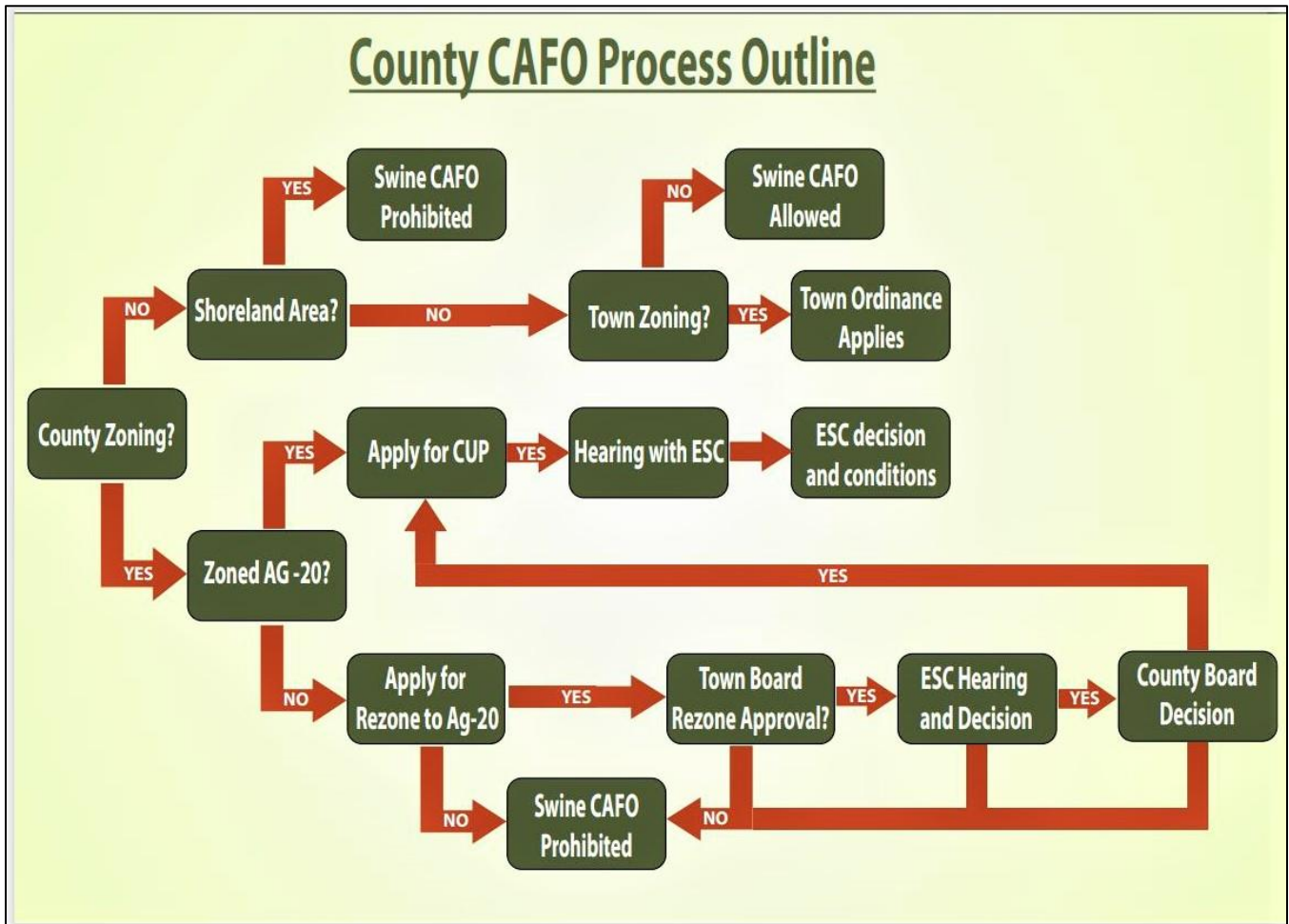


**TOWN OF LUCK  
 POLK COUNTY, WISCONSIN  
 ORDINANCE NO. \_\_\_\_\_  
 CONCENTRATED ANIMAL FEEDING OPERATIONS (CAFO) ORDINANCE  
 DRAFT APPENDIX B.**

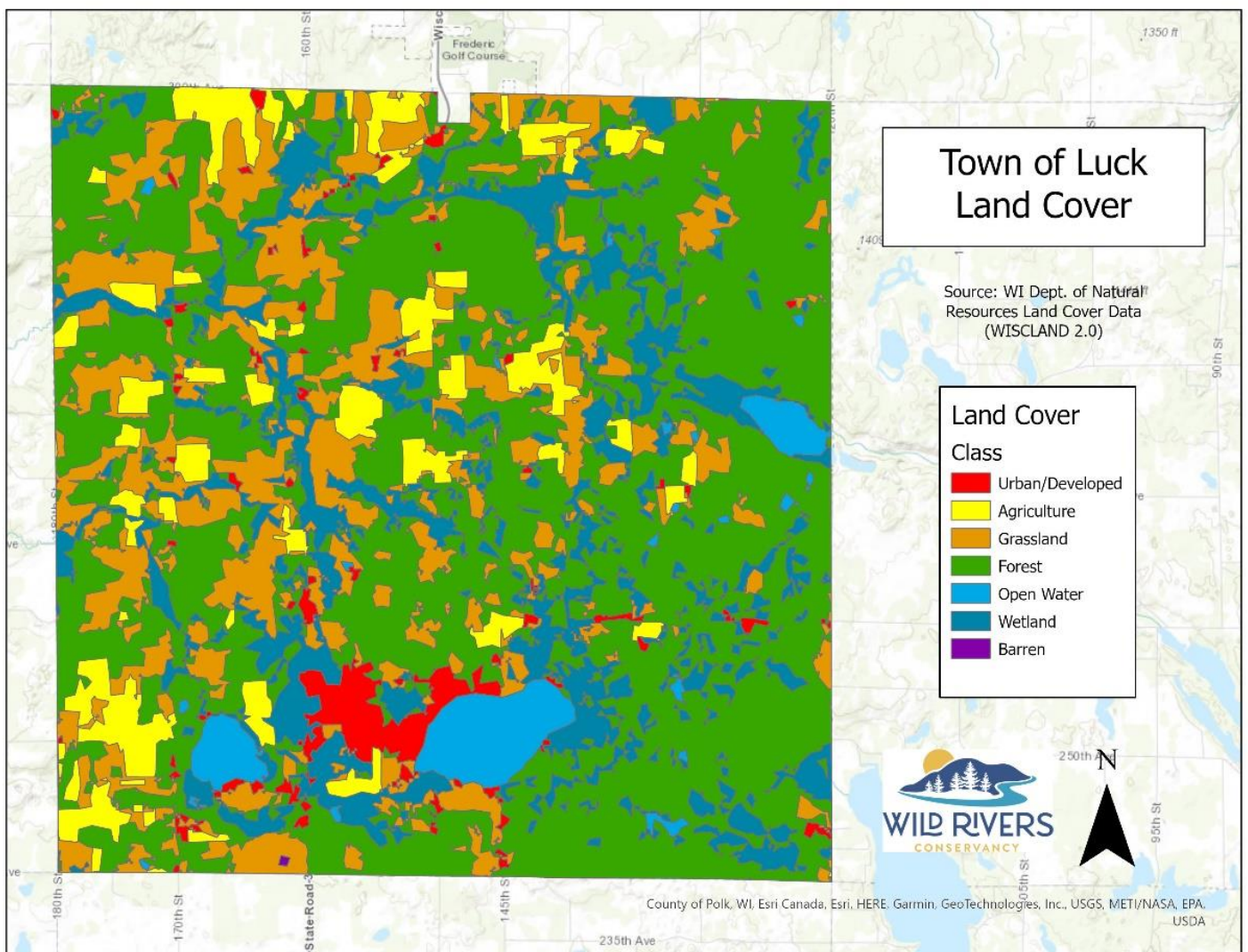
**Figure 1. Polk County Swine CAFO ordinance Flow Chart - Local Finding 2**



## Map 1. Land Cover - Local Finding 5

Data for the Town of Luck extracted from WiscLand 2 shows the approximate land cover as follows:

Land Cover - WiscLand (NOT land use)	Percent
Agriculture	8%
Barren	0%
Forest	52%
Grassland	19%
Open Water	3%
Urban/Developed	3%
Wetland	15%

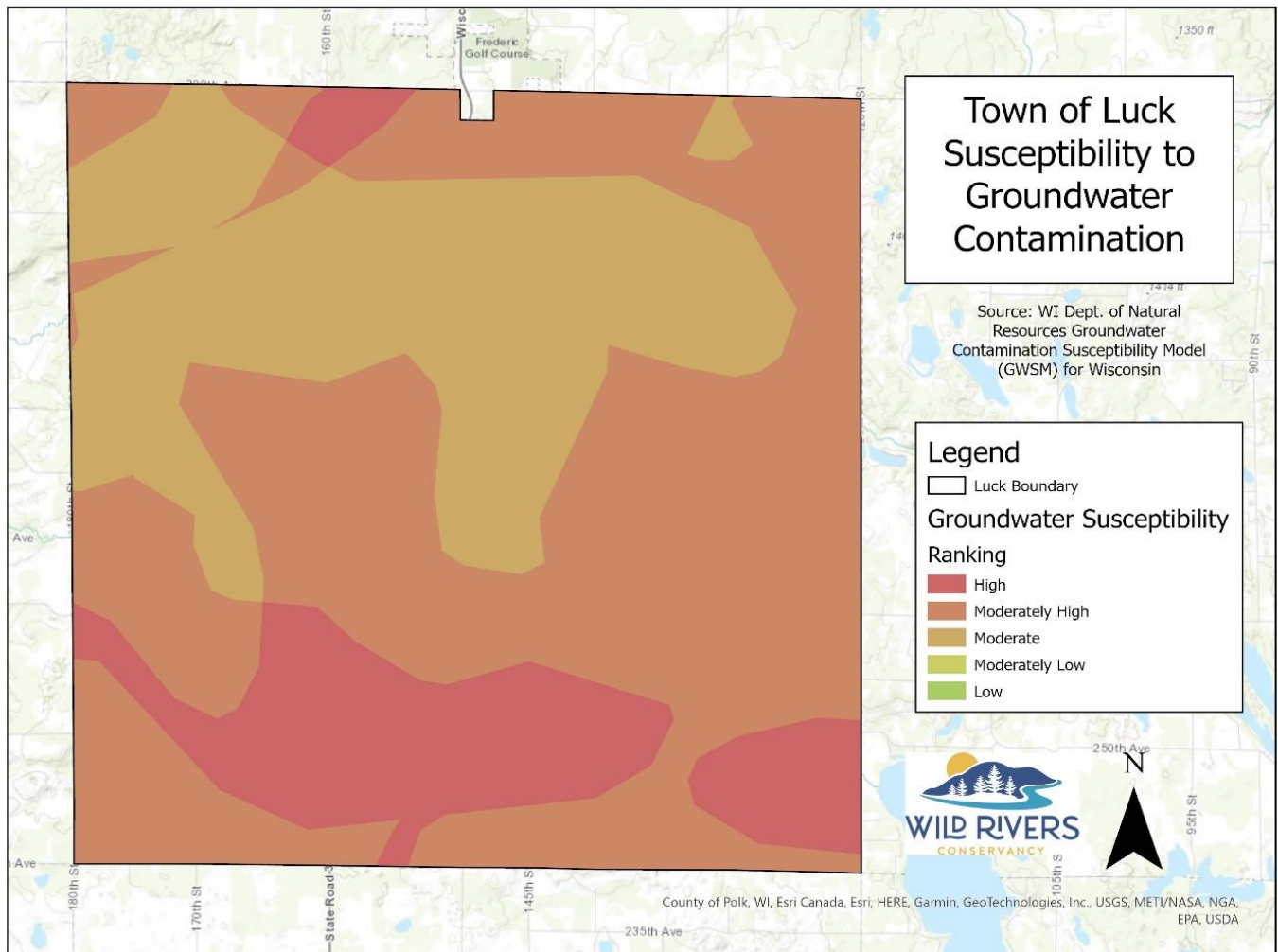


Source: Wisconsin Land Cover Data (WISCLAND 2.0): <https://dnr.wisconsin.gov/maps/WISCLAND>

## Map 2. Groundwater Susceptibility to Contamination Model - Local Finding 8

The Town has a vulnerable landscape with shallow soils, high water table and gravel formations that make large areas susceptible to groundwater pollution. Five factors contribute to groundwater susceptibility, including: type of soil, bedrock and materials between soil and bedrock; depth to bedrock; and depth to groundwater. Data from the Department of Natural Resources Groundwater Susceptibility Model was divided into five evenly spread categories ranging from high to low. Of the town’s total acreage approximately 16% is ranked high susceptibility to contamination, 55% moderately high, 29% moderate, 0% moderately low, and 0% ranked low susceptibility.

Groundwater Susceptibility Ranking	
Ranking	Percent of Total
High	16%
Moderately High	55%
Moderate	29%
Moderately Low	0%
Low	0%



Source: Wisconsin Department of Natural Resources (DNR). (2008).

<https://geodata.wisc.edu/catalog/CF9E8298-63E5-43C7-9E8A-DEDCB93C1519>

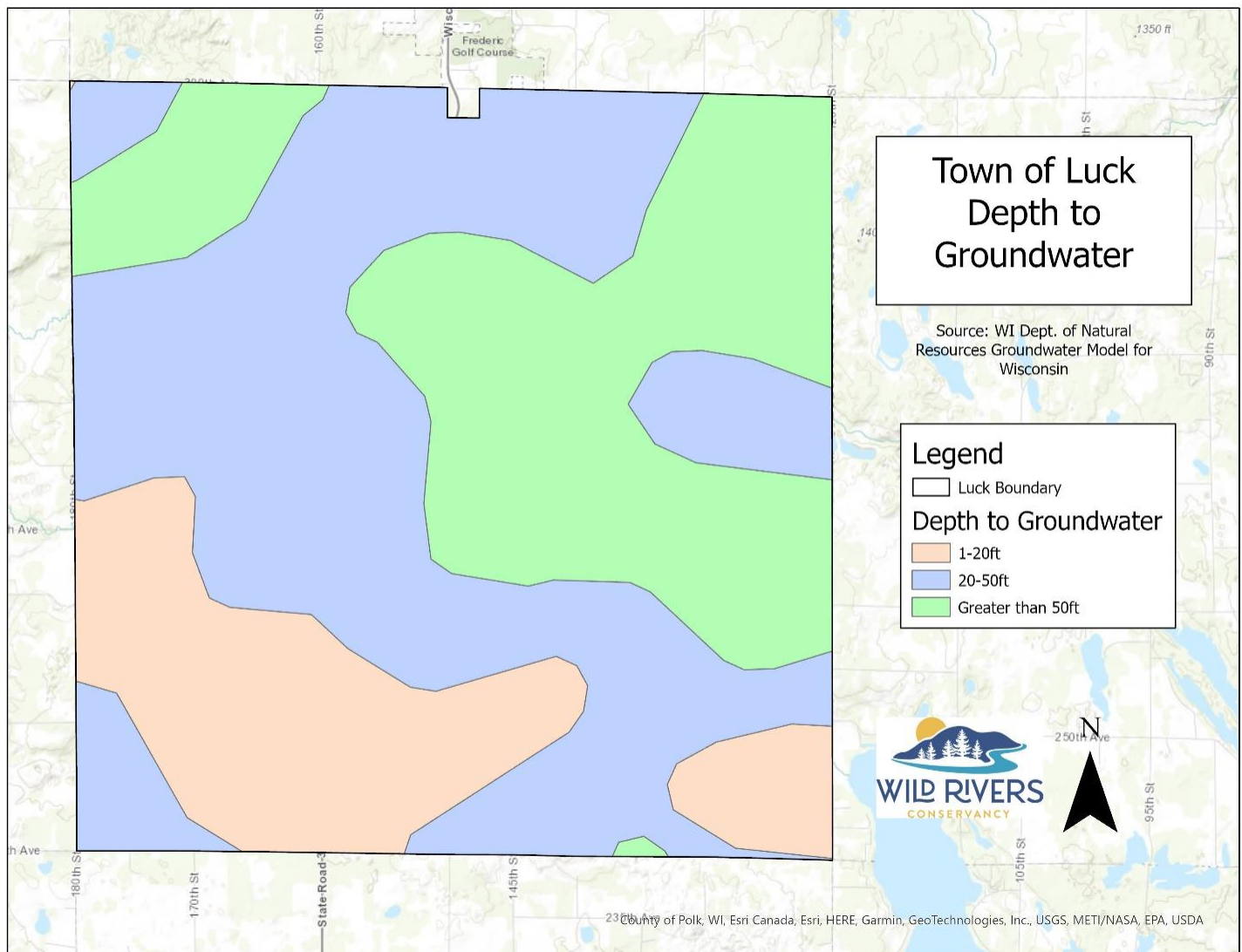
Developed by the DNR, the US Geological Survey, the Wisconsin Geological & Natural History Survey, and the University of Wisconsin – Madison in the mid-1980s.



### Map 3. Depth to Groundwater - Local Finding 9

Approximately 19% of Luck’s total acres have groundwater within 20 feet of the land surface. Approximately 67% is within 50 feet of the land surface. Approximately 33% is over 50 feet from land surface.

Depth to Groundwater	
1-20ft	19%
20ft - 50ft	48%
Over 50ft	33%

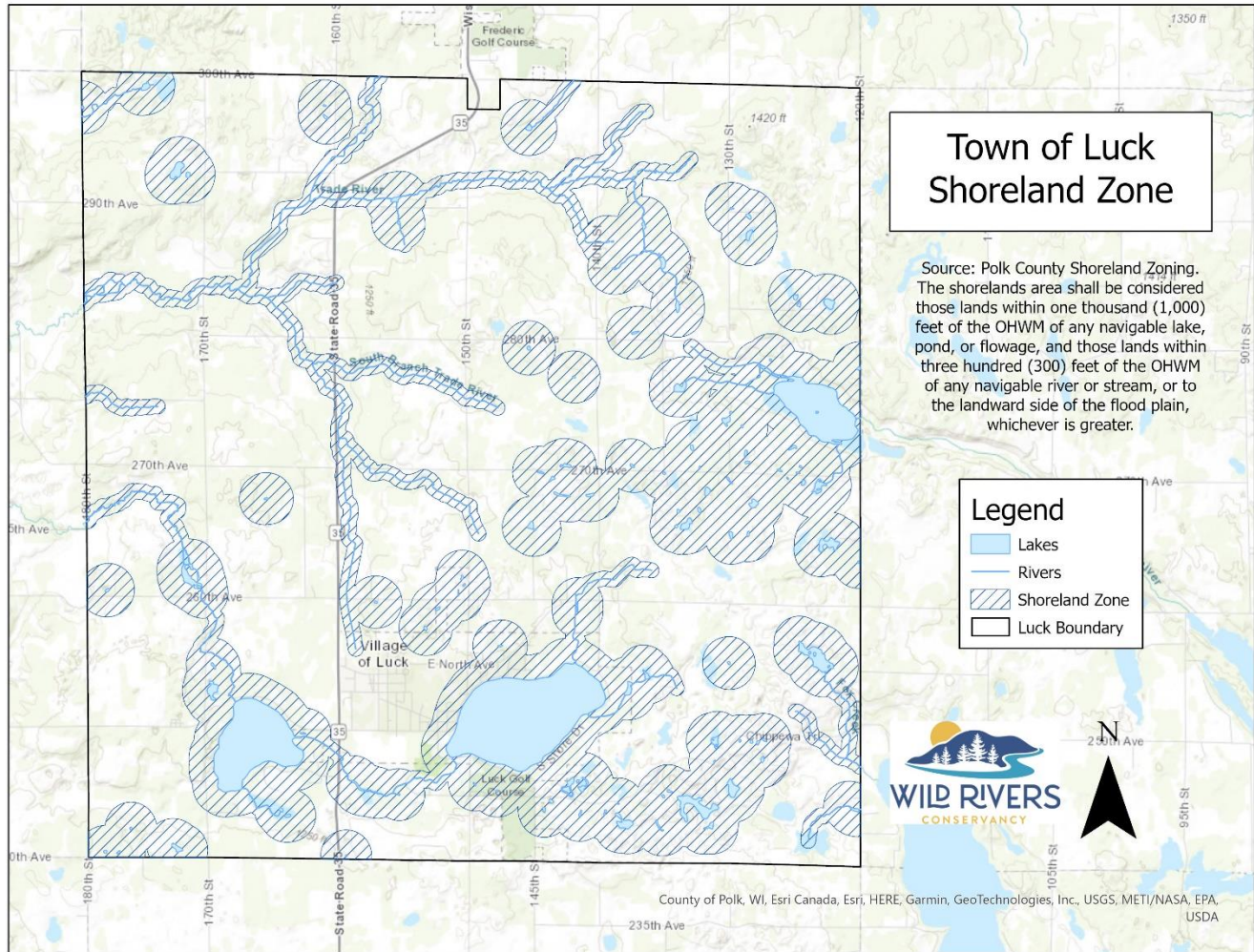


Source:

Wisconsin DNR Groundwater Susceptibility Model, Depth to Groundwater: <https://data-wi-dnr.opendata.arcgis.com/datasets/wi-dnr::gcs-m-water-table-depth/about>

## Map 4. Shoreland Zone Polk County - Local Finding 10

Approximately 40% of the Town of Luck is within the shoreland zone.



Source: Polk County Shoreland Zoning. The shorelands area shall be considered those lands within one thousand (1,000) feet of the OHWM of any navigable lake, pond, or flowage, and those lands within three hundred (300) feet of the OHWM of any navigable river or stream, or to the landward side of the flood plain, whichever is greater.



## Map 5. Fragile Soil Index - Local Finding 11

WSS provides soil data (Soil Survey Geographic Database) and information produced by the National Cooperative Soil Survey. It is operated by the USDA – NRCS and provides access to the largest natural resource information system in the world. Soil surveys can be used for general farm, local and wider area planning.

<https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

### Fragile Soil Index:

Fragile soils are those that are most vulnerable to degradation. They are easily degraded and are highly susceptible to erosion with low resilience. They are characterized as having low organic matter contents, low water-stable aggregates and low soil structure. Fragile soils are generally located on sloping ground, have sparse plant cover and tend to be in arid and semiarid regions. A fragile soil index interpretation was developed to rate soils based on their fragility. The index can be used in conservation and watershed planning to assist in identifying soils and areas with greater vulnerability to degradation.

Of Luck’s total acres:

- 0% Extremely to Highly Fragile
- .3% Fragile
- 31.9% Moderately Fragile
- 61.4% Slightly Fragile
- 0% Not Fragile
- 6.4% Not Rated



### MAP LEGEND

Area of Interest (AOI)	Not rated or not available
<b>Soils</b>	<b>Water Features</b>
<b>Soil Rating Polygons</b>	Streams and Canals
Extremely fragile	<b>Transportation</b>
Highly fragile	Rails
Fragile	Interstate Highways
Moderately fragile	US Routes
Slightly fragile	Major Roads
Not fragile	Local Roads
Not rated or not available	<b>Background</b>
<b>Soil Rating Lines</b>	Aerial Photography
Extremely fragile	
Highly fragile	
Fragile	
Moderately fragile	
Slightly fragile	
Not fragile	
Not rated or not available	
<b>Soil Rating Points</b>	
Extremely fragile	
Highly fragile	
Fragile	
Moderately fragile	
Slightly fragile	
Not fragile	



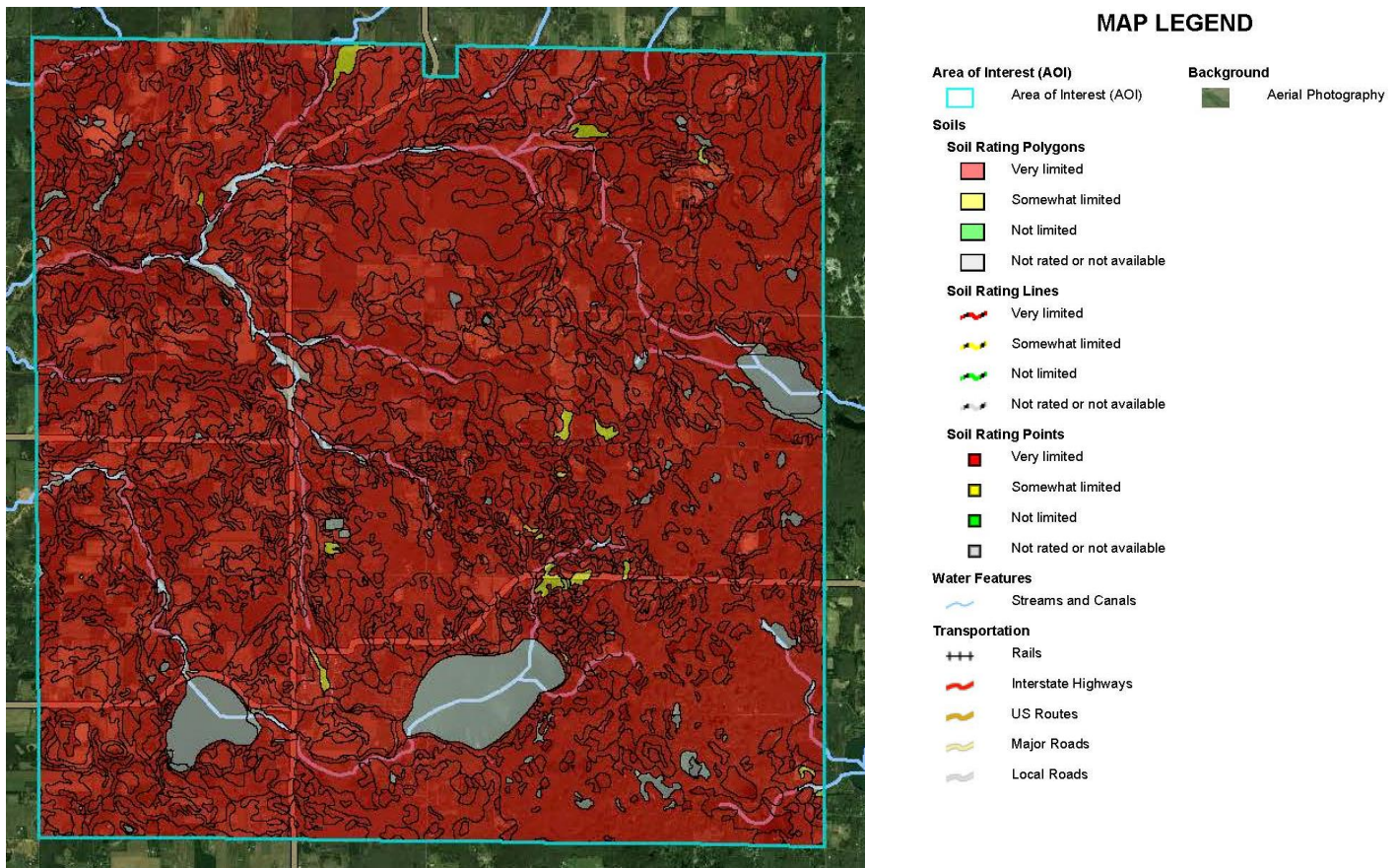
## Map 6. Manure and Food-Processing Waste - Local Finding 12

The application of manure and food-processing waste not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied.

The ratings are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the waste is applied, and the method by which the waste is applied. The properties that affect absorption include saturated hydraulic conductivity (Ksat), depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, and available water capacity. The properties that affect plant growth and microbial activity include reaction, the sodium adsorption ratio, salinity, and bulk density. The wind erodibility group, soil erosion factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

Of Luck's total acres:

- **94.3% Very Limited** – indicates that soil has one or more features that are unfavorable for the specific use. Limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.
- **.6% Somewhat Limited** – indicates that the soil has features that are moderately favorable for specified use. Limitations can be overcome or minimized by special planning, design, or installation.
- **0% Not Limited**
- **5.1% Not Rated**

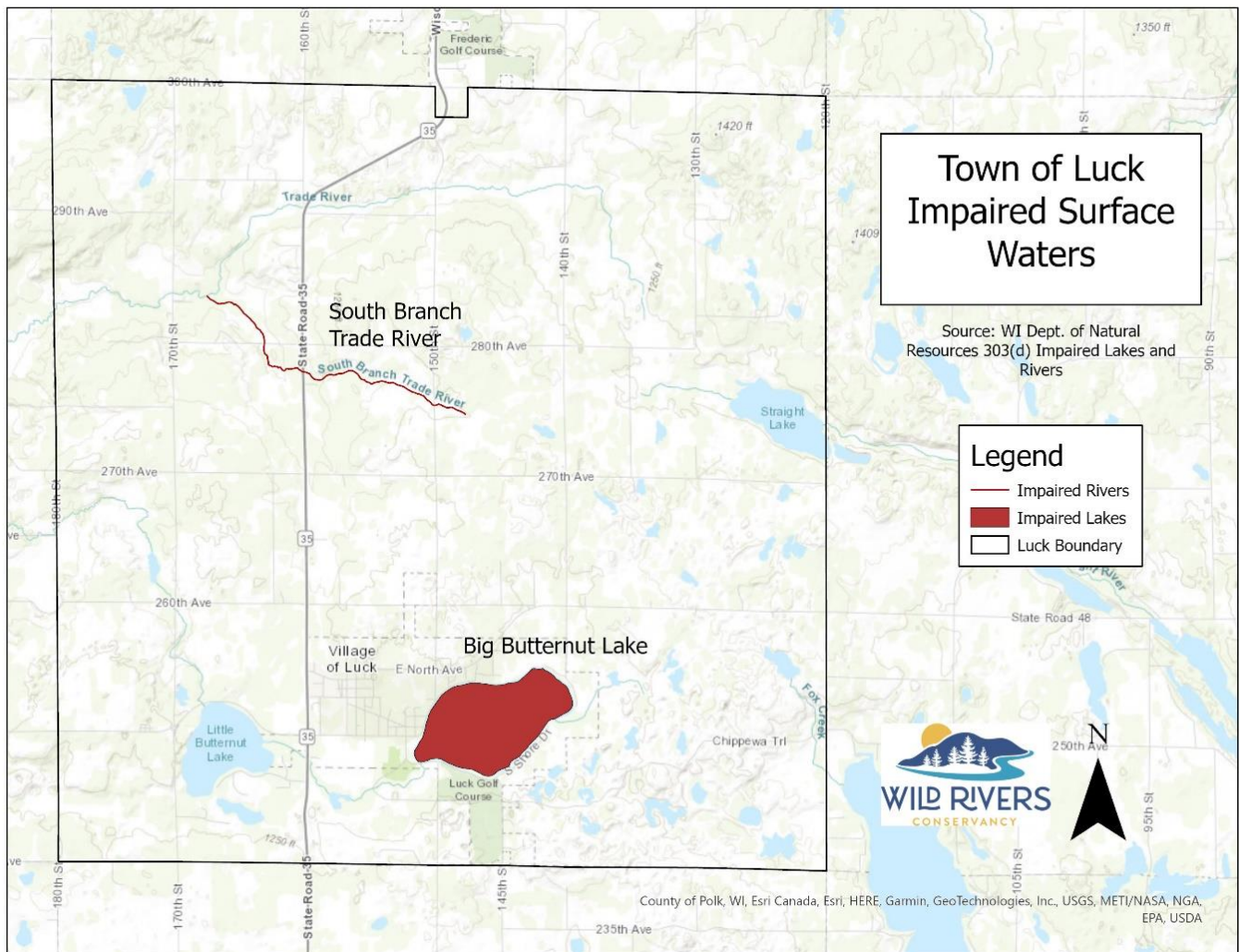


## Map 7. Impaired Waters - Local Finding 15

Excess nutrients from non-point source runoff leads to surface water quality degradation of local lakes and streams. According to the 2012 Lake St. Croix TMDL Implementation Plan, Polk County is the highest contributor of phosphorus runoff in the St. Croix Watershed. Subsequently, it has the greatest phosphorus reduction required by the State of Wisconsin and U.S. Environmental Protection Agency to meet Lake St. Croix TMDL goals. Currently, in the Town of Luck there is one lake and one river listed as impaired for excess phosphorus.

Lakes Impaired for P	Acres
Big Butternut	385

Rivers Impaired for P	Miles
South Branch Trade River	2.5



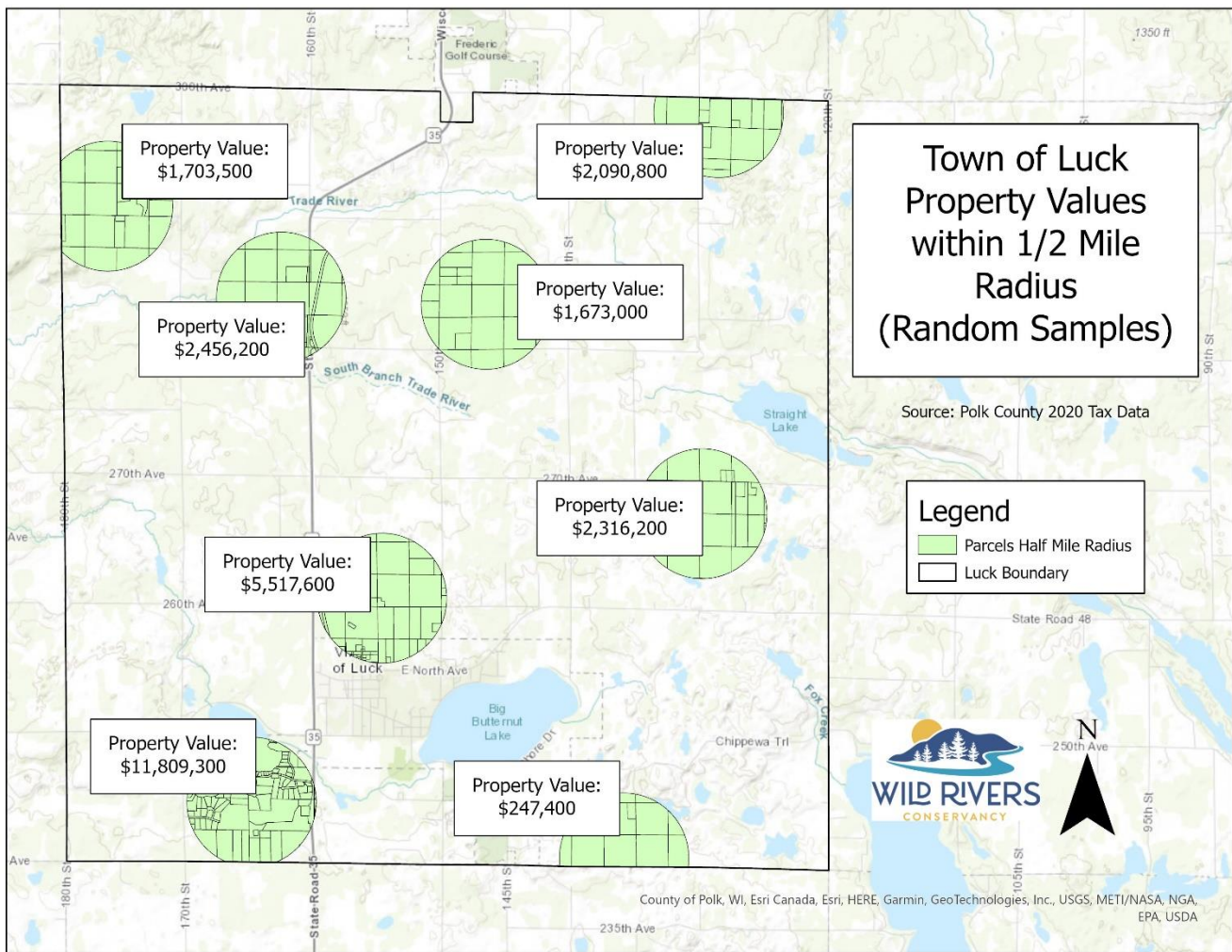
Source:

Wisconsin DNR 303(d) Impaired Lakes 2021: <https://data-wi-dnr.opendata.arcgis.com/datasets/wi-dnr::303d-impaired-lakes-listed/about>

Wisconsin DNR 303(d) Impaired Rivers and Streams 2021: <https://data-wi-dnr.opendata.arcgis.com/datasets/wi-dnr::303d-impaired-rivers-and-streams-listed/about>

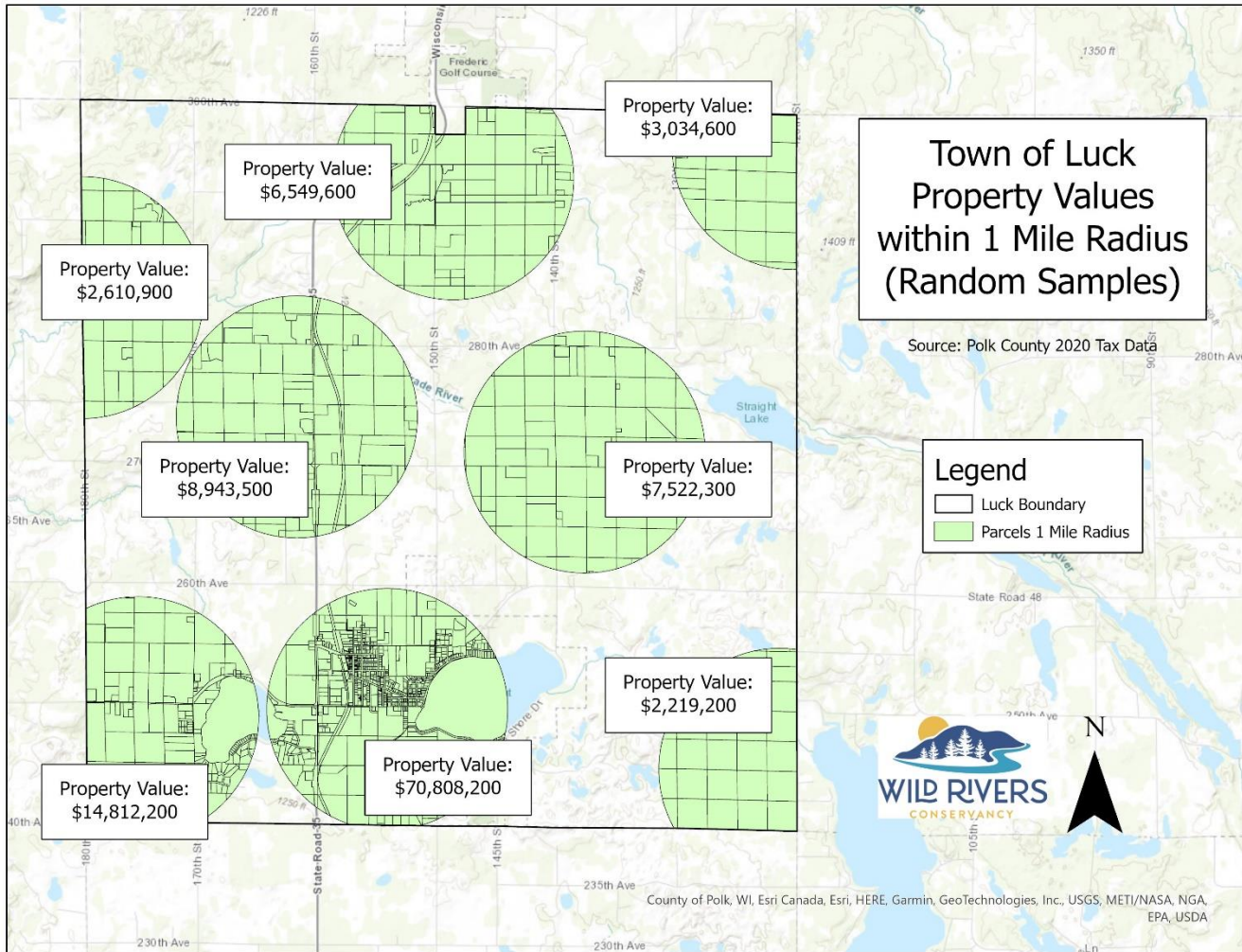


## Map 8. Property Tax Values Within 0.5 mile radius of 8 Randomly Selected Potential CAFO Sites - Local Finding 19



Source: 2020 Wisconsin County Parcel Data – Polk County, WI - <https://www.sco.wisc.edu/parcels/data-county/>

# Map 9. Property Tax Values within 1 mile radius of 8 Randomly Selected Potential CAFO Sites - Local Finding 19



Source: 2020 Wisconsin County Parcel Data – Polk County, WI - <https://www.sco.wisc.edu/parcels/data-county/>