City of Verona

Planning and Development Department
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November 13, 2023

Capital Area Regional Planning Commission
Attn: Nick Bower
100 State St #400
Madison, WI 53703

Re: City of Verona: Urban Service Area Amendment Application

Attached is one (1) digital copy of the City of Verona Urban Service Area (USA) application. The City of Verona is requesting an USA amendment to add 262-acres to the Verona USA. The City understands the Capital Area Regional Planning Commission will determine the application fee based upon the area to be served by sewer with ½ the fee will be due within 30-days of this submittal. Please send the City the invoice so the fee can be paid.

The State budget requires the Department of Natural Resources (DNR) to approve or reject proposed revisions to the area wide water quality management plan for Dane County and requires the DNR to approve or reject plans within 90-days of application. The City of Verona finds the attached application is complete and is requesting a review of the application.

If you have any questions, please contact me via email at Katherine.Holt@ci.verona.wi.us.

Sincerely,

Katherine Holt

Katherine Holt
Interim Director of Planning & Development

Cc: Luke Diaz, City of Verona Mayor
Melissa Breyer, CARPC
Alexandra Andros, Greater Madison MPO

City of Verona

Urban Service Area Amendment Request: Epic Campus 6 and 7 expansion

NOVEMBER 13, 2023

City of Verona

VANDEWALLE & ASSOCIATES

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Introduction

The City of Verona is requesting a 262-acre addition to its Urban Service Area to provide sanitary sewer, potable water, and other urban services to a site adjacent to the existing corporate campus of Epic Systems. As depicted on Map 1, this would be entirely within the existing boundaries of the City of Verona.

The developer, Epic Systems, currently owns all parcels in the USAA and is proposing to develop an office area called Epic Campus 6 and 7. The USAA consists of two separate areas. The first is a reclaimed quarry currently used for crushing activities related to construction throughout the property. The other area is primarily agricultural and open land, with a solar array in the center and various, small Epic facilities buildings. The existing right-of-way consists of County View Rd to the west and CTH PD to the north.

On September 5, 2023, the City of Verona Plan Commission recommended a Resolution to the City Council to initiate an Urban Service Area Amendment for the 262 acres and that the proposed development within the Urban Service Area Amendment is consistent with the City's Comprehensive Plan. On September 11, 2023 the City of Verona City Council adopted the recommended Resolution (Appendix A).

Plan Consistency and Need

1.1. Document Consistency

The City of Verona adopted a resolution on September 11, 2023 approving the USAA expansion and confirming its consistency with the Comprehensive Plan. A copy of that resolution is included in this application as Appendix A.

A majority of the property has a planned land use designation of Office in the City of Verona's Comprehensive Plan, which was updated in 2019. A portion of the property was not within the City of Verona's municipal boundaries during the adoption of the last comprehensive plan and was designated as Commercial by the Town of Verona's Comprehensive Plan, as shown on Map 3. This area has long been expected to be developed by Epic for their office campus expansion.

A wide variety of goals, strategies, and recommendations from the Comprehensive Plan align with the proposed development. In particular, the following objectives from the Comprehensive Plan are aligned with this project:

- Chapter 6: Economic Development and Agriculture:
  - Objective 1-C: Encourage new non-retail commercial development in appropriate locations
    - Policy: Encourage new non-retail commercial development – such as office parks and medical facilities - in areas outside of the downtown area
- Chapter 8: Land Use
  - Objective 1-C: Direct new non-retail commercial development to the "growing edge" of the city.
    - Policy: Direct new non-retail commercial development to areas along the city's corporate limits through annexations and expansions of the city's urban service area

Additionally, the city recently rezoned the area from Rural Agriculture to Suburban Industrial in anticipation of the new commercial development.

Finally, the proposed plans for the amendment area are also consistent with CARPC's 2050 Regional Development Framework. Epic is committed to the three overarching goals of the Regional Development Framework, which are 1) Reduce greenhouse gas emissions to foster community resilience to climate change, 2) Increase access to jobs, housing, and services for all people, and 3) Conserve farmland, water resources, natural areas, and fiscal resources.

The area planned for expansion with this Urban Service Area Amendment request algins directly with the Framework's strategy of "planning areas for quality business growth". As the largest private sector employer in Dane County, Epic Systems is shown on the Regional Development Framework's map as a "2050 employment district" (*CARPC Regional Development Framework, Page 29*).

Furthermore, Epic has demonstrated this commitment through land use and operational initiatives on the Epic Campus. Epic plans to further these efforts through each stage of expansion on their campus. A few notable initiatives to highlight include:

- Maintaining storm water control features.
- Using best practices for salt application management to reduce any harmful effects to the environment.
- Limiting the amount of impervious surfaces present on the campus through the design of structures, including approximately 43 acres of green roofs after the construction on Campus 5 is complete.
- The 1.4-megawatt solar field in the USAA on the west side of campus is elevated to allow for farming below and geothermal well field underground.
- The 21-acre quarry pond in the USAA on the northeast side of campus is utilized as a geothermal heat sink to improve the capacity and efficiency of a world-class geothermal system. Utilization of the lake supplants the need for additional traditional geothermal borefields, thereby preserving land from additional development.
- A 2-acre Epic Community Garden for staff to participate in organic community gardening.
- Preservation of environmentally sensitive features such as drainage/flood ways, burial mounds, federally delineated wetlands, and a native prairie remnant.
- Reuse of on-site materials for backfill in other areas of campus to avoid import/export of materials to the site.
- Building designs with durable materials to create long lasting "100 year" structures and with sustainable practices incorporated into building utility systems.
- Fully subsidize multiple bus routes to and from campus for employee use to reduce vehicle traffic. Campus bikes and shuttles are also provided to reduce vehicles as a mode of transportation on campus.
- Pedestrian paths are incorporated into the design of the landscape multi-modal transportation plan. Bike paths, bike racks, and showers are also included in campus design to encourage employees to bike to campus.

1.2. Applicable Neighborhood Plan or Studies

The area for the USAA is within the area of the North Neighborhood Plan, adopted in 2015. The North Neighborhood Plan subdivided the planning area in the Western, Central, and Eastern sub-planning areas. The USAA amendment lies within the Western planning area, with a designated future land use of "Office". The plan further describes the future land use of the Western planning area as follows:

> "The majority of lands within the Western Planning Area are planned for the future expansion of Epic Systems Corporation. Some of these lands may contain office buildings, while other areas will remain open space for geothermal use, solar areas and farming uses. Epic is the largest private employer in Dane County and additional campus growth is anticipated during the next few years. The City and Epic continue to work towards roadway improvements within the area including the reconstruction of Nine Mound Road, CTH PD, and a future northern Epic access point onto CTH PD between Country View Road and Nine Mound Road."

The proposed plan for the area is consistent with this description. It expands office area, maintains existing renewable energy sources, and continues roadway improvements through the area. A copy of that plan can be found online at https://www.ci.verona.wi.us/284/North-Neighborhood-Plan.

The Greater Madison MPO sent the following comment regarding the planned reconstruction of Country View Road.

> "Country View Road is currently considered a local roadway/connecting through-route on the Greater Madison MPO bike map. MPO staff suggest providing bicycle facilities on the reconstructed roadway – preferably a separated path, but at the very least bike lanes. Ideally the new facilities would connect to the existing separated path along Epic Lane."

In response to the MPO's comment, the Country View realignment and any potential connection from there to the west, across the Sugar River, will include bike facilities.

1.3. Need for the Addition to the USA

From the time Epic constructed Campus 1 for their corporate headquarters in 2003, they have continued to steadily grow their corporate campus as needed to accommodate the company's growth. Epic is the largest private sector employer in Dane County and continues to be an incredibly important leader of the regional economy. The table below shows a brief timeline of past Epic corporate campus office expansions.

Campus #	Year	Buildings
Campus 1	2003	Five office buildings; structured parking
Campus 2	2007	Four office buildings; structured parking
Campus 3	2011	Three office buildings; structured parking
Campus 4	2013-2023	Five office buildings; food service building, structured parking
Campus 5	2014-2022	Eight office buildings; food service building; structured parking

Epic has projected that hiring will continue at large enough numbers to warrant the investment in planning and construction of Campus 6 and Campus 7. Lands west of the current campus have been determined as optimal for Epic employee proximity and business function. The USAA is needed because part of the planned Campus 6 and most of Campus 7 are outside of the current USA. In addition to commercial office buildings, Epic anticipates other support buildings needed to facilitate the needs of the employees on site.

Epic also recently purchased the old Wingra Quarry parcels and annexed the parcels into the City of Verona. A utility building was permitted and constructed on this property and is currently served by a well and a sanitary holding tank. Epic is requesting to add these lands to the USA so that the well and holding tank can eventually be replaced with sewer service.

Intergovernmental Cooperation

2.1. Document Notification of Adjacent Local Governmental Units

The Town of Verona was notified of the USAA via email on August 9, 2023. The Town Administrator acknowledged receipt on August 10, 2023. A copy of this communication is included as Appendix B.

2.2. Adjacent Local Governmental Unit(s) Objections or Support

The City of Verona has not received any comments from adjacent local government units after notifying them of the proposed USAA. Any documented letter of support, neutrality, or opposition from the Town of Verona will be provided to CARPC.

Land Use

3.1. Proposed USAA Boundary and Existing Rights-of-Way Map

See Maps 1 and 2. The proposed addition to the USA is comprised of 12 existing parcels. The existing and future land uses on the property are described in the table in section 3.2. There are no existing housing units on the property, and no housing units are planned as a part of this development. Proposed land uses do not reflect current City of Verona land use designations for the area and are subject to change.

3.2. USA Amendment Area Data

Proposed Land Use	Total Acres	Existing Development	Environmental Corridor
Office (Corporate Campus)	30	-	-
Agricultural and Open Land	50	161	1.5
Construction Staging	0	58	-
Utilities (Solar Array)	16	16	-
Water	21	21	21
Parking	1	0	
Driveway	6	0	
Street R-O-W	16	7	-
Other Open Space	122	-	19.9
Total	262	262	42.4

**Sums of individual cells may not exactly match subtotal due to rounding.*

3.3. Existing and Planned Land Use Map

Map 2 depicts Existing Land Use for the amendment area and Map 1a depicts the conceptual plan for development. See Introduction and Section 3.1 for more information.

Map 3 depicts the Planned Land Use from comprehensive planning documents. The area has long been planned for future expansion of the Epic Campus, as further described in Section 1.1.

3.4 Proposed Quantity and Type of Housing Units

Epic Systems is not proposing any housing units within the Urban Service Amendment Area.

3.5 Land Use Phasing

The requested Urban Service Amendment Area is more than 100 developable acres, and thus requires a 10-year staging map for this application. Map 1a depicts the 10-year staging plan.

Natural Resources:

4.1. Natural Features

See Maps 4 and 4a. There is one area within the 100-year floodplain near the southern tip of the USAA that is near an intermittent stream. There is a water body within the quarry portion of the USAA and a majority of that portion is internally draining. There is another small internally drained area within the larger portion of the USAA. A wetland delineation study was performed on the site and is included as Appendix C.

Additionally, there are portions of the project within CARPC's Stewardship and Protection Areas. See Map 4 for Stewardship and Protection Areas, and Map 4b for proposed Environmental Corridors. All existing Protection Areas, aside from a section in the northeast corner of the quarry that has received a wetland exemption from the DNR, have been designated as Environmental Corridors. All waterbodies in the USAA have also been designated as Environmental Corridors.

In addition to the Protection Areas, three other areas have been included in the proposed Environmental Corridor.

1. The Stewardship Area surrounding the Protection Area in the Southwest portion of the USAA.
2. The stormwater pond directly south of the solar array
3. The man-made stormwater pond on the northwest portion of the site along Country View Road. The intention is for it to be relocated during the new development. A future relocation of the stormwater pond will require a WI DNR artificial wetland exemption. At that time the City would request a minor amendment to remove it as an Environmental Corridor.

There are two other general areas designated as CARPC Stewardship Areas that have not been included in the proposed Environmental Corridor. The area in the quarry is currently used for crushing operations to support construction activities on the Epic Campus and would not be suitable for an environmental corridor. The entire quarry received and wetland exemption from the WI DNR. The WI DNR exemption letter is attached in the appendices. There is no immediate anticipated development on the quarry site. Epic is requesting to add these lands to the USA so that the well and holding tank can eventually be replaced with sewer service. Lastly, there are scattered areas surrounding the northern stormwater pond that were designated as Stewardship Area. The wetland delineation determined that the stormwater pond is the only wetland in that portion of the USA. Therefore, the non-wetland areas outside of the 75 ft buffer were not included in the Environmental Corridor.

The City is also requesting minor amendments to the existing Environmental Corridor within the current Urban Service Area as shown on Map 4b. The suspected wetland in the existing Environmental Corridor was subject to an assured wetland determination and was found to not be a wetland. A copy of that assured delineation is attached in the appendices. The amendment is necessary to accommodate for existing development constructed in this area and allow for planned construction of the Campus 6 and 7 buildings.

The Wisconsin DNR Bureau of Natural Heritage Conservation for Endangered Resources Review Preliminary Assessment was completed on August 14, 2023. The Preliminary Assessments for the two areas for the application are attached as Appendix D and E. The Preliminary Assessments indicated that a full Endangered Resources Review was required. That review was completed on September 25, 2023. The review is attached as Appendix F and indicated that there are 0 species with required actions, 5 species with recommended actions, and 9 species with no follow-up actions. Details of the species with recommended actions have been provided to CARPC and the recommendations will be followed to the extent possible within the development area and may be exceeded in some circumstances.

When designing habitat space, Epic looks at the functionality of a plant list as a whole and the ability of each to contribute as part of an ecosystem as a key goal of selection. For example, the Epic Campus includes extended nectar and pollen sources from April-November, grasses for habitat, plants with stems for overwintering eggs, and the ability to infiltrate water. Some species tend to be more generalist in their foraging habits so the diversity of plants (including the large number of native plants) on the Epic Campus provides a large and suitable food source. The biggest factors to success for pollinators on site are nesting habitat (limiting site disturbance and soil compaction) and overwintering habitat (allowing the existence of buffer strips, brushy fence lines, and woodlands), minimizing pesticide and chemical usage, and making a sustained effort to properly restore areas that are disturbed. For other species on site, Epic's stormwater management practices help to keep the adjacent wetlands and sloughs productive and clean. Preservation of open upland sites nearby the wetlands provides availability of suitable nesting grounds.

4.2. Stormwater Management Facilities

Stormwater facilities for the future development will be privately owned and maintained. Stormwater management areas will require approval by the City and meeting all requirements of Dane County and the state of Wisconsin. The stormwater management standards are described in greater depth in Section 5.9.

4.3. Environmental Corridors

See Map 4b and section 4.1 for more details. Within the proposed USA amendment area, there are a total of 42.4 acres proposed as Environmental Corridor.

The City will request that CARPC amend the existing Environmental Corridor as shown on Map 4b. These corridor changes would remove 16.1 acres and is classified as a minor amendment because they do not include water bodies, floodplains, wetlands, minimum buffer strips, or steep slopes adjacent to water bodies. As shown on Map 4b, there are a few small areas where the requested corridor amendment areas conflict with existing or planned buildings. These areas comprise the existing corridor amendments and are shown in hatched purple color.

4.4. Proposed Environmental Corridors Map

See Map 4b.

4.5. Environmental Corridors Requirements

The proposed corridor achieves the intended goals outlined for Environmental Corridors in the Water Quality Plan for Dane County. It protects water quality and public health by including the intermittent stream area as part of the corridor, as well as the quarry pond. See Map 4 for Stewardship and Protection Areas, and Map 4b for proposed Environmental Corridors. All existing Protection Areas in the USAA, with the exception of a small area in the northeast corner of the quarry that has received a wetland exemption from the WI DNR, have been designated as Environmental Corridors. A few additional areas have also been designated as an Environmental Corridor. See section 4.1 for more detail.

Utilities and Stormwater Management

5.1. Proposed Sanitary Sewer

The sanitary sewers in this amendment area will ultimately drain to the Lower Badger Mill Creek interceptor. It is anticipated all sewers in the amendment area will be local sewers.

In the western portion of the amendment area, east of and adjacent to Country View Road, sanitary sewer will be extended along Country View Road north from the existing City of Verona Country View Lift Station.

The eastern portion of the amendment area (at the southwest quadrant of CTH PD and Northern Lights Road) will all drain directly to the LBMC Interceptor.

Laterals will be provided for future private connections. Proposed sanitary sewer routes are shown on Map 5.

5.2. USAA Average Daily and Peak Wastewater Flow

2021 average daily flow to the Nine Springs wastewater plant from the City was 1.145 million gallons per day (January to December 2021 figures).

The City's 2019 Wastewater Master Plan analyzed future development areas within and adjacent to the City using flow monitoring data and a calibrated model. This amendment area was not included in that model.

The proposed future flow from the 262-acre expansion area is estimated at 184,410 gallons per day (average daily flow) and 371,000 gallons per day for peak flow, based on adding up to 8,400 office workers to the population. The peaking factor equates to 2.01, which is based on flow monitoring data at MMSD Pump Station 17 completed by the City in 2017. This data is based on Epic System's projections and previous flow studies as well as Administrative Code NR110. See spreadsheet included as Appendix I for source of assumptions and calculations.

5.3. Average Wastewater Treatment Plant Daily Flow

The sanitary sewers in this amendment area will all drain to the Lower Badger Mill Creek (LBMC) Interceptor. The LBMC Interceptor flows to Pump Station 17 in the southwest side of Verona and is then pumped to the MMSD Nine Springs regional wastewater treatment facility in Madison. The proposed future flow for this amendment area is calculated at approximately 22 gallons per day, per person, based on an adjusted average base flow for day use. The City continues to reduce its Infiltration/Inflow with maintenance of the system. The sanitary sewer will be approximately located through the site as shown on the mapping included in this submittal, see Map 5.

The western portion of the amendment area, east of and adjacent to Country View Road, drains to the City of Verona's Country View Lift Station which pumps flow east via forcemain before discharging to gravity sewer which connects to the LBMC Interceptor near the intersection of W Verona Ave and N Nine Mound Rd. The existing Country View Lift Station was designed with the ability to be reconfigured to handle future growth at Epic. The lift station has hydraulic capacity to handle the flows from the proposed USAA but will need pump and motor upgrades consistent with the original plans.

The eastern portion of the amendment area (at the southwest quadrant of CTH PD and Northern Lights Road) will all drain directly to the LBMC Interceptor.

5.4. Wastewater Treatment Plant Capacity

The MMSD Nine Springs regional wastewater treatment facility serves the City and will provide wastewater treatment for development within the amendment area. Capacity information for the Nine Springs treatment plant can be obtained from Curt Sauser at (608) 222-1201, ext. 269. The downstream capacity of the LBMC Interceptor is 5.53 MGD south of Verona Ave. Current flows at PS 17 are 1.15 MGD (2021); therefore, this pipe has sufficient capacity for this development.

5.5. Proposed USAA Public Water Supply

The Central Pressure Zone of the water system serves this amendment area. The Water System Master Plan completed in November of 2015 shows the proposed amendment area as future Epic development. The static pressure ranges at street level for the amendment area range from 39 to 49 psi on the northern limits to 89 psi on the southern portion of the area. See Map 5 for the proposed public water line location.

In the western portion of the amendment area, east of and adjacent to Country View Road, existing water main that currently ends at Epic Lane (south of Milky Way) is proposed to be extended north along Epic Lane and up Country View Road where it will connect to Campuses 6 & 7. A second connection to existing water main in the Campus 6 & 7 area is proposed on Epic-owned lands northeast of the solar fields, near the maintenance buildings from existing water main that tees off of Hubble Road. All proposed water main in the amendment area is planned to be 12-inch, consistent with the City's 2015 Water System Master Plan for this area.

The eastern portion of the amendment area (at the southwest quadrant of CTH PD and Northern Lights Road) is planned to connect to a 12-inch water main stub currently being constructed off of CTH PD to the south.

The entire City system is planned to be looped eventually with a connection from Well 5 north to CTH PD, which is also a requirement for the Ardent Glen subdivision located directly north of Epic, across CTH PD.

5.6. Estimated USAA Daily and Peak Hourly Water Demand

Projected 2040 city-wide average daily demand is 3.33 million gallons with a peak hour demand of 10,300 gallons per minute (City of Verona 2015 Water System Master Plan). The 2015 Water System Master Plan evaluated metered data for existing buildings at the time and estimated a per capita demand for Epic employees of 10 gpcd. Therefore, the proposed demand for this amendment area is calculated at approximately 84,000 gallons per day (8,400 population * 10 gallons per capita per day). The Peak Hour

Demand is estimated to be 201 gallons per minute using a factor of 3.44 based on the 2015 Water System Master Plan. See spreadsheet included as Appendix I for source of assumptions and calculations.

5.7. Average Daily and Peak Hourly Water Demand

The 2022 City pumping records show the city-wide average daily demand is approximately 1.2 million gallons with a maximum daily demand of 2.6 million gallons. Peak hourly demand is 2,880 gallons per minute.

Current demand is based upon user class (residential, commercial, etc.) and not a pressure zone. In general, the Central Pressure Zone peak hour factor is 3.44, per 2015 water master plan. Per data from the 2015 Water System Master Plan, the average daily demand is less presently (2022 data) than in 2015 (0.94 million gallons per day in 2022 vs 1.19 million gallons per day from the 2015 water master plan). See spreadsheet included as Appendix I for source of assumptions and calculations.

The current (2022 data) city-wide average daily demand is approximately 1.2 million gallons; therefore, the City of Verona is using less water currently versus the 2015 master plan. The central zone is approximately 78% of the city-wide demand (1.2 million gallons per day /0.94 million gallons per day = 0.7833 (78.3% of overall average million gallons per day)).

The central pressure zone average daily demand in 2022 is 940,000 gallons per day (0.7833 x 1.2 million gallons per day = 0.94 million gallons per day) and the peak hour demand is estimated to be 1,890 gallons per minute (0.94 million gallons per day x 2.14 (maximum day factor) = 2.0 million gallons per day. 2.0 million gallons per day * 1.36 (peak hour factor) / 24 / 60 = 1890 gallons per minute).

5.8. Water Supply System Capacity

The City of Verona has 1,100,000 gallons of elevated water storage in three water towers, and 500,000 gallons of ground reservoir storage and a pumping capacity of 7,670 gallons per minute. The City currently has six wells and operates as follows: Well 1 pumps 450 gallons per minute, Well 2 pumps 1,100 gallons per minute, Well 3 pumps 1,750 gallons per minute, Well 4 pumps 1,900 gallons per minute, Well 5 pumps 2,200 gallons per minute, and Well 6 pumps 1,400 gallons per minute, totaling 8,600 gallons per minute. The City's firm pumping capacity with its largest well out of service is 6,700 gallons per minute.

The City's water system is currently composed of three (3) pressure zones. This project is within the Central Zone, which contains Wells 1 – 5, a 300,000-gallon water tower, and a 500,000-gallon ground reservoir with firm pumping capacity of 3,000 gallon per minute supply booster station. Total pumping capacity within the Central Zone is 7,400 gallons per minute.

This amendment area demand of 201 gallons per minute during the peak hour is 2.7% of the Central Zone pumping capacity (201 divided by 7,400 gallons per minute). The City updates their Water Master Plan every 10 years. The next update will start in 2024. As demand increases, the City will address additional capacity and storage needs. If additional wells and or storage are needed, they will be added to the system.

5.9. Proposed Stormwater Management Standards

The western portion of the amendment area (east of and adjacent to Country View Road) drains southwest to the Sugar River. There are two existing stormwater basins in the western portion of the amendment area.

- One basin is located approximately 1,000 feet south of CTH PD on the east side of Country View Road. This was a historic sediment basin that does not meet today's stormwater standards. It is anticipated that this basin will be removed as a part of the development and a new basin (or set of basins) will replace it downstream (southwest) of its existing location that meets today's stormwater treatment standards, detailed below.
- A second basin is located south of the solar fields on the east side of Country View Road. This basin treats water from nearby buildings. It is anticipated that this basin will eventually shift downstream (southwest) and be enlarged to capture existing developments and additional

development from Campuses 6 and 7. The new basin would be designed to meet today's stormwater standards, detailed below.

The eastern portion of the amendment area (at the southwest quadrant of CTH PD and Northern Lights Road) is a decommissioned quarry area. Historically this area would have drained southwest to the Dry Tributary to Badger Mill Creek. Due to quarrying operations, this area is now internally drained and is planned to stay that way. There is standing water in the old quarry, and water levels fluctuate and are closely tied to groundwater levels in the area. Should buildings be proposed in this area, the City would require that buildings be set two-feet above the back-to-back 100-year events and that an outlet (either gravity or pumping) be installed to the Dry Tributary to Badger Mill Creek.

The City of Verona has adopted construction site erosion and stormwater run-off control standards in Chapter 15-2 of the Code of City Ordinances. Chapter 15-2 has standards for sediment control, oil and grease control, runoff rate control, infiltration and thermal control for new developments that will occur in the amendment area in accordance with Wisconsin Administrative Code NR 151 and NR 216, and the Dane County Stormwater Management and Erosion Control Ordinance. For new development the standards in the Ordinance are summarized as follows:

- Sediment Control: Retain soil particles greater than five (5) microns resulting from a one-year, 24-hour storm event.
- Oil and Grease Control: Treat the first 0.5 inches of run-off using best management practices at commercial and industrial sites.
- Runoff Rate Control: Maintain pre-settlement peak run-off rates for the 1, 2, 10, 100 and 200-year, 24-hour storm events.
- Thermal Control: Stormwater management plans must include provisions and practices to reduce runoff temperatures for sites within the City since the entire City of Verona lies within the Upper Sugar River and Badger Mill Creek Watersheds.
- Infiltration: Infiltrate sufficient runoff volume so that post-development infiltration volume is a least 90% of the pre-development infiltration volume, based on average annual rainfall. Where feasible, strive for 100% stay-on.

The above standards will reduce the impact of development through minimization of sediment in stormwater runoff both during and after construction.

The City's Ordinance is enforced through the issuing of erosion control and stormwater management permits as part of the building permit process. The City Engineer reviews all erosion control and stormwater management permit applications. Often these reviews result in modifications to the proposed plans.

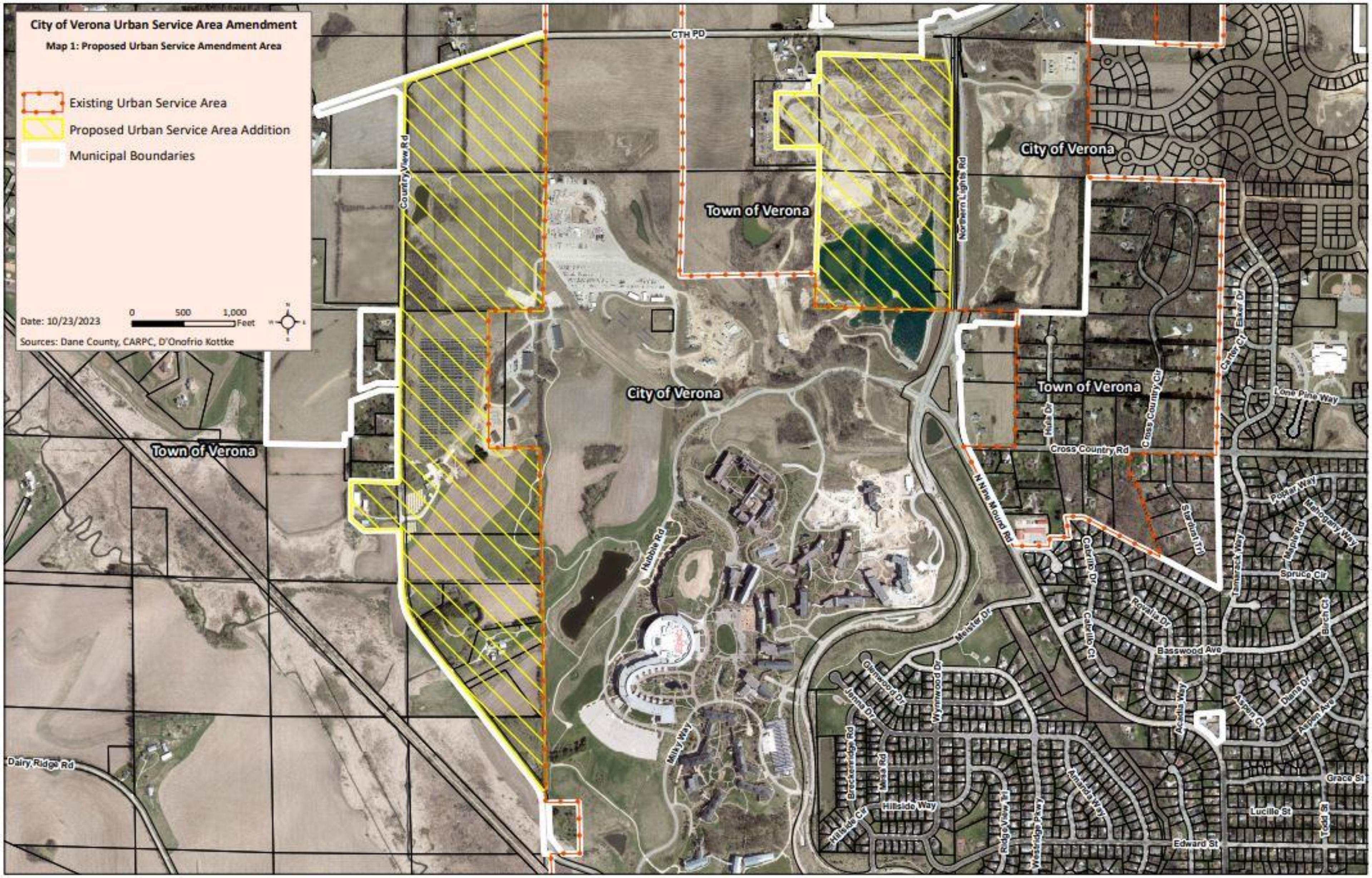
The City has committed to follow up on the approved erosion control plans through the Public Works Staff. Staff follows up on the stormwater management plans that have been implemented and inspects commercial and industrial construction sites for compliance with erosion control plans.

The issuance of the erosion control and stormwater management permits by the City Engineer requires the implementation of erosion and stormwater management controls as the first step in the construction process. Failure to meet this requirement subjects the contractor to cease work orders and fines. The requirement to implement stormwater management controls is enforced by both the Public Works Department and Building Inspection Department Staff.

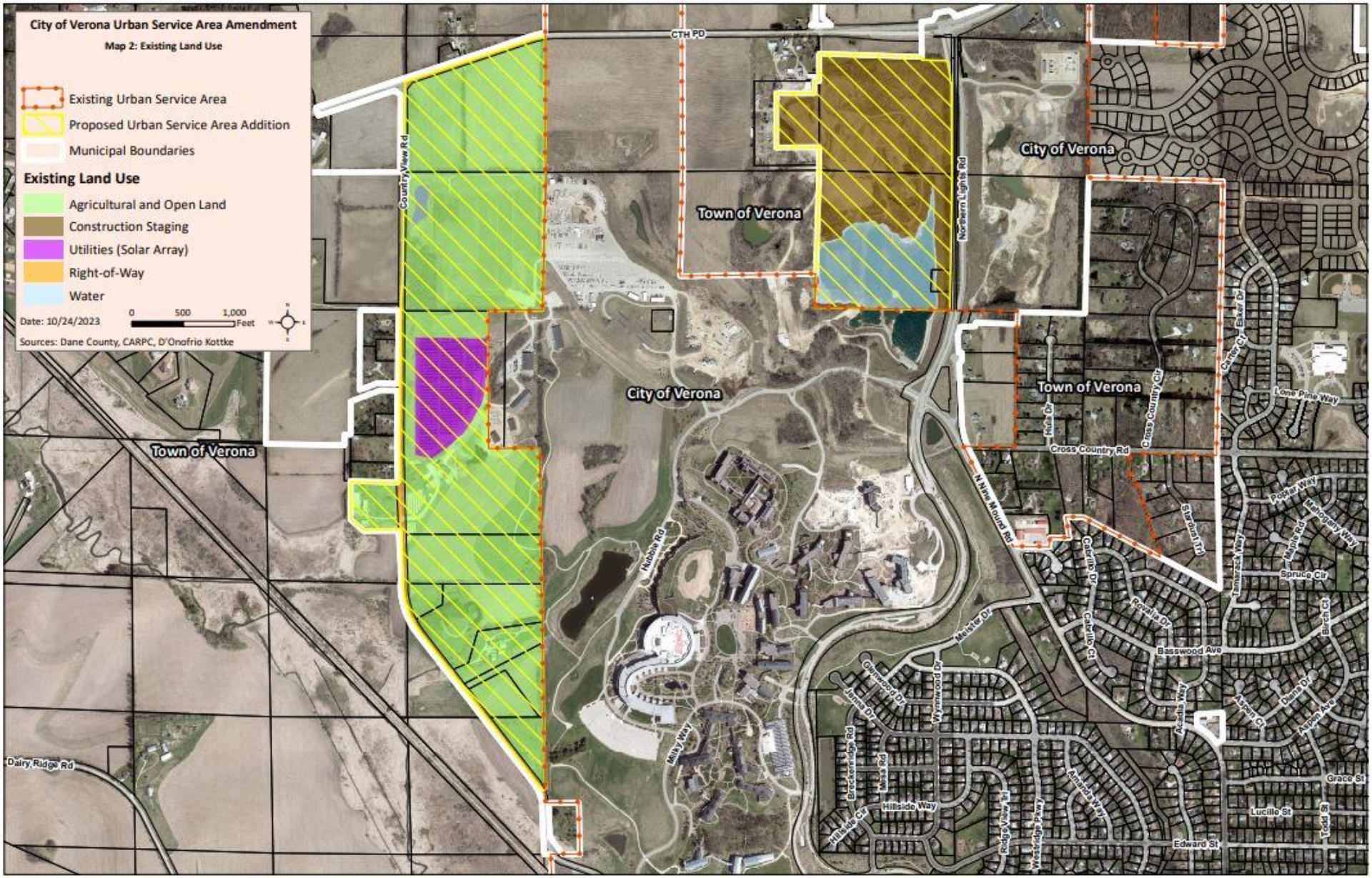
Stormwater will not directly discharge to wetlands. A full stormwater management report will be provided with future steps in the development review process, and the development will comply with all stormwater requirements.

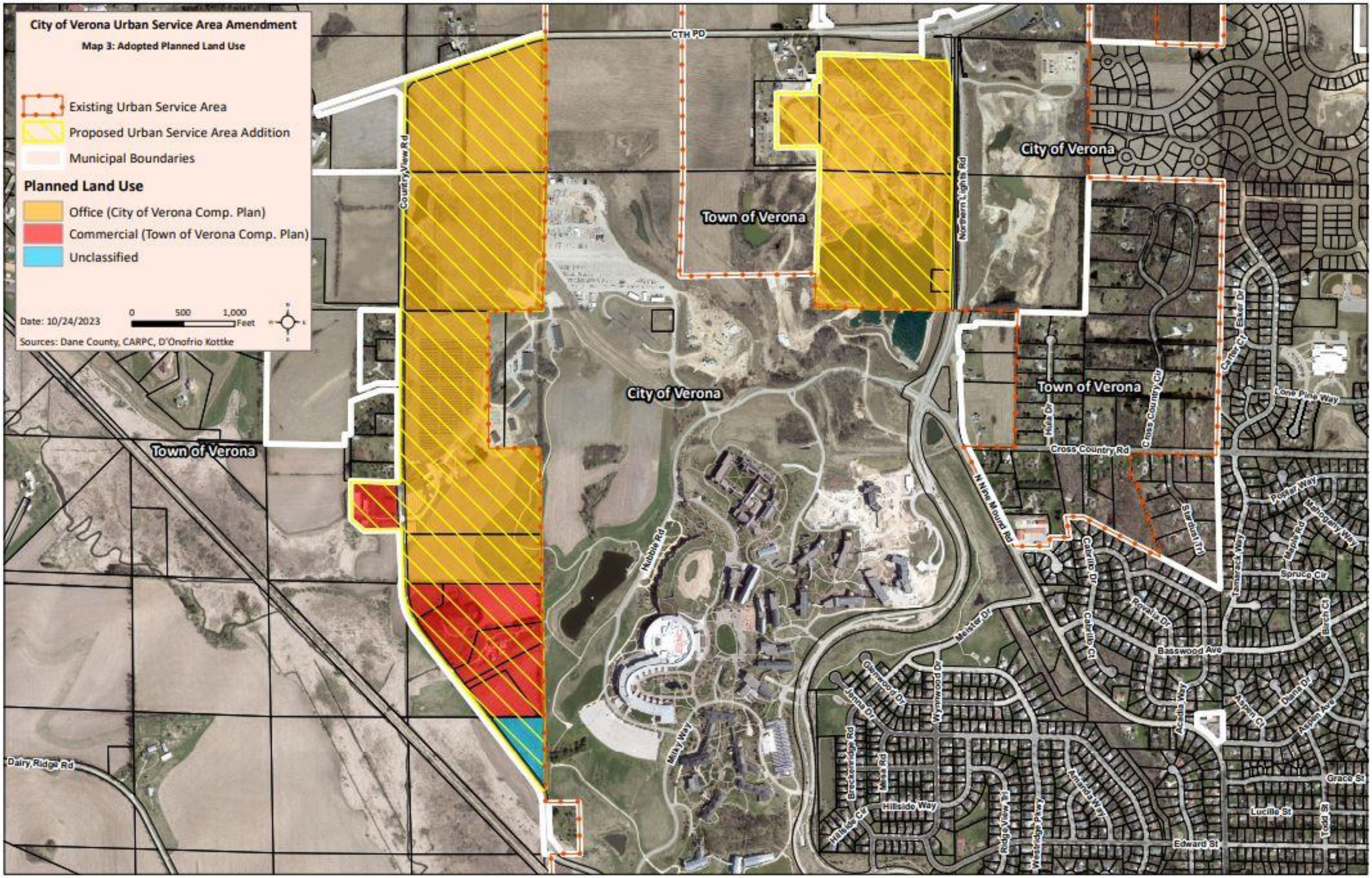
5.10. Stormwater Management Plan

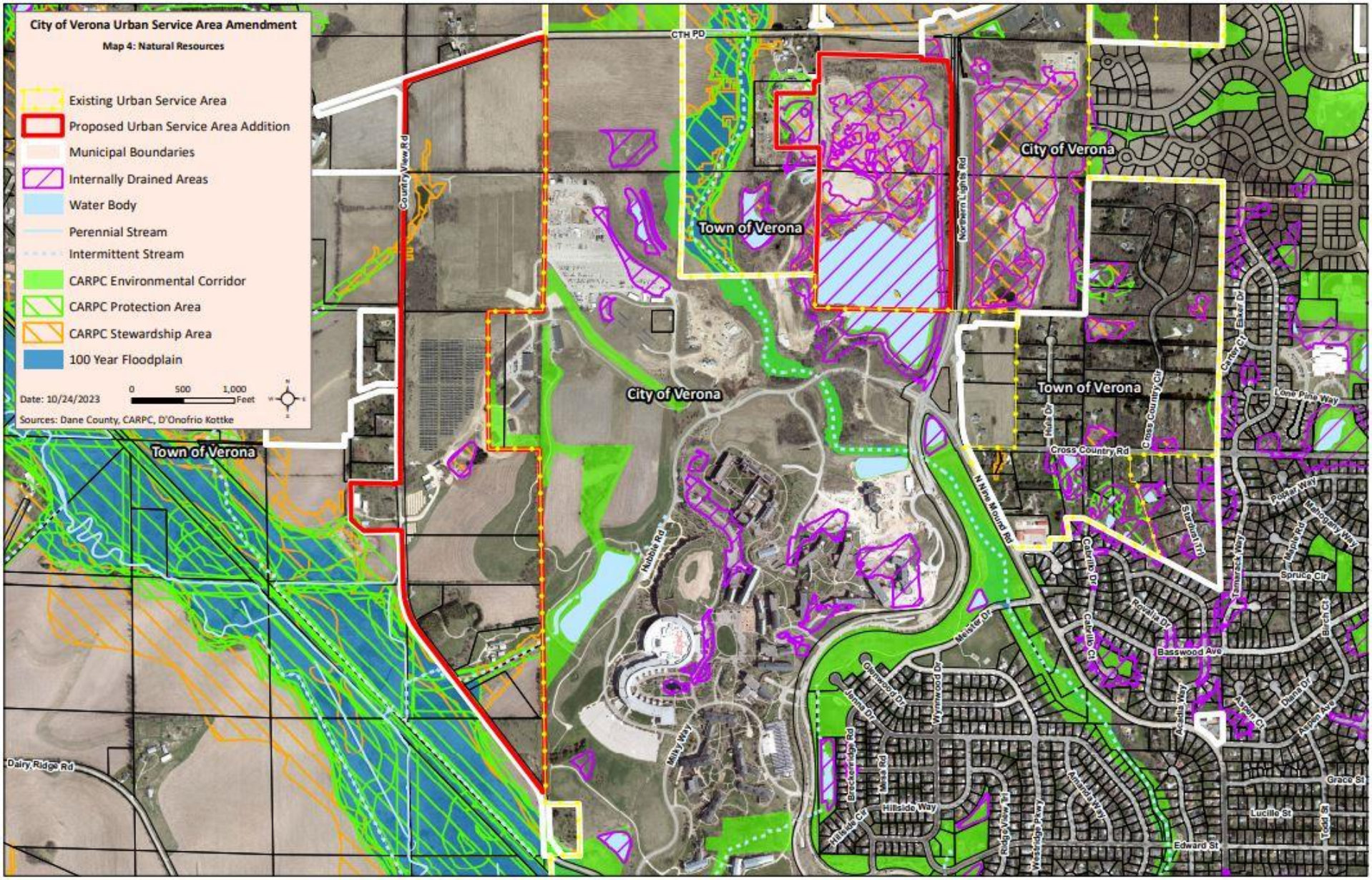
The City of Verona has adopted stormwater management requirements that are as stringent as or more stringent than current Dane County stormwater management requirements. The City has a consultant who is responsible for insuring that private and public stormwater management facilities within the City of Verona are being managed and maintained according to the approved management plans for these facilities. The ownership and management follow the City's development procedures. Stormwater management facilities that are designed at the plat level or certified survey map (CSM) level and located in outlots that are dedicated to the public, are ultimately owned and managed by the City. Facilities that are not dedicated to the City are owned and maintained by the property owner.

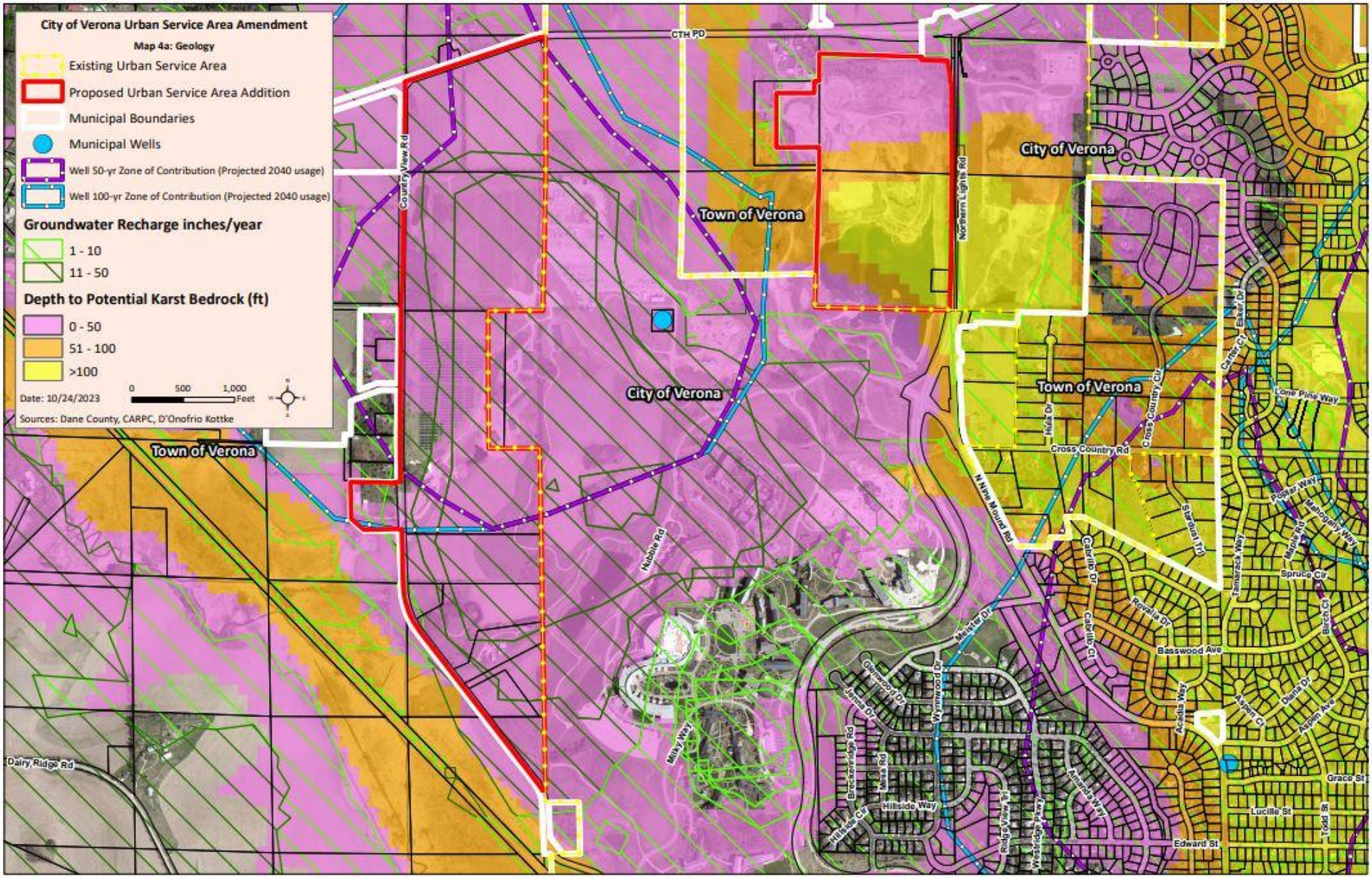

City of Verona Urban Service Area Amendment
Map 1: Proposed Urban Service Amendment Area
Existing Urban Service Area
Proposed Urban Service Area Addition
Municipal Boundaries
Date: 10/23/2023
0 500 1,000 Feet
Sources: Dane County, CARPC, D'Onofrio Kottke
CTH PD
City of Verona
Town of Verona
Country View Rd
Northern Lights Rd
N Nine Mound Rd
Cross Country Rd
Cross Country Cir
Lone Pine Way
Hubble Rd
Milky Way
Meister Dr
Basswood Ave
Edward St
Grace St
Lucille St
Hillside Way
Dairy Ridge Rd

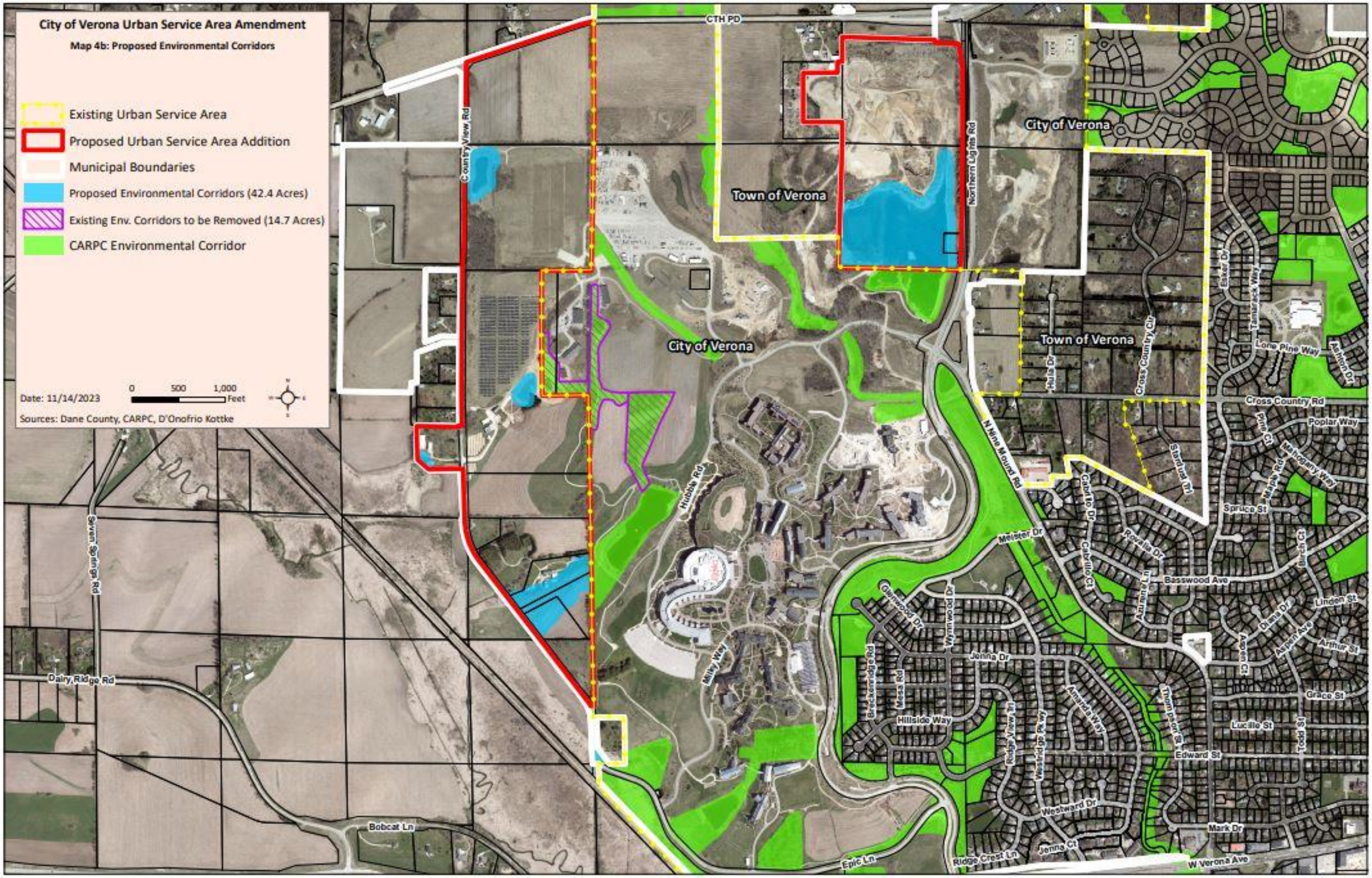

City of Verona Urban Service Area Amendment
Map 1a: Proposed Urban Service Area Amendment Area Concept Plan
Existing Urban Service Area
Proposed Urban Service Area Addition
Municipal Boundaries
Planned Road Network
Planned Sidewalks
Phasing Boundaries
Proposed Land Use
Agricultural and Open Space
Other Open Space
Office (Corporate Campus)
Utilities (Solar Array)
Parking
Driveway
Right of Way
Water
This map does not change zoning designations as regulated by the City of Verona
Proposed Land Use | Acres
Agricultural and Open Space | 50
Other Open Space | 122
Office (Corporate Campus) | 30
Utilities | 15
Parking | 1
Driveway | 6
Right of Way | 16
Water | 21
Total | 262
0 500 1,000 Feet
Date: 10/24/2023
Sources: Dane County, CARPC, D'Onofrio Kottke
CTH PD
County View Rd
Phase 1 2023 to 2025
Future Dates TBD
Town of Verona
Northern Lights Rd
City of Verona
Future Dates TBD
City of Verona
Phase 2 2023 to 2027
Phase 3 2024 to 2025
Phase 4 2024 to 2026
Phase 5 2024 to 2029
Future Dates TBD
Nobbie Rd
Town of Verona
Cross Country Cir
Cross Country Rd
Lone Pine Way
N Nine Mound Rd
Spruce Cir
Basswood Ave
Meister Dr
Milky Way
Hillside Way
Edward St
Graco St
Lucille St
Dairy Ridge Rd
Town of Verona

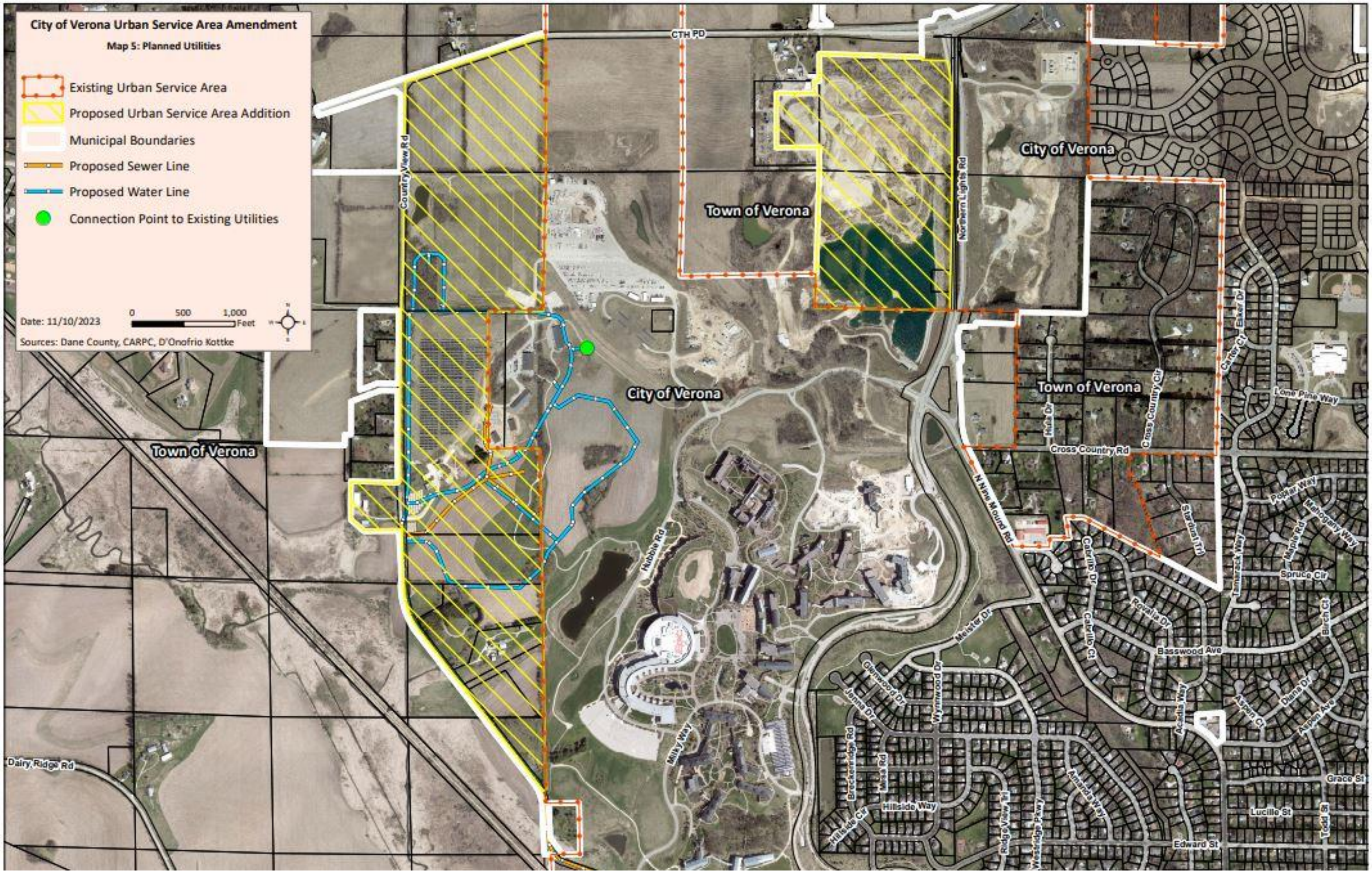

City of Verona Urban Service Area Amendment
Map 2: Existing Land Use
Existing Urban Service Area
Proposed Urban Service Area Addition
Municipal Boundaries
Existing Land Use
Agricultural and Open Land
Construction Staging
Utilities (Solar Array)
Right-of-Way
Water
Date: 10/24/2023
0 500 1,000 Feet
Sources: Dane County, CARPC, D'Onofrio Kottke
CTH PD
Town of Verona
City of Verona
Town of Verona
City of Verona
Town of Verona
Northern Lights Rd
Cross Country Rd
N Nine Mound Rd
Meister Dr
Basswood Ave
Hillside Way
Dairy Ridge Rd
Lucille St
Edward St
Graco St


City of Verona Urban Service Area Amendment
Map 3: Adopted Planned Land Use
Existing Urban Service Area
Proposed Urban Service Area Addition
Municipal Boundaries
Planned Land Use
Office (City of Verona Comp. Plan)
Commercial (Town of Verona Comp. Plan)
Unclassified
Date: 10/24/2023
0 500 1,000 Feet
Sources: Dane County, CARPC, D'Onofrio Kottke
City of Verona
Town of Verona
Town of Verona
City of Verona
Town of Verona
CTH PD
Country View Rd
Northern Lights Rd
Cross Country Rd
N Nine Mound Rd
Dairy Ridge Rd
Nobel Rd
Milky Way
Meister Dr
Basswood Ave
Edward St
Lucille St
Grace St
Lone Pine Way
Hillside Way


City of Verona Urban Service Area Amendment
Map 4: Natural Resources
Existing Urban Service Area
Proposed Urban Service Area Addition
Municipal Boundaries
Internally Drained Areas
Water Body
Perennial Stream
Intermittent Stream
CARPC Environmental Corridor
CARPC Protection Area
CARPC Stewardship Area
100 Year Floodplain
Date: 10/24/2023
0 500 1,000 Feet
Sources: Dane County, CARPC, D'Onofrio Kottke
CTH PD
Town of Verona
City of Verona
Town of Verona
City of Verona
Town of Verona
Dairy Ridge Rd
Cross Country Rd
Basswood Ave
Edward St
Lucille St
Grace St
Spruce Ct
Lone Pine Way


City of Verona Urban Service Area Amendment
Map 4a: Geology
Existing Urban Service Area
Proposed Urban Service Area Addition
Municipal Boundaries
Municipal Wells
Well 50-yr Zone of Contribution (Projected 2040 usage)
Well 100-yr Zone of Contribution (Projected 2040 usage)
Groundwater Recharge inches/year
1 - 10
11 - 50
Depth to Potential Karst Bedrock (ft)
0 - 50
51 - 100
>100
Date: 10/24/2023
0 500 1,000 Feet
Sources: Dane County, CARPC, D'Onofrio Kottke
CTH PD
Town of Verona
City of Verona
Town of Verona
City of Verona
Town of Verona
Country View Rd
Northern Lights Rd
Hubbe Rd
N Nine Mound Rd
Cross Country Rd
Cross Country Cir
Meister Dr
Basswood Ave
Lone Pine Way
Spruce Cir
Dairy Ridge Rd
Hillside Way
Edward St
Lucille St
Grace St


City of Verona Urban Service Area Amendment
Map 4b: Proposed Environmental Corridors
Existing Urban Service Area
Proposed Urban Service Area Addition
Municipal Boundaries
Proposed Environmental Corridors (42.4 Acres)
Existing Env. Corridors to be Removed (14.7 Acres)
CARPC Environmental Corridor
Date: 11/14/2023
0 500 1,000 Feet
Sources: Dane County, CARPC, D'Onofrio Kottke
CTH PD
Country View Rd
City of Verona
Town of Verona
Northern Lights Rd
N Nine Mound Rd
Cross Country Rd
Cross Country Cir
Hubble Rd
Milky Way
Seven Springs Rd
Dairy Ridge Rd
Bobcat Ln
Epic Ln
Ridge Crest Ln
W Verona Ave
Meister Dr
Basswood Ave
Jenna Dr
Hillside Way
Edward St
Westward Dr
Mark Dr
Lucille St
Grace St
Spruce St
Poplar Way
Lone Pine Way
Linden St
Arthur St


City of Verona Urban Service Area Amendment
Map 5: Planned Utilities
Existing Urban Service Area
Proposed Urban Service Area Addition
Municipal Boundaries
Proposed Sewer Line
Proposed Water Line
Connection Point to Existing Utilities
Date: 11/10/2023
0 500 1,000 Feet
Sources: Dane County, CARPC, D'Onofrio Kottke
CTH PD
Country View Rd
Northern Lights Rd
City of Verona
Town of Verona
Cross Country Rd
N Nine Mound Rd
Hubbie Rd
Milky Way
Dairy Ridge Rd
Basswood Ave
Edward St
Lucille St
Grace St
Spruce Cir
Lone Pine Way
Hillside Way

List of Appendices:

Appendix A: Plan Commission and City Council USA Amendment Resolutions

Appendix B: Town of Verona Notification

Appendix C: USA Expansion Wetland Delineation

Appendix D: Wisconsin DNR Bureau of Natural Heritage Conservation for Endangered Resources Review Preliminary Assessment Section A

Appendix E: Wisconsin DNR Bureau of Natural Heritage Conservation for Endangered Resources Review Preliminary Assessment Section B

Appendix F: Wisconsin DNR Bureau of Natural Heritage Conservation for Endangered Resources Review Assessment

Appendix G: Artificial Wetland Exemption- Quarry

Appendix H: Assured Wetland Determination- Existing USA

Appendix I: Sanitary and Water Flow Calculations

City of Verona

Urban Service Area Amendment Request: Epic Campus 6 and 7 expansion Appendices

NOVEMBER 13, 2023

City of Verona

VANDEWALLE & ASSOCIATES

Appendix A: Plan Commission and City Council USA Amendment Resolutions

CITY OF VERONA
Resolution No. R-23-023

RESOLUTION APPROVING THE EXPANSION OF THE VERONA URBAN SERVICE AREA TO INCLUDE 262-ACRES OF LAND LOCATED AT 1979 MILKY WAY

WHEREAS, the City's Urban Service Area is the area in which denser, urban development is permitted and utilities such as sewer and water are allowed; and

WHEREAS, the City expects urban development to occur in the near future; and

WHEREAS, the City has planned for expected urban growth within the proposed urban service expansion area; and

WHEREAS, the City's Comprehensive Plan have designated future land uses for the proposed urban service area and the development planned for these areas will be consistent with the City's Comprehensive Plan; and

WHEREAS, the proposed urban service area amendment will be consistent with all applicable land use and environmental protection regulations and requirements; and

WHEREAS, Plan Commission recommended approval of expanding the Verona Urban Service Area to include lands located at 1979 Milky Way at the September 5, 2023 Plan Commission meeting.

NOW, THEREFORE, BE IT RESOLVED that the City of Verona Common Council finds that the expansion of the Urban Service Area to include 262-acres is consistent with the adopted Comprehensive Plan and furthermore directs staff to submit a request to expand the Verona Urban Service Area to include said property.

CITY OF VERONA SEAL CORPORATE SEAL DANE COUNTY, WISCONSIN

CITY OF VERONA

Luke Diaz, Mayor

Holly Licht, City Clerk

Passed, signed and dated this 11 day of September, 2023.

Appendix B: Town of Verona Notification

From: Sarah Gaskell <SGaskell@town.verona.wi.us>
Sent: Thursday, August 10, 2023 9:54 AM
To: Adam Sayre <adam.sayre@ci.verona.wi.us>
Cc: Jamie Aulik <jamie.aulik@ci.verona.wi.us>; Katherine Holt <katherine.holt@ci.verona.wi.us>
Subject: RE: City of Verona USA

Thank for sending this over.

Sarah Gaskell
She/her
Planner/Administrator
Direct line: 608-807-4460
Main line: 608-845-7187

From: Adam Sayre <adam.sayre@ci.verona.wi.us>
Sent: Wednesday, August 9, 2023 8:20 AM
To: Sarah Gaskell <SGaskell@town.verona.wi.us>
Cc: Jamie Aulik <jamie.aulik@ci.verona.wi.us>; Katherine Holt <katherine.holt@ci.verona.wi.us>
Subject: City of Verona USA

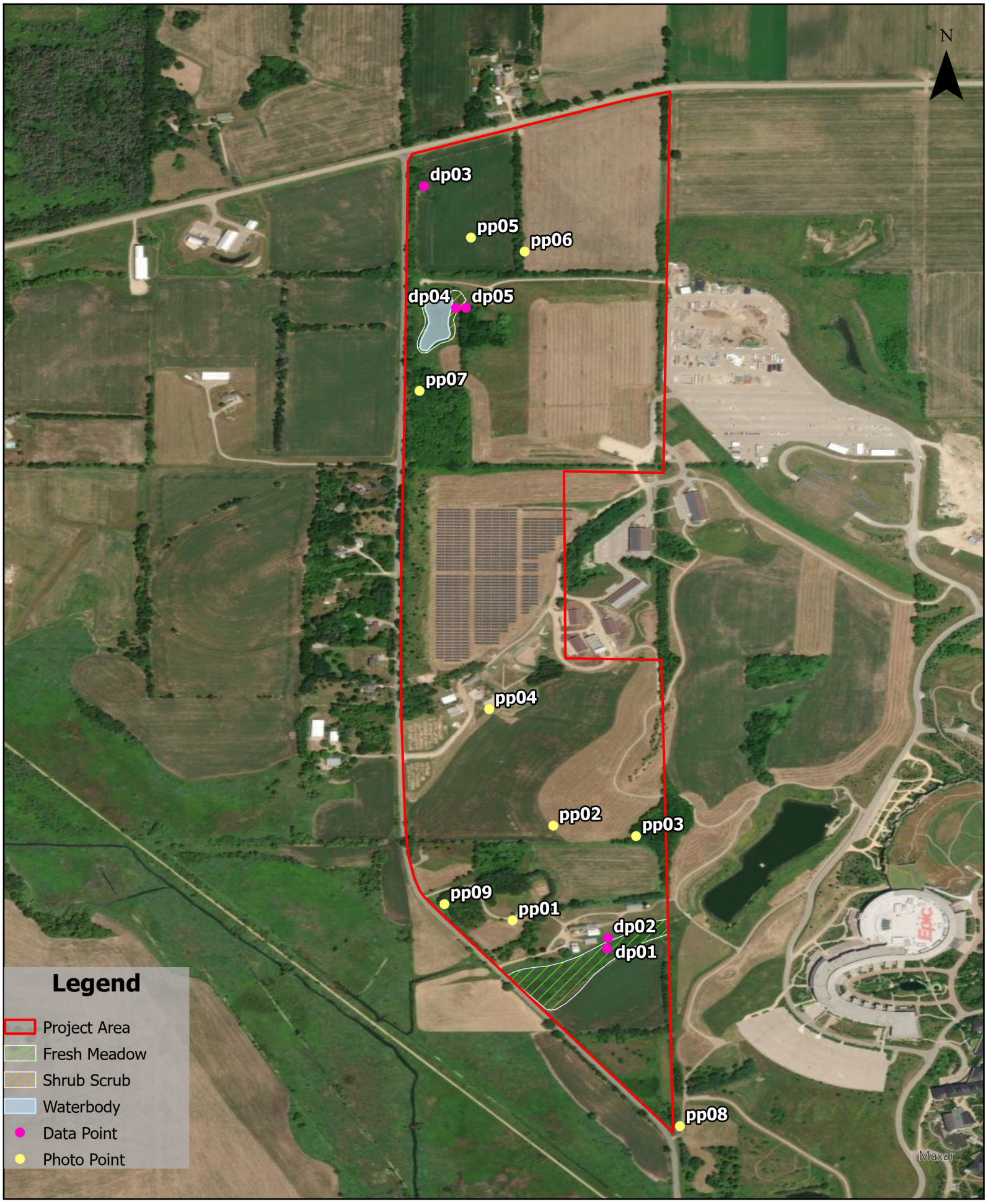
Good morning Sarah –

Attached is a draft USA map that will go to the City's Plan Commission and Common Council in September for authorization to expand our urban service area. Please let me know if you have any questions.

Thanks.

Adam Sayre, AICP
Director of Planning & Development
City of Verona
111 Lincoln St.
Verona, WI 53593
Phone: (608) 848-9941
adam.sayre@ci.verona.wi.us

Appendix C: USA Expansion Wetland Delineation

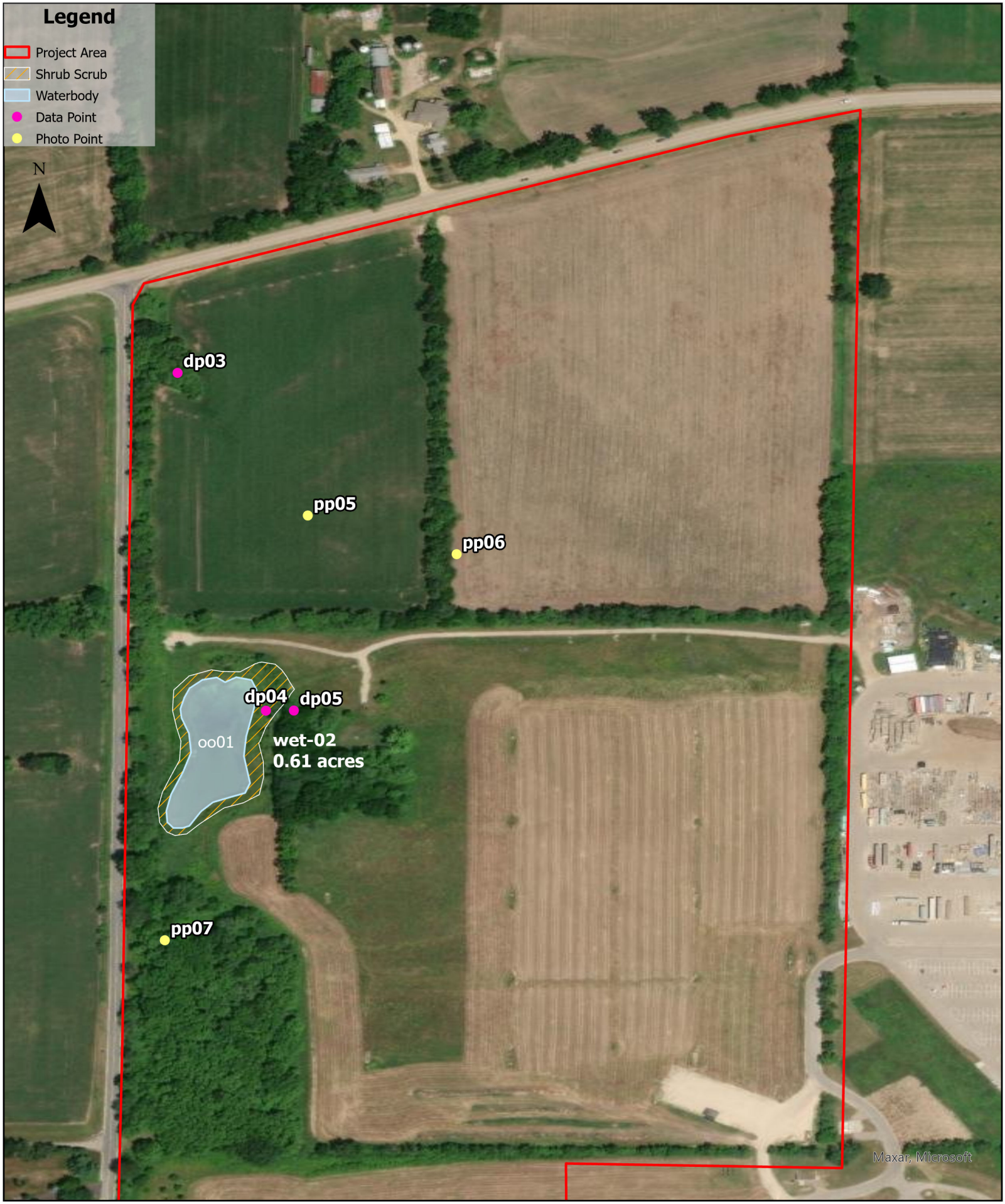


Urban Service Area Expansion
Verona, Wisconsin
Project No 60185102

0 0.1 0.2 Miles

Figure 6 - Wetland Detail Map

Prepared August 2023

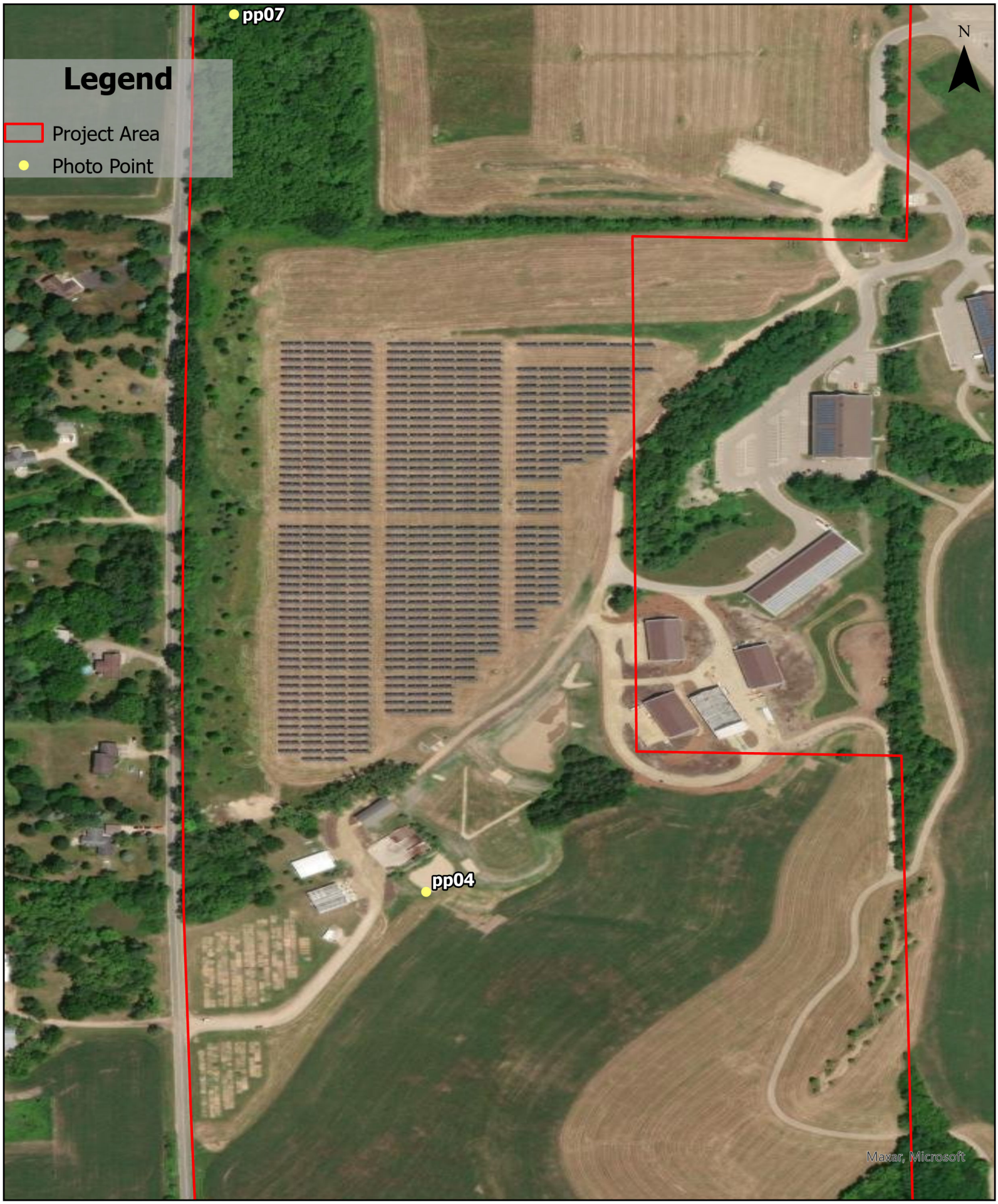


Urban Service Area Expansion
Verona, Wisconsin
Project No 60185102

0 200 400 Feet

Figure 6 - Wetland Detail Map

Prepared August 2023



Urban Service Area Expansion
Verona, Wisconsin
Project No 60185102

0 200 400 Feet

Figure 6 - Wetland Detail Map

Prepared August 2023

Urban Service Area Expansion
Verona, Wisconsin
Project No 60185102

0 200 400 Feet

Figure 6 - Wetland Detail Map

Prepared August 2023

Appendix D: Wisconsin DNR Bureau of Natural Heritage Conservation for Endangered Resources Review Preliminary Assessment Section A

Endangered Resources Preliminary Assessment

Created on **8/14/2023**. This report is good for one year after the created date.

DNR staff will be reviewing the ER Preliminary Assessments to verify the results provided by the Public Portal. ER Preliminary Assessments are only valid if the project habitat and waterway-related questions are answered accurately based on current site conditions. If an assessment is deemed invalid, a full ER review may be required even if the assessment indicated otherwise.

Results

A search was conducted of the NHI Portal within a 1-mile buffer (for terrestrial and wetland species) and a 2-mile buffer (for aquatic species) of the project area. Based on these search results, below are your next steps.

An ER Review is needed to ensure compliance with Wisconsin's Endangered Species Law (s. 29.604 Wis. Stats.) and the Federal Endangered Species Act (16 USC ss 1531-43). Therefore you should request an Endangered Resources Review https://dnr.wi.gov/topic/ERReview/Review.html The ER Review will list the endangered resources that have been recorded within the vicinity of the project area and follow-up actions may be necessary.

One (or more) of the following situations apply:

- The species recorded are state or federal threatened or endangered animals.
- The species recorded are state threatened or endangered plants on public land.
- The species recorded are federal threatened or endangered plants on federal land or involve federal funds or a federal permit.
- The project site overlaps the Karner Blue Butterfly High Potential Range.
- The project overlaps the Rusty Patched Bumble Bee High Potential Zone.

A copy of this document can be kept on file and submitted with any other necessary DNR permit applications to show that the need for an ER Review has been met. This notice only addresses endangered resources issues. This notice does not constitute DNR authorization of the proposed project and does not exempt the project from securing necessary permits and approvals from the DNR and/or other permitting authorities.

Project Information

Landowner name	
Project address	
Project description	

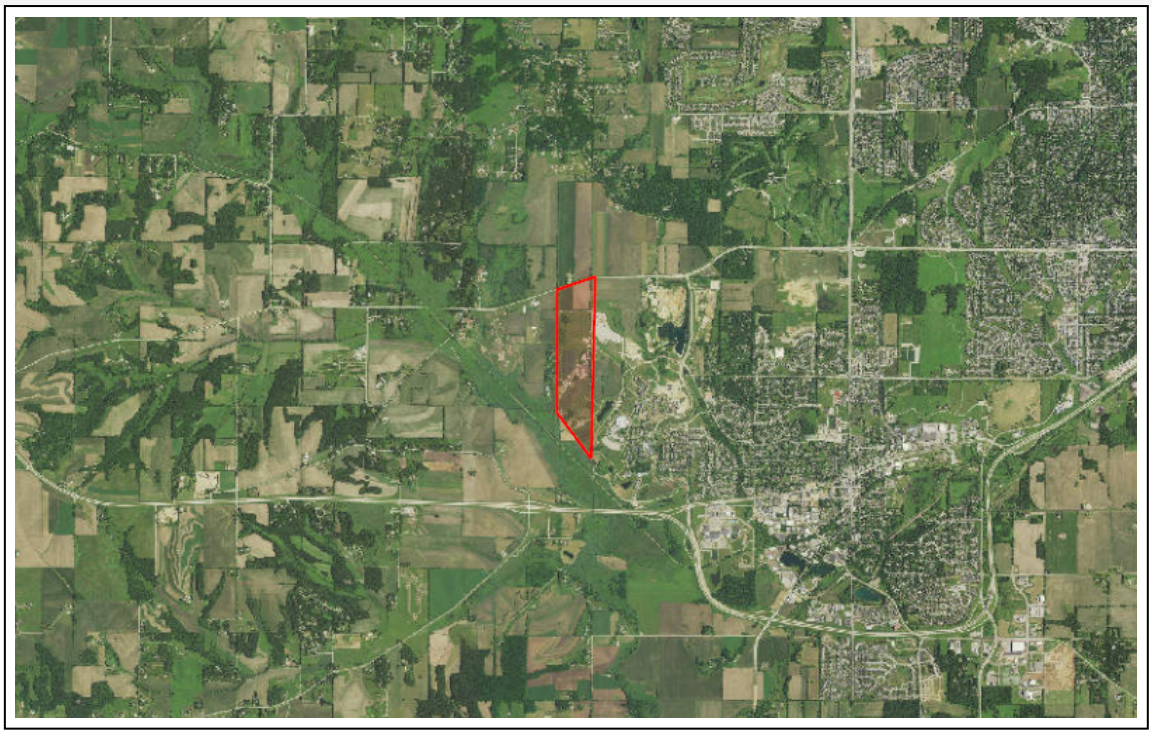
Project Questions

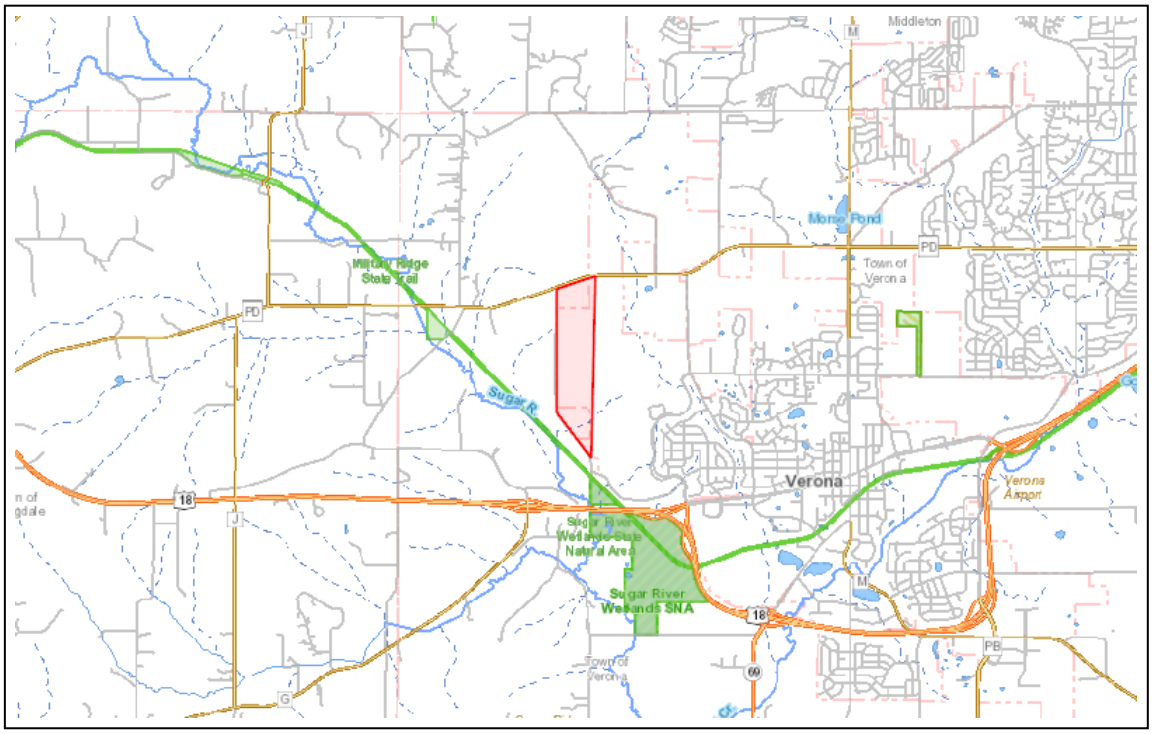
Does the project involve a public property?	**No**
Is there any federal involvement with the project?	**No**
Is the project a utility, agricultural, forestry or bulk sampling (associated with mining) project?	**No**
Is the project property in Managed Forest Law or Managed Forest Tax Law?	**No**
Project involves tree or shrub removal?	**No**
Is project near (within 300 ft) a waterbody or a shoreline?	**No**
Is project within a waterbody or along the shoreline?	**No**

Does the project area (including access routes, staging areas, laydown yards, select sites, source/fill sites, etc.) occur **entirely within** one or more of the following habitats?

Urban/residential	**No**
Manicured lawn	**No**
Artificial/paved surface	**No**
Agricultural land	**No**
Areas covered in crushed stone or gravel	**No**

Project Area Maps





Appendix E: Wisconsin DNR Bureau of Natural Heritage Conservation for Endangered Resources Review Preliminary Assessment Section B

Endangered Resources Preliminary Assessment

Created on **8/22/2023**. This report is good for one year after the created date.

DNR staff will be reviewing the ER Preliminary Assessments to verify the results provided by the Public Portal. ER Preliminary Assessments are only valid if the project habitat and waterway-related questions are answered accurately based on current site conditions. If an assessment is deemed invalid, a full ER review may be required even if the assessment indicated otherwise.

Results

A search was conducted of the NHI Portal within a 1-mile buffer (for terrestrial and wetland species) and a 2-mile buffer (for aquatic species) of the project area. Based on these search results, below are your next steps.

An ER Review is needed to ensure compliance with Wisconsin's Endangered Species Law (s. 29.604 Wis. Stats.) and the Federal Endangered Species Act (16 USC ss 1531-43). Therefore you should request an Endangered Resources Review https://dnr.wi.gov/topic/ERReview/Review.html The ER Review will list the endangered resources that have been recorded within the vicinity of the project area and follow-up actions may be necessary.

One (or more) of the following situations apply:

- The species recorded are state or federal threatened or endangered animals.
- The species recorded are state threatened or endangered plants on public land.
- The species recorded are federal threatened or endangered plants on federal land or involve federal funds or a federal permit.
- The project site overlaps the Karner Blue Butterfly High Potential Range.
- The project overlaps the Rusty Patched Bumble Bee High Potential Zone.

A copy of this document can be kept on file and submitted with any other necessary DNR permit applications to show that the need for an ER Review has been met. This notice only addresses endangered resources issues. This notice does not constitute DNR authorization of the proposed project and does not exempt the project from securing necessary permits and approvals from the DNR and/or other permitting authorities.

Project Information

Landowner name	
Project address	
Project description	

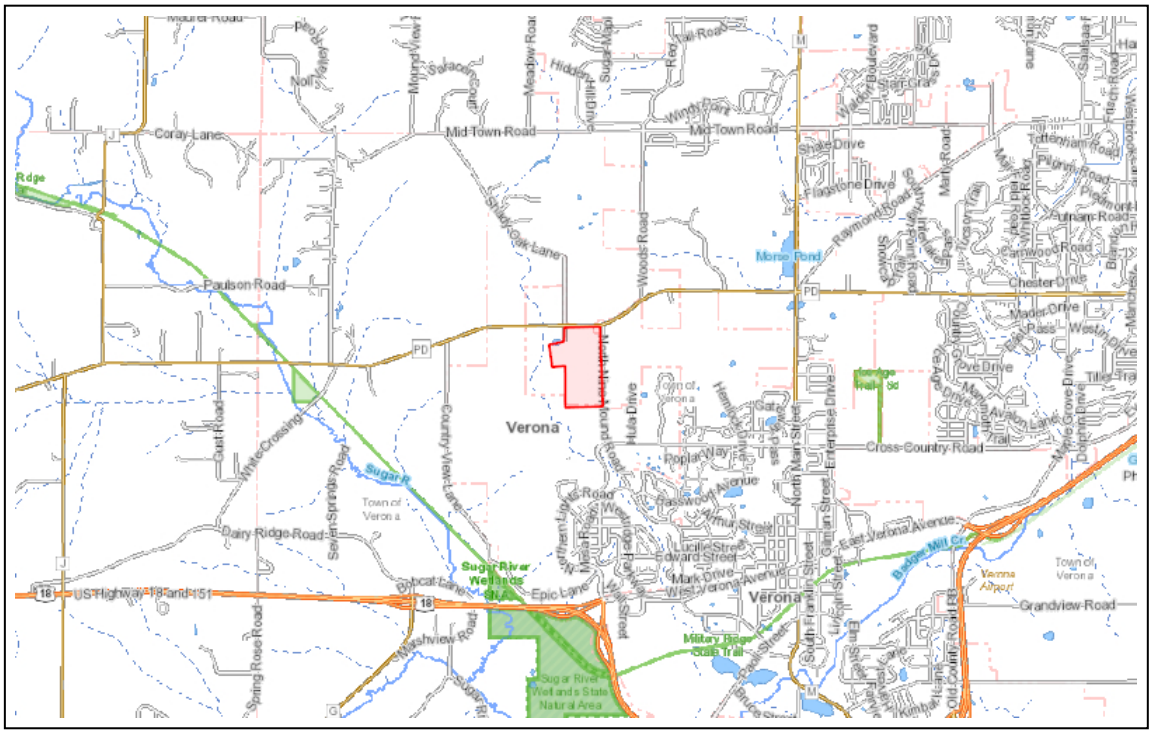
Project Questions

Does the project involve a public property?	**No**
Is there any federal involvement with the project?	**No**
Is the project a utility, agricultural, forestry or bulk sampling (associated with mining) project?	**No**
Is the project property in Managed Forest Law or Managed Forest Tax Law?	**No**
Project involves tree or shrub removal?	**No**
Is project near (within 300 ft) a waterbody or a shoreline?	**No**
Is project within a waterbody or along the shoreline?	**No**

Does the project area (including access routes, staging areas, laydown yards, select sites, source/fill sites, etc.) occur **entirely within** one or more of the following habitats?

Urban/residential	**No**
Manicured lawn	**No**
Artificial/paved surface	**No**
Agricultural land	**No**
Areas covered in crushed stone or gravel	**No**

Project Area Maps



Appendix F: Wisconsin DNR Bureau of Natural Heritage Conservation for Endangered Resources Review Assessment

State of Wisconsin / DEPARTMENT OF NATURAL RESOURCES

Tony Evers, Governor
Adam N. Payne, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

101 S. Webster St.
Box 7921
Madison, WI 53707-7921

September 22, 2023

Scott Heacock
Vandewalle and Associates
120 E Lakeside Street
Madison, WI 53715

SUBJECT: Endangered Resources Review (ERR Log # 23-660)
Proposed Epic Campus 6 and 7, Dane County, WI (T06N R08E S08, T06N R08E S09, T06N R08E S17)

Dear Scott Heacock,

The Bureau of Natural Heritage Conservation has reviewed the proposed project described in the Endangered Resources (ER) Review Request received September 1, 2023. The complete ER Review for this proposed project is attached and follow-up actions are summarized below:

Required Actions: 0 species
Recommended Actions: 5 species
No Follow-Up Actions: 9 species
Additional Recommendations Specified: Yes

This ER Review may contain Natural Heritage Inventory data (http://dnr.wi.gov/topic/NHI), including specific locations of endangered resources, which are considered sensitive and are not subject toWisconsin's Open Records Law. Information contained in this ER Review may be shared with individuals who need this information in order to carry out specific roles in the planning, permitting, and implementation of the proposed project. **Specific locations of endangered resources may not be released or reproduced in any publicly disseminated documents.**

The attached ER Review is for informational purposes and only addresses endangered resources issues. **This ER Review does not constitute DNR authorization of the proposed project and does not exempt the project from securing necessary permits and approvals from the DNR and/or other permitting authorities.** Please contact the ER Review Program whenever the project plans change, new details become available, or more than a year has passed to confirm if results of this ER Review are still valid.

Please contact me at 608-419-2005 or via email at anna.rossler@wi.gov if you have any questions about this ER Review.

Sincerely,

Anna Rossler
Endangered Resources Review Program

cc:

Appendix G: Artificial Wetland Exemption- Quarry

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
3911 Fish Hatchery Rd.
Fitchburg, WI, 53711

Tony Evers, Governor
Adam N. Payne, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

08/31/2023

Mercedez Kennedy
1350 Deming Way, Suite 100
Middleton, WI 53562

WIC-SC-2023-13-02714

RE: Artificial Wetland Exemption Determination within red boxed area described on Wetlands within Verona USA – Artificial WWI Map located in the City of Verona, Dane County. See enclosed map.

Dear Mr. or Ms. Kennedy:

This letter is in response to your request for an artificial wetland exemption determination for the above-mentioned wetlands.

According to 281.36 (4n), State Statutes, a landscape feature where hydrophytic vegetation may be present as a result of human modification to the landscape or hydrology and for which no definitive evidence exists showing a prior wetland or stream history before August 1, 1991, may be exempt from state wetland regulations. The following types of artificial wetlands cannot be exempted from state wetland regulation: 1) a wetland that serves as a fish spawning area or that is passage to a fish spawning area and 2) a wetland created as a result of a wetland mitigation requirement. In addition, DNR must also consider whether the artificial wetland is providing significant flood protection to adjacent or downstream properties and infrastructure, and/or significant water quality functions to adjacent or downstream water bodies.

The Department reviewed the following materials to aid in our exemption determination:

- The request narrative
- Site photographs that show different angles and views of the wetland
- Historic Maps such as the Original Land Survey Plat, Bordner Survey, USGS topographic Quad map, and/or soil mapping

Conclusion:
Based upon the information provided above, the wetland identified as within red boxed area described on Wetlands within Verona USA – Artificial WWI Map, lacked a wetland history prior to August 1, 1991, and fulfills all artificial wetland exemption standards. Therefore, within red boxed area described on Wetlands within Verona USA – Artificial WWI Map is exempt from state wetland regulations.

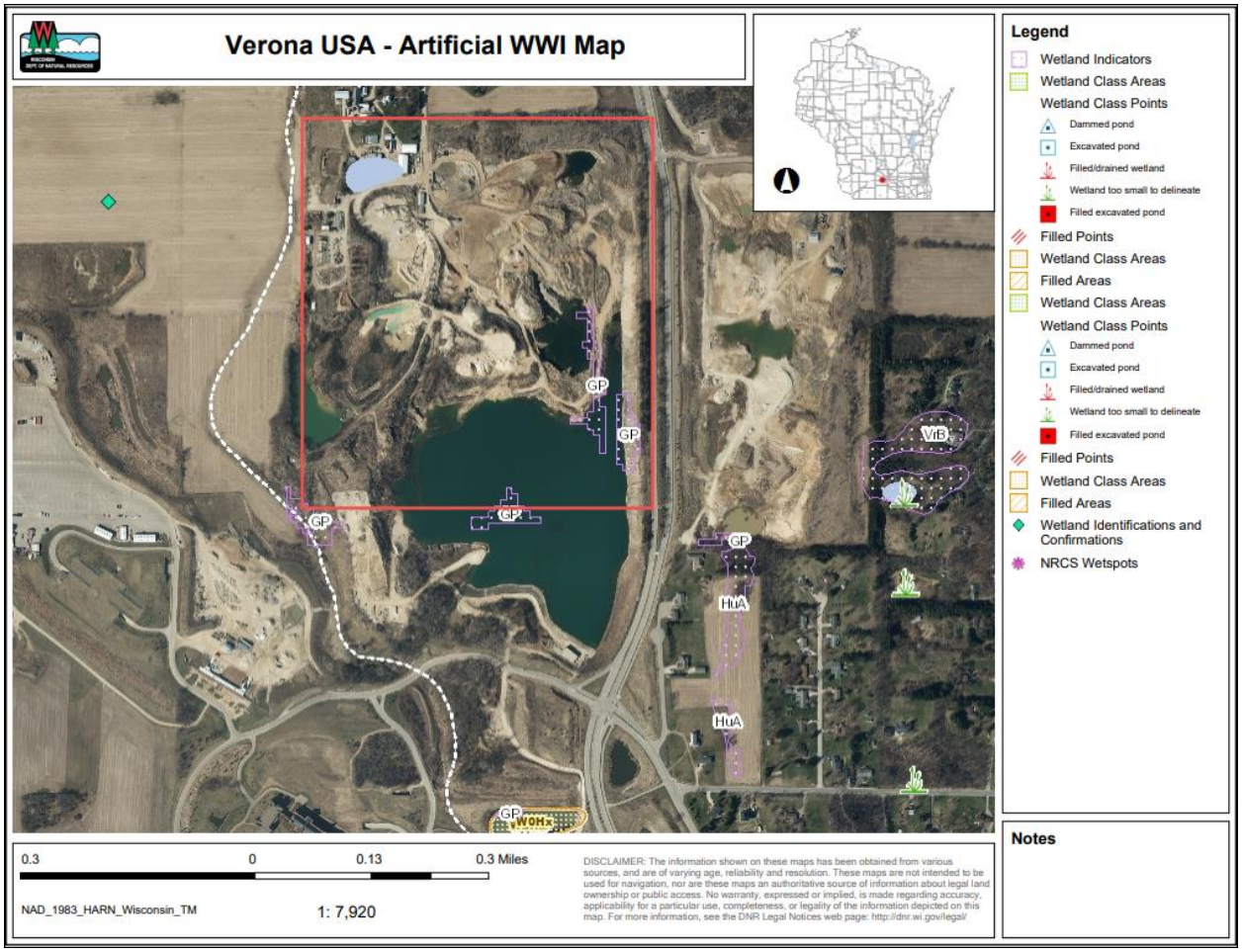
This letter describes DNR's decision regarding the jurisdictional status of within red boxed area described on Wetlands within Verona USA – Artificial WWI Map and is only valid for state jurisdictional purposes. For decisions regarding the federal jurisdictional status of within red boxed area described on Wetlands within Verona USA – Artificial WWI Map, you will need to contact the U.S. Army Corps of Engineers.

If you have any questions, please call me at (608) 228-4067 or email Allen.Ramminger@wisconsin.gov

Sincerely,

Allen Ramminger
Water Management Specialist

Copy to: USACE Project Manager
Water Management Specialist
Consultant
Clerk



Appendix H: Assured Wetland Determination- Existing USA

Heartland
ECOLOGICAL GROUP INC
506 Springdale Street, Mount Horeb, WI 53572

November 10, 2023

Mr. Nathan Lockwood
D'Onofrio, Kottke & Associates
7530 Westward Way
Madison, WI, 53717

RE: Wetland Determination Summary – Epic-Verona USA Expansion, City of Verona, Dane County, Wisconsin

Dear Mr. Lockwood:

Heartland Ecological Group, Inc. ("Heartland") completed an assured wetland determination at the Epic-Verona USA Expansion Site on October 31, 2023 at the request of D'Onofrio, Kottke & Associates. Fieldwork was completed by Jeff Kraemer, an assured delineator qualified via the Wisconsin Department of Natural Resources (WDNR) Wetland Delineation Assurance Program (Attachment 5, Delineator Qualifications). The 2.03-acre site (the "Study Area") lies southeast of the intersection of County Trunk Highway (CTH) PD and Country View Rd, in the northwest ¼ of Section 17, T6N, R8E, City of Verona, Dane County, Wisconsin (Attachment 1, Figure 1). The purpose of the wetland delineation was to determine the location and extent of wetlands within the Study Area. There were no wetlands identified within the Study Area (Attachment 1, Figure 7).

Methods

Wetland determinations were based upon the criteria and methods described in the USACE Wetland Delineation Manual, T.R. Y-87-1 ("1987 Corps Manual") and the applicable Regional Supplement to the Corps of Engineers Wetland Delineation Manual. In addition, the Guidance for Submittal of Delineation Reports to the St. Paul District USACE and the WDNR (WDNR, 2015) was followed in completing the wetland determination and report.

Wetland determinations utilized available resources including the U.S. Geological Survey's (USGS) *WI 7.5 Minute Series (Topographic) Map* (Figure 2, Appendix A), the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service's (NRCS) Soil Survey Geographic Database (SSURGO) *Web Soil Survey* (Figure 3, Appendix A), the WDNR's *Wetland Indicator* data layer (Figure 4, Appendix A), the WDNR's *Wisconsin Wetland Inventory* data layer (Figure 5, Appendix A), the WNDR's *24k Hydro Flowlines (Rivers and Streams)* data layer (Figure 2 and 5, Appendix A), the WDNR's *Color-Stretch LiDAR and Hillshade Image Service Layer* (Figure 6, Appendix A), and aerial imagery available through the USDA Farm Service Agency's (FSA) National Agriculture Imagery Program (NAIP) and Dane County's Land Information Office.

Wetland determinations were completed on-site at sample points, often along transects if wetlands were determined to be present, using the three (3) criteria (vegetation, soil, and hydrology) approach per the 1987 Corps Manual and the Regional Supplement. Procedures in these sources were followed to demonstrate that, under normal circumstances, wetlands

were present or not present based on a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology.

Fieldwork was completed in the early fall when conditions are typically neither wet nor dry in most types of wetlands in southern Wisconsin. Typically, primary indicators such as High-Water Table (A2) and Saturation (A3) are not expected to be present in seasonal wetlands at this time of year. The growing season was determined to still be underway due to various species still retaining green foliage including reed canary grass (*Phalaris arundinacea*), Canada goldenrod (*Solidago canadensis*), Canada thistle (*Cirsium arvense*), smooth brome grass (*Bromus inermus*) and Bell's honeysuckle (*Lonicera x bella*). Sample point placement for the wetland determination was based on topography and WDNR's *WI Wetland Inventory* layer (WWI). No hydric or potentially hydric soils and no SWDV wetland indicators were mapped within, or immediately adjacent to, the Study Area (Figures 3 and 4, Appendix A). However, a WWI point symbol was depicted within the Study Area (Figure 5, Appendix A).

Recent weather conditions influence the visibility or presence of certain wetland hydrology indicators. An assessment of recent precipitation patterns helps to determine if climatic/hydrologic conditions were typical when the field investigation was completed. Therefore, a review of antecedent precipitation in the 90 days leading up to the field investigation was completed. Using an Antecedent Precipitation Tool (APT) analysis developed by the USACE (Deters & Gutenson 2021), the amount of precipitation over these 90 days was compared to averages and standard deviation thresholds observed over the past 30 years to generally represent if conditions encountered during the investigation were normal, wet, or dry. Recent precipitation events in the weeks prior to the investigation were also considered while interpreting wetland hydrology indicators. Additionally, the Palmer Drought Severity Index was checked for long-term drought or moist conditions (NOAA, 2018).

The sample point location was recorded with a Global Navigation Satellite System (GNSS) receiver capable of sub-meter accuracy. Wetland flagging was not utilized and the sample point location was only recorded with a GNSS receiver. The GNSS data was then used to map the sample point locations using ESRI ArcGIS Pro™ software.

Results

According to the APT analysis using the previous 90 days of precipitation data, conditions encountered at the time of the fieldwork were expected to be normal for the time of year (Appendix B). The Palmer Drought Severity Index was checked as part of the APT analysis, and the long-term conditions at the time of the fieldwork were in the mild drought range. Fieldwork was completed outside the dry season based on long-term regional hydrology data utilized in the WebWIMP Climatic Water Balance and computed as part of the APT analysis. The growing season was determined to still be underway based on several species still retaining green foliage.

The topography within the Study Area can best be described as an eroded gulley/ low draw bounded by two slopes on its eastern and western boundaries. A topographic high of approximately 991 feet mean sea level (msl) occurs in the northeast corner, whereas a topographic low of approximately 962 feet msl occurs on the southern boundary (Attachment 1, Figures 2 and 7). Land uses within the Study Area consist of unmanaged degraded woodlands. The surrounding areas are primarily agricultural row cropping with landscaping and developed infrastructure associated with the Epic campus to the south.

Soils mapped by the NRCS Soil Survey within the Study Area and their hydric status are summarized in Table 1 and illustrated on Figure 3. Areas of the Study Area with hydric or potentially hydric soils mapped by the NRCS are typically the primary focus of the field wetland determination. No hydric or potentially hydric soils were present within, or immediately adjacent to, the Study Area.

The Wisconsin Wetland Inventory (WWI) mapping (Attachment 1, Figure 5) does not depict any wetland polygons within the Study Area. However, one (1) WWI point symbol is depicted within the Study Area.

Table 1. Summary of NRCS Mapped Soils within the Study Area

Soil Symbol: Soil Unit Name	Soil Unit Component	Soil Unit Component Percentage	Landform	Hydric status
EdD2: Edmund silt loam, 12 to 20 percent slopes, eroded	Edmund	100	Hills	No
PrC: Port Byron silt loam, 6 to 12 percent slopes	Port Byron	100	Valley sides	No
TrB: Troxel silt loam, 0 to 3 percent slopes	Troxel-Wet substratum	80-90	Depressions, moraines	No
	Elburn	5-11	Drainageways	No
	Plano	5-9	Till plains	No

Available NAIP imagery of the Study Area from the period of 2004-2022 (Attachment 5) was reviewed for evidence of wetland signatures and to gain insight into the site's recent history. Throughout the photo review period, the Study Area consists of woodland cover positioned between two agricultural fields. In 2006, grading is first observed to the south of the Study Area. These grading activities continue until 2013 where stormwater infrastructure, roads, and paths first appear. These land use changes are associated with the Epic campus expansion. No land use changes are evident within the Study Area itself from 2004-2022.

Wetland determination data sheets (Attachment 3) were completed at one (1) sample point where potential wetlands may be present based on the desktop review and field reconnaissance. The sample point location was placed for its position within the lowest elevation spot of the eroded gulley and its proximity to a WWI point symbol. Attachment 4 provides photographs, typically at the sample point locations. The sample point location is shown on Figure 7.

Vegetation at the sample point location was comprised of degraded woodlands dominated by smooth brome grass (*Bromus inermis*, FACU), black raspberry (*Rubus occidentaliss*, FACU), red pine (*Pinus resinosa*, FACU), crack willow (*Salix x fragilis, FAC*), and Bell's honeysuckle (*Lonicera x bella*, FACU). Therefore, the hydrophytic vegetation criteria was not satisfied. No field indicators of hydric soils or indicators of wetland hydrology were observed.

Based on the results of the wetland determination, no wetlands are present within the limits of the Study Area.

Heartland recommends that all applicable regulatory agency reviews and permits are obtained prior to beginning work within the Study Area. Heartland can assist with evaluating the need for additional environmental reviews, surveys, or regulatory agency coordination in consideration of the proposed activity and land use as requested but is outside of the scope of the wetland determination.

Experienced and qualified professionals completed the wetland determination using standard practices and professional judgment. Wetland determinations may be affected by conditions present within the Study Area at the time of the fieldwork. All final decisions on wetlands are made by the USACE, the WDNR, and/or sometimes a local unit of government. Wetland determination reviews by regulatory agencies may result in modifications to the findings presented to the Client. These modifications may result from varying conditions between the time the wetland determination was completed and the time of the review. Factors that may influence the findings may include but not limited to precipitation patterns, drainage modifications, changes or modification to vegetation, and the time of year.

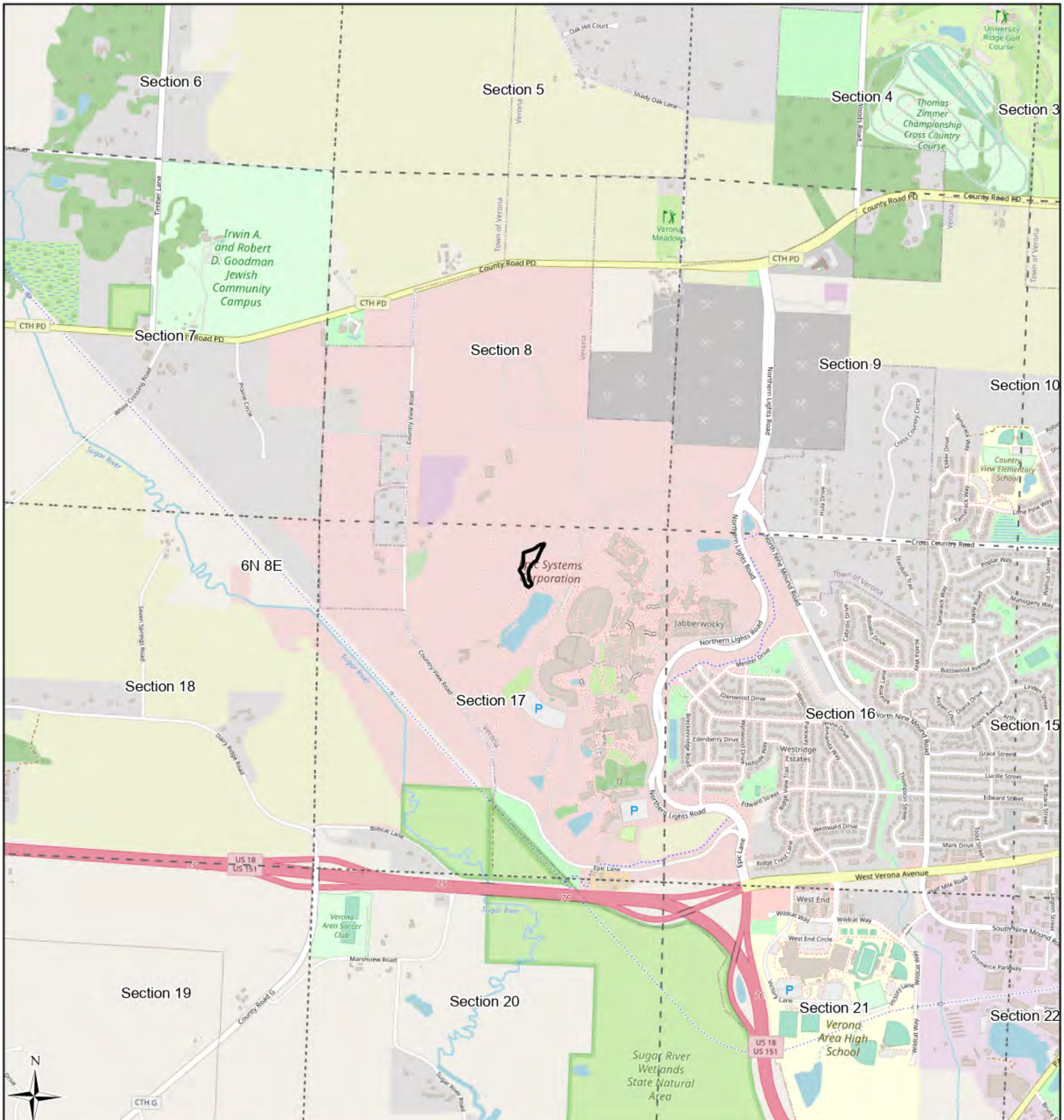
Please feel free to contact me if you have any questions regarding this wetland determination.

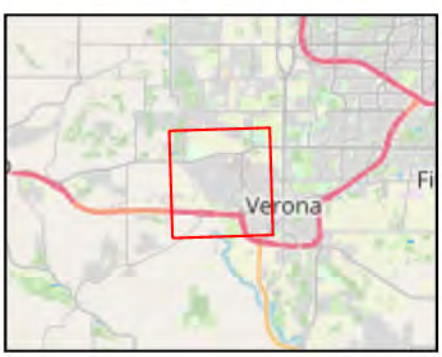
Regards,

Principal Scientist
Heartland Ecological Group, Inc.
jeff@heartlandecological.com
608-575-5783

Attachments:
1 – Figures 1-7
2 – APT Analysis
3 – Wetland Determination Data Sheets
4 – Site Photographs
5 – Off-Site Analysis
6 – Delineator Qualifications

Attachment 1 | Figures





Study Area (2.03 ac)

Township

Section

0 1,000 2,000 Ft

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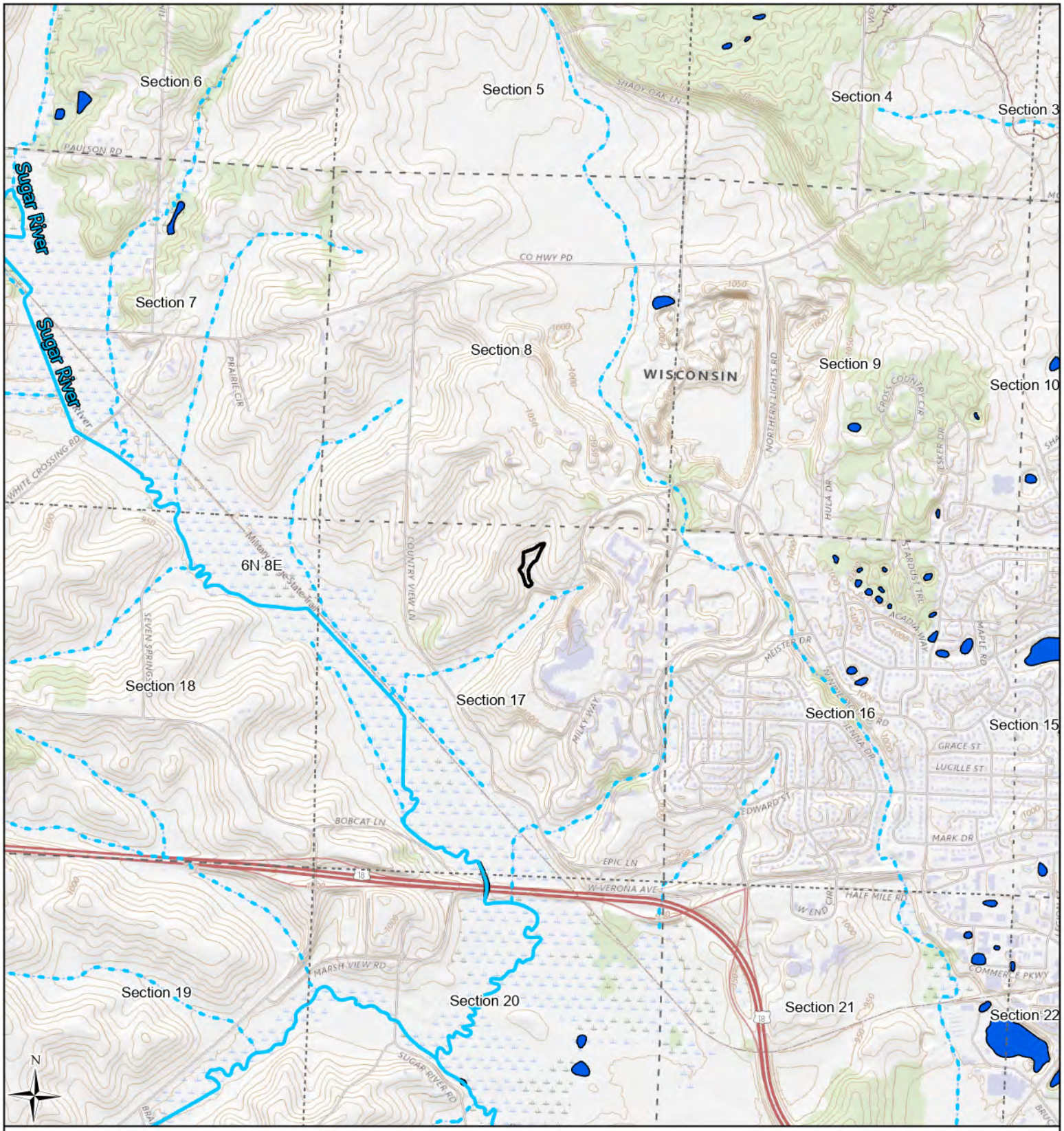
Figure 1. Project Location

Epic Verona Expansion
Project #20231144
T6N, R8E, S17
C Verona, Dane Co

OpenStreetMap
ESRI

LRR: MW

Figure Created: 11/9/2023



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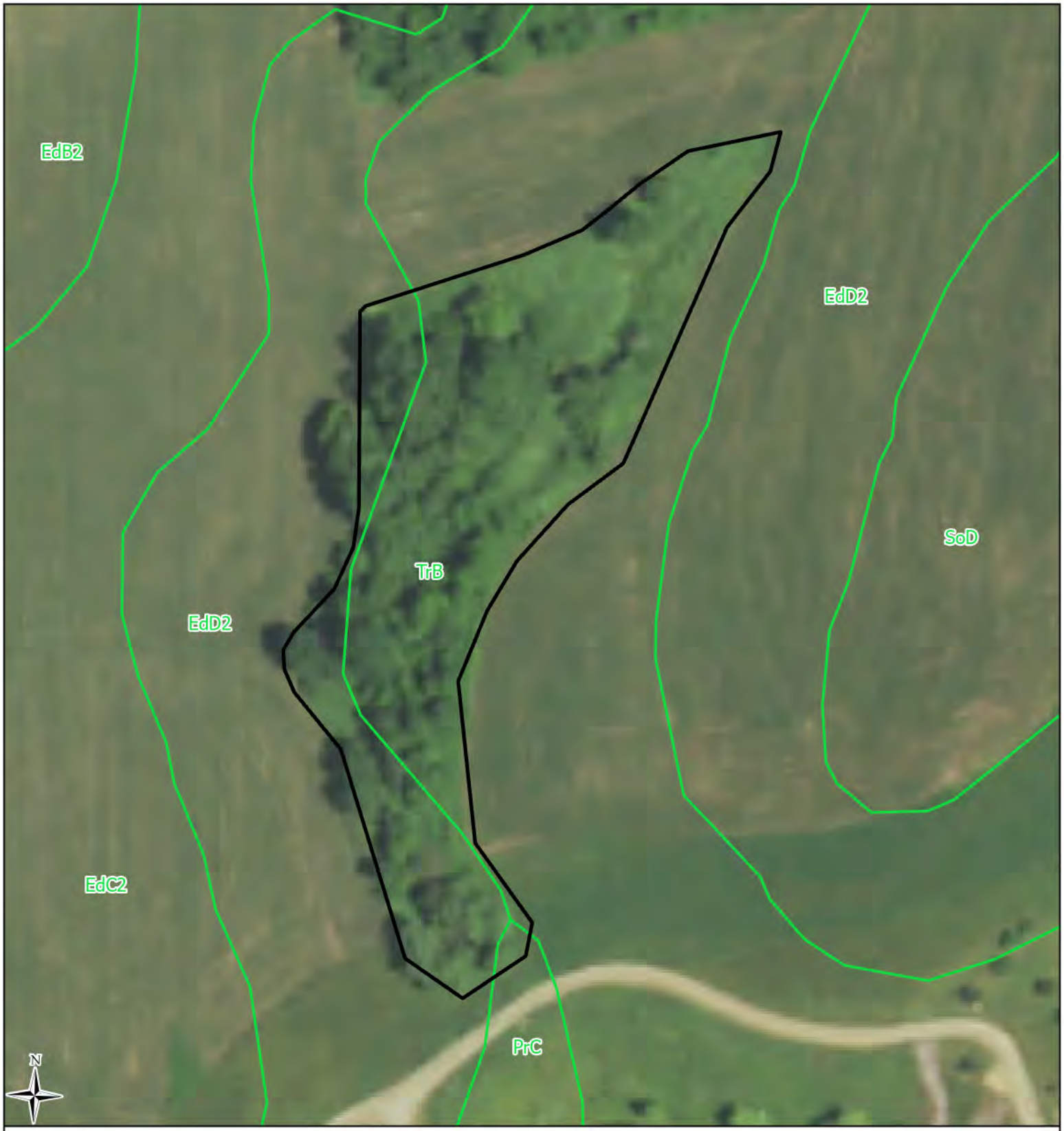
ECOLOGICAL GROUP INC

Figure 2. USGS Topography

Epic Verona Expansion
Project #20231144
T6N, R8E, S17
C Verona, Dane Co

USGSTopo
USGS, WDNR
LRR: MW

Figure Created: 11/9/2023



Study Area (2.03 ac)

NRCS Soil Survey Data

- Hydric (100%)
- Predominantly Hydric (85-99%)
- Partially Hydric (16-84%)
- Predominantly Non-Hydric (1-15%)
- Non-Hydric (0%)

0 100 Ft

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Figure 3. NRCS Hydric Soils

Epic Verona Expansion
Project #20231144
T6N, R8E, S17
C Verona, Dane Co

2022 NAIP
NRCS LRR: MW

Figure Created: 11/9/2023

Study Area (2.03 ac)

SWDV Wetland Indicators (None in Map Extent)

0 100 Ft

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Figure 4. SWDV Wetland Indicators

Epic Verona Expansion
Project #20231144
T6N, R8E, S17
C Verona, Dane Co

2022 NAIP
WDNR
LRR: MW

Figure Created: 11/9/2023

Study Area (2.03 ac)
WWI Wetland Polygons (None in Map Extent)
WWI Wetland Points
Perennial Streams (None in Map Extent)
Intermittent Streams (None in Map Extent)
Waterbodies (None in Map Extent)

0 100 Ft

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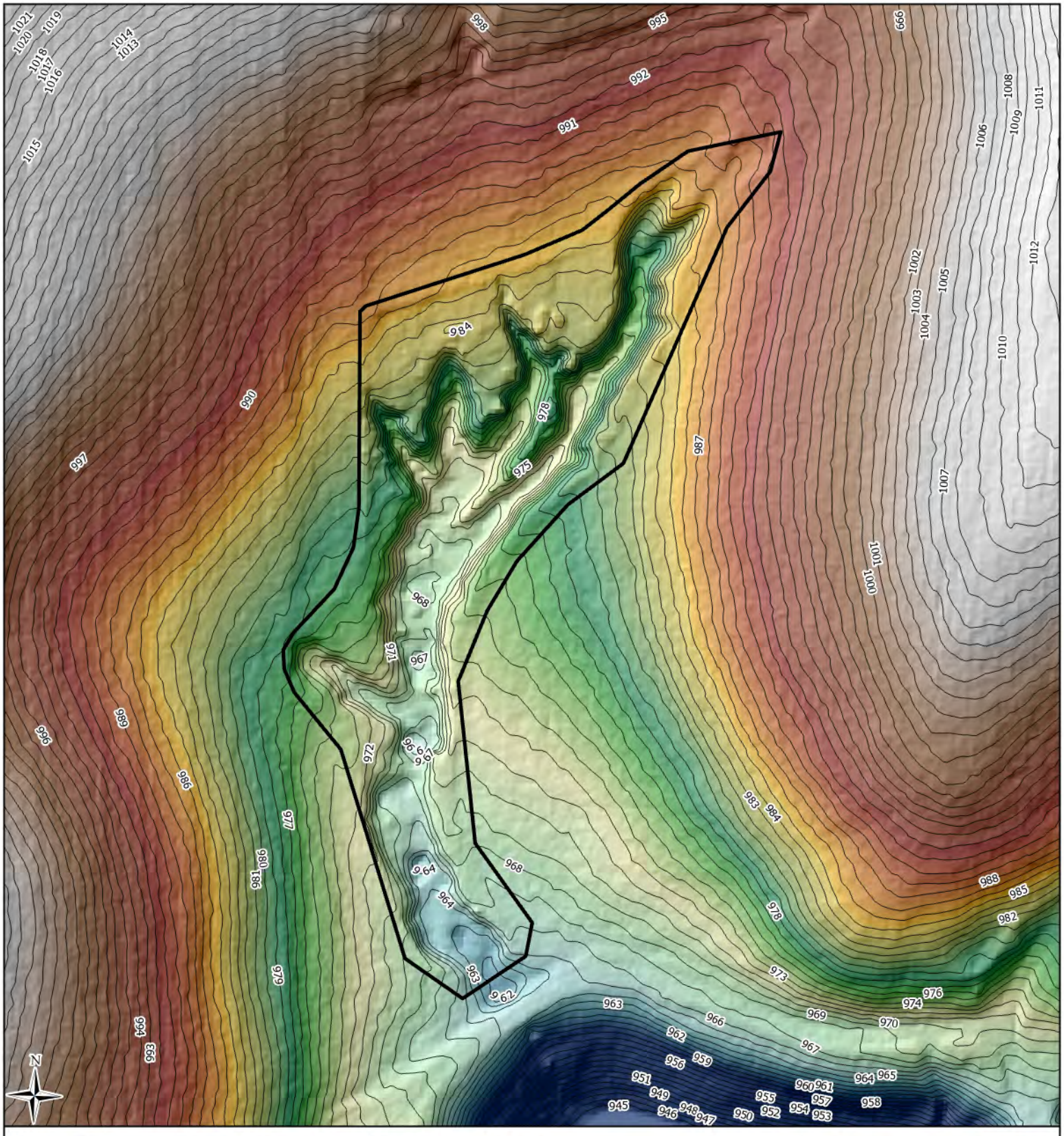
ECOLOGICAL GROUP INC

Figure 5. Wisconsin Wetland Inventory

Epic Verona Expansion
Project #20231144
T6N, R8E, S17
C Verona, Dane Co

2022 NAIP
WDNR, USGS
LRR: MW

Figure Created: 11/9/2023



Study Area (2.03 ac)

Dane Co 1' Contours

0 100 Ft

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Figure 6. Color-Stretch Digital Elevation Model

Epic Verona Expansion
Project #20231144
T6N, R8E, S17
C Verona, Dane Co

DNR Lidar Service
Dane Co, WDNR

LRR: MW

Figure Created: 11/9/2023

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Figure 7. Field Delineated Wetlands

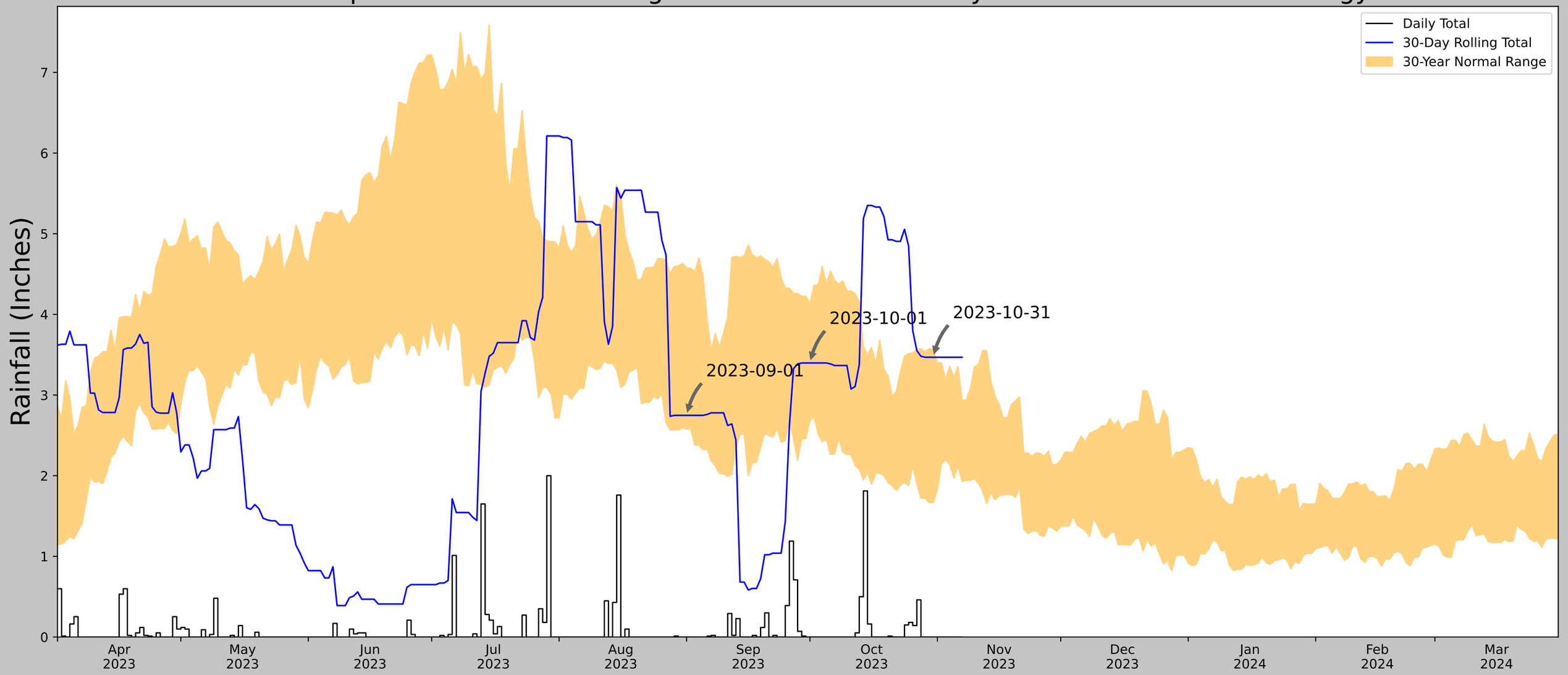
Epic Verona Expansion
Project #20231144
T6N, R8E, S17
C Verona, Dane Co

2022 Dane Co Orthophoto
Dane Co, HEG
LRR: MW

Figure Created: 11/9/2023

Attachment 2 | APT Analysis

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	43.000544, -89.571133
Observation Date	2023-10-31
Elevation (ft)	970.914
Drought Index (PDSI)	Mild drought
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-10-31	1.668898	3.566142	3.468504	Normal	2	3	6
2023-10-01	2.682677	4.136221	3.397638	Normal	2	2	4
2023-09-01	2.580315	4.573622	2.748032	Normal	2	1	2
Result							Normal Conditions - 12

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHARMANY FARM	43.0597, -89.4819	1045.932	6.084	75.018	3.194	11237	88
MADISON 4.3 WSW	43.0533, -89.4638	999.016	1.015	46.916	0.504	7	0
MADISON 6.1 W	43.0695, -89.5079	1055.118	1.477	9.186	0.678	11	0
MADISON 4.8 WSW	43.042, -89.4682	1007.874	1.405	38.058	0.686	5	0
MADISON 3.7 WSW	43.0623, -89.4565	935.039	1.295	110.893	0.726	16	2
MADISON 5.0 SW	43.0317, -89.4831	1033.137	1.936	12.795	0.896	1	0
UW ARBORETUM - MADISON	43.0411, -89.4286	870.079	2.982	175.853	1.866	69	0
MADISON DANE CO RGNL AP	43.1406, -89.3453	858.924	8.873	187.008	5.652	6	0

Attachment 3 | Wetland Determination Data Sheets

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Epic-Verona USA Expansion City/County: C Verona/ Dane Co Sampling Date: 10/31/2023

Applicant/Owner: D'Onofrio, Kottke & Associates State: WI Sampling Point: P1

Investigator(s): Jeff Kraemer, Heartland Ecological Group Section, Township, Range: Section 17, T6N, R8E

Landform (hillside, terrace, etc.): Gulley/ Low Draw Local relief (concave, convex, none): None

Slope (%): 1-2 Lat: Long: Datum:

Soil Map Unit Name: Edmund silt loam (EdD2) NWI classification: None (WWI Point Near)

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks:
Based on the USACE APT analysis, antecedant precipitation conditions at the time of sampling were expected to be normal. Plot was located in a low elevation spot within a gulley. No wetlands were observed during the course of fieldwork- gulley consists of degraded upland woodlands.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus resinosa*	20	Yes	FACU
2. *Salix X fragilis*	10	Yes	FAC
3. *Prunus serotina*	3	No	FACU
4. *Acer negundo*	5	No	FAC
5.			
	38	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Lonicera X bella*	10	Yes	FACU
2.			
3.			
4.			
5.			
	10	=Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Bromus inermis*	100	Yes	FACU
2. *Rubus occidentalis*	5	No	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	105	=Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	133	x 4 =	532
UPL species	5	x 5 =	25
Column Totals:	153 (A)		602 (B)
Prevalence Index = B/A =			3.93

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0[1]
- 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
No hydrophytic vegetation indicators observed.

SOIL

Sampling Point: P1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					Loamy/Clayey	SiL
10-22	10YR 4/4	100					Sandy	LS

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
No hydric soils observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No wetland hydrology observed

Attachment 4 | Site Photographs

Photo #1 Sample point P1

Photo #2 Sample point P1

Photo #3 Sample point P1

Photo #4 Sample point P1

Photo #5 Evidence of growing season- RCG and *C. arvense* still green

Photo #6 Evidence of growing season- *Solidago* sp. still green

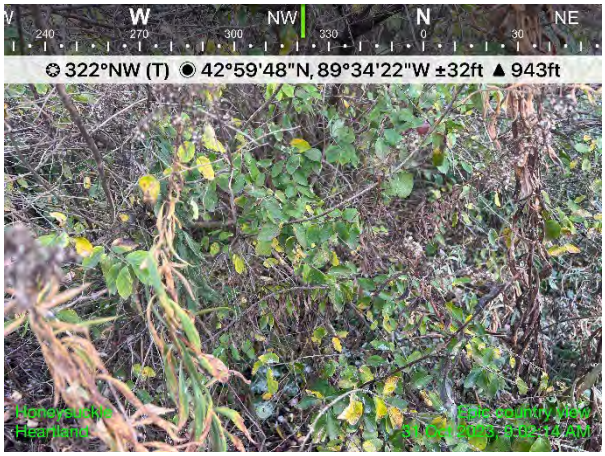


Photo #7 Evidence of growing season- *Lonicera x bella* still green

Photo #8 Evidence of growing season- *Lonicera x bella* still green

Attachment 6 | Delineator Qualifications

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
1027 W St Paul Ave
Milwaukee WI, WI, 53233

Tony Evers, Governor
Adam N. Payne, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

April 3, 2023

Jeff Kraemer
Heartland Ecological Group, Inc.
506 Springdale Street
Mt. Horeb, WI 53572

Subject: 2023 Assured Wetland Delineator Confirmation

Dear Mr. Kraemer:

This letter provides Wisconsin Department of Natural Resources (WDNR) confirmation for the wetland delineations you conduct during the 2023 growing season. You and your clients will not need to wait for the WDNR to review your wetland delineations before moving forward with project planning. This will help expedite the review process for WDNR's wetland regulatory program. Your name and contact information will continue to be listed on our website at: http://dnr.wi.gov/topic/wetlands/assurance.html.

In the instance where a municipality may require a letter of confirmation for your work prior to moving forward in the local regulatory process, this letter shall serve as that confirmation. Although your wetland delineations do not require WDNR field review, inclusion of a Wetland Delineation Report is required for projects needing State authorized wetland, waterway and/or storm water permit approvals.

To comply with Chapter 23.321, State Statutes, please supply the department with a polygon shapefile of the wetland boundaries delineated within the project area. Please do not include data such as parcel boundaries, project limits, wetland graphic representation symbols, etc. If internal upland polygons are found within a wetland polygon, then please label as UPLAND. The shapefile should utilize a State Plane Projection and be overlain onto recent aerial photography. If a different projection system is used, please indicate in which system the data are projected. In the correspondence sent with the shapefile, please supply a brief description of each wetland's plant community (eg: wet meadow, floodplain forest, etc.). Please send these data to Calvin Lawrence (608-266-0756 or email at calvin.lawrence@wisconsin.gov).

If you or any client has a question regarding your status in the Wetland Delineation Professional Assurance Program, contact me by email at kara.brooks@wisconsin.gov or phone at 414-308-6780. Thank you for all your hard work and best wishes for the upcoming field season.

Sincerely,

Kara Brooks
Wetland Identification Coordinator
Bureau of Watershed Management

Appendix I: Water and Sanitary Flow Calculations

Epic 2023 USAA
Sanitary Flow Calculations
11/10/2023

Sanitary

Given Values		
Campuses	3	
Buildings	7	
Employees per Building	400	
Total Employees	8400	people
Meals	5000	meals per day

ADBF: Average Daily Base Flow
PHF: Peak Hourly Flow

2017 Flow Monitoring Data			
Average Daily Flow	68.83	GPD / person	Section 4.1.1 (from 2019 Wastewater Master Plan)
Wet Weather Flow	138.48	GPD / person	Section 4.1.1 - Table 4-1 (from 2019 Wastewater Master Plan)
	2.01	Peaking Factor	at MMSD Pump Station 17

	Low	High	Notes
Day Visitor Multiplier	0.1	0.2	Values from NR 110.09 (2)(j)2m.(a)
Per Capita (GPD)	65	80	Values from NR 110.09 (2)(j)2m.(b)
Wastewater per meal (GPD)	7	10	Values from Metcalf and Eddy, Restaurant

Calculations			Notes
ADBF High Office Employees	134400	GPD	
ADBF Low Office Employees	54600	GPD	
PHF - High Office Employees	188	gpm	Peak hour multiplier from 2017 Flow Monitoring at PS17 (2.01)
PHF - Low Office Employees	76	gpm	Peak hour multiplier from 2017 Flow Monitoring at PS17 (2.01)
ADBF - High Restaurant	50000	GPD	
ADBF - Low Restaurant	35000	GPD	
PHF - High Restaurant	70	gpm	Peak hour multiplier from 2017 Flow Monitoring at PS17 (2.01)
PHF - Low Restaurant	49	gpm	Peak hour multiplier from 2017 Flow Monitoring at PS17 (2.01)

ADBF (High)	184410	GPD	No peaking factor
ADBF (High) per employee	22	gpcd	ADBF / # employees
Total PHF (High)	258	gpm	Adds High Employee PHF and High PHF for restaurant meals
Total PHF (High)	371000	GPD	
Total PHF (Low)	125	gpm	Adds Low Employee PHF and Low PHF for restaurant meals
Total PHF (Low)	180270	GPD	

NR 110.09 Sewage treatment facilities projects.

2m. `Estimation methods.' The estimation of existing and future ADBF from combined residential, commercial, and institutional sources, shall be based upon one of the following methods:

a. Existing ADBF shall be estimated based upon a fully documented analysis of water use records adjusted for consumption and losses or on records of wastewater flows for extended dry periods less estimated dry weather infiltration. Future flows for the sewerage system design shall be estimated by determining the existing per capita flows, subtracting any projected per capita water conservation flow reduction and multiplying this figure by the future projected population to be served. Seasonal population can be converted to equivalent full-time residents using the following multipliers:

Day-use visitor (0.1-0.2).

Seasonal visitor (0.5-0.8).

The preferred method shall be used wherever water supply records or wastewater flow data exist. Allowances for future increases of per capita flow over time will not be approved.

b. Where water supply and wastewater flow data are lacking, existing and future ADBF shall be estimated by multiplying a gallon per capita per day (gpcd) allowance not exceeding those in the following table by the estimated total of the existing and future resident populations to be served. The tabulated ADBF allowances include estimates for commercial and institutional sources as well as residential sources. The department may approve exceptions to the tabulated allowances where large commercial and institutional flows (more than 25% of total estimated ADBF) are documented. - See PDF for table

Description	Gallons per capita per day (gpcd)
Non–SMSA cities and towns with projected total 10–yr population of 5,000 or less . . .	60–70
Other cities and towns	65–80

NR 110.13 Sewer design criteria.

(c) *Design capacity.* Sewers shall be designed to carry, when running full, the peak design flows expected from domestic, commercial, industrial and other sources, and infiltration and inflow. Peak design flow shall be established using existing sewage flow or water use records, and records of infiltration and inflow. Where peak flow records are not available, the peak design flow shall be determined by applying one of the following peak flow factors to the average design flow:

1. 250% of the average design flow for interceptors, main (trunk) sewers, and sewage outfall pipes; or,

2. 400% of average design flow for submain and branch sewers.

Epic 2023 USAA

Water Flow Calculations
11/10/2023

Water

Section 4.7.1 (from 2015 Water System Master Plan - Epic use)	10	GPD / person	Average Daily Flow	(2017 flow monitoring data)
Section 4.6 - Figure 4-5 (from 2015 Water System Master Plan)	3.44	GPD / person	Wet Weather Flow	(2017 flow monitoring data)

						Average Daily		Peak Hour	
	# Campus	**Buildings / Campus**	**Persons / Building**	**Persons**	**GPD / person**	**GPD**	**Peak Factor**	**GPM**
Campuses	3	7	400	8400	10	84,000	3.44	201

Average Day by Zone (Measured 2022)
Average Day City: 1.2 MGD (2022)
Design Maximum Day City: 2.6 MGD (last 10 years of data 2.14 factor at 99% confidence)

Average Day by Zone (approximate based on 2022 metered data from City)

Zone	Average Day (MGD)	Maximum Day Factor	Maximum Day (MGD)	Peak Hour Factor	Peak Hour Demand (GPM)
Central	**0.94**	**2.14**	**2.0**	**1.36**	**1,890**
Southeast	0.17	2.14	0.4	1.83	460
North	0.10	2.14	0.2	3.74	530
Total	1.2		2.6		2,880