

Land to Lake: Agriculture Update

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Defiance Soil and Water Conservation District

June 11, 2015

What is causing the Harmful Algal Blooms in Lake Erie?

25 Theories:

1. Climate change
2. Commodity prices
3. Cropping system
4. Crop nutrient efficiency
5. Ethanol production
6. Fertilizer placement
7. Fertilizer rates
8. Tri-state recommendations
9. Fertilizer source
10. Fertilizer timing
11. RoundUp ready crops
12. Increased soil pH
13. Larger farms
14. Lower levels of sediment in the water
15. Manure
16. Misconceptions about P loss
17. Nitrogen
18. No-till
19. Rental Agreements
20. Products sold to increase soil P solubility
21. Alterations to soil biology
22. Soil testing and analysis
23. Stratification of P
24. Tile drainage
25. Zebra mussels

Ag Practices, Programs & Regulations to Address DRP

- 4R Nutrient Stewardship
- 4R Ag Retailer Certification
- Nutrient Reduction Programs
- Conservation Reserve Programs
- Ag Pollution Abatement Program
- Senate Bill 150: Fertilizer Applicator Certification
- Senate Bill 1: Fertilizer and Manure Application Restrictions

4R Nutrient Stewardship

- Right Fertilizer Source
- Right Rate
- Right Time
- Right Placement



4R Ag Retailer Certification

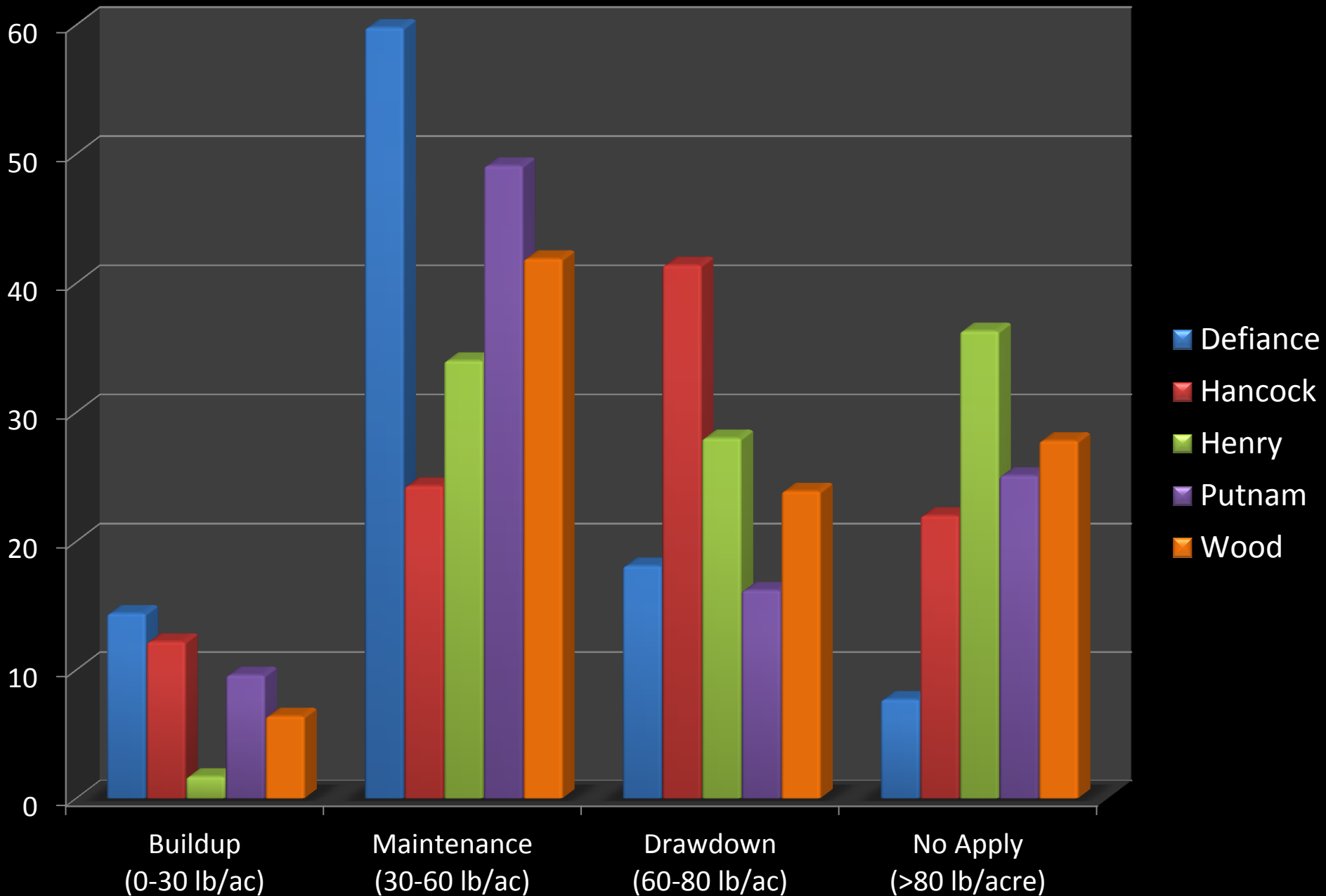
- Consistent, recognized standard for nutrient stewardship in Indiana, Michigan, and Ohio.
- 41 criteria audited annually to maintain certification
 - Recent soil tests
 - Equipment calibration
 - Setbacks from sensitive areas
 - Non-frozen ground applications
- 16 retailers are currently participating

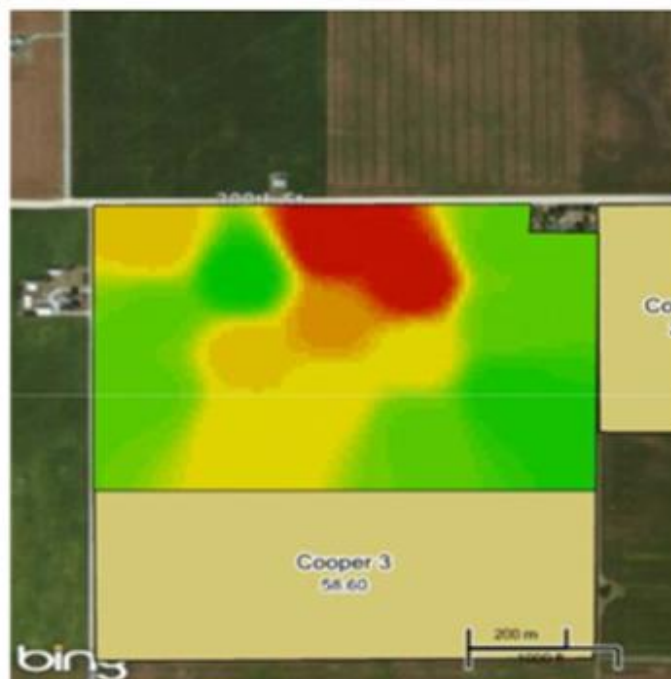


Nutrient Reduction Programs

- Practices
 - Grid soil sampling
 - Variable rate application
 - Over-wintering cover crops
 - Controlled drainage structures
 - Blind inlets
 - Saturated buffers
 - Variable rate fertilizer injection
 - Manure storage and roofing

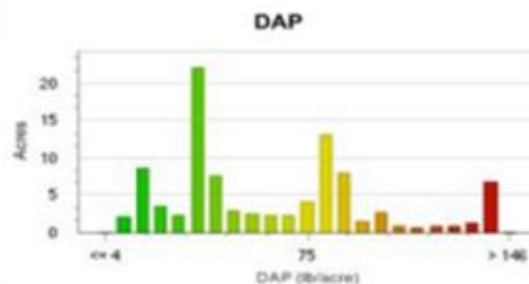
Tri-State Phosphorus Ranges for Corn and Soybeans





Area: 95.83 ac
County: Logan, IL
Township:
Twp Rng Sec: T R S
Directions:

Application Notes:



Product Summary:

Operation: Product Recommendation
Product: DAP

Area (acres)

Total: 95.83

App: 95.83

Rate (pounds/acre)

Switch Setpoint: 0.00

Max Setpoint: 0.00

Min Setpoint: 0.00

Subtractor: 0.00

Multiplier: 0.00

Out of Field: 0.00

Default Rate: 0.00

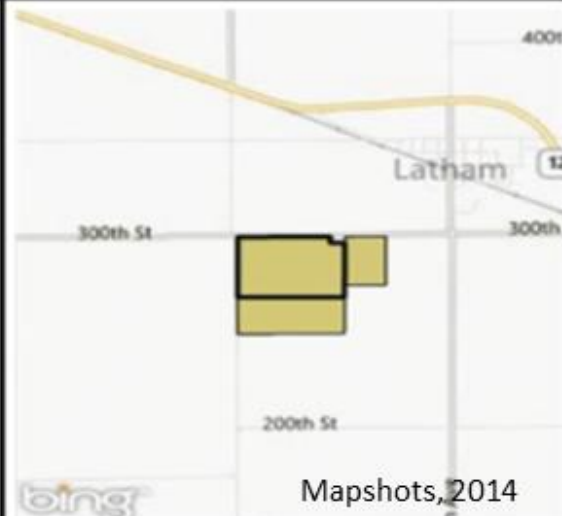
Average (total): 61.96

Average (app): 61.96

Minimum: 4.36

Maximum: 145.65

Quantity: 2.97 (tons)



Cover Crops



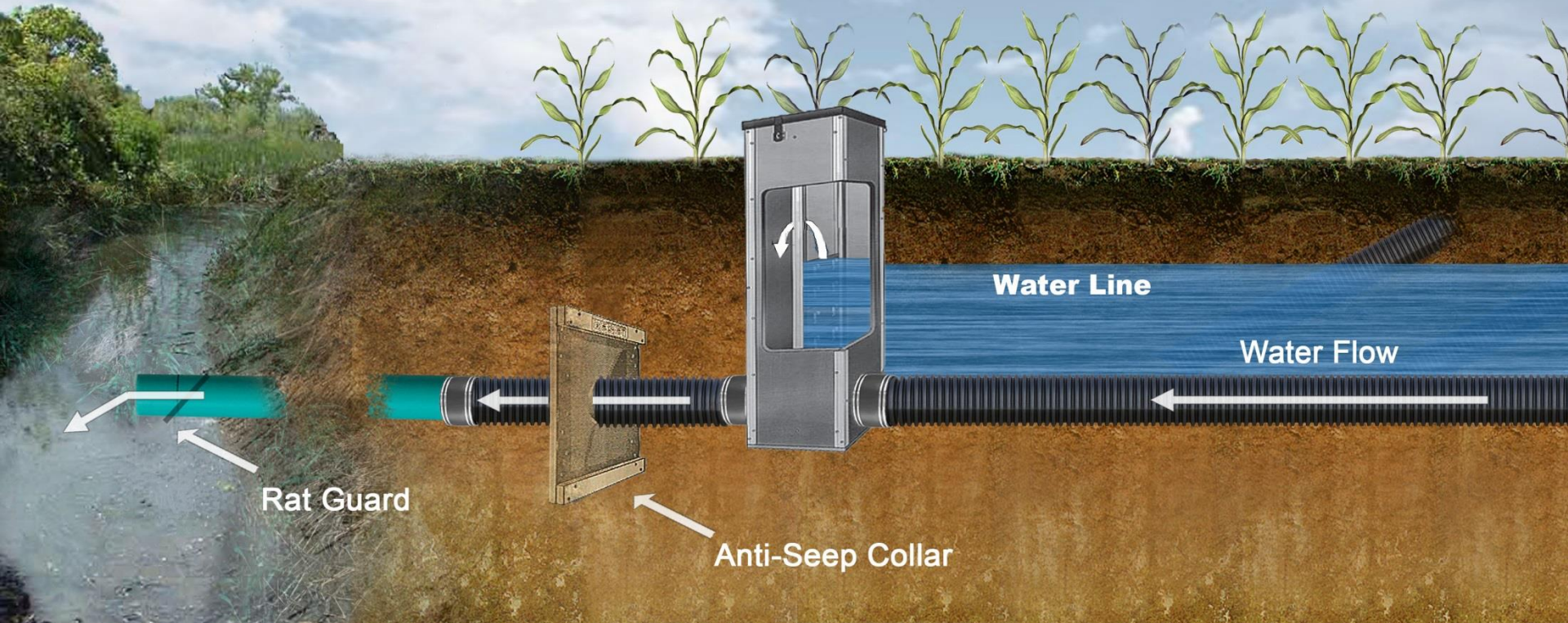
Dwarf Rapeseed and Cereal Rye



Austrian Winter Peas and Radish

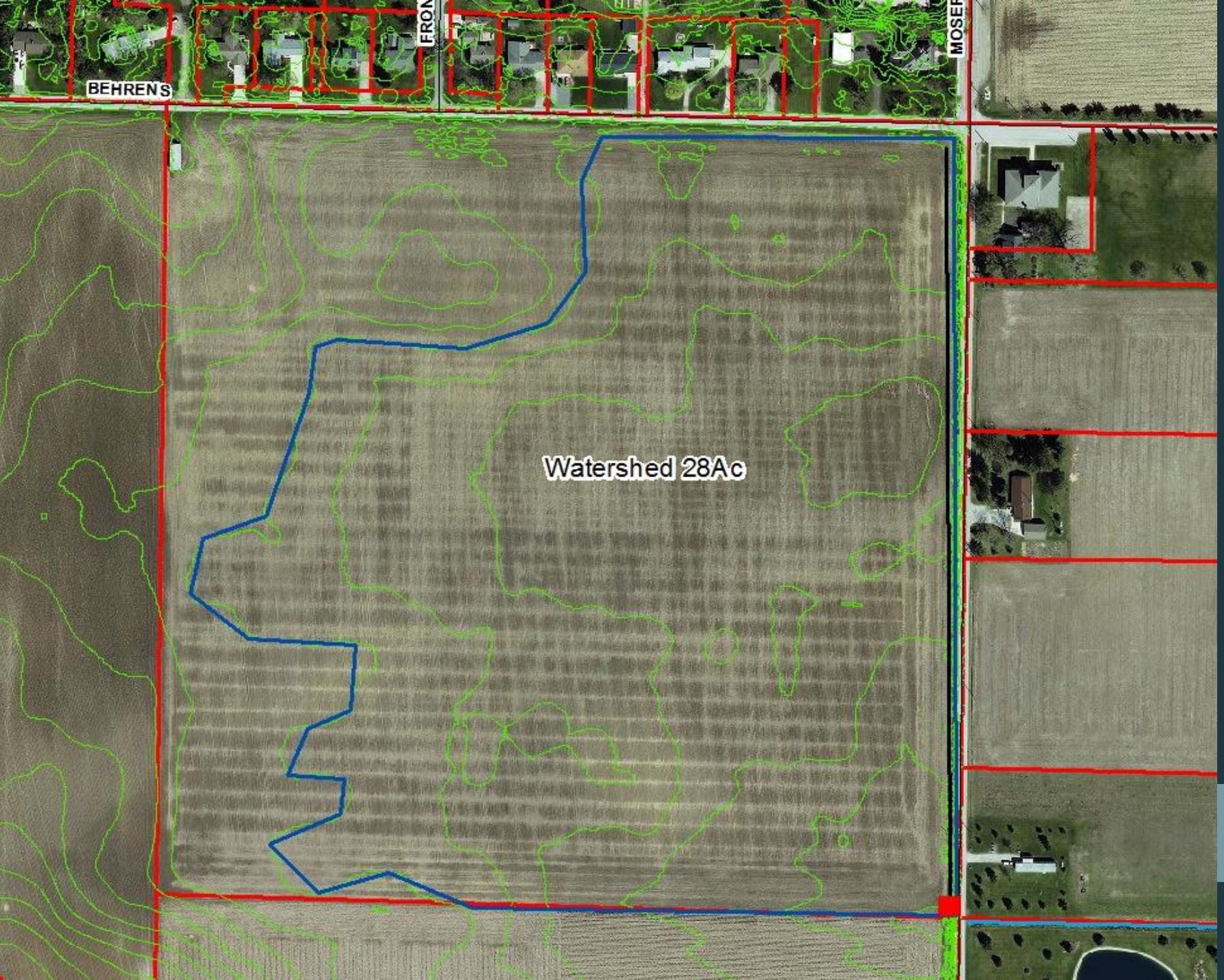
TYPICAL DRAINAGE WATER MANAGEMENT INSTALLATION

Inline Water Level Control Structure



Controlled Drainage Structures





Saturated Buffer

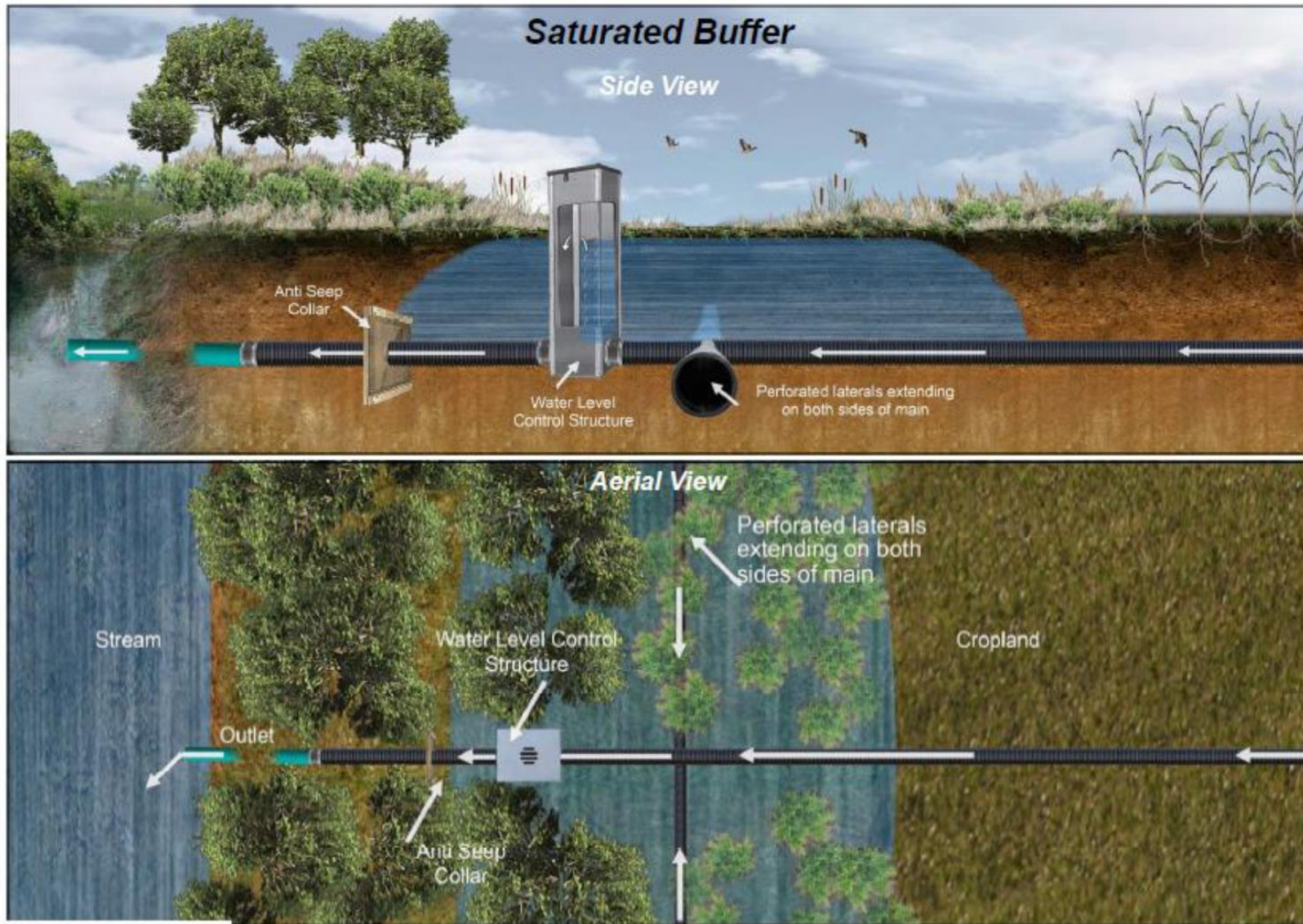


Photo courtesy Agri Drain Corp.

Blind Inlets



Phosphorus Injection

- Starter fertilizers
- Strip till
- Modified drills
 - Simultaneous cover crop seeding
- Anhydrous ammonia bars



Kuhn, 2014



Charles St

Pleasant St

Holgate Ave

Park Ave

Division

424

Kentner St

Asa St

Harrison Ave

Pierce St

Davidson St

Kahllo St

111

Frank St

Goltax St

Linden St

Allen St

Deatrick St

Gorman St

Scanton St

Gedar St

Wilhelm St

Baltimore St

West St

Cherry St

Elm St

Locust St

Riverfront Dr

4

earth

Ag Pollution Abatement Program



Senate Bill 150

- Requires fertilizer applicator certification by ODA
 - Must be certified no later than September 30, 2017
 - N, P, and K
 - >50 acres
- Emphasis on 4R Nutrient Stewardship
- Producers must keep application records for three years
- Voluntary completion of nutrient management plans

Senate Bill 1

- Prohibits commercial fertilizer (N or P) and manure application in WLEB under following circumstances:
 - On snow-covered or frozen soil
 - When top two inches of soil are saturated from precipitation
 - When local weather forecast indicates greater than 50% chance of precipitation exceeding one inch in a 12-hour period (commercial fertilizer)
 - When local weather forecast indicates greater than 50% chance of precipitation exceeding ½ inch in a 24-hour period (manure)
 - Exceptions:
 - Fertilizer/manure injected into the ground
 - Fertilizer incorporated within 24 hours
 - Fertilizer applied onto a growing crop
- Effective July 1, 2015

Questions

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