
**Staff Analysis of Proposed Amendment to the *Dane County*
Water Quality Plan, Revising the
 Stoughton Urban Service Area Boundary and Environmental Corridors in the
 City of Stoughton (Nordic Ridge Development)**

1. Applicant: City of Stoughton

2. Description of Proposal

The proposed amendment is located on the southwest side of the City of Stoughton, south of W. Milwaukee Street, southwest of Pleasant View Drive, and north of County Highway A. The City of Stoughton proposes to add 50.5 acres to the Stoughton Urban Service Area, including 0.9 acres of environmental corridors, resulting in a net developable area of 49.6 acres. The land use proposed for the addition is residential, accommodating 169 new housing units with an estimated population of 410, including 84 school age children (see Table 1, Maps 1 through 3).

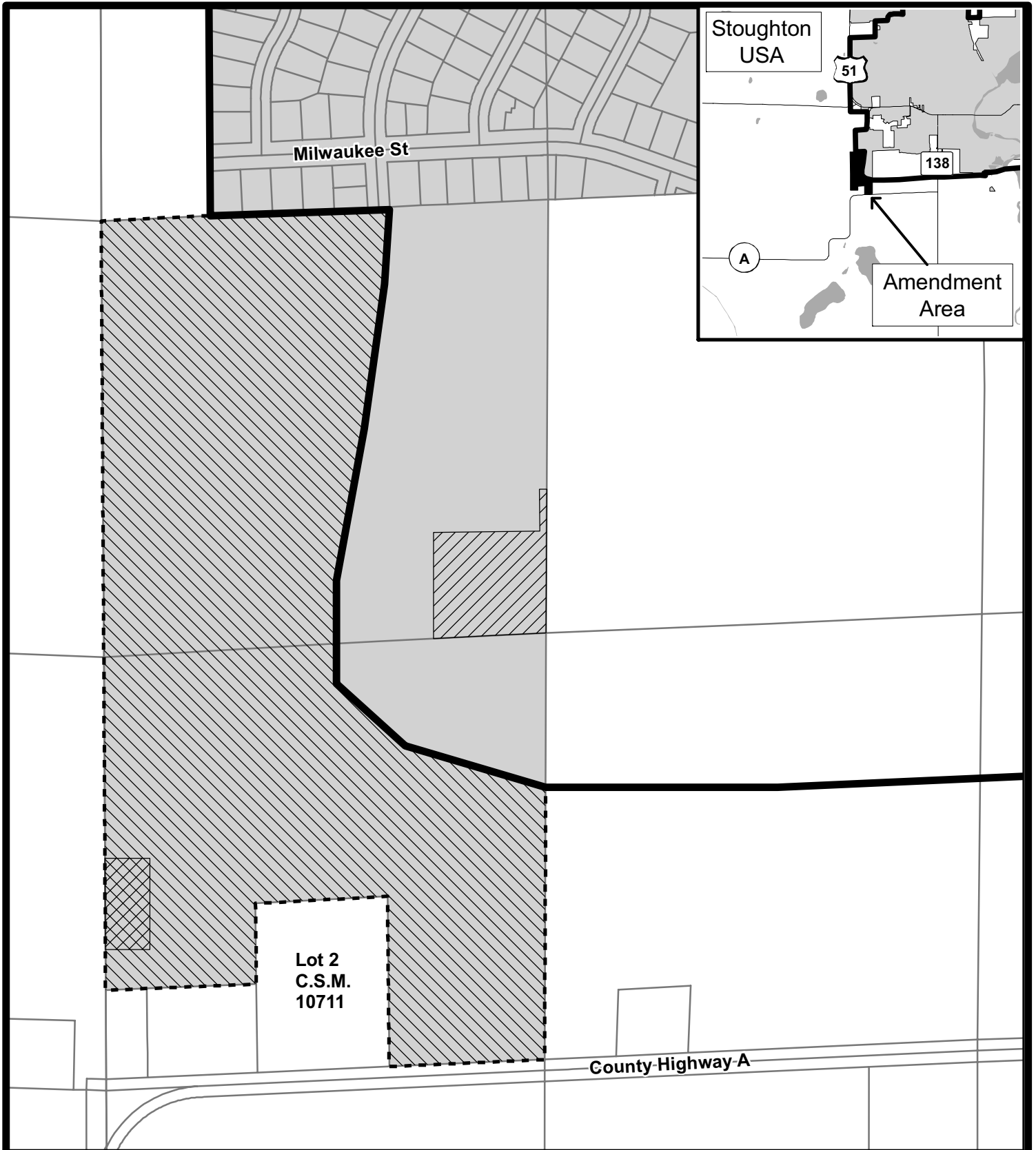
Table 1: Stoughton Urban Service Area, Nordic Ridge Requested by the City of Stoughton										
Proposed Land Use	Density (units/acre)		Total (ac.)	% of Total	Housing Units	No. of Persons	No. of Students	Existing Develop.	Environ. Corridor	Develop- able
	Proposal	Stoughton								
Single Family	3.94	3.80	20.3	40.2%	80	228	56			
Other Residential	7.81	11.30	11.4	22.6%	89	182	28			
Residential Total	5.33	5.13	31.7	62.8%	169	410	84			
Street R-O-W			11.5	22.8%						
Stormwater Mgmt.			0.9	1.7%					0.9	
Parkland			6.4	12.7%						
TOTAL			50.5	100.0%				0.0	0.9	49.6
					Single Family Portion of DU's in Amendment = 47%					

Source: City of Stoughton Planning Submittal and Dane County Community Analysis and Planning

The proposed addition is contiguous to the Stoughton Urban Service Area and to urban development to the north.






3. Existing Environment

Natural Resources. The proposed amendment is located in two watersheds in the Lower Rock River Basin. The east half of the development is in the Lower Yahara River Watershed. Drainage is to the east, through City of Stoughton greenways, stormwater ponds, and storm sewers to the Lower Yahara River 1.25 miles away. Some of this part of the development is already within the urban service area. The Lower Yahara River supports a warm water sport fishery.




Map 1

**Amendment
to the Stoughton
Urban Service Area,
City of Stoughton**

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

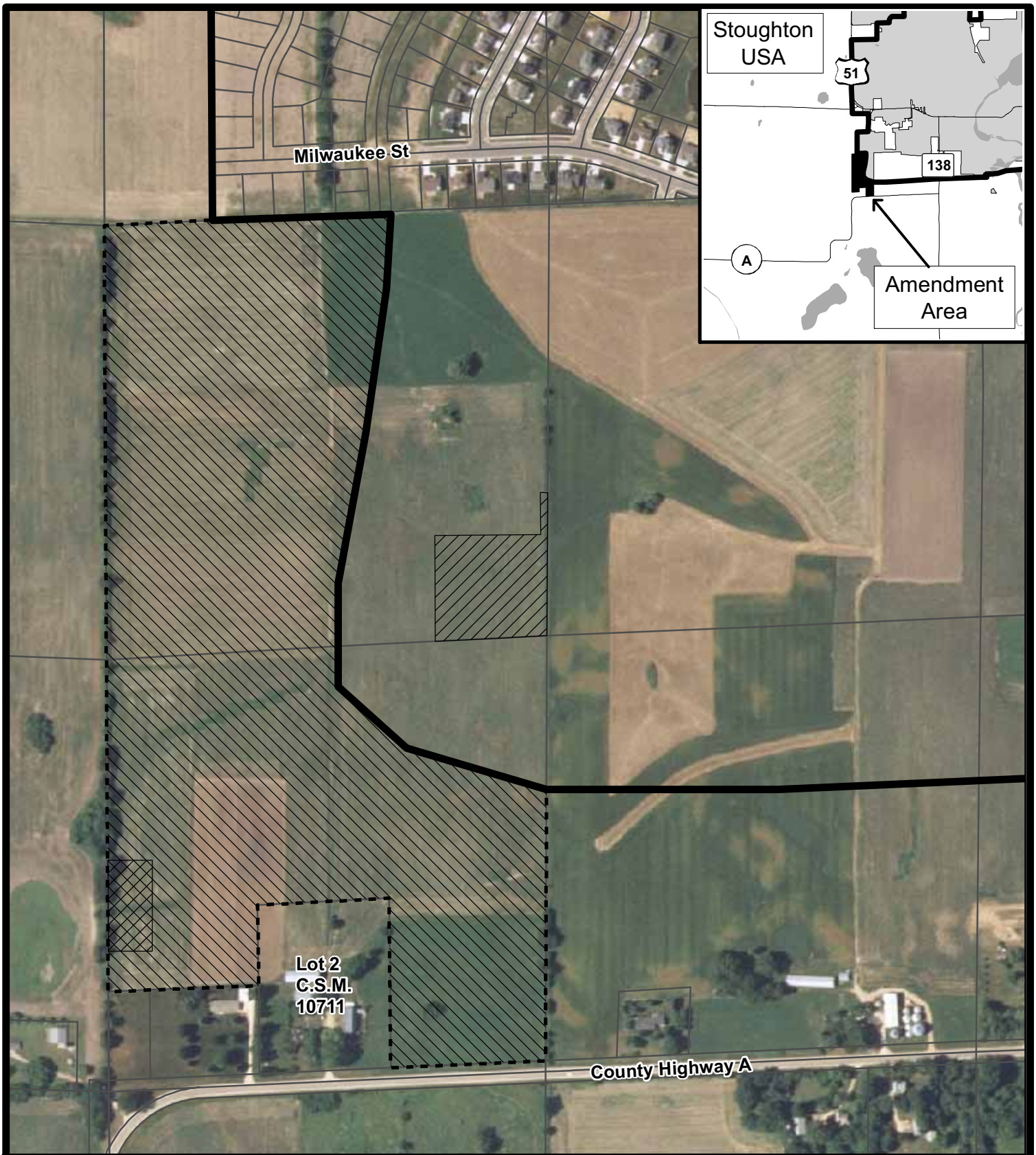
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Prepared by staff
of the CAPD.




Map 2 - 2005 Aerial

**Amendment
to the Stoughton
Urban Service Area,
City of Stoughton**

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

2005 aerial courtesy of FSA/NRCS

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Prepared by staff
of the CAPD.

The west half of the proposed development is in the Badfish Creek Watershed. Drainage from this portion of the amendment area is to the west and southwest. The topography of this area is hummocky with many low points and glacial kettles with no outlet. Runoff currently collects in these low areas and seeps into the ground or creates small pothole wetlands. There is a tributary of Badfish Creek located approximately one mile to the west of the amendment area. This tributary flows south approximately 1.7 miles to its confluence with Badfish Creek located two miles southwest of the proposed amendment. However, it is not clear that drainage from the amendment area ever gets to this tributary. There is a prior converted pothole wetland immediately to the west of the amendment area in the Town of Rutland. There are larger pothole kettles south-southwest of the amendment area in the Town of Rutland on both sides of CTH A. Drainage appears to be through ground seepage to Grass Lake wetlands located a half-mile south of the amendment area, and to Bass Lake to the southwest of Grass Lake. The ground elevation at the southwest corner of the amendment area is 900. The elevation of the pothole wetland immediately to the west is 890. The elevation of Grass Lake wetlands is 870, and water elevation in Bass Lake is 871. Bass Lake has an outfall creek which is a tributary of Badfish Creek. Badfish Creek supports a warm water sport fishery.

Depth to the water table in the amendment area is over 25 feet, except in the southeast corner where a small area has groundwater at a depth of 10 to 25 feet. There are no mapped wetlands or floodplains in the amendment area. Approximately 0.9 acres in the southwest corner of the amendment area is proposed for designation as environmental corridors for stormwater management purposes. Depth to bedrock is 10 to 50 feet throughout the amendment area. The bedrock type is fractured dolomite in the majority of the amendment area, with sandstone in the southwest corner.

The soils of the area are in the Plano-Ringwood-Griswold Association. These are soils that have been formed on sandy loam glacial till. They are moderately well drained and well drained, deep silt loams and loams. Detailed characteristics of the soils of the amendment area are shown in Table 2 (also see Map 4). Prime agricultural soils make up 56 percent of the proposed amendment area.

The applicant has provided an archaeological literature and records search prepared for the development site which concludes that no previously reported archaeological materials are reported for the project area or immediate vicinity, no Euro-American building sites are in the project area, and no buildings or structures are listed on the Wisconsin Architectural/Historical Inventory. The State Historical Society has reviewed the proposal and has determined it unlikely that unknown archaeological resources are present in the area (see comment letter attached).

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

Land Use. The proposed amendment is primarily in agricultural use. Existing land uses adjacent to the amendment areas are as follows:

North: Residential (City of Stoughton), Agricultural (Town of Dunkirk)
East: Agricultural (City of Stoughton, Town of Dunkirk)
South: Agricultural (Town of Dunkirk)
West: Agricultural (Town of Rutland)

Table 2 – Soil Characteristics

Soil	Percent of Area	Prime Agricultural Soils?	Characteristics
Griswold loam; GwB/C/D2	49	Yes, where slopes <6%	Deep, well-drained soils in glaciated uplands formed on thick glacial till. Soils have medium fertility and moderate permeability and pose moderate to very severe hazard of erosion. Pose moderate limitation for development where steep slopes are not present.
Plano silt loam; PnB	40	Yes	Deep, well-drained and moderately well drained soils on glaciated uplands. High fertility, moderate permeability. Poses slight to moderate limitation for development. 155 bu/acre corn yield. Prime agricultural soils.
Troxel Silt Loam; TrB	11	Yes	Deep, well-drained and moderately well drained soils in drainageways and small draws. Poses severe limitation for development due to low bearing capacity and flooding. 145 bu/acre corn yield. Prime agricultural soils.
<i>Source: Dane County Soil Survey</i>			

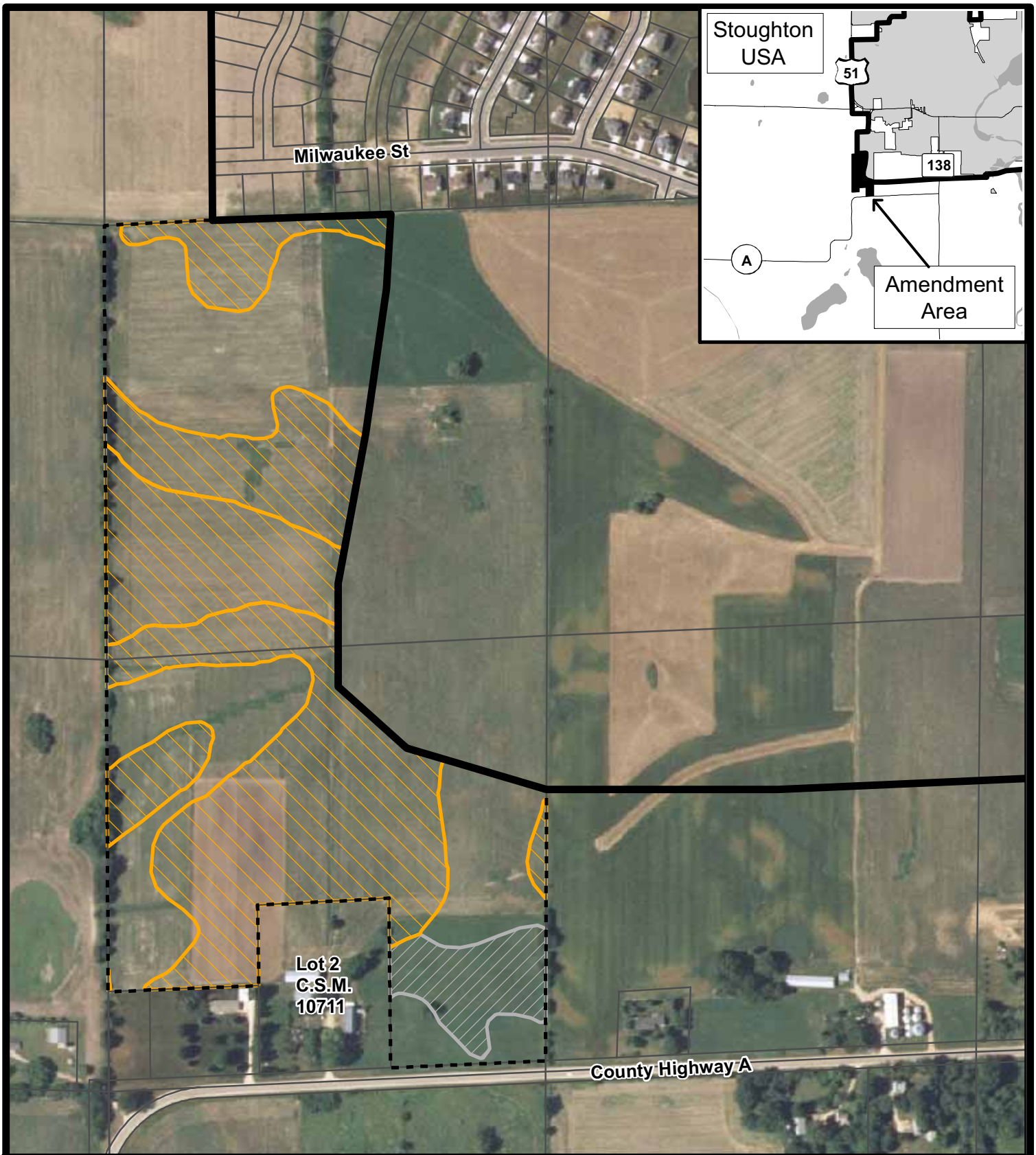
4. Consistency or Conflict With Adopted Plans and Policies

The Stoughton USA was established in 1977, and the environmental corridors were adopted in 1985. The urban service area was last amended in September 2006.

The proposed amendment is consistent with the City of Stoughton Comprehensive Plan which identifies this property as Planned Neighborhood.





The Stoughton USA has an estimated 2005 population of 13,070 and a 2030 population forecast of 19,160. The Stoughton Housing Unit and Land Area Analysis provides for a maximum urban service area of 4,750 acres. This represents a potential increase of 1,696 acres of developable land over the current urban service area size of 3,054 acres (including the September 2006 addition of approximately 10 acres). The proposed amendment would add 49.6 acres of developable land to the urban service area, well within the maximum allowable addition.

The land to be added to the urban service area is contiguous to the current urban service area and within 200 feet of existing City utilities, and is a logical expansion of the urban service area. The proposal in this request will add developable land to the urban service area to accommodate 169 additional housing units. The complete Nordic Ridge development totals approximately 70 acres, and is expected to be developed within the next seven years. Because the amendment involves less than 100 acres of developable land, no phasing of development is required.

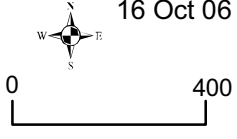


Map 4 - Soils

**Amendment
to the Stoughton
Urban Service Area,
City of Stoughton**

-  Prime Farmland (28.0 acres)
-  Severe Limitations to Development (2.7 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

The proposed amendment is consistent with most of the goals and policies of the *Dane County Land Use and Transportation Plan*. Table 3 presents the evaluation checklist for the proposed amendment regarding consistency or conflict with the 11 major goals of the *Plan*. The proposed amendment is supportive of the following three of the 11 goals of the *Plan*:

1. It promotes balanced communities with a mix of development by providing for 5.2 acres of planned unit development which the Stoughton Comprehensive Plan describes as including institutional, office, and neighborhood business uses.
2. It provides a range of safe and affordable housing choices by offering two-family and multifamily housing as well as single family housing.
3. It supports the development of a system of open space corridors by designating 0.9 acres of environmental corridors surrounding stormwater facilities within the amendment area, and an additional 2.5 acres in the existing USA.

The proposed amendment has offsetting effects for the goal of promoting compact urban development. Considered on its own, the amendment area has a proposed density of 5.33 units per acre and promotes compact urban development by exceeding the overall density of 5.13 in the Stoughton Urban Service Area. However, the overall plan for the Nordic Ridge development has a proposed density of 5.0 units per acre which is lower than the current USA density.

The proposed amendment is neutral with respect to another six goals of the *Plan*.

The proposed amendment conflicts with only one major goal: protecting agricultural lands by limiting non-farm development in agricultural areas. Fifty-six percent of the amendment area contains prime agricultural soils and is currently being farmed.

5. Proposed Urban Services

Public Water System. Stoughton water system includes five wells supplying a single pressure distribution system. The total pumping capacity is 4,815 gallons per minute (gpm). The North Elevated tank provides 300,000 gallons of storage, and the South Ground Reservoir provides 400,000 gallons of storage. The 2005 average daily water usage was 1,405,000 gallons and the maximum daily water usage was 2,368,000 gallons.

The proposed amendment is estimated to consume 37,000 gpd of potable water. Potable and fire fighting water will be supplied to the amendment area by looped water main from Milwaukee Street. No new equipment will be needed for the proposed USA expansion and the system can supply adequate pressure and capacity to provide 2,000 gpm for 2.5 hours during the peak hourly demand period for firefighting.

Wastewater. The Stoughton Wastewater Treatment Facility has a rated capacity of 1.65 million gallons per day (MGD). The 2005 average daily flow was 1.39 MGD, and the treatment plant has adequate capacity to treat the additional wastewater from the proposed development.

The proposed amendment is estimated to generate 34,000 gallons of wastewater per day. The USA expansion for Nordic Ridge is proposed to be served by a temporary sanitary sewer lift station with a forced main discharging to the sewer main on W. Milwaukee Street. The temporary sanitary sewer lift station is planned to be abandoned when gravity sanitary sewer service becomes available.

Table 3
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: Stoughton Urban Service Area Amendment

Applicant and Submittal Date: City of Stoughton, October 2006

Stormwater Management System. Stormwater management will be provided through two stormwater management facilities. One facility is proposed on the east side of the Nordic Ridge development, within the current urban service area. A second facility is proposed for the rest of the amendment located in the southwest corner of the development, within the amendment area. Stormwater management areas will be designated as environmental corridors, including 2.5 acres within the USA and 0.9 acres in the amendment area. The proposal does not show a connection between stormwater facilities and greenway environmental corridors.

In May of 2006, the City of Stoughton amended its Erosion Control and Stormwater Management Ordinance to remain as restrictive as the Dane County standards. The proposed development will be reviewed in accordance with the City of Stoughton Erosion Control and Stormwater Management Ordinance by Dane County Land Conservation, under a contractual agreement with the City.

Environmental Corridors. Environmental corridors of 0.9 acres within the amendment area and 2.5 acres within the existing USA are proposed for stormwater management facilities. There are two greenway environmental corridors in the current urban service area near the amendment area. The proposal does not clearly tie the stormwater management areas to these environmental corridors. The purpose of these greenway corridors is to provide a natural, low cost, and flexible stormwater conveyance system for the City. It is important for the stormwater management facilities to connect to these greenway corridors, or to their extensions.

Public Safety Services. The distance from the police, fire and EMS services to the proposed amendment area is approximately 1.8 miles. The Police Department has total of 26 full-time equivalent staff serving the City providing 2 officers per 1,000 residents, more than adequate for a city of this size. Police response time to the proposed amendment area is estimated to be four minutes from the police headquarters.

The Fire Department has three full-time personnel and 30 part-time volunteers. The Fire Department contracts with the Towns of Dunn, Dunkirk, Pleasant Springs, Albion, Porter and Rutland. The response time to the proposed amendment area is anticipated to be between four and six minutes.

The Stoughton Area EMS is staffed by 30 volunteer members. The area serviced is about 105 square miles including the Towns of Dunkirk, Dunn, Pleasant Springs and Rutland. The response time to the amendment area is anticipated to be five minutes.

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. The City of Stoughton has over 140 acres of parkland, three recreation trails and marked bike lanes. The proposed amendment includes 6.4 acres of parkland and an additional 0.9 acres of environmental corridors for stormwater facilities. The Nordic Ridge development includes a total of 7.2 acres of parkland and 3.4 acres of environmental corridor for stormwater facilities. The nearest existing City park is approximately 0.2 miles away, located at Harvest Lane, Hilldale Lane and Valley View Drive.

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 well documented 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 as well as with the long-term land use change to urban uses; and contaminants from landscaping, house keeping, street surfaces, and pets.

The City has updated its stormwater management ordinance to make it consistent with Dane County stormwater standards. This would provide adequate protection against short-term construction erosion impacts if the construction erosion control measures are aggressively enforced by the City Building Inspector. However, the standards would not protect adjacent downstream properties against increased flooding from larger storm events, and from increased runoff volumes. It is important that the stormwater plan for the proposed development maintain pre-development stormwater runoff rates for all storms up to the 100-year event.

Furthermore, because half of the amendment area drains to a closed pothole wetland immediately to the west of the amendment area, increased runoff volumes would cause flooding in neighboring parcel(s). It is crucial to include stable outlets in the stormwater plan for any closed basin that would receive runoff from the development.

Adverse impact from the proposed development on the groundwater should be minimal since the Dane County stormwater standard includes infiltration requirements, and because the development is not located in a sensitive, groundwater dependant area of the watershed. However, the area immediately to the west and south of the amendment area includes areas with seasonal flooding and shallow groundwater. Dramatically increased infiltration could result in local mounding of the water table and cause increased incidences of flooding.

The proposed amendment is expected to have negligible impacts on the water supply and the wastewater conveyance and treatment systems in the City of Stoughton.

The stormwater management standards proposed by the City would not adequately mitigate the expected impacts from this development. The City should work with the developer and the staff of the DCLCD and CAPD to evaluate possible solutions to the drainage issues of the site.

School System Impacts. The proposed amendment is in the Stoughton School District. The amendment area is anticipated to be developed with 169 housing units, adding an estimated 26 high school students, 13 seventh and eighth grade students, 13 fifth and sixth grade students, and 32 elementary students. The nearest school is Fox Prairies Elementary which is approximately 0.6 miles from the proposed development.

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 Stoughton Urban Service Area can expand up to a maximum of 1,696 developable acres by 2030. The *Water Quality Plan* does not provide for “no-growth” urban service areas if they fulfill the conditions, standards, and requirements of adding to the USA as outlined in the *Water Quality Plan*.

This amendment area is the only area adjacent to the Stoughton Urban Service Area which is in the Badfish Creek watershed. The Badfish Creek watershed does not create constraints to development in itself. However, the amendment area and its environs are in a poorly drained portion of the watershed, causing additional constraints to development and requiring comprehensive stormwater management planning prior to approval.

A detailed neighborhood plan is being developed for the Linnerud neighborhood in the northwest corner of the City, a newly annexed area of approximately 183 acres which is not currently included in the urban service area. This area is expected to include a mix of housing types as well as provide neighborhood shopping opportunities, employment opportunities, and educational facilities.

8. Controversies, Comments Received, Unresolved Issues

The Dane County Community Analysis and Planning Division will hold a public hearing on this amendment on November 16, 2006, at 4:30 p.m. at the Stoughton Public Safety Building, 321 S. Fourth St., Stoughton, Wisconsin. No controversies are noted. The Town of Dunkirk has been provided notice of all Planning Commission and Council meetings related to the proposed Nordic Ridge development.

9. Conclusions and Staff Recommendation

The proposal supports most of the goals and policies of the *Dane County Water Quality Plan*. The staff analysis finds that more information regarding stormwater management is needed to evaluate the adequacy of the plan to mitigate the adverse impacts of the development. Staff recommends continuation of the amendment review process and delay in approval of the amendment to allow the preparation of a stormwater and drainage concept plan for the amendment area. The concept plan should be developed through collaboration between the City of Stoughton staff, engineers for the developer, and the staff of DCLCD and CAPD.

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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19 October 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 Stoughton Urban Service Area Boundary and Environmental Corridors within the City of Stoughton.

Dear Mr. Mesbah:

No archaeological or burials sites have been reported for this area. On the basis of previous archaeological work in similar settings and considering the lay-of-the-land, no archaeological investigations are recommended for this area.

Under Wisconsin law, Native American burial mounds, unmarked burials, and all marked and unmarked cemeteries are protected from intentional disturbance. If anyone suspects that a Native American burial mound or an unmarked or marked burial is present in an area, the 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
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608-264-6496
johnbroihahn@wisconsinhistory.org
(asi searches/Dane/ Sun Prairie 8_17_6)