



# Connecticut Department of Energy and Environmental Protection



# Connecticut's Nitrogen Trading Program

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Phoenix Auditorium  
DEEP Headquarters  
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Connecticut Department of Energy and Environmental Protection

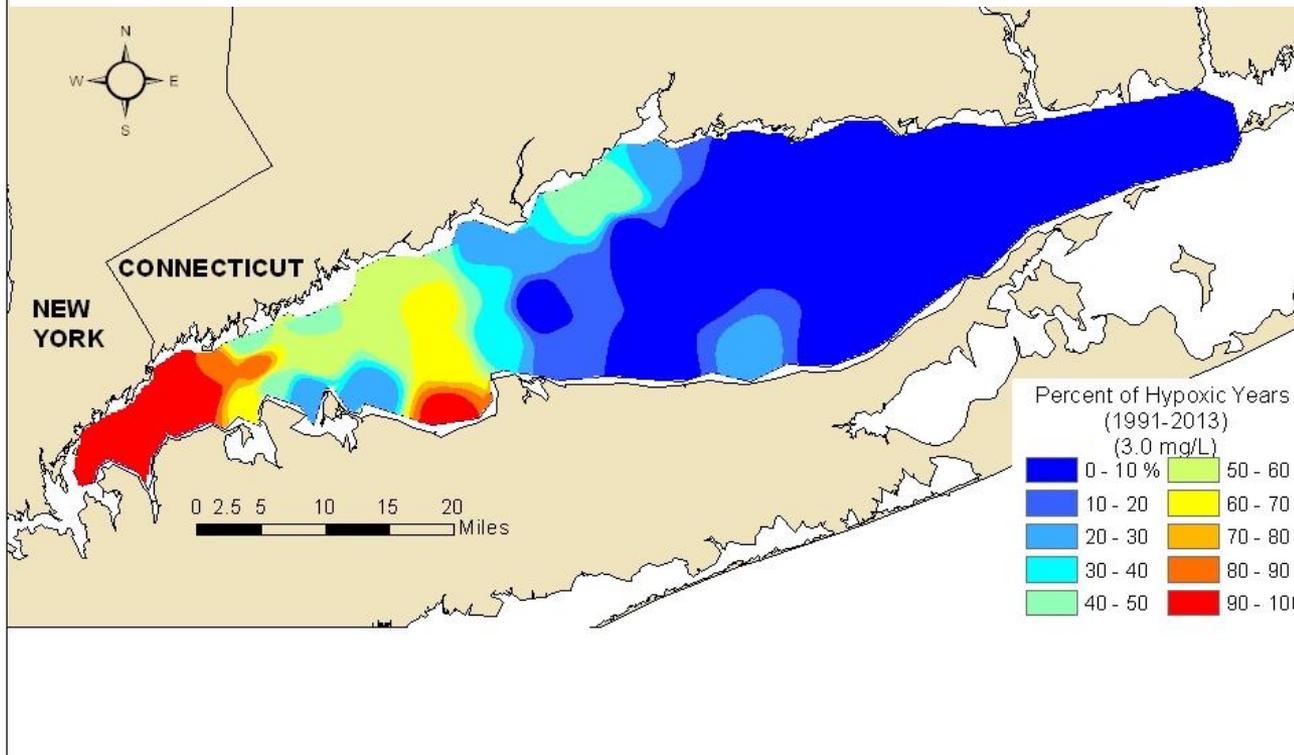
# Connecticut's Nitrogen Trading Program

- Why a trading program
- The Goals of the Trading Program in 2002
  - Meet the TMDL cost-effectively in 13 years
- The Trading Program Accomplishments
  - Met the TMDL cost-effectively in 12 years
- Near-Term Goals of the Trading Program
  - Maintain compliance with the TMDL
  - Self-sufficiency



# Why a trading program

## The frequency of hypoxia in LIS bottom waters 1991-2013



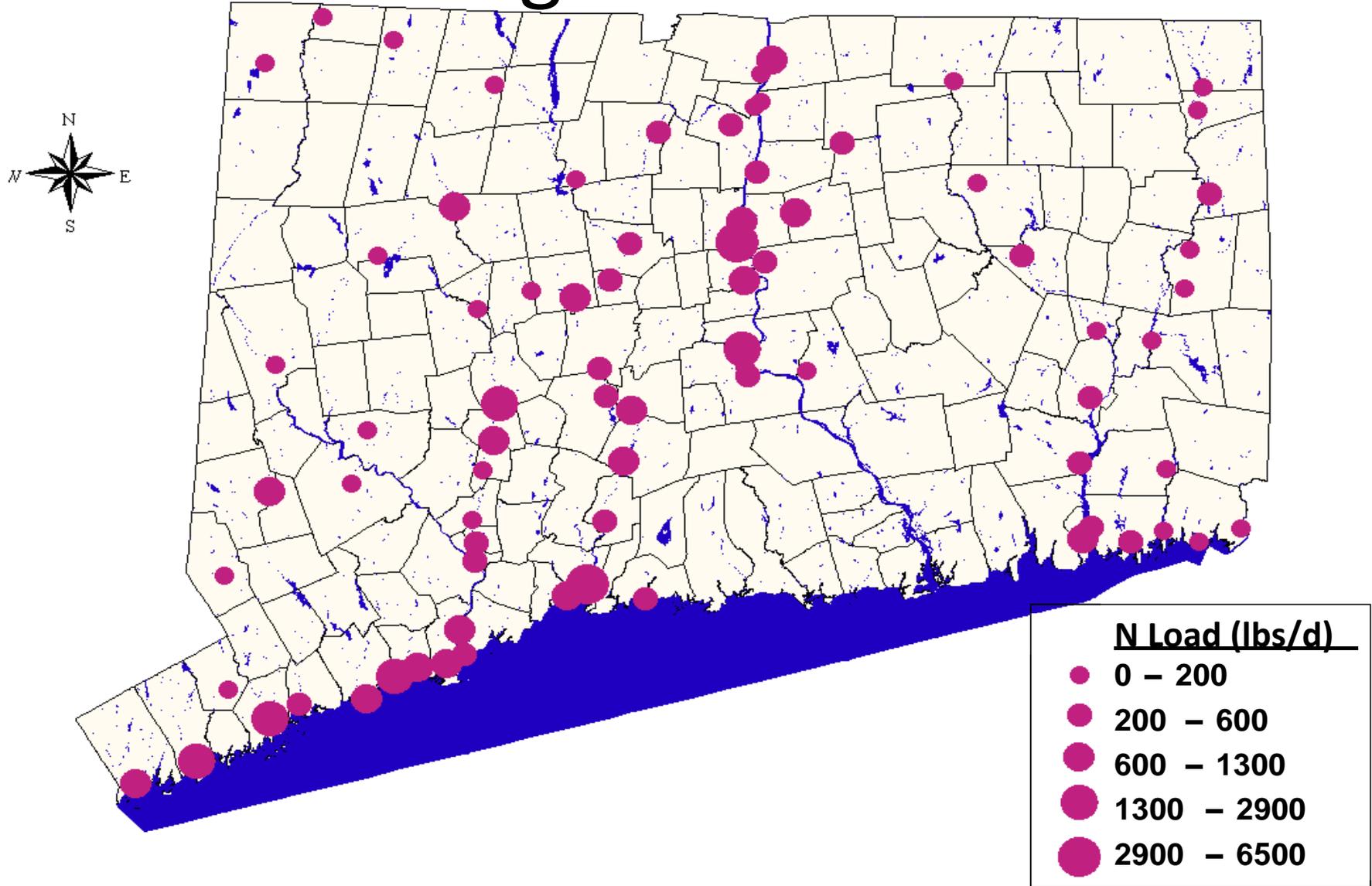
# Why a trading program

## Long Island Sound TMDL

- Meet Water Quality Standards
- In-basin Nitrogen Reduction Goal
  - 58.5%
    - 10% reduction of urban and agricultural runoff
    - 64% reduction of point sources
- Enforceable Schedule – reductions due 2014
- Allows “Trading”
- Future Actions
  - Out of State Sources (runoff –10%, point sources – 25%)
  - Atmospheric Deposition (CAIR Rule and SIPs)
- Periodic Revision (Adaptive Management)
  - Revision Someday



# STP Nitrogen Baseline Loads



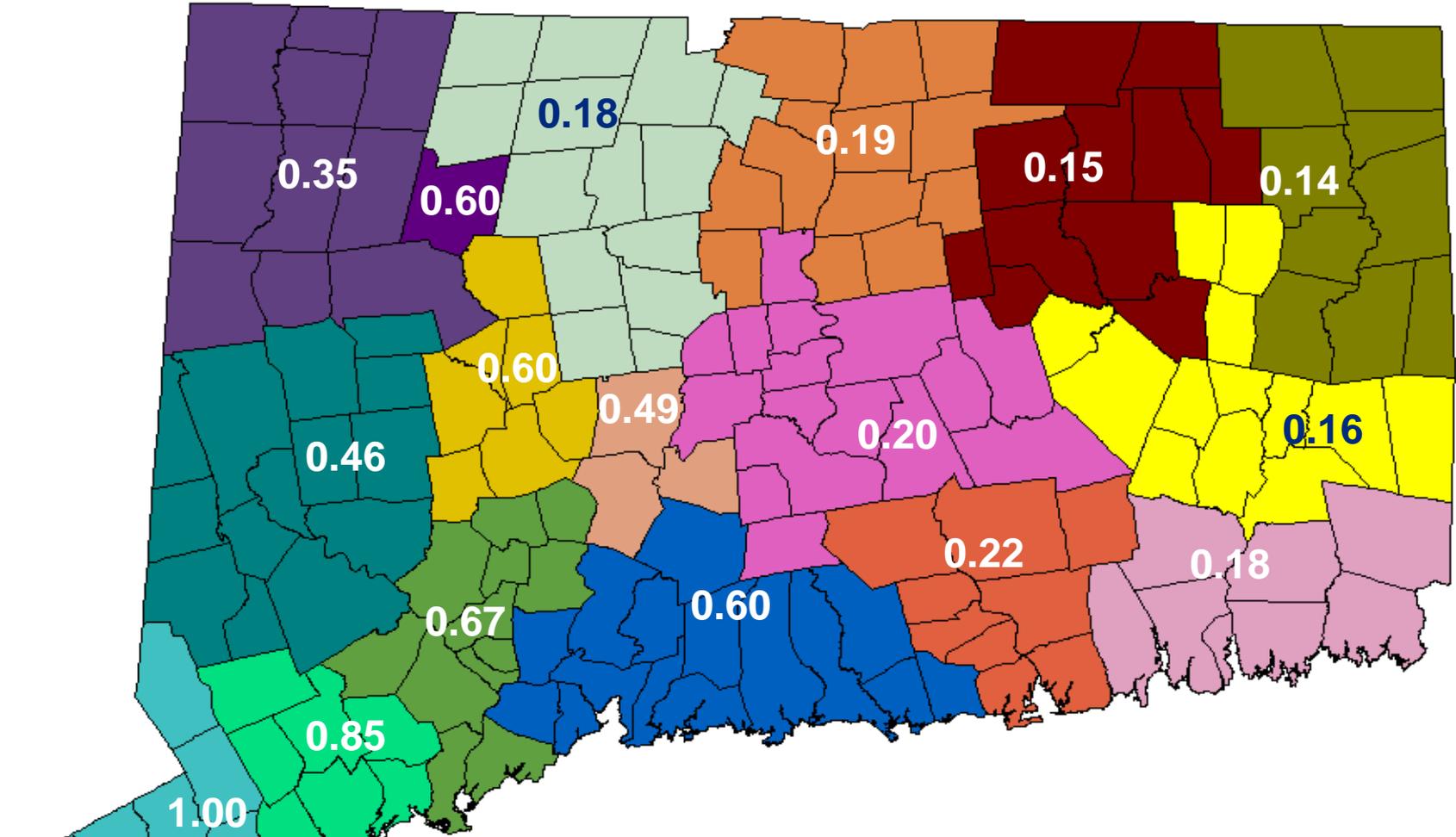
**Distribution of 79 Connecticut STPs participating in nitrogen trading. Dots are proportional to baseline, end of pipe nitrogen loads (lbs/day).**

# Why a trading program

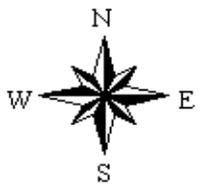
## Connecticut Nitrogen Trading Program

- Governed by a General Permit
- Incentive Based – Not Free Market
- Centrally Managed by NCAB
- NCAB Sets Credit Prices
  - Annual CWF Project Capital Costs and Annual O&M Costs
- Scheduled Annual Trades
- Transactions through the State “Bank”





Nitrogen Trading Zones



# Goals of the Trading Program in 2002

Meet the TMDL by 2014 cost-effectively by

- Encouraging denitrification at STPs
- Spreading out upgrades over thirteen years
  - Western and larger facilities expected first
- Efficiently using funding and resources

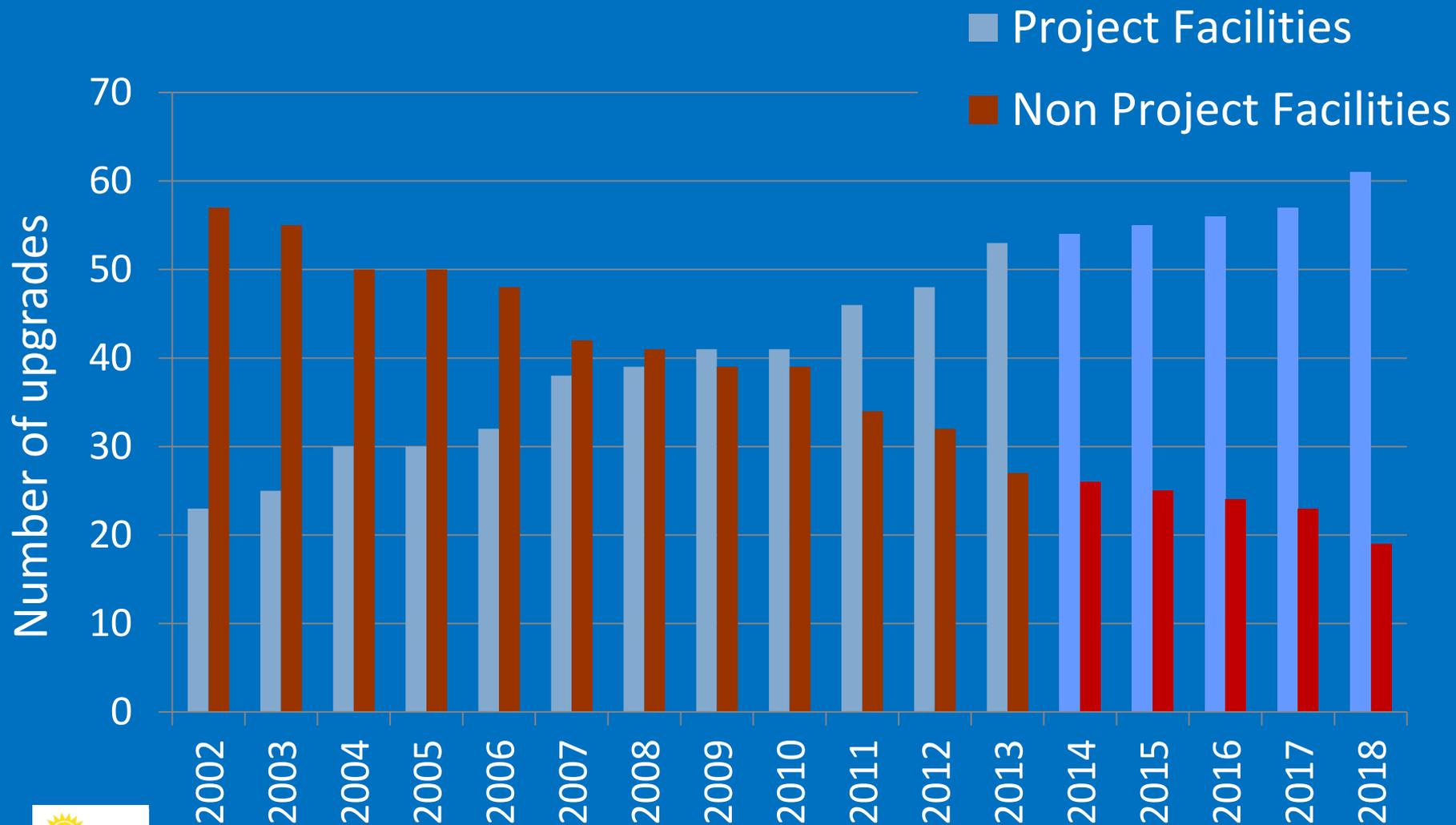


# Trading Program Accomplishments

- Cost-effective implementation of the TMDL
  - (cost savings of \$300 – 400 million)
- 53 facility upgrades
  - \$332 million invested in CWF project facilities to remove TN
- Compliance with the TMDL in 2013



# Trading Program Accomplishments



# Trading Program Accomplishments

## 2013 – 2018 Nitrogen Upgrades:

- Under Construction
  - Putnam
  - Hartford
  - Manchester
  - Mattabassett
  - New Haven
  - Middletown Abandonment
  - Plymouth
- Under Design
  - Rocky Hill
  - Norwich
  - Farmington
- In Planning
  - Killingly
  - Sprague



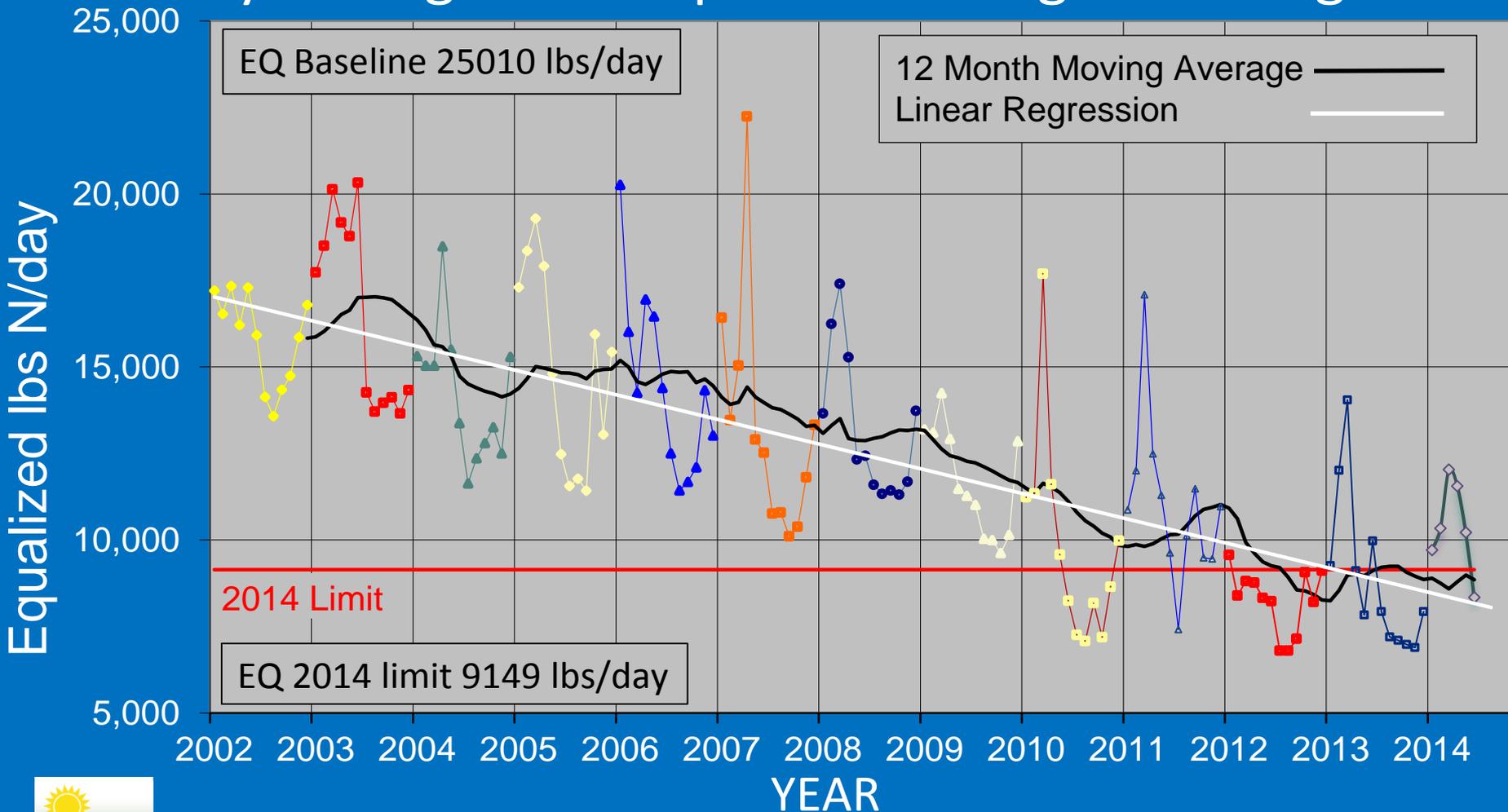
# Trading Program Accomplishments

## Cost of a Credit 2002 - 2013

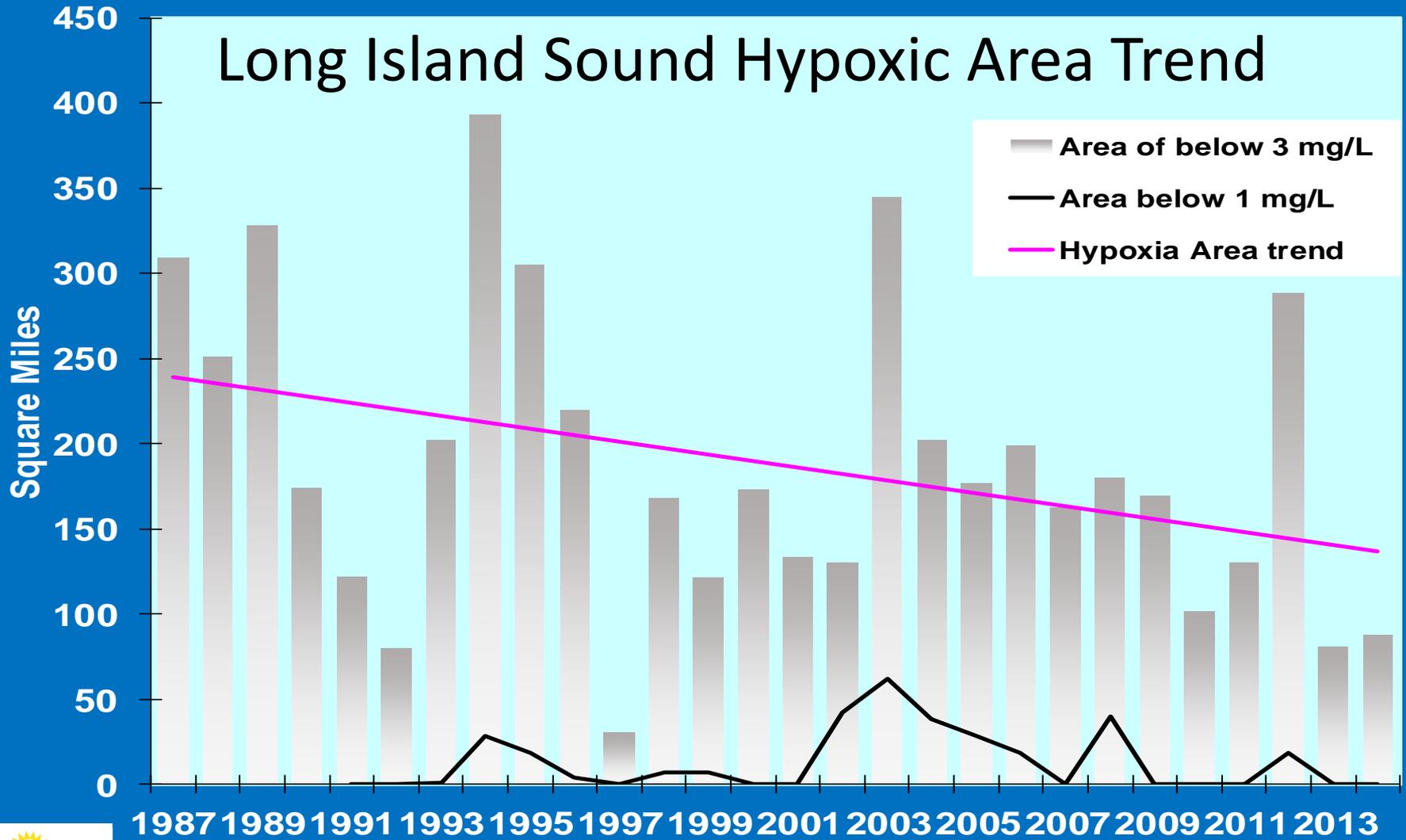


# Trading Program Accomplishments

## Monthly average total equalized nitrogen loading to LIS

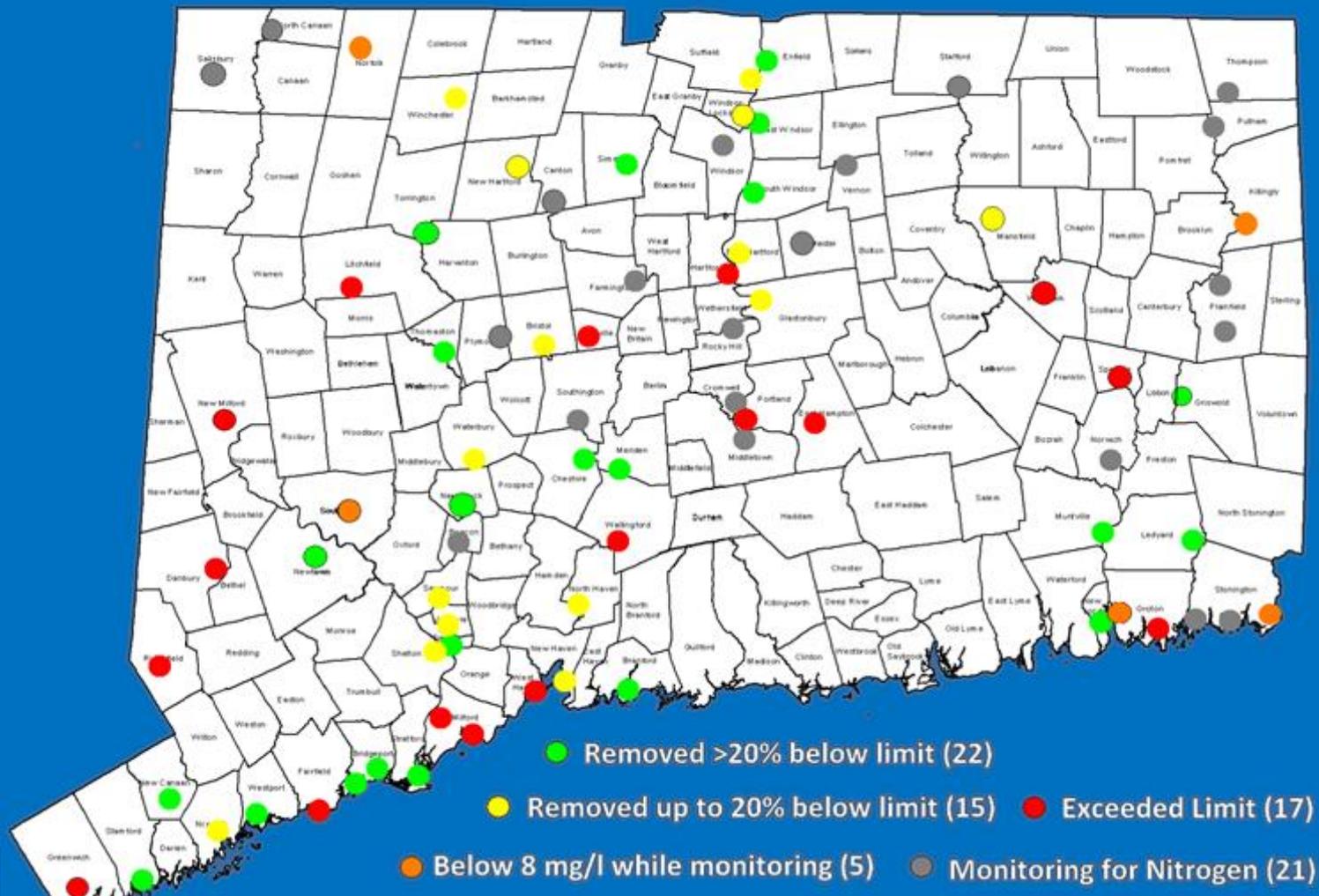


# Trading Program Accomplishments



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Actual Average (2007 – 2012)



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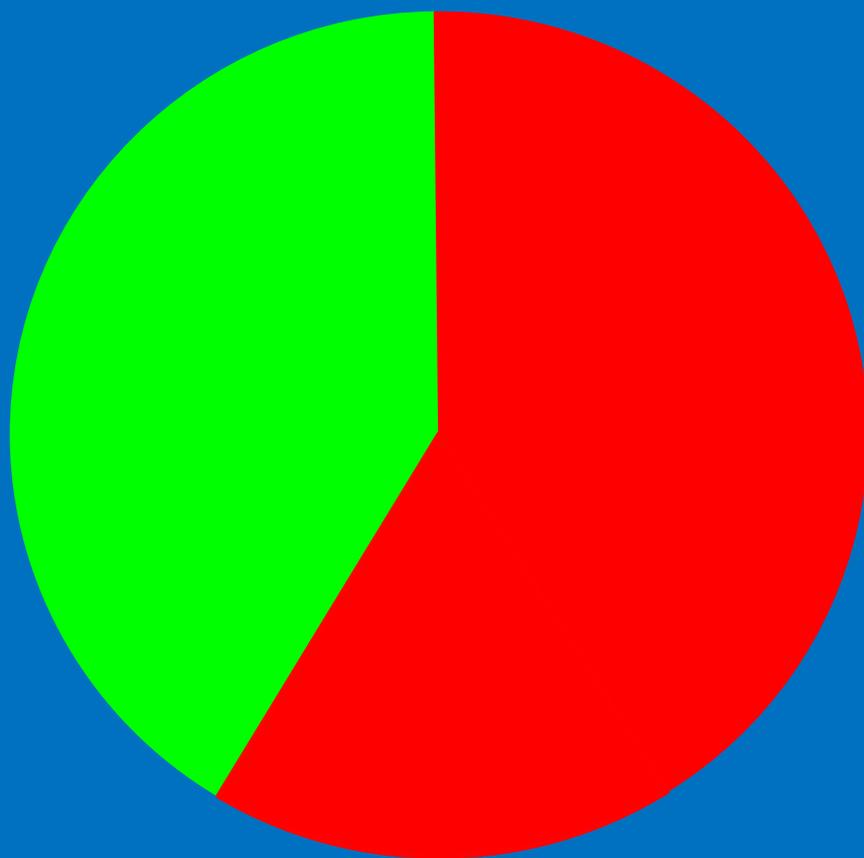
# Near-term Goals of the Trading Program

- Continue to maintain compliance with TMDL
  - Encourage optimized denitrification at WWTPs
  - Continue efficient use of resources & funding
  - Continue support of data collection
- Continue utilization of General Permit
  - Renewal coming due at the end of 2015
- Maintain Options for future TMDL compliance
  - Continue to incentivize upgrades through 2018
- Move the trading program to self-sufficiency



# Near-term Goals of the Trading Program

2013



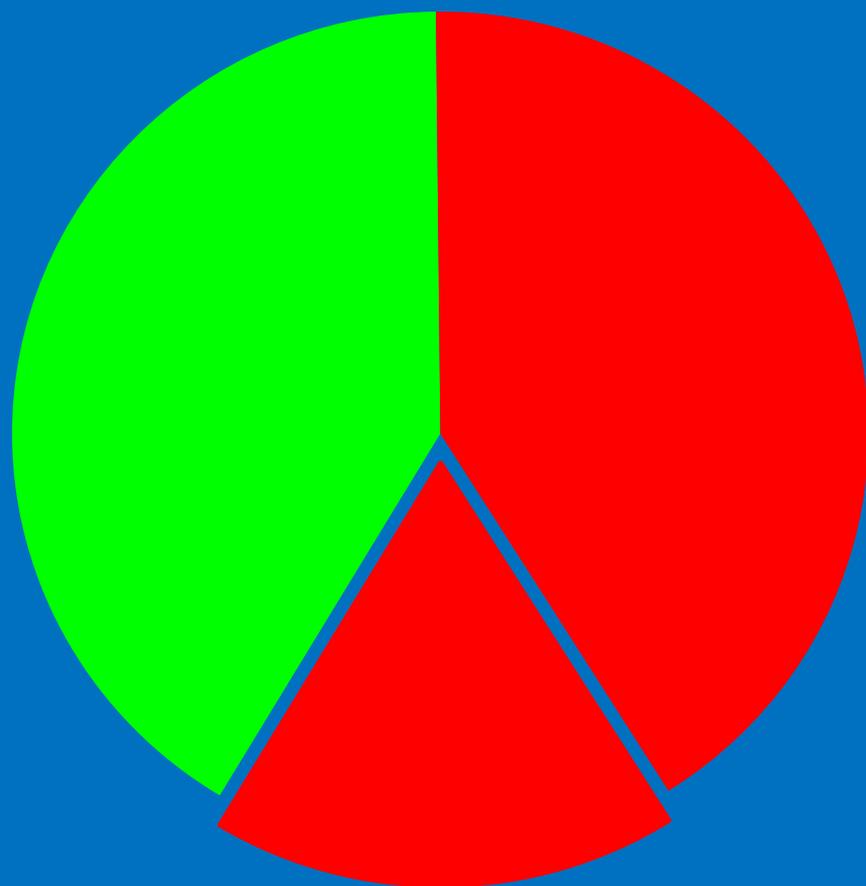
■ Buyer's credits needed

■ Sellers's credits available



# Near-term Goals of the Trading Program

2013



■ Buyer's credits needed

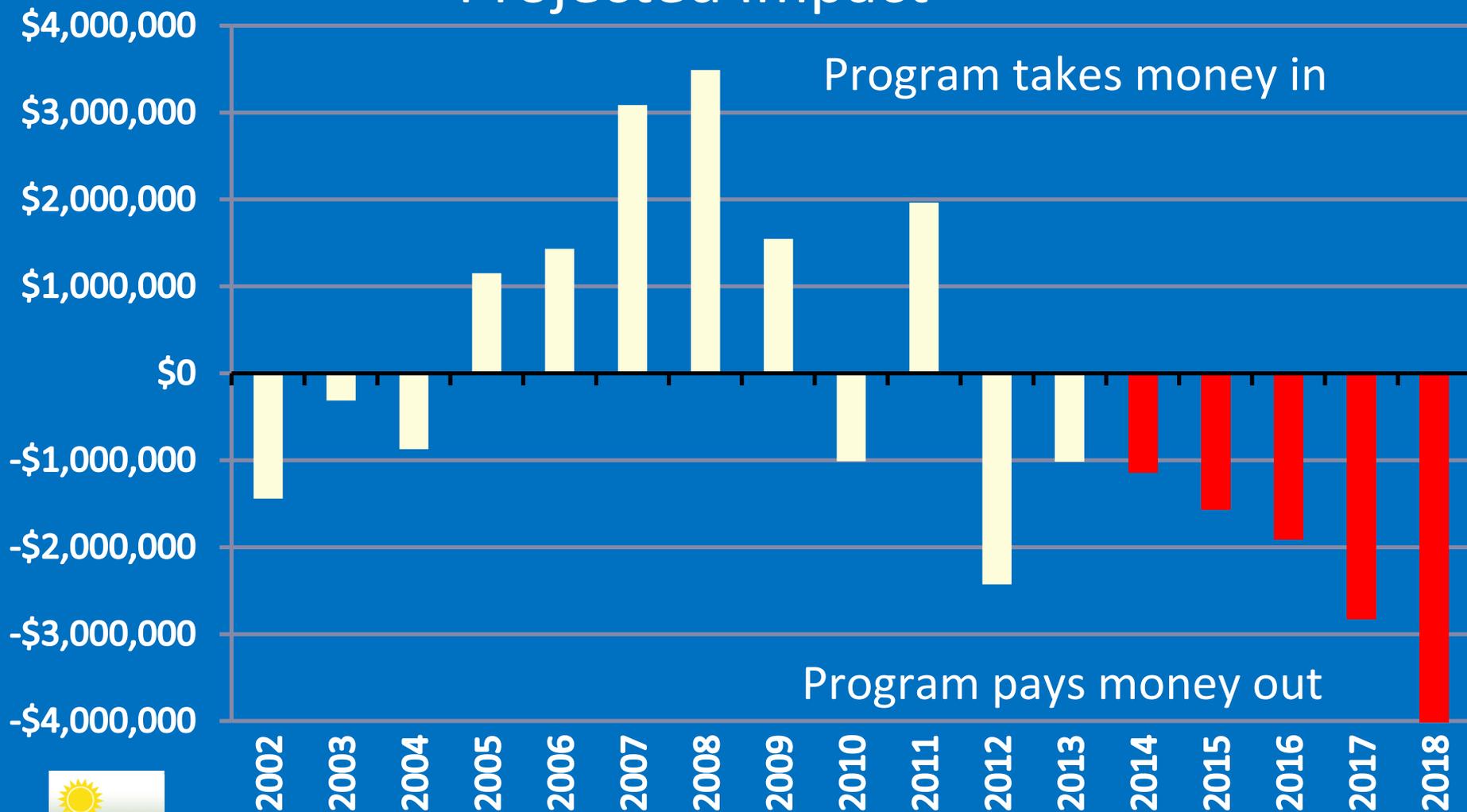
■ Sellers' credits available

■ Trading account subsidy



# Near-term Goals of the Trading Program

## Projected Impact



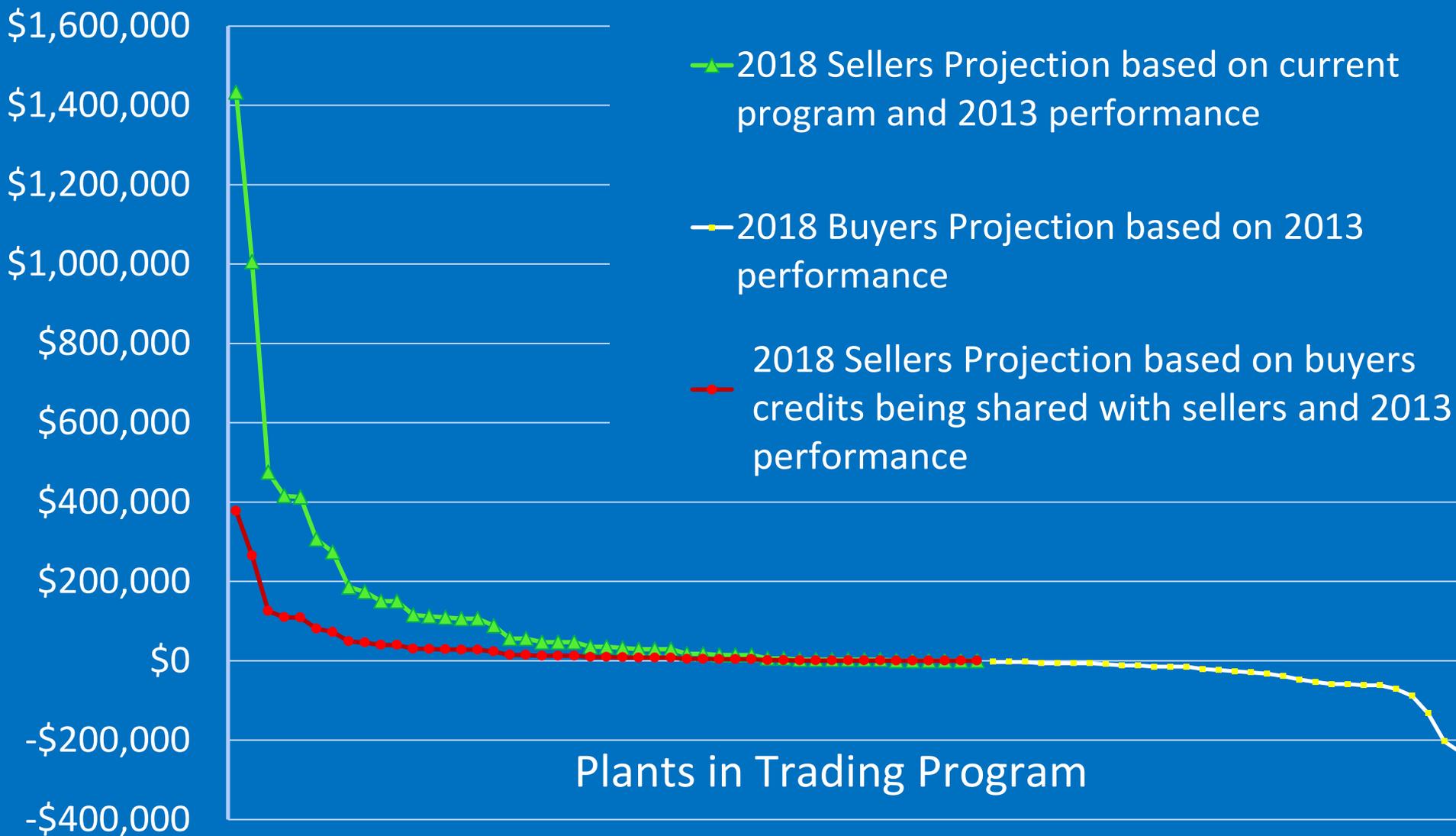
# Near-term Goals of the Trading Program

## Self-sufficient scenarios evaluated

- Discontinue the trading program
- Drop low producing sellers
- Drop inefficient sellers
- Buyers buy all of the credits produced
- Buyers buy the credits they need to meet their General Permit limit and those payments are shared by the sellers



# Proposed self-sufficiency scenario



# Next steps

- Legislative changes
- Public participation



- Questions ?

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