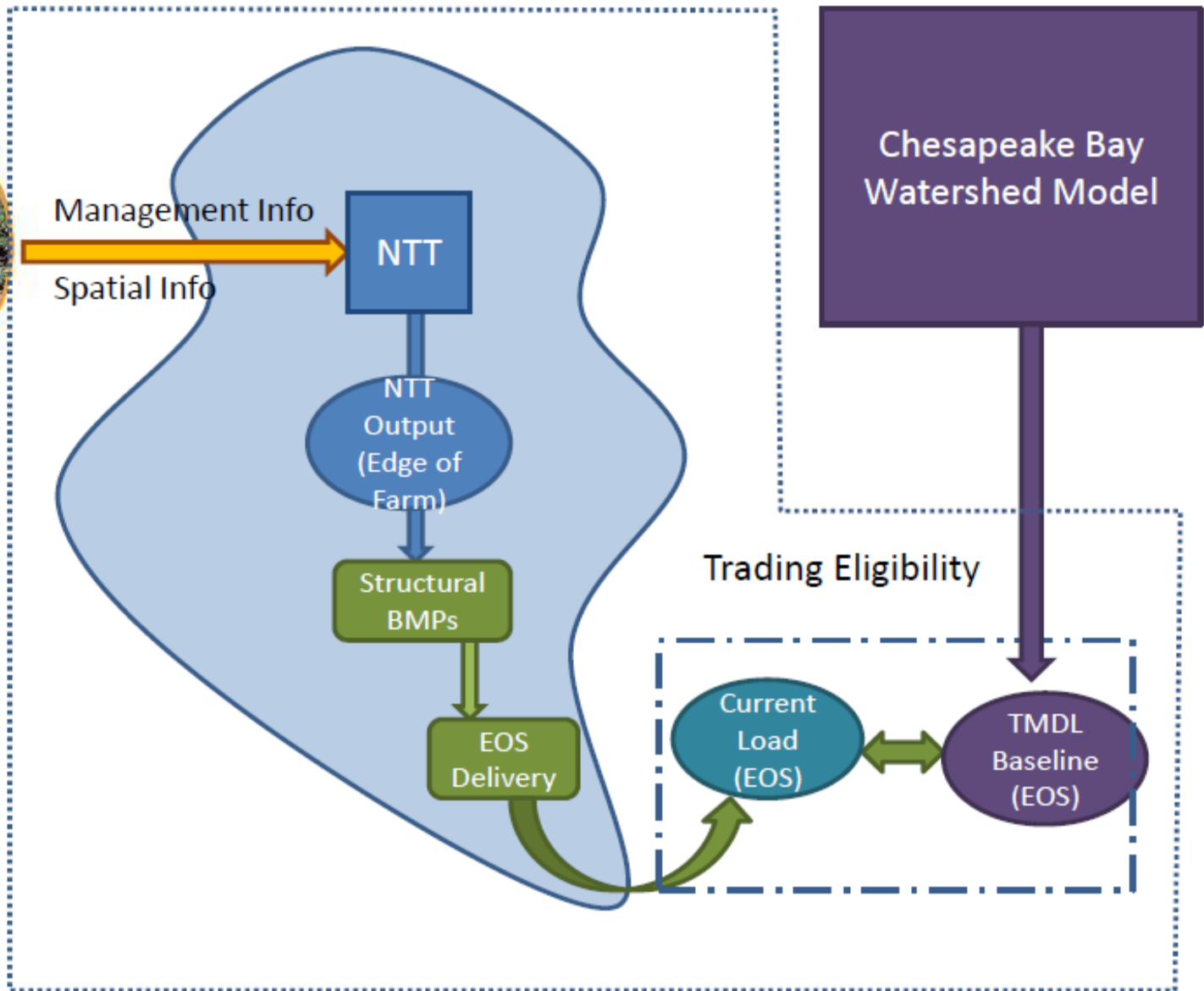


Chesapeake Bay Partnership Model

Chesapeake Bay Nutrient Trading/Tracking Tool Calculations



-  Nutrient Tracking Tool
-  NutrientNet Operations
-  Chesapeake Bay Watershed Model



BAY TMDL

Agricultural Baseline Based on Model Version 5.3.2 (Edge of Segment)

| | PTX | POT | SUS | WS | ES |
|---------------------|-------------|--------------|-------------|-------------|--------------|
| N (lb/acre) | 10.3 | 24.9 | 17.6 | 15.9 | 11.7 |
| P (lb/acre) | 1.3 | 1.8 | 0.9 | 1.1 | 1.0 |
| TSS (t/acre) | 51.4 | 552.6 | 48.6 | 89.3 | 117.5 |

Statewide N =16.7
Statewide P =1.3
Statewide TSS =171.9

| | Eastern Shore Bay TMDL Nitrogen | Chester River (Middle) Local TMDL Nitrogen |
|--------------------|--|---|
| Raw | 29.96 lbs/acre | 29.96 lbs/acre |
| TMDL | 11.70 lbs/acre | 6.91 lbs/acre |
| % Reduction | 61% | 77% |
| Phosphorus | | Phosphorus |
| Raw | 2.01 lbs/acre | 2.01 lbs/acre |
| TMDL | 1.03 lbs/acre | 0.49 lbs/acre |
| % Reduction | 49% | 73% |

Bay TMDL vs. Local TMDL

Agricultural Project Worksheets

N LOAD INFORMATION

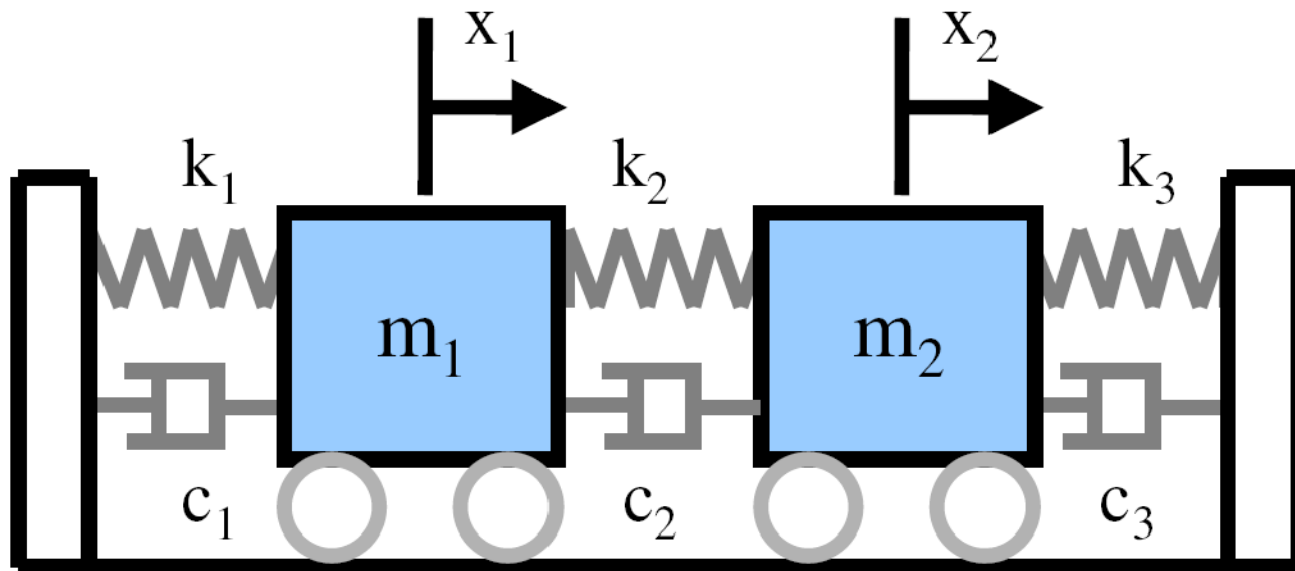
| | | | |
|------------------------------|-----------------|------------------|--------|
| Baseline N load fields (EOS) | 2,310.00 lbs/yr | Delivery Ratio | 1.0 |
| Current N load fields (EOS) | 1,210.00 lbs/yr | Total Reductions | 438.00 |
| Future N load fields (EOS) | 772.00 lbs/yr | Credits | 438 |

P LOAD INFORMATION

| | | | |
|------------------------------|---------------|------------------|-------|
| Baseline P load fields (EOS) | 180.00 lbs/yr | Delivery Ratio | 1.0 |
| Current N load fields (EOS) | 75.00 lbs/yr | Total Reductions | 29.50 |
| Future P load fields (EOS) | 45.50 lbs/yr | Credits | 30 |

SEDIMENT LOAD INFORMATION

| | | | |
|--------------------------------|-------------------------------|------------------|-----------------|
| Baseline TSS load fields (EOS) | 32,600.00 lbs/yr (16.32 t/yr) | Delivery Ratio | 1.0 |
| Current TSS load fields (EOS) | 5,430.00 lbs/yr (2.72 t/yr) | Total Reductions | 2,830.00 (1.40) |
| Future TSS load fields (EOS) | 2,600.00 lbs/yr (1.31 t/yr) | Credits: | 1 |



Trading Ratios

Application of Trading Ratios

Delivery Ratio Example

| | Scenario 1 | Scenario 2 |
|---------------------------|------------|------------|
| Eligible Reductions | 1,000 | 1,000 |
| Delivery Ratio | X 0.58 | X 0.80 |
| Credits Available to Sell | 580 | 800 |

Retirement Ratio Example

| | |
|-----------------------------|------------|
| Credits Sold | 500 |
| Retirement Ratio (10%) | 50 |
| Total Credits Needed | 550 |




Certification, Verification, Registration

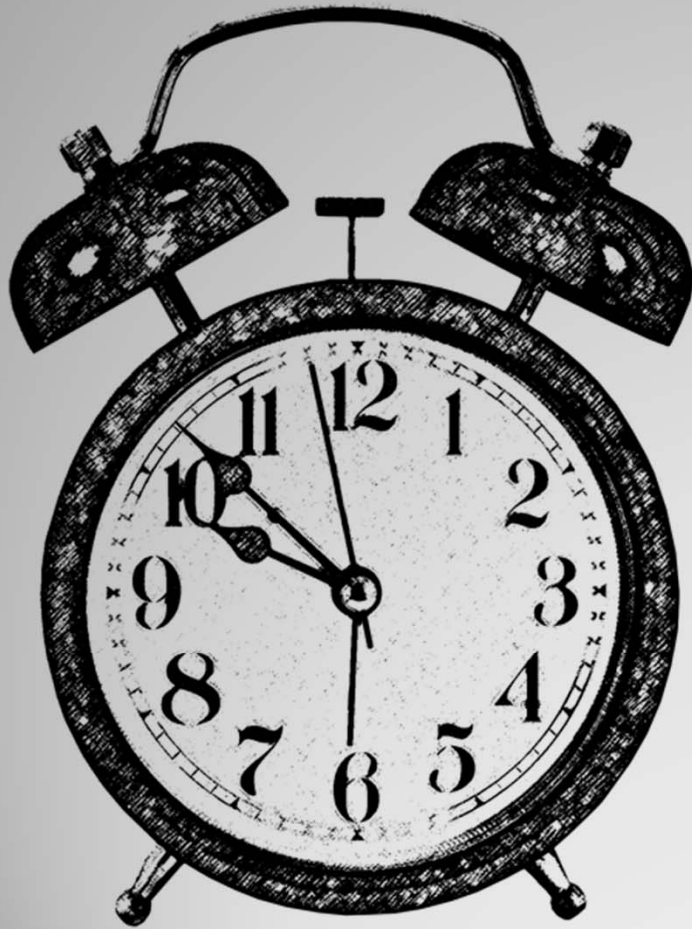
Home / Credits / Index

CREDITS

+ Add Credits

Credits listed in the public registry.

| Project | Current Owner | Original Owner | Pollutant | Vintage | Quantity | Serial Numbers | Permanent/Term | Credit Type | Credit Status | Issued On | Actions |
|------------------------------|------------------|----------------|-----------|---------|----------|---|----------------|-------------|---------------|------------|---|
| test project | Virginia Manager | person | N | 2014 | 3 | 2014-N-VA1-51179-00043- 2014-N-VA1-51179-00045 | Term | ex-post | Retired | 2014-02-05 |    |
| test project | person | person | N | 2014 | 19 | 2014-N-VA1-51179-00001- 2014-N-VA1-51179-00019 | Term | ex-post | Active | 2014-02-05 |    |
| test project | Virginia Manager | person | N | 2015 | 3 | 2015-N-VA1-51179-00043- 2015-N-VA1-51179-00045 | Term | ex-post | Retired | 2014-02-05 |    |
| test project | person | person | N | 2015 | 32 | 2015-N-VA1-51179-00001- 2015-N-VA1-51179-00032 | Term | ex-post | Active | 2014-02-05 |    |
| test project | Virginia Manager | person | N | 2016 | 3 | 2016-N-VA1-51179-00043- 2016-N-VA1-51179-00045 | Term | ex-post | Retired | 2014-02-05 |    |
| test project | person | person | N | 2016 | 32 | 2016-N-VA1-51179-00001- 2016-N-VA1-51179-00032 | Term | ex-post | Active | 2014-02-05 |    |
| test project | Virginia Manager | person | P | 2014 | 4 | 2014-P-VA1-51179-00067- 2014-P-VA1-51179-00070 | Term | ex-post | Retired | 2014-02-05 |    |
| test project | person | person | P | 2014 | 66 | 2014-P-VA1-51179-00001- 2014-P-VA1-51179-00066 | Term | ex-post | Active | 2014-02-05 |    |
| test project | Virginia Manager | person | P | 2015 | 4 | 2015-P-VA1-51179-00067- 2015-P-VA1-51179-00070 | Term | ex-post | Retired | 2014-02-05 |    |
| test project | person | person | P | 2015 | 36 | 2015-P-VA1-51179-00001- 2015-P-VA1-51179-00036 | Term | ex-post | Active | 2014-02-05 |    |



Costs



Susan Payne
Coordinator of Ecosystem Markets
410-841-5897

susan.payne@maryland.gov
www.mdnutrienttrading.com