August 2, 2023

Staff Analysis of Proposed Amendment to the *Dane County Water Quality Plan* **Revising the Sewer Service Area Boundary and Environmental Corridors in the Stoughton Urban Service Area**

History of the Stoughton Urban Service Area

The Stoughton Urban Service Area (USA) was first delineated in the early 1970s when the Dane County Regional Planning Commission adopted its first Land Use Plan. The first amendment to the Stoughton Service Area occurred in 1985 to delineate Environmental Corridors and ensure the SSA boundaries reflected the City's adopted 1984 master plan. This amendment resulted in a net reduction of 450 total acres, including 150 developable acres and 300 acres of Environmental Corridor. There has been a total of 12 amendments to this urban service area since its creation totaling 325 net acres of developable land and a net reduction of Environmental Corridor acres due to the 1985 refinement of the original delineation. The most recent amendment of the service area by the City of Stoughton was recommended by the Commission in July 2023, adding approximately 129 acres in the southeast corner of the Stoughton USA.

Planning in Stoughton

The City of Stoughton updated their comprehensive plan in 2017 and amended it in 2023 to accommodate changes to the development plan contained within the current amendment request. Previous versions of the development plan were anchored by big box retail. The Comprehensive Plan is substantially consistent with the adopted 2050 Regional Development Framework (Framework). The amendment area is identified in the City's future land use maps as a part of the "Northwest Planned Neighborhood" and "Northwest Planned Mixed Use Area." The planned development will be part of a designated center in the Framework located at Velkommen Way and US Highway 51.

Existing Conditions

Land Use

The City of Stoughton is requesting amendment to the Stoughton USA northwest of the City, adjacent to existing development along Highway 51 between Rutland-Dunn Townline Road and CTH B. The amendment area is contiguous to the south and east with the existing USA boundary. Existing land uses adjacent to the requested amendment area include single-family residential and planned commercial to the south, single-family residential to the east, and a mixture of agriculture and rural residential to the north and west. The requested amendment area is approximately 279 acres.

The proposed development itself is divided by Highway 51 running north to south. The west side of the development, although conceptual in nature at this time, would consist of commercial nearest to the highway, stormwater management areas, and multi-family residential ringing the commercial areas to the north, west, and south. Development on the east side of the highway follows a similar pattern with a large corporate headquarters surrounded by stormwater management and natural lands and a ring

road. Land uses outside the ring road include commercial to the west, commercial and/or multi-family "flexible use" area totaling roughly 10 acres in the southwest corner, and predominantly two-family, multi-family, and single-family to the northeast, east, and south respectively. Refer to Table 1 for existing and planned land uses.

Surrounding Planned Land Uses:

- **North**: Mixed-Use, "Planned Neighborhood"
- **West**: "Westside Planned Neighborhood"
- **South**: Existing Single-Family Residential and Commercial
- **East**: Existing Single-Family Residential and Institutional (Elementary School, Church, and Senior Living Center)

Table 1
Existing and Planned Land Use

Land Use Category	Existing Land Use Acres (see Map 3)	Proposed Land Use Acres (see Map 4)
Agriculture	253.9	
Commercial Retail and Services		58.9
High Density Residential		48.5
Low Density Residential	7.8	10.6
Medium Density Residential		4.9
Mixed Commercial/Residential		11.6
Natural Area		0.0
Open Land	2.6	
Parks/Outdoor Recreation		101.0
Transportation	13.6	43.5
Vacant/Subdivided Land	0.8	
Woodland	0.2	0.0
	278.9	278.9

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 cultural heritage sites are reported within the bounds of the proposed Stoughton Urban Service Area. Substantial portions of the proposed

Stoughton Urban Service Area have previously been surveyed for archaeological and burial sites, with negative results. No archaeological survey or investigation is recommended for this area.

Natural Resources

The proposed amendment area is in the Lake Kegonsa-Yahara River (HUC 12: 070900020902) and City of Stoughton-Yahara River (HUC 12: 070900020903) subwatersheds (see Map 5). Four delineated wetlands are present within the amendment area. There are no floodplains within the amendment area.

Wastewater from the amendment area will be treated at the Stoughton Wastewater Treatment Facility (location shown on Map 5). The treated effluent is discharged to the Yahara River.

Wetlands

WDNR's Wisconsin Wetland Inventory (WWI) shows one wetland too small to delineate within the amendment area. A wetland delineation (link to report) was conducted by TRC Environmental Corporation, Inc. in May 2022 on the portion of the amendment area east of USH 51. The site investigation and field delineation determined that there were four wetlands within the study area (see Map 11). Wetland 1 is described as a partially farmed wet meadow with vegetation dominated by reed canary grass (*Phalaris arundinacea*) and narrow-leaved cattail (*Typha angustifolia*), both which are invasive species. Wetlands 2, 3, and 4 are described as a farmed fresh wet meadow. No vegetation was present at these three wetlands due to agricultural activities. The delineator classified all four wetlands as "less susceptible" to stormwater runoff.

Disturbance/fill is proposed for portions of Wetlands 1 and 3 and the entirety of Wetland 2. The City is pursuing a nonfederal wetland exemption for these wetlands. Disturbance and removal of the northern portion of Wetland 1 due to the planned Wisconsin Department of Transportation highway expansion of USH 51 is also anticipated. The remainder of Wetlands 1 and 3 and the entirety of Wetland 4, with a minimum 75' vegetated buffer, are required to be designated as Environmental Corridor per the adopted Policies and Criteria for Environmental Corridors (link to document), as part of the *Dane County Water Quality Plan*.

In addition to the wetlands within the amendment area, there are also other wetlands near the amendment area. According to the WWI, the wetlands to the south of the eastern portion of the amendment area are associated with Virgin Lake and classified as palustrine persistent narrow-leaved emergent/wet meadow, persistent narrow-leaved emergent/wet meadow, and broad-leaved deciduous forest. The wetlands to the northwest of the western portion of the amendment area are part of a larger complex and classified as persistent narrow-leaved emergent/wet meadow, palustrine broad-leaved deciduous forest, and broad-leaved deciduous scrub/shrub. According to the Minnesota Stormwater Manual (link to webpage), shrub-carrs are moderately susceptible to degradation by stormwater input, fresh (wet) meadows are slightly to moderately susceptible, and floodplain forests are slightly susceptible.

Yahara River

The Yahara River (WBIC 798300 / WATERS ID 355202) is 63 miles long and originates in Columbia County, connecting Lakes Mendota, Monona, Kegonsa, and Waubesa. The Lower Yahara River subwatershed (the portion downstream of Lake Kegonsa) is approximately 44 square miles. A 22-mile

segment of the Lower Yahara River from Lake Kegonsa downstream to its mouth at the Rock River has been listed as an impaired water per Section 303(d) of the Clean Water Act since 1998. Pollutants of concern are sediment/total suspended solids and total phosphorus, which have resulted in a degraded habitat and low dissolved oxygen. Total Maximum Daily Loads (TMDL) for total phosphorus and sediment were approved by the US EPA in 2011. The water was assessed during the 2018 listing cycle and based on the sample data the total phosphorus listing was removed. The Stoughton and Lake Kegonsa segment (from mile 16.33 to 22.08) is downstream of the amendment area and supports a Warmwater Sport Fishery (see Map 5).

There has been a Rock River Coalition / Yahara WINs monitoring location on the Yahara River at Prospect Street (Station ID 10040742) since 2013. Field measurements from 2022 indicated dissolved oxygen levels of 8.1 to 14.6 mg/L, transparency of 113.5 to 120 cm, and macroinvertebrate index scores of 2.4 to 2.6. Chloride data is not collected at this monitoring location. USGS baseflow monitoring on the Yahara River at the Forton Street Bridge (Station ID 05429700) measures discharge and water level but does not collect water quality data.

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. From 2014 to 2017, the WGNHS surveyed springs statewide that were expected to have flow rates of at least 0.25 cubic feet per second (cfs). There are no known springs in or near the proposed amendment area.

Groundwater

Groundwater modeling, using the 2016 Groundwater Flow Model for Dane County developed by the WGNHS (link to website), shows that 2010 modeled baseflow in the Yahara River at Main Street (see Map 5), decreased compared to predevelopment flow conditions (202 to 152 cfs; see Table 4). These reductions are primarily due to the cumulative effects of well water withdrawals from multiple municipalities in the groundwatershed. Pre-development conditions represent no well pumping within the model.

In 2012, the WGNHS published a report, *Groundwater Recharge in Dane County, Wisconsin, Estimated by a GIS-Based Water-Balance Model* (link to report), 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 proposed amendment area ranges from approximately 9 to 10 inches per year.

Endangered Resources

The WDNR 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 (link to website). A screening review of this database conducted by CARPC staff for species designated as endangered, threatened, or of special concern identified one lichen, one reptile, and one fish within a 1- to 2-mile radius of the amendment area. One National Wildlife Refuge, Gadwall Swamp Waterfowl Production Area, was identified with a 1-mile radius of the amendment area. Therefore, it is recommended that a formal Endangered Resources Review be conducted by the WDNR

or one of their certified reviewers for potential impacts to endangered resources, and habitat protection measures to be implemented if species are found.

The southeastern quarter of the amendment area is within the High Potential Zone (species likely present) for the federally endangered Rusty Patched Bumble Bee (link to web map). Section 7 of the Endangered Species Act requires consultation with the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service when any action that is carried out, funded, or permitted by a federal agency may affect a federally listed endangered or threatened species. The WDNR typically recommends that projects within the High Potential Zone include native trees, shrubs, and flowering plants; plants that bloom spring through fall; and the removal and control of invasive species in any habitat used for foraging, nesting, and overwintering. The USFWS developed a list of plants favored by Rusty Patched Bumble Bee (link to list). Implementing these conservation measures should be coordinated with the WDNR Endangered Resources Review Program as needed.

Soils and Geology

The southwestern two-thirds of the amendment area is located within the East Johnstown-Milton Moraines Land Type Association of Wisconsin. The Association classifies the surficial geology of this area as undulating hummocky moraine and outwash plain complex with scattered lake plains. The northeastern third of the amendment area is located within the Dane-Jefferson Drumlins and Lakes Land Type Association of Wisconsin. The Association classifies the surficial geology of this area as an undulating complex of till plains where drumlins, outwash plains, lake plains and muck deposits are common.

Surface elevations within the amendment area range from around 893 feet to 959 feet. There are areas of steep (> 12%) and very steep (>20%) slopes associated with the road embankments along US Highway 51 in the central portion of the amendment area (see Map 6). These areas of steep slopes are not riparian and do not require inclusion in Environmental Corridors.

According to the Natural Resource Conservation Service (NRCS) Soil Survey of Dane County, the soils in the amendment area are in the Batavia-Houghton-Dresden association. These soils are well to poorly drained, deep to moderately deep silt loams and mucks that are underlain by silt, sand, and gravel. Table 2 shows detailed classifications for soils in the amendment area (see Map 7) while Table 3 shows important soil characteristics for the amendment area.

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 NRCS (link to web soil survey), the Troxel, Elburn, and Radford soils (the TrB, EgA, and RaA map units) are not hydric, but they do have a seasonal (April to June) zone of water saturation within 5 feet of the ground surface. The Troxel soils are classified as moderately well drained, and therefore do not pose a limitation for buildings with basements. The Radford and Elburn soils are classified as somewhat poorly drained and do pose severe limitations for buildings with basements.

Table 2
Soils Classification

Soil	% of Area	General Characteristics
Kegonsa Silt Loam; KeB	36.5	Well drained, nearly level and gently sloping, moderately deep soils on benches on outwash plains. Soils have medium fertility, moderate to rapid permeability, and moderate hazard of erosion. Poses no limitations for development.
Batavia Silt Loam; BbB	17.4	Deep, well drained, nearly level to sloping soils on high benches. Soils have high fertility, moderate permeability, and a moderate hazard of erosion. Poses moderate limitations for development due to shrink/swell potential.
Dresden Silt Loam; DsC2	9.5	Well drained, gently sloping to steep slopes on benches in stream valleys. Soils have medium fertility, moderate permeability, and a severe hazard of erosion. Poses moderate limitations for development due to slope.
Batavia Silt Loam; BbA	8.9	Deep, well drained, nearly level to sloping soils on high benches. Soils have high fertility, moderate permeability, and no hazard of erosion. Poses moderate limitations for development due to shrink/swell potential.
Plano Silt Loam; PoB	8	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 slight to moderate limitations for development due to low bearing capacity.
Dodge Silt Loam; DnC2	5.8	Deep, well drained, gently sloping and sloping soils on glaciated uplands. Soils have high fertility, moderate permeability, and a severe hazard of erosion. Poses moderate limitations for development due to slope, shrink/swell potential, and low bearing capacity.
Troxel Silt Loam; TrB	5.4	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 severe limitations for development due to low bearing capacity.
Elburn Silt Loam; EgA	2.7	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 in areas where the slopes are 2 to 3 percent. Poses severe limitations for development due to depth to saturated zone.
Dresdent Silt Loam; DsB	1.2	Well drained, gently sloping to steep slopes on benches in stream valleys. Soils have medium fertility, low permeability, and a moderate to severe hazard of erosion. Poses slight to moderate limitations for development due to slope.

McHenry Silt Loam; MdD2	1.1	Deep, well drained, gently sloping to moderately steep soils on glaciated uplands. Soils have medium fertility, moderate permeability, and a very severe hazard of erosion. Poses severe limitations for development due to slope.
Radford Silt Loam; RaA	1.1	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 moderate hazard of erosion. Poses very severe limitations for development due to very low bearing capacity and depth to saturated zone.
St. Charlies Silt Loam; ScC2	1.0	Deep, well drained, sloping soils to moderately steep soils on glaciated uplands. Soils have high fertility, moderate permeability, and a severe hazard of erosion. Poses severe limitations for development due to slope.

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	KeB, BbB, BbA, PoB, TrB, DsB, DnB	77.9
Hydric Soils (Indicates Potential / Restorable Wetlands)	None	0
Poorly Drained Soils with Seasonal High Water Table (< 5')	EgA, RaA	3.8
Soils Associated with Steep Slopes (> 12%)	MdD2, DrD2	1.8
Soils Associated with Shallow Bedrock (< 5')	None	0
Best Potential for Infiltration in Subsoils	KeB, BbB, DsC2, BbA, PoB, DnC2, EgA, DsB, MdD2, ScC2, DrD2, DnB, BbC2	93.4

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

According to WGNHS data, most of the bedrock within the amendment area is in the Trempealeau Group. Bedrock in the Trempealeau Group is quartz sandstone, dolomitic siltstone, silty dolomite, and sandy dolomite, consists of two formations including the Jordan and underlying St. Lawrence Formations, which were combined as one mapping unit. Thickness is about 75 feet, where not eroded. A small portion of the south-central amendment area is in the Prairie du Chien Group. Bedrock in the Prairie du Chien Group is dolomite, minor sandstone, cherty dolomite, vuggy, sandy, and oolitic, and consists of two formations including the Shakopee and Oneota Formations. Thickness is up to 145 feet in

eastern Dane County. According to WGNHS data, the depth to bedrock in the amendment area ranges from 30-190 feet, with the shallowest depths generally being in the south-central portion of the amendment area and deepest depths being in the west-central portion.

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 is 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. Karst features may be anticipated within the proposed Environmental Corridors at depths ranging from 38-172 feet (see Map 8).

Given the expected separation of typical stormwater management practices compared to the anticipated depth of potential karst (over 20 feet), there is not a concern for groundwater contamination due to karst features. In addition, *WDNR Conservation Practice Standard 1001 – Wet Detention Pond* (2007) and *WDNR Conservation Practice Standard 1002 – Site Evaluation for Stormwater Infiltration* (2017) require field verification for areas of the development site considered suitable for stormwater management. This includes a site assessment for karst features in this area. If shallow karst features are found, adequate protection measures are required to address any potential for groundwater contamination.

Per Dane County ordinance, infiltration practices receiving runoff from source areas that contain impervious surfaces must be located to allow a separation distance of at least 5 feet between the bottom of the infiltration system and the elevation of seasonal high groundwater, or the top of bedrock, along with certain soil filtering characteristics. There is no minimum separation distance for roofs draining to surface infiltration practices. Soil test pits are required as part of the stormwater management plan to assure that infiltration practices are sited in locations that will not adversely affect groundwater quality.

Proposed Urban Services

Parks and Open Space

The proposed development includes 34.1 acres of parkland and 2.5 acres of open space in the amendment area (see Map 2). Several stormwater management areas, totaling 62.8 acres within the amendment area, are also proposed. All park, stormwater, and open space areas are proposed for placement in public outlots and Environmental Corridors.

Wastewater

Sanitary sewer service will be provided to the amendment area by connection to the City's sanitary sewer collection and treatment system. Each lot will be served by an individual sewer lateral and connect to proposed public sewer mains within the development (see Map 9A). Approximately 10 proposed single-family lots will be served by gravity, while the remaining amendment area will be served by a proposed lift station located west of the proposed intersection of Kings Lynn Road and Greenbriar Drive. The proposed sewers and lift station will be sized to have capacity for potential

additional future development to the north and west. The entire amendment area will flow to an existing 18-inch interceptor sewer located at the north end of Kings Lynn Road. The Kings Lynn Road Interceptor (KLR Interceptor) is part of the City's "West" interceptor, which flows to the City of Stoughton Wastewater Treatment Facility.

The amendment area includes two proposed development areas, separated by the USH 51 corridor. The area west of USH 51 is more conceptual in nature, but assumptions have been made as to the likely development and has been included in wastewater loading estimates provided by the City. The proposed development within the amendment area consists of single-family residential (45 dwelling units), two-family residential (20 dwelling units), multifamily residential (1,156 dwelling units), and commercial (65 acres) land uses contributing to wastewater flows. Nine existing single-family residential units are included within the amendment area and are included in the wastewater loading calculations. The City estimates that the amendment area will generate an annual average of approximately 311,000 gallons per day (gpd) of wastewater, or 216 gallons per minute (gpm) (0.48 cfs). This assumes 2.8 persons per single-family dwelling unit, 2.1 persons per two-family dwelling unit, 1.7 persons per multifamily dwelling unity, and an average wastewater generation rate of 100 gallons per capita per day (gpcd) for residential land uses. For commercial land uses, this assumes 1,500 gallons per acre (gal/ac). The City estimates that the amendment area will generate a peak daily flow rate of approximately 762 gpm (1.70 cfs), utilizing a peaking factor of 4 for residential land uses and 2.5 for commercial land uses.

The proposed sewer within the development area is anticipated to range in size from 8-inch to 15-inch-diameter, depending on the local sewershed of each pipe, and will be sized with final design. Stoughton Utilities seeks to have local sewers operate at no more than 80% of the maximum capacity. The City reports that the existing KLR Interceptor currently receives a peak daily flow of approximately 600 gpm (1.33 cfs) and has a total capacity of 1,764 gpm (3.93 cfs). Using peaking factors commensurate to the sewershed size and land uses contributing flows, all segments of the "West" Interceptor downstream of the amendment area were evaluated by the City and found to have adequate capacity to serve the proposed amendment area. Additionally, in 2024 Stoughton Utilities will complete flow monitoring to improve accuracy of modeling efforts and ensure capacity as new developments come online.

Wastewater Treatment Facility

The Stoughton Wastewater Treatment Facility (WWTF) will provide wastewater treatment for the amendment area. The WWTF is located on Mandt Parkway and discharges to the Yahara River within the City of Stoughton-Yahara River watershed. The average annual design flow of the facility is 1.65 million gallons per day (MGD), the rated monthly design flow capacity is 2.06 MGD and the maximum daily design flow capacity is 4.0 MGD. In 2006, hydraulic improvements were made to the plant to increase capacity, although the plant capacity was not re-rerated. Currently, Stoughton Utilities is undertaking a plant analysis to determine what improvements may be needed in the next 5-10 years as systems age and additional developments come online. In the year 2021, the facility received an average monthly influent hydraulic loading of 1.14 MGD (56% of the rated design monthly capacity), including infiltration and inflow, according to the 2021 Compliance Maintenance Annual Report (CMAR) (link to 2021 CMAR). With the additional anticipated flows from the proposed amendment area and recent development in the City, the average loading is expected to approach the rated inflow capacity of the plant; however, given the previous improvements made (as described above) and ongoing assessment,

Stoughton Utilities does not foresee an issue with providing wastewater treatment to the proposed amendment area.

The City did not have any issues meeting its WPDES permit (effective May 2020, expires March 2025) limits for the quality of effluent discharged to Yahara River in the most recently reported calendar year, except for one limit exceedance in the month of April due to maintenance (see below). Below is a summary of the major effluents reported on in the 2021 CMAR:

- The biological oxygen demand (BOD) effluent quality for 2021 was below the monthly average limit, with a monthly average of 5.0 mg/L (20% of the limit) and a maximum of 10.0 mg/L (40% of the limit) for the month of July.

- The total suspended solids (TSS) effluent quality for 2021 was below the monthly average limit, with a monthly average of 8.7 mg/L (43% of the limit) and a maximum of 13.0 mg/L (65% of the limit) for the month of June.

- The ammonia (NH3) effluent quality for 2021 was below the monthly average limit (varies by month), with a monthly average of 9.8 mg/L (1-39% of the respective limits) and a maximum concentration of 14.9 mg/L (24% of the limit) for the month of March.

- The phosphorus (P) effluent quality for 2021 was below the monthly average limit, except for the month of April when the limit was exceeded due to a shutdown of the digester for cleaning. The monthly average was 0.46 mg/L (average of 46% of the monthly limit) with a maximum of 1.07 mg/L (107% of the limit) in the month of April.

The WWTF discharges to a tributary of the Rock River, and thus the WPDES permit includes TSS and phosphorus limits to comply with the Total Maximum Daily Load (TMDL) developed for the Rock River Basin to protect and improve water quality. To meet the future water quality-based effluent limit (WQBEL) for phosphorous, the Stoughton WWTF has been approved by Wisconsin DNR to implement a watershed adaptive management approach (WAM) through participation in Yahara Watershed Improvement Network (Yahara WINs) to implement phosphorus reducing practices within the watershed (link to website). The adaptive management interim limitation for phosphorus is 0.6 mg/L, expressed as a six-month average (May through October and November through April), and goes into effect beginning the period from May 1, 2023, through October 31, 2023. Additionally, a 1.0 mg/L monthly average has been required since May 2020 (previous limit was 1.3 mg/L).

Water System

Stoughton Water Utility provides municipal water through a public water distribution system which includes approximately 378,000 linear feet of water main and four active high-capacity groundwater wells within the City. Three of the wells pump directly into the distribution system and one pumps into a reservoir, where two booster pumps are then used to pump into the distribution system. The active wells are at depths ranging from approximately 969 to 1,137 feet with an average capacity of 990 to 1,320 gallons per minute (gpm). In total, the gross capacity of the municipal wells is approximately 4,520 gpm, or 6.52 million gallons per day (MGD). The firm capacity (with the largest well assumed to be out of service) is approximately 3,200 gpm, or 4.61 MGD, although the City also maintains two standby high-

capacity groundwater wells. The City has one ground-level reservoir and two elevated tanks, with a combined storage capacity of 1.30 million gallons. According to the 2021 Annual Report to the Public Service Commission of Wisconsin (link to 2021 Annual Report), the City pumped an average of 918 gpm, or 1.32 MGD, in 2021, which is approximately 31% of its firm pumping capacity. In 2021, the maximum amount pumped in any one day was 2.05 MGD.

Water losses in the City's distribution system were an average of 86,263 gpd, or 0.09 MGD, in 2021, which accounted for 7% of the net water supplied in 2021. Approximately 77% of this was due to unreported and background leakage, with the remaining due to reported leaks and other apparent losses. In 2021, there were 8 main breaks and 3 service breaks which were repaired. Water losses in the City's distribution system were 11% in 2020 and 8% in 2019. The Wisconsin Administrative Code PSC 185.85(4)(b) requires a utility with more than 1,000 customers to submit a water loss control plan to the Public Service Commission (PSC) if the utility reports its percentage of water losses exceeds 15%.

The amendment area includes two proposed development areas, separated by the USH 51 corridor. The area west of USH 51 is more conceptual in nature, but assumptions have been made as to the likely development and this area has been included in water demand estimates provided by the City. The proposed development within the amendment area consists of single-family residential (45 dwelling units), two-family residential (20 dwelling units), multifamily residential (1,156 dwelling units), and commercial (65 acres) land uses contributing to water demand. Nine existing single-family residential units are included within the amendment area and are included in the water demand calculations.

Water supply within the eastern portion of the amendment area will be provided by connecting to existing (or soon to be constructed with the "51 West" development) water main at several locations, including at the intersection of Nygaard Street and Greenbriar Drive, Oakridge Way, Kings Lynn Road, Kriedeman Drive, and CTH B; water supply within the western portion will be provided by connecting to water main at the intersection of Oak Opening Drive and Rutland Dunn Town Line Road to the south and also looped to connect to the easterly side of USH 51(see Map 9A). Water main will be looped interior to the development and individual service laterals will be provided to serve the proposed lots.

The City anticipates the annual average daily water demand for the amendment area to be approximately 310,900 gallons per day (gpd), or 216 gpm. This assumes 2.8 persons per single-family dwelling unit, 2.1 persons per two-family dwelling unit, 1.7 persons per multifamily dwelling unit, and an average water demand of 100 gallons per capita per day (gpcd) for residential land uses. For commercial land uses, this assumes 1,500 gallons per acre per day (gpd/ac). The estimated peak hourly demand is approximately 45,700 gallons/hour, or 762 gpm, based on a peak hourly demand factor (peak hour to average daily demand) of 4 for residential land uses and 2.5 for commercial land uses. The estimated average daily water demand represents an increase of approximately 24% of the current demand and the estimated peak hourly demand represents an increase of approximately 27% of the current demand on the system. This is within the gross capacity of the system with all four wells running but does exceed the firm capacity. If one well is down, water from storage will be required to meet the peak hourly demands on the system.

The City estimates that static pressures within the amendment area will range between 52 psi (at the highest elevations) to 72 psi (at the lowest elevations), providing acceptable pressure. Furthermore, the

City conducted water modeling of the amendment area and does not have concerns with available fire flow. It is anticipated that the existing water supply system will support the additional demand from the proposed amendment area.

Stormwater Management System

The amendment area is almost entirely within the Lake Kegonsa-Yahara River (HUC 12: 070900020902) subwatershed, with only the very southern edge also within the City of Stoughton-Yahara River (HUC 12: 070900020903) subwatershed, according to mapping available on WDNR's Surface Water Data Viewer. The area currently consists of agricultural lands, single family residential lots, farmsteads, and one small grove of woodlands.

The drainage patterns are not well defined and nearly the entire amendment area is within internally drained areas, or closed basin watersheds, associated with the wetlands east of USH 51. The amendment area is also hydraulically connected to additional closed basins downstream to the south. Internally drained watersheds lack a defined drainageway or stream outlet, and the only mechanisms for water to leave the basin under average rainfall conditions are by infiltration and evapotranspiration. Changes to the watershed resulting in increased volumes of runoff (e.g., from an increase in impervious surfaces) can potentially impact surrounding and downstream properties and water resources if the increases are not mitigated. Therefore, enhanced stormwater management for runoff quantity and quality considerations is important in closed basins to avoid unintended impacts on surrounding properties and water resources. Dane County ordinance requires sites within closed watersheds to achieve 90% stay-on of the predevelopment stay-on volume, without exceptions, as well as to provide adequate storage capacity for back-to-back 100-year, 24-hour storms, a stable overflow outlet, and an emergency drawdown or pumping plan. Given the downstream susceptibility to flooding, the City will also require that runoff volume leaving the site be maintained at existing levels for all storm events up to the 200-year, 24-hour event. This exceeds current state, county, and local requirements for stormwater management and is intended to mitigate negative impacts to downstream properties and conveyances due to the proposed development.

A conceptual stormwater management plan has been prepared for the development within the area east of USH 51. This plan proposes a series of wet detention and infiltration basins mostly located within the center of the site nearby the existing wetlands to treat stormwater for the proposed development (see Map 9B). The conceptual plan is designed to provide stormwater management for the entire development east of USH 51 as well as an additional 201 acres from offsite sources, including the 87 acres within the amendment area west of USH 51 and additional lands to the north, east, and south. The proposed drainage conditions will generally match existing conditions. Plat-wide or regional stormwater facilities will be placed in outlots dedicated to the public and will be owned and managed by the City, while any stormwater facilities privately owned and managed will be subject to a stormwater maintenance agreement to be recorded with the Dane County Register of Deeds.

According to the City's application, development within the amendment area will meet or exceed current stormwater regulations for peak rate control and attenuation, water quality (TSS reduction), volume control (infiltration), and oil/grease control. Closed basins have been included in the existing conditions modeling to account for existing stormwater control. Pretreatment of stormwater runoff

prior to entering the wetlands will be required in accordance with NR 151 regulations. In addition to meeting current stormwater regulations, the City's application indicates, based on conceptual stormwater modeling, that the development will achieve greater than 90% TSS control (beyond the 80% standard), provide post-development stay-on (infiltration) greater than 100% of the predevelopment stay-on volume for the average annual rainfall (exceeding the 90% standard), provide post-development runoff volume control to match the predevelopment runoff volume for all storm events through the 200-year, 24-hour storm, and also further reduce the runoff volume for the development east of USH 51 for all storm events by 10% relative to existing conditions. This exceeds current state, county, and local requirements for sediment and volume control and will further mitigate negative impacts to downstream properties, water resources, and conveyances due to the proposed development.

A detailed stormwater management plan review and approval is required prior to beginning any development construction. The plan will be required to meet all stormwater management and performance standards of the City of Stoughton, Dane County, and WDNR current at the time of development.

Performance Standards

The City of Stoughton stormwater management and performance standards are contained within Chapter 10, Article IV of the City of Stoughton Code of Ordinances. Dane County stormwater standards are detailed within Dane County Code of Ordinances, Chapter 14. WDNR stormwater standards are contained in Administrative Code Chapters NR 151 and NR 216. Development within the amendment area will be required to follow the more protective requirements contained within the respective standards.

The City of Stoughton proposes stormwater management performance measures for the amendment area to meet, or exceed, applicable stormwater standards currently required by the State of Wisconsin, Dane County, and City of Stoughton, and include:

1. Require post-construction sediment control for the average annual rainfall period. Specifically, reduce total suspended solids leaving the site by at least 80%, as compared to no runoff management controls, with sediment control pretreatment occurring prior to infiltration for runoff from parking lots and new road construction within commercial, industrial, and institutional land uses. This is consistent with the standards currently required by Dane County and City of Stoughton ordinances.

2. Require post-construction peak runoff rate control for the 1-, 2-, 10-, 100-, and 200-year, 24-hour design storms (using NRCS MSE4 storm distributions) to match predevelopment peak runoff rates. This is consistent with the standards currently required by Dane County and City of Stoughton ordinances.

3. Require post-development infiltration (stay-on) volume of at least 90% of the pre-development infiltration (stay-on) volume for the average annual rainfall period, without exemption for the amendment area within a closed basin watershed. This is consistent with the standards currently required by Dane County and City of Stoughton ordinances.

4. Require post-development infiltration (stay-on) volume of 100% of the pre-development infiltration (stay-on) volume for the average annual rainfall period. This exceeds the standards currently required by Dane County and City of Stoughton ordinances.

5. Require post-development runoff volume control for the 1-, 2-, 10-, 100-, and 200-year, 24-hour design storms (using NRCS MSE4 storm distributions) to match predevelopment runoff volumes. For the area east of USH 51, post-development runoff volume control will be provided to reduce the predevelopment runoff volumes by 10%. This exceeds the standards currently required by Dane County and City of Stoughton ordinances.

6. For areas within a closed basin watershed, it is required to provide adequate storage capacity for back-to-back 100-year, 24-hour storms, a stable overflow outlet, and an emergency drawdown or pumping plan. This is consistent with the standards currently required by Dane County and City of Stoughton ordinances.

7. Maintain predevelopment groundwater annual recharge rates of approximately 9 to 10 inches per year, as estimated by the Wisconsin Geological and Natural History Survey's 2012 report, *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 and City of Stoughton ordinances.

8. Treat the first one-half inch of runoff to provide oil and grease control using the best available technology for commercial, institutional, and any other land uses where the potential for pollution by oil or grease, or both, exists. This is consistent with the standards currently required by Dane County and City of Stoughton ordinances.

Impacts and Effects of Proposal

Environmental Corridors

The proposed amendment area includes a total of approximately 99 acres of Environmental Corridor (see Map 12). This will include delineated wetlands with associated buffers and proposed stormwater management, park, and open space areas in accordance with the Environmental Corridor Policies and Criteria (link to document) adopted in the *Dane County Water Quality Plan*. Some of what is proposed as Environmental Corridor also coincides with mapped Stewardship Areas, as described below.

Protection Areas must be included in Environmental Corridors when those areas are added to the urban service area. Protection Areas include natural resource features such as the 1% annual chance floodplain, waterbodies, streams and wetlands, plus their required vegetative buffers, riparian steep slopes, existing public lands, parks, and conservancy areas, and existing stormwater management facilities. Protection areas are mapped based on regionally available information, such as the Wisconsin Wetland Inventory data.

The 2050 Regional Development Framework (Framework) is designed to serve as a guide for local communities as they plan for future growth and development. One of the three goals of the Framework is to foster regional development that conserves water resources and natural areas. To achieve this goal, the Framework advocates for enhancing Stewardship and Natural Resource Areas. Stewardship Areas

are advisory areas to consider for inclusion in Environmental Corridors above the minimum requirements. Stewardship Areas may include natural resource features such as the 0.2% annual chance floodplain, potentially restorable wetlands, internally drained areas, hydric soils, current/potential Ice Age Trail Corridor, and Natural Resource Area boundaries identified in the Dane County Parks and Open Space Plan.

The proposed amendment area includes 76.2 acres mapped as Stewardship Area, including potentially restorable wetlands and internally drained areas, of which 49.6 acres are proposed to be designated as Environmental Corridor with this amendment (see Map 12).

Meeting Projected Demand

Stoughton is projected to grow by roughly 5,700 people comprising 2,300 households over the next 30 years. The proposed amendment would add and estimated 34 single-family, 20 two-family, and 1,156 multi-family units (potentially more). The Framework estimates that 68% of households added to the City of Stoughton between 2020 and 2050 will be in already developed areas.

Historic development trends provide useful context for understanding community planning and proposed USA expansions. The City of Stoughton's population count in the 2020 census was 12,916. This represents 2% of Dane County's population. The City's population increased 5% from 2010 to 2020, compared to Dane County's 15% increase. The Framework estimates that Stoughton will grow to 19,364 people by 2050. Around half of new housing units constructed in the last decade have been single-family structures, whereas single-family units constructed were slightly below that in the 1980s and 2010s and slightly above that in the 1990s and 2000s. Total multifamily units have likewise remained at about half of all units, but the composition of structures has changed from a mix of sizes to predominantly larger buildings with five or more units.

The shift to larger multifamily buildings is consistent with regional trends. The growing proportion of multifamily housing units in Stoughton reflects a region-wide shift towards more infill and redevelopment, especially in downtown areas and along major transportation corridors. This shift is driven by factors including the cost of single-family homes rising faster than average incomes, population growth outpacing the supply of new homes, local plans and policies encouraging residential and mixed-use growth along corridors and in centers, the large millennial generation entering their homebuying years, and the burden of student debt impacting abilities to purchase homes.

Phasing

The proposed amendment area is larger than 100 acres. The amendment area is divided by Highway 51 running north-south, with the area west (Figure 1) and east (Figure 2) comprising separate planned developments. Development on the east side of USH 51 is anticipated to commence with the commercial headquarters site and surrounding stormwater and natural areas before progressing into the southwest corner of the site to develop the "flexible use" areas, then continuing in a clockwise fashion around the ring road. Development phasing west of USH 51 is unknown, as plans are still conceptual in nature.

Figure 1. Western Development

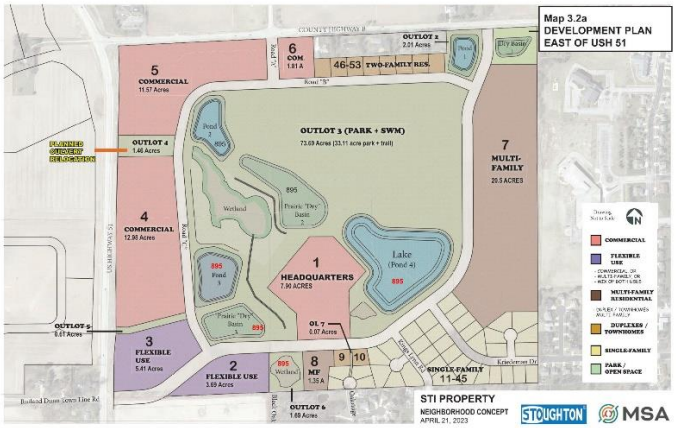


Figure 2. Eastern Development

Surface Water Impacts

Development creates impervious surfaces (e.g., 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 (e.g., 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 bank-full 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 designed to address the impacts of development on water quality, runoff volumes, peak flows, water temperature, and groundwater recharge. In 2011, county and local standards for runoff volume control were increased beyond state standards to further address the potential stormwater impacts of development. Since 2010 many communities adopted even higher standards for volume control through their own ordinances or as part of USA amendment agreements. In 2017, State statute 281.33(6)(a)(1) was changed to limit the ability of local governments to adopted higher standards for runoff volume through local ordinances.

In response to climate change, the City of Madison adopted peak rate control for the 200-year storm event in their ordinance in June 2020. Dane County adopted this same peak rate control requirement as well as requirements for closed basins in November 2021, which made these requirements universal to all communities in Dane County.

The City of Stoughton 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 current Dane County standards for pollutant reduction, runoff volumes, peak flows, water temperature, and groundwater recharge. Such practices will address the potential water quality impacts of stormwater runoff from the proposed development on the receiving waters. The City has also agreed to pursue stormwater management controls that exceed current standards by aiming for higher levels of volume control for this development.

Regional partners are actively working to address chlorides through the Wisconsin Salt Wise Partnership. WI Salt Wise's chloride reduction trainings are open to all municipal and private winter maintenance professionals in the region. City of Stoughton staff have attended winter salt certification classes for winter road maintenance and are encouraged to stay current on the latest trainings and development.

The City of Stoughton is also a participant in the Madison Area Municipal Storm Water Partnership (MAMSWaP), which is a coalition of Dane County municipalities and organizations working together to promote practices that reduce and improve stormwater runoff into Dane County lakes, rivers, and streams. The MAMSWaP Information and Education (I&E) Committee works to develop and implement projects and plans through regional outreach and consistent messaging throughout the communities, including maintaining the www.ripple-effects.com website, distributing tools and articles to municipalities, community groups, and neighborhood associations, and providing presentations to focused audiences. Specific goals include promoting beneficial onsite reuse of leaves and grass clippings, proper use of lawn and garden fertilizers and pesticides, and promoting infiltration of residential stormwater runoff from rooftops, driveways, and sidewalks.

Groundwater Impacts

Without effective mitigation practices, converting natural areas to urban development shifts the ground/surface water balance in streams and wetlands from a groundwater-dominated system to one dominated more and more by surface water runoff. This can result in subsequent reductions in stream quality and transitions to biological communities more tolerant to these changing conditions.

Groundwater modeling indicates that the cumulative effects of well withdrawals have resulted in a 52 cubic feet per second (cfs) decrease in baseflow of the Yahara River downstream of the amendment area at Main Street (location of modeling shown on Map 5) from predevelopment (no pumping) to 2010 (see Table 4). An additional 8 cfs decline compared to 2010 conditions is anticipated for the year 2040, according to modeling.

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

Stream	No Pumping	2010	2040
Yahara River	202 cfs	150 cfs	142 cfs

Generally, groundwater discharge occurs along the entire length of perennial streams and is the source of stream baseflow. The loss of baseflow from the cumulative effects of well water pumping and urbanization is a regional issue, beyond the boundaries of a single USA Amendment or even a single municipality. This issue is discussed along with potential management options in the updated *Dane County Groundwater Protection Planning Framework* (link to report). Maintaining pre-development groundwater recharge by infiltrating stormwater runoff helps to replenish groundwater, maintain baseflow, and mitigate this impact. The regional groundwater model is a useful tool for evaluating different configurations and scenarios of municipal groundwater well withdrawals on these stream systems.

Comments at the Public Hearing

A public hearing was held on the proposed amendment at the July 13, 2023, meeting of the Capital Area Regional Planning Commission. Representatives from the City of Stoughton spoke in favor of the amendment. There were no registrants opposed to the amendment. Commissioner Hampton inquired about the public sentiment of this amendment application compared to previous amendments in the area, noting there was far less outcry over this proposed amendment. Mr. Rodney Scheel, City of Stoughton Director of Planning & Development, and Commissioner Pfeiffer noted that the primary concern received by the public was to ensure there are compatible land uses adjacent to the existing single-family lots. Other commentary from Commissioners related to planned environmental corridors, the City's policy on protection of agricultural lands, and plans for USH 51 roadway improvements. Additionally, one letter was received prior to the public hearing and is included as Attachment 1. These items were discussed during the public hearing and have been expanded on within this report, as appropriate.

Conclusions and Staff Water Quality Recommendations

There is sufficient existing treatment plant system capacity at the Stoughton Wastewater Treatment Facility and sufficient existing or planned 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 designed to address the impacts of development on water quality, runoff volumes, peak flows, water temperature, and groundwater recharge. Most recently, in 2021 Dane County adopted requirements for peak rate control for the 200-year storm event and for closed basins that now apply to all communities in Dane County. The City of Stoughton proposes to mitigate the potential urban nonpoint source impacts of the proposed development on the receiving waters by requiring the implementation of stormwater best management practices that are designed and constructed to meet current standards for pollutant reduction, runoff volumes, peak flow rates, water temperature, and groundwater recharge.

In addition, the City of Stoughton and the development team have agreed to higher stormwater management standards for this amendment area, including requiring higher levels of volume control to mitigate concerns for flooding within the hydraulically connected closed basin watersheds.

It is CARPC staff's opinion that the proposed amendment is consistent with water quality standards under Wis. Stat. § 281.15, and the adopted Policies and Criteria for the Review of Sewer Service Area Amendments to the *Dane County Water Quality Plan*, with the existing state and local requirements identified below. Additional actions have also been recommended below to further improve water quality and environmental resource management.

State and Local Requirements

CARPC staff recommend approval of this amendment in recognition of the state and local requirements for the following:

1. State and local review and approval of stormwater management plan(s) is required, including Regional Planning Commission staff review and approval as part of the sewer extension review process.

    a. Stormwater and erosion control practices are required to be installed prior to other land disturbing activities. Infiltration practices are required to be protected from compaction and sedimentation during land disturbing activities.

    b. Peak rates of runoff are required to be controlled for the 1-, 2-, 10-, 100-, and 200-year, 24-hour design storms to pre-development levels, in accordance with the City of Stoughton and Dane County Stormwater Ordinances.

    c. Sediment control is required to achieve at least 80% sediment control for the amendment area based on the average annual rainfall period, with sediment control pretreatment occurring prior to infiltration for runoff from parking lots and new road construction within

commercial, industrial, and institutional land uses, in accordance with the City of Stoughton and Dane County Stormwater Ordinances.

d. Runoff volume control is required to maintain the post-development stay-on volume to at least 90% of the pre-development stay-on volume for the average annual rainfall period, without exemption for the area within a closed basin watershed, in accordance with the City of Stoughton and Dane County Stormwater Ordinances.

e. For areas within a closed basin watershed, it is required to provide adequate storage capacity for back-to-back 100-year, 24-hour storms, a stable overflow outlet, and an emergency drawdown or pumping plan, in accordance with the City of Stoughton and Dane County Stormwater Ordinances.

f. Maintain predevelopment 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",* for the amendment area (a range of 9 to 10 inches/year) or by a site-specific analysis, when required by the City of Stoughton and Dane County Stormwater Ordinances.

g. Oil and grease control are required to treat the first 0.5 inches of runoff using best management practices at commercial and industrial sites and any other uses where the potential for pollution by oil or grease, or both, exists, in accordance with the City of Stoughton and Dane County Stormwater Ordinances.

2. Easements and perpetual legal maintenance agreements with the City, to allow the City to maintain stormwater management facilities if owners fail to do so, are required for any facilities located on private property.

3. Environmental corridors are required to be delineated to meet the Environmental Corridor Policies and Criteria adopted in the *Dane County Water Quality Plan*.

Additional Agreements for the Amendment Area

In addition to the existing state and local requirements, the City of Stoughton and the development team have agreed to pursue the following water resource management measures for the amendment area:

1. Provide post-development infiltration (stay-on) volume of 100% of the pre-development infiltration (stay-on) volume for the average annual rainfall period.

2. Provide post-development runoff volume control for the 1-, 2-, 10-, 100-, and 200-year, 24-hour design storms (using NRCS MSE4 storm distributions) to match pre-development runoff volumes. <u>For the area east of USH 51</u>, provide post-development runoff volume control to reduce the pre-development runoff volumes by 10%.

3. Pursue restoration or improvement of the wetlands located in the area east of USH 51 (not those which receive a DNR exemption or fill permit) to create an amenity for the surrounding development.

Recommendations

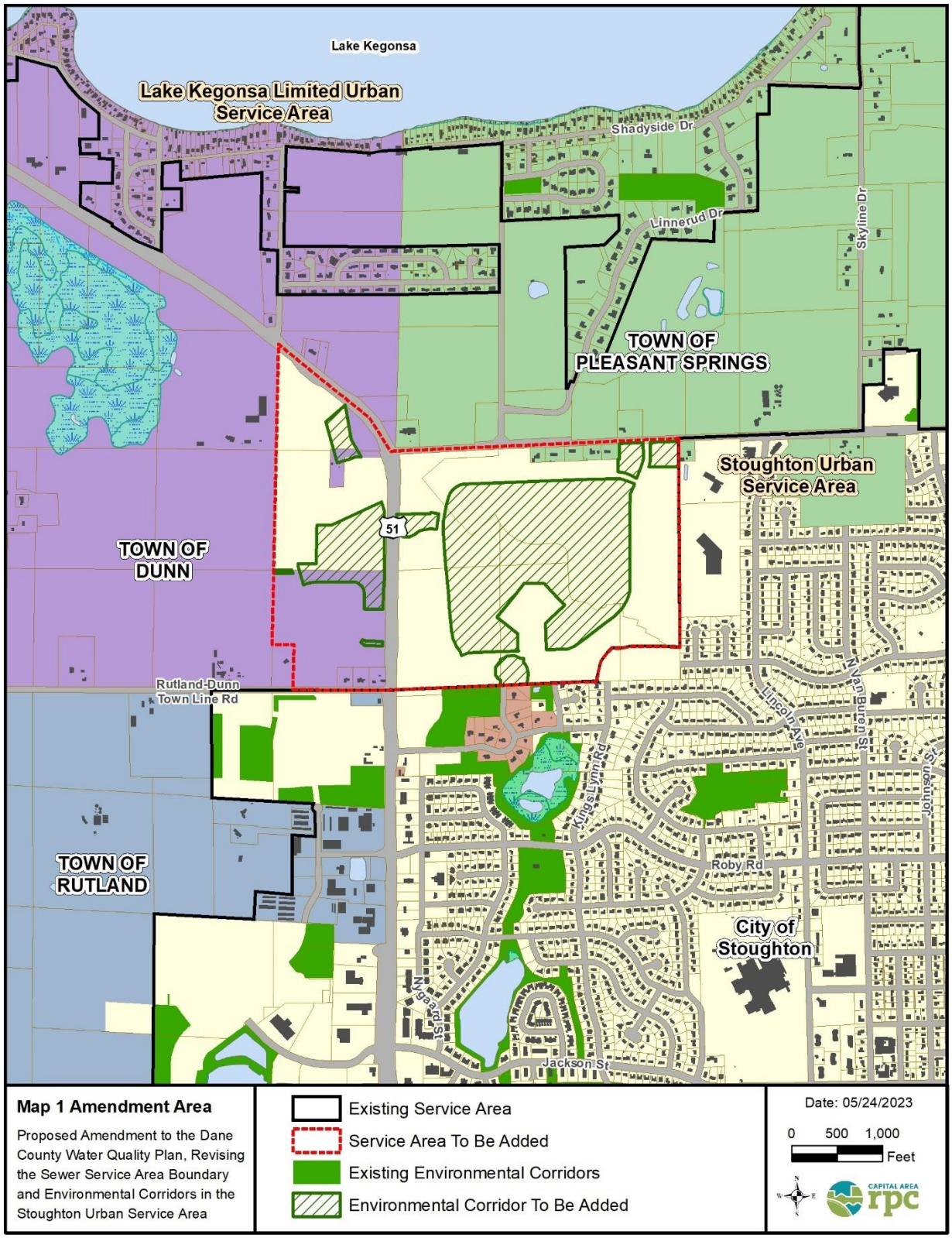
It is recommended that the City of Stoughton pursue the following to further improve water quality and environmental resource management:

1. Continue to participate in regional water quality initiatives including Wisconsin Salt Wise, the Madison Area Municipal Storm Water Partnership, and Yahara WINs.

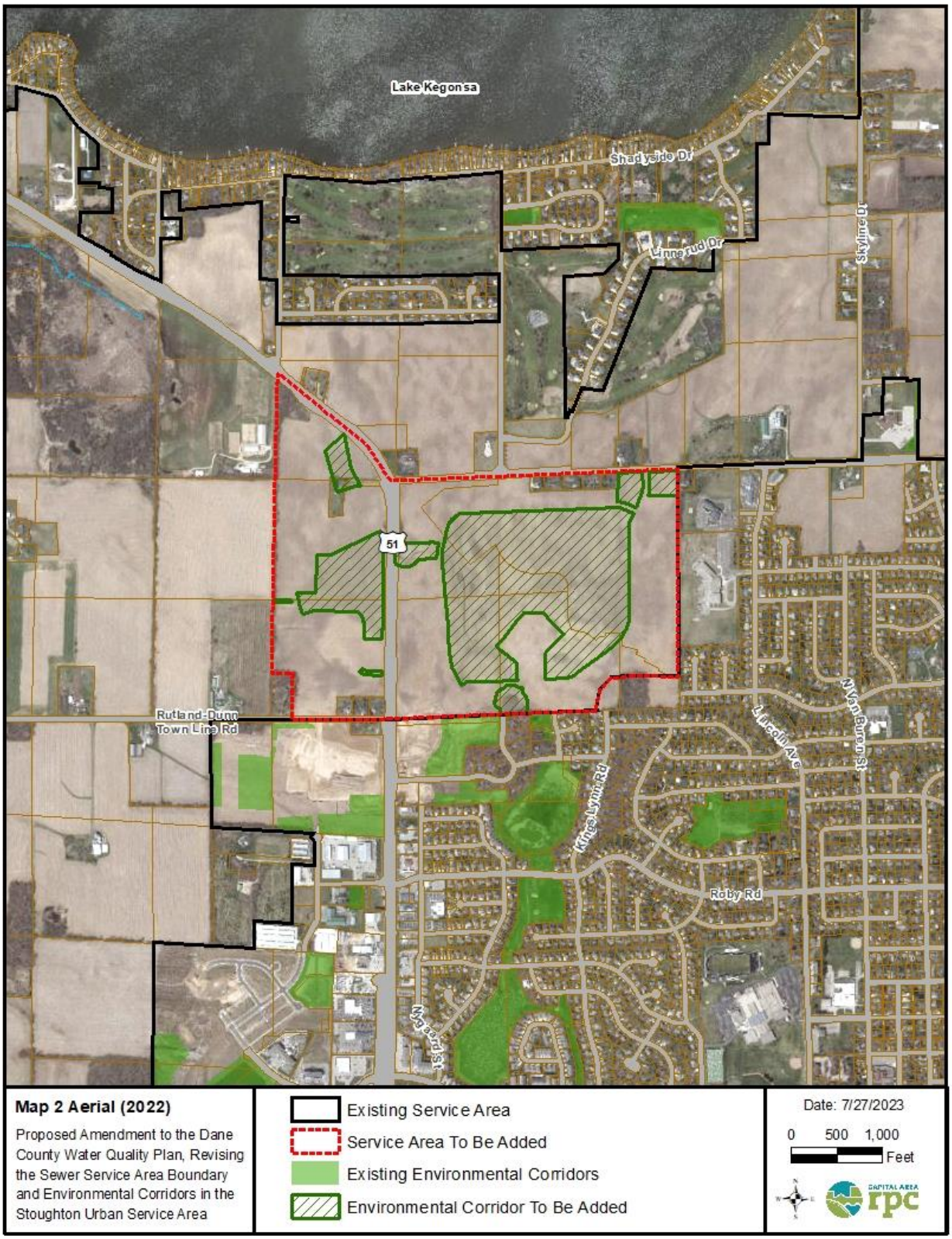
2. Encourage the removal and control of invasives and the use of native flora favored by the Rusty Patched Bumble Bee in landscaping to provide suitable habitat for this pollinator, where appropriate, for the portion of the amendment area within the High Potential Zone for the federally endangered Rusty Patched Bumble Bee.

3. 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, based on the results of screening conducted.

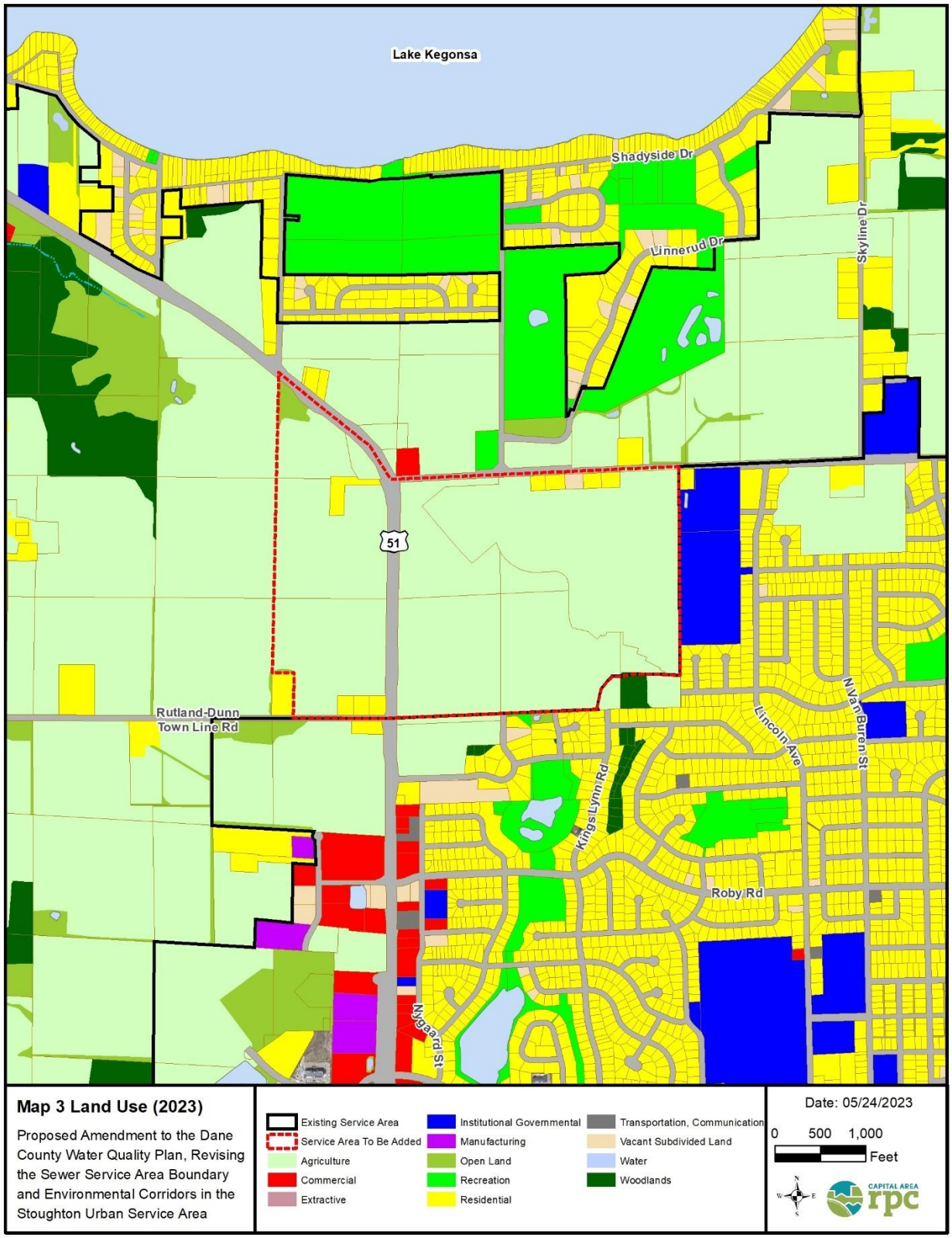
Map 1 - Amendment Area



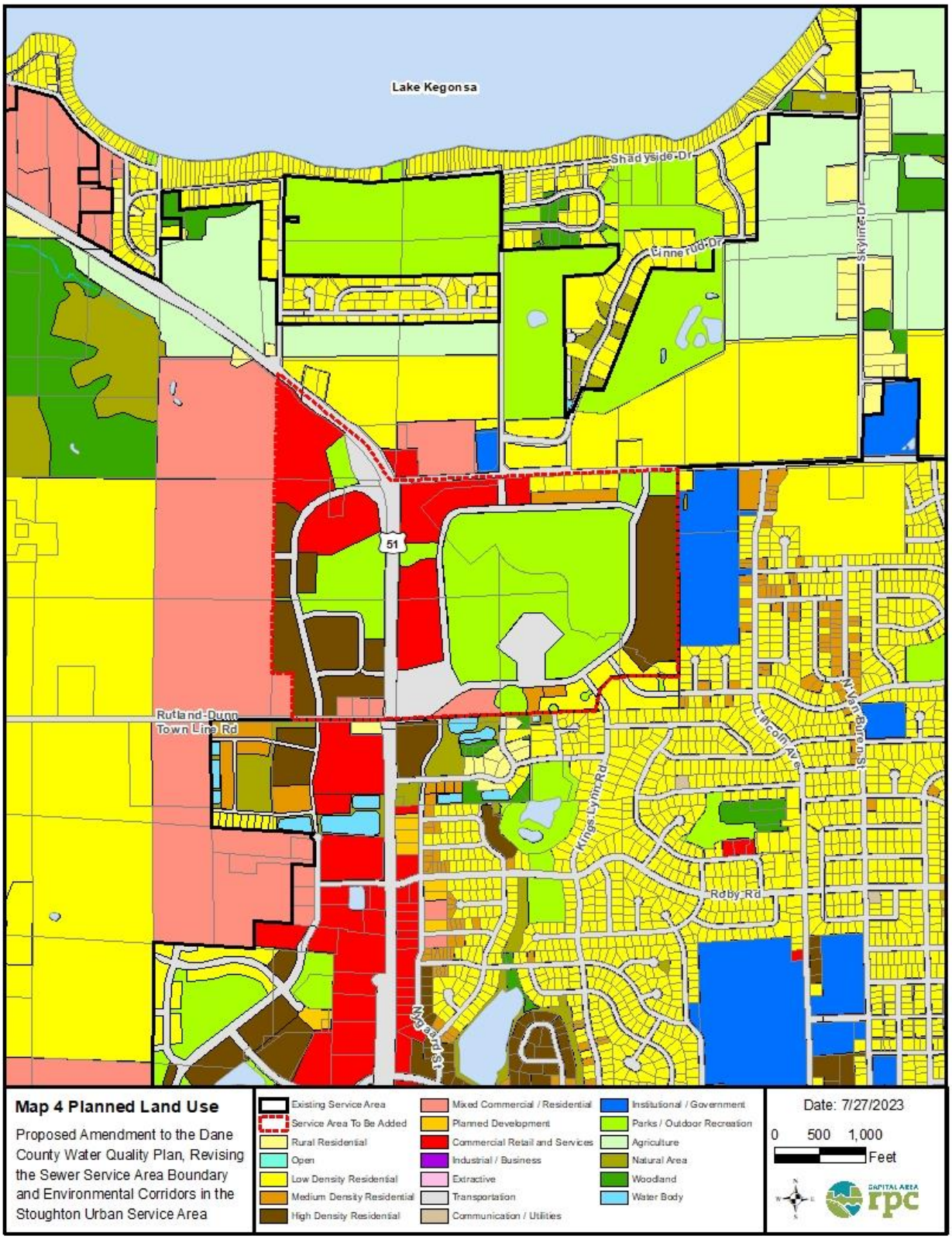
Map 2 – Aerial


Lake Kegonsa
Shadyside Dr
Linneyud Dr
Skyline Dr
51
Rutland-Dunn Town Line Rd
N Van Buren St
Lucelia Ave
Kings Lynn Rd
Roby Rd
Map 2 Aerial (2022)
Proposed Amendment to the Dane County Water Quality Plan, Revising the Sewer Service Area Boundary and Environmental Corridors in the Stoughton Urban Service Area
Existing Service Area
Service Area To Be Added
Existing Environmental Corridors
Environmental Corridor To Be Added
Date: 7/27/2023
0 500 1,000
Feet
CAPITAL AREA rpc

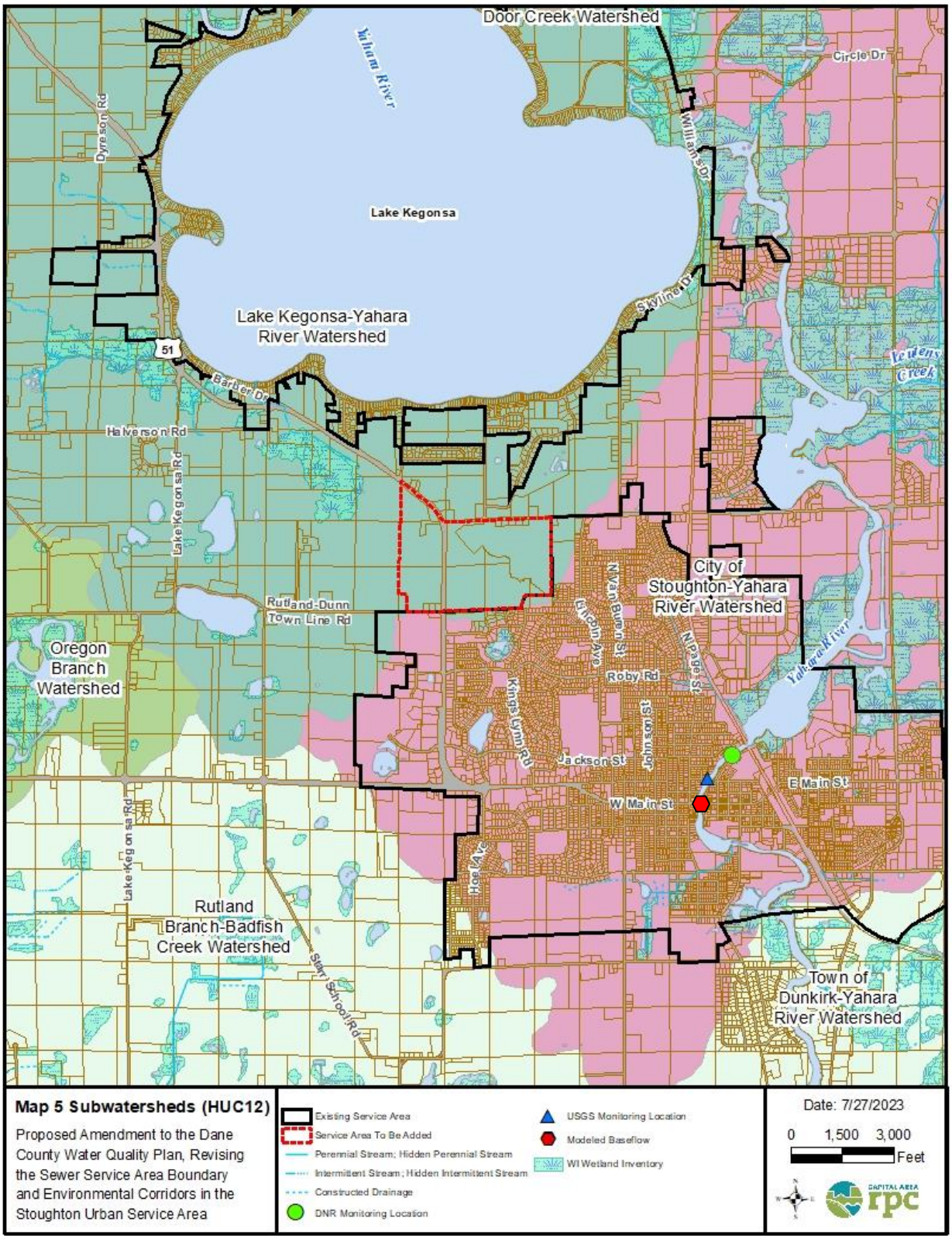
Map 3 – Existing Land Use



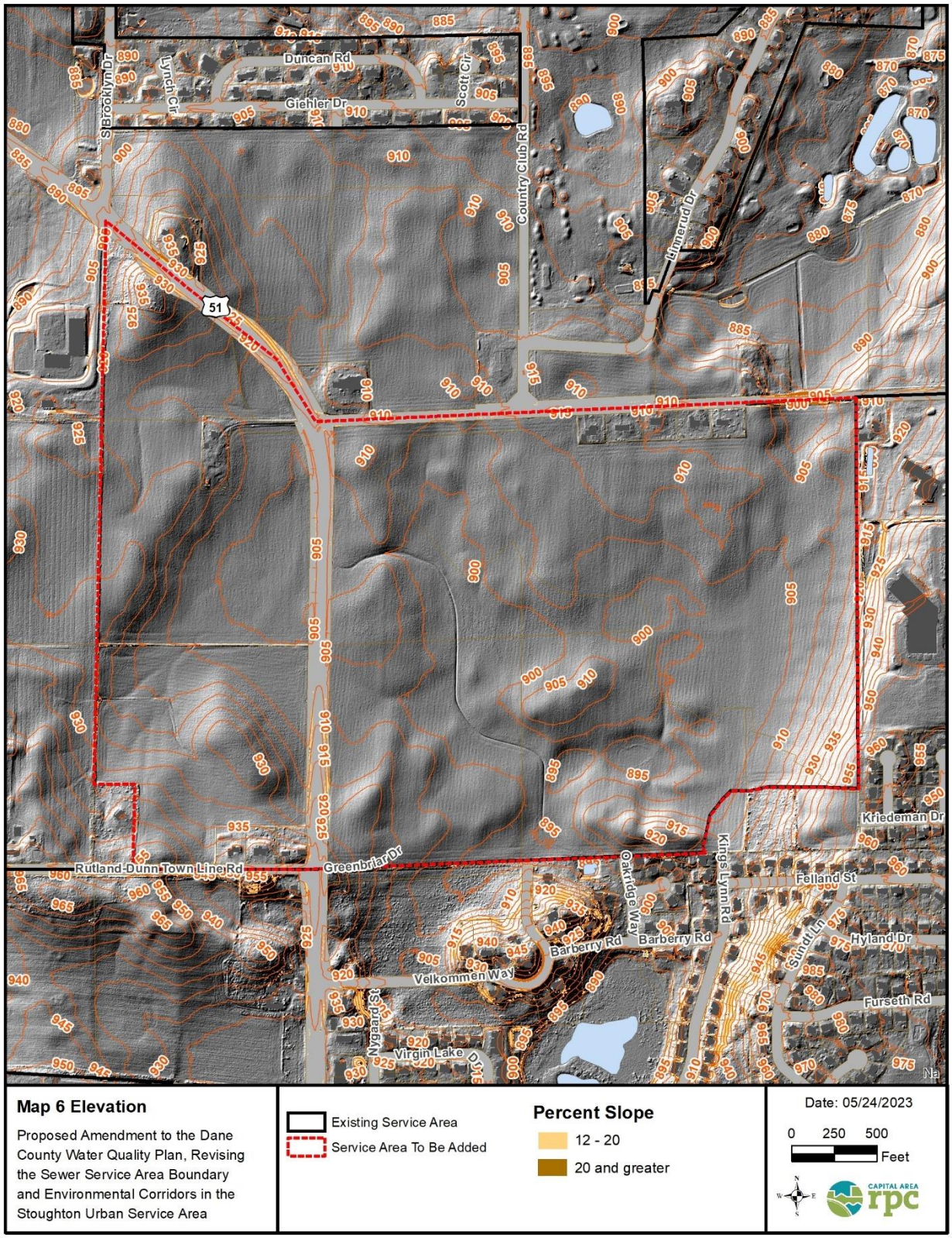
Map 4 – Planned Land Use



Map 5 – Subwatersheds



Map 6 – Elevations



Map 6 Elevation

Proposed Amendment to the Dane County Water Quality Plan, Revising the Sewer Service Area Boundary and Environmental Corridors in the Stoughton Urban Service Area

Existing Service Area

Service Area To Be Added

Percent Slope

12 - 20

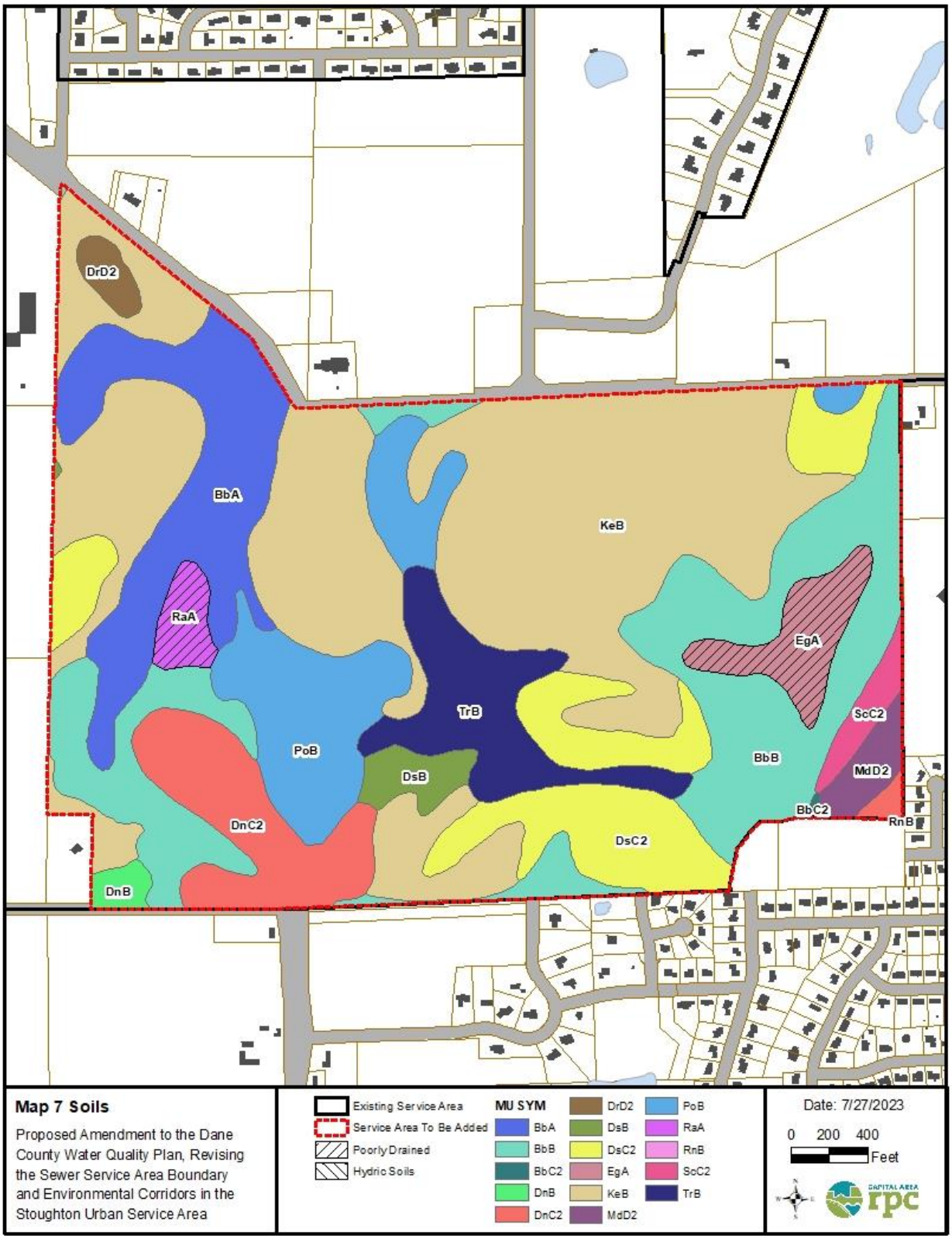
20 and greater

Date: 05/24/2023

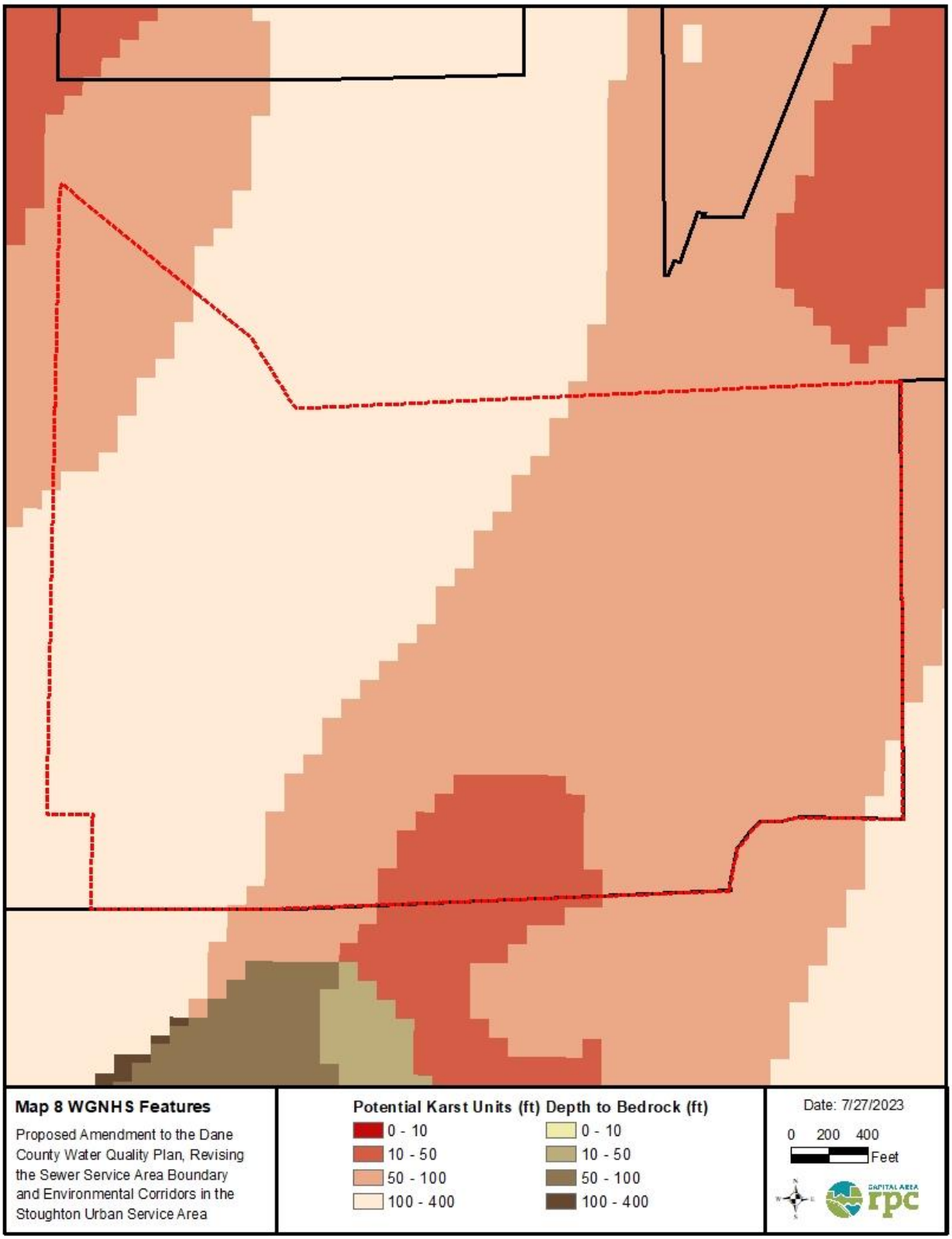
0 250 500

Feet

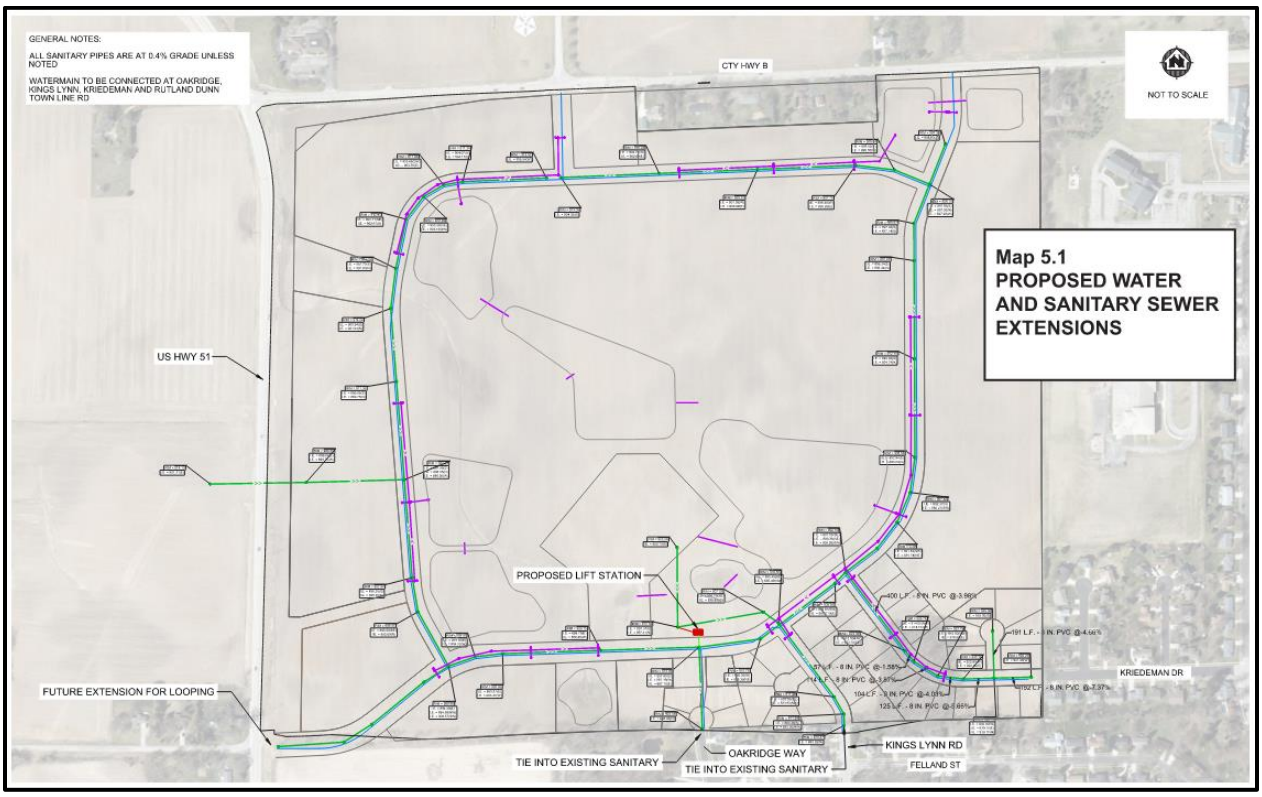
Map 7 - Soil Type



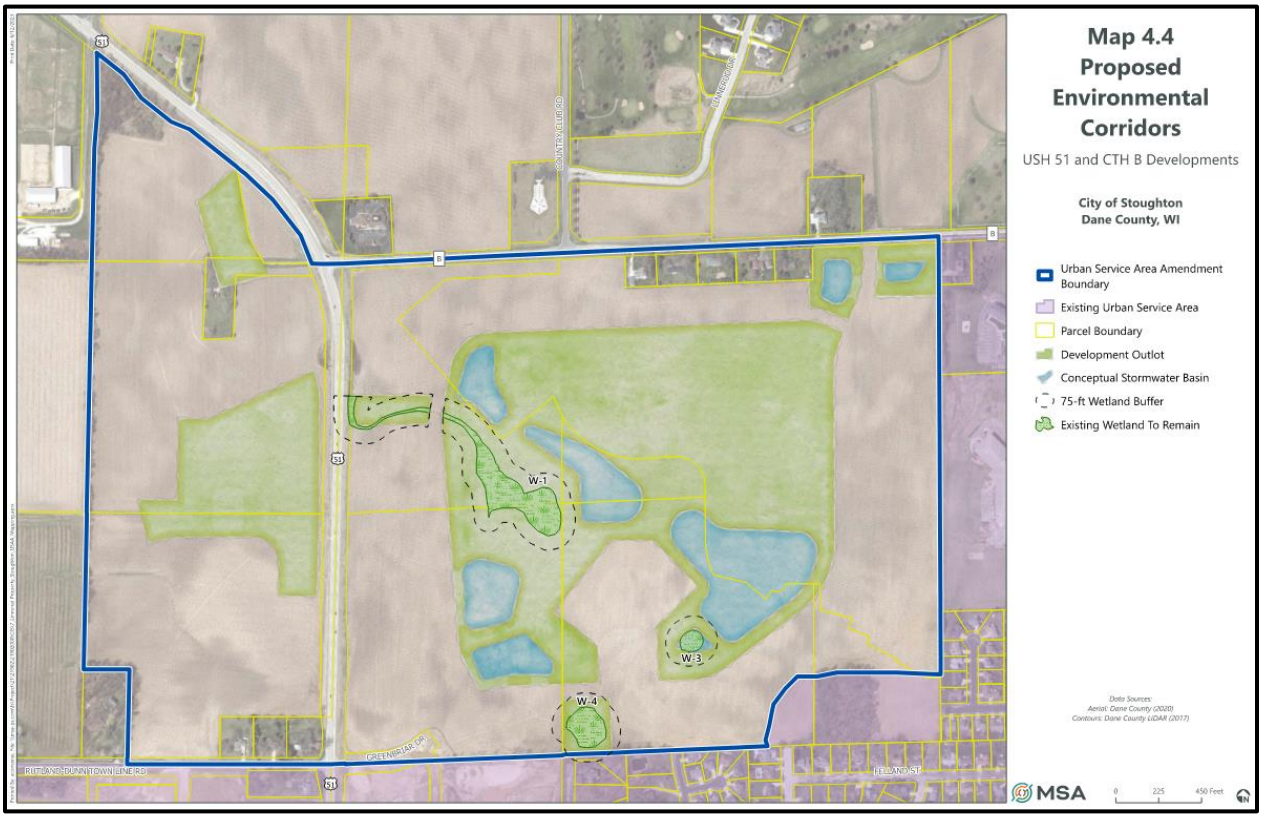
Map 8 – WGNHS Bedrock Depth and Potential Karst Features



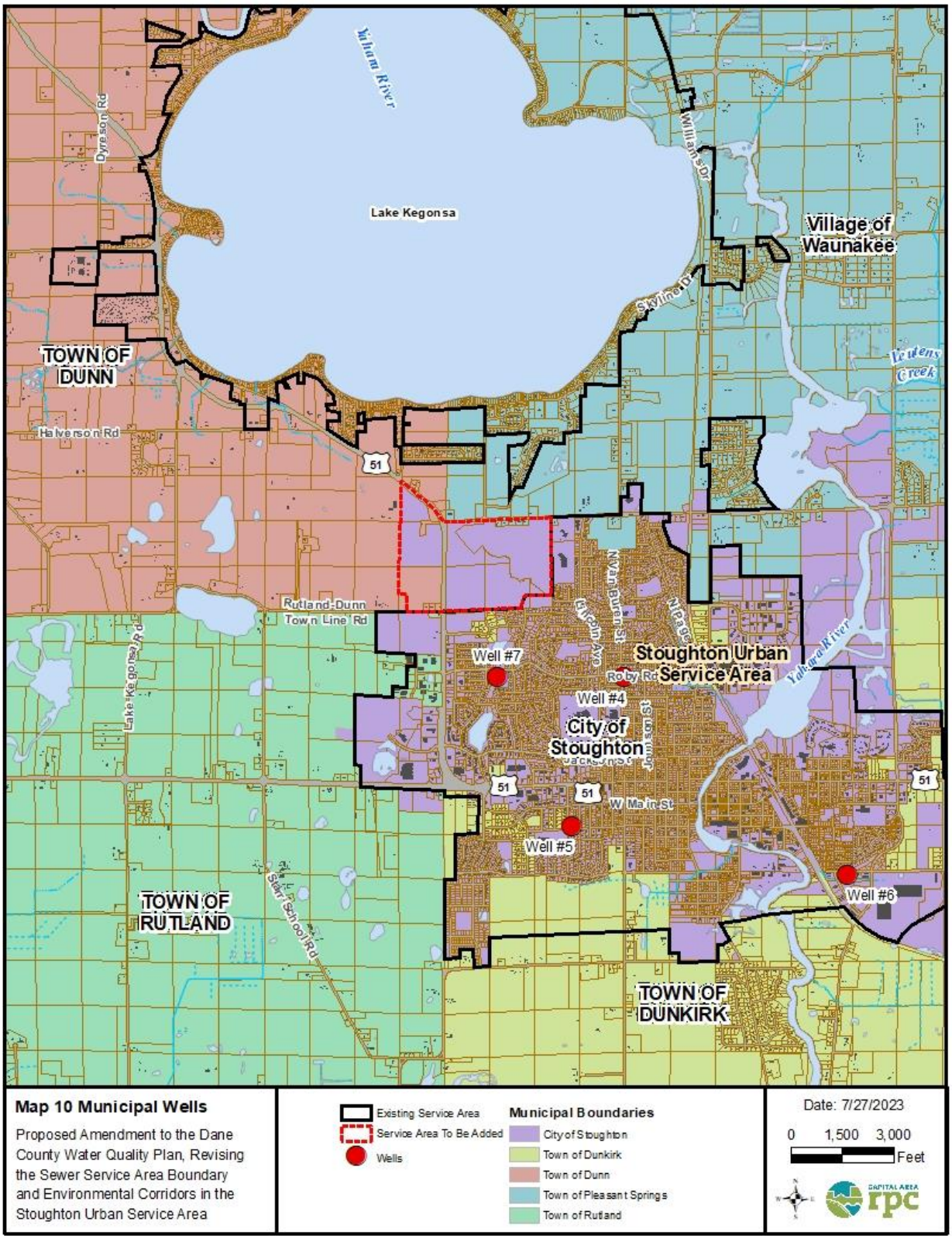
Map 9A – Proposed Sanitary Sewer and Water Main



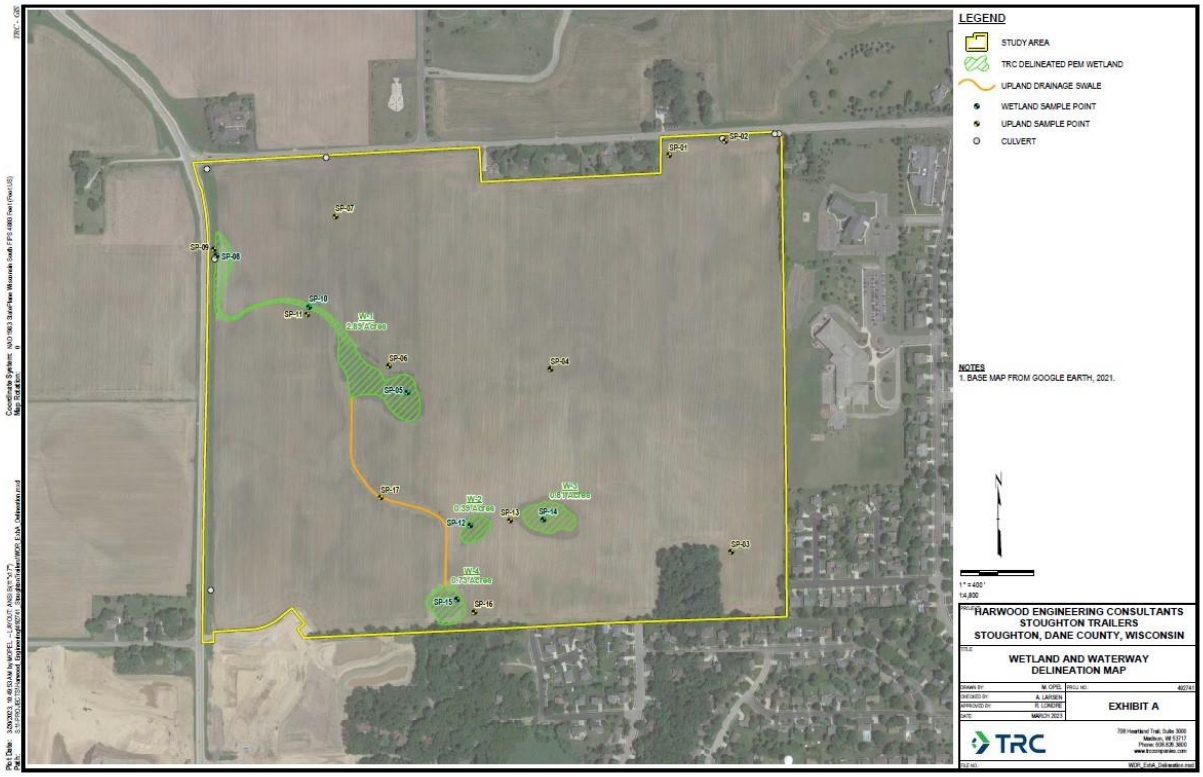
Map 9B – Proposed Stormwater Management



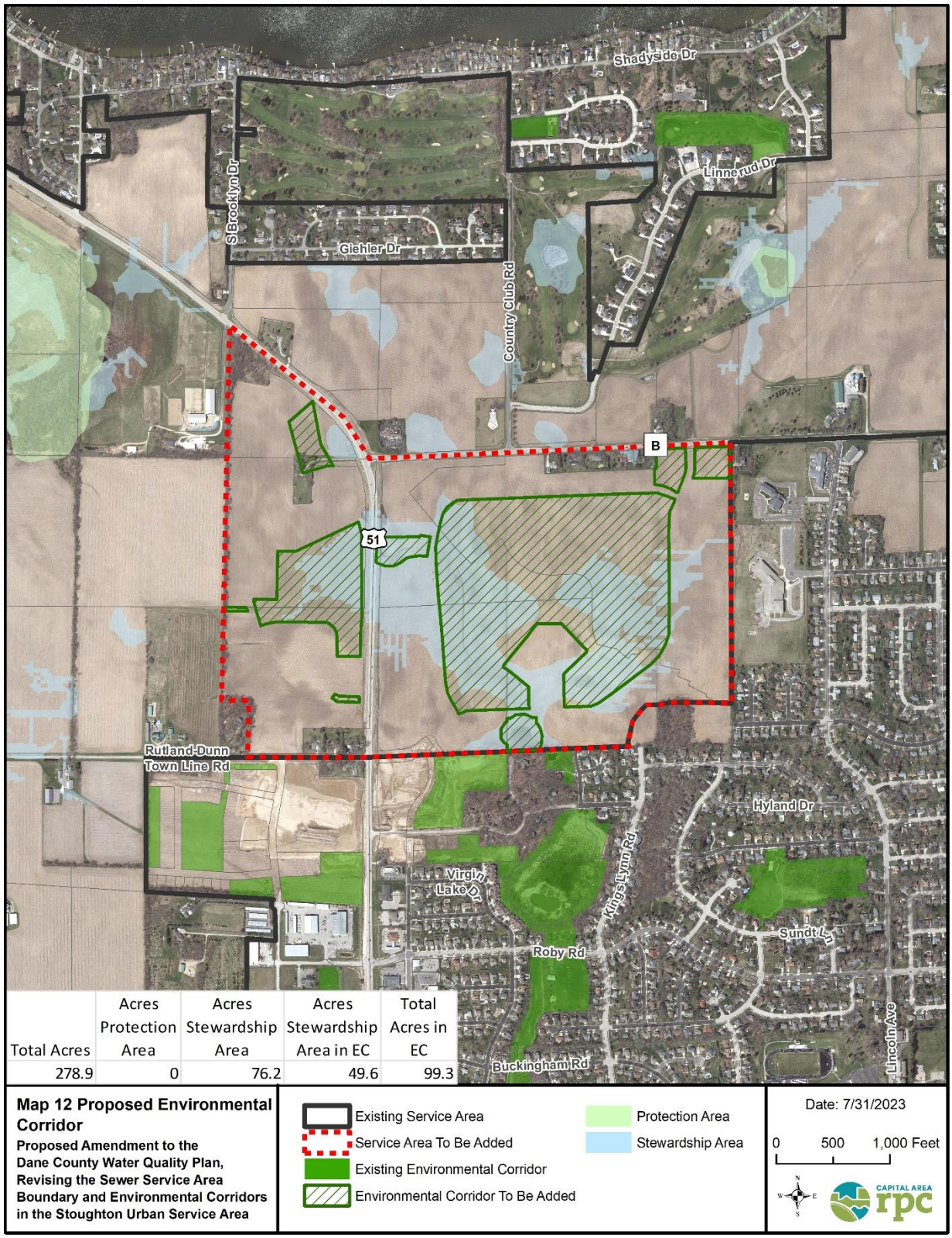
Map 10 – Municipal Wells



Map 11 – Wetland Delineations



Map 12 – Proposed Environmental Corridor



Total Acres	Acres Protection Area	Acres Stewardship Area	Acres Stewardship Area in EC	Total Acres in EC
278.9	0	76.2	49.6	99.3

Map 12 Proposed Environmental Corridor

Proposed Amendment to the Dane County Water Quality Plan, Revising the Sewer Service Area Boundary and Environmental Corridors in the Stoughton Urban Service Area

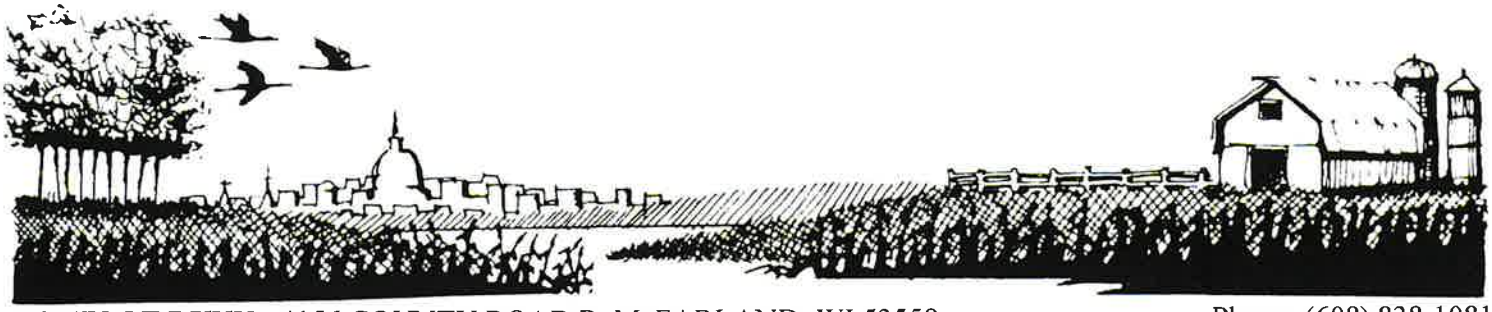
Existing Service Area
Service Area To Be Added
Existing Environmental Corridor
Environmental Corridor To Be Added
Protection Area
Stewardship Area

Date: 7/31/2023

0 500 1,000 Feet

CAPITAL AREA rpc

Attachment 1 – Written Public Comments Received



TOWN OF DUNN - 4156 COUNTY ROAD B, McFARLAND, WI 53558
Website: www.town.dunn.wi.us
E-mail: townhall@town.dunn.wi.us
Phone: (608) 838-1081
FAX: (608) 838-1085

June 12, 2023

Rodney Scheel
City of Stoughton
207 S. Forrest St
Stoughton, WI 53589

Dear Rodney,

The Town of Dunn would like to share its comments regarding the City of Stoughton Urban Service Area Amendment Application.

Our concern with any large-scale development is the possibility of negative stormwater impacts on our residents' properties and the environment. This is especially concerning for the Town due to previous widespread flooding in recent years, which has led to FEMA disaster declarations in 2008 and 2018. We only expect these floods to become more frequent, damaging, and intensified by increased development from surrounding municipalities. For that reason, we would like the post-development runoff rate and volume to be equal or less than pre-development rates for a 200-year, 24-hour storm event.

Additionally, the Town would like to see "stepped" development in this area, where vacant land adjacent to existing City development would need to first be developed before skipping over to build on land that is not adjacent to existing development. This would prevent leapfrog development and follow Stoughton's Comprehensive Plan, which states that the Short-Term Urban Growth areas on the Peripheral Growth Analysis map (Map 5) should be developed before the Mid-Term Urban Growth areas are developed. The Short-Term Urban Growth areas are located both south of Rutland-Dunn Townline Road and east of HWY 51.

Sincerely,

Steven Greb
Town of Dunn Chair

cc: Capital Area Regional Planning Commission