
**Staff Analysis of Proposed Amendment to the *Dane County Water Quality Plan*
Revising the Sun Prairie Urban Service Area Boundary
in the City of Sun Prairie**

1. **Applicant:** City of Sun Prairie

2. **Description of Proposal**

The proposed amendment adds 5.06 acres to the Sun Prairie Urban Service Area, including 0.32 acres of existing development (road right-of-way), resulting in a net developable area of 4.74 acres. The proposed amendment is located within the City of Sun Prairie and is intended to serve institutional uses, specifically a municipal Fleet Services building and salt shed (see Maps 1, 2, and 3). There is no residential component to this amendment proposal.

3. **Existing Environment**

Natural Resources. The proposed amendment area is located in the Koshkonong Creek Watershed, in the Rock River Basin. Koshkonong Creek starts in the City of Sun Prairie and flows within approximately 1,500 feet of the amendment area as it winds its way to the southeast. Koshkonong Creek supports limited aquatic life in the vicinity of the amendment area. Approximately one and a half miles farther downstream, south of County Highway T, it supports a warm water sport fishery.

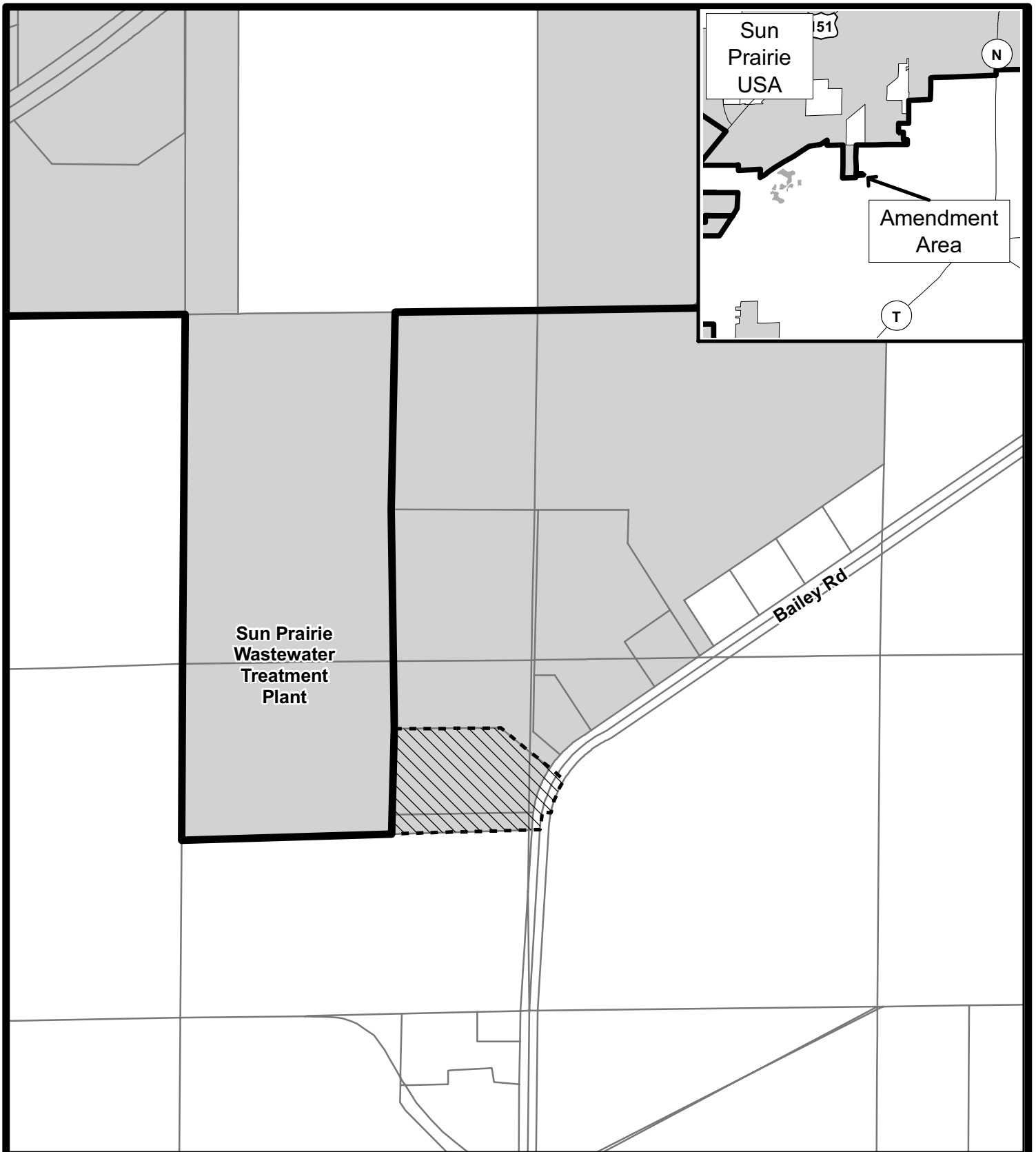
Generally, the amendment area slopes slightly to the south and west. There are no wetlands, floodplains or drainage ways within the proposed amendment area. Approximately 0.15 acres of a woodland located north of the site is included in the amendment area. The applicant notes that the woodland will not be disturbed as part of the proposed development of the Fleet Service Facility.

Depth to the water table in the amendment area is over 25 feet. There are no mapped wetlands or floodplains in the amendment area although there are wetlands and floodplain to the north of the proposed amendment. Depth to fractured dolomite bedrock is over 50 feet.

The soils of the area are in the Dodge-St.Charles-McHenry Association. These soils have been formed on sandy loam glacial till. They are well drained and moderately well drained, deep silt loams. Detailed characteristics of the soils of the amendment area are shown in Table 1. Approximately 74 percent of the amendment area is composed of prime agricultural soils (see Map 3).






The applicant notes that there are no historic properties or known archeological sites identified within the proposed amendment area. Comment letter from the State Historical Society indicates that the area was surveyed as part of the treatment plant project, and no archaeological or cultural resources were found within the proposed amendment areas (letter attached).

The Natural Heritage Inventory, maintained by the Department of Natural Resources, does not cite any threatened or endangered species within the area.

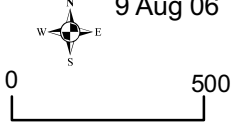


Map 1

**Amendment
to the Sun Prairie
Urban Service Area,
City of Sun Prairie**

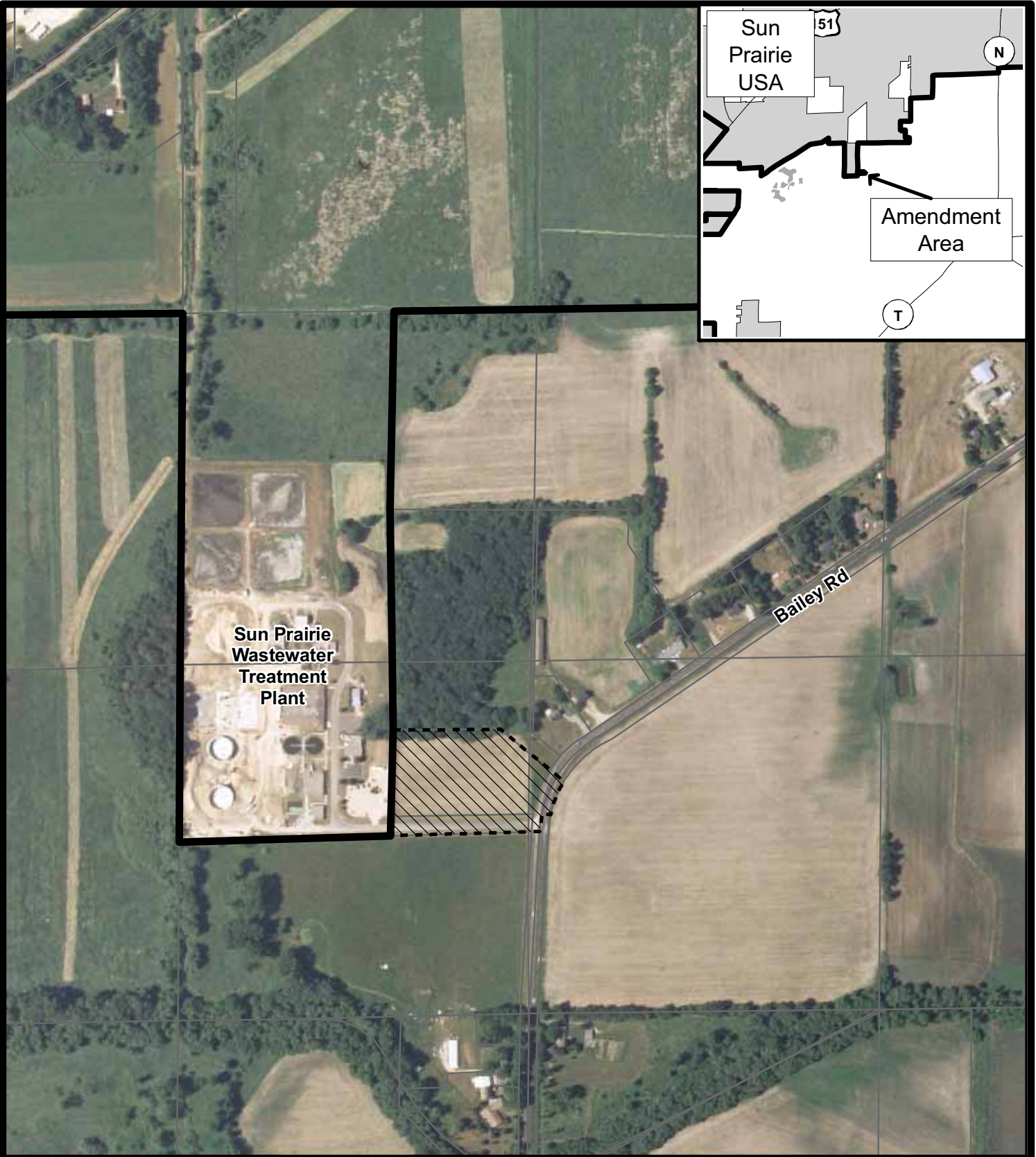
-  Service Area to be added
-  Proposed Environmental Corridor
-  Existing Urban Service Area Boundary
-  Proposed Urban Service Area Boundary
-  Incorporated Area

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





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Prepared by staff
of the CAPD.



Map 2 Aerial
Amendment
to the Sun Prairie
Urban Service Area,
City of Sun Prairie

-  Service Area to be added
-  Proposed Environmental Corridor
-  Existing Urban Service Area Boundary
-  Proposed Urban Service Area Boundary

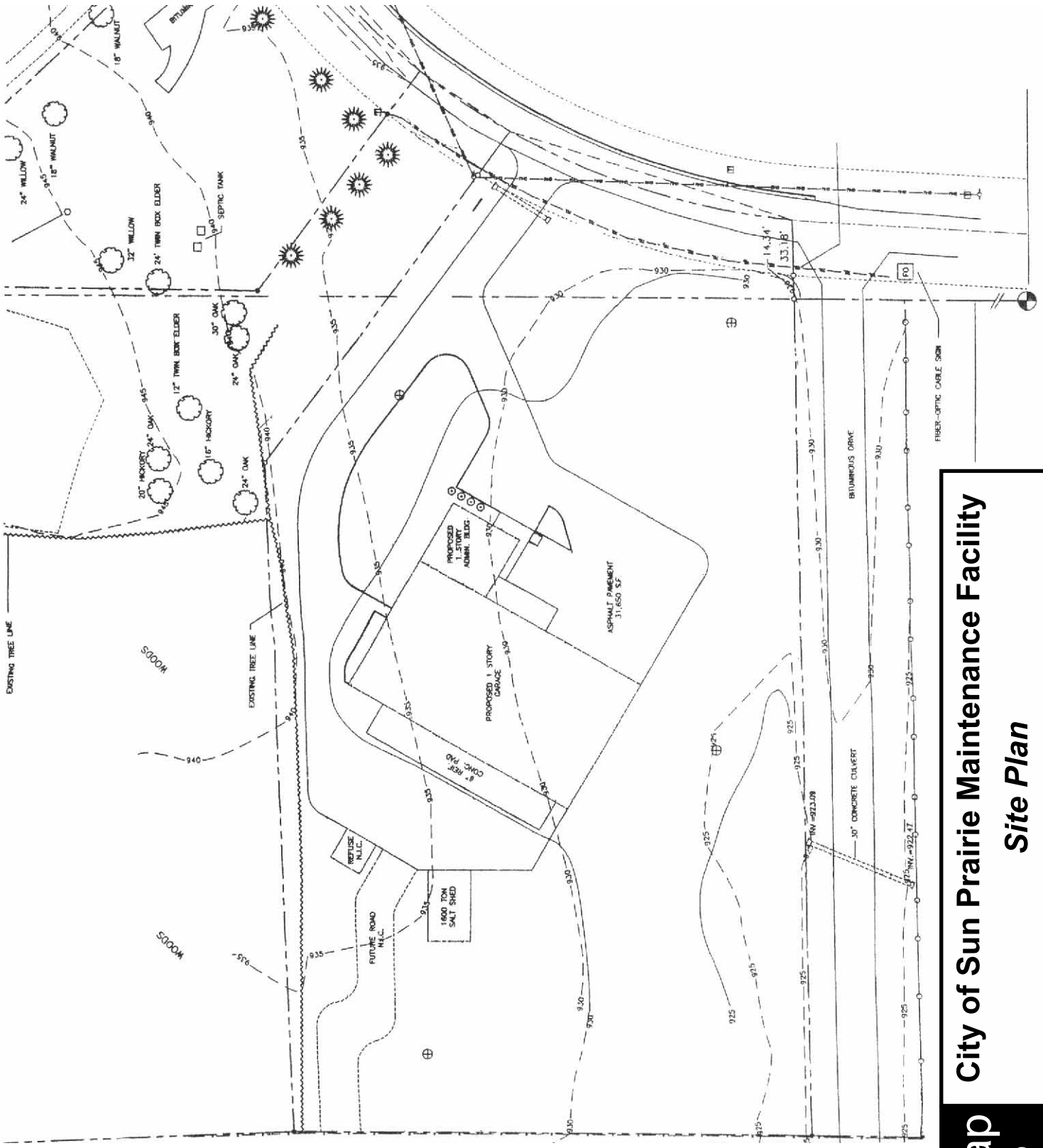
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2005 Aerialphotograph courtesy of FSA/NRCS

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Map 3
City of Sun Prairie Maintenance Facility
Site Plan

Table 1 – Soil Characteristics

Soil	Percent of Area	Characteristics
Dodge silt loam; DnB	41	Deep, well-drained soils on glaciated uplands formed over sandy loam glacial till. Soils have high fertility, moderate permeability, and moderate to severe hazard of erosion. Slight to moderate limitation to development. Prime agricultural soils. 120 Bu/acre corn yield.
McHenry silt loam; MdC2	26	Deep, well-drained soils on glaciated uplands and formed in sandy loam glacial till. Soils have medium fertility, moderate permeability, and pose severe hazard of erosion. Substratum is moderately rapidly permeable. Poses moderate limitation for development. Not a prime agricultural soil.
Virgil silt loam; VrB	18	Deep, somewhat poorly drained soils with high fertility on low benches on uplands and in stream valleys. Soil has high fertility and moderately low permeability. Poses moderate hazard of erosion and severe limitation for development due to seasonal high water table, poor stability in the substratum, and subject to piping and liquefaction when wet. Prime agricultural soils. 155 Bu/acre corn yield.
St.Charles silt loam; ScB	15	Deep, well drained soils with high fertility, moderate permeability, and moderate hazard of erosion. Poses slight to moderate limitation for development (low bearing capacity in substratum and moderate shrink-swell potential). Prime agricultural soils. 145 Bu/acre corn yield.

Source: Dane County Soil Survey

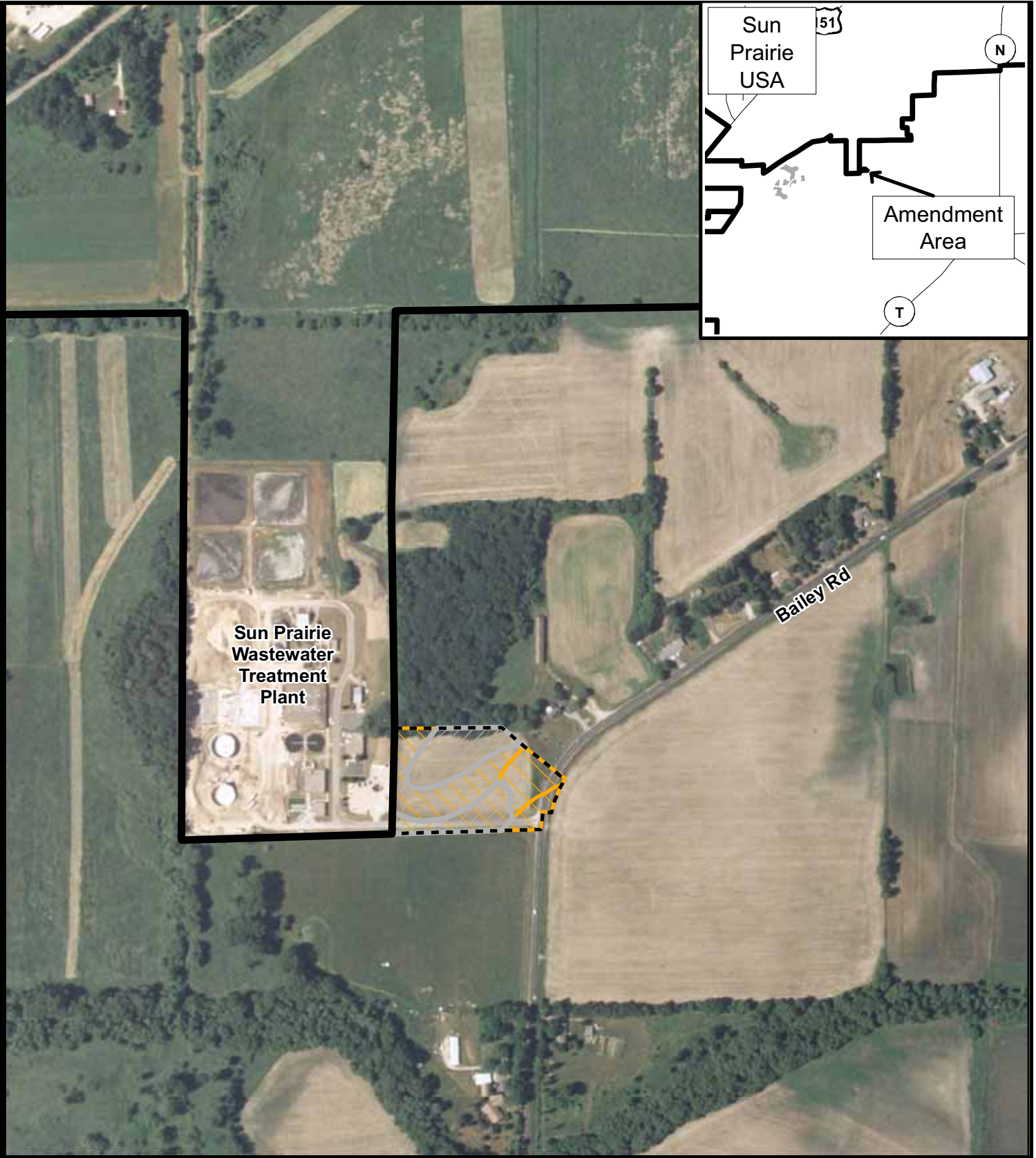
Land Use. The proposed amendment, currently vacant, is one of several parcels comprising 60 acres of city owned property planned for a “Public Works Campus” northwest of Bailey Road, in the area of the existing Wastewater Treatment Plant and Recycling Center. Existing land uses adjacent to the amendment areas are as follows:

- North: Undeveloped/woodland area and vacant rural residence, all owned by the City of Sun Prairie.
- East: Agricultural (Town of Sun Prairie)
- South: Agricultural (Town of Sun Prairie)
- West: Wastewater Treatment Plant (City of Sun Prairie)

4. Consistency or Conflict With Adopted Plans and Policies





The Sun Prairie USA was established in 1977 and the environmental corridors were adopted in March 1990. The urban service area was last amended in November 2004.

The Sun Prairie USA has an estimated 2005 population of 24,219 and a 2030 population forecast of 35,874. The Sun Prairie Housing Unit and Land Area Analysis provides for a maximum urban service area of 12,161 acres. This represents a potential addition of 3,424

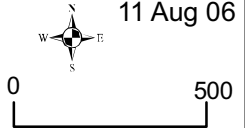


Map 4 Soils

**Amendment
to the Sun Prairie
Urban Service Area,
City of Sun Prairie**

-  Prime Farmland (3.7 acres)
-  Severe Limitations to Development (2.2 acres)
-  Existing Urban Service Area Boundary
-  Proposed Urban Service Area Boundary

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Prepared by staff
of the CAPD.

2005 aerial courtesy of FSA/NRCS

acres of developable land over the current urban service area size of 8,736 acres. The proposed amendment would add 4.74 acres of developable land to the urban service area.

The land to be added to the urban service area is adjacent to the current urban service area and adjacent to the existing City Wastewater Treatment Plant, and is a logical extension of development. The proposal in this request will add developable land to the urban service area to accommodate the location of a Fleet Service Facility as part of a long-term plan to create a “Public Works Campus”.

The proposed amendment is generally consistent with the *Dane County Land Use and Transportation Plan* policies and objectives. Table 2 presents the evaluation checklist for the proposed amendment regarding consistency or conflict with the 11 major goals of the Plan. The proposed amendment has minor or neutral effects for ten of the goals of the Plan. The proposed amendment conflicts with one major goal: protecting agricultural lands, since the soils in 74 percent of the amendment area are prime agricultural soils proposed to be converted to development.

5. Proposed Urban Services

Public Water System. The City of Sun Prairie has six wells with a total pumping capacity of 11,016,000 gallons per day, or 7,650 gallons per minute (gpm). Six reservoirs provide 2,850,000 gallons of storage capacity. The 2005 average daily water usage was 2,800,000 gallons per day, and the maximum daily water usage was 5,635,000 gallons per day. The peak hourly water demand is 320,000 gallons. The system has adequate capacity to provide fire-fighting water during the peak hour demand.

Potable and fire fighting water will be supplied to the amendment area through the extension of an existing 10-inch main from the adjacent Water Pollution Control Facility (WPCF). No water distribution and production facility modifications to the existing system are anticipated to be necessary to accommodate the proposed addition.

Wastewater. The amendment area is proposed to be served by a 8-inch sanitary sewer main extending from the 15-inch line located within the WPCF. The WPCF has reserve capacity in the 15-inch line and is capable of serving the amendment area. The WPCF is currently being upgraded and completion is anticipated by the end of the year. Upon completion of the improvements, the WPCF will have adequate capacity for the forecast growth of the service area through 2025. The expanded treatment plant capacity is 3.065 million gallons per day.

Stormwater Management System. The applicant proposes to meet the stormwater management needs of the amendment area through the use of stormwater facilities to be owned and maintained by the City of Sun Prairie. Stormwater management facilities are proposed to reduce total suspended solids by 80%, treat the first one-half inch of runoff for oil and grease, and infiltrate roof runoff. The City ordinance controls the post-development peak runoff rates of the two, five, and larger than twenty-five year storm events to the respective pre-developed rates. The ordinance also controls the post-development peak runoff rates for the ten and twenty-five year storm events to the pre-developed five year rate. Stormwater management measures will include a rain garden/bioinfiltration area for roof runoff, grass swales and/or trenches with either limestone or engineered soil to treat

Table 2
Dane County Land Use and Transportation Plan
Goals Achievement Checklist

Goals	Strongly Conflicts	Conflicts	Neutral or Offsetting Effects	Supports	Strongly Supports
Promote balanced communities with a mix of development			X		
Promote compact urban development			X		
Promote distinct communities, mixed-use neighborhoods with a full range of public services			X		
Provide a range of safe and affordable housing choices			X		
Provide an integrated all-mode transportation system			X		
Concentrate employment and activity centers along transit corridors			X		
Maintain Downtown Madison as region's major activity center			X		
Provide employment opportunities and a diverse economic base			X		
Protect agricultural lands by limiting non-farm development in agricultural areas		X			
Protect environmental, cultural and historic resources			X		
Develop a system of open space corridors to preserve environmental functions, scenic value, and recreational opportunities			X		

Proposal: Sun Prairie Urban Service Area Amendment

Applicant and Submittal Date: City of Sun Prairie, August 2006

oil and grease, and retention basin(s) to achieve 80% reduction in the sediment loads to Dane County waters when compared to no controls. Native plant plugs and seeds will be used in the stormwater treatment areas. The applicant states that the stormwater basin(s) will be constructed prior to any other land disturbance on the site.

Environmental Corridors. There are no sensitive resources in this amendment area requiring environmental corridors designation.

Public Safety Services. The Sun Prairie Volunteer Fire Department currently operates from the Fire Station located at 135 N. Bristol Street, approximately 2.9 miles from the amendment area. A new, second fire station located at West Main Street and County Highway C is to be completed in November of 2006. That location is 3.8 miles from the amendment area. Estimated response times from these stations to the amendment area are 4 to 7 minutes.

Sun Prairie EMS service shares the two Fire Department locations and is staffed 24 hours a day. The EMS consists of 12 full-time paramedics plus a full-time supervisor and full-time director. Response time to the amendment area for EMS service is estimated at 4-5 minutes.

The Sun Prairie Police Department employs 45 full-time, sworn officers, or 1.8 officers per thousand residents, adequate for a city of this size.

Other Urban Services. Other urban services, including street maintenance, snow removal, refuse collection and recycling pickup, will be provided through the existing City delivery systems.

Parks and Open Space. Due to the type of development proposed, a municipal fleet service facility, the amendment area will not be served by parks or schools.

6. Impacts or Effects of Proposal

Surface and Ground Water Impacts. The potential impacts of urban development in general include an increase in stormwater runoff volumes and rate, reduced groundwater recharge, and the introduction of contaminants from urban land uses to receiving waters. Some of these, notably increased pollutant loads, simply replace adverse impacts from agricultural land uses that preceded urbanization. However, the hydrologic and water quality impacts associated with urbanization have had short and long term adverse impacts on surface water and groundwater resources. This results from increased impervious ground cover from roadways, parking areas, and roofs; sedimentation and erosion associated with construction activities; and contaminants from urban and industrial activities.

The City of Sun Prairie has adopted a stringent set of stormwater management standards, that if diligently applied, would mitigate most of the adverse impacts of the proposed development. The proposal includes installation of stormwater facilities prior to other land disturbing activities, providing further protection against construction erosion impacts.

The proposal is consequently expected to have negligible adverse impacts on the water resources of the area.

School System Impacts. With no residential component, this amendment will not impact school system enrollment with additional students.

7. Alternatives

Alternatives to expanding the urban service area to include this location are addition to the USA in another location, or no expansion of the USA. According to the standards outlined in NR 121, and the USA expansion flexibility standards of the current *Dane County Water Quality Plan*, the Sun Prairie Urban Service Area can expand by a maximum of 3,424 additional developable acres by 2030. The *Water Quality Plan* does not provide for “no-growth” urban service areas if the fulfill the conditions, standards, and requirements of adding to the USA as outlined in the *Water Quality Plan*.

The City chose this particular location for the Fleet Service Facility as part of a long term plan to relocate all of its public works facilities to a “Public Works Campus” in this area. The City owns approximately 60 acres northwest of Bailey Road at this location, between the Wastewater Treatment Plant immediately west of the proposed amendment, and the Recycling Center north and east of the property. Environmental corridors and floodplains surround the Wastewater Treatment Plant to the north, west, and part of the south, making the proposed location the most logical for expansion of the urban service area for the purpose of the fleet facility.

8. Controversies, Comments Received, Unresolved Issues

The Dane County Community Analysis and Planning Division will hold a public hearing on this amendment on September 12, 2006, at 4:30 p.m. in the City Council Chambers at the Sun Prairie City Hall, 300 E. Main Street, Sun Prairie, Wisconsin. No controversies regarding amendment of the urban service area are noted. The Town of Sun Prairie had no objection to the annexation of the amendment area for this purpose.

9. Conclusions and Staff Recommendation

The proposal meets the standards and requirements of the *Dane County Water Quality Plan* for the expansion of urban service areas. The proposed plan includes measures to mitigate the adverse impacts of the proposed development and is neutral with regards to ten out of eleven *Land Use and Transportation Plan* goals. The proposal conflicts with the goal of preserving prime agricultural lands. However, the location is a logical location for municipal fleet services because it is in the buffer area for the wastewater treatment plant.

Staff tentatively recommends approval of the proposed amendment based on the land uses, services, and mitigation measures outlined in the City of Sun Prairie submittal, conditioned on the City of Sun Prairie providing a detailed stormwater management plan for CAPD and DCL&WCD staff review and approval prior to land disturbance in the area.

Report approved by Kamran Mesbah, Deputy Administrator/Director of Environmental Resources Planning, Dane County Community Analysis and Planning Division



WISCONSIN
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SOCIETY

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816 State Street
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17 August 2006

K. Mesbah
Community Analysis and Planning Division
City-County Building
210 Martin Luther King Drive
Room 362
Madison, WI 53703-2558

RE: Amending the *Dane County Water Quality Plan* by Revising the Sun Prairie Urban Service Area Boundary and Environmental Corridors within the City of Sun Prairie.

Dear Mr. Mesbah:

The area encompassed by this boundary expansion was surveyed in 1975 as part of a Sun Prairie Sewage plant project (75-0272). No additional work is recommended.

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 Burial Sites Preservation Office should be notified. If human bone is unearthed during any phase of a project, **all work must cease**, and the Burial Sites Preservation Office **must be contacted** at 1-800-342-7834 to be in compliance with Wis. Stat. 157.70 which provides for the protection of all human burial sites. **Work cannot resume until the Burial Sites Preservation Office gives permission.** If you have any questions concerning the law, please contact the Coordinator of the Burial Sites Preservation Program at the Wisconsin Historical Society, Dr. Leslie Eisenberg at 608-264-6503.

If you have any questions, or if you need additional information, please feel free to contact me.

Sincerely;

John H. Broihahn
State Archaeologist
State Archaeology and Maritime Preservation
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johnbroihahn@wisconsinhistory.org
(asi searches/Dane/ Sun Prairie 8_17_6)