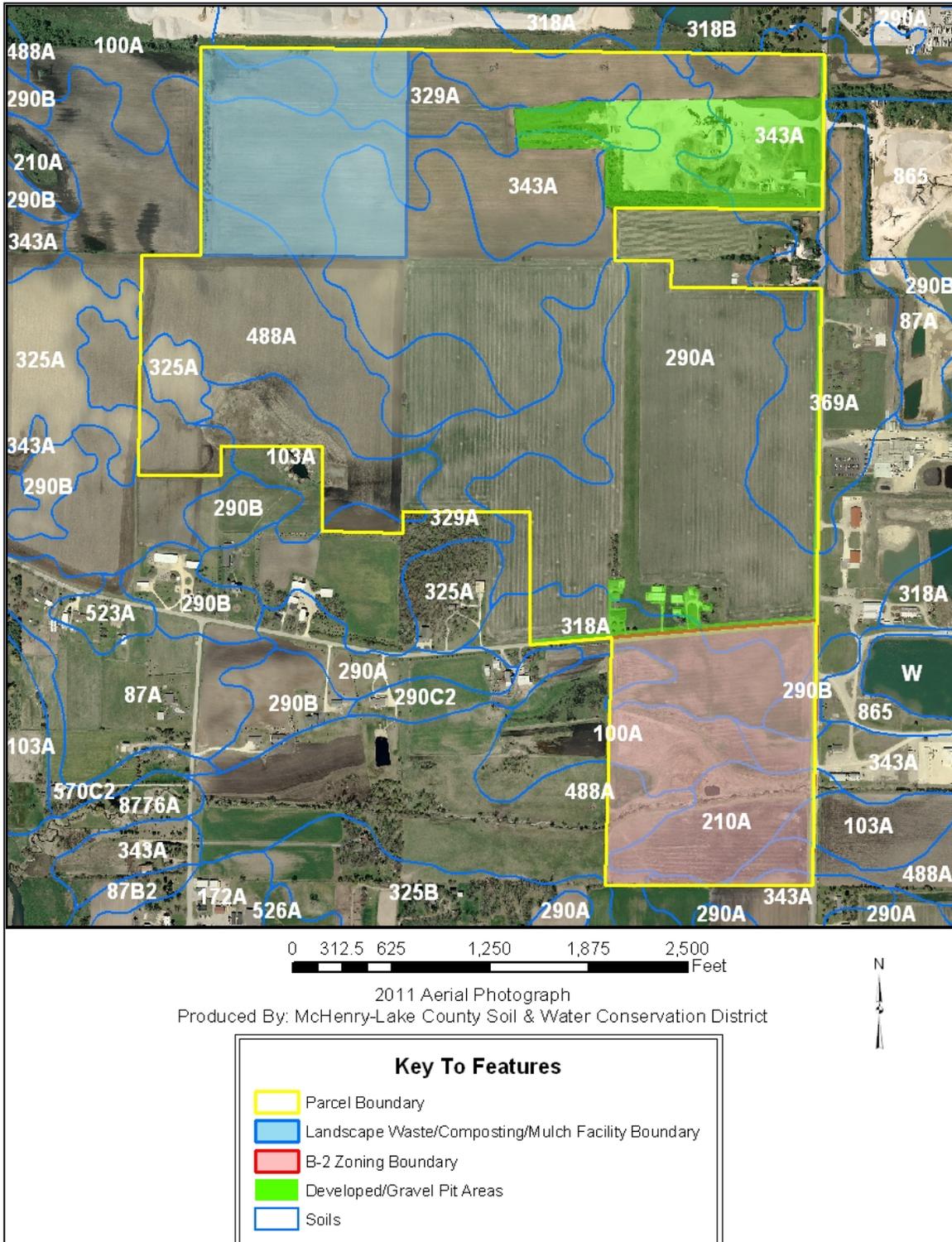


## EXECUTIVE SUMMARY OF NRI REPORT #13-019-3793

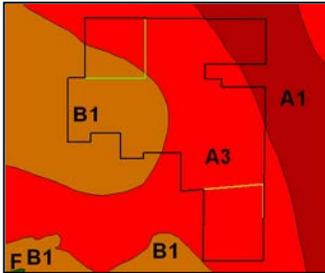
*It is the opinion of the McHenry-Lake County Soil and Water Conservation District Board of Directors that this report as summarized on this page is pertinent to the requested zoning change.*



**Caveats:** This report evaluates the entire parcel as a whole, and also evaluates the proposed Landscape Waste/Composting/Mulch Facility and the Proposed B-2 Areas as separate parcels.

**Groundwater Contamination Potential and Recharge Areas:**

**Aquifer Sensitivity Map** (\*This is the area beneath the soil profile down to bedrock)

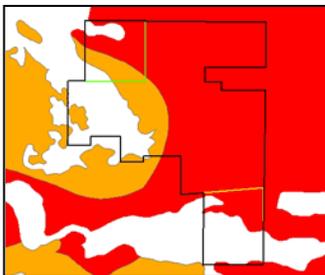


A3 geologic limitations.

- The Geologic features map indicates the entire parcel is comprised of 24.91 acres of A1, 226.94 acres of A3 and 85.78 acres of B1 geologic limitations.
- The proposed Landscape Waste/Composting/Mulch facility is comprised of 25.23 acres of A3 and 14.30 acres of B1 geologic limitations.
- The proposed B-2 site is entirely comprised of

A1 and A3 (red areas on map) have a high aquifer contamination potential. B1 has a moderately-high potential for aquifer contamination.

**Sensitive Aquifer Recharge Areas** (Includes the soil profile and underlying geology).

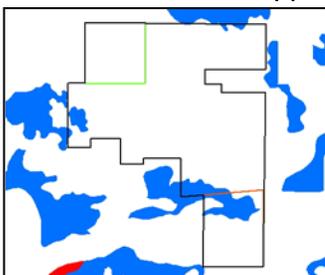


and 10.93 acres of Moderately-High Sensitive Aquifer Recharge.

- The proposed B-2 site contains 18.70 acres of High Sensitive Aquifer Recharge Areas.

- The Sensitive Aquifer Recharge Map indicates 216.59 acres (red areas of map) of the parcel is within an area designated as High Sensitive Aquifer Recharge and 40.25 acres is designated as Moderately-High Sensitive Aquifer Recharge (orange areas of map).
- The proposed Landscape Waste/Composting/Mulch Facility is comprised of 19.92 acres of High Sensitive Aquifer Recharge

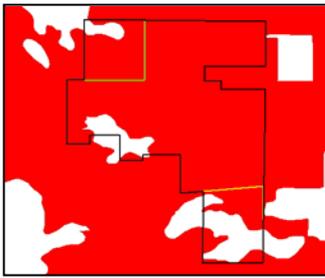
**Soil Leachability Map** (This is only the soil profile within the parcel from the surface down to approx. 5 feet).



moderate leaching potential.

- The Soil Leachability Index indicates 5.61% or 18.93 acres of the entire parcel has a moderate leaching potential (blue areas of map) for fertilizers (includes household use).
- The Soil Leachability Index indicates 0% of the Landscape Waste/Composting/Mulch Facility has a moderate leaching potential.
- The Soil Leachability Index indicates 19.28% or 9.38 acres of the proposed B-2 site has a

**Soil Permeability Map** (This is only the soil profile within the parcel from the surface down to approx. 5 feet. Soil permeability is a reflection of the speed in which water (with or without pollutants) can move through the soil profile.)



- The USDA-NRCS Soil Survey Map of the area indicates 78.41% or 264.73 acres of the entire parcel has soils which are highly permeable, allowing water to rapidly move through the soil profile. Highly permeable areas are identified in red.
- The USDA-NRCS Soil Survey Map of the area indicates 86.57% or 34.20 acres of the Landscape Waste/Composting/Mulch Facility has soils which are highly permeable, allowing water to rapidly move through the soil profile.
- The USDA-NRCS Soil Survey Map of the area indicates 48.42 % or 23.56 acres of the proposed B-2 site has soils which are highly permeable, allowing water to rapidly move through the soil profile.

**Soil Limitations (This evaluates the parcel from the surface down to approximately 5 feet.):**

**Basement Limitations**

This parcel was not evaluated for basements due to its proposed use.

**Septic Limitations**

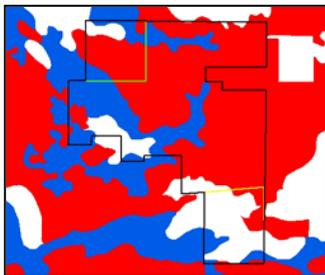
This parcel was not evaluated for septic systems due to its proposed use.

**Erosion Ratings**

The NRCS Soils Survey indicates that 0 % of the entire parcel has a severe erosion rating.

**Prime Farmland Soils**

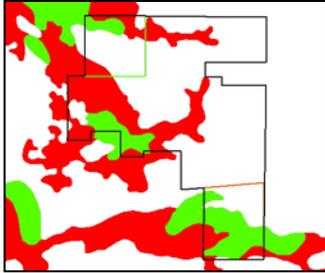
- The Natural Resources Conservation Service (NRCS) Soil Survey indicates that approximately 180.54 acres or 53.47% of the entire parcel are comprised of prime farmland soils and 69.42 acres or 20.56% of prime when drained soils.



- The Natural Resources Conservation Service (NRCS) Soil Survey indicates that approximately 25.45 acres or 64.42% of the Landscape Waste/Composting/Mulch Facility are comprised of prime farmland soils and 8.75 acres or 22.15% of prime when drained soils.
- The Natural Resources Conservation Service (NRCS) Soil Survey indicates that approximately 7.78 acres or 15.99% of the proposed B-2 site are comprised of prime farmland soils and 6.40 acres or 13.16% of prime when drained soils.

## Hydric Soils

- The Natural Resources Conservation Service (NRCS) Soil Survey indicates that approximately 109.79 acres or 32.52% of the entire parcel are comprised of hydric soils (identified in red and green). Approximately 40.37 acres (or 20.56%) of the hydric soils are considered organic (green areas only).



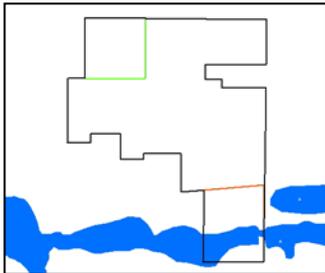
- The Natural Resources Conservation Service (NRCS) Soil Survey indicates that approximately 14.06 acres or 35.58% of the Landscape Waste/Composting/Mulch Facility are comprised of hydric soils.

Approximately 5.31 acres (or 13.43%) of the hydric soils are considered organic.

- The Natural Resources Conservation Service (NRCS) Soil Survey indicates that approximately 29.53 acres or 60.69% of the proposed B-2 site are comprised of hydric soils. Approximately 23.13 acres (or 47.53%) of the hydric soils are considered organic.

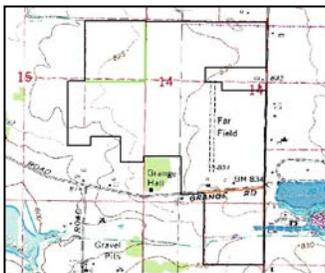
## Floodplain Information:

### The Flood Insurance Rate Map



Indicates 100-year floodplain is present on 13.56 acres of the parcel (identified in blue). These 13.56 acres are totally contained within the proposed B-2 Zoning area.

### Flood of Record Map (Hydrologic Atlas)



The Flood of Record Map for this area indicates previous flooding on 1.89 acres of the parcel (identified in blue). This previous flooding has occurred entirely within the proposed B-2 Zoning area.

**Wetland Information:**

**USDA-NRCS Wetland Inventory**



The NRCS Wetlands Inventory identifies 2 wetland areas (identified in orange) on the parcel. Within the northwestern portion of the parcel (within the proposed Landscape Waste/Composting/Mulch Facility) is a FW: Farmed Wetland which comprises 1.16 acres of the parcel. Within the southwestern portion of the parcel is a FW: Farmed Wetland which comprises 4.43 acres of the parcel.

**ADID Wetland Inventory**



The ADID study identifies 2 FW: farmed wetlands (orange) and 1 W: wetland (light green) on the parcel. Farmed Wetland C80 covers 1.16 acres of the parcel and is located within the proposed Landscape Waste/ Composting/ Mulch Facility Area and requires 40 feet of buffer. Farmed Wetland C97 covers 4.44 acres of the parcel and is located in the southwestern portion of the parcel and requires 50 feet of buffer. Wetland C118 covers 0.13 acres of

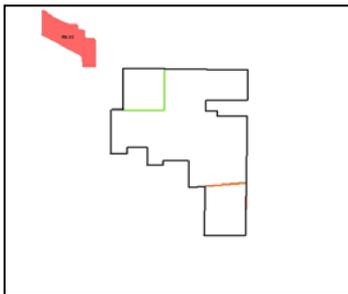
the parcel and is located within the proposed B-2 Area of the parcel. The ADID study also indicates a stream runs through the B-2 Area of the parcel.

**Cultural Resources:** None identified

**Woodlands:** The parcel contains mature trees along the northwestern fence line and around the existing buildings.

**Agricultural Areas:** Office Maps indicate there are no agricultural areas on the parcel in question.

**McHenry County Natural Areas:**



Office Maps indicate McHenry County Natural Areas Inventory Site RIL02- Coon Creek Fen is northwest of the parcel in question (identified in red). Coon Creek Fen is a Graminoid Fen which is threatened by Siltation & Water Table Alterations.

**Watershed Plans:** The parcel is within the Coon Creek Watershed, which is part of the larger Kishwaukee River Watershed. The Kishwaukee River Ecosystem Partnership has an active planning group and should be consulted to see if they have any concerns or recommendations for this zoning change.

---

## ADDITIONAL CONCERNS

---

### Parcel in General:

- Due to the soils and underlying geology on the entire site, groundwater contamination is a huge concern for the proposed uses. The Aquifer Sensitivity Map indicates the parcel is within either a high or moderately high aquifer contamination potential area, with the majority of the parcel identified as high. In these areas, contaminants from any source can move rapidly through these sand and gravel deposits to wells or nearby streams. In addition, this thick surficial aquifer is commonly hydraulically connected to underlying aquifers (Berg 1994). Land-use practices should be very conservative within these areas.
- The southwestern portion of the parcel contains a large farmed wetland which expands south off of the site and will require additional permitting for the requested use. A wetland delineation by a McHenry County Wetland Specialist (see McHenry County Planning & Development's Website for a current list) is needed to determine the limits of the wetland before earthwork occurs. Wetland buffers or mitigation may be required depending on the proposed impact.

### Landscape Waste/Composting/Mulch Facility:

- The proposed Landscape Waste/Composting/Mulch Facility has been sited in an area that contains hydric soils with a portion of those soils identified as organic. Organic soils are more restrictive in use due to their unstable nature and high groundwater table.
- The site drains directly toward a graminoid fen that has been identified on the McHenry County Natural Areas Inventory. Any changes in the water table can have a direct negative impact to this resource. If this use is to occur, it is recommended that the top soil remain in its natural state to allow the maximum filtration of any potential contaminants. In addition the potential for non-native plants to infest the fen from the landscape waste material is of huge concern and should be monitored and remedial measures should be in place if migration of non-natives does occur.
- The northwestern corner of the parcel has been identified as farmed wetland and will require additional permitting for the requested use. A wetland delineation by a McHenry County Wetland Specialist is needed to determine the limits of the wetland before earthwork or landscape debris is brought onto the site. Wetland buffers or mitigation may be required depending on the proposed impact.

### B-2 Zoning Area:

- It appears that the south-southwest two-thirds of the site are unbuildable due to natural resource restrictions/limitations.
- Approximately 60.69% of this B-2 Zoning Area is comprised of hydric soils with a majority of those hydric soils identified as organic. Although, the wetland inventory does not identify this area as wetland, the site visit conducted found large portions of this hydric soil area contains hydrophytic vegetation and appears to have reverted to a wetland status. A wetland delineation by a McHenry County Wetland Specialist is needed to determine the limits of the wetland before site planning begins. Wetland buffers or mitigation may be required depending on the proposed impact. In addition, almost all farmed hydric soils in McHenry County contain drain tile systems. Drainage tile expedites drainage and facilitates farming. It is imperative that these drainage tiles remain undisturbed. A damaged subsurface drainage tile may return original hydrologic

conditions to all of the areas that drained through the tile (ranging from less than one acre to many square miles.)

- The southern portion of the property contains a stream and the surrounding land (approximately 13.56 acres) has been identified as Zone A, 100-year floodplain. It is recommended that the base flood elevation be determined and this area not be developed. Additional stormwater permitting may be required.
- Due to the potential groundwater contamination owing to the soils and underlying geology, uses which have the potential for contamination such as gas stations, or fertilizer/chemical storage should be prohibited on this site.