

**STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
DECISION TO AMEND THE DANE COUNTY
AREAWIDE WATER QUALITY MANAGEMENT PLAN**

The Wisconsin Department of Natural Resources (WDNR) has reviewed a request from the City of Fitchburg (City) to amend the Dane County Areawide Water Quality Management Plan. WDNR issues the following decision regarding that request.

FINDINGS OF FACT, CONCLUSIONS OF LAW AND DECISION

FINDINGS OF FACT

WDNR finds that:

1. In November 2013, the City of Fitchburg submitted the Northeast Neighborhood (NEN) Urban Service Area Draft Amendment Application to the Capital Area Regional Planning Commission (CARPC).
2. In December 2013, CARPC staff replied to the City with a list of 24 questions to better understand the proposal.
3. On February 12, 2014, the Fitchburg Plan Commission requested the Fitchburg Common Council to authorize submittal of NEN Amendment to CARPC.
4. On February 25, 2014, the City of Fitchburg Common Council voted to approve the NEN Amendment, Resolution R-18-14.
5. On March 21, 2014, the City submitted the NEN Amendment to CARPC.
6. At the June 2014, CARPC meeting, the staff made a preliminary presentation of the NEN Amendment to the Commission, members of which asked for additional or clarifying information to be included in the final staff analysis.
7. At the July 2014, CARPC meeting, Professor Calvin DeWitt presented scientific data on the Waubesa Wetlands, regional groundwater issues, and hydrologic connectivity.
8. The Northeast Neighborhood Amendment was placed on the CARPC September 2014 Agenda for Public Hearing, along with 3 other amendment requests, including another City of Fitchburg Amendment called North Stoner Prairie. The Commission was not able to consider either of the two City of Fitchburg requests due to time constraints.
9. At the October 2014, CARPC meeting public hearings for both North Stoner Prairie and NEN were, again, on the agenda. The public hearing for North Stone Prairie was held and the Commission approved the North Stoner Prairie amendment. The City of Fitchburg then made its presentation on the Northeast Neighborhood amendment. The public hearing for the NEN was opened and public testimony was held until 11:40 pm, at which time the meeting was adjourned.

10. At the November 13, 2014, meeting the Commission heard additional public testimony regarding the NEN Amendment. CARPC staff made their presentation and the commission voted, but the request failed to receive the required eight votes.
11. On November 19, 2014, CARPC sent a letter to the WDNR with the results of the Commission vote, a summary of the amendment request, and all supporting materials in fulfillment of their work program with the Department.
12. On January 7, 2015, the City sent a letter to the Department via email requesting that the WDNR conduct a review of the City's application for the NEN Urban Service Area Amendment.
13. On January 9, 2015, the Department replied to the City and asked that the City supply materials needed for the WDNR to review the amendment request.
14. On January 14, 2015, the Department received the amendment application and associated materials from the City of Fitchburg.
15. The Department convened a technical team for the amendment review. Meetings were held on January 21, January 27, January 28, and March 10 of 2015. The technical team included water quality biologists, groundwater quality experts, wetlands ecologists, water resources specialists, and stormwater management experts.
16. On February 16, 2015, the technical team met at the offices of the Wisconsin Geological and Natural History Survey to gain a more thorough understanding of the Dane County Hydrologic Model and how that model was applied to the proposed development. The team discussed local and regional issues related to Dane County's WQM Plan including the existing and projected aquifer drawdown, modeled source water areas, and anticipated 2015 aquifer and surface water status. Discussion included evaluating the connectivity between the various groundwater flows in differential aquifer strata with the various surface water features of concern, with particular emphasis on Waubesa Wetlands. Wisconsin's updated springs inventory (conducted by the Wisconsin Geological and Natural History Survey and Beloit College) was also discussed; the absence of delineated springs from the project area in the groundwater run and the use of a coarser scale groundwater model versus the finer scale cell-model released in 2015 were noted.
17. On March 10, 2015, DNR met with CARPC technical staff to view results using the Dane County Hydrologic Model. Issues discussed included the potential need for a watershed study to better understand sources and sinks of nutrients and water flows to the Waubesa Wetlands and the Groundwater Status and Protection Appendix to the Dane County WQM Plan.
18. WDNR issued a press release on March 12, 2015, which directed the public to a WDNR webpage on the NEN Urban Service Area Amendment. The webpage included the City's submittal to CARPC, as well as supporting information used in the local decision making process. The press release outlined WDNR's public participation process for the NEN Urban Service Area Amendment, including a public comment period from March 12 to April 3, 2015.
19. As part of the public comment process, on March 27, 2015, DNR met with the Town of Dunn representatives, including Town Chairman, Ed Minihan, to hear perspectives and gather information from wetlands experts, Cal DeWitt and Joy Zedler.

20. Public comments are summarized in Attachment 2. WDNR considered the public comments, along with the entire record in the formulation of its decision.

CONCLUSIONS OF LAW

1. The Legislature requires WDNR to "establish a continuing water pollution control planning process which is consistent with applicable state requirements. The continuing planning process shall result in plans for all waters of the state..." (s. 283.83(1), Wis. Stats).
2. WDNR implements a continuing water pollution control planning process through Chapter NR 121. Wis. Adm. Code which "establishes regulations specifying policies, procedures, and requirements for Wisconsin's areawide water quality planning process" and results "in the preparation throughout the state of areawide plans for managing the quality of waters of the state..." (s. NR 121.01, Wis. Adm. Code)
3. WDNR "shall recommend that the governor designate areawide planning areas which as a result of urban and industrial concentrations or other factors have substantial and complex water quality control problems." (s. NR 121.06(1), Wis. Adm. Code). Dane County is a "designated area."
4. WDNR shall also "recommend to the governor for designation a single agency capable of developing effective areawide water quality management plans" within "designated areas." (s. NR 121.06(2), Wis. Adm. Code). CARPC is not a "designated agency" but provides contractual services to conduct technical reviews and public input processes on behalf of DNR.
5. For "designated areas," WDNR has the authority to review and approve areawide water quality management plans (s. NR 121.07(1), Wis. Adm. Code), review and approve revisions to areawide water quality management plans (s. NR 121.07(3), Wis. Adm. Code) and disapprove or otherwise modify any previously approved areawide water quality management plan or plan element (s. NR 121.07(4), Wis. Adm. Code).

DECISION

WDNR partially approves the proposed amendment, as modified below with conditions, to the Dane County Areawide Water Quality Management Plan, to revise the City of Fitchburg portion of the Central Urban Sewer Service Area boundary:

Phase 1 and the majority of Phase 2a (see description of amendment area) are approved for addition to the Central Urban Service Area for the City of Fitchburg with the following conditions.

CONDITIONS OF APPROVAL

1. Submit a detailed stormwater management plan for CARPC and Dane County Land and Water Conservation Department 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). Peak flow calculations are to be based on National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Precipitation Frequency Estimates for precipitation depth. Wisconsin has calculated county-specific Atlas 14 precipitation depths and in Dane County, it is to be used in combination with the Natural Resources Conservation Service (NRCS) MSE4 precipitation distribution. MSE4 refers to the Midwest/Southeast 4 rainfall distribution as developed by the NRCS National Water Quality and Quantity Team based on data from Atlas 14 Volumes 8 (Midwest US) and Volume 9 (Southeast US).
- c. Maintain the post development stay-on volume to at least 90% of the predevelopment stay-on volume for the one-year average annual rainfall period, as defined by WDNR.
- d. Maintain pre-development groundwater recharge rates from the Wisconsin Geological and Natural History Survey (WGNHS) 2009 report, Groundwater Recharge in Dane County, Wisconsin, Estimated by a GIS-Based Water-Balance Model (an average of 9-10 in./yr. for the amendment area) or by a site specific analysis.
- e. Provide at least 80% sediment control for the amendment area in accordance with existing ordinances.
- f. Stormwater practices should be publicly owned and managed or have perpetual legal maintenance agreements with the City, which will allow the City to maintain facilities if owners fail to do so.

2. Work with CARPC technical staff to update land projection needs based on the 2013 Census data. Provide a letter from Department of Administration (DOA) indicating support of the projections used.

- a. Applicant should work with CARPC to update land use need calculations based on 2013 population projections from US Census and adjust its 20 year development needs in the Dane County WQM Plan.
- b. CARPC should forward the population projections to the DNR, as an amendment to the Dane County WQM Plan. This staff based update does not require action by CARPC.

3. Provide wetland delineations, as determined through procedures specified in state and federal rules, for the approved amendment area and delineated environmentally sensitive areas (ESAs) to CARPC technical staff and the DNR to update ESA map delineations to guide development, water quality protection, and stormwater planning.

4. Work with CARPC and DNR in the conduct of a wetland condition survey of all affected wetlands including riparian and isolated features within the site boundary and adjacent hydrologically connected area, including the Waubesa Wetlands. This study will apply the Wisconsin Wetland Rapid Assessment Methodology for wetland condition and function, and use the Floristic Quality Assessment for plant community condition. These analyses will be used to identify compliance with ch. NR103, Wis. Adm. Code, prior to locating stormwater management facilities. The survey will include the identification of all currently placed agricultural drainage structures.

5. Note this amendment updates the environmentally sensitive area map the WQM Plan for Dane County as well as for future City of Fitchburg development. The updated environmentally sensitive area map (to be developed) will include WGNHS inventoried springs, wetlands (as per future wetland inventory of site location and adjacent resource areas), rivers/streams with surface water features having 75 to 300 foot buffers in the development area and in surrounding areas for water features including Nine Springs Creek, Swan Creek, Murphy's Creek and the Waubesa Wetlands.

6. DNR, City of Fitchburg, Town of Dunn, CARPC, and other interested parties will conduct a watershed study with recommendations for management actions and protection areas focusing on the Waubesa Wetlands. This study will use updated groundwater model data and updated storm event data for all areas feeding the Waubesa Wetlands.

7. CARPC technical staff, together with DNR and WGNHS, should complete the Dane County WQM Plan Appendix: Groundwater Status and Protection Plan. This study should be based on the updated (2015) Dane County Hydrologic Model to provide recommendations for source water protection areas that feed the perched fen located in the southwest portion of Lake Waubesa and provide more detail regarding current and future municipal well placement. The plan will identify areas recommended for more detailed studies of groundwater flow and surface and groundwater interaction areas in the southern reaches of Dane County. The study will also identify water quantity mitigation actions designed to help reduce the current cone of depression mitigate future significant surface water drawdowns. These actions should be published and shared with the public.

We concur with CARPC recommendations for the following:

1. Strive to achieve 100% stay-on volumes through stormwater volume controls in which stormwater is reused, evaporated or transpired.
2. Maintain suitable wetland hydrology by controlling the wetland water level bounce for the 1-, 2-, and 10-year, 24-hour design storms to within 0.5 feet of existing conditions and providing a maximum drawdown time within the wetland of 24-hours for the 1- and 2-year, 24-hour storms and 72-hours for the 10- and 100-year, 24-hour storms.
3. Deep till all compacted pervious areas.
4. Have the areas of the amendment not previously surveyed for cultural resources surveyed by a qualified archaeologist, with special attention focused on relocation and evaluation of archaeological site DA-0532, and additional investigations to better define the limits and condition of archaeological site DA-0467. Send three copies of the report to the CARPC.
5. 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 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.
6. Work with Dane County to plan and budget for improvements (intersections, urban cross-section with pedestrian and bicycle facilities) to the CTH MM corridor in the future as development of the neighborhood occurs.

7. Develop a street and multi-use path plan for the neighborhood prior to approval of platting of the first phases of development so that opportunities for future connections are not lost. In particular, the plans should identify bicycle route(s) not only to the Capital City Trail but also to Haight Farm Road, which provides a safe crossing of USH 14.
8. Conduct additional planning to identify a potential park-and-ride (PNR) facility near the Lacy Road interchange. Inform the Wisconsin Department of Transportation (WisDOT) of the city's interest in a facility. WisDOT is currently conducting a Southwest Region PNR study.
9. Add paved shoulders to roads where appropriate in the future in accordance with the City of Fitchburg's Bike and Pedestrian Plan as consistent with the areas approved for sewer development.
10. Consider non-infiltration based volume control measures such as stormwater reuse and green roofs.
11. Conduct a threatened and endangered resources ecological survey for the amendment area in consultation with WDNR prior to plat design and submittal procedures and any land disturbing activities. Any necessary habitat protection measures as recommended by WDNR shall be implemented.

Description of Approved Amendment Area:

This amendment adds approximately 375 acres (includes both developable and nondevelopable land) to the City of Fitchburg's urban sewer service area, south of Highway 18/151 (south of East Clayton Road), east of Highway 14, west of Larson Road, and north of Goodland Park Road (see Attachment 1 - map of proposed urban sewer service area amendment). Fine scale analysis of environmentally sensitive area delineations both within the approval area as well adjacent to and downstream will be developed and published for the record and future decision making.

This approval to the Dane County Water Quality Plan to revise Fitchburg's Urban Sewer Service Area does not constitute approval of any other local, state, or federal permit that may be required for sewer construction or associated land development activities.

DISCUSSION

DNR is responsible for preparation of WQM Plans (and plan amendments) in designated areas where no designated agency exists. In the case of Dane County, the DNR contracts CARPC for analysis and review of proposed amendments to the Dane County WQM Plan. WDNR and CARPC have established standard procedures for the review and approval process for Areawide Water Quality Management Plan amendment requests. This process consists of CARPC working directly with applicants to develop acceptable amendment proposals. CARPC then submits a recommendation to WDNR for approval, or conditional approval, of the request. CARPC staff work with the applicant upfront to modify initial proposals to improve compliance with local, regional and state regulations before the proposals are reviewed by the regional commission and the DNR.

Procedure

In the case of the City of Fitchburg NEN request, after the municipality received the decision from CARPC denying the request, the city made a direct request to the DNR to review the amendment proposal and requested that DNR provide an administrative decision under ch. NR121, Wis. Adm. Code. The City of Fitchburg submittal to WDNR, regarding the proposed amendment, contains a portion of the record of the applicant's request. Additional supporting information is included in the applicant's submittal and analyses to CARPC.

The file includes CARPC technical reports, correspondence, commission meetings, public hearing proceedings, the staff analysis report and CARPC resolution, as well as subsequent correspondence and materials created by the DNR. The file also includes a detailed description of how applicable review criteria have been addressed as well as a map of the urban service area change including the delineation of environmentally sensitive areas which include but are not limited to springs, wetlands, rivers/streams, lakes, groundwater recharge areas/open space lands, and buffers.

Land Use Needs

The Fitchburg Northeast (NEN) Neighborhood Amendment proposes adding 985.9 acres of land and water resources to the Central Urban Service Area of the Dane County Water Quality Management Plan. The proposal identifies 273.5 acres of environmental corridor and uses demographics based on 2003 population projections. However, 2013 population projections from the US Census are currently available. With this action, the DNR approves approximately 375 acres (portions of phase 1 and phase 2a of the initial proposal) and requests that the City of Fitchburg work with CARPC to provide updated land use needs based on 2013 population projections from the US Census as well as a letter from DOA indicating support of the projections used, which is required under ch. NR121, Wis. Adm. Code (see Wis. Adm. Code NR 121.05).

Environmentally Sensitive Areas

Sewer service area plans require the delineation of environmentally sensitive areas that are prohibited from sewered development. In addition, the proposed development should not impact the quality of these surface water features under the state's water quality standards. In the case of wetlands, the applicable standard is ch. NR103, Wis. Adm. Code the state's functional wetlands water standard.

The initial amendment request reviewed and ultimately denied by the Commission includes lands with hydrologically complex features in the northern, eastern and southern areas. The initial proposal identified 273.5 acres of environmentally sensitive areas; however, only a portion of the wetland features had been professionally inventoried. There is a need for professional wetland delineations and buffers that correspond to protections requisite to maintain water quality standards for all wetland features. Additionally, a new inventory of springs conducted by WGNHS identified features that should also be identified as environmentally sensitive areas.

Stormwater Management

Stormwater management in the proposed development area, compared with other areas of the county, is complicated. The development, as initially proposed, will use wetlands as stormwater receiving waters and will result in increasing stormwater flow to Swan Creek and its corridors. Currently, portions of the land area are in agricultural use with varying levels of soil compaction. Existing land uses deliver excess nutrients and sediment to downstream resources. The variable terrain and differential water table (reflecting the perched aquifer in the eastern portion of the proposal) complicate stormwater retention in a residential development scenario. Conversely, protection of the southern riparian wetlands and downstream resources precludes channeling stormwater from newly developed areas to these resources as well.

The release of dissolved and particulate nutrients and sediment, and a potential to increase the existing spread of aquatic invasive species (reed canary grass, phragmites, and cattails) due to hydrologic modifications resulting from a development's discharge to sensitive areas are of concern. Increased stormwater flow to Swan Creek and its riparian corridor, which feeds the Waubesa Wetlands, poses a potential significant risk to the resource. Due to this concern, a detailed stormwater plan that works in concert with, but avoids the treatment within, natural surface water features such as existing springs and wetlands, is recommended.

The CARPC staff analysis suggested stormwater control measures that, in some aspects, exceed the applicable state requirements of ch. NR 151, Wis. Adm. Code. The City of Fitchburg has agreed to comply with infiltration of 90% of the pre-development infiltration volume for all land uses. A site-specific stormwater management plan which delineates specific control measures will be required prior to construction. Stormwater management actions that involve using natural surface water features such as wetlands or streams as receiving waters require compliance with applicable local, regional and state regulations including chs. NR102 and NR103, Wis. Adm. Code, state water quality standards. More details regarding stormwater management are found in the conditions of the amendment decision.

Wetland Quantity and Quality Protection

To ascertain the condition of surface water features in and around the approved amendment area, wetlands are to be field delineated and a quantitative wetland condition survey of riparian and isolated wetlands conducted. A special study of the Waubesa Wetlands should also be conducted. These studies will apply the Floristic Quality Assessment and the WI Wetland Rapid Assessment Methodology to assess impacts to wetland functional values as part of compliance with chs. NR102 and NR103, Wis. Adm. Code.

Impacts to Regionally Significant Resources: Waubesa Wetlands

Hydrologically connected downstream resources include the regionally important and unique Waubesa Wetlands complex. Statements by numerous experts and advocates have outlined the value of these resources and the importance and need for protection of these resources. Significant investigation regarding the specific sources and flows of surface and groundwater feeding these wetlands is warranted.

The DNR, City of Fitchburg, Town of Dunn, CARPC and others should conduct a watershed-based study to provide recommendations for management actions and protection areas focusing on the Waubesa Wetlands. This study should use updated groundwater model data, storm event data, and nutrient and sediment runoff projections for areas feeding the Waubesa Wetlands.

Impacts to Regionally Significant Resources: Groundwater

Initial discussions between DNR and the WGNHS regarding the application of the Dane County Hydrological Model for analysis of this amendment revealed that a previous, coarser-scale version of the model was applied to the proposed amendment. The 2013 model results indicated that source water areas for the Waubesa Wetlands are primarily located in western portion of the county, where hydraulic conductivity and therefore permeability to the deep aquifer is high.

In the east just southwest of Lake Waubesa, a geologic irregularity in the Eau Claire Shale (which acts as an aquitard where it is present), results in the deep aquifer-fed spring that helps form the Waubesa Wetlands. This information is combined with well-documented and increasing issue of aquifer drawdown in the Madison Metropolitan area (“cone of depression”) and 2035 model projections hypothesizing the loss of Starkweather Creek along with significant flow reductions in numerous other surface features. Therefore, **DNR requests the use of the updated Dane County Hydrologic Model for future application proposals**, as well as any additional significant land use change scenarios in the region.

In addition, CARPC technical staff, DNR, and the WGNHS, should **complete the Dane County WQM Plan: Groundwater Status and Protection Plan by December 2016**. The report will provide recommendations for source water protection areas to reduce cone of depression impacts and to protect areas that feed surface water features such as the perched fen located west of Lake Waubesa. This study will provide more detail regarding current and future well placement. The plan will help identify needed areas for detailed studies of groundwater flow and surface and groundwater interaction areas in the

southern reaches of Dane County. And in addition, this report should identify water quantity mitigation actions that may alleviate groundwater use pressure.

Public Participation

Extensive public participation on the proposed amendment was offered at the local level during the CARPC meetings which serve as part of the local public hearing for amendment requests. These public input sessions extended over two meetings in late 2014 became part of the official record for this decision.

On March 12, 2015, DNR issued a press release notifying the public that the Department was reviewing the City's request for the NEN Amendment. The press release directed the public to a DNR webpage where the city's cover letter, amendment request, and supporting documentation were posted. As part of the public participation process, the DNR accepted public comment from March 12 - April 3, 2015. Two subsequent Gov Delivery notices were issued. During the public comment period, DNR received 71 written comments against the proposed amendment and 8 comments supporting the proposal. During this time, 5 persons/entities requested a public hearing on the matter. In addition, the DNR met with the Town of Dunn and its legal representatives and wetlands experts to provide detailed comments for consideration during decision making. These public comments are available on the DNR's website.

The WDNR considered all public comments in its final decision.

APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that the Wisconsin statutes, administrative rules, and case law establish time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to sections 227.52 and 227.53, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition to the Department. A petition for judicial review must name the Department of Natural Resources as the respondent.

Dated this *14th* day of April 2015



Susan L. Sylvester, Director
Water Quality Bureau
Department of Natural Resources

- Attachment 1 – Map of approved urban service area amendment lands and environmentally sensitive areas. Final environmentally sensitive area delineations will be published subsequent to this decision.
- Attachment 2- Summary of Public Comments Received and Response to Comments
- Attachment 3- List of Public Comments Received by WDNR between March 12 and April 3, 2015