December 2, 2024

Staff Analysis of Proposed Amendment to the *Dane County Water Quality Plan* **Revising the Sewer Service Area Boundary in the Central Urban Service Area** ***"Kennedy Drive"***

History of the Central Urban Service Area

The Central Urban Service Area (USA) was established in 1971 with the adoption of the first sewer service plan and originally included about 29,000 acres. The first Town of Westport amendment to the Central Urban Service Area occurred in 1986, adding Governor Nelson State Park. There have been 14 amendments to this service area at Westport's request since its creation totaling roughly 150 acres of developable land and 160 acres of Environmental Corridor. The most recent amendment of the service area was recommended by the Commission and approved by the Wisconsin DNR (WDNR) in 2024.

Existing Conditions

Land Use

The Town of Westport is requesting a minor amendment to the Central USA north of the Yahara River, near the Village of Waunakee. The site is located at the intersection of Kennedy Drive and State Highway 113. The site is comprised of existing developed areas which will be connected to the public sanitary sewer system. There are no planned new development or redevelopment activities.

Surrounding Planned Land Uses, Southwest:

- **North**: Rural Preservation (Ag.), Single-family Residential
- **West**: Rural Preservation (Ag.), Single-family Residential
- **South**: Business Park, Commercial
- **East**: Rural Preservation (Ag.), Single-family Residential

Table 1
Existing and Planned Land Use

Land Use Category	Existing Land Use Acres (see Map 3)	Proposed Land Use Acres (see Map 4)
Residential	1.30	1.30
Transportation Right-of-way	0.42	0.42
	1.72	**1.72**

Natural Resources

The proposed amendment area is in the Lake Mendota-Yahara River (HUC 12: 070900020702) subwatershed (see Map 4). There are no mapped wetlands, floodplains or old-growth woodlands present within the amendment areas.

Wastewater from the amendment area will be treated at the Madison Metropolitan Sewerage District (MMSD) Wastewater Treatment Facility. The treated effluent is currently discharged to Badfish Creek and Badger Mill Creek, bypassing the Yahara chain of lakes.

Unnamed Intermittent Creek

There is an unnamed intermittent creek (WBIC 806100) ~1.5 miles long originating southeast of the amendment area that discharges between the Yahara River and Sixmile Creek into the north side of Lake Mendota. The Lake Mendota-Yahara River subwatershed is approximately 35 square miles and encompasses predominantly low density residential and high density urban land uses. The two rivers in proximity to the amendment area--Sixmile Creek and Yahara River—are listed on the state 303d list of impaired waters for total phosphorus due to high phosphorus levels.

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 the vicinity of this amendment area.

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 special concern insect species, one special concern mammal species, one threatened bird and one threatened mammal species. If any new development activity occurs in the future, a formal Endangered Resources Review by DNR should be conducted.

The entire 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). If any new development activity occurs in the future, consideration as to protection of this important species should be given. Implementing these conservation measures should be coordinated with the WDNR Endangered Resources Review Program as needed.

Soils and Geology

The amendment area is located within the Waunakee Moraines Land Type Association of Wisconsin. The characteristic landform pattern is rolling till plain and irregular drumlins with scattered bedrock knolls, lake plains, and outwash plains. Soils are predominantly well drained silt and loam over calcareous sandy loam till or bedrock. Surface elevations within the amendment area range from approximately 875 to 888 feet. There are minimal areas of steep (>12%) or very steep (>20%) slopes, none of which are riparian and required for 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 somewhat poorly drained, deep-to moderately deep silt loams and mucks that are underlain by silt, sand, and gravel.

There are no hydric soils within the amendment area (see Map 5). 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 McHenry Silt, St. Charles Silt Loam, and Virgil Silt Loam soils (the MdC2, ScB, and VrB map units) are not hydric. The McHenry Silt and St. Charles Silt Loam are classified as well drained, and therefore do not pose a limitation for buildings with basements. The Virgil Silt Loam soils are somewhat poorly drained and may pose a limitation for buildings and basements.

According to Wisconsin Geological and Natural History Survey (WGNHS) mapping, the bedrock in the amendment area is in the Tunnel City Group, which is medium to very fine-grained quartz sandstone, locally very glauconitic, and consists of two formations including the Lone Rock and Mazomanie Formations. Thickness is up to 150 feet. According to WGNHS data, the depth to bedrock in the amendment area ranges from approximately 20 to 40 feet.

Proposed Urban Services

Wastewater

Overview

Wastewater treatment will be provided by the Madison Metropolitan Sewerage District (MMSD). Sanitary sewer service will be provided to the amendment area by the Town of Westport Sewer Utility District through lateral connection to the proposed MMSD Northeast Interceptor along Kennedy Drive. Wastewater from the amendment area will flow via the Northeast Interceptor to Pump Station 14 within the MMSD system, and eventually to the Nine Springs Wastewater Treatment Facility.

Collection System

The proposed amendment consists of approximately 1.3 acres of residential land uses contributing to wastewater flows, currently treated by private septic systems. The Town's application provides that the existing residential developments serve 11 families. The amendment area is estimated to generate an annual average of approximately 2,750 gallons per day (gpd) of wastewater, or 1.9 gallons per minute (gpm). This assumes 2.5 persons per dwelling unit and an average wastewater generation rate of 100 gallons per capita per day (gpcd) for residential land uses. The amendment area will generate a peak daily flow rate of approximately 11,000 gpd (0.01 MGD), or 7.6 gpm, utilizing a peaking factor of 4.0.

The amendment area will connect directly to the proposed 36-inch interceptor sewer in Kennedy Drive, which is anticipated to provide sufficient capacity for peak flows from the amendment area. This interceptor is meant to function as a relief sewer for the existing MMSD Northeast Interceptor and will be constructed as part of planned upgrades to meet capacity requirements forecasted in the *2018 MMSD Collection System Evaluation.* The anticipated additional loading from the amendment area is comparatively insignificant and there are no wastewater collection capacity concerns.

Wastewater Treatment Facility

Madison Metropolitan Sewerage District (MMSD) will provide wastewater treatment for the amendment area. The amendment area will need to be annexed into the MMSD service boundary. The Nine Springs Wastewater Treatment Facility (WWTF) is located on Moorland Road, Madison, and currently discharges treated effluent to Badfish Creek within the Badfish Creek Watershed (Lower Rock River Basin) and Badger Mill Creek within the Upper Sugar River Watershed (Sugar-Pecatonica Basin). The rated monthly design flow capacity of the facility is 56.0 million gallons per day (MGD) and the maximum daily design flow capacity is 68.6 MGD. In the year 2023, the facility received an average monthly influent hydraulic loading of 36.9 MGD (66% of the 56.0 MGD design capacity), including infiltration and inflow, according to the 2023 Compliance Maintenance Annual Report (CMAR) (link to 2023 CMAR). It is expected to reach 90% of current hydraulic design capacity around 2026 based on current projected growth rate assumptions. This already occurs on occasion, although average flows did not exceed 74% design capacity for any month in 2023. MMSD did not have issues meeting its WPDES permit limits for the quality of effluent discharged to Badfish Creek and Badger Mill Creek, according to their 2023 CMAR. MMSD completed a facility plan in 2017, titled Liquid Processing Facilities Plan, that recommended improvements to the liquid treatment processes at the plant, including the addition of hydraulic capacity. These improvements are being implemented in multiple phases between 2018 and 2030. For the 20-year planning period, treatment for this area is expected to remain at the existing wastewater treatment facility location with expanded capacity of the system as the need is foreseen. MMSD staff were contacted regarding this amendment and did not have concerns with serving this additional area.

Water System

The three parcels in the amendment area are served by private wells. Currently, the Town does not intend to provide water service to the area. The overall domestic water demand within the amendment area is not changing.

Stormwater Management System

The proposed amendment is within the Lake Mendota-Yahara River subwatershed (HUC 12: 070900020604). The amendment area currently consists of existing residential land uses. Runoff generally flows from north to south, crossing Kennedy Dr through an existing culvert then flows along Hwy 113 approximately 720 feet to the south where it enters an unnamed intermittent stream which eventually flows into Lake Mendota. There is no proposed development within the amendment area, as the existing improvements will remain.

The existing improvements were constructed prior to August 22, 2001, and so none of the existing impervious surfaces are subject to the Dane County stormwater ordinance. Any future development on

the parcel resulting in a cumulative addition of 20,000 sf of impervious surface after August 22, 2001, will require stormwater control measures to be implemented in accordance with the Dane County stormwater ordinance. Nonetheless, it is recommended that any new impervious surfaces which are created in the future be provided with stormwater controls to manage site runoff.

There are no existing engineered stormwater management controls within the amendment area or the parcel. Although no redevelopment or new development is planned, small-scale stormwater practices can be implemented as a way of mitigating the existing pollution coming from the existing site. It is recommended that all proposed roof downspouts and impervious surfaces be directed to pervious surfaces onsite to promote infiltration and limit the potential for stormwater runoff. Rain gardens, water harvesting (e.g., rain barrels), and native vegetation are additional measures that can be taken within the amendment area to improve stormwater management.

Impacts and Effects of Proposal

Environmental Corridors

Within the requested amendment area, there are no environmentally sensitive areas (i.e., wetlands, waterbodies, floodplains, riparian steep slopes, etc.) requiring placement in environmental corridors in accordance with the adopted policies and criteria of the *Dane County Water Quality Plan*. There are also no Stewardship Areas within the amendment area, which are areas recommended for inclusion in environmental corridor.

Surface Water and Groundwater Impacts

The requested amendment area is comprised of three existing developed parcels which are not being proposed for any new development or redevelopment. There are no new impacts to surface water or groundwater because of the proposed amendment.

Connection to the public sanitary sewer system has the potential to eliminate any existing detrimental impacts on groundwater being caused by the existing septic system. The amendment area is not anticipated to connect to the public water supply system.

There is currently no formal stormwater management on the site due to the age of the existing development (built before current stormwater management standards). In such areas where development predates current stormwater regulations for volume and rate control and water quality requirements, urban stormwater runoff represents a significant source of water quality problems—but also an opportunity to make significant improvements. Redevelopment activity offers a prime opportunity to add or improve stormwater controls to meet current stormwater standards and dramatically improve site conditions. Even where large-scale redevelopment is not occurring, smaller retrofit improvements—such as downspout disconnection, use of rain barrels, and conversion of turf grass to native vegetation—can collectively have a big effect. Additionally, other green infrastructure practices such as rain gardens, bioswales, and native prairie buffers are great options for not only better managing stormwater but also adding aesthetic appeal to a property. Together, these measures would help to promote infiltration onsite and limit the potential for stormwater runoff, thereby improving stormwater management on the property and reducing negative surface water and groundwater impacts currently occurring on downstream receiving waters.

Regional partners are actively working to address chlorides through the Wisconsin Salt Wise Partnership. WI Salt Wise's chloride reduction training courses are open to all municipal and private winter maintenance professionals in the region. Town of Westport staff are encouraged to attend winter salt certification classes and training for winter road maintenance and to stay current on the latest trainings and development. The Town of Westport 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 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 proper leaf management, proper lawncare practices, reduction in chlorides pollution from over-use of salt, and rainwater harvesting for beneficial reuse. Such practices are all appropriate for the proposed amendment area.

Comments at the Public Hearing

A public hearing before the Capital Area Regional Planning Commission is scheduled for December 12, 2024. No comments have been received and no controversies have been noted to date. The Village of Waunakee has been notified of the proposed amendment.

Conclusions and Staff Water Quality Recommendations

There is sufficient existing treatment plant system capacity at MMSD's Nine Springs Wastewater Treatment Facility and sufficient existing or planned wastewater collection system capacity to serve the proposed amendment area.

There is no proposed new development or redevelopment activity triggering any stormwater management requirements; however, there is an opportunity to voluntarily install retrofit stormwater management practices as a way of reducing stormwater runoff and improving downstream water quality in receiving streams.

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 Minor Sewer Service Area Amendments to the *Dane County Water Quality Plan*. Additional actions have also been recommended below to further improve water quality and environmental resource management.

Recommendations

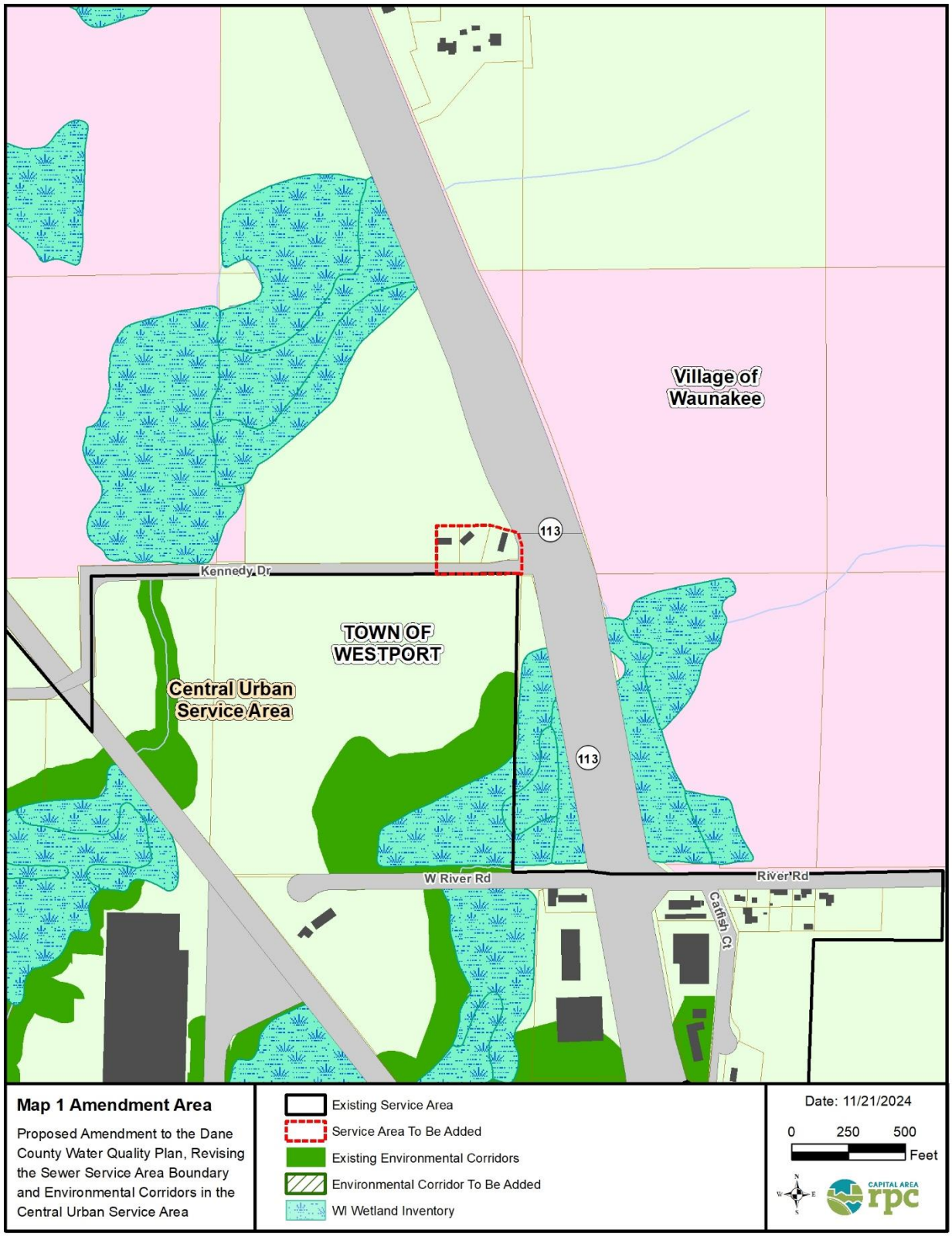
It is recommended that the Town of Westport pursue the following to further improve water quality and environmental resource management:

1. Work with the property owner(s) to encourage implementation of various green infrastructure practices for stormwater management of the existing site improvements.

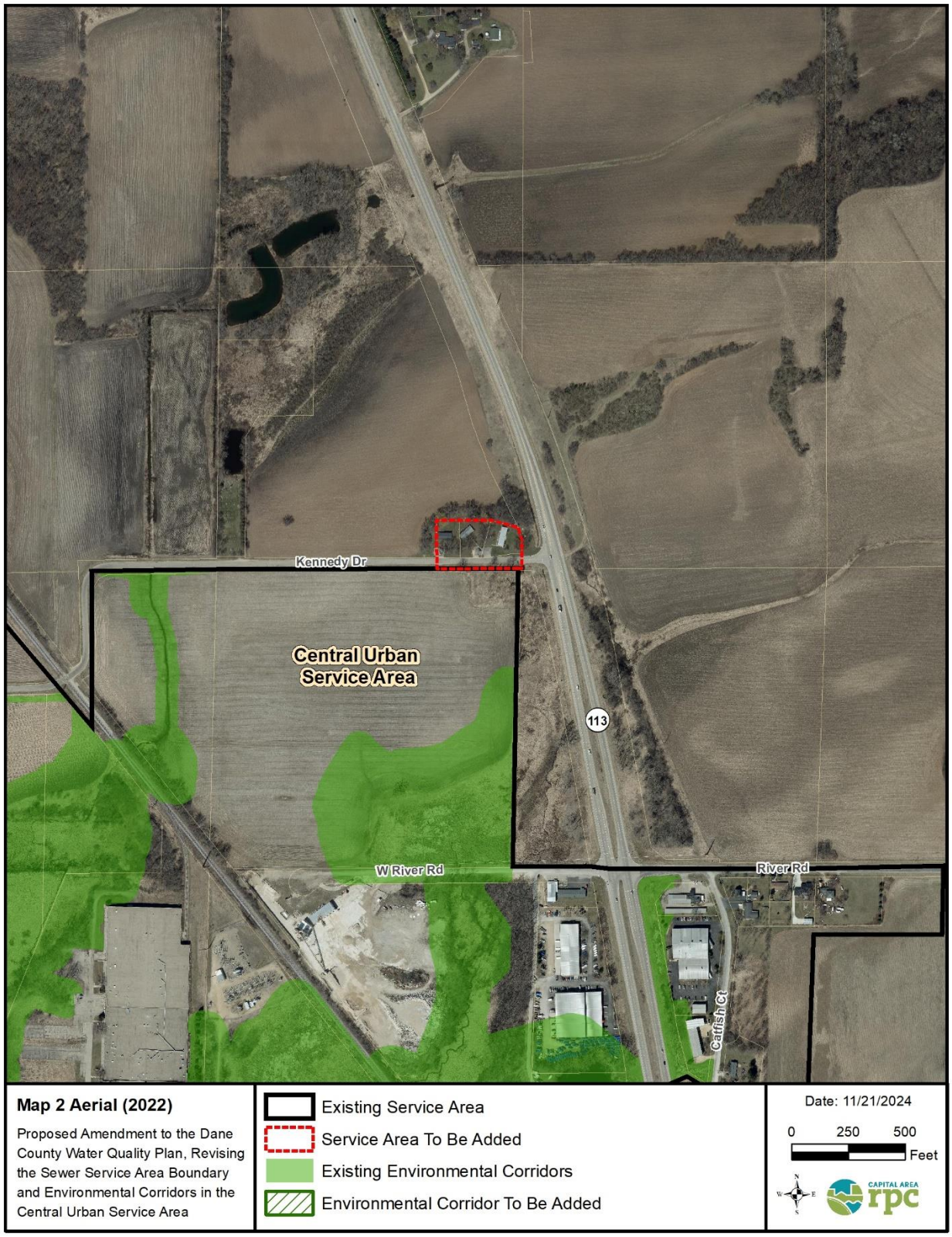
2. Continue to participate in regional water quality initiatives including Wisconsin Salt Wise, the Madison Area Municipal Storm Water Partnership (MAMSWaP), and Yahara WINs.

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

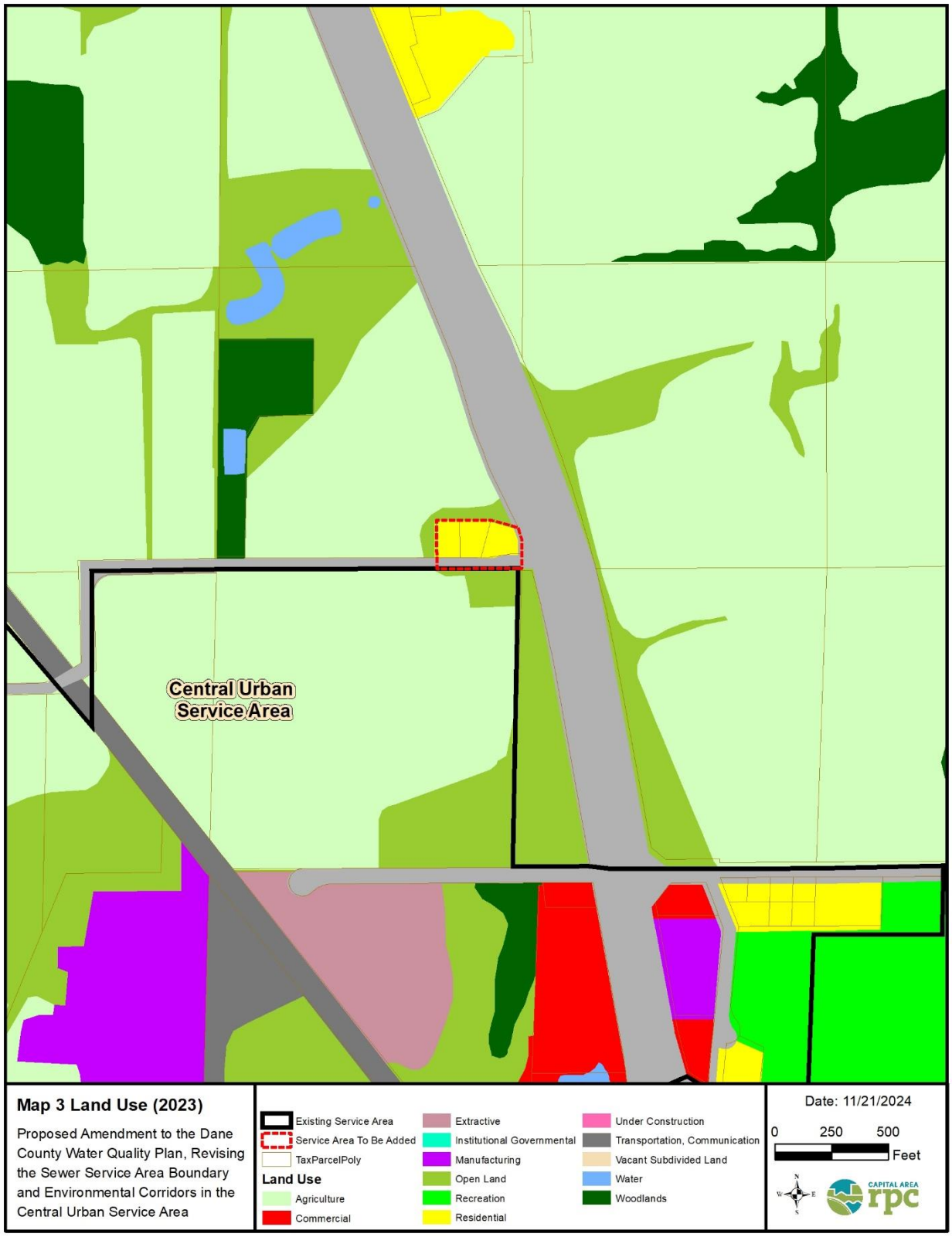
Map 1 – Amendment Area



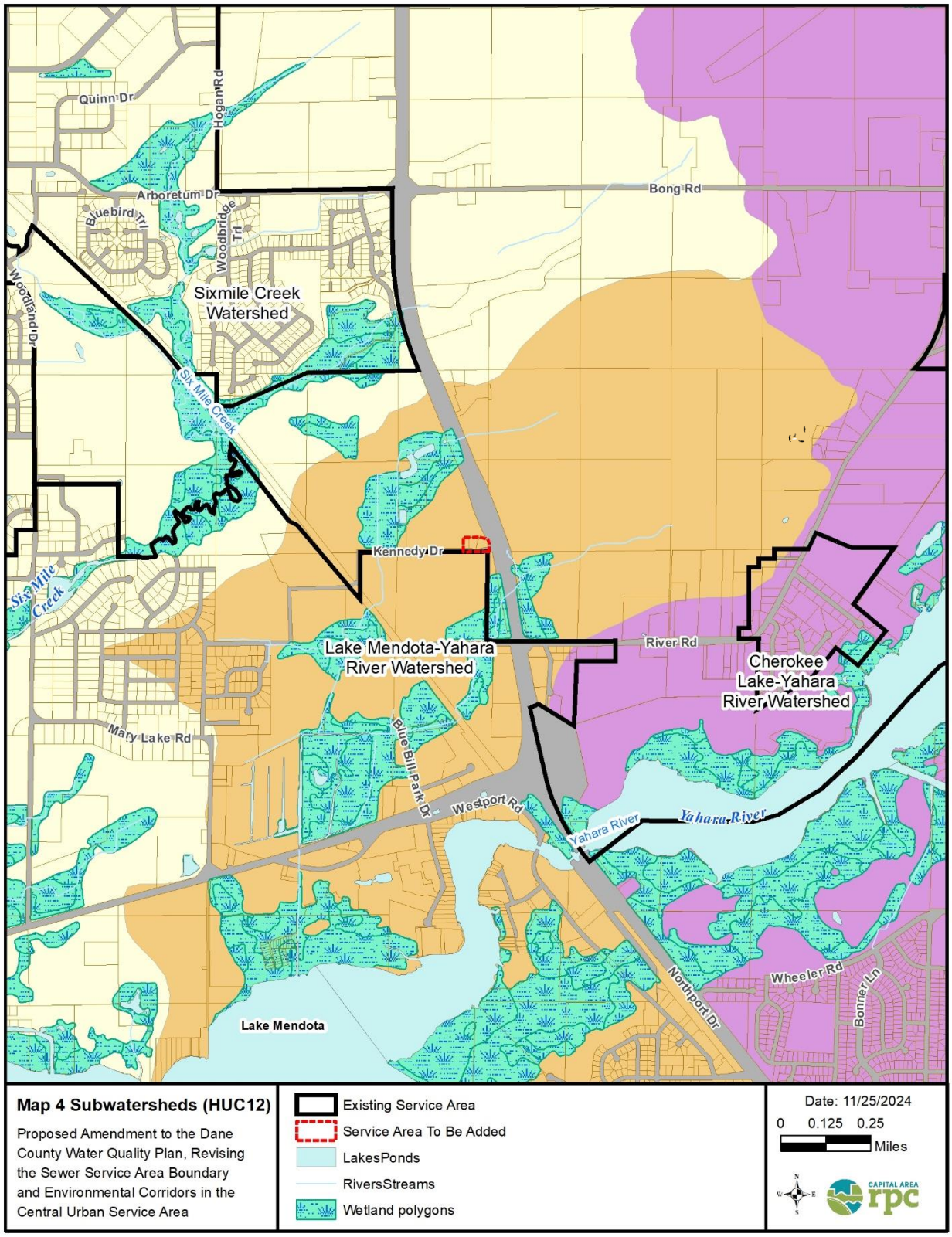
Map 2 – Aerial


Kennedy Dr
Central Urban Service Area
113
W River Rd
River Rd
Catfish Ct
Map 2 Aerial (2022)
Proposed Amendment to the Dane County Water Quality Plan, Revising the Sewer Service Area Boundary and Environmental Corridors in the Central Urban Service Area
Existing Service Area
Service Area To Be Added
Existing Environmental Corridors
Environmental Corridor To Be Added
Date: 11/21/2024
0 250 500
Feet
CAPITAL AREA rpc

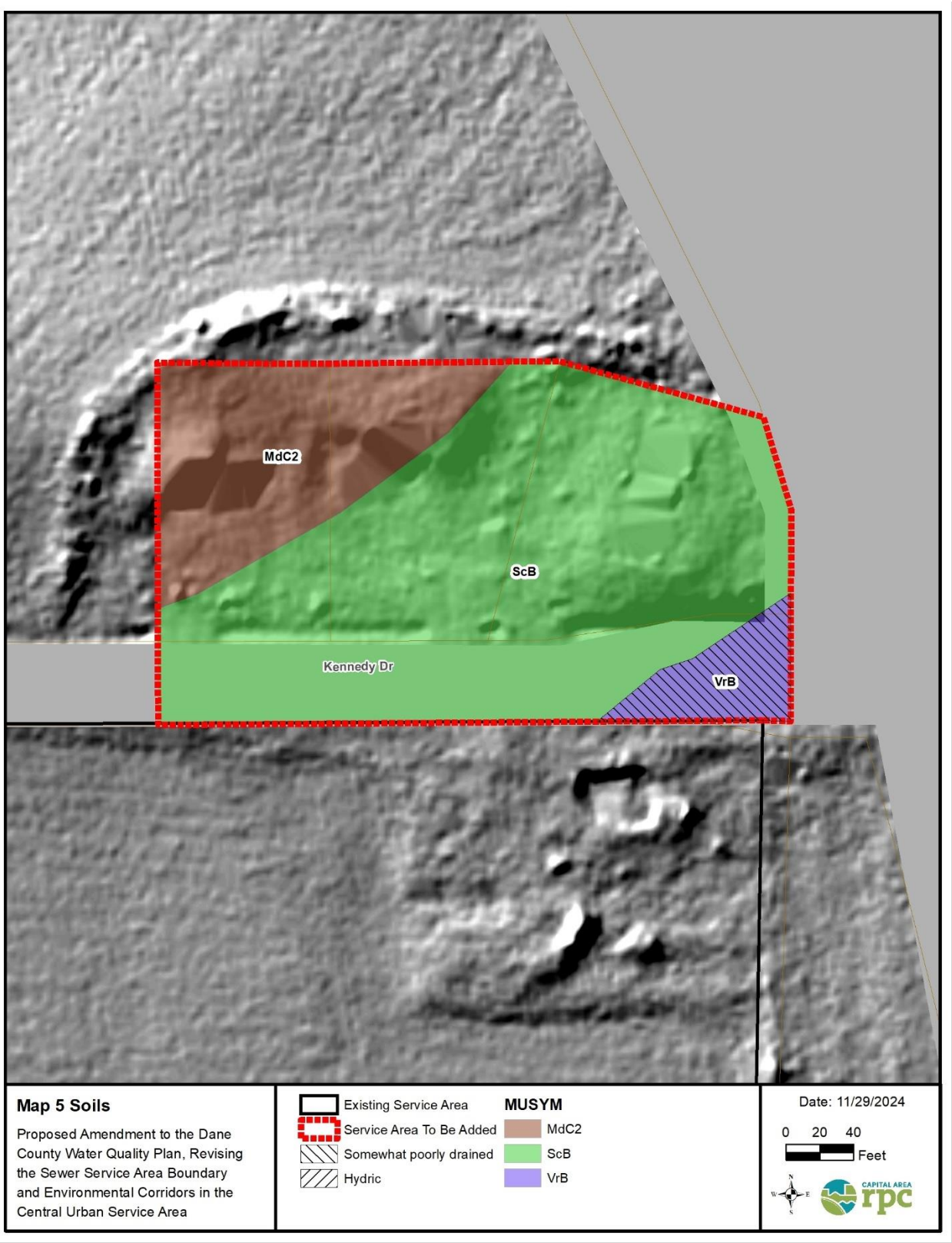
Map 3 – Existing Land Use



Map 4 – Subwatersheds



Map 5 - Soil Type



Map 6 – Proposed Sanitary Sewer