Phase 6 Watershed Model Inputs

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Phase 6 Watershed Model Inputs

- 1985 – 2013
- Manure + Fertilizer + Bio-solids
  - Application rates, timing, location by nutrient species
- Wastewater discharges
  - significant + non-significant, municipal + industrial
- Septic fluxes
- CAFO/AFO loads
- Crop uptake
- Crop cover, detached sediment storage
- Nitrogen fixation routine
- Landuses acres + calibration LU loading rates
  - Agriculture + Developed + Forest
- BMP implementation levels

Phase 6 Watershed Model Inputs

- Quality of the data submitted for initial Phase 6 calibration was highly variable among jurisdictions and sources within jurisdictions

Phase 6 Watershed Model Inputs

- Possible sources of a complete record (spatially and through time) of calibration data for the Phase 6 calibration and forward:
  - 1st = data from jurisdictions
  - 2nd = methods for defaults from jurisdictions ⇒ WQGIT Workgroup decisions
  - 2nd to last = CBPO methods
  - Last = No data

Phase 6 Watershed Model Inputs

- Multitude of suggestions, direction, decisions from Water Quality GIT + its workgroups:
  - Agriculture Workgroup
  - BMP Expert Panels
  - BMP Verification Committee
  - Federal Facilities Workgroup
  - Forestry Workgroup
  - Land Use Workgroup
  - Milestones Workgroup
  - Trading and Offsets Workgroup
  - Urban Stormwater Workgroup
  - Wastewater Treatment Workgroup
  - Watershed Technical Workgroup

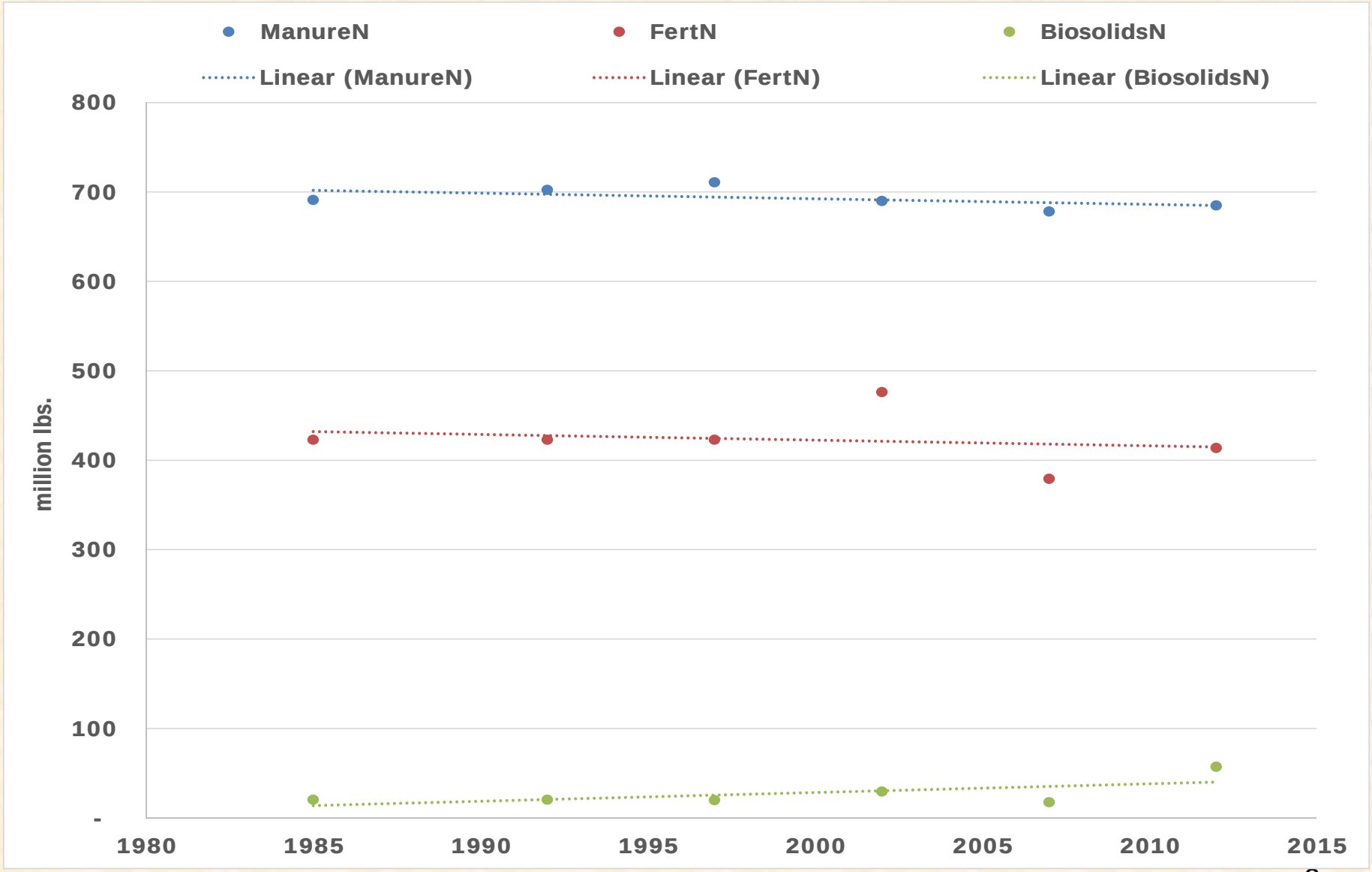
Phase 6 Watershed Model Inputs

- For manure + fertilizer + bio-solids applications to agricultural lands
  - Much credit to Agricultural Modeling Subcommittee, including coordination and chair

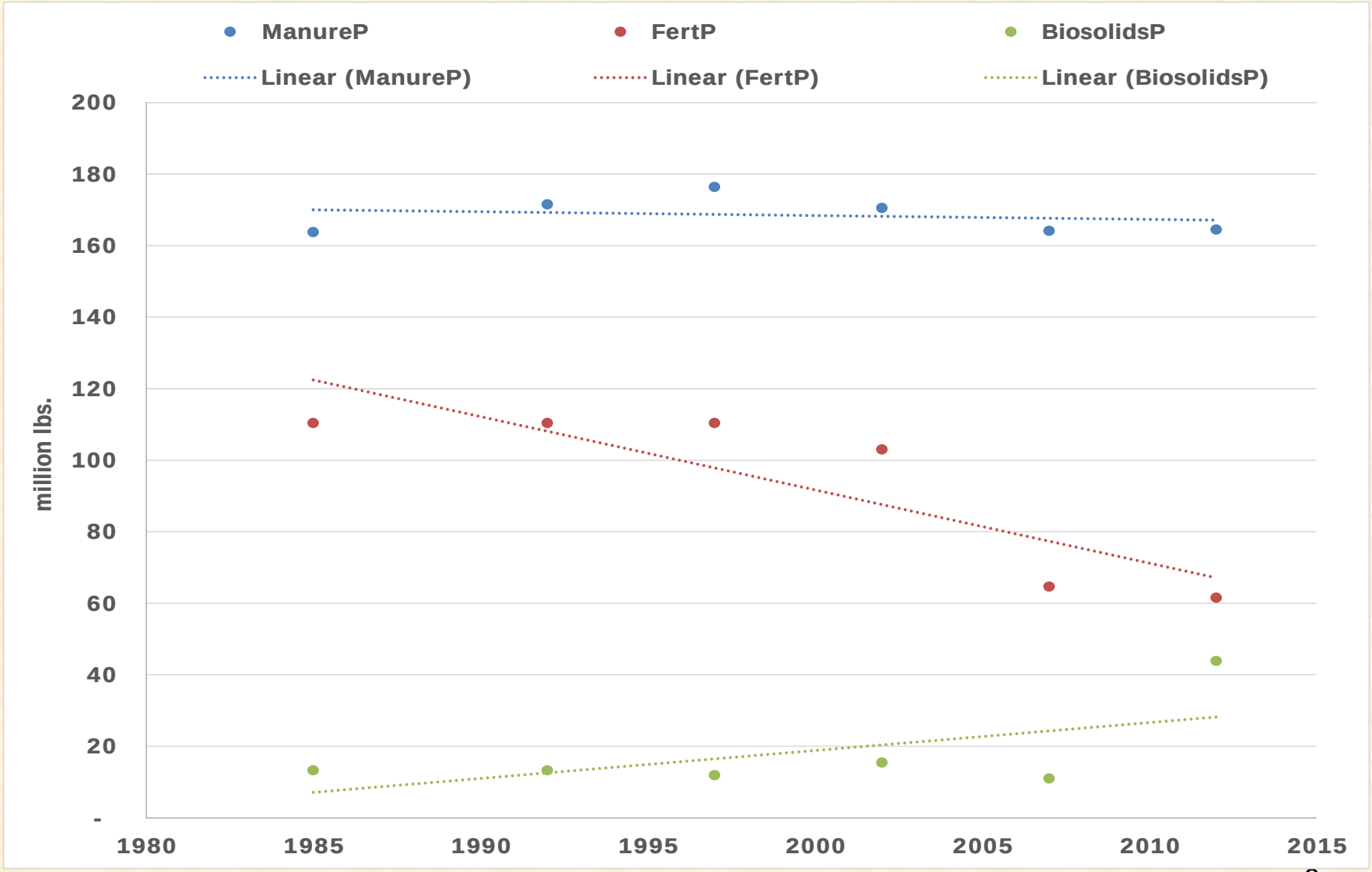
Phase 6 Watershed Model Inputs

- Fertilizer, manure and bio-solids inputs to the model require:
  - Location of application to the land
    - Down to county level
  - Landuse type the nutrients are applied to
    - Crops + Pasture
  - Application rate = mass of each species of nutrients divided by landuse acre
    - Species are TN = NH3, Organic N, NO3
    - Species are TP = PO4, Organic P
  - Timing of application
    - By month
    - Over the 1985 – 2013 calibration period

Mass of Nitrogen from Manure, Agriculture Chemical Fertilizer and Bio-solids (CB Watershed, 1985-2012)



Mass of Phosphorus from Manure, Agriculture Chemical Fertilizer and Bio-solids (CB Watershed, 1985-2012)



Phase 6 Watershed Model Inputs
BMPs

- 300+ unique practice names available for reporting through NEIEN
  - About 50 unique BMP names available for conservation plans alone
- These lump into 200+ more-inclusive BMP categories in Scenario Builder across the agricultural, urban, septic, and natural sectors
  - 90+ individual cover crop BMPs available in the cover crop group alone
- Wastewater controls across significant + non-significant facilities, municipal + industrial.

Phase 6 Watershed Model Inputs
BMPs

- BMP historic record should cover 1985 – 2013
  - Emphasis was on 2000 – 2013
  - Need for comprehensive record versus verification
- Quality of the data submitted for initial Phase 6 calibration was highly variable among jurisdictions and sources within jurisdictions

Phase 6 Watershed Model Inputs
BMP Expert Panels Underway

- Phase 5 and 6 Nutrient Management
- Manure Technologies
- Urban Tree Cover
- Floating Wetlands
- Street Sweeping
- Algal Flow-Way Technologies
- Advanced Onsite Systems
- Wetlands
- Cover Crops
- Conservation Tillage
- Manure Injection/Incorporation
- AWMS

Phase 6 Watershed Model Inputs

- Phase 6 model review period begins no later than 1st week of January, 2016
  - Input and output data to the model are available on jurisdiction-specific sites
- Next opportunity for Phase 6 data is (likely, but not guaranteed) April re-calibration $\Rightarrow$ end of March, 2016 submission
- Final data to be submitted Sept. 30, 2016 which includes finalization of methods