

**Staff Analysis of Proposed Amendment to the
Dane County Land Use and Transportation Plan, Farmland Preservation Plan and
Water Quality Plan to Revise the
Cross Plains Urban Service Area Boundary and Environmental Corridors**

1. **Applicant:** Village of Cross Plains

2. **Description of Proposal**

The Village of Cross Plains proposes to add six acres to the Cross Plains Urban Service Area, including 0.2 acre of existing development and 0.8 acre of environmental corridor, as indicated on Map 1. The proposed amendment would also result in the deletion of 1,700 linear feet of environmental corridor within the current urban service area (13.7 acres) and the designation of 1.6 acres of environmental corridors for park purposes. The total net developable acreage change is 17.1 acres. The net reduction in environmental corridors is 11.3 acres. The amendment area is located in the Village of Cross Plains, is zoned R-1 or C for single-family residential or commercial development, and is part of the Cedar Hill Plat (see Map 2). This amendment would allow development of 2 commercial lots and 11 residential lots in the new subdivision.

3. **Existing Environment**

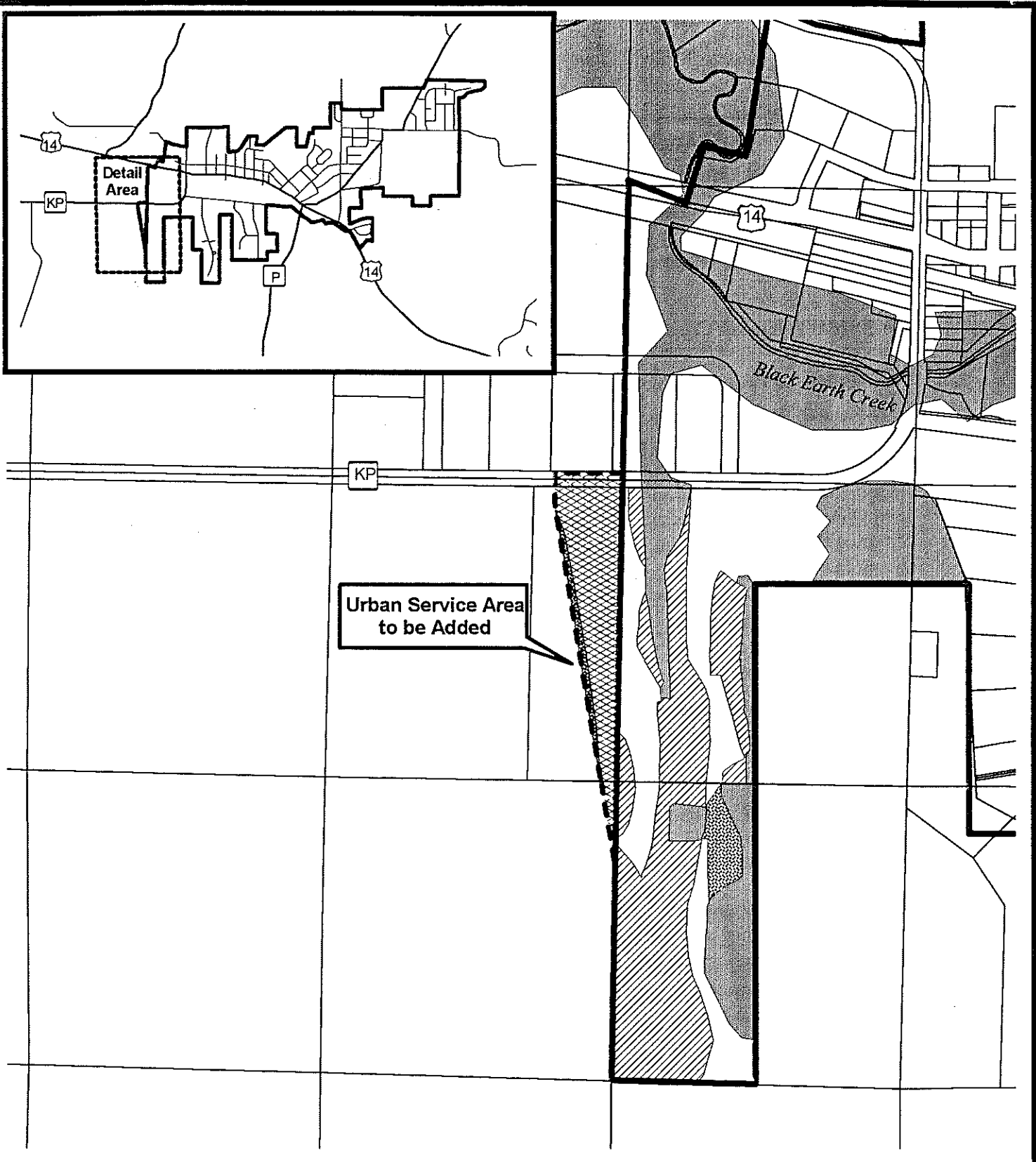
Land Use. The proposed amendment area is presently in open use (see air photo). Land uses adjacent to the proposed amendment are:

- North: Agriculture (Town of Cross Plains)
- East: Agriculture and proposed residential plat (Village of Cross Plains)
- South: Hillside and agriculture (Town of Cross Plains)
- West: Abandoned quarry (Town of Cross Plains)

Natural Resource Features. The Cross Plains Urban Service Area is situated in the Black Earth Creek Watershed in western Dane County. The geology and soils of the area are varied. The proposed service area addition consists of non-glacial stream sediment deposited by ancient rivers. The proposed development is located on the southwest of the urban service area in a narrow valley. An intermittent stream flows northerly along a ravine and discharges into Black Earth Creek, which passes through the Village from east to west 600 feet north of the proposed development. Black Earth Creek is a trout stream designated as an Exceptional Resource Water. There are no wetland or floodplain areas in the amendment area or the proposed development; however, the environmental corridor is proposed to provide a buffer strip along the 20% slope located on the western edge of the proposed amendment.






The depth to groundwater is generally less than 10 feet. Sandstone bedrock is over 50 feet deep in the service area addition.

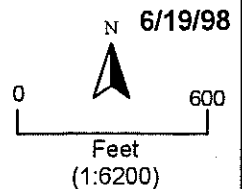
The major soil group within the proposed service area addition is Plano silt loam, which has slight limitations for development. The proposed environmental corridor is comprised of Seaton silt loam, which has severe limitations for development due to steep slope.



Map 1

**Cross Plains
Urban Service Area**

-  Proposed Urban Service Area
-  Existing Urban Service Area Boundary
-  Existing Environmental Corridor
-  Environmental Corridor to be Added
-  Environmental Corridor to be Deleted

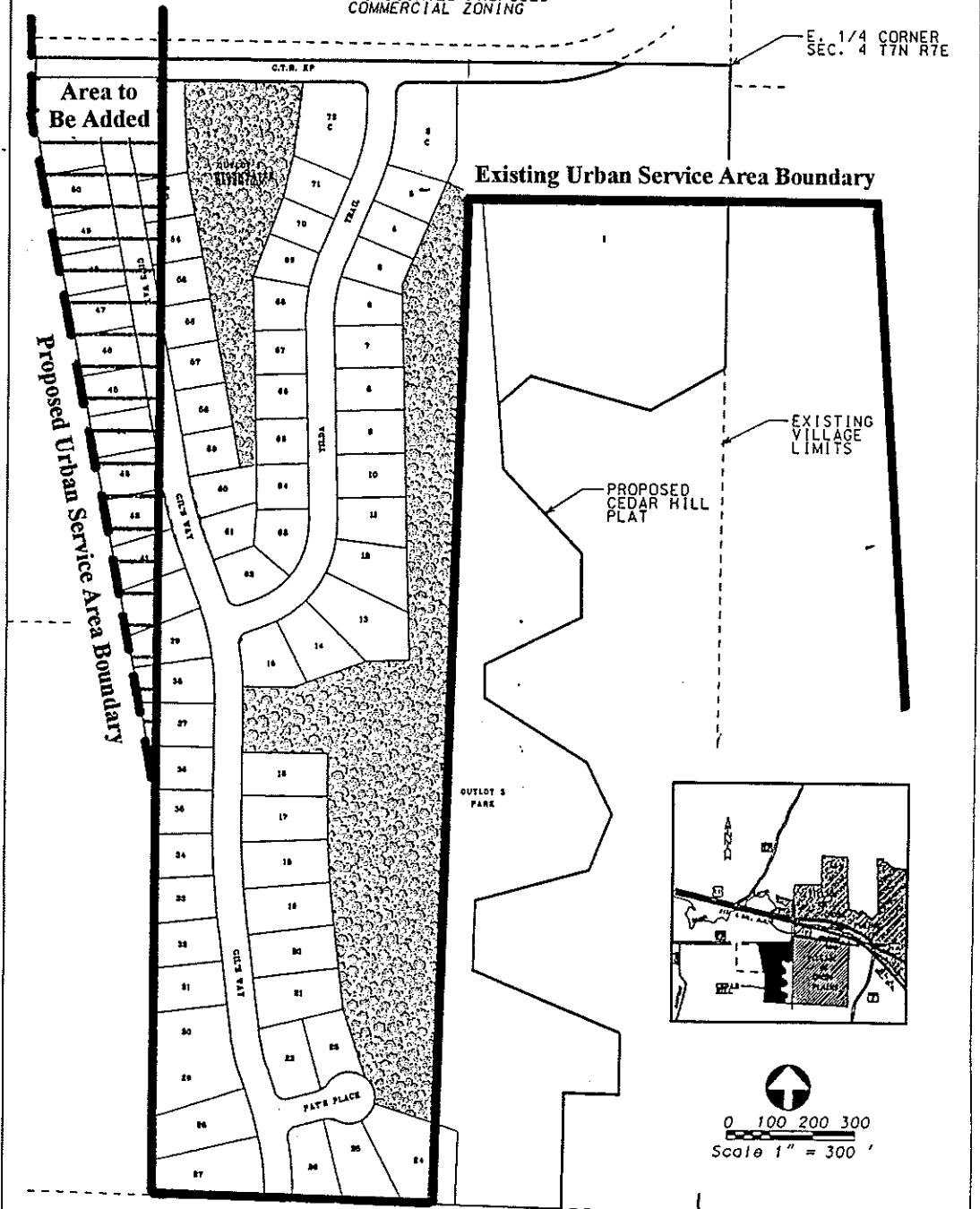


Prepared by staff
to the DCRPC.

Map 2

"C" INDICATES PROPOSED COMMERCIAL ZONING

E. 1/4 CORNER SEC. 4 T7N R7E



PROPOSED ADDITION TO VILLAGE OF CROSS PLAINS URBAN SERVICE AREA

Part of the NW 1/4 and the SW 1/4 of the SE 1/4 of Section 4, T7N, R7E, Village of Cross Plains, Dane County, Wisconsin, to-wit: Beginning at the east quarter corner of said Section 4; thence N89°43'04"W, 1306.30 feet to the point of beginning; thence S00°24'41"W, 1702.95 feet; thence N10°40'00"W, 392.09 feet; thence thence N10°23'00"W, 1201.09 feet; thence N00°16'56"E, 137.65 feet; thence S89°43'04"E, 300.59 feet to the point of beginning. Contains 6.37 acres.



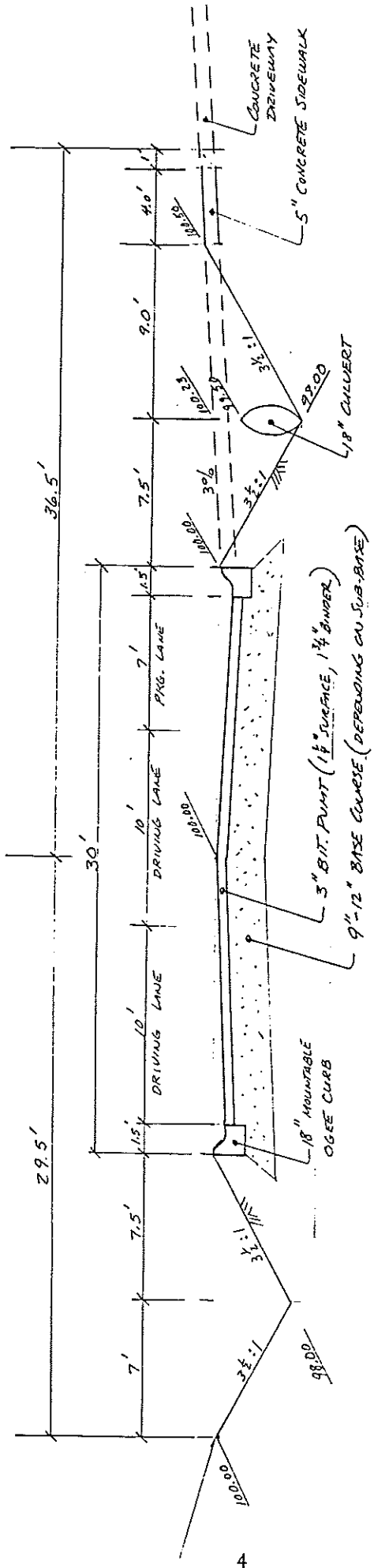
Proposed Environmental Corridor



D'ONOFRIO, KOTKE AND ASSOCIATES, INC.

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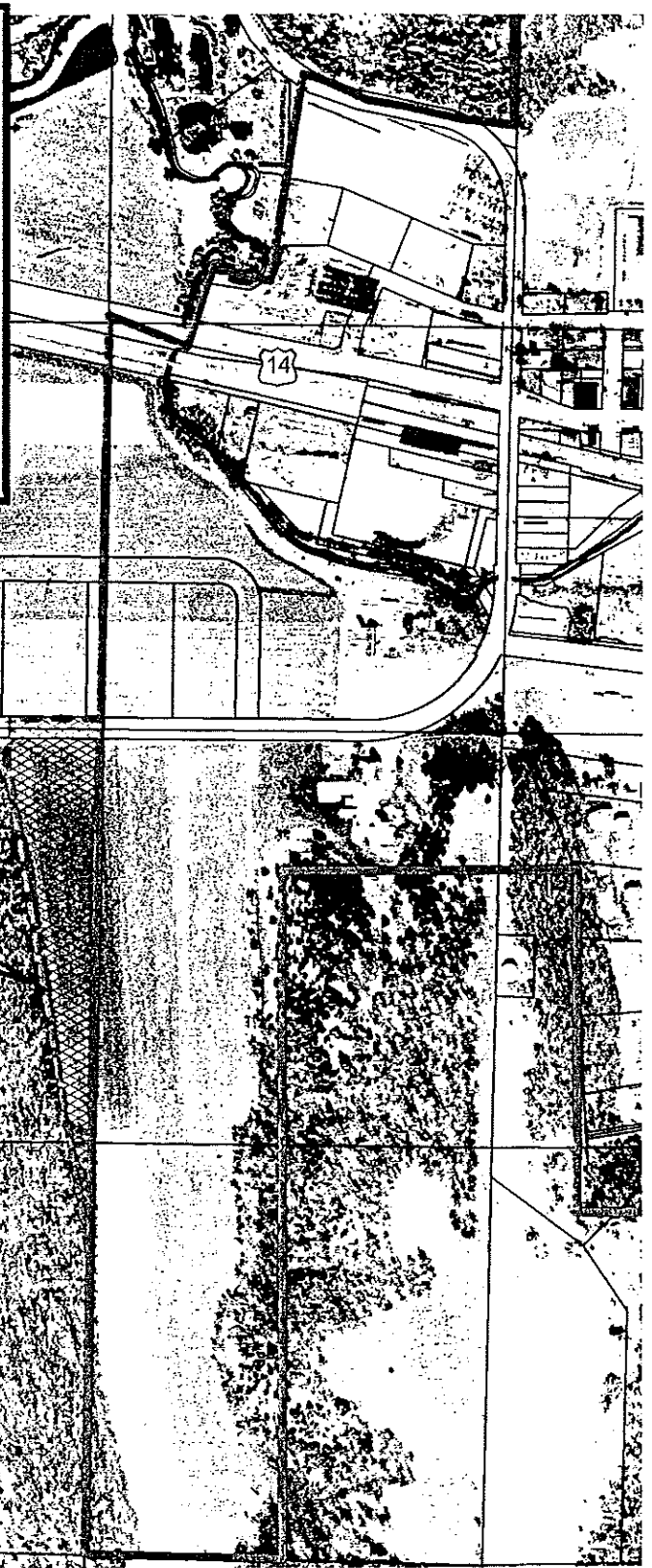
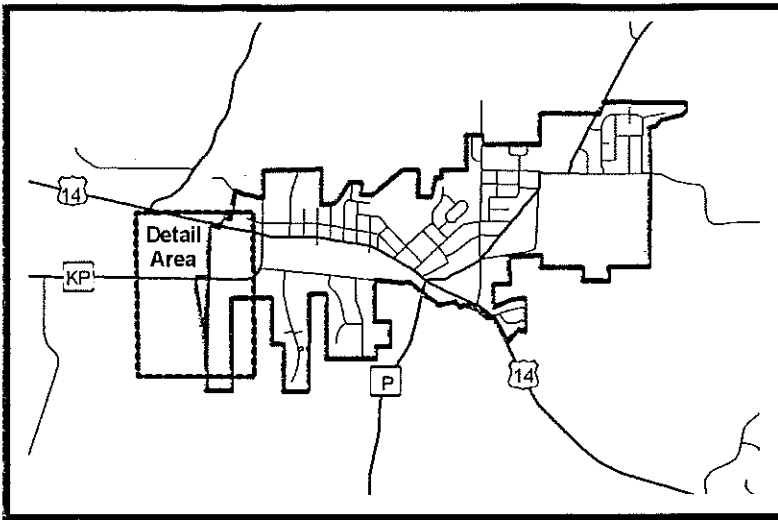
FN: 97-07-118
DATE: 5-15-98



CEDAR HILL, CROSS PLANS - TYPICAL STREET SECTION



66' R.O.W., 30' STREET
 PARKING ON 1 SIDE ONLY

SCALE: HORIZ 1" = 6'
 VERT 1" = 3'




**Cross Plains
Urban Service Area**

1995 Orthophotograph

-  Proposed Urban Service Area
-  Existing Urban Service Area Boundary

6/19/98

N



0 600

Feet
(1:6200)

Prepared by staff
to the DCRPC.

Historic and archeological information on file at the State Historical Society does not record pre-historic or historic cultural sites within the proposed amendment. Available information on endangered resources does not indicate the existence of any threatened or endangered species in the area.

4. Consistency or Conflict with Plans

The proposal is an amendment to the Village of Cross Plains Master Plan, adopted in May 1997. The Cross Plains USA was originally delineated in 1973 and environmental corridors were adopted in 1985.

The proposed amendment interrupts 1,700 linear feet of drainage-based environmental corridor in the current urban service area. This represents a major change to the environmental corridors of the Cross Plains Urban Service Area. In order to mitigate the negative impacts of the corridor interruption, the developer proposes to install stormwater quality improvement measures and maximize infiltration. These measures include an extended detention/infiltration basin combination which captures and treats all runoff from the proposed development. Grass swales are proposed to convey runoff from the development as well as flow from areas upstream of the development to the detention/infiltration basin. Furthermore, a retention basin is proposed to be located upstream of the development to capture and attenuate all runoff flowing down the ravine.

Table 1 summarizes the consistency of this proposal with the goals of the Vision 2020 *Dane County Land Use and Transportation Plan*. In nine categories, the proposal is relatively neutral with respect to the *Plan* goals. The proposal conflicts with the *Plan* goal for protection of agricultural lands because it is inconsistent with the *Dane County Farmland Preservation Plan*; since this area was planned for agricultural preservation in the Town of Cross Plains Land Use Plan and the amendment area soil is classified as prime agricultural soil.

In one category the proposal supports the goals of the *Land Use and Transportation Plan*. The proposed residential/commercial plat is adjacent to existing development.

In one category—concerning the goal of developing a system of open space corridors—the proposal contains offsetting effects. The proposal results in an 11.3-acre net reduction in environmental corridors. However, this is compensated by the dedication of 20 acres of park on the east edge of the plat. Approximately 12.5 acres of this park is located outside of the urban service area, and is consequently not designated as environmental corridors. Nonetheless, the park includes recreational trails and steep slopes and cliffs covered with mature trees, contributing to the goal of developing a system of open space corridors.

5. Description of Urban Services

Existing Transportation System. The proposed amendment to the Cross Plains Urban Service Area is located on the southwest side of the Village in the Cedar Hill plat. The amendment area includes 2 lots (1.3 acres) zoned for commercial use and 11 lots zoned for single-family residential use.

CTH KP, an east-west collector roadway, would provide access to the amendment area. According to the plat submitted with the amendment request, the two commercial lots would abut CTH KP, and the 11 single-family residential lots would be located along Gil's Way, a future village street which will extend south from CTH KP.

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 and neighborhoods with a mix of uses.			X		
Provide a range of affordable housing.			X		
Provide an integrated, all-mode transportation system.			X		
Concentrate employment and activity centers along transit corridors.			X		
Maintain Downtown Madison as the 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: Amendment to the Cross Plains Urban Service Area

Applicant &

Submittal Date: Village of Cross Plains, May 1998.

Bicycle travel in the amendment area is accommodated through shared use of roadways with vehicles.

Transit service is not available within the Village of Cross Plains and there are presently no sidewalks within the proposed amendment area.

Public Water System. A detailed municipal water network has not been submitted. Public water is provided through 8-inch mains along CTH KP. Two wells supply water to the system (with pumping capacities of 425 gpm and 650 gpm). An elevated water tank (located on the hilltop east of the plat) and one ground reservoir, with a total capacity of 550,000 gallons, provide sufficient storage and fire flows for the Cross Plains service area at present. Fire hydrants are included in the water distribution system. The proposed water distribution network follows the street layout and will loop at the south end of the plat, along the extension of Pat's Place, to the elevated water tank.

Wastewater. A detailed sanitary sewer network has not been submitted, but the proposed development will be served through gravity sewers connecting to a 10-inch sanitary sewer located along CTH KP. The Village of Cross Plains Treatment Facility, which would treat the wastewater generated in the proposed amendment area, has a design capacity of 0.45 million gallons per day (mgd), and is expected to receive 0.39 mgd of wastewater by the year 2020. The proposed amendment will have little effect on the projected flows and loadings to the treatment facility because the proposed amendment does not increase the overall population and flow forecast for the urban service area.

Stormwater Management System. Detailed stormwater management measures have been submitted as part of the proposal and as the result of consultation with DNR and RPC staff. The proposal includes a retention basin to the south and upstream of the proposed development, to capture and attenuate the runoff which flows through the ravine and into the development. Grass swales are proposed, in lieu of storm sewers, to convey all runoff and flow through the development to an extended detention basin followed by an infiltration/detention basin with prairie grass plantings. The infiltration basin would maximize groundwater recharge and minimize thermal impacts associated with wet pond alternatives. Such thermal impacts could prove harmful to the cold water fishery of Black Earth Creek.

Stormwater from the steep slopes and backyards along the eastern and western edges of the valley drain along lot lines to the grass swales along the front yards and is conveyed to the retention/infiltration basin.

Environmental Corridors. An 0.8-acre area has been designated as environmental corridor in the addition area to minimize erosion on steep slopes. A total of 12.1 acres of environmental corridors will be deleted in the portion of the proposed development which is currently in the urban service area.

Public Areas and Facilities. Twenty acres of park are provided in the Cedar Hill Plat together with three acres for stormwater detention.

Fire Protection. The Village of Cross Plains has a fire insurance rating of 5, adequate for a community of its size. The water system proposed for the amendment area provides fire hydrants and adequate flow and storage for fire-fighting purposes at the present time. The Village is

performing a water supply facilities planning study to identify measures necessary to provide adequate potable and fire-fighting water supply capabilities through year 2020. Fire protection is provided by the Cross Plains Fire Department, within a mile of the amendment area.

Emergency and Other Urban Services. Other urban services, including solid waste collection, will be provided through the Village's existing delivery system.

6. Impacts or Effects of Proposal

Surface and Ground Water Impacts. The potential impacts of urban development are to increase stormwater runoff rates and volumes, reduce groundwater recharge and introduce additional contaminants into the receiving bodies of water. This would occur from the expansion of impervious surfaces (i.e., parking lots and roofs). Development can also cause substantial soil erosion and off-site siltation from construction activities.

This development will be subject to the construction site erosion protection practices consistent with the Village ordinance. Strict adherence to these practices and aggressive enforcement would be needed to protect the water quality of Black Earth Creek and adjacent wetlands from construction erosion, especially because some of the proposed development is located on slopes between 12% and 20%.

Water quality protection measures have been outlined in the submittal. These include an extended stormwater detention basin with a water quality forebay, followed by a prairie grass infiltration basin to minimize the thermal impact of stormwater on the creek. The proposal also includes a retention pond upstream of the proposed development to capture and attenuate the runoff flowing down the ravine. Grass swales convey the flow from this retention basin to the downstream detention/infiltration basin. Flow through the swales will be slowed down by undersized culverts under driveways to reduce scouring and maximize infiltration. The proposed development will also contain a restrictive covenant which will require all rooftop runoff to be diverted to grassed areas. Finally, it is proposed to deep till the area (chisel plow to a depth of 2 feet or more) prior to the spreading of topsoil to maximize infiltration. These measures, in combination, serve to mitigate the surface and groundwater impacts of the proposed development and environmental corridor interruption.

Transportation System Impacts. The proposed amendment area includes 11 single-family lots and 1.3 acres of land zoned for commercial use. Depending on the type of commercial uses ultimately developed, the amendment area can be expected to generate approximately 450 to 830 vehicle trips per weekday when it is fully developed.

In 1996, average weekday traffic (ADT) on CTH KP near the proposed amendment area was 1,300. There is adequate capacity on CTH KP to accommodate the anticipated increase in vehicular traffic resulting from the proposed addition to the urban service area.

The Village of Cross Plains *Comprehensive Master Plan Update* (May 1997) includes several recommendations intended to address transportation system needs in the proposed amendment area.

For CTH KP, the plan recommends officially mapping 80 feet of right-of-way to reserve lands for future potential improvements such as medians, sidewalks and parking/bicycle lanes. The Cedar Hill Plat will dedicate 50 feet to the south half of the CTH KP right-of-way. The plan also recommends limiting the number of future private access points along CTH KP through the use of shared parking facilities between developments.

To accommodate bicycle travel, the plan includes a recommended network of bicycle routes and a set of guidelines regarding the design and location of on-street bikeways. As a designated bicycle route, the plan recommends that bicycle route signage and, possibly, bike lane striping be added along CTH KP.

The plan also includes a set of guidelines regarding pedestrian facilities. The plan recommends that sidewalks should be added along both sides of CTH KP, and along one side of Gil's Way. An illustration of a typical street section in the Cedar Hill plat that was submitted with the amendment request shows a sidewalk along one side of the street.

To accommodate future transit service, the plan recommends participation in regional rail corridor transportation planning and studies, and official mapping of a future commuter rail station and appropriate linkages to the Cross Plains central business district.

School System Impacts. The proposed development is in the Middleton–Cross Plains school district and would add nine new students.

7. Alternatives

This residential/commercial plat represents a logical and efficient extension of urban development in the area, and appears to be an appropriate land use for this location.

8. Controversies, Comments Received, Unresolved Issues

A public hearing before the Regional Planning Commission is scheduled for June 25, 1998. No controversies are noted and no comments have been received to date.

9. Conclusions and Staff Recommendations

The proposed amendment is generally consistent with adopted plans and policies and with criteria for urban service area amendments. Staff recommends adoption of Resolution RPC No. 843, subject to the following conditions:

- Stormwater management practices to include:
 1. maximizing infiltration by directing roof runoff to grassy areas, and chisel plowing the graded area before spreading topsoil;
 2. installing a retention pond, upstream of the development, to retain the flow in the ravine from upstream areas;
 3. installing open-channel grass swales to convey runoff through the proposed development; and
 4. installing an extended detention/infiltration basin to capture and treat all runoff from the development before discharge to Black Earth Creek; and
 5. strict adherence to construction site erosion protection practices and aggressive enforcement of the Village construction erosion ordinance.