Staff Analysis of Proposed Amendment to the *Dane County Land Use and Transportation Plan* and *Water Quality Plan*, Revising the Central Urban Service Area Boundary and Environmental Corridors in the North Stoner Prairie Neighborhood of the City of Fitchburg

1. **Applicant:** City of Fitchburg

2. **Description of Proposal**

   **Amendment Area.** The City of Fitchburg requests an amendment to the Central Urban Service Area adding the North Stoner Prairie Neighborhood, north of Lacy Road along both sides of Seminole Highway, in the City of Fitchburg. The amendment adds 331.4 acres to the Central Urban service area including 64.8 acres proposed as environmental corridors and 42.1 acres of existing development comprised of 0.9 acres of existing residential use, 20.7 acres in mineral extraction, 3.5 acres in manufacturing use, 3.0 acres of school property, and 14.0 acres of existing right-of-way and utilities. The amendment area is primarily in agricultural use, with 2 single family residences on 0.9 acres and a quarry on 20.7 acres. The amendment would add 224.5 developable acres. [See: Map 1 and Map 2; Table 1]

   **Proposed Development.** The amendment area is proposed to include residential, industrial and business uses in addition to Parks and conservancy areas and wetlands and stormwater facilities in environmental corridors. The residential component consists of 40.7 acres proposed for a variety of residential uses including low and medium density residences. The low density development will consist of up to 42 single-family residences averaging 3 units per acre and the medium density will be up to 92 single- and multi-family units averaging 3 to 6 units per acre. The amendment area is anticipated to accommodate an estimated 344 residents including 64 school-aged children. The residential land uses are planned for the eastern portion of the amendment area, east of Seminole Highway. The lower density proposed for the residential development in the amendment area is due to adjacent low density neighborhoods and the City's expectation that the land south of the amendment area will retain a rural nature.

   Approximately 121.9 acres in the western portion of the amendment area are planned for future general industrial uses such as clean production, processing, packaging, offices, and warehouse/distribution. Another 45.5 acres of the amendment area are planned for commercial/industrial uses such as offices, research and development, specialized manufacturing, biotechnology businesses, services, health and fitness, banks, financial institutions, and accessory uses for those working in the neighborhood. These areas are to serve as transitions between the more intensive general industrial uses and the lower density residential areas east of Seminole Highway.

   Business uses are planned for approximately 11.2 acres east of the Badger State Trail and west of Seminole Highway, in the southern half of the amendment area. The City envisions businesses that will provide a visual entrance to the neighborhood from the west, east and south, such as a food co-op, coffee shop, bike store, or other business that can mark the transition of usage from agriculture to urban.

   Approximately 24.4 acres are planned for park areas for recreational purposes and conservancy areas to protect natural resources. The three acres of the existing school site are also included in this category. Approximately 16.9 acres of park and conservancy areas will be included in environmental corridors. Another 47.9 acres will be designated as environmental corridors to protect wetlands and stormwater management facilities.

   Road right-of-way currently accounts for approximately 14.0 acres of the amendment area, and an additional 25.8 acres of roadways are planned. [See: Map 3 and Map 4]
Map 1 – North Stoner Prairie
Map 2 – Site Aerial (2013)

Amendment to the Central Urban Service Area and Environmental Corridors in the City of Fitchburg
Table 1 – Central Urban Service Area, North Stoner Prairie, Requested by the City of Fitchburg

<table>
<thead>
<tr>
<th>Proposed Land Use</th>
<th>Density (units/acre)</th>
<th>Total (ac.)</th>
<th>% of Total</th>
<th>Housing Units</th>
<th>No. of Persons</th>
<th>No. of Students</th>
<th>Existing Develop.</th>
<th>Environ. Corridor</th>
<th>Developable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>3.3</td>
<td>40.7</td>
<td>12%</td>
<td>134</td>
<td>344</td>
<td>64</td>
<td>0.9</td>
<td>Source: City of Fitchburg Submittal and Capital Area Regional Planning Commission</td>
<td></td>
</tr>
<tr>
<td>Residential Total</td>
<td>3.3</td>
<td>6.9</td>
<td>12%</td>
<td>134</td>
<td>344</td>
<td>64</td>
<td>0.9</td>
<td></td>
<td></td>
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<tr>
<td>Mineral Extraction</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Industrial - General</td>
<td>121.9</td>
<td></td>
<td>37%</td>
<td></td>
<td></td>
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<tr>
<td>Industrial - Commercial</td>
<td>45.5</td>
<td></td>
<td>14%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>11.2</td>
<td></td>
<td>3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institutional (school yard)</td>
<td></td>
<td></td>
<td>0%</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Park and Conservancy</td>
<td>24.4</td>
<td></td>
<td>7%</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland/Stormwater Mgmt</td>
<td>47.9</td>
<td></td>
<td>14%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-O-W/Trails/Utilities</td>
<td>39.8</td>
<td></td>
<td>12%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>331.4</td>
<td>100%</td>
<td></td>
<td>134</td>
<td>344</td>
<td>64</td>
<td>42.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: City of Fitchburg Submittal and Capital Area Regional Planning Commission
Natural Resources.

The amendment area is primarily in an internally drained basin that occasionally overflows into the Allen Creek/Middle Sugar River Watershed. The southwest corner of the amendment area contains 26 acres that drain to the upper Sugar River watershed and 58 acres in the northeast portion of the amendment that drain to Nine Springs Creek. [See: Map 8]

Nine Springs Creek

Nine Springs Creek is six miles long and intermittent until just east of Fish Hatchery Road where it picks up flow from the springs that give the stream its name. The creek empties into the Yahara River just above Upper Mud Lake. Portions of the stream have been ditched and straightened, and the stream runs through an urbanizing area. Channelization has resulted in increased summer water temperatures, reduced habitat, and increased sedimentation and excessive growth of aquatic plants. Urban storm water from the cities of Fitchburg and Madison also delivers pollutants to the creek. The creek could function as a warm water sport fishery if restoration measures are undertaken. Nine Springs Creek is included on the state’s 303(d) Impaired Waters list as well as the Rock River Basin Total Maximum Daily Load (TMDL) project as a first priority stream due to phosphorus and sediment loading degrading habitat and causing elevated temperatures and low dissolved oxygen levels in the stream. The WDNR has designated the creek as being a Limited Forage Fishery (LFF) with the potential of becoming a Warm Water Sport Fishery (WWSF) if these impairments can be removed. Nine Springs Creek is 0.075 mg/L. Summary of USGS data for Nine Springs1 indicates that mean baseflow concentrations have shown a downward trend in phosphorus, showing some improvement (ranging from 0.20 mg/L in 1979 to 0.11 mg/L in 2010). However, minimum dissolved oxygen levels show a steady decline (from 5.3 mg/L to 2.7 mg/L over the same time period) prompting the 303d Impaired Waters Listing.

Nine Springs Creek is rated fair using the Hilsenhoff Biotic Index (HBI) (RPC 2004). This rating is calculated by ranking the sensitivity of aquatic macro invertebrates. A rating of fair indicates a fairly significant level of organic pollution.

Swanson and Bahr (2004) found that the springs feeding Nine Springs Creek produce a consistent flow and concluded that this flow is due to a “layered aquifer system that includes high permeability features” (p.756). They also concluded that the “steady nature of spring flow would suggest that the effective aquifer, or flow path, length is rather long” (p. 754). Upon modeling the spring flow they noted that the actual flow conditions were only met in models with high permeability zones which would indicate relatively high flow between layers. The principal groundwater concern is the decrease in groundwater levels due to urban pumping and increasing numbers of impervious surfaces that limit surface water infiltration, resulting in reduced baseflow in the stream.

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1 Source: CARPC cooperative water resources monitoring program and U.S. Geological Survey.
Allen Creek and Middle Sugar River

The Allen Creek Middle Sugar River watershed begins in the west central area of the city and flows south into Green County east of the Village of Belleville. The dominant land use in the watershed is agriculture, although some low intensity urban development exists in the upper reaches of the watershed. Little is known about the existing water quality of streams in this part of the watershed. An intermittent stream begins in section 20, just south of Whalen Road near the former Illinois Central Rail line (now Badger Trail). This unnamed stream flows to Lake Harriett in the Town of Oregon. Lake Harriett lacks an outfall and water level would need to rise about ten feet before overflowing and draining to Story Creek to the south. Water quality in the lake is fair and agricultural runoff poses the most significant problem. Winterkill occurs and the fishery is not actively managed. Story Creek is a Class II coldwater fishery that begins in section 17 in the Town of Oregon and flows approximately 11 miles to join the middle portion of the Sugar River in Green County.

Badger Mill Creek

Badger Mill Creek begins in a wetlands complex along USH 18-151 between Madison and Verona on the Fitchburg city border. It flows about 5 miles to join the Upper Sugar River south of the 18-151 Verona bypass. It drains an area of about 34 sq. mi., approximately 2.5 sq. mi. of which is located in the City of Fitchburg. The watershed is intensely developed or rapidly developing. The most significant threat to water quality in Badger Mill Creek is from urban stormwater runoff from old development in the watershed with substandard stormwater management. Impervious surfaces are estimated to cover about 20 percent of the Badger Mill drainage area. These areas are subject to varying levels of stormwater management as standards have improved over the last decade. Until recently, new development projects were required to meet strict infiltration standards as well as temperature controls for coldwater streams. In July 2013 the approved state budget changed water quality rules setting NR 151 as a maximum standard (as opposed to a minimum previously), nullifying local standards that exceed NR 151. Voluntarily retrofitting stormwater management practices in areas built before the current standards were put in place, as well as promoting enhanced standards (considering the recently relaxed water quality requirements), presents significant opportunities to improve water quality and the health of Badger Mill Creek. There are 16.4 acres in the southwest corner of the proposed amendment area draining to Badger Mill Creek.

Soils and Geology

The Land Type Associations of Wisconsin classifies the amendment area as being in the West Johnston- Milton Moraines. Rolling hummocky moraine and outwash plain complex with scattered bedrock knolls. Soils are predominantly well drained silt and loam over sandstone or dolomite calcareous sandy loam till, or calcareous gravelly sandy outwash. Surface elevations in the amendment area range from around 850 feet to 1000 feet. [See: Map 5] According to the Natural Resource Conservation Service (NRCS) Soil Survey of Dane County, the majority of soils in the amendment area are in the Dodge-St. Charles, McHenry association. These soils are primarily moderately well drained and well drained, deep silt loams. Table 3 shows detailed classification for the major soils in the amendment area. Table 4 shows important soil characteristics for the amendment area. [See also: Map 6]
## Table 3
### Soils Classification

<table>
<thead>
<tr>
<th>Soil</th>
<th>% of Area</th>
<th>General Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dodge silt loam; DnC2</td>
<td>1%</td>
<td>Deep, well-drained, gently sloping and sloping soils on glaciated uplands. Soils have high fertility, moderate permeability, and a moderate to severe hazard of erosion. Poses slight to moderate limitations for development due to low bearing capacity.</td>
</tr>
<tr>
<td>Dunbarton silt loam; DuD2</td>
<td>3%</td>
<td>Shallow, well-drained, gently sloping to steep soils on uplands. Soils have low fertility, moderately slow permeability, and a severe to very severe hazard of erosion. May pose severe limitations for development due to shallow bedrock.</td>
</tr>
<tr>
<td>Kegonsa silt loam; KeB</td>
<td>5%</td>
<td>Moderately deep soil, nearly level and gently sloping on benches on outwash plains. Soils have medium fertility, moderate permeability a moderate hazards of erosion. Posess slight limitations to development due the rapid permeability of the substratum.</td>
</tr>
<tr>
<td>Orion silt loam, wet; Os</td>
<td>4%</td>
<td>Deep, somewhat poorly drained, nearly level soils on flood plains and narrow stream bottoms. Soils have high fertility, moderate permeability, seasonal high water table, and severe hazard of flooding. Poses very severe limitations for development due to seasonal high water table and very low bearing capacity.</td>
</tr>
<tr>
<td>Plano silt loam; PnB, PnC2</td>
<td>2%</td>
<td>Deep, well drained and moderately well drained, nearly level to sloping soils on glacial uplands. Soils have high fertility, moderate permeability, and a slight to severe hazard of erosion. Poses slight to moderate limitations for development due to low bearing capacity.</td>
</tr>
<tr>
<td>Plano silt loam, gravelly substratum; PoA, PoB</td>
<td>58%</td>
<td>Deep, well drained and moderately well drained, nearly level to sloping soils on benches in stream valleys. Soils have high fertility, moderate permeability, and a slight to moderate hazard of erosion. Poses slight to moderate limitations for development due to low bearing capacity.</td>
</tr>
<tr>
<td>Quarry; QUA</td>
<td>2%</td>
<td>Quarry</td>
</tr>
<tr>
<td>Ringwood silt loam; RnC2</td>
<td>&lt;1%</td>
<td>Deep, well drained, gently sloping to sloping soils on glaciated uplands. Soils have high fertility, moderate permeability, and a moderate to severe hazard of erosion. Poses slight to moderate limitations for development due to low bearing capacity and slopes.</td>
</tr>
<tr>
<td>Rockton silt loam; RoB, RoC2</td>
<td>7%</td>
<td>Moderately deep, well-drained, gently sloping to moderately steep soils on dolomite controlled uplands. Soils have medium fertility, moderate permeability, and a severe hazard of erosion. Poses moderate to severe limitations for development due to shallow bedrock.</td>
</tr>
<tr>
<td>Sogn silt loam; SoD</td>
<td>1%</td>
<td>Very Shallow excessively drained gently sloping to very steep soils on dolomite controlled uplands. Soils have very low fertility, moderate permeability. Possess severe limitations for development due to shallow dolomite bedrock.</td>
</tr>
<tr>
<td>St. Charles silt loam; ScB</td>
<td>1%</td>
<td>Deep, well drained and moderately well drained, nearly level to moderately steep 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.</td>
</tr>
<tr>
<td>Troxel silt loam; TrB</td>
<td>1%</td>
<td>Deep, well drained and moderately well drained, gently sloping soils in draws, on fans, and in drainageways. Soils have high fertility, moderate permeability, a moderate hazard of erosion, but are subject to flooding. Poses severe limitations for development due to low bearing capacity and frequent flooding.</td>
</tr>
<tr>
<td>Virgil silt loam, gravelly substratum; VwA</td>
<td>5%</td>
<td>Deep, somewhat poorly drained, nearly level and gently sloping soils on convex benchlands on outwash plains. Soils have high fertility, moderately slow permeability, and a moderate hazard of erosion. Poses severe limitations for development due to seasonal high water table and low bearing capacity.</td>
</tr>
<tr>
<td>Whalan silt loam; WxB</td>
<td>10%</td>
<td>Moderately deep, well drained, gently sloping soils on dolomite controlled uplands. Soils have medium fertility, moderate permeability, and severe hazard of erosion. Poses severe limitations for development due to shallow bedrock.</td>
</tr>
</tbody>
</table>
### Table 4
Soils Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Soil Map Symbols</th>
<th>% of Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prime Agricultural Soils</td>
<td>KeB, PnB, PoA, PoB, RoB, ScB, TrB</td>
<td>73%</td>
</tr>
<tr>
<td>Hydric Soils (Indicates potential and restorable wetlands)</td>
<td>Os, TrB, VwA</td>
<td>10%</td>
</tr>
<tr>
<td>Soils with Seasonal High Water Table &lt; 5 ft.</td>
<td>Os, PnC2, ScB, TrB, VwA</td>
<td>12%</td>
</tr>
<tr>
<td>Soils Associated with Steep Slopes</td>
<td>DuD2</td>
<td>3%</td>
</tr>
<tr>
<td>Soils Associated with Shallow Bedrock &lt; 5 ft.</td>
<td>DuD2, RoB, RoC2, SoD, WxB, WxC2</td>
<td>21%</td>
</tr>
<tr>
<td>Poorly Drained Soils</td>
<td>Os</td>
<td>4%</td>
</tr>
<tr>
<td>Best Potential for High Rates of Infiltration (3.6” / hr.)</td>
<td>TrB</td>
<td>1%</td>
</tr>
</tbody>
</table>
Groundwater
The depth to groundwater is over 95 feet according to the upper aquifer contours in the 2014 WGNHS groundwater model. There are soils associated with seasonal high groundwater near the wetland located near the center of the amendment area. [See: Map 7]

Wetlands
The Wisconsin Wetland Inventory indicates two wetlands within the amendment area. A preliminary assessment of the site during the creation of the plan by ECO-Resource Consulting, LLC found evidence of a third wetland. A full wetland determination is needed before development occurs. All of the wetland features in the amendment area have been highly degraded by farming activities.

Wetland 1 exists in low portion of the occurs in the closed depression west of the Badger State Trail, in the southern half of the amendment area. This depression collects surface drainage from surrounding areas and has frequently been wet enough to interfere with cropping. Farmers constructed a ditch many years ago to use as a sump for pumping water from this area south over Lacy Road. Cultivation occurs up to the spoil banks adjacent to the ditch. Vegetation in the ditch includes invasive reed canary grass, as well as smartweed and Canada goldenrod typical of disturbed environments. Seven test pits were excavated in and near the ditch. Mottling, indicative of hydric soils, was observed in the clay soil in the bottom of the ditch, while soil pits in the cropped field to the east and west of the ditch encountered loamy soils to a depth of at least 20 inches, with no hydric indicators. As such, the reconnaissance level evaluation indicates that regulatory wetland occurs only within the excavated ditch and not in the rest of this closed drainage depression.

Wetland 2 lies on the east side of Seminole Highway in the northern half of the amendment area. The small closed depression is farmed during dry years. At the time of observation in November 2012, conditions were dry and the field had recently been plowed.

Wetland 3 is located on the east side of Seminole Highway in the northern half of the amendment area. The small closed depression is farmed during dry years. At the time of observation in November 2012, conditions were dry and the field had recently been plowed.

The buffers for the three wetlands area shown on Map 2. The three wetlands are currently in a highly disturbed state due to farming practices. Proposed vegetative buffers of 75-feet meet the Environmental Corridors requirements of the Dane County water Quality Plan. Wetland 1 has a much larger environmental corridor associated with it as the area also includes proposed stormwater management facilities.

Forested Land
A reconnaissance level evaluation of woodlands and other upland habitats was conducted by Eco-Resource Consulting, LLC during development of the North Stoner Prairie Neighborhood Plan. This evaluation included observations on the presence and type of mature trees, and the diversity and quality of tree and understory species. The most extensive woodland in the amendment area is located in the far southwestern corner of the Area on the Payne and Dolan property. Half or more of this woodland is planned for removal by a current mining operation, with the southern portion along Lacy Road to remain. This area consists of a dry-mesic woodland with large bur, white, and black oaks, plus mature shag bark and bitternut hickory trees. Numerous bur oaks have a diameter of greater than 36 inches. The shrub and herbaceous layers are dominated by invasive species. Other woodland areas in the amendment area are smaller and are primarily along property lines. Interspersed large bur oaks occur in these areas, however many of them are in declining health.
Endangered, Threatened and special Concern Species

The North Stoner Prairie Neighborhood Plan indicated no known endangered, threatened, and special concern species are located in the amendment area.

Internally drained Basin

The majority of the site is internally drained with an overflow to the south during extreme events. From a hydrologic perspective, closed basins often possess significant seasonal and inter-annual variability in water levels. The only mechanisms for water to leave the basin under average rainfall conditions are by infiltration and evapotranspiration. These two processes can be quite slow compared to watershed runoff entering the basin. For example, it might take weeks for the pond to infiltrate and evaporate runoff from a single storm event that may have lasted only several hours. The vegetation communities that often inhabit these glacial depressions, which are wet in many years but dry up during periods of drought, are sometimes referred to as prairie pothole communities.

Montgomery and Associates conducted a thorough hydrologic investigation of the internally drained basin that included monitoring of groundwater levels and computer modeling. They concluded that the internally drain area would not overflow to the south during back to back 100-yr storms. This is the equivalent of 12 inches of rain in 48 hours. The current pumping regime is in place to protect crops and depending on the farm management decisions pumps water over Lacy road and into the Allen Creek watershed. The yearly flow volumes are nearly impossible to quantify as they are dependent on water management decisions made by the land owner and not measured.

Archaeology

The Wisconsin State Historical Society (WSHS) reviewed the amendment location and found no previously recorded archaeological sites or cemeteries within the proposed boundaries of the amendment. However, an examination of the wider area shows a number of sites, some potentially significant, found just west of the proposed amendment area near USH 151. Because the amendment area is just a short distance away and contains a similar combination of outwash deposits/former wetlands and higher landforms, WSHS recommends a limited archaeological survey be conducted within the area, focusing in particular on the terraces and landforms at the boundary between the till and outwash deposits. The survey should include area sufficient to identify sites on higher ground bordering the outwash plains. Three copies of the survey report should be sent to CARPC.

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 Wisconsin Historical Society should be notified. If human bone is unearthed during any phase of a project, all work must cease, and the Wisconsin Historical Society must be contacted. Work cannot resume until the Burial Sites Preservation Office gives permission. (See WSHS response letter, attached)
Map 5- Elevations

Elevations
Amendment to the Central Urban Service Area and Environmental Corridors in the City of Fitchburg

Prepared by staff of the CARPC.
Map 6- Soil Type

Amendment to the Central Urban Service Area and Environmental Corridors in the City of Fitchburg

Prepared by staff of the CACPC.
Map 7 – Potential Seasonal High Groundwater and Shallow Bedrock

Potential Seasonal High Groundwater and Shallow Bedrock

Amendment to the Waunakee Urban Service Area and Environmental Corridors in the City of Fitchburg

5 August 2014

Depth to Bedrock
- < 5 ft

High Water Table Depth
- 0 to 3
- 3 to 5

Prepared by staff of the CARPC.
Map 9 - WGNHS Groundwater Recharge Rates

Pre-Development Groundwater Recharge
from the Wisconsin Geological and Natural History Survey's 2009 Report, Groundwater Recharge in Dane County, Wisconsin, Estimated by a GIS-Based Water Balance Model

SWB Recharge (Inches / year)

Prepared by staff of the CARPC.
Map 10 - Groundwater Flow
**Land Use.** The majority of the amendment area is in agricultural use, including one farmhouse. There are two existing residences on 0.9 acres, a quarry on 20.7 acres in the western end of the area, 14 acres of existing right-of-way, and small portions of a manufacturing use and a school site extend into the amendment area. The area also contains open lands, and woodlands in the southwest corner.

Land uses surrounding the amendment area are as follows:

- **North:** Commercial, Extractive, Industrial, Residential (City of Fitchburg)
- **South:** Agriculture, Extractive, Residential (City of Fitchburg)
- **East:** Agriculture, Institutional (Verona School District—City of Fitchburg)
- **West:** Extractive, Woodlands (City of Fitchburg)

**Transportation System.** The major roadways serving the amendment area are Seminole Highway, a two-lane minor arterial and Lacy Road, a two-lane urban collector that forms the southern boundary of the amendment area. Verona Road (USH 18/151), a four-lane principal arterial, and Fitchrona Road, a two-lane urban collector, are located west of the amendment area. McKee Road (CTH PD), a four-lane principal arterial, is located north of the amendment area. The Badger State Trail transects the amendment area just west of Seminole Highway and provides direct access for pedestrians and bicyclists.

The City of Fitchburg contracts with Metro Transit for transit service. The closest bus stop is located approximately 0.3 miles north of the amendment area, at the intersection of Market Place Drive and Executive Drive (Route 59). Weekend and holiday service only is available via Route 59, which connects the West Transfer Point and Allied Drive area to the AMC Star Theatre and Super Target commercial areas. The Madison Area Transportation Planning Board’s Rideshare Etc. Program provides ride-matching services for individuals interested in car- or vanpooling. Dane County contracts with private providers, Transit Solutions and We Care Transportation, for limited group ride service for the elderly and persons with disabilities. The routes serve trips to nutrition sites, senior center activities, adult day care and shopping.

The section of Lacy Road within the amendment area currently has a rural cross-section without sidewalks. It has paved shoulders east of Seminole Highway. Lacy Road is considered moderately suitable for bicycling due to the paved shoulders east of Seminole Highway and lower traffic volumes west of Seminole Highway. The developed section of Seminole Highway north of the ATC transmission line easement contains bike lanes and a multi-use path on the west side that connects over to the Badger State Trail to the west. The section of Seminole Highway located south of the ATC transmission line easement, between Schumann Drive and Lacy Road, was reconstructed in 2013 and contains wide paved shoulders. It is still only moderately suitable for bicycling due to the traffic speeds and volumes, particularly during peak commute times. Local streets serving the residential neighborhood immediately north and east of the amendment area, east of Seminole Highway, do not have sidewalks. A pathway that connects Schumann Drive to Stoner Prairie Elementary School and Savannah Oaks Middle School is located along the eastern border of the amendment area.
4. Consistency or Conflict With Adopted Plans and Policies

**Consistency With Plans.** The proposed addition to the Central Urban Service Area is entirely within the City of Fitchburg. The City of Fitchburg Comprehensive Plan includes a policy that in no case shall there be more than 1,875 acres of available developable land in the CUSA. This limit is determined by 20 years plus a 5-year flexibility factor at a rate of 75 acres per year – the maximum average annual development as determined by the Comprehensive Plan. If both the North Stoner Prairie and Northeast Neighborhood amendment areas are added to the Central Urban Service Area, the resulting developable acreage added to the CUSA in Fitchburg brings the total very close to the self-imposed cap.

The City estimates that there are 1,126 acres of available developable land in the CUSA in Fitchburg, according to a June 1, 2013 analysis. The City notes in the applications additions of 246.6 available developable acres in the North Stoner Prairie amendment and 498.4 available developable acres in the Northeast Neighborhood, bringing the total to approximately 1,871 developable acres – just under the 1,875 maximum identified in the Comprehensive Plan.

CARPC’s identification of “developable acres” differs from the City of Fitchburg calculations of “available developable land”. The CARPC calculation relies on land use identified in the latest land use survey (2010) and estimates developable acres in urban service areas by identifying land that is not in developed land use categories and not in undevelopable categories and does not take into account availability or incorporate local knowledge of conditions for development. (CARPC calculations identify the North Stoner Prairie amendment as adding 224.5 developable acres to the CUSA. The Northeast Neighborhood amendment application would add another 542.3 developable acres.)

The proposed development within the North Stoner Prairie amendment area is consistent with the City of Fitchburg’s North Stoner Prairie Neighborhood Plan, adopted by the Fitchburg City Council as an amendment to the City of Fitchburg Comprehensive Plan on November 26, 2013. The Fitchburg City Council passed a resolution on February 25, 2014 endorsing the amendment of the CUSA to include the Northeast Neighborhood after finding the amendment consistent with the Comprehensive Plan. This resolution has been included as part of the USA amendment application.

The amendment area is currently zoned Exclusive Agriculture and Transitional Agriculture. The *City of Fitchburg Farmland Preservation Plan* identifies the western half of the amendment area, a small sliver of land along Bud’s Way (north central in the amendment area), and the eastern portion protruding into the City of Madison as “Future Growth Areas.” The plan identifies the remaining land as “Agricultural Preservation Area II,” a category that is designated within defined neighborhood boundaries for future study as a part of future urban development boundaries. These lands are reviewed every ten years as a part of the renewal of the Farmland Preservation Plan. Lands with this designation are considered every ten years for re-categorization as “Future Growth Areas” in response to land demand and growth rates.

There is no conflict with the *Dane County Park and Open Space Plan.*
Consistency With CARPC’s Advisory Goals and Objectives. The Capital Area Regional Planning Commission has adopted 14 goals as part of the advisory land Use and Transportation Plan. The amendment request is evaluated with respect to each of these goals based on CARPC staff's professional judgment, since the plan does not provide any metrics or indicators for this evaluation. The proposed amendment for the North Stoner Prairie Neighborhood supports five of the goals. The amendment is neutral or has offsetting effects with respect to eight goals, and conflicts with the goal of compact development.

1. **Promote the development of balanced communities throughout the county with sufficient commercial, industrial, residential, and open space land to meet the needs of existing and future residents.**

   The amendment supports the CARPC goal of development of balanced communities by proposing development with a mix of residential, commercial and industrial uses.

2. **Promote compact urban development in new areas adjacent to existing urban areas and in the redevelopment or infill development of existing neighborhoods.**

   The amendment proposal includes lower residential densities of 3.3 units per acre in the amendment area, while the CUSA averages 6.9 units per acre. The conflict with the goal to promote compact urban development in new areas is somewhat offset by the City’s desire to have future development at lower densities that are considered to be more compatible with the existing adjacent residential development and expected long-term rural nature of the land south of the amendment area. The City notes that there are other areas planned for higher densities, and also provides information about four redevelopment/infill areas in Fitchburg within the CUSA. [See: Map 11]

3. **Promote the development of functionally and visually distinct communities encouraging compact, mixed-use neighborhoods and the efficient provision of a full range of public services.**

   The proposed amendment neither conflicts with nor supports the goal to promote functionally and visually distinct communities. However, the proposal does include low- and medium-density residential components (3.3 units per acre average) and a mixture of other non-residential land uses. A range of public services are present. More details on the mixture of uses, densities, and provision for services are covered in the descriptions of the other goals in this section.

   The proposal is effectively neutral with regard to this goal.

4. **Provide a full range of safe and affordable housing opportunities and choices for all residents throughout the county.**

   The amendment is neutral with respect to the goal of providing a full range of housing choices. While the amendment proposes to provide some variety of low and medium density housing, it is not providing a range of housing opportunities that provides additional choices for residents.
5. **Provide an integrated, all-mode transportation system which offers the efficient, effective and safe movement of people and goods, and provides mode choice wherever possible while enhancing and, where relevant, preserving the character and livability of the neighborhoods and residential areas where transportation facilities are located.**

The proposed amendment somewhat supports this goal. Madison Metro Transit routes are currently nearby, and streets in the development are to be designed to accommodate extension of services into the amendment area. However, it is anticipated that the low density residential and the nature of the industrial development and employment levels within the area may not support transit service expansion to the area.

The area is connected to an extensive off road bike system, with proximity to the Military Ridge Trail, Badger State Trail, Cannonball and Capital City Trail. An accessible bike and pedestrian network is planned to be incorporated throughout the amendment area for recreational and transportation uses. The plan recommends sidewalks, on-street bicycle lands, and multi-use trails to accommodate pedestrian and bike traffic, and industrial, commercial and residential use areas will be connected to the bicycle and pedestrian network. [See: Map 12]

6. **Encourage concentration of employment and activity centers at nodes and along transit corridors to maximize the efficiency of the existing and future transportation system.**

The amendment is neutral with respect to the goal of concentrating employment and activity centers at nodes and along transit corridors. This proposal does not create an employment concentration. It is not anticipated that the low density residential development, the nature of the industrial development, and the employment levels expected will support transit service in the near future.

7. **Support and maintain the central urban core as the region’s major activity center and seek greater diversity and vitality in that area.**

The amendment neither supports nor conflicts with this goal. The proposed development does not detract from the vitality of Downtown Madison.

8. **Promote an economic development strategy that will provide suitable employment opportunities and a stable and diversified economic base.**

The proposed amendment supports the goal to promote provide employment opportunities and a diversified economic base by including industrial and business uses.
Map 11 – Future Urban Growth Neighborhoods

Note: This is a reproduction of a map from the 2009 City of Fitchburg Comprehensive Plan, for illustrative purposes only. Not to scale.

Prepared by: Planning/Zoning
Source: Planning/Zoning &
Dane County, 1.0.1
Revised: 2/2008

* Acreage is exclusive of mapped natural resources, buffers and parcels less than 5 acres.
9. **Protect agricultural lands and limit non-farm developments in order to maintain the county as one of the nation’s most productive agricultural areas.**

The proposal has a mixed result regarding this goal.

Contrary to the protection of agricultural lands, much of the amendment area is farmland currently in agricultural use. Approximately 72% of the amendment area includes prime agricultural soils. Additionally, roughly 37 acres (11% of the total amendment area) is zoned “A-X Exclusive Agriculture.” The City does have a Farmland Preservation Plan, adopted as part of the Dane County Farmland Preservation Plan, that designates a future urban development boundary and identifies areas to be protected and maintained as agriculture within the City. The amendment area is in the area designated for future urban development.

In support of the broader goal of protecting agricultural lands, it should be noted that Fitchburg is the only city in the State of Wisconsin that has farmland preservation zoning certified by the Department of Agriculture, Trade and Consumer Protection. This may also make it one of the only cities in Wisconsin to have agricultural zoning. More than one half of Fitchburg—roughly 10,640 acres—is covered by “A-X—Exclusive Agriculture” zoning. (Fitchburg’s boundary encloses approximately 22,500 acres.) This agricultural zoning will make it more difficult to develop non-farm uses in the future. The Plan Commission may zone lands out of the “A-X—Exclusive Agriculture” district but only after meeting a number of criteria.²

While the amendment area itself conflicts with the goal of protecting agricultural lands, Fitchburg’s overall commitment, through its long-range plans and zoning code, to the preservation of farmland overshadows the negative effects of this amendment on the preservation of farmland. The amendment area in question constitutes a limited amount of non-farm development when weighed against the extensive amount of farmland that is currently being protected under Fitchburg’s zoning code. In this sense, the amendment and the wider planning context have offsetting effects with respect to this goal.

10. **Promote planning and design that preserves and restores environmental functions and protects important environmental, cultural and historic resources.**

The proposed amendment supports the preservation and restoration of environmental function by including wetland buffers greater than the minimum requirements, connecting environmental corridors with green space, planning for wetland restoration and preserving heritage trees.

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² Criteria for Re-zoning “A-X—Exclusive Agriculture” land:

- Rezoned land is better suited for a use not allowed in the farmland preservation zoning district
- The rezone is consistent with all applicable comprehensive plans
- The rezone is substantially consistent with the county’s certified farmland preservation plan
- The rezone will not substantially impair or limit current or future agricultural use of surrounding parcels of land that are zoned for or legally restricted to agricultural use
11. Develop and promote a countywide system of open space corridors as a framework to protect the natural environment and scenic values, and provide outdoor recreation opportunities.

The amendment supports the goal of promoting a countywide system of open space corridors to protect the natural environment and scenic values by meeting CARPC policies for designation environmental corridors. Environmental corridors are adopted as part of the Water Quality Plan, as a regional system of open space corridors, and include isolated resource features. The 64.8 acres of proposed environmental corridors include wetlands, stormwater facilities and park and conservancy lands as isolated resource features.

12. Promote, conserve and restore all water resources in the region as to both quality and quantity.

The proposed amendment supports water quality and quantity through infiltration practices, detention ponds, wetland buffers, woodland preservation, and planned open space.

13. Promote a sustainable capital area region. A sustainable region is one that is far-seeing enough, flexible enough, and wise enough to maintain and enhance its physical, environmental, and social systems of support.

This amendment is neutral with respect to this CARPC goal. The applicants have identified no specific sustainability elements in the proposal.

14. The CARPC shall work with communities to update the Dane County Water Quality Plan. In addition to the elements required by NR 121 of the Wisconsin Administrative Code, the Plan shall also define areas that can be developed with measures to protect, restore or minimize degradation of water quality.

The City of Fitchburg has not participated in the FUDA process with the Capital Area Regional Planning Commission. The City conducted its own analysis of future urban development areas, upon which the comprehensive plan is based, with information on natural resources provided by CARPC.

Contiguity. The proposed amendment meets the CARPC criteria for contiguity with existing urban service areas. The proposed expansion is contiguous to the existing Central Urban Service Area to the north, east and west.

Staging. CARPC policies require that service area expansion requests containing over 100 acres of developable land include 10-year staging boundaries. The proposed amendment adds 246.6 developable acres. The City of Fitchburg Comprehensive Plan states that development, on average, shall not exceed 75 acres per year within the CUSA. Development is planned in seven phases (1.1 through 1.5, 2.1 and 2.2) corresponding to service areas of proposed sanitary sewer interceptors and water mains. Development proposed to be phased in accordance with the Comprehensive Plan and the City’s land use policies. [See: Map 14]
Map 13 – Existing Developable Lands
Map 14 – Proposed Development Phasing
**Need.** CARPC staff is in the process of updating the method of projecting population and land demand for urban service areas. Staff recently presented the 2013 preliminary population update to the Commission. The 2013 projections indicate slower population growth in Dane County than what was projected in 2008. The new projections also adjust total county-wide population for 2035 downward to 539,440 residents from the 654,000 residents projected back in 2008. The county-wide 2040 population projection (the new planning horizon population) is 606,620, which is 47,380 less than the previous (2035) planning horizon population. However, urban service area allocation updates and new methods have not been finalized, and the current analysis is based on the currently approved and adopted population and land demand projections. The currently adopted CARPC land demand calculations use a projected population of 379,411 in the Central Urban Service Area in 2035 and estimate that 3,685 additional developed acres are needed to accommodate the land demand of the 2035 population. The proposed amendment adds 224.5 developable acres, within the anticipated land demand for the CUSA. (The City of Fitchburg has simultaneously requested an amendment in the Northeast Neighborhood that proposes adding 542.3 developable acres to the CUSA.) The last amendment to the CUSA was a request by the City of Madison to add 10.6 developable acres south of Old Sauk Road, approved by the Wisconsin Department of Natural Resources on December 13, 2013. The CARPC also recently approved an addition of 0.2 developable acres in the Town of Westport, which has not yet been approved by the DNR.

The City of Fitchburg used housing and employment projections formulated by the Dane County Regional Plan Commission in 2003 to forecast land demand for the city. The 2003 Department of Administration (DOA) population projections that would have been the basis for the DRCPC projections were more conservative than the 2008 version, and were consistent with the more conservative growth projected in the 2013 DOA projections. Based on housing and employment projections and City goals and policies for community development as stated in the Comprehensive Plan, the City of Fitchburg has projected its land demand for the 20-year planning horizon from 2010-2029. The projection calls for an average of 75 acres per year over the 20 year timeframe, or a total of 1,500 acres over 20 years. The City of Fitchburg Comprehensive Plan policy states, and the North Stoner Prairie Neighborhood amendment application reiterates that, while additions to the CUSA may exceed the 375 acres per 5 year average, in no case shall there be more than 1,875 acres of available developable land in the CUSA: the 1,500 acre 20-year need plus a 5-year flexibility factor at a rate of 75 acres per year. The City of Fitchburg has provided in its application an inventory of available developable CUSA lands as of January, 2013, totaling approximately 1,126 acres within the City. This area includes 23 acres designated for Residential – Single Family use, approximately 66 acres designated for Residential – Multi-Family or Condominium use, approximately 98 acres designated for Commercial/Industrial use, approximately 140 acres designated for Redevelopment/Infill use, approximately 5 acres in the City’s Smart Code zoning district, and approximately 794 acres that are not platted. The City describes each of the vacant or redevelopment areas in the amendment application. [See: Map 13] The City also identifies four areas within the CUSA that are targeted for redevelopment and infill. The City calculates 246.6 available developable acres in the North Stoner Prairie amendment area and 498.4 available developable acres in the Northeast Neighborhood, bringing the total to approximately 1,871 developable acres – essentially fulfilling the 1,875 acre need identified in the Comprehensive Plan.
5. Proposed Urban Services

Public Water System.

Water. The City has a groundwater supply system consisting of wells, storage facilities, booster stations and a pressure reducing station to provide water for daily usage and fire protection. The City’s water distribution system currently has three pressure zones: West Zone, East Zone, and Northeast Zone.

The amendment area is located within the West Zone. The West Zone’s water supply system is located adjacent to this development on the north and east boundaries. No water main extensions will be required through other lands to service this Area.

Future water usage for the amendment area is projected to be 213,082 g.p.d. at full build-out. This estimate is based on current water usage rates and planned land uses in the amendment area and is highly variable as different business/commercial and industrial land uses have varying water needs. Table 2 – Water Use (p. 34) provides average daily water usage projections for each development phase identified in Map 15. [See also: Map 14]

Wastewater. The amendment area will be serviced by the Madison Metropolitan Sewerage District (MMSD). The City will collect all wastewater from the amendment area and discharge it into MMSD’s Nine Springs Valley interceptor located north of the amendment area. This interceptor will convey all wastewater to MMSD’s wastewater treatment plant located approximately 5.5 miles northeast of the amendment area. Average daily flow to MMSD is projected to be 202,428 g.p.d. from this Area.

Stormwater Management System. The landscape in and around the amendment area includes numerous glacial kettles (closed topographic depressions) and lacks a defined drainage ways or streams. These landscape elements provide a challenge in developing a storm water management system that avoids unintended impacts on properties within and adjacent to the amendment area. The majority of the amendment area, specifically west of Seminole Highway, drains to the large closed depression west of the Badger State Trail (hereafter “western closed depression”). East of the Badger State Trail, runoff drains south to culverts under Lacy Road. An exception to this is the north and northeastern portions of the amendment area, east of Seminole Highway, where closed depressions have historically overflowed to the north and east in very heavy rain and/or snowmelt events, thus impacting the Lacy Heights and Seminole Forest neighborhoods.

The aforementioned runoff east of the Badger State Trail drains south to a closed depression southwest of the intersection of Lacy Road and Seminole Highway. Overflow from this closed the south, parallel to Seminole Highway, into a ditched wetland south of Lacy Road. Outflow from this wetland follows an intermittent channel approximately 5 miles south to Lake Harriett in the Town of Oregon. The channel is poorly defined in several locations between Whalen Road and Lake Harriett, and runoff in these areas is likely to spread out across farm fields en route to Lake Harriett.

Lake Harriett is a small closed depression lake with several houses located around its shore. Under normal conditions, it has no surface water outlet. The overflow route from the lake is south to Story Creek which flows into the Sugar River downstream of Belleville. The watersheds of Lake Harriett and Story Creek are dominated by agricultural land use.
Map 15 – Public Water Supply
Story Creek supports reproducing brown and brook trout and is classified as an Exceptional Resource Water by the DNR. DNR considers the primary water quality and ecosystem threats to Story Creek to be sediment and nutrients in runoff from agricultural fields. It would be possible for runoff from the amendment area to increase the frequency of overflow from Lake Harriett to Story Creek, but this appears to be unlikely given the complex drainage system and numerous locations where runoff could be detained and given time to infiltrate the soil or evaporate.

The amount of runoff coming from the site is dependent on farm management practices. The existing conditions were modeled and the back to back hundred year storm resulted in a peak flood elevation causing 42.5 acres to have standing water at a volume of 111 acre-ft. Without the existing pump, there be no flow out of the closed basin.

There are currently 16.4 acres in the southwest corner of the proposed amendment area that drain to Badger Mill Creek. Post-development, the area draining to Badger Mill Creek will be reduced to 7.6 acres and 6.8 of those acres will be in environmental corridor intended to remain as woodland.

The following practices have been proposed by the City of Fitchburg to address stormwater runoff.

**Storm Water Stay-on Infiltration Volume**

1. Avoid exacerbating closed depression flooding by maintaining existing runoff volumes, meaning requiring runoff volume control practices that achieve 100% of the predevelopment infiltration (stay on) volume for all development areas, including roads, based on the average annual rainfall series. This could be accomplished through regional storm water controls and integrating storm water controls into site landscaping. Soil borings were conducted as part of the plan development. The top soil layer is clayey, but there is a sand layer between 4 and 8 feet deep at many of the borings. It may be possible to excavate to the sand seam and utilize the higher infiltration rate. In locations were the sand layer is too deep and the natural soil will need to be used controlling runoff to 100% of the pre-development volume will require significant area. Extensive storm water infiltration in clay-rich soils is not common practice and includes some risk. One measure that can be taken to enhance the performance of infiltration features in clay soils is to oversize them to reduce hydraulic loading rates. The open space around the western closed depression offers an opportunity to spread storm water over a large vegetated area where soil moisture storage and evapotranspiration can reduce the effects of runoff volume. Another precaution would be to supplement infiltration practices with other types of volume controls that harvest and reuse runoff, or reduce volume through evapotranspiration (e.g. green roofs).

2. Require additional soil borings (and monitoring wells if appropriate) during the development of detailed storm water system designs following DNR Conservation Practice Standard 1002. This investigation should determine if shallow groundwater is present near the eastern edge of the amendment area. Available data indicates that groundwater is more than 20 feet deep in this area but it should be confirmed that storm water infiltration practices will not pose a groundwater induced flooding risk to the Seminole Forest and Lacy Heights Neighborhoods, or new development within the amendment area.

3. Encourage volume controls in which storm water is evaporated or transpired (e.g. green roofs, harvest and irrigation). Relying solely on infiltration into the ground will be challenging given the fine grained soils and shallow groundwater west of the Badger State Trail. A balanced approach to volume control will also help prevent an unintended rise in the water table that could create groundwater-induced flooding impacts.
Control peak discharge to pre-development levels for the 1, 2, 10, and 100-year events.

1. If the western closed depression (hereafter “CD1” in accordance with Map 16 is proposed to have one regional stormwater detention facility centered on the existing potential wetland, a wetland delineation will be needed and pre-treatment of the 1 and 2-year design storms will be required prior to entering the wetland boundary. Furthermore, due to the closed depression, detention facilities will need to be sized to meet detention volumes for two back to back 100-year design storms.

Flood Protection

1. Establish a flood protection elevation of approximately 1022.6 feet for CD1, based on the predicted water surface for back-to-back 100-year runoff events as modeled by the City of Fitchburg’s consultants. This corresponds to an inundation area of approximately 44 acres for the existing topography. This extreme weather scenario is recommended for flood protection because there is no surface outlet for this watershed.

2. Ensure structures are either above 1,022.6 feet or have flood-proofed openings for bottom floor elevations below 1,022.6.

3. Consider development of an emergency pumping plan and install infrastructure needed to mitigate unanticipated flooding of CD1 due to climate change, storm water system failure, or other factors. This is especially recommended due to the challenges in maintaining 100% of the pre-development runoff volume. Pumped water would be discharged to the existing storm sewer system north of the amendment area, where it would eventually discharge to Dunn’s Marsh. Infrastructure improvements would include an intake pipe and manhole in the closed depression, electric submersible pumps in an enclosure, and a buried HDPE pipeline to the storm sewer. The sizing of a pump station would be determined at the time of submittal of development proposals identifying specific land uses. Pumped water could be routed north along the Badger State Trail to a pond in the Fitchburg Business Park, north of the amendment area, or could remain in the Badger State Trail area until moved north by gravity. The stormwater plan will similarly be dependent upon specific future land uses in the amendment area. The City intends to achieve the highest levels of on-site infiltration as possible, given future land uses.

4. Monitor water levels in the closed depressions to provide early warning of unanticipated conditions, with installation of a staff gage and monthly stage readings recommended.

5. CARPC staff also recommend deep tilling all compacted areas to reduce runoff from pervious land.
### Table 2 – Water Use

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### Proposed Performance Standards

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<td>Peak Discharge</td>
<td>Maintain pre-development peak discharge for the 1, 2, 10, and 100-year, 24-hour design storms;</td>
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<tr>
<td>Stay-on Infiltration Volume</td>
<td>Maintain 100% of the pre-development infiltration volume;</td>
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<tr>
<td>Groundwater Recharge</td>
<td>Maintain an average recharge rate of at least 7.6 inches per year or the recharge rate identified in the Wisconsin Geological and Natural History Survey (2009);</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td>Reduce 80% based on 1-year 24 hour storm event;</td>
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Map 16 – Surface Drainage Conditions with Closed Depressions
**Environmental Corridors.** Land within 75 feet of wetlands/closed depressions in the amendment area, and land specified as park/conservancy is designated as Environmental Corridors and identified as follows:

1. The proposed park/conservancy land located westerly adjacent to the Badger State Trail and a minimum 75-foot vegetative buffer around and including the wetland located westerly adjacent to said land, in the middle portion of the amendment area (The large closed depression area used for stormwater management, as identified above, has also been added to the environmental corridor).

2. A minimum 75-foot vegetative buffer around and including the wetland/closed depression located just east of Seminole Highway, in the northern half of the amendment area.

3. A 75-foot vegetative buffer around and including the wetland/closed depression located just west of Seminole Highway, in the northern half of the amendment area.

4. The proposed park//conservancy land located on the eastern middle boundary of the amendment area.

5. The proposed park/conservancy land located in the southwestern corner of the amendment area. The proposed corridor accounts for 89% of the post construction area draining to Badger Mill Creek.

The location of wetlands, stormwater management areas, and related environmental corridors predicated the location and type of other proposed land uses within the amendment area. Development within these areas is to be prohibited consistent with CARPC standards and requirements, the City’s Comprehensive Plan, and subject to and in accordance with any required approvals by relevant City committees and commissions. Efforts are to be undertaken to restore these areas.

**Public Safety Services.** The proposed amendment meets the CARPC criteria and standards for provision of a full range of urban public safety services. The Fitchburg Police Department is located at 5520 Lacy Road, approximately 2.5 miles east of the amendment area. Police services are distributed across the City through three police districts, with resources allocated based on the number and type of service calls, population and geography of the district. As conditions change, the districts and resource allocations may shift. The department currently is staffed by 46 officers and 12 civilian employees. With an estimated 2013 population of 25,465, the staffing level provides a ratio of 1.8 officers and 0.47 civilian employees per 1,000 residents.

The City projects that one additional officer will eventually be needed to serve the projected population of the amendment area. The police service level available meets the criteria recommended by the CARPC for urban services.

Fire protection and emergency medical services will be provided by the City of Fitchburg Fire Department and the Fitch-Rona Emergency Medical Service. Currently there are two fire stations: Station One at 5791 Lacy Road, and Station Two at 5415 King James Way. Station One is closest to the amendment area, located approximately one-half mile to the west. The Fitch-Rona EMS currently operates from two stations: Fitchburg Fire Station Two at 5415 King James Way and 416 Venture Court in the City of Verona. As the result of a 2009 study of Fitchburg’s fire station and EMS unit locations, confirmed by a Fire Station Oversight Committee in 2014, the City plans a relocation of Fire Station Two, to be known as the Northwest Station, to the vicinity of McKee Road and the Badger State Trail, close to the amendment area, in the next few years.
From the current station locations, response time to the amendment area is within the City’s goal of 5-minute fire response and 8-minute EMS response. The City currently has an Fire Insurance (ISO) rating of 3 for land within the CUSA, and 6 for lands outside of the CUSA but within five miles of a City or automatic aid fire station. These ratings meet the CARPC criteria for urban service levels.

**Street and Sanitation Services.** The City of Fitchburg Public Works Department will provide street design layout, street snow removal, and refuse/recycling collection for the amendment area. The City contracts with a private refuse and recycling collection company for most residences while residences and businesses not covered by these collection services are required to provide service through their own contract.

**School and Park Facilities.** The amendment area is located within the Verona Area School District. With 137 residential units planned within the amendment area, approximately 64 new students are anticipated to be added to the school district. Currently, students within the amendment area would attend Stoner Prairie Elementary School at 5830 Devoro Rd, and Savannah Oaks Middle School at 5890 Lacy Road. Each of these schools is located adjacent to the amendment area on the east. The Verona Area High School is located at 300 Richard Street in Verona, approximately 3.1 miles southwest of the amendment area.

There are a number of parks, opens space and trails near the amendment area. The Badger State Trail, Military Ridge State Trail, a school path and Seminole Road path are all within the amendment area or in close proximity. Quarry Ridge Recreation Area is a 53-acre former quarry site northwest of the amendment area that is designated as a Natural Area. Seminole Glen Park is a 16-acre neighborhood park located just northeast of the amendment area and linked by the school path, and Stoner Prairie Park is a 7-acre neighborhood park on the east end of the amendment area. In addition, Stoner Prairie Elementary and Savannah Oaks Middle School, located adjacent to the east end of the amendment area, provide playgrounds, basketball courts and playfields. [See: Map 17]

The City of Fitchburg Comprehensive Park, Open Space and Recreation Plan 2010-2015 calls for a neighborhood park within ¼ walking distance of most City residents, and area parks within ½ mile of most City residents. The City requires parkland dedication of 2,900 square feet per new residential unit, and the projected residential land uses in the amendment area will require approximately 8.9 acres of new park land that may be satisfied through site dedication, fee-in-lieu of dedication, or off-site dedication.

**Urban Transportation System.** The North Stoner Prairie Neighborhood Plan recommends a grid-like network of local streets providing connections to existing local streets to the north and east and future connections to the south. Sidewalks will be provided on both sides of the proposed streets per city ordinance.

Figure 7-4, Conceptual Connectivity Sketch, in the North Stoner Prairie Neighborhood Plan indicates that direct access to the residential section of amendment area will be provided via a north-south street that will connect to Lacy Road and an east-west road that will connect to Seminole Highway. Figure 7-1, Land Use Recommendations, in the Neighborhood Plan identifies an additional access point on Seminole Highway located north of the proposed east-west road. A connection to the existing Lacy Heights residential neighborhood will be provided via Persimmon Drive and Scarlett Drive. These local streets are located immediately north of Stoner Prairie Elementary School and Savannah Oaks Middle School.
The Neighborhood Plan does not include a conceptual street network for the planned industrial areas within the amendment area, but does indicate that Commerce Park Drive and Bud’s Drive are planned to be extended south to Lacy Road.

There are a number of ongoing and scheduled transportation improvements, mostly north of the amendment area, that are being made in conjunction with the reconstruction and capacity expansion of Verona Road (USH 18/151) between the Beltline and McKee Road (CTH PD), including a new single-point interchange at the Beltline. The interchange area work has begun. Other traffic mitigation improvements have also been completed or begun. These include improvements (extension, addition of turn lanes) at the Seminole/McKee Road and Seminole/Lacy Road intersections and construction of a grade-separated pedestrian/bicycle overpass of McKee Road just east of Verona Road for the Cannonball Trail connection to the Military Ridge Trail. The interchange area work has begun. Other traffic mitigation improvements have also been completed or begun. These include improvements (extension, addition of turn lanes) at the Seminole/McKee Road and Seminole/Lacy Road intersections and construction of a grade-separated pedestrian/bicycle overpass of McKee Road just east of Verona Road for the Cannonball Trail connection to the Military Ridge Trail.

The Neighborhood Plan recommends two new east-west multi-use paths, one along the north side of Lacy Road and one through the center of the neighborhood, both intersecting the Badger State Trail. The neighborhood path will connect to the existing north-south path and schools to the east and eventually through the Quarry Ridge Recreational Area to the Military Ridge Trail to the west. The path will traverse through Stoner Prairie Park and the proposed Badger State Trailhead Park. A path extension is also planned on the west side of Seminole Highway between the ATC transmission line easement and the planned east-west connector path.
Map 17 – Parks and Open Space
6. Impacts or Effects of Proposal

Surface Water. Development typically creates impervious surfaces (i.e., streets, parking areas, and roofs) and alters the natural drainage system (i.e., natural swales are replaced by storm sewer) resulting, if not mitigated, in increased stormwater runoff rates and volumes, as well as reduced infiltration. Unmanaged development can 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:

- Flashier stream flows (i.e., sudden higher peaks)
- Increased frequency and duration of bankfull 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
- Increased water temperatures

Natural drainage systems attempt to adapt to the dominant flow conditions. The frequency of bank-full events often increase 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, as well as loss of riparian cover, and shoreland and aquatic habitat.

Stormwater runoff carries soil particles, nutrients, and contaminants that can change the ecological balance of the receiving water body. Changes in the volume, rate, frequency, or duration of stormwater entering or discharging from the water body can also change the ecological integrity.

If left unmanaged, these changes in hydrology, combined with increased urban pollutant loading, can have a dramatic effect on the aquatic ecosystem of streams. It is important to realize that flow is a major determinant of the physical habitat in a stream, which in turn determines the biotic composition of stream communities. A growing body of literature documents that channel geomorphology, habitat structure, and complexity are determined by prevailing flow conditions, which in turn determine the biota that can inhabit the area. This is true for the fish as well as the aquatic insects upon which they feed. Studies of streams affected by urbanization have shown that fish populations either disappear or become dominated by rough fish that can tolerate the associated lower water quality levels.

The City proposes to mitigate the urban non-point source impacts of the proposed development by implementing stormwater best management practices that are designed and constructed in accordance with performance standards that meet or exceed current minimum standards. The proposed stormwater best management practices will reduce the impacts of the proposed development and should partially address the potential impacts on the receiving waters. The stormwater management facilities will be sized to contain the runoff from back to back 100-yr storms. This will result in a significant reduction in flow to
the poorly defined channel south of Lacy road as the dewatering pump currently in use to protect agricultural crops will be removed. The City has agreed to a 100% pre-development stay-on standard to maintain existing hydrology, which is critically important to maintaining the health of the water resources and the biological communities that they support and to maintaining downstream water levels. Since the soils on this site have low infiltration rates and may be more prone to failure, CARPC recommends that an emergency draw down plan be developed in the event that prolonged flooding is threatening to damage buildings or will be detrimental to maintaining appropriate vegetative cover.

_Groundwater._ As natural areas are converted to urban development the ground/surface water balance in streams and wetlands shifts from a groundwater-dominated system to one dominated more and more by surface water runoff, with subsequent reductions in stream quality and transitions to more tolerant biological communities. Maintaining pre-development groundwater recharge helps to maintain baseflow and mitigate this impact. CARPC staff recommends maintaining the pre-development annual recharge rate of 9 to 13 inches per year for this area as estimated by the Wisconsin Geological and Natural History Survey. Experience has shown that this criterion is generally met when the volume control standard is achieved by infiltration practices. The most up to date WGNHS ground water model (2014) was used to evaluate the impact of increased development and groundwater withdrawals on Nine Spring creek. It is predicted that 2035 water demands and growth will reduce the August base flow in Nine springs by 7-18%. This is based on regional withdrawals and it not a direct result of this development. It does however stress the importance of maintaining recharge rates.

The WDNR has done and is continuing to do research on the effectiveness of infiltration practices. The results of this research are regularly used to refine design standards which are adopted as part of design practice.

_Transportation System Impacts._ The proposed amendment is intended for (1) a total of 35 developable acres of low to medium density residential development with a mix of housing types accommodating an estimated total of 134 new dwelling units; (2) 122 acres of Industrial-General development; (3) 45.5 acres of Industrial – Commercial development; and (4) 11 acres of Business development. When fully developed, the amendment area could be expected to generate around 11,000 vehicle trips (inbound and outbound total) on an average weekday.

In 2009, the average daily traffic (ADT) volume on Lacy Road was 3,000 approximately ½ mile west of Seminole Highway. The 2012 ADT volume on Lacy Road east of Seminole Highway was 7,100. The 2009 ADT volume on Seminole Highway was 7,500 north of Lacy Road and 3,400 south of Lacy Road. In 2012, the ADT volume on McKee Road was 23,900 west of Seminole Highway. The 2009 ADT volume on McKee Road east of Seminole Highway was 20,300. The 2009 ADT volume on Fitchrona Road was 3,800 north of Lacy Road. The reconstruction and expansion of Verona Road in 2014 has caused increased traffic on Seminole Highway during peak periods. Interim improvements constructed at the intersections of Seminole Highway/McKee Road and Seminole Highway/Lacy Road have helped mitigate the temporary increase in traffic volumes.

Lacy Road and Seminole Highway have sufficient capacity to accommodate the future traffic volumes that will be added as a result of the neighborhood’s future development. Reconstruction of these streets to urban standards with pedestrian and bicycle accommodations is warranted, however, at the appropriate life cycle phase.
As indicated in the traffic analysis for the neighborhood plan, a vast majority of the traffic from the industrial/business area will access the area from McKee Road via Commerce Park Drive extended. Traffic volumes on McKee Road indicate that it is currently experiencing some traffic congestion during weekday peak periods. However, the McKee Road expansion and new interchange at Verona Road will allow McKee Road to accommodate the additional traffic to be generated by the amendment area. Intersection improvements in the vicinity of the amendment area will likely be necessary.

**School System Impacts.** The amendment is anticipated to add approximately 64 students to the Verona Area School District (VASD) when fully developed. Enrollment was 5,433 in the 2013-14 school year, an increase of 2.2% (117 students) over the previous year and a 30.3% increase (1,263 students) over the previous ten years. Over the last decade, Verona has had the fifth fastest growth rate among the 15 suburban districts in Dane County.

7. **Alternatives**

The City of Fitchburg’s amendment application provides details about the existing developable areas already within the City of Fitchburg and the CUSA. While these areas are substantial, the City has determined that additional need exists during the planning period. If the requested amendment was not approved, development may occur in alternate locations within the City or alternate expansion areas requested to fulfill needs. While alternative locations for the proposed development may exist within and outside the Central Urban Service Area, this proposal is consistent with City of Fitchburg plan for the North Stoner Prairie Neighborhood and the *City of Fitchburg Cooperative Plan*. The area is a logical extension of the Central Urban Service Area, and the developable acreage to be added is within the anticipated need for the Central Urban Service Area within the planning horizon.

8. **Controversies, Comments Received, Unresolved Issues**

During the development of the North Stoner Prairie Neighborhood Plan, the City provided notice to the Town of Verona. The Town did not provide any comment.

A public hearing before the Capital Area Regional Planning Commission is scheduled for 7:00 p.m. on September 11, 2014 at the City of Fitchburg Council Chambers, 5520 Lacy Road, Fitchburg, Wisconsin. Notice of the public hearing has been sent to the local governments within the Central Urban Service Area. As of the time of publication of this analysis, no comments have been received.
9. Conclusions and Staff Recommendation

The proposed amendment would add 224.5 developable acres to the Central Urban Service Area, well within the additional 3,685 developable acres called for in the latest CARPC land demand calculations. The amendment supports five CARPC goals: it supports balanced communities through a mix of development types, it supports an all-mode transportation system by providing bike and pedestrian trail connections, it supports economic development through industrial and business development, it promotes the preservation of environmental functions by including wetland buffers greater than the minimum requirement, and it supports the conservation of water resources through infiltration practices and detention ponds. The amendment is neutral or has offsetting effects with respect to seven goals, and conflicts with the goal of compact development.

CARPC staff recommends approval of this amendment, based on the land uses and services proposed and conditioned on the City of Fitchburg commitment to pursuing the following:

1. Submit a detailed stormwater management plan for CARPC and DCL&WCD staff review and approval prior to any land disturbing activities in the amendment area. The stormwater management plan should include the following:

   a. Install stormwater and erosion control practices prior to other land disturbing activities. Protect infiltration practices from compaction and sedimentation during land disturbing activities.

   b. Control peak rates of runoff for the 1, 2, 10, and 100-year 24-hour design storms to “pre-development” levels (i.e. maximum Runoff Curve Number = 68 for agricultural land use and hydrologic soil group B).

   c. Maintain the post development stay-on volume to at least 100% of the pre-development stay-on volume for the one-year average annual rainfall period, as defined by WDNR.

   d. Provide adequate storage for back to back 100-yr 24 hour storms.

   e. Maintain pre-development groundwater recharge rates from the Wisconsin Geological and Natural History Survey’s 2009 report, *Groundwater Recharge in Dane County, Wisconsin, Estimated by a GIS-Based Water-Balance Model* (an average of 9-13 in./yr. for the amendment area) or by a site specific analysis.

   f. Provide at least 80% sediment control for the amendment area in accordance with existing ordinances.

   g. Deep till all compacted pervious areas.

   h. Stormwater practices should be publicly owned, or have perpetual legal maintenance agreements with the City to allow the City to maintain facilities if owners fail to do so.

   i. Develop an emergency draw down plan to mitigate unanticipated flooding in CD1.
It is also recommended that the City pursue the following:

1. Conduct a limited archaeological survey of the amendment area, focusing on those areas matching the topography and landforms matching those suggested by WSHS. (See WSHS response letter, attached) Send three copies of the survey report to CARPC.

2. 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 Wisconsin Historical Society should be notified. If human bone is unearthed during any phase of a project, all work must cease, and the Wisconsin Historical Society must be contacted at 1-800-3442-7834 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. Questions concerning the law can be directed to Mr. Chip Brown, 608-264-6508.

3. Continue to work with WisDOT and Dane County on the planned reconstruction of McKee Road between Verona Road and Seminole Highway, including improvements to the Commerce Park Drive intersection.

4. It is recommended that a detailed street plan for the neighborhood be developed prior to approval of the first preliminary or final plat to ensure desirable routing options are not foreclosed in the future.

5. Consideration should be given to a more direct street connection from the planned residential area to the Lacy Heights Neighborhood (via Persimmon Dr. and Scarlet Dr.). The one shown in the conceptual street network in the plan is extremely indirect. The concern about “cut through” traffic is overstated with Schumann Drive just to the north. If the concern is the street crossings of the existing path, improvements can be made (e.g., speed table, signage, street markings) to ensure a safe crossing of the streets for path users.

6. Figures 7-1 and 7-6 in the North Stoner Prairie Neighborhood Plan denote different multi-use path alignments near the existing schools, which needs to be clarified. It is recommended that the planned path connect directly to both schools.

7. Encourage volume controls in which stormwater is evaporated or transpired.

8. Establish an emergency outlet for the closed basin for times when the infiltration devices are off line. Depending on the outlet location improvements to the downstream conveyance channel may also need improvement.
April 1, 2014

Barbara Weber
Capital Area Regional Planning Commission
City-County Building, Room 362
210 Martin Luther King Jr. Boulevard
Madison, WI  53703-2558

RE: North Stoner Prairie Urban Service Expansion Area, Dane County, Wisconsin

Dear Ms. Weber:

No previously recorded archaeological sites or cemeteries are recorded within proposed North Stoner Prairie urban service expansion area. The only survey within the proposed expansion area is right-of-way survey along Lacy Road on the south margin of the proposed expansion area (WHS #96-1321). No sites were found during that survey.

However, an examination of the wider area reveals that a number of archaeological sites, some potentially significant and up to 13,000 years old, were found just west of the proposed expansion area near USH 151. The proposed urban service expansion area is a short distance away and contains a similar combination of outwash deposits/former wetlands and higher landforms. For that reason, we believe that it would be prudent to have limited archaeological survey conducted within the proposed expansion area, in particular focusing on the terraces and landforms at the boundary between the till and outwash deposits (shown in green and pink, respectively, in Figure 6-6 of Appendix II(1) of the Neighborhood Plan. The survey should include an area sufficient to identify sites on higher ground bordering the outwash plains. Please send two copies of the report directly to the Office of the State Archaeologist. A list of qualified archaeologists may be obtained at: http://preview.wisconsinhistory.org/pdfs/hp/HPR-arch-consultants.pdf

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

Please note that 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 Wisconsin Historical Society should be notified. If human bone is unearthed during any phase of a project, all work must cease, and the Wisconsin Historical Society 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 Mr. Chip Brown, 608-164-6508.

Sincerely;

John H. Broihahn
State Archaeologist
State Archaeology and Maritime Preservation
608-264-6496
John.broihahn@wisconsinhistory.org
(North Stoner Prairie 4/2014)
North Stoner Prairie proposed service expansion area, showing prior archaeological surveys (light blue).