**August 2, 2018**

# Staff Analysis of a Proposed Amendment to the *Dane County Water Quality Plan*, Revising the Environmental Corridors of the Central Urban Service Area in the City of Madison

## 1. Background and Existing Conditions

The proposed project, known as the Automation Arts, is located at 5404 Voges Road, between the intersections of Marsh Road and Owl Creek Drive, in the City of Madison (see Maps 1 and 2). The 2.6 acre parcel is the second of two phases at this location. The area was added to the Central Urban Service Area by Resolution DCRPC No. 908 in 2000. The site has historically been a homestead with multiple, agricultural outbuildings surrounded by cultivated farmland. Approval of the urban service area (USA) amendment was conditioned on the following:

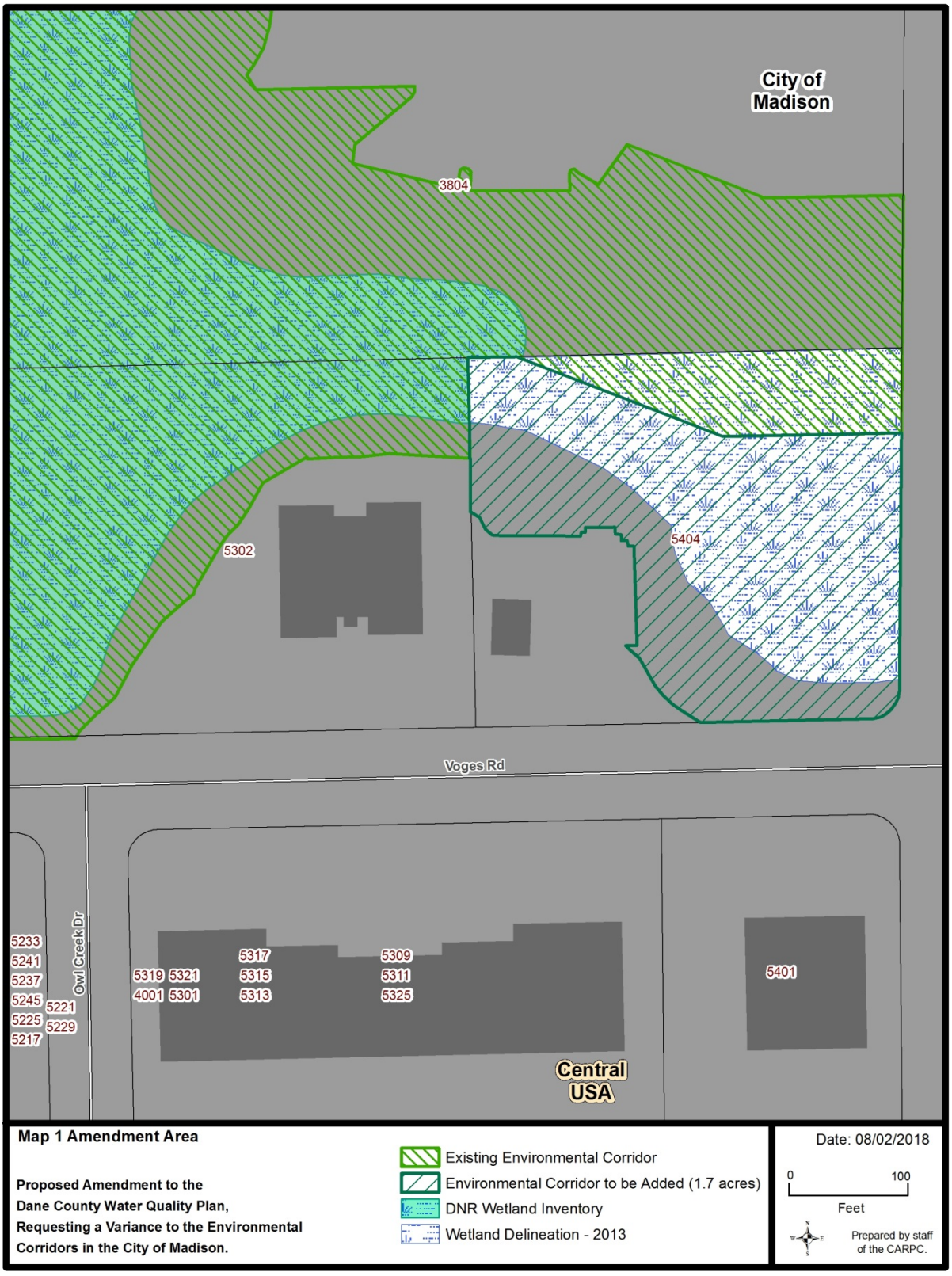
- Maximize infiltration by directing rooftop runoff to pervious areas and infiltrating all rooftop runoff from commercial and high-density residential areas;
- Conduct a wetland survey for the tributary along I 90 and USH 12/18 and include all wetland areas and a 75-foot vegetated wetland buffer in environmental corridors; and
- Submit a detailed stormwater management plan for amendment area for RPC and County staff review and install wet stormwater ponds prior to development.

In 2000, at the time of USA amendment, there was an expanse of wetlands identified immediately north of the proposed site in the Wisconsin Wetland Inventory maintained by Wisconsin Department of Natural Resources (WDNR) that was added to Environmental Corridors (see Map 3). The wetland is part of a larger complex extending to the northwest with persistent and narrow-leaved persistent emergent/wet meadows as well as broad-leaved deciduous forested wetland classes present. The total WDNR mapped wetland complex area is close to 12 acres in size

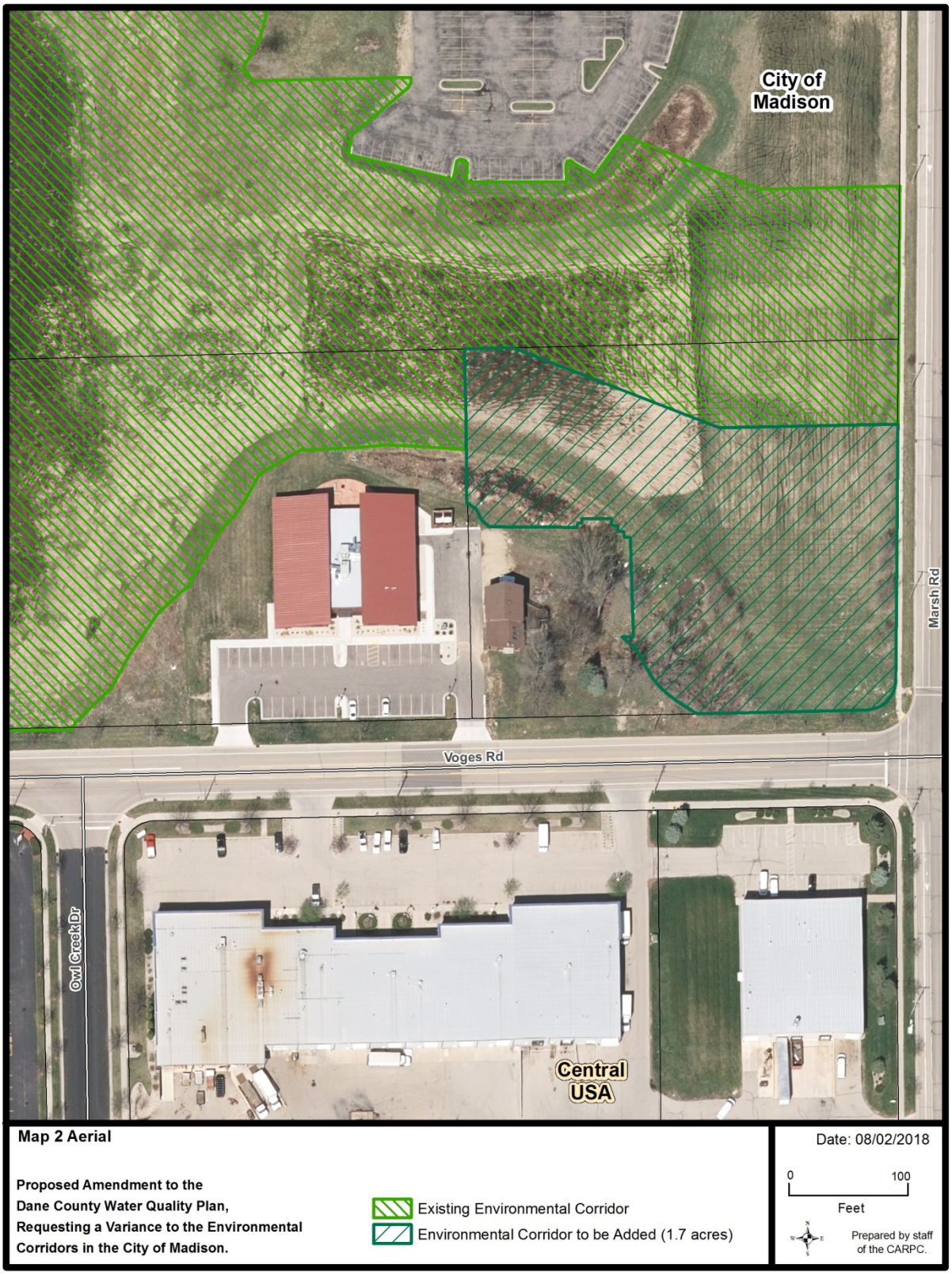
In 2013, a commercial building with associated parking lot was built adjacent and west of the proposed project site as the first phase of the project. For that development, a wetland delineation was performed by Stantec on April 30, 2013. The wetland delineation concluded that 3.77 acres of the 7.5 acre combined phase 1 and 2 property was wetland composed of a wet meadow community type. The delineated wetland extended east of the Wisconsin Wetland Inventory mapped area into both the phase 1 and 2 sites. The dominant vegetation within the wetland from the site review was reed canary grass (phalaris arundinacea) in the herb stratum. Per State of Wisconsin NR 151, wetlands dominated by invasive species such as reed canary grass are considered less susceptible or degraded wetlands.

The previously completed phase 1 design drawings show that a 30-foot protective area setback was provided between the delineated wetland edge and any impervious surfaces and that no grading setback was provided. The phase 1 stormwater management plan included a wet detention pond to provide peak runoff control and water quality treatment of total suspended solids for the combined phases but was exempted from infiltration requirements due to high groundwater observed at two boring sites located near the wetland edge. CARPC records do not indicate that this project was submitted to the agency for review.

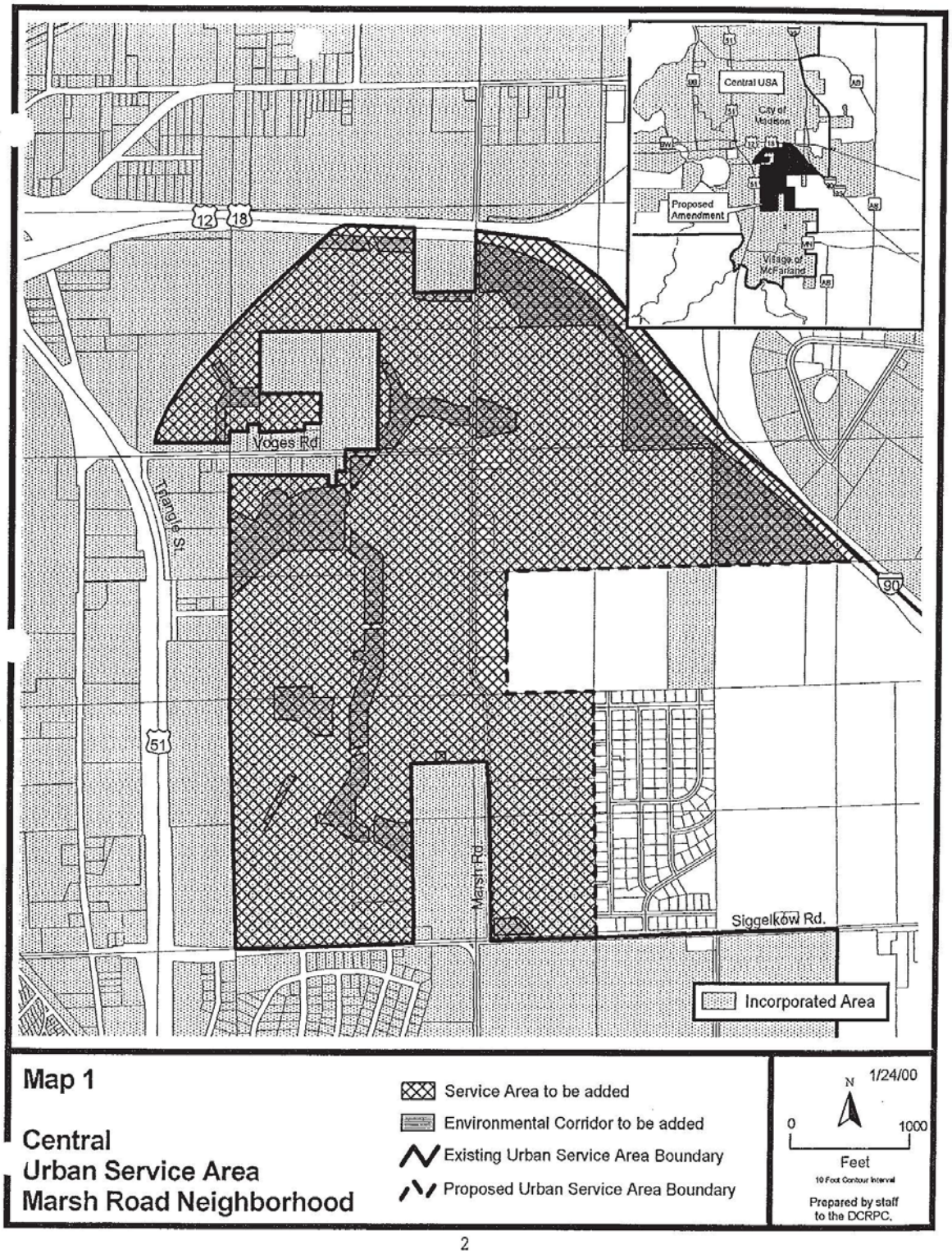
## Map 1 – Amendment Area



## Map 2 – Aerial


City of Madison
Marsh Rd
Voges Rd
Owl Creek Dr
Central USA
Map 2 Aerial
Proposed Amendment to the Dane County Water Quality Plan, Requesting a Variance to the Environmental Corridors in the City of Madison.
Existing Environmental Corridor
Environmental Corridor to be Added (1.7 acres)
Date: 08/02/2018
0
100
Feet
Prepared by staff of the CARPC.

**Map 3 – 2000 DCRPC Resolution No. 908 Map**

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## 2. Description of Proposal

In March 2018, the phase 2 proposed project was submitted for CARPC consideration under the same assumptions as phase 1 regarding wetland setbacks and infiltration requirements. Of the 2.57 acre parcel, 0.95 acres was proposed to be disturbed (see Map 4) with portions of the proposed building, rear patio, and bioretention facility being within the 75-foot wetland buffer but outside of the 30-foot no grading zone. Restorative grading is proposed to be conducted to within approximately 5 feet of the wetland edge.

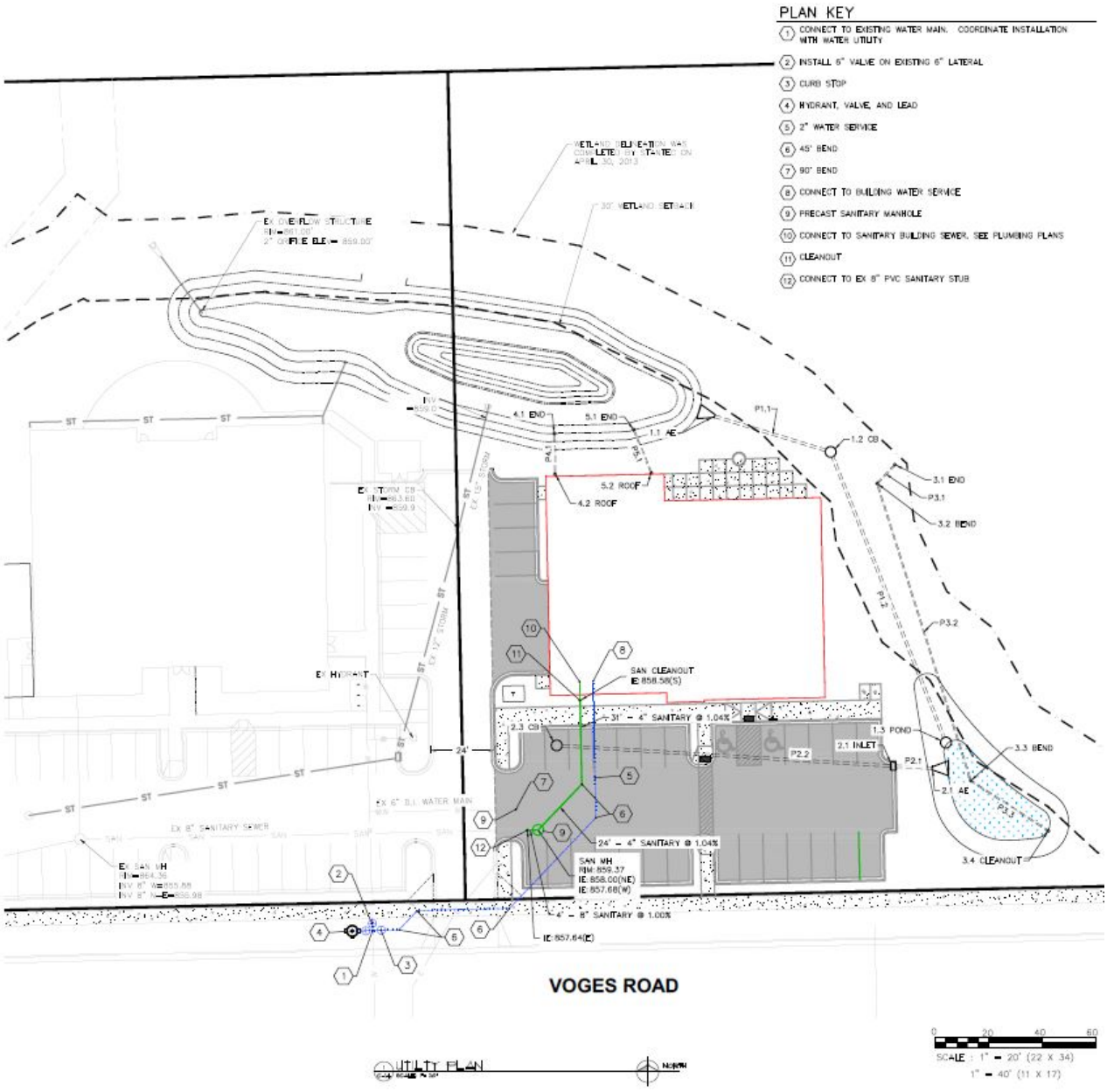
Enhanced native vegetation has been proposed for the remaining buffer area to mitigate the reduced buffer width and enhanced erosion control will be provided during construction. The City of Madison has committed to requiring no parking lot be allowed within 75 feet of the delineated wetland edge, which will require a modification of the existing site plan as shown in Map 4. In addition, no further encroachments of the building or rear patio will be allowed by the City of Madison. Finally, an affidavit of correction will be recorded to Certified Survey Map 13480 to correctly reflect the 75-foot setback requirement from the delineated setback.

Additionally, the wetland buffer reduction is proposed to be mitigated by the installation of additional stormwater management facilities than was originally proposed in the 2013 combined stormwater management plan to capture and treat stormwater runoff from the development prior to discharge to the wetland (see Map 4). The stormwater management plan for the proposed site includes a bioretention basin in the southeast corner of the site that will accept runoff from the proposed parking lot in addition to the existing wet pond installed in phase 1. The wet pond and bioretention basin will provide peak runoff control and water quality treatment while the bioretention basin will also provide sufficient infiltration to meet the intent of the USA amendment stormwater condition. Excess runoff will then discharge to the wetland through the enhanced buffer. Modelling conducted for the stormwater management plan has determined that the bioretention basin will provide an overall total suspended solids reduction of 85.6% prior, exceeding the 80% required by ordinance.

In most cases, a minimum five foot grading setback is being provided from the delineated wetland boundary, which is less than CARPC's adopted policy and criteria of 30 feet. Erosion control measures including silt fence, sediment traps, and erosion mat are proposed to control sediment during construction.

Approximately 1.7 acres of environmental corridor is proposed to be added, resulting in a total of 2.1 acres of environmental corridor on the site. including the wetland area, enhanced buffer, stormwater management areas, and other green space.

## Map 4 – Proposed Site / Stormwater Management Plan



## 3. Consistency and Conflict with Adopted Plans and Policies

The City of Madison Department of Planning and Community and Economic Development submitted the request for a "major change" to the environmental corridors of the Central Urban Service Area.

Environmental Corridor

The *Dane County Water Quality Plan* outlines policies regarding the delineation and designation of environmental corridors in the *Environmental Corridors* report, last updated and adopted by the Dane County Regional Planning Commission in 1996, and approved by the WDNR in 1997. The report establishes the need for a minimum 75-foot vegetative shoreland and wetland buffer. The need for buffer strips is based on the role they play in filtering pollutants from stormwater runoff; protecting stream banks and wetlands from erosion; providing space for the natural meander, shifting, and expansion of streams and wetlands; and protecting the habitat functions of these resource areas. Because of the natural resource functions provided by vegetative buffer strips, any encroachment into the minimum buffer width of 75 feet requires an evaluation of the impacts of the encroachment. This evaluation is performed through the Water Quality Plan amendment process and the requirement for WDNR review and approval.

The Capital Area Regional Planning Commission and WDNR subsequently adopted the current Environmental Corridor Policies in February 2008. These policies include:

- Vegetative buffers for wetlands and shorelands (75-feet minimum and excluding impervious surfaces).
- Grading in a wetland vegetative buffer and within 30 feet of the wetland edge, where the buffer has been delineated in environmental corridors, unless the grading is intended to re-establish natural grades or to restore wetland habitat.
- Grading or the installation of stormwater management measures and practices in an environmental corridor should not appreciably reduce or harm the ecological functions of the environmental corridor.

Stormwater Management

The proposed stormwater management plan meets or exceeds the stormwater management requirements in the City of Madison (Chapter 37) and Dane County (Chapter 14) ordinances. Modelling has shown the proposed bioretention basins will achieve a total suspended solid reduction of 85.6%, exceeding the 80% requirement. The wet pond and bioretention basin will provide peak runoff control and water quality treatment while the bioretention basin will also provide sufficient infiltration to meet the intent of the USA amendment stormwater condition.

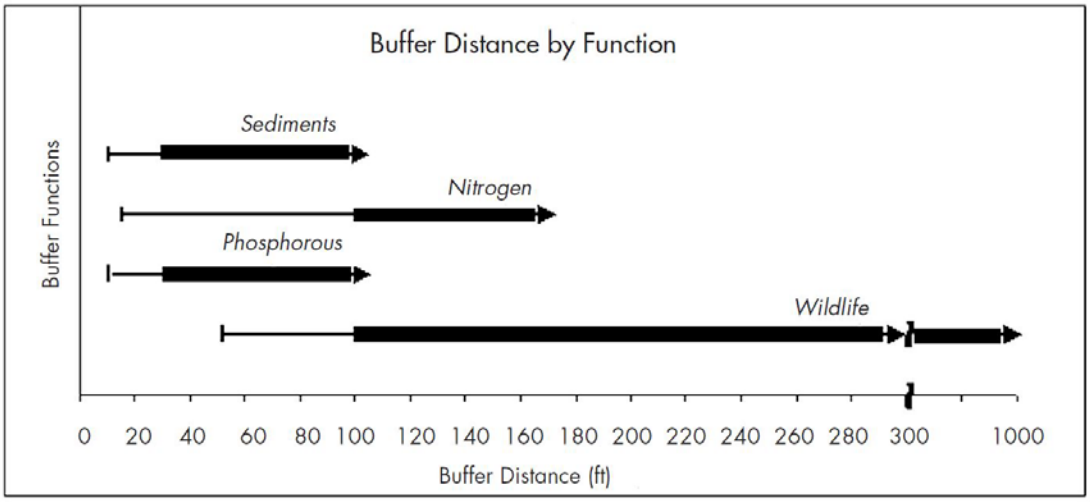
## 4. Impacts or Effects of the Proposal

The proposed development includes a stormwater management plan, enhanced buffers, a 75-foot parking lot setback from the wetland, and restrictions on future encroachment. The enhanced buffer will provide better habitat and water quality compared to the current homestead turf grass and previously cultivated agricultural fields.

The proposed stormwater management plan will meet or exceed total suspended solid and peak rate reduction requirements and provide sufficient infiltration to meet the intent of the USA amendment stormwater condition.

The purpose of a vegetated buffer is to provide water quality and wildlife protection functions. The proposed vegetated buffer width on the west side of the wetland of 30 to 75 feet, with an average width of approximately 60 feet, is sufficient to provide sediment and phosphorus removal. In addition, the proposed stormwater management facilities will provide additional stormwater management functions for the site. So the proposed buffer width reduction should not have a negative effect on water quality. Since the existing wetland is considered a less susceptible wetland, NR 151 only requires protective areas be established that are ten percent of the average wetland width but no less than 10 feet or greater than 30 feet. Therefore, the 60 foot average buffer width is still more protective than the standard in NR 151.

The proposed buffer width will provide little wildlife benefits, which is also the case with a standard 75 foot buffer.




*Effective buffer distance for water quality and wildlife protection functions. The thin arrow represents the range of potentially effective buffer distances for each function as suggested in the science literature. The thick bar represents the buffer distances that may* ***most*** *effectively accomplish each function (30 - > 100 feet for sediment and phosphorous removal; 100 - > 160 feet for nitrogen removal; and 100 - >300 feet for wildife protection. Depending on the species and the habitat characteristics, effective buffer distances for wildlife protection may be either small or large.*

Source: *Planner's Guide to Wetland Buffers for Local Governments,* Environmental Law Institute 2008.

The purpose of the 30 foot no grading setback is to protect the wetland from sedimentation during construction. Effectively implemented erosion control practices can provide the same or a higher level of protection. Neither the City of Madison nor Dane County have a requirement for a grading setback from wetlands.

## 5. Alternatives

One alternative is for no development to occur on the phase 2 site. This would not improve water quality since there is currently no stormwater management for this portion of the overall site.

Another alternative would be to redesign the site layout to accommodate a 75-foot vegetated buffer for the wetland. This would result in an unknown cost increase for the project, potentially resulting in an unviable project that would result in no redevelopment of the site and therefore no potential improvement in water quality.

A better alternative to the traditional asphalt paving for the parking lot and concrete for the north patio is the use of permeable pavement. Permeable pavement reduces runoff and provides pollutant removal as well as reduces the need for winter plowing. Porous asphalt and concrete have been used successfully in the City of Madison and the University at multiple locations.

## 6. Controversies, Comments Received, Unresolved Issues

The proposal has been reviewed by the City of Madison.

A public hearing has been scheduled for August 9, 2018, at 7:00 p.m. to receive testimony on this proposed amendment to the *Dane County Water Quality Plan*. Staff has not received any comments on the proposed amendment at this writing.

## 7. Conclusions

The "major change" to the environmental corridors is located on a parcel that was originally added to the urban service area in 2000. At that time, a wetland was identified adjacent to the proposed site.

The following conclusions can be made in support of the proposed amendment:

- The proposed buffer enhancements will improve water quality and provide better habitat compared to the existing farmstead turf grass.
- The proposed stormwater management plan for the site meets or exceeds the requirements in the Dane County Ordinance.
- The reduced buffer widths and reduced no grading zone will be mitigated by the proposed stormwater management and erosion control plan and enhanced buffer planting.

- The restriction of parking within 75 feet of the wetland edge will provide better protection of the wetland.

In summary, with the proposed stormwater management plan, the changes on the site will have positive impacts to water quality overall.

CARPC staff recommends that approval of this amendment be conditioned on the City of Madison pursuing the following:

1. Submit a revised site plan for CARPC review maintaining a minimum 75-foot parking lot setback from the delineated wetland edge in accordance with the City's application for this environmental corridor amendment.

2. Require the provision of a level spreader or similar practice to spread the flow of water discharging toward the wetland.

3. Require that the vegetated buffer be maintained in dense native vegetation at a height of at least 6 inches.

It is also recommended that the City of Madison pursue the following measures:

1. Consider requiring/encouraging the use of permeable pavement for the north patio and parking surfaces.

2. Evaluate and improve the process for reviewing Environmental Corridors and other Water Quality Plan conditions of approval as part of the City's internal development review.