Staff Analysis of a Proposed Amendment to the *Dane County Water Quality Plan* Revising the Central Urban Service Area Boundary and Environmental Corridors Requested by the City of Madison

1) Existing Conditions

a) Land Use

The requested amendment area is located along the boundary between the City of Madison and the Town of Middleton (see Map 1). Fifty-eight percent of the site is located within the Town of Middleton. The 313 acre site is contiguous to the Central Urban Service Area along the site's east and south sides. The area is bounded by Old Sauk Road, Pioneer Road, and Mineral Point Road. The requested amendment area is adjacent the 2014 "Schewe Road" amendment (DNR Resolution DC-0163) and the 2013 "Old Sauk Road" amendment (DNR Resolution DC-0158). It is the final piece of the neighborhood detailed in the "Elderberry Neighborhood Development Plan" (adopted 2002) to request expansion of the CUSA.

Surrounding Land Uses Include:

- North: Agriculture and Open Land
- South: Agriculture and Open Land (Planned residential neighborhood)
- West: Single-family Residential, Institutional (school), Open Space
- East: Agriculture and Open Land (Planned residential/commercial mix)

Existing Land Use	Acres
Agriculture	276.9
Institutional/Governmental	0.7
Open Land / Woodlands	21.0
Residential	4.1
Transportation	10.1
TOTAL	**312.8**

Proposed Land Use	Proposed Acres	Env. Corridor Acres
Transportation	80.1	
Commercial Retail and Services	4.8	
Institutional/Governmental	1.5	
Parks/ Natural Area / Stormwater	35.4	35.4
Rural Residential	0.2	
Low Density Residential	159.6	
Medium Density Residential	9.8	
High Density Residential	21.4	
TOTAL	**312.8**	**35.4**

The Madison Common Council adopted a resolution on November 21, 2017 (RES-17-00913) finding the requested amendment consistent with the *City of Madison Comprehensive Plan* and *City of Madison Elderberry Neighborhood Development Plan* and recommending submission of the application to CARPC. The site is identified for future development by the aforementioned plans. The site is also identified as a development area in the *Town of Middleton Comprehensive Plan* and the *City of Madison and Town of Middleton Cooperative Plan*. The western half of the site is designated a "Transition Area" under the terms of this City of Madison/Town of Middleton intergovernmental agreement. Development within ¼ mile of the centerline of Pioneer Road is subject to density, unit-per-structure, and height limitations. All Town land within the proposed amendment area will be annexed to the City of Madison by 2042, if not sooner as a part of an intermediate attachment.

b) Cultural and Historic Sites

The Wisconsin Historical Society (WHS) has been contacted regarding the presence of any known archaeological sites or cemeteries within the amendment area. No previously identified sites are recorded within the amendment area. However, due to the presence of four pre-European contact sites east of the amendment area and because of similarities in landforms, their August 25, 2017 review letter recommends an archaeological survey be completed for the area.

c) Natural Resources

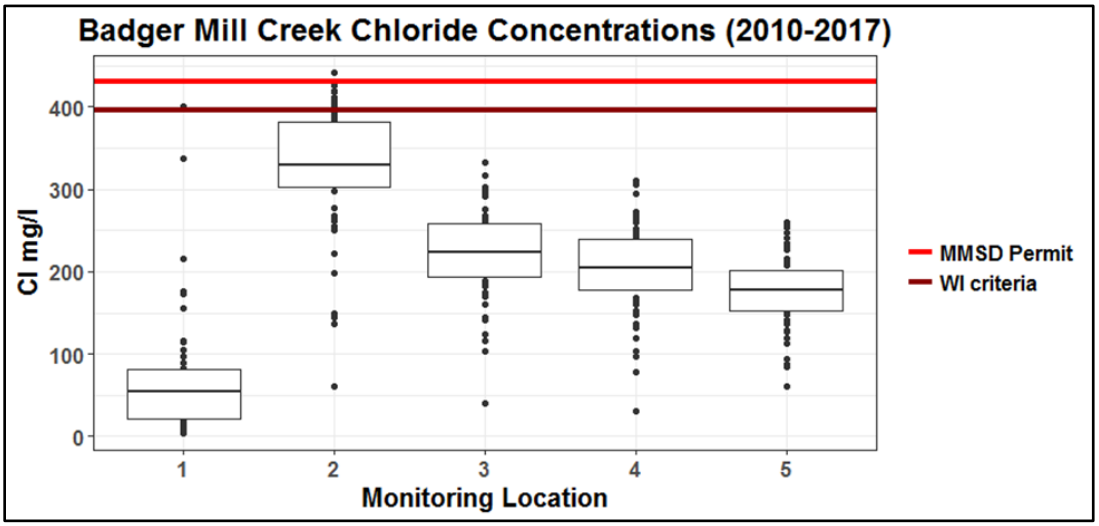
The proposed amendment area is located within the northern portion of the Lower Badger Mill Creek subwatershed (Map 5), a tributary of Badger Mill Creek and the Upper Sugar River. Wastewater from the City of Madison is treated at the Madison Metropolitan Sewerage District Wastewater Treatment Facility. The treated effluent is discharged to Badfish Creek and Badger Mill Creek, bypassing the Yahara Chain of Lakes. Within the amendment area, there are 14.6 acres of somewhat poorly drained soils (Elburn silt loam and Radford silt loam shown on Map 7), but no Environmentally Sensitive Areas such as wetlands, waterbodies, or floodplains are present.

Lower Badger Mill Creek
The amendment area is in the northern portion of the 11.1 square mile sub-watershed of Lower Badger Mill Creek. The creek, an intermittent tributary to Badger Mill Creek, is approximately 6 miles long and joins Badger Mill Creek 1.23 miles upstream from its confluence with the Upper Sugar River. The tributary is classified as an intermittent stream, meaning it flows only after rainfall or snowmelt, and as a result, is dry most of the year. Water quality and biotic index data are therefore not collected for Lower Badger Mill Creek. The Lower Badger Mill Creek sub-watershed is designated as a thermally sensitive area since it is a tributary to Badger Mill Creek, which supports brown trout populations.

Badger Mill Creek
The main branch of Badger Mill Creek is designated as a Class II trout stream by the WDNR for fish management purposes, in accordance with NR 1.02(7). The creek flows 9.44 miles through the southwest side of Madison and Verona. The 34 square mile watershed contains mostly agricultural land but ongoing development in Madison and Verona is continuing to change land use. Badger Mill Creek is also classified as a Variance Stream for Uses and Designated Standards [NR 104.05(2)], which allows the WDNR to relax certain water quality standards for this stream to allow discharge of treated municipal wastewater. These stream Use Standards are state water quality standards established to guide water quality planning under NR 121.

Since August 1998, MMSD has been discharging about 3.3 mgd (5 cfs) of highly treated effluent to Badger Mill Creek as a means of maintaining baseflow in the creek. This additional effluent serves as compensation for groundwater extracted from the Sugar River basin by municipal wells. Groundwater modeling indicated that well water withdrawals had reduced baseflow in Badger Mill Creek by approximately 35 percent and the Sugar River by approximately 6 percent, (compared to pre-development or no pumping conditions). After groundwater is pumped and used, the wastewater is diverted to MMSD's Nine Springs treatment plant and discharged to Badfish Creek, in the adjacent Rock River basin, and Badger Mill Creek, in the Sugar River Basin. This return of treated effluent helps to restore the water balance between these two basins and, more importantly, improves aquatic habitat in Badger Mill Creek by removing low baseflow as a limiting habitat condition.

According to a 2002, assessment by a DNR aquatic biologist, increased flow has sustained trout populations in Badger Mill Creek, but levels of chlorides, total phosphorus, dissolved phosphorus, and ammonia remain a potential concern. A variance in MMSD's discharge permit allows the effluent to have a chloride concentration of 430 mg/l, which is higher than the state water quality chronic criteria of 395 mg/l, to allow additional time to meet the limit through creative source reduction measures. In each permit term, additional reductions are expected until a weekly average below 395 mg/l can be maintained. Chloride in the effluent is primarily associated with water softening and deicers. MMSD monitors chloride concentrations at five locations along Badger Mill Creek (Map 11). This boxplot, using data collected every other month since 2010, shows highest chloride concentrations just downstream of the MMSD discharge (monitoring location 2). Concentrations at monitoring location 2 have occasionally exceeded the Wisconsin criteria for chloride but decrease downstream to consistently meet the criteria standard.



The box shows the first and third quartiles (25th and 75th percentiles). Center line is median. All other points are plotted as outliers.

Since Badger Mill Creek is a coldwater stream, it is sensitive to temperatures increases from uncontrolled urban runoff. Stormwater management practices are required for new development within the watershed to provide thermal controls so that warm water does not enter the stream and negatively impact the aquatic ecosystem.

In DNR assessments for 2018, miles 5 to 0 of the creek did not show biological impairments but did show phosphorus impairments prompting a proposal for the creek to be listed as an impaired water.

The United States Geological Survey (USGS) monitors flow, temperature, specific conductance and dissolved oxygen near the Bruce Street crossing in Verona.

Springs

Springs represent groundwater discharge visible to the casual observer. The Wisconsin Geological and Natural History Survey (WGNHS) maintains an inventory of springs in Dane County and throughout the state. There are no known springs in the proposed amendment area. The closest spring (WGNHS ID 130123) is in another watershed, next to Black Earth Creek, located one mile north of the amendment area. This spring's flow is 0.022 cfs, and it is located on private land. The Badger Mill Creek watershed has one spring located about 6 miles south of the amendment area near Verona's Fireman's park. That spring (WGNHS 130205) has a discharge of 0.45 cfs (Map 5).

Groundwater

Groundwater discharge generally occurs along the entire length of perennial streams and is the source of stream baseflow. The regional groundwater model has been used to evaluate the possible effects of current and future municipal groundwater well withdrawals on these stream systems. Groundwater modeling, using the 2016 Groundwater Flow Model for Dane County developed by the WGNHS, simulated regional changes in streamflow from predevelopment to 2010 conditions. Because of the added discharge from the MMSD treatment plant, flows in Badger Mill Creek have increased compared to predevelopment amounts. Where Lower Badger Mill Creek joins the perennial stream, predevelopment baseflows for Badger Mill Creek were modeled to be 3.29 cfs (Map 11). For the year 2010, flows were modeled to have increased to 3.95 cfs. The amendment area has the potential for seasonal high groundwater in portions of the northeast and southeast corners where poorly drained soils are present (Map 7).

In 2012, the WGNHS published a report, *Groundwater Recharge in Dane County, Wisconsin, Estimated by a GIS-Based Water-Balance Model*, estimating the existing groundwater recharge rates in Dane County based on the soil water balance method. The study estimates that the existing groundwater recharge rate in the amendment area ranges from 9 to 10 inches per year.

Endangered Resources

The DNR Bureau of Endangered Resources maintains a database representing the known occurrences of rare plants, animals, and natural communities that have been recorded in the Wisconsin Natural Heritage Inventory. A screening review of this database conducted by Regional Planning Commission staff for species designated as endangered, threatened, or of special concern identified several species of special concern (insects, mammal) within a one-mile radius of the amendment area. It is recommended that the City request a complete Endangered Resources Review by the DNR for potential impacts to endangered resources like rare plants, animals and natural communities in the amendment area.

Soils and Geology

The amendment area is located within the West Johnstown-Milton Moraines. The Land Type Associations of Wisconsin classifies the surficial geology of this area as rolling hummocky moraine and outwash plain complex with scattered bedrock knolls. Soils are predominantly well drained silt and loam over sandstone or dolomite calcareous sandy loam till, or calcareous gravelly sandy outwash.

Surface elevations in the amendment area range from around 1060 feet to 1170 feet. The amendment area includes some very small, isolated, areas of steep (> 12%) and very steep (>20%) slopes in the central and east-central portions of the amendment area (see Map 6). There are no steep slopes adjacent to riparian areas.

According to the Natural Resource Conservation Service (NRCS) Soil Survey of Dane County, the soils in the upper third of the amendment area are primarily in the Dodge-St. Charles-McHenry association, while the soils in the lower two-thirds of the amendment area are primarily in the Plano – Ringwood – Griswold association. Plano – Ringwood – Griswold association soils are moderately well drained and well drained, deep silt loams and loams and Dodge-St. Charles-McHenry association soils are moderately well drained and well drained, deep silt loams. The Table 2 shows detailed classification for soils in the

amendment area (see Map 7). Table 3 shows important soil characteristics for the amendment area (see Map 7).

There are no hydric soils within the amendment area (see Map 7). Hydric soils are good indicators of existing and former (drained) wetlands.

According to the Soil Survey Geographic data for Dane County developed by the USDA Natural Resources Conservation Service, the Elburn, Plano, Radford, St. Charles and Troxel soils (the EfB, PnB, PnC2, RaA, ScB and TrB map units) are not hydric, but they can have a seasonal (April to June) zone of water saturation within 5 feet of the ground surface. All these soils except the Elburn and Radford (EfB and RaA) are classified as either well drained or moderately well drained. Soils with seasonal high water tables that are also classified as well drained or moderately well drained generally do not pose limitations for buildings with basements.

The Elburn and Radford soils are somewhat poorly drained and may have limited suitability for buildings with basements due to their seasonal high water table (zone of soil saturation), which can cause problems with groundwater induced flooding. These areas are well suited for park and open space areas. If these areas are developed, on-site soils investigations are recommended to determine the actual extent of seasonal high groundwater areas. Restrictions are recommended in confirmed problem areas to establish the lowest allowable level of any structure such that it is at least 1 foot above the high water table to reduce the potential for groundwater induced flooding.

Table 2
Soils Classification

Soil	% of Area	General Characteristics
Plano Silt Loam; PnB	33.7	Deep, well drained and moderately well drained, nearly level to sloping soils on glaciated uplands. Soils have high fertility, moderate permeability, and a moderate to severe hazard of erosion. Poses moderate limitations for development due to low bearing capacity.
St. Charles Silt Loam; ScB	16.6	Deep, well drained, sloping soils to moderately steep soils on glaciated uplands. Soils have high fertility, moderate permeability, and a moderate to severe hazard of erosion. Poses moderate limitations for development due to slopes, shrink/swell potential and low bearing capacity.
Griswold Loam; GwC	9.4	Deep, well-drained gently sloping to moderate steep soils on glaciated uplands. Soils have medium fertility, moderate permeability, and a severe hazard of erosion. Poses moderate limitations for development due to bearing capacity and shrink/swell potential.
Ringwood Silt Loam; RnC2	8.4	Deep, well drained, gently sloping and sloping soils on glaciated uplands. Soils have high fertility, moderate permeability, and a moderate hazard of erosion. Poses moderate limitations for development due to slope, low bearing capacity, shrink/swell potential, and erodibility.
Kidder Loam; KdC2	4.9	Deep, well drained, gently sloping to very steep soils on glaciated uplands. Soils have medium fertility, moderate permeability, and a severe hazard of erosion. Poses moderate limitations for development due to steep slopes.
Troxel Silt Loam; TrB	4.0	Deep, well drained and moderately well drained, gently sloping soils in draws, on fans, and in drainageways. Soils have high fertility, moderate permeability, and a moderate hazard of erosion. Poses moderate limitations for development due to shrink/swell potential and depth to saturated zone.
Plano Silt Loam; PnC2	3.5	Deep, well drained and moderately well drained, nearly level to sloping soils on glaciated uplands. Soils have high fertility, moderate permeability, and a moderate to severe hazard of erosion. Poses moderate limitations for development due to low bearing capacity.
McHenry Silt Loam; MdB	3.4	Deep, well-drained, gently sloping to moderately steep soils on glacial uplands. Soils have medium fertility, moderate permeability, and a moderate hazard of erosion. Poses moderate limitations for development due to steep slopes.
Kegonsa Silt Loam; KeB	3.1	Moderately deep, well drained, nearly level and gently sloping soils on benches on outwash plains. Soils have medium fertility, moderate permeability, and a moderate hazard of erosion. Poses no limitations for development.

Table 2
Soils Classification

Soil	% of Area	General Characteristics
McHenry Silt Loam; MdC2	2.7	Deep, well drained, gently sloping to moderately steep soils on glaciated uplands. Soils have medium fertility, moderate permeability, and a moderate to severe hazard of erosion. Poses slight to moderate limitations for development due to slopes, shrink/swell potential and low bearing capacity.
Radford Silt Loam; RaA	2.5	Deep, somewhat poorly drained, nearly level and gently undulating alluvial soils in low drainageways and stream channels. Soils have high fertility, moderate permeability, and a low hazard of erosion. Poses very severe limitations for development due to flooding, seasonal high water table, and very low bearing capacity.
Elburn Silt Loam; EfB	2.1	Deep, somewhat poorly drained, nearly level and gently sloping soils in glaciated stream valleys. Soils have high fertility, moderately slow permeability, and a moderate hazard of erosion. Poses moderate to severe limitations for development due to seasonal high water table, frost heave potential and low bearing capacity.
Dodge Silt Loam; DnC2	1.8	Deep, well drained, gently sloping and sloping soils on glaciated uplands. Soils have high fertility, moderate permeability, and a moderate to severe hazard of erosion. Poses moderate limitations for development due to slope, shrink/swell potential and low bearing capacity.
Ringwood Silt Loam; RnB	1.6	Deep, well drained, gently sloping and sloping soils on glaciated uplands. Soils have high fertility, moderate permeability, and a moderate hazard of erosion. Poses moderate limitations for development due to low bearing capacity and erodibility.
McHenry Silt Loam; MdD2	1.0	Deep, well-drained, gently sloping to moderately steep soils on glacial uplands. Soils have medium fertility , moderate permeability, and a severe hazard of erosion. Poses severe limitations for development due to steep slopes, erodibility, and low bearing capacity.
Military Loam; MhD2	0.7	Moderately deep, well-drained, sloping to steep soils on glaciated uplands. Soils have medium fertility, moderate permeability, and a severe hazard of erosion. Poses severe limitations for development due to steep slopes, shallow bedrock, and erodibility.
Plano Silt Loam; PoA	0.4	Deep, well drained and moderately well drained, nearly level to sloping soils on glaciated uplands. Soils have high fertility, moderate permeability, and a moderate hazard of erosion. Poses moderate limitations for development due low bearing capacity and erodibility.
Griswold Loam; GwB	0.2	Deep, well-drained gently sloping to moderately steep soils on glaciated uplands. Soils have medium fertility, moderate permeability, and a moderate hazard of erosion. Poses slight limitations for development.

Source: Soil Survey Geographic data for Dane County developed by the USDA Natural Resources Conservation Service

Table 3
Soils Characteristics

Characteristic	Soil Map Symbols (see Map 7)	% of Area
Prime Agricultural Soils	*EfB, GwB, KeB, MdB, PnB, PoA, RnB, ScB, TrB*	*65.1*
Hydric Soils (Indicates Potential / Restorable Wetlands)	*None*	*0*
Soils with Seasonal High Water Table (< 5')	*EfB, PnB, PnC2, RaA, ScB, TrB*	*62.4*
Soils Associated with Steep Slopes (> 12%)	*MdD2, MhD2*	*1.6*
Soils Associated with Shallow Bedrock (< 5')	*MhD2*	*0.7*
Poorly Drained Soils	*EfB, RaA*	*4.7*
Best Potential for High Rates of Infiltration in Subsoils	*KdC2, KeB, MdB, MdC2, MdD2, PnB, PnC2, PoA, RnB, RnC2, ScB, TrB*	*83.2*

Source: Soil Survey Geographic data for Dane County developed by the USDA Natural Resources Conservation Service

According to WGNHS data, bedrock within the amendment area is split between the Sinnipee Group in the northwest, the Prairie du Chien Group in the southeast and the Ancell Group representing the largest group crossing the area from southwest to northeast. Bedrock within the Sinnipee Group bedrock is dolomite with some limestone and shale, and consists of three formations including the Galena, Decorah and Platteville Formations. Bedrock within the Prairie du Chien Group is dolomite, minor sandstone, cherty dolomite; vuggy, sandy, and oolitic, consists of two formations, the Shakopee and the Oneota. Thickness is from 145 feet in eastern Dane County to 220 feet in western Dane County. Bedrock within the Ancell Group is quartz sandstone, dolomitic siltstone, silty dolomite, and sandy dolomite. It consists of two formations, the Jordan and the underlying St. Lawrence, which were combined as one mapping unit. The thickness is about 75 feet where not eroded. According to WGNHS data, the depth to bedrock ranges from less than 10 feet in the north to greater than 70 feet in the southeast portion of the amendment area (see Map 8).

As is common throughout much of the upper Midwest, karst features such as enlarged bedrock fractures are prevalent in the local dolomite uplands. Karst features such as vertical fractures and conduits provide primary pathways for groundwater movement and can dramatically increase groundwater susceptibility when present. The location of karst features are difficult to predict, and the thickness and type of the overlying soil greatly affects how much water drains into them. Where clay soils are thick, infiltration rates are likely to be very low. However, where bedrock fractures are near the surface infiltration rates can be very high. Based on the WGNHS karst potential data, karst features may be encountered in the northwest and southeast portions of the amendment area (see Map 8). The depths to potential karst units in the northwest range from 0 to 25 feet while depths in the southeast range from 10 to 85 feet. The DNR Conservation Practice Standard 1002 - Site Evaluation for Stormwater Infiltration requires field verification for areas of the development site considered suitable for infiltration. This includes a site assessment for karst features in this area.

According to the NRCS soils map data, the amendment area has the potential for a seasonal high water table or shallow bedrock within five feet of the surface. There is no minimum separation distance for roofs draining to surface infiltration practices. However,

the Dane County ordinance requires infiltration practices to be located so that the separation distance between the bottom of the infiltration system and the elevation of seasonal high groundwater or the top of bedrock is at least 5 feet for residential arterial roads and 3 feet for other impervious surfaces.

2) Proposed Urban Services

a) Parks and Open Space

The current development plans for the amendment area includes 16 acres for two parks and 19.4 acres for stormwater management and open space (Map 4). The final size and location of parks, open space, and stormwater management areas will be refined as the City of Madison completes its update to the Elderberry, Pioneer and Junction Neighborhood Development Plans in 2018, and as the stormwater management plan and final plat approval process is completed.

b) Public Water System

The Madison Water Utility operates 22 high capacity wells with a combined capacity to deliver 67,964,000 gallons per day (gpd), or 47,200 gallons per minute (gpm) (see Map 12). The wells range in pumping capacity from 1,260 gpm to 2,520 and depth from 500 to 1,130 feet. The City's water system currently has 40,734,000 gallons of storage provided by 31 above and below ground reservoirs. The City's maximum pumping capacity is 66 million gallons per day (mgd) with an average municipal water demand of 29.2 mgd.

The estimated average daily water demand for the amendment area will be 143,750 gpd based on 1178 housing units with an associated population of 2,875 individuals. The maximum demand for the amendment area is estimated to be 267,375 gallons per day. This estimate is reasonable based on building use and the water utility's annual reports to the Public Service Commission. Water will be provided to the amendment area by way of water main extensions within City Pressure Zones 8, 10 and 11 (see Map 10). Current water demands for Pressure Zones 8, 10, and 11 are 3.82 mgd for the average day and 8.08 mgd for the maximum day while current capacity is 4.82 mgd and 8.68 mgd for the average and maximum day. Therefore, the additional demand associated with the amendment area can be accommodated based on the current pumping capacity of the servicing pressure zones.

Madison Water Utility began construction of the Blackhawk Water Tower, located at the southeast corner of Pioneer Road and Old Sauk Road at the northern edge of the amendment area. Upon completion in late 2018, the water utility will be able to hydraulically merge Pressure Zones 10 and 11, resulting in increased emergency storage, fire-fighting capacity and improve system reliability in the amendment area. The water utility estimates that continued development on the west side of Madison will increase the average day demand and maximum day demand to 34.1 mgd and 63.8 mgd by 2040, respectively. Within Pressure Zones 8, 10, and 11, projected average day and maximum day demands are estimated to increase to 5.42 mgd and 16.02 mgd, respectively, by 2040. The Madison Water Utility Master Plan includes a conceptual location for a future Well 32 on South Point Road between Mineral Point Road and Valley View Road to address this increased future demand.

Water losses in the City's distribution system have been slowly increasing since 2012, beginning at 9% and reaching a level of 13% of net water supplied in 2016. The Wisconsin Administrative Code PSC 185.85(4)(b) requires a utility with more than 1,000 customer to submit a water loss control plan to the Public Service Commission if the utility reports its percentage of water losses exceed 15%. A large percentage of the water loss is associated with water main breaks due to the old age and poor condition of much of the city's water supply infrastructure. The Madison Water Utility currently responds to and repairs more than 200 water main breaks per year. In response to this issue, the water utility is undertaking the task of replacing about a third of its water mains, about 300 miles of pipe in total. In 2013, the water utility spent $7.5 million rebuilding and renewing their aging water infrastructure and they plan to increase that amount to $12.7 million per year by 2020, replacing or relining 10 to 12 miles of water main annually.

c) Wastewater

Sanitary sewer service will be provided to the amendment area by two main extensions. The northern portion of the amendment area will be served by a new 10-inch sanitary main from the intersection of Schewe Road and White Fox Lane with an operating capacity of 582 gpm. Work in 2017 extended the existing sanitary main from Cape Silver Way west of Big Stone Trail to Schewe Road and White Fox Lane (see Map 9). This sanitary network drains into progressively larger mains prior to entering into the MMSD Esser Pond Extension. The City of Madison Lower Badger Mill Creek Interceptor will be extended north from Mineral Point Road to serve the amendment area in 2019. Between the amendment area and Valley View Road, the interceptor is 21-inch and has a design capacity of 3,187 gpm.

The City estimates that the amendment area will generate an average of 271,470 gpd, or 189 gpm. Using a peaking factor of 4.0, it is estimated that the amendment area will generate a peak flow of 1,085,880 gpd, or 754 gpm. The estimated flow is based on the following land use assumptions: low density residential of 310 units at 250 gpd per unit, low density residential transitional of 470 units at 250 gpd per unit, low-medium density residential of 98 units at 225 gpd per unit, medium density residential of 300 units at 175 gpd per unit, and employment of 128 employees at 15 gpd per employee. The estimate is consistent with historical wastewater generation rates in the City. The existing system has capacity to accommodate the additional flows from the amendment area.

MMSD Pumping Stations 12 and 16 currently serve the area near the amendment area. MMSD Pumping Station 17 will ultimately serve this area as the MMSD Lower Badger Mill Creek Interceptor is extended. The projected average daily and peak flows are below the capacity of the interceptors. MMSD has a regular capital improvement planning process to periodically evaluate their system capacity and expanded the capacity of the system as the need is foreseen.

Wastewater Treatment Facility

MMSD will provide wastewater treatment for the amendment area. The Nine Springs Treatment Facility has a design capacity of 50 million gallons per day (mgd) and received an average of 40.7 mgd in 2016, including infiltration and inflow. It is expected to reach 90 percent of current hydraulic design capacity around 2026 based on current projected growth rate assumptions. MMSD has completed a long-range plan that evaluated various options for expanded treatment capacity to serve its current and future service area. For the 20-year planning period, service to this area is expected to remain at the existing wastewater treatment facility location with expanded capacity of the system as the need is foreseen.

Wastewater treatment at the district's Nine Springs Treatment Facility does not remove chloride and the concentration of chloride that arrives at the Nine Springs Plant can exceed the water quality standard. In 2015, AECOM completed a study for MMSD which determined that while possible, treatment would be cost-prohibitive, energy intensive, and involve other environmental impacts[1]. MMSD's Wisconsin Pollutant Discharge Elimination System (WPDES) permit which requires pollution prevention and source reduction initiatives for chlorides, such as the Wisconsin Salt Wise Partnership. MMSD has not had any issues meeting its WPDES permit limits for the quality of effluent discharged to Badger Mill Creek according to their 2016 Annual Report. In 2016, the effluent monthly average Total Suspended Solids ranged from 3.4 to 7.5 mg/L, below the 10 to 16 mg/L permit limit for Badger Mill Creek. The effluent monthly average ammonia ranged from 0.07 to 0.43 mg/L, below the 1.1 to 3.8 mg/L permit limit for Badger Mill Creek. The effluent monthly average total phosphorus ranged from 0.26 to 0.46 mg/L, below the current 1.5 mg/L permit limit but not low enough to meet future water quality based effluent limits (WQBEL) for phosphorus. The total phosphorus monthly limit of 1.5 mg/L is an interim limit and will be reduced to 0.075 mg/L on a six month average and 0.225 mg/L on a monthly average. MMSD has implemented a Watershed Adaptive Management approach, leading a diverse group of partners called Yahara Watershed Improvement Network (Yahara WINs) in implementing phosphorus reducing practices in the watershed.

d) Stormwater Management System

The City of Madison completed the Lower Badger Mill Creek Stormwater Management Analyses in 2003 to address rapid urbanization within the watershed. Since adoption by the City, State, County and local stormwater ordinances have become more protective. As such, the preliminary stormwater management plan for the amendment area exceeds the recommendations from the 2003 report. The preliminary plan for the amendment area includes a regional detention basin along the Lower Badger Mill Creek Corridor, north of Mineral Point Road, along with multiple stormwater detention/infiltration facilities located strategically throughout the amendment area. In addition, a 75-foot wide drainage way will be built north of the regional facility, going north almost to Elderberry Road. These facilities will generally be located to adequately provide water quality treatment (80% TSS reduction) followed by volume reduction facilities, which will provide for annual stay-on (90% stay-on of the average annual storm). It is anticipated that infiltration performance will further reduce TSS (and other pollutants such as Total Phosphorus) from stormwater discharges. Collectively, the stormwater facilities will provide peak discharge rate control to account for storms up to and including the 100-year rainfall event. All stormwater facilities are anticipated to be dedicated to the public upon completion.

Should development occur in portions of the amendment area prior to the City of Madison having ownership or easement rights to that area, the City will require post-developed runoff volume to match pre-developed runoff volume for all design events up to, and including, the 10-year, 24-hour design storm. This requirement attempts to minimize the potential of downstream hydrologic impacts associated with urbanization.

A majority of the topographic low points and valleys of the amendment area have the potential to experience a seasonal high water table between three and five feet of the surface, which will require care when siting infiltration practices so as to not impact groundwater quality. The DNR Conservation Practice Standard 1002 - Site Evaluation for Stormwater Infiltration requires field verification for areas of the development site considered suitable for infiltration. This includes a site assessment for karst features on the site to locate infiltration facilities appropriately so that performance can be maximized while protecting groundwater resources. As such, the City's stormwater management plan may require incorporation of volume reduction strategies (i.e. bioretention, porous pavement, green roofs, etc.) higher in the landscape should limiting conditions be found at the proposed stormwater management facilities locations along the edges of the site.

[1] Chloride Compliance Study Nine Springs Wastewater Treatment Plant Final Report, AECOM, 2015

Performance Standards

The City of Madison proposes stormwater management performance measures to meet or exceed standards required by the State of Wisconsin (NR 151), Dane County (Chapter 14), and City of Madison (Chapter 37) stormwater regulations, as follows:

1) Require post-construction sediment control (reduce total suspended solids leaving the site by at least 80%, with a minimum of 60% of that control occurring in a retention pond prior to infiltration) for the 1-year, 24-hour design storm. This is consistent with the standards currently required by Dane County.

2) Require post-construction peak runoff rate control for the 1-, 2-, 10-, and 100-year, 24-hour design storms to "pre-development" peak runoff rates. This is consistent with the range of design storms currently required by Dane County.

3) Require post-development stay-on volume of at least 90% of pre-development stay-on volume. This is consistent with the stay-on standard for new development currently required by Dane County regulations.

4) Include provisions and practices to reduce the temperature of runoff. This is consistent with the standards currently required by Dane County.

5) Maintain pre-development groundwater annual recharge rate of 9 to 10 inches per year for this area as estimated by the Wisconsin Geological and Natural History Survey in a 2012 report titled "Groundwater Recharge in Dane County, Wisconsin Estimated by a GIS-Based Water Balance Model." This is consistent with the standards currently required by Dane County.

6) When development proceeds in an order such that the City does not have the right, such as an easement or ownership, to increase flows to a downstream channel, infiltration shall be required such that the runoff-volume pre-development to post-development is matched during a 10-year design event.

e) Environmental Corridors

Within this amendment area, there are no Environmentally Sensitive Areas (i.e. wetlands, waterbodies, floodplains, riparian steep (> 12%) slopes, etc.) requiring placement in environmental corridors according to the adopted policies and criteria of the *Dane County Water Quality Plan*. The City has proposed to include the non-riparian, steep, wooded slopes; the proposed stormwater management facilities; and planned park and open space in environmental corridors. The environmental corridors total approximately 35.4 acres.

3) Impacts and Effects of Proposal

a) Meeting Projected Demand

Current projections suggest that an additional 61,000 residents and 38,000 housing units can be expected in the Central Urban Service Area between 2010 and 2040. Land demand projections in 2014 estimated that a total of 5,800 additional residential acres would be needed by 2040 to accommodate that growth. Department of Administration (DOA) population estimates for 2017 indicate that 322,000 residents call the communities of Fitchburg, McFarland, Madison, Maple Bluff, Monona, Middleton, and Shorewood Hills home[2] and that the population in those communities has increased by over 23,000 since 2010, much faster than originally expected. Average annual population increase was roughly 3,400 per year. If growth continues at this pace, the CUSA could gain an additional

[2] Please note that this is a very rough approximation of CUSA. The CUSA includes areas in a handful of Towns. Additionally, the CUSA does not include some areas in the listed communities.

78,000 residents by 2040. This would mean around 40,000 more people than the DOA projected.

b) Phasing

The amendment area is expected to be developed from east to west. Development is likely to begin within the next five years as developers have already shown interest in the Schewe and Herrling properties.

c) Surface Water Impacts

Development creates impervious surfaces (i.e., streets, parking areas, and roofs) and typically alters the natural drainage system (e.g., natural swales are replaced by storm sewers). Without structural best management practices (i.e., detention basins and infiltration basins) this would result in increased stormwater runoff rates and volumes, as well as reduced infiltration. Without structural best management practices for erosion control, development would also cause substantial short-term soil erosion and off-site siltation from construction activities. Scientific research has well documented that without effective mitigation measures, the potential impacts of development on receiving water bodies can include the following:

- Flashier stream flows (i.e., sudden higher peaks)
- Increased frequency and duration of bankfull flows
- Reduced groundwater recharge and stream base flow
- Greater fluctuations in water levels in wetlands
- Increased frequency, level (i.e., elevation), and duration of flooding
- Additional nutrients and urban contaminants entering the receiving water bodies
- Geomorphic changes in receiving streams and wetlands

Natural drainage systems attempt to adapt to the dominant flow conditions. In the absence of mitigation measures, the frequency of bank-full events often increases with urbanization, and the stream attempts to enlarge its cross section to reach a new equilibrium with the increased channel forming flows. Higher flow velocities and volumes increase the erosive force in a channel, which alters streambed and bank stability. This can result in channel incision, bank undercutting, increased bank erosion, and increased sediment transport. The results are often wider, straighter, sediment laden streams, greater water level fluctuations, loss of riparian cover, and degradation of shoreland and aquatic habitat.

Since 2002, there have been stormwater management standards in effect at the state, county, and local level to require stormwater management and erosion control plans and structural best management practices to address the impacts of development on water quality, runoff volumes, peak flows, water temperature, and groundwater recharge.

The City proposes to mitigate the urban nonpoint source impacts of the proposed development by requiring the implementation of various stormwater best management practices that are designed and constructed to meet or exceed current standards for pollutant reduction, runoff volumes, peak flows, water temperature, and groundwater recharge. This will address the potential water quality impacts of stormwater runoff from the proposed development on the receiving waters. To its credit, the City has increased volume control requirements for portions of the amendment area that discharge stormwater runoff onto property neither under the applicant's control (via ownership, easement or agreement) nor onto publicly owned property to match the existing volumetric discharges in storm events up to and including the 10-year storm.

The City of Madison, in conjunction with the Madison Metropolitan Sewerage District, Madison Water Utility, and other regional partners, is also actively working to address chlorides through the Wisconsin Salt Wise Partnership. New development is not expected to exacerbate effluent chloride concentrations since the new high efficiency water softeners

currently required by Wisconsin's plumbing code are substantially more efficient[3] than the old timer based softeners still found in many homes.

d) Groundwater Impacts

Without effective mitigation practices, as natural areas are converted to urban development, the ground/surface water balance in streams and wetlands shifts from a groundwater-dominated system to one dominated more and more by surface water runoff, with subsequent reductions in stream quality and transitions to more tolerant biological communities.

The 2016 Groundwater Flow Model for Dane County, developed by the WGNHS, was used to examine simulated regional changes in streamflow. Where Lower Badger Mill Creek joins the perennial stream, predevelopment base flows for Badger Mill Creek were modeled to be 3.29 cfs (Map 12 and Table 4). For the year 2010, flows were modeled to have increased to 3.95 cfs because of the MMSD effluent discharged upstream. For 2040, the model shows baseflows lowering by about 0.6 cfs, down to 3.38 cfs, due to the cumulative effects of well water withdrawals from multiple municipalities in the groundwatershed. However, this is still higher than modeled predevelopment flows, because of the MMSD effluent return. The wells likely to serve the amendment area are north of Badger Mill Creek and based on the zones of contribution modeled for these wells, it appears that they are not close enough to Badger Mill Creek to impact future baseflow (Map 11).

According to the 2014 DNR report *Ecological Limits of Hydrologic Alteration in Dane County Streams*, Badger Mill Creek has a fish community that would be sensitive to reductions in baseflow, with American brook lamprey, brown trout, and mottled sculpin being the most sensitive to flow change. Therefore continuation of the MMSD effluent return, or some other method of maintaining baseflow, is important in this watershed.

The loss of baseflow from the cumulative effects of well water pumping is a regional issue, beyond the boundaries of a single Urban Service Area Amendment or even a single municipality. This issue is discussed along with potential management options in the recently updated *Dane County Groundwater Protection Planning Framework* (Technical Appendix G of the Water Quality Plan). Maintaining pre-development groundwater recharge also helps to maintain baseflow and mitigate this impact. CARPC staff recommends maintaining the pre-development annual recharge rate of 9 to 10 inches per year for this area as estimated by the Wisconsin Geological and Natural History Survey. Experience has shown that this criterion is generally met when the volume control standard is achieved by infiltration practices.

Table 4
Modeled Baseflow Results
Due to Current and Anticipated Future Municipal Well Water Withdrawals
(All Municipal Wells)

Stream	No Pumping	2010	2040
Badger Mill Creek	*3.29 cfs*	*3.95 cfs*	*3.38 cfs*

4) Comments Received and Unresolved Issues

A public hearing was held on the proposed amendment at the January 11, 2018 meeting of the Capital Area Regional Planning Commission. Sharon Goss, President of Elderberry

[3] The Reduction of Influent Chloride to Wastewater Treatment Plants by the Optimization of Residential Water Softeners, Madison Metropolitan Sewerage District.

Neighborhood Association, submitted comments by email (Attachment 2) and spoke at the public hearing. The comments were not related to water quality concerns. Representatives of the City of Madison spoke in favor of the amendment. Phil Gaebler from City Engineering commented that the available soil borings indicate good infiltration rates and no concerns with karst features. Key comments and questions from Commissioners at the public hearing were related to encouraging the use of green streets and terrace rain gardens, concerns regarding additional chloride from new development, and concerns over additional flow to Badger Mill Creek. Actions have been recommended to the City to further improve water quality and environmental resource management in response to the issues raised.

5) Conclusions and Staff Water Quality Recommendations

There is sufficient existing treatment plant system capacity at MMSD to serve the proposed amendment area. There is also sufficient existing wastewater collection system capacity to serve the proposed amendment area.

Since 2002, there have been stormwater management standards in effect at the state, county, and local level to require stormwater management and erosion control plans and structural best management practices to address the impacts of development on water quality, runoff volumes, peak flows, water temperature, and groundwater recharge.

The City proposes to mitigate the urban nonpoint source impacts of the proposed development by requiring the implementation of stormwater best management practices that are designed and constructed to meet or exceed current standards for pollutant reduction, runoff volumes, peak flows, water temperature, and groundwater recharge. This will address the potential urban nonpoint source impacts of the proposed development on the receiving waters.

The City of Madison, Madison Metropolitan Sewerage District, Madison Water Utility, and other regional partners are also actively working to achieve source reduction of chlorides by encouraging the responsible use of deicers and water softeners through the Wisconsin Salt Wise Partnership.

It is the Regional Planning Commission staff's opinion that the proposed amendment is consistent with water quality standards under Wis. Stat. § 281.15, with the conditions of approval identified below. Additional actions have also been recommended below to further improve water quality and environmental resource management.

a) Conditions

Regional Planning Commission staff recommends approval of this amendment, based on the land uses and services proposed, and conditioned on the continued commitment of the City of Madison to pursue the following:

1. Submit a detailed stormwater management plan for Regional Planning Commission staff review and approval (in conjunction with DCL&WCD staff) prior to any land disturbing activities in the amendment area. The stormwater management plan shall include the following:

    a. Install stormwater and erosion control practices prior to other land disturbing activities. Protect infiltration practices from compaction and sedimentation during land disturbing activities.

    b. Control peak rates of runoff for the 1-, 2-, 10-, and 100-year 24-hour design storms to pre-development levels, in accordance with the City of Madison Stormwater Ordinance.

    c. Provide at least 80% sediment control for the amendment area based on the average annual rainfall, with a minimum of 60% of that control occurring prior to infiltration, in accordance with the City of Madison Stormwater Ordinance.

    d. Maintain the post development stay-on volume to at least 90% of the pre-development stay-on volume for the average annual rainfall period, in accordance with the City of Madison Stormwater Ordinance.

    e. Maintain pre-development groundwater recharge rates from the Wisconsin Geological and Natural History Survey's 2012 report, *Groundwater Recharge in Dane County, Wisconsin, Estimated by a GIS-Based Water-Balance Model* (a range of 9 to 10 inches/year for the amendment area) or by a site specific analysis, in accordance with the Dane County Stormwater Ordinance.

    f. Include provisions and practices to reduce the temperature of runoff, in accordance with the City of Madison Stormwater Ordinance.

    g. When development proceeds in an order such that the City does not have the right, such as an easement or ownership, to increase flows to a downstream channel, infiltration shall be required such that the runoff-volume pre-development to post-development is matched during a 10-year design event, to the extent allowed by state statutes.

2. Conduct a field verification for areas of the development site considered suitable for infiltration including a site assessment for karst features as required by the Wisconsin Department of Natural Resources Conservation Practice Standard 1002 - Site Evaluation for Stormwater Infiltration.

3. Stormwater management facilities shall be placed in public outlots whenever feasible and designated as environmental corridor. Easements and perpetual legal maintenance agreements with the City, to allow the City to maintain stormwater management facilities if owners fail to do so, shall be provided for any facilities located on private property.

4. Delineate environmental corridors to include parks and stormwater management areas to meet the Environmental Corridor Policies and Criteria adopted in the *Dane County Water Quality Plan*. Submit plats showing environmental corridors for Regional Planning Commission staff review and approval prior to recording.

5. Continue to encourage the responsible use of deicers and water softeners as an active participant in the Wisconsin Salt Wise Partnership.

b) Recommendations

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

1. Require an archaeological survey be performed by a qualified archaeologist for the amendment area as recommended by the Wisconsin Historical Society (Attachment 1) and take necessary protection measures if artifacts are found.

2. Request a formal Endangered Resources Review by the WDNR or one of their certified reviewers for potential impacts to endangered resources like rare plants, animals and natural communities and take necessary habitat protection measures if species are found.

3. Continue to participate in the Green Tier Clear Waters Initiative, which aims to reduce the sediment and nutrient delivery to Dane County's lakes and streams from construction activities, beyond the current state and local requirements.

4. Collaborate with watershed-wide efforts to examine and address the concern of higher water levels in Badger Mill Creek.

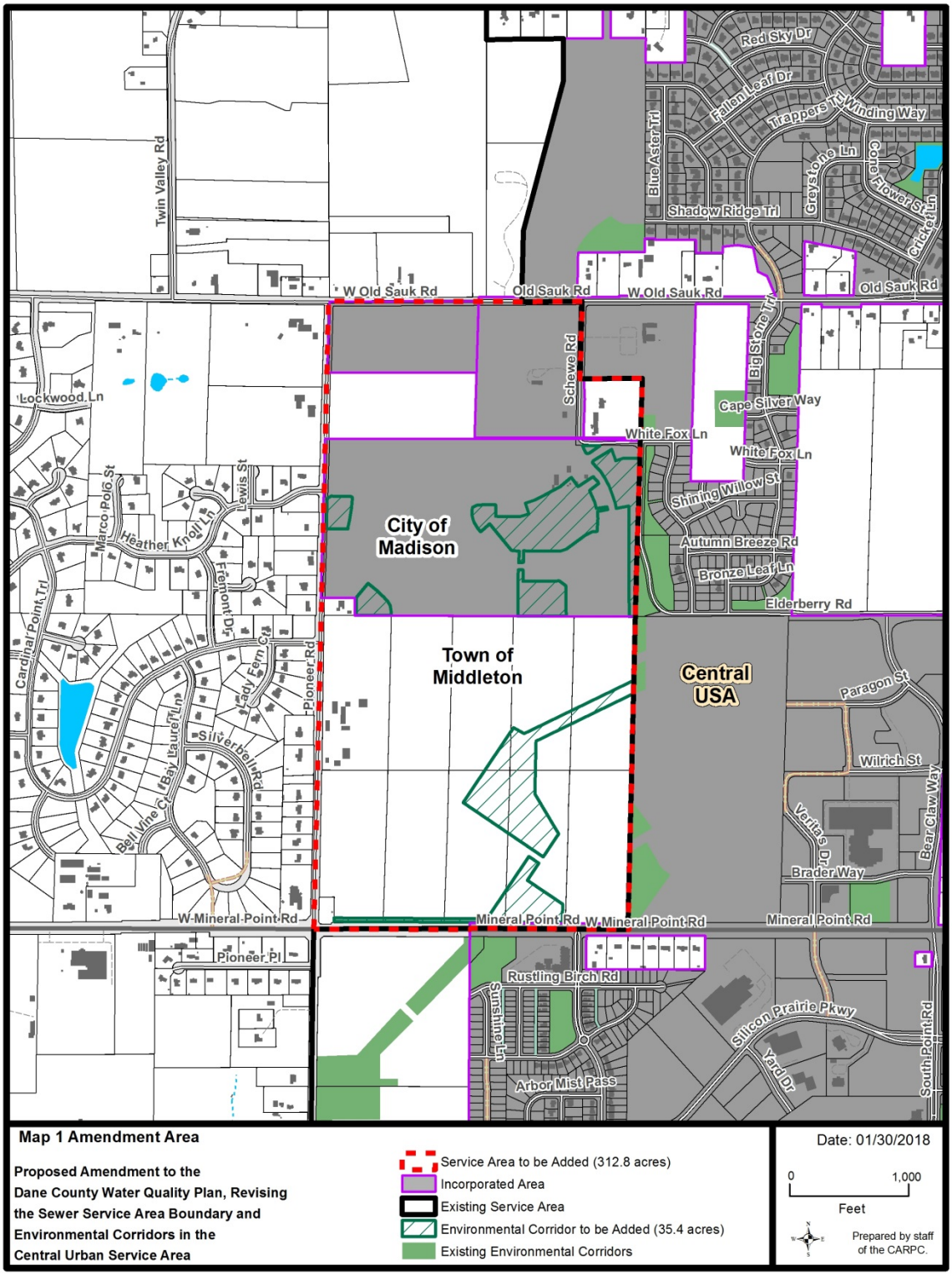
5. Consider a pilot project in the amendment area that would utilize bio-retention, trees, and ribbon curbs or curb cuts for stormwater management in the street terraces. Especially in the city – town transition area, since the larger lots here would allow for wider street terraces.

6. Continue to work with CARPC and the Dane County Lakes & Watershed Commission to implement the Recommendations of the Stormwater Technical Advisory Committee, to the extent allowed by state statutes.

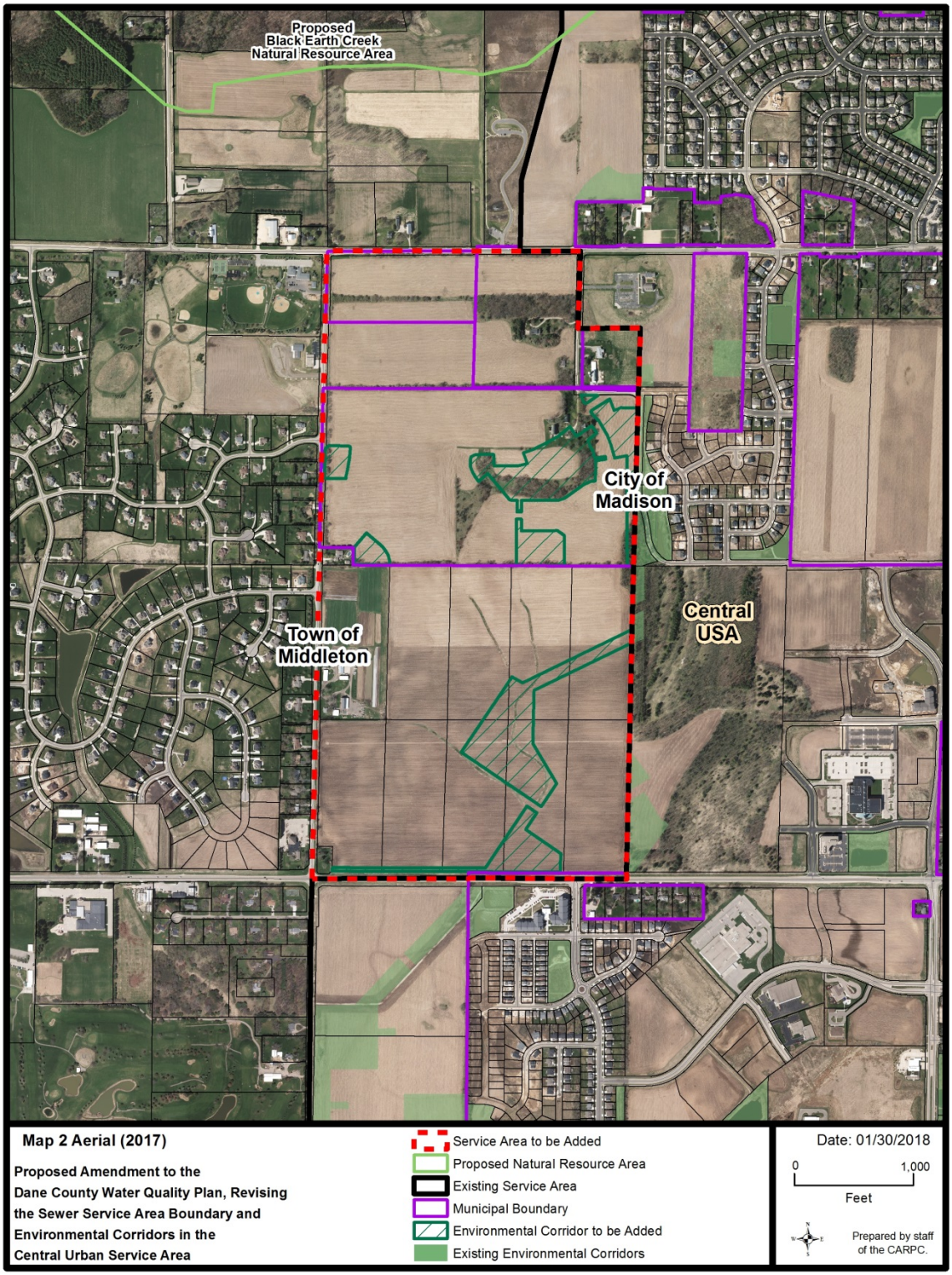
7. Update the XP -SWMM model for the watershed to reflect post -development conditions.

8. Conduct on-site soils investigations in areas with mapped seasonal high groundwater tables and somewhat poorly drained soils (the Elburn and Radford silt loam soils) to determine the actual extent of seasonal high groundwater and identify potential problem areas. The City should consider restrictions in confirmed problem areas such that the lowest level of any structure be built at least one foot above the seasonal high groundwater table to reduce the potential for groundwater induced flooding.

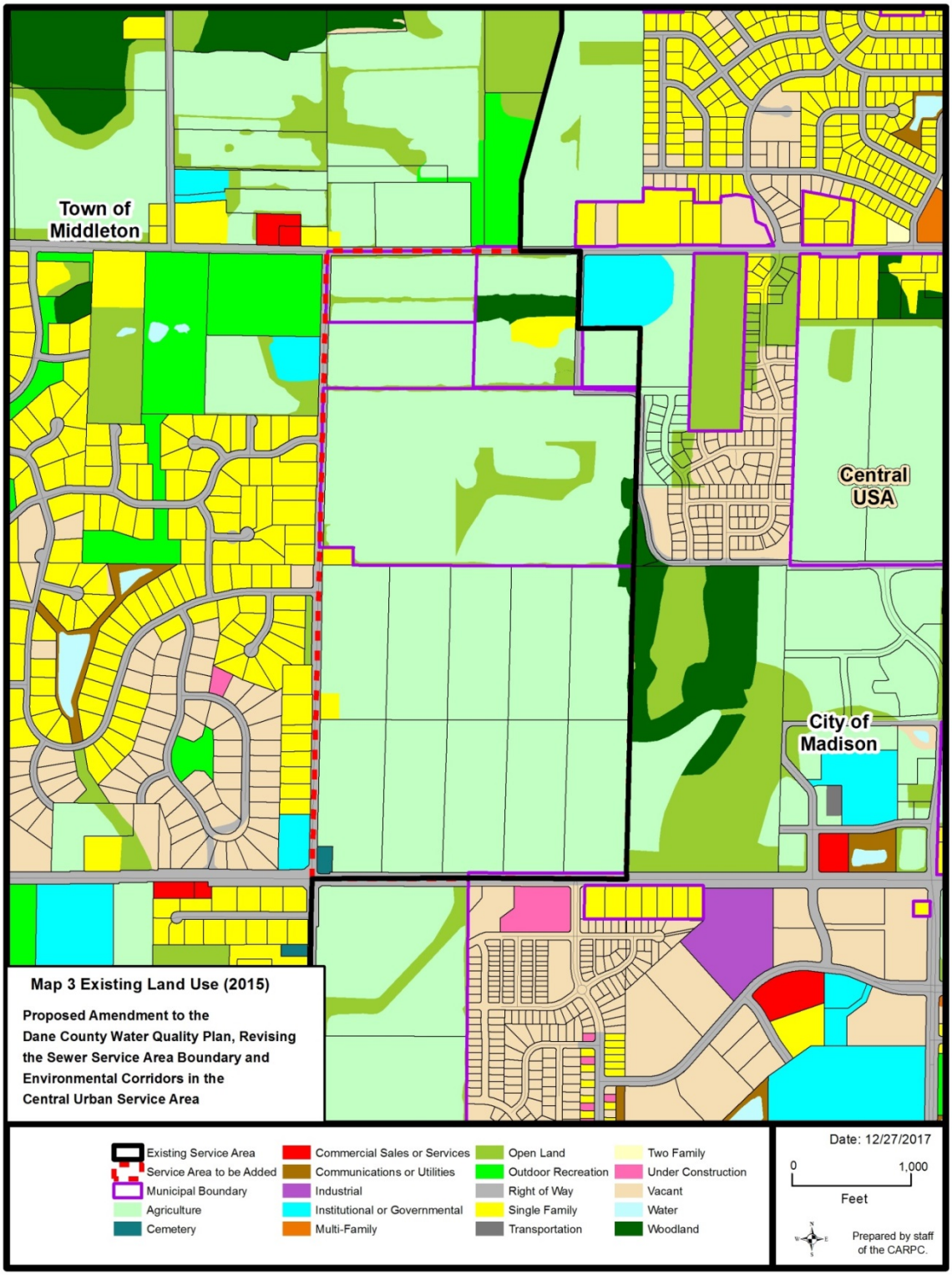
Map 1 - Amendment Area



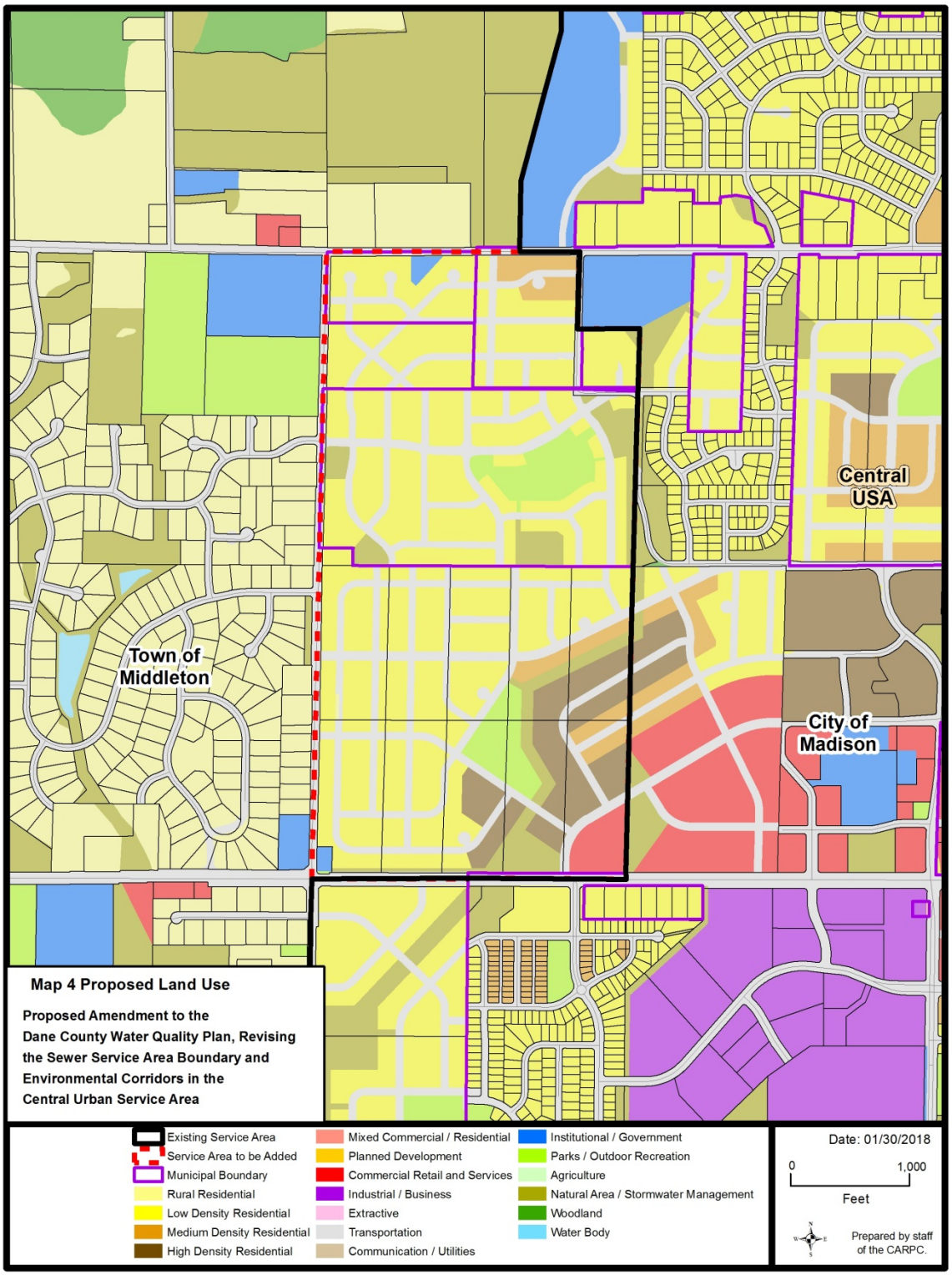
Map 2 – Aerial


Proposed
Black Earth Creek
Natural Resource Area
City of
Madison
Central
USA
Town of
Middleton
Map 2 Aerial (2017)
Proposed Amendment to the
Dane County Water Quality Plan, Revising
the Sewer Service Area Boundary and
Environmental Corridors in the
Central Urban Service Area
Service Area to be Added
Proposed Natural Resource Area
Existing Service Area
Municipal Boundary
Environmental Corridor to be Added
Existing Environmental Corridors
Date: 01/30/2018
0
1,000
Feet
Prepared by staff
of the CARPC.

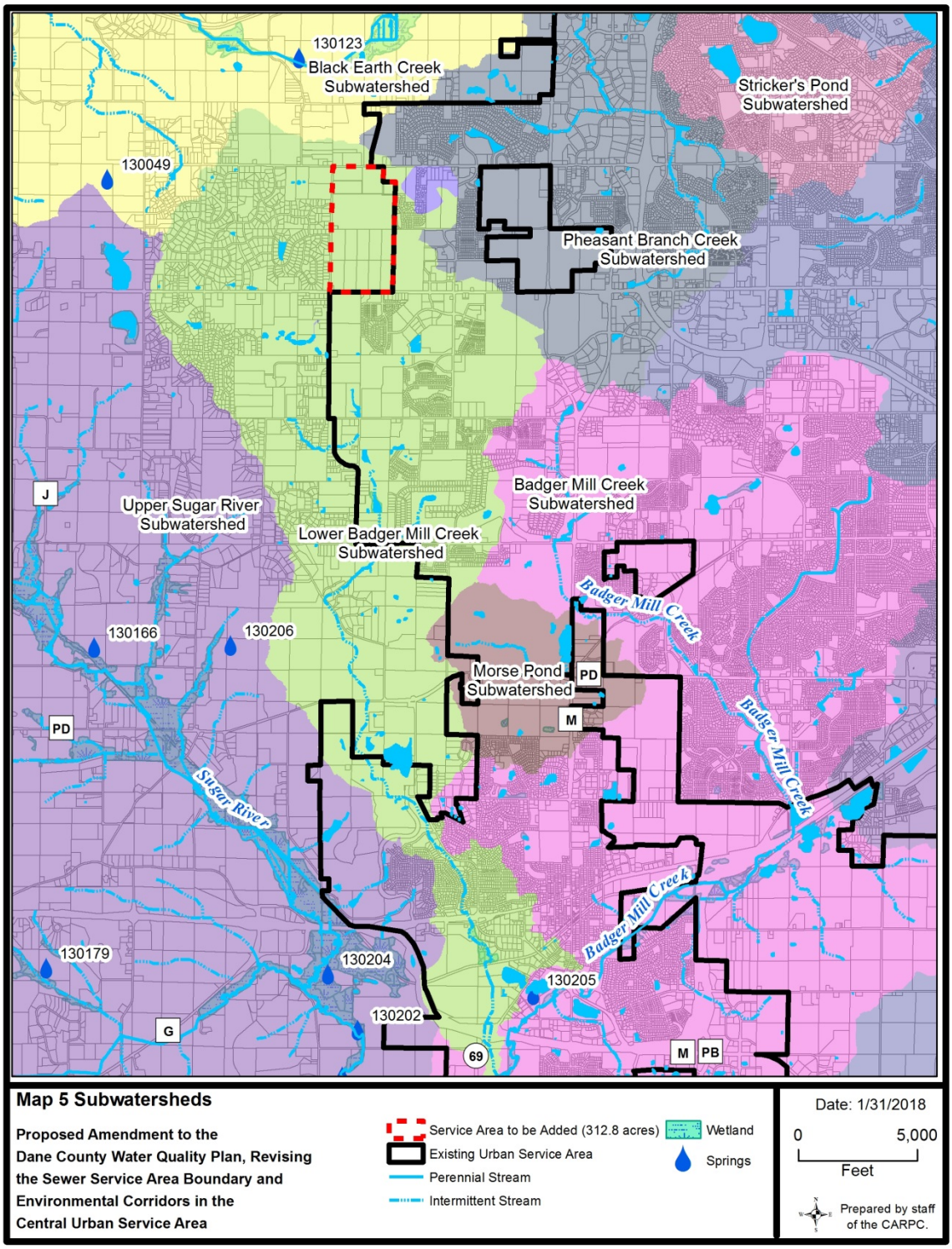
Map 3 – Existing Land Use



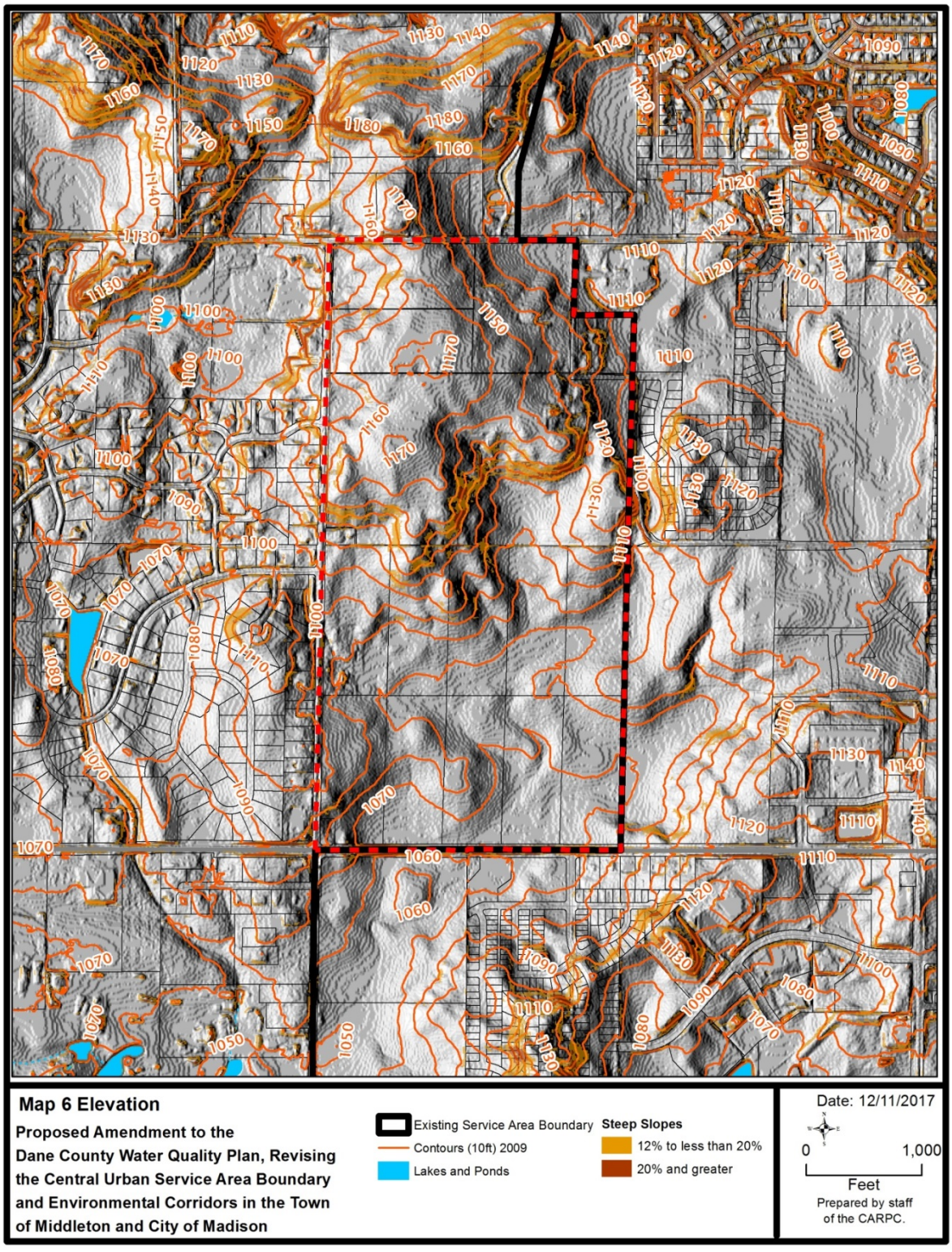
Map 4 – Planned Land Use



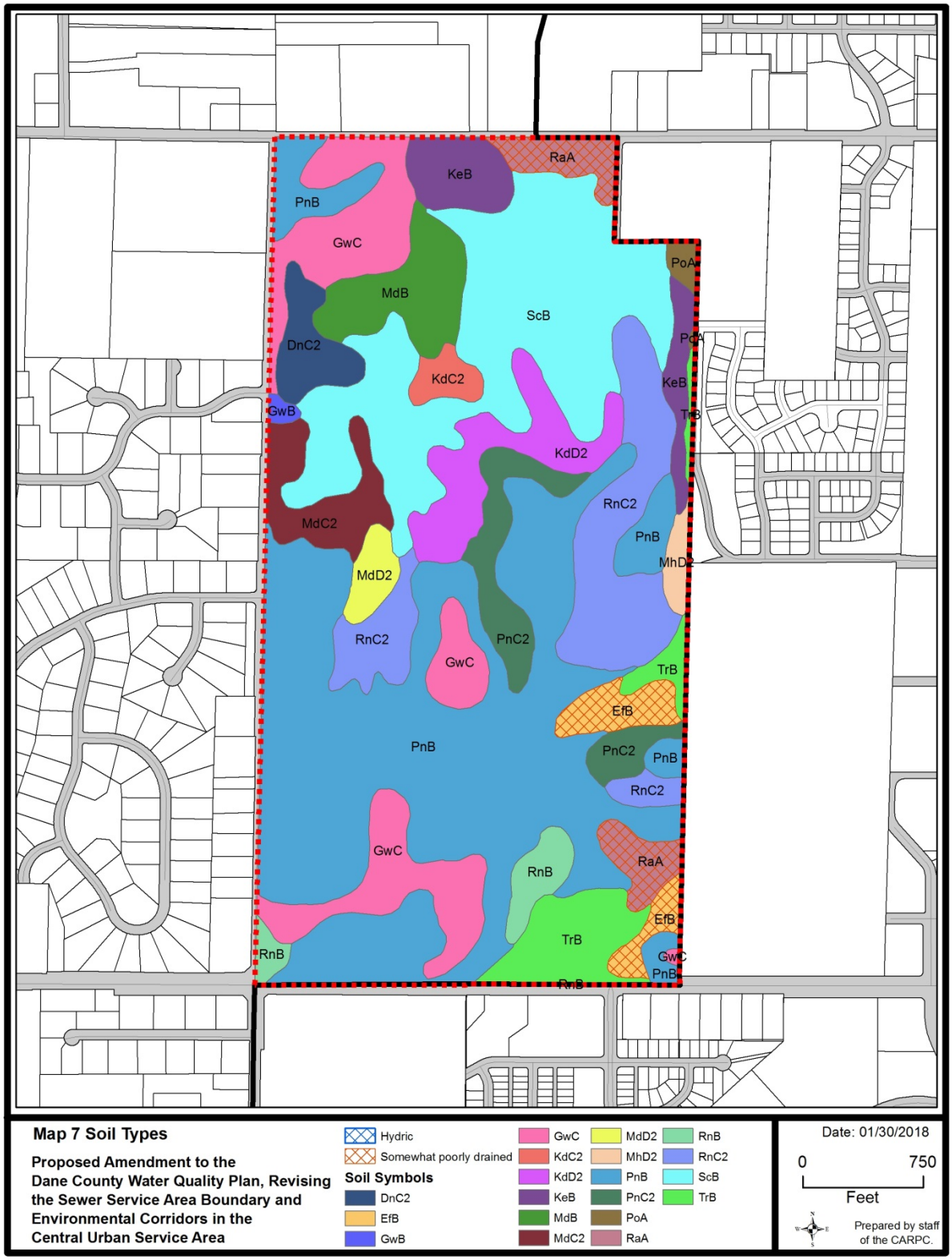
Map 5 - Subwatersheds



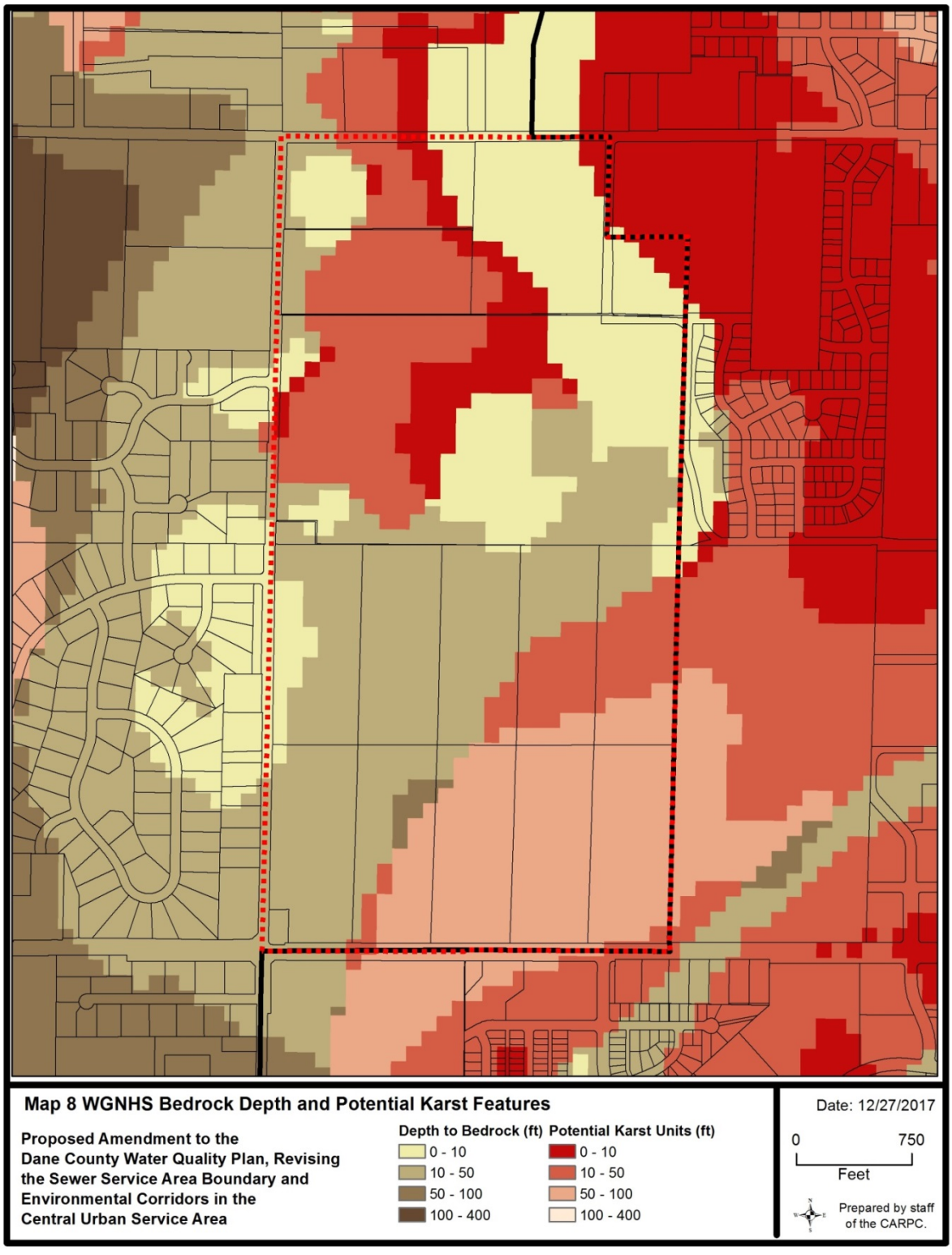
Map 6 - Elevations



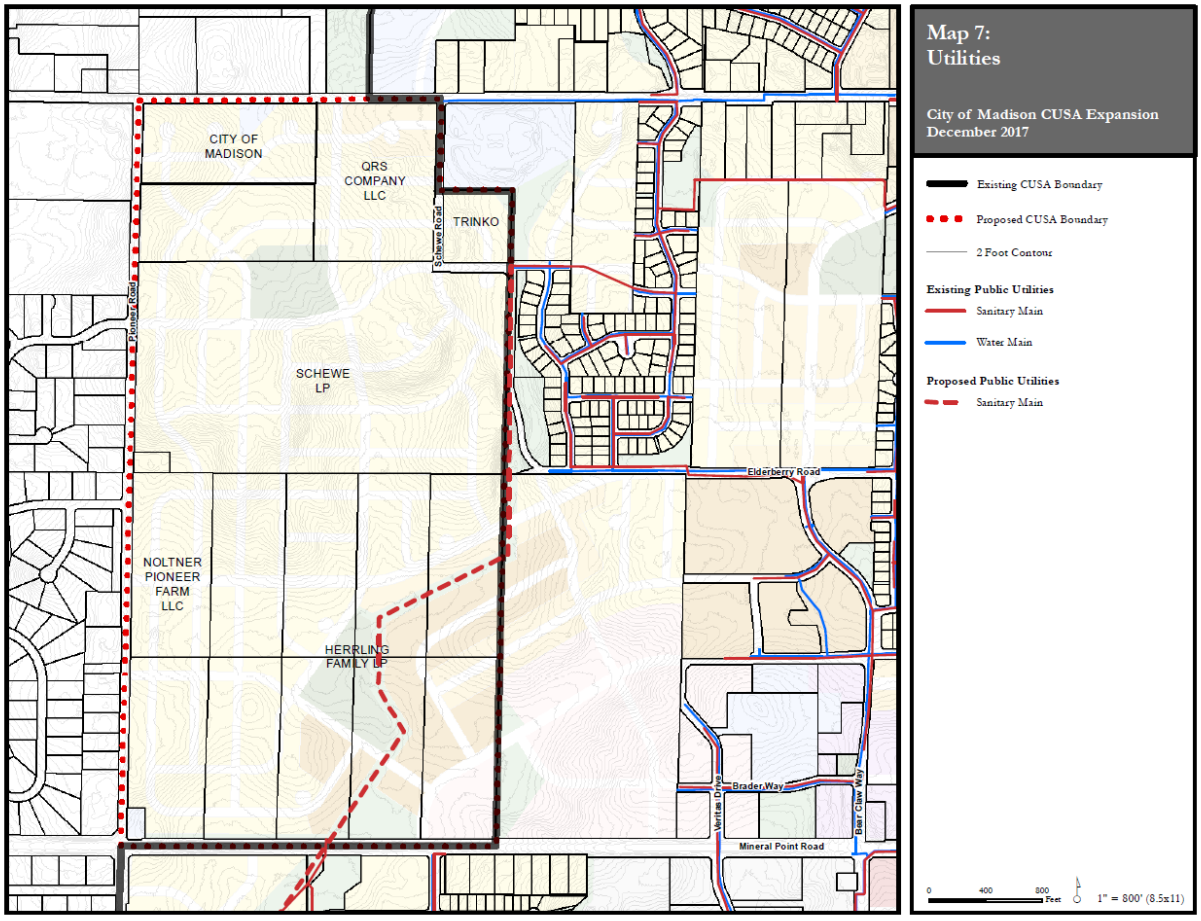
Map 7 - Soil Type



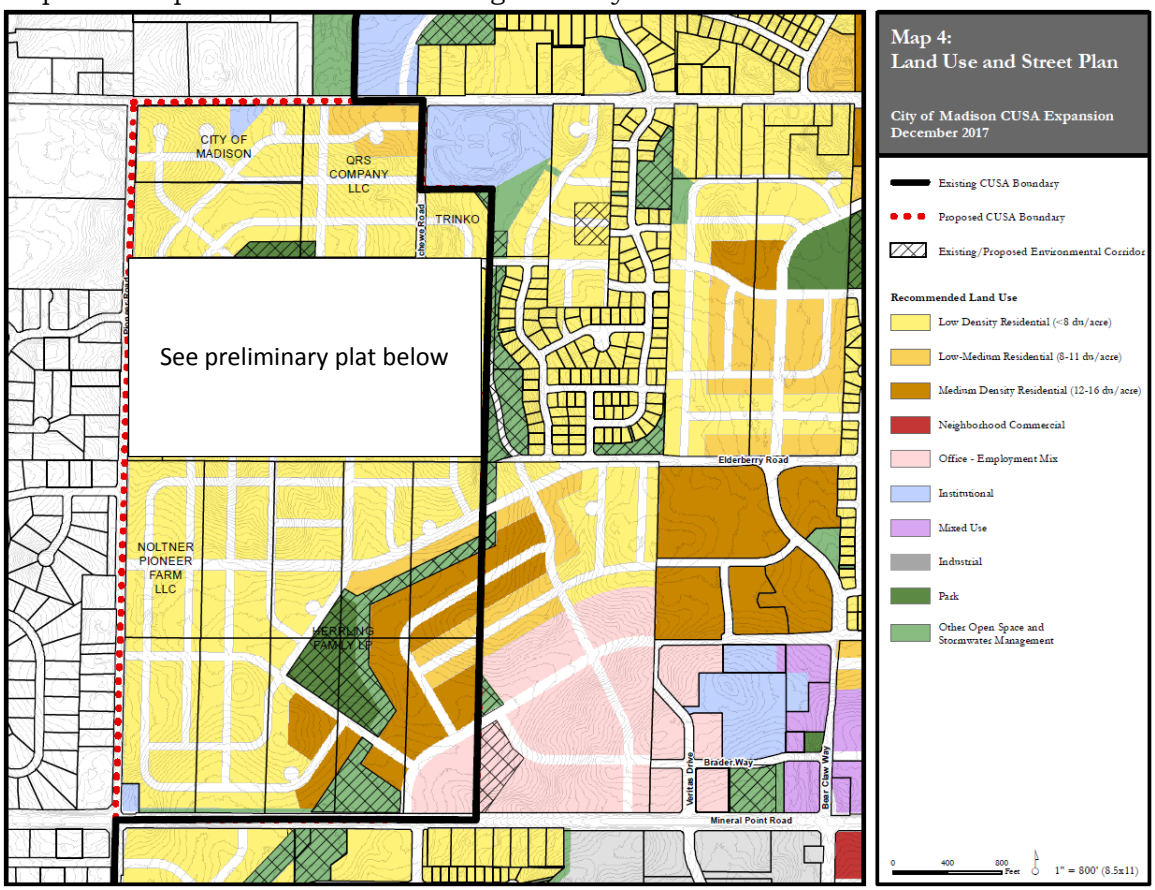
Map 8 – WGNHS Bedrock Depth and Potential Karst Features



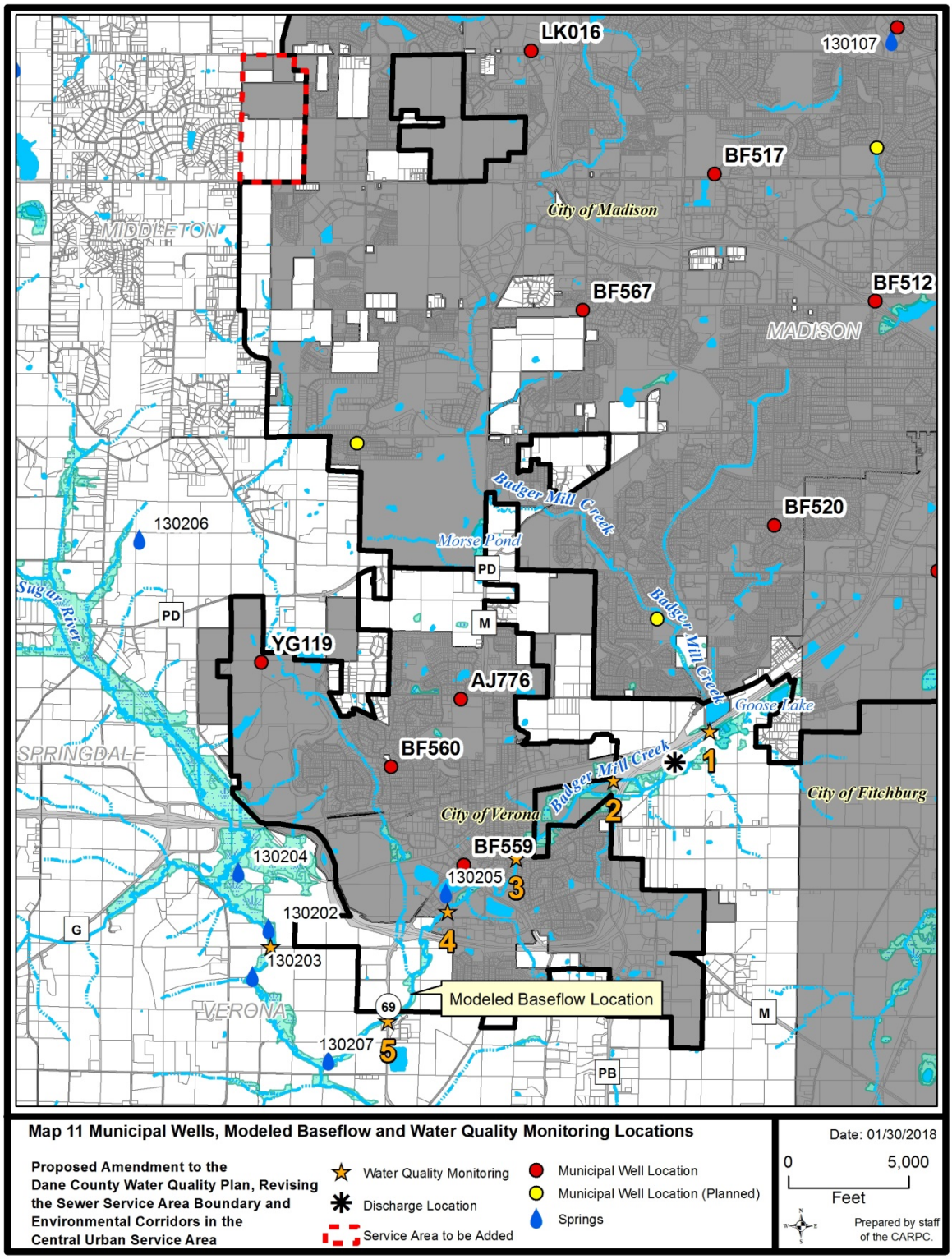
Map 9 – Planned Sanitary Sewer and Water Service



Map 10 – Proposed Stormwater Management System



Map 11 – Municipal Wells, Modeled Baseflow, and Water Quality Monitoring Locations



ATTACHMENT 1

WISCONSIN HISTORICAL SOCIETY

August 25, 2017

Sean Higgins
Capital Area Regional Planning Commission
City-County Building, Room 362
210 Martin Luther King Jr. Boulevard
Madison, WI 53703-2558

RE: Elderberry Neighborhood Central Urban Service Area, Dane County, Wisconsin

Dear Mr. Higgins:

No previously recorded archaeological sites have been recorded within the Elderberry Neighborhood Central Urban Service Area. However, the area has not been surveyed for the presence of archaeological resources. Because of the identification in a recent survey of four pre-contact sites immediately east of this parcel, and because of similarities in the landforms, we recommend that an archaeological survey of the parcel be completed by a qualified archaeologist. When the archaeological field investigation is completed, please send two copies of the report to our office.

Please note that the West Middleton Lutheran Church Cemetery (BDA-84) is located in the very southwestern corner of the proposed expansion area.

Under Wisconsin law, Native American burial mounds, unmarked burials, and all marked and unmarked cemeteries are protected from intentional disturbance. If anyone suspects that a Native American burial mound or an unmarked or marked burial is present in an area, the Wisconsin Historical Society should be notified.

If human bone is unearthed during any phase of a project, **all work must cease**, and the **local authorities must be contacted**. The police or sheriff will determine if the burial is a criminal matter or if it should be referred to the Wisconsin Historical Society at 1-800-342-7834 to be in compliance with Wis. Stat. § 157.70 which provides for the protection of all human burial sites. If we are contacted, **work cannot resume until the Wisconsin Historical Society gives permission**. If you have any questions concerning the law, please contact the Wisconsin Historical Society at 1-800-342-7834.

If you have any questions, or if you need additional information, my contact information is listed below.

Sincerely,

John H. Broihahn
State Archaeologist
State Archaeology and Maritime Preservation
608-264-6496
john.broihahn@wisconsinhistory.org

ATTACHMENT 2

From: Rupiper, Mike
To: Rupiper, Mike
Subject: FW: Public hearing/land use report on western end of EN
Date: Tuesday, January 30, 2018 1:31:17 PM

-----Original Message-----
From: WordPress [mailto:info@capitalarearpc.org]
Sent: Wednesday, January 10, 2018 2:22 PM
To: Capital Area RPC Mail
Subject: Public hearing/land use report on western end of EN

From: Sharon Goss, President of Elderberry NA <elderberry.northcentral@gmail.com>
Subject: Public hearing/land use report on western end of EN

Message Body:
My great-grandparents farmed just north of Old Sauk Rd. a century ago, and other ancestors were pioneer settlers in Dane County. I was raised in a rural area and then grew up in what was then the small village of Middleton. So I care deeply about what's happening to Madison and to our agricultural land. Below are my responses to the land use report recommendations:
1. Promoting balanced communities: Offsetting the desire to balance housing types is, I think, a need to transition from high density West Madison to lower density Town of Middleton by having an above average number of single family homes and extra open land. Please keep in mind that single family homes are very hard to find in West Madison, especially newer construction. Some day all these apartment dwellers will be looking for homes; then what?
2. Compact urban development -- I sincerely hope there will be no more annexation of Town of Middleton land. This should not even be a possibility.
3. Promote distinct communities: Madison is doing a poor job of reaching this goal. This is a rural, agricultural neighborhood. Why haven't we capitalized on that by creating, e.g., agri-hood developments? They would create a link to past use, preserve agriculture, and create a neighborhood unlike any other in Madison. Distinct neighborhood design is still a worthy goal and capable of being achieved -- if you can encourage some creative planning and let go of the need to apply formulas about "mixed use" everywhere in the city regardless of location and character. Mixed use is great in New Jersey; not so much here.
4. Affordable housing: I encourage more construction of attractive town houses, carriage lane houses, and duplexes. Developers and architects tell us it's hard to get town houses approved in light of city restrictions. We would greatly prefer these over the monstrous apartment houses going up all over the west side and neighboring towns (many of them with vacancies).
5. Employment -- see above relative to formulas. Does every single neighborhood have to provide employment? We abut miles and miles of commercial/employment property. In fact, Madison from Rosa Rd west is nothing but mini-malls.
6. Agricultural lands: See above regarding agri-hoods. It's interesting that the goal of preserving agriculture is essentially cast aside in this plan. Apparently it's not really a goal because it certainly could be applied here if anyone cared to do it! Agriculture is not only important for food production; it is the history of this neighborhood. I would like to see it honored and preserved in as many parcels as possible, especially on the University of Wisconsin land and undeveloped parcels like the Theis property.
7. Protect resources: The major resource here, besides agricultural land, is a stretch of beautiful rolling hills and ridges and proximity to Pope Farm Conservancy. I'm extremely disappointed there is no apparent effort to preserve this area of historic farms nor to integrate any of this land with Pope Farm.
8. Develop a system of open space corridors. Please ensure that the former Schewe Rd, now a bike path, is integrated into other trails. Also, please review the Plan Commission's decision on 1/8 regarding a trail proposed to run south out of Eagle Trace. This was opposed by the staff; I'm not clear how it ended up. We would like more off-road bike trails, and attention to the fact that parks are better used when they're reached by trails rather than sidewalks. Also, please require developers to plant more trees. And give some thought to the problems associated with these unsightly detention ponds that are nesting grounds for hordes of mosquitoes, a danger for small children, and most of the time merely swamps. Please don't glorify them by categorizing them as "open land."

ATTACHMENT 2

Thank you for your work and for your consideration of these comments. Speaking for the neighborhood, I can say that we all came here for a tranquil environment and hoped for retention of some of its natural beauty, even as it's inevitably developed.

Sharon Goss, 420 Straw Harvest Ln

Sharon Goss, President of Elderberry NA
608-841-1739
elderberry.northcentral@gmail.com
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This e-mail was sent from the contact form on the CARPC website.