

FOREST JUNCTION 2035

SEWER SERVICE AREA PLAN

WDNR CERTIFICATION DATE: #####

Prepared by the
East Central Wisconsin Regional Planning Commission
in cooperation with the
State of Wisconsin Department of Natural Resources

The preparation of this document was financed in part through a Water Quality Planning Assistance Grant from the Wisconsin Department of Natural Resources and Section 205(j) of the Clean Water Act.

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Todd Weyenberg, Operations Specilaist, Robert E. Lee & Associates, Inc.
Matthew Payette, Director Planning, Zoning, and Land Information, Calumet County

STATE OFFICIALS

Lisa Helmuth, Bureau of Water Quality, Wisconsin Department of Natural Resources
David Gerdman, Wastewater Engineer, WDNR Northeast Region

EAST CENTRAL STAFF

Joe Huffman, Sewer Service Area Planner, ECWRPC

SUSTAINABLE AND EFFICIENT COMMUNITY SERVICES AND FACILITIES COMMITTEE

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Brian Smith
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Brenda Schneider

ABSTRACT

TITLE: Forest Junction 2035 Sewer Service Area Plan

CONTACT: Joe Huffman – Sewer Service Area Planner

AUTHORS: Joe Huffman – Sewer Service Area Planner

SUBJECT: Sanitary sewer service area delineation for future community growth.

DATE: ##### (WDNR Approval/USEPA Certification Date)

PLANNING AGENCY: East Central Wisconsin Regional Planning Commission

SOURCE OF COPIES: East Central Wisconsin Regional Planning Commission
400 Ahnaip Street, Suite 100
Menasha, WI 54952
(920) 751-4770
www.ecwrpc.org

This plan updates and supersedes the *2000 Forest Junction Sewer Service Area Plan* which is an element of the *Water Quality Management Plan*, Plum and Kankapot Creeks Watershed, Wisconsin. This plan was prepared by the East Central Wisconsin Regional Planning Commission and was certified by the Wisconsin Department of Natural Resources on ##### as an amendment to the *Lower Fox Basin Integrated Management Plan, (2001)*. It provides population and land use projections and delineates future growth areas for the Forest Junction Sewer Service Area. Also identified are environmentally sensitive areas which are prohibited from development. This plan contains policy recommendations encouraging cost-effective and environmentally sound development patterns.

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CHAPTER 1: INTRODUCTION

This report represents the second update of the *Forest Junction Sewer Service Area Plan*, a formal element of the *State of Wisconsin's Water Quality Management Plan*, which for this area includes the *Lakeshore State of the Basin Plan, 2001* and *Lower Fox Basin Integrated Management Plan, (2001)*. In the thirty years sewer service areas have been in effect, they have had significant impacts on urban development. Both communities and land developers are now more aware of sewer service areas and are using the plans and policies in planning future growth.

REPORT FORMAT

This plan describes and delineates the 2035 Forest Junction Sewer Service Area. The plan was developed in accordance with state and federal guidelines and involved public input and review. These measures include:

- one public hearing/informational meeting; and
- working sessions with local officials.

This plan discusses the Sewer Service Area, (SSA), characteristics, projected growth levels and the service area plan map, (Map 8). The beginning and end portions of this document discuss traits common to all SSA plans, such as:

- service area goals, objectives and policies;
- service area delineation and planning process; and
- service area amendment and update process.

PURPOSE

This *Forest Junction Sewer Service Area Plan* update amends the *2000 Forest Junction Sewer Service Area Plan*. The update is part of a regularly scheduled re-evaluation of sewer service area plans. Water quality plan elements, including sewer service areas, are to be updated every five years as provided by Wisconsin Administrative Code NR-121.07(2)(a)1. However, this schedule is dependent upon available funds and priorities established within the WDNR.

Sewer service area plans serve as a basis for Wisconsin Department of Natural Resources (WDNR) approval of state and federal grants for the planning and construction of wastewater collection and treatment facilities. They also serve as a basis for WDNR approval of locally proposed sanitary sewer extensions and the Wisconsin Department of Safety and Professional Services approval of private sewer laterals. In addition, environmentally sensitive areas (ESAs) identified in the service area plans serve as a guide for environmental permit decisions by federal and state and local agencies.

Sewer service area plans are intended to be an important planning and development guide for local communities. The updated plans:

- Identify wastewater treatment and collection needs for sewer service areas through the year 2035.
- Forecast the amount and location of future urban development areas.
- Identify environmentally sensitive areas where development should be limited to protect water quality.
- Contain land use development forecasts and recommendations for implementing wastewater treatment and collection plans for individual sewer service areas.
- Establish "holding tank" service areas for isolated and rural special uses where appropriate.

BACKGROUND

The passage of the Federal Water Pollution Control Act Amendment (P.L. 92-500) in 1972 marked the beginning of a new approach to the planning, design and construction of municipal wastewater collection and treatment facilities. This law established areawide water quality management planning under Section 208 and also the Facility Planning Grant Program under Section 201. The preparation of sewer service area plans for major urban areas was a significant part of this planning process, (see Map 1 for 'designated' and 'non-designated' areas).

In recent years, the State of Wisconsin has embodied many of the federal areawide and facility planning requirements in the Wisconsin Administrative Code. These administrative rules set forth clear procedures and standards regarding the preparation of these plans and their implementation. Specific sections of the code directly pertaining to these activities are NR-121, concerning areawide waste treatment management planning; and NR-110, concerning facility planning and sanitary sewer extensions.

In June 1977, East Central completed initial sewer service area plans for 23 communities within the Fox Valley area under contract with the Fox Valley Water Quality Planning Agency (FVWQPA). These plans delineated sewer service areas through the year 2000. The service area plans were adopted as part of the Point Source element of the *Fox Valley Water Quality Management Plan* in January 1979. In 1985, the East Central Wisconsin Regional Planning Commission entered into a memorandum of understanding with the Wisconsin Department of Natural Resources to initiate sewer service area planning for the non-designated portions of the East Central ten county region. This memorandum sets out the responsibilities and relationships among the parties relative to the planning, management and implementation of sewer service area plans.

The contractual agreement provides that East Central will periodically review, revise and update the service area plans, and review proposed sewer extensions and sanitary laterals for conformance with the approved areawide water quality plan. As provided by Wisconsin Administrative Code NR-121, the WDNR's role is to review and approve every sewer service area plan and plan amendment taking into account water quality impacts and cost effectiveness.

The WDNR and East Central Planning also reviews and approves plans for wastewater treatment facilities and sewer extensions and laterals based upon conformance with the

areawide plan. The contract agreement outlines rather broadly the responsibilities of each of the agencies involved in managing sewer service areas.

In order to address specific development proposals which impact sewer service area plans on a day-to-day basis, East Central has adopted an "Amendment Policy and Procedure for Sewer Service Areas." The amendment policies and procedures, initially adopted in 1978, were revised in 1984, 1990, with additional amendments regarding the urban areas (Fox-Cities/Oshkosh/Fond Du Lac) in late 1996 and early 1997. These policies and procedures established standards and criteria for amending sewer service area boundaries and also describes the procedure for amending sewer service area plans. The amendment policies, (page 75), provide a mechanism whereby communities can alter service area boundaries in response to changes in both the rate and direction of development.

The amendment process provides the flexibility for communities to adjust to short-term changes in development trends and thus provides a means of accommodating changing development trends between the five-year updates.

The *Forest Junction Sewer Service Area Plan* was adopted by the Forest Junction Utility District on #### and by the Town of Brillion on ####. East Central's Sustainable and Efficient Community Services and Facilities Committee adopted the plan via Resolution ##### on #### and by its full Commission on ####. The plan update was certified by the Wisconsin Department of Natural Resources and became effective on #### (Appendix A).

GOALS, OBJECTIVES AND POLICIES

In the ten-county region of the East Central Wisconsin Regional Planning Commission, sewer service area plans are prepared within the context of the regional comprehensive land use plan, *New Directions for Growth and Development* (ECWRPC, 1978). The process used for the 1978 land use plan established goals, objectives and policies formulated in response to citizens' desires and needs brought forth in East Central's public participation program. Appropriate goals, objectives and policies were referenced as the groundwork for the establishment of 104 urban service area plans and boundaries.

A major review and update of the goals, objectives and policies was completed in 1995 and 1996 and have been incorporated within the Community Facilities Chapter of the Commission's approved *2030 Regional Comprehensive Plan* (visit www.ecwrpc.org for a .pdf copy.) As part of the updating process in 1995 and 1996, the earlier set of goals, objectives and policies have been refined to provide more specific guidance for service area planning. The refinements are a result of additional community and technical advisory committee participation in the service area update planning process. The refinements also reflect various state and federal laws and regulations which impact sewer service area growth and development activities.

Four overall goals have been identified. These goals and related objectives and policies pertain to growth management, urban service delivery, environmental resources and open space. Objectives and policies related to the goals point out the significant interrelationship between urban growth and land use, sanitary sewerage planning and the environment. Together, they provide a sound basis for determining a community's future development.

The intent of the *2030 Forest Junction Sewer Service Area Plan* is to encourage efficient, orderly and planned land use development patterns which allow for logical, cost-effective

sewered development that incorporates sound environmental management practices. The land use element provides direction and integrates four sub-area functional plans which have direct impacts on future land use. These functional areas are Growth Management, Urban Service Delivery, Environmental Resources and Open Space.

GROWTH MANAGEMENT

Goal: Encourage an orderly and planned pattern of community growth and development.

Objective: Allocated Growth. Promote balanced allocation of land areas to accommodate current and future urban development needs.

Policies:

1. The supply of land allocated for urban development should approximate the current and future needs as determined from population, employment and land use projections which have been developed in conjunction with adopted comprehensive or urban service area plans. Allowances are also made for local circumstances.
2. New urban development patterns should incorporate planned areas of mixed use and density neighborhoods that are clustered and compatible with adjacent uses.
3. Work places, shopping centers, recreational facilities, and community facilities should be located to provide a mix of land uses for improved accessibility for residents.
4. Urban designs with higher density land use alternatives should be promoted.

Objective: Planned Urban Communities. Promote planned urban communities which contain centralized, compact, contiguous and compatible urban development patterns.

Policies:

1. Vacant developable lands within existing urban areas should first be in-filled, then development staged outward from the existing development limits.
2. New subdivision development should be encouraged within existing urbanized areas or as an expansion of existing urban areas concurrent with the provision of necessary facilities and services.
3. The expansion of major commercial and industrial land use activities should be adjacent to existing areas or in areas designated for such development in adopted comprehensive plans.
4. Natural and man-made features, such as ridge lines, streams and major highways, should be considered in the expansion and staging of urban development.
5. Urban development should only take place in designated urban service areas.
6. Community development plans should be coordinated in multi-jurisdictional urban areas.

7. Urban sprawl in the form of unplanned development which is non-contiguous, low density, scattered and inefficiently served should be discouraged.

Objective: Environmentally Sound Development. Promote urban development which protects environmentally sensitive areas and is compatible with the natural resource base.

Policies:

1. Urban development should be directed to suitable land and discouraged on unsuitable land, such as floodplains, wetlands, prime agricultural soils, areas of high bedrock and groundwater, steep slopes, prime wildlife habitat, unique scientific areas and areas of historical or archeological significance.
2. The development of environmentally sensitive areas should be discouraged.
3. Adverse development impacts to surface water and groundwater should be mitigated.
4. Designs and plans for new development should preserve open spaces for public use, complement the existing landscape, and conserve energy and natural resources.
5. Land reclamation should be required following extractive operations or other uses which significantly alter the land surface.
6. Urban redevelopment activities should weigh environmental, health and safety factors against associated costs and benefits.

Objective: Efficient Development. Promote efficient and cost-effective development in urban growth areas.

Policies:

1. Urban development should be encouraged at densities adequate to sustain reasonable urban service costs.
2. Urban development should occur in areas served by adequate public facilities and services.
3. A variety of types, prices and locations of housing should be provided to promote convenience, choice and affordability.
4. Development patterns and site designs that support multimodal transportation should be encouraged.
5. Major commercial and industrial areas should be provided with readily accessible major transportation systems.
6. Community comprehensive plans should be adopted prior to the extension of urban services.

Objective: Rural Land Development. Preserve rural land uses by requiring planning which considers water and sanitary sewer adequacy.

Policies:

1. Agricultural and open space characteristics of rural areas should be preserved.
2. Rural development should be limited to land with suitable physical characteristics and soils supporting conventional on-site sewage treatment systems.
3. Rural residential housing should be limited to dependent single lot use in agriculture and open space areas.
4. Rural subdivision development should be limited to areas which do not negatively impact agricultural or open space uses and the provision of public services.
5. Rural subdivision development should be restricted in urban planning areas until long-term urban services are provided.

Objective: Compatibility with the Transportation Network. Encourage development in areas that are served by existing transportation infrastructure.

Policies:

1. Infill development and redevelopment projects should be promoted in order to avoid the need for extension of transportation infrastructure and service.
2. Design standards for infill should be given different consideration for transportation/traffic requirements compared to "greenfield" development.

URBAN SERVICE DELIVERY

Goal: Promote urban services in an efficient, environmentally sound, and socially responsible manner.

Objective: Economical Public Facilities. Provide efficient, economical, and equitable public facilities and services to urban development.

Policies:

1. The use of existing public facilities and services should be maximized in the allocation of future urban growth.
2. Designing of new and upgraded transportation and utility facilities with capacities sufficient to respond to existing demand levels and to the additional demand generated by planned development should be encouraged.
3. A full range of essential urban services and facilities should be provided to urban development areas.

4. The costs of providing urban services should be minimized through higher density development.
5. Major infrastructure extensions should be staged to coincide with community growth rates.
6. Utilities serving individual developments should be extended consistent with community water and wastewater system plans.
7. Provision of public facilities and services should be coordinated with the location and timing of new development.

Objective: To promote sanitary sewerage systems which are environmentally sound.

Policies:

1. Disturbances of natural resources should be minimized when constructing sanitary sewerage systems.
2. Constructing sanitary sewers through environmentally sensitive areas should be avoided whenever possible.
3. The design and construction of sanitary sewerage facilities should not promote development in environmentally sensitive areas.
4. Sanitary sewerage systems should meet water quality standards.
5. When feasible, sanitary sewer systems and stormwater drainage systems should be designed and constructed concurrently to achieve pollution abatement, gain drainage benefits and minimize disruption of natural resources.
6. Erosion and sediment control practices should be utilized in constructing sanitary sewer systems where the potential for erosion is high.

Objective: To promote sanitary sewerage systems which will effectively and economically serve urban development.

Policies:

1. The number of waste treatment plants should be minimized to avoid duplication of facilities, institute economies of scale and lessen environmental degradation.
2. Urban development should be provided with sanitary sewer service which is reasonably sized.
3. Existing capacity in sanitary sewerage systems should be used before making substantial expansion or extensions of service.
4. Sanitary sewerage system construction and sizing should be staged to encourage lower capital investment and greater flexibility.

5. Sanitary sewerage systems should be provided for existing development whenever they are the most cost-effective alternative for addressing failing on-site disposal systems.
6. Gravity flow sewer and interceptor systems should be utilized whenever it is cost-effective.

Objective: Cooperative Provision of Services. Provide services where efficiency, equity, and economies of scale can be obtained through cooperation and coordination.

Policies:

1. Overlapping urban service areas, facility and system capacities and service capabilities should be discouraged.
2. The proliferation of major public infrastructure facilities should be discouraged.
3. Inter-municipal agreements should be promoted for the provision of joint services.
4. More uniform facility design and service standards should be encouraged for multiple jurisdiction development areas.

ENVIRONMENTAL RESOURCES

Goal: Protect the environment and manage natural resources in an ecologically sound manner.

Objective: Water Quality Protection. Improve and protect surface and groundwater quality.

Policies:

1. The quality and supply of groundwater should be protected as the principal source of water supply and encourage water conservation programs.
2. The use of natural drainage patterns and measures should be promoted to enhance water quality.
3. Wetlands should be preserved as an essential component of the hydrologic system.
4. The risk of groundwater contamination should be reduced in aquifer recharge areas.
5. Lakeshore and streambank erosion should be minimized.
6. Construction site erosion should be controlled and urban stormwater runoff reduced.
7. Non-point source pollution abatement programs should be supported.
8. The adverse water quality impacts of agricultural runoff should be minimized.

Objective: Air Quality Maintenance. Improve or maintain high air quality throughout east central Wisconsin.

Policies:

1. Air pollution abatement programs and air quality regulations should be supported.
2. Geographically coordinated abatement strategies should be encouraged.
3. The public should be provided with information on air quality programs and specific air quality problems.
4. The increased use of transportation modes that are more efficient and environmentally sound than the private automobile should be encouraged.
5. Noise pollution should be reduced and noise sources isolated.

Objective: Environmentally Sensitive Area Protection. Preserve and protect environmentally sensitive areas and promote the linkage of these areas into environmental corridors.

Policies:

1. The natural environment should be recognized as an integrated system of interacting and finite land, water and air resources to protect the health and stability of this system.
2. Shoreland, floodplain and wetland areas should be protected as essential components of the hydrologic system and their scenic and recreational value preserved.
3. The disturbance of environmentally sensitive areas by utilities and transportation facilities construction should be minimized.
4. Critical natural areas should be preserved and protected from development and other adverse impacts.
5. Adjacent land uses which adversely impact sensitive areas should be restricted or mitigated.
6. The interrelationship of adjacent landscape types should be recognized to avoid dividing the natural units or breaking important linkages.

Objective: Wildlife Habitat Management. Manage wildlife and wildlife habitat in a manner that maintains ecological stability and diversity, and considers social and economic impacts.

Policies:

1. The diversity and population of plant and wildlife species should be maintained and increased.
2. Critical habitat areas for endangered and rare species should be preserved and enhanced.

3. Wildlife habitat such as fencerows, woodlots and natural areas should be protected and expanded.
4. Adequate public access to hunting and fishing areas should be provided.
5. Responsible public use of private land should be encouraged.
6. Wildlife and plant populations should be managed in ways that do not impose undue financial loss to individual property owners.
7. Plant and animal preserves used specifically for educational and observational purposes should be maintained and expanded.

Objective: Food and Fiber Production. Preserve land suitable for the production of food and fiber to meet present and future needs.

Policies:

1. Land best suited for agriculture or forestry should be preserved for these uses or in other uses which enable the land to be readily converted to agricultural or forestry production.
2. Ecologically sound and economically feasible farm and forestry management practices which preserve soil productivity and minimize soil loss should be encouraged.
3. Soil should be recognized as one of the basic and most important resources and programs to preserve and improve productivity and wise use consistent with soil capability should be developed and promoted.

Objective: Solid Waste Management. Employ a comprehensive management approach for solid and organic wastes.

1. Unique areas should be protected by minimizing the impact of individual development proposals.
2. Significant natural areas should be preserved as public open space.
3. Public access and use within environmental corridors and drainage ways should be promoted.

OPEN SPACE

Objective: Urban Recreation Needs. Plan for the future open space and recreational needs of the urban area.

Policies:

1. All municipalities should be encouraged to participate in the development of a comprehensive park and open space plans.
2. Opportunities should be identified for developing a network of recreational trails along highly attractive environmental corridors, natural waterways, and transportation rights-of-way to link major recreational facilities and residential areas.
3. Coordination between neighboring jurisdictions should be facilitated for development of parks and recreation facilities and linkages.
4. Future parks and open space areas should be preserved so that suitable and adequate land will be available to provide active and passive recreational opportunities as growth occurs.

Objective: Cost-Effective Recreation. Provide recreational opportunities in a cost-effective manner.

Policies:

1. Facilities should be developed which can provide multi-seasonal recreational opportunities.
2. The use of existing recreational facilities should be optimized.
3. Duplicative recreational facilities and programs should be avoided.
4. Grants and funding assistance should be maximized in the acquisition and development of recreational facilities.
5. Municipalities and school districts should be encouraged to cooperate in the development of community recreational and playground facilities.
6. The development of the county park system should be encouraged to complement recreational opportunities available in local parks.
7. Municipalities should be encouraged to establish capital funding and other parkland dedication methods to provide for future recreational needs.

Objective: Attractive Communities. Make individual communities, and the region as a whole, a more attractive place to live, work, and play.

Policies:

1. Scenic areas should be preserved and landscaping and other site development requirements strengthened to promote community beautification.

2. Additional billboard proliferation should be prevented, their placement controlled and a phase-out program promoted.
3. Community tree planting programs on street terraces and public areas should be promoted.
4. Waterfront areas should be preserved and redeveloped to promote greater public recreational use.
5. Scenic easements to protect important viewsheds should be considered.

WATER QUALITY MANAGEMENT AREAS

The *Statewide Water Quality Management Plan* identifies three designated, (complex), water quality management planning areas within the State of Wisconsin with the remainder of the state identified as a "non-designated" area. Within the East Central region, the Fox Valley Designated Water Quality Management Area comprises major portions of the four urban counties surrounding Lake Winnebago, (Calumet, Outagamie, Fond du Lac and Winnebago). The 1,580 square mile area has been specifically designated for water quality planning because of the concentration of industries and urbanization along the Fox River and Lake Winnebago. Within this overall area there are 17 different sewer service areas that have been delineated and individual plans prepared, (Map 1).

The remainder of the region is identified as a non-designated water quality management area. To date, within the East Central region, there are seven sewer service area plans in effect within the non-designated 208 area. The "non-designated" portion of the East Central region, as well as the remainder of the state, are further divided into major river basins. For each river basin the WDNR has prepared a water quality plan. The Forest Junction Sewer Service Area is located within a "designated" area and lies primarily within the Plum and Kankapot Creeks watershed, Lower Fox River Basin.

**Map 1
Fox River Water Quality Management Area**

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CHAPTER 2: FOREST JUNCTION SEWER SERVICE AREA PLAN OVERVIEW

PLAN ASSUMPTIONS AND READER NOTES

The beginning year for this update was 2014, and hence; data was finalized mid-2014 to coincide with this starting timeframe. The plan itself looks out 20 years into the future (2035). The reader should further note that all references to SSA boundaries and acreages are associated with the 'updated' (2014) land use conditions, not with the 'current' (2000) plan features. Basically, the plan is written as if it has already obtained WDNR approval.

2035 SSA POPULATION, DEVELOPMENT AND ACREAGE PROJECTIONS

In order to ease the reading of this document, all of the detailed demographic and development projection data for each Designated Management Areas (DMA) are contained in a separate appendix (Appendix B). Figures for the aggregate SSA are referenced in the text for descriptive purposes. An attempt was made to have all data reflect conditions as of mid-year, 2014. The planning horizon also encompasses a slightly longer time span, rather than the traditional 20 year span. This will allow staff to provide (in 5-year increments) a 20-year population and development projection when reviewing sewer projects and sizing through the Water Quality Management (WQM or 208) review process.

FUTURE LAND USE DESIGNATIONS

The SSA plan has tables and maps which illustrate 2035 SSA's vacant acreage by proposed land use type. Each community's land use classification scheme was assessed and simplified so that common land use categories could be compared.

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CHAPTER 3: FOREST JUNCTION SEWER SERVICE AREA

PLANNING AREA DESCRIPTION

The planning area is defined partially by what is felt to be an approximation of the "ultimate service" area of the treatment plant based on capacity, the extent of service areas for individual lift stations or interceptor sewers, as well as delineating and including nearby clusters of development currently utilizing on-site systems which may have long-term needs for sanitary sewer (usually more than 20 years). Regionalization with a major wastewater treatment facility, (City of Brillion), has been deemed premature and infeasible at this time. This circumstance is addressed through this plan's "Goals, Objectives and Policies" section of this report, (page 1- 8). It should also be noted East Central administers a sewer service area plan for the City of Brillion with these same goals, objectives and policies. Future updates to this plan will continue to explore the concept of regionalization where and if practical.

The Forest Junction planning area and sewer service area are located in the northeast part of Calumet County. U.S. Highway 10 and State Highways 32 and 57 converge on the community of Forest Junction. County trunk highway K defines the northern planning area boundary while Harvestore Road makes up the southern boundary. Micke Road signifies the eastern planning area boundary and Plum Creek defines the eastern boundary, more or less. The entire planning area is located within the Town of Brillion, (Map 2). The total planning area encompasses approximately 1,984 acres or 3.1 square miles. The planning area includes portions of Sections 7, 8 ,9, 16, 17 and 18, T.20N-R.20E.

Planning Area Additions/Expansions

There were no portions deleted from the previous planning area, (Map 2). The planning area boundary was expanded into the northwest portion of Section 16 more generally described as south of Rusch Road and east of Keuer Road. This minor expansion was necessary to bring the force main located in Rusch Road in conformance with the plan. This planning area expansion involved 15.8 acres.

LAND USE AND DEVELOPMENT

Map 3 illustrates the 2014 existing land use for the Forest Junction SSA along with the updated planning area boundary for reference purposes. This information is based on the Commission's detailed land use inventory with corrections made by the community during the update process. This data corresponds with a timeframe (or 'snapshot') of mid-year 2014.

In this update, the 2035 SSA contains 574.6 acres, an increase of approximately 46% over the last plan period or 182.2 acres. Within the 2035 SSA 236.8 acres, (41.2%), are considered to be developed. The developed lands can be described as follows (Appendix B, Table B-11): 101.9 acres of single family and multi-family residential land use (17.7% of total SSA); 7.7 acres of commercial land use (1.3% of total SSA); 1.6 acres of industrial land use (.3% of total SSA); 92.9 acres of transportation/road use (16.2% of total SSA); 25.1 acres of public/institutional/use (4.4% of total SSA) and 6.3 acres of utility use, (1.1% of total). This update also contains 38.9 acres of environmentally sensitive areas which can be broken down by the following categories; 30.5 acres of stream/wetland buffers, 8.3 acres of wetlands and .12 acres of open water.

Residential Development

Residential development within the 2035 Forest Junction Sewer Service Area is the dominate land use category. There are considered to be 2.4 acres of multi-family residential, exclusively confined to an area on the western right of way of Holmes Road. The bulk of single family residential development can be found concentrated in neighborhoods in the central and south central portions of the community. Newer subdivisions of residential development are found south of STH 57 & 32 and north of USH 10, (Junction Meadows and Stanelle Acres and the 1st Addition to Stanelle Acres). It is anticipated that this area will continue to develop as single family residential development within the Forest Junction Utility District. Other areas slated for residential development include vacant acreage between Church Street and Holmes Road, south of USH 10 and west of the Forest Estates Subdivision. Additionally, residential development in the form of mobile homes could materialize west of STH 57 & 32 and south of USH 10.

Commercial Development

Existing commercial development accounts for only 1.3% of the total developed areas within the 2035 Forest Junction Sewer Service Area. Commercial areas are concentrated at the west end of the Forest Junction Utility District along the north and south sides of USH 10. A small amount of commercial development can be found along Main Street south of USH 10. Future commercial development is anticipated to continue in these areas especially the USH 10 corridor. As future commercial uses materialize they may manifest themselves as a matter of enhancements of existing businesses, re-development of vacant storefronts or new start-ups.

Industrial Development

The *2035 Forest Junction Sewer Service Area Plan* will have approximately 21 acres for the purposes of industrial expansion. Industrial development is predominately confined north of USH 10 and southeast of STH 57/32. Minor pockets of industrial uses are also found in the extreme southern portion of the Forest Junction Utility District east of Church Street.

Public/Institutional Uses

Public and institutional land uses comprise 5.5% of the land cover within the 2035 Forest Junction Sewer Service Area. The more significant uses include the wastewater treatment facility, Zion United Methodist Church and the Outer Limits Youth Outreach Center. Currently, there are no elementary and high schools or higher education facilities within the Forest Junction Utility District.

Map 2 - 2050 Planning Area Boundary

BACK OF MAP 2

Map 3 - Year 2014 Existing Land Use

BACK OF MAP 3

LIMITING ENVIRONMENTAL CONDITIONS

Limiting environmental conditions for development are found within the Forest Junction planning area as indicated on Map 4. Steep slopes are exclusively found south of Schmidt Road along the northern planning area boundary. Bedrock features are non-existent within the planning area boundary. Groundwater within two feet of the surface is scattered throughout the 2050 planning area.

Watersheds and Water Features

The 2050 Forest Junction planning area is for all intents and purposes located within the Lower Fox River Sub-Basin and Lakeshore Sub-Basin both being part of the Lake Michigan Drainage system. The Lower Fox River Basin drains an area of approximately 638 square miles and the Lakeshore Sub-Basin has a drainage area of approximately 1, 777 square miles. The primary watershed within the 2050 Forest Junction planning area is the Plum and Kankapot Creek watershed. The North Branch Manitowoc River watershed is also present within the 2050 Forest Junction planning area, however, the impact to the watershed is very minimal. The Plum and Kankapot Creek watershed, in its totality, has an area of approximately 53, 760 acres or 84.1 square miles. Ninety-eight percent of the 2050 Forest Junction planning area resides within the Plum and Kankapot Creek watershed leaving 2% within the North Branch Manitowoc River watershed.

Plum Creek is the major surface water feature within the 2050 Forest Junction planning area. Plum Creek enters the 2050 Forest Junction planning area in the southwest quadrant crossing at STH 57 and winding its way northeasterly exiting the 2050 planning area at Keuer Road south of USH 10. This water feature then heads north of USH 10 and skirts the eastern 2050 Forest Junction planning area boundary flowing beyond the wastewater treatment facility. Plum Creek is the discharge point for the Forest Junction wastewater treatment facility. Also evident throughout the 2050 Forest Junction planning area are numerous unnamed streams and tributaries to Plum Creek. These features are all considered to be environmentally sensitive, and as such, are buffered 75 feet from their centerlines.

Additional information on basins and watersheds in this region can be found in a 2001 Wisconsin Department of Natural Resources publication, *Lower Fox Integrated Management Plan* and the *2001 Lakeshore State of the Basin Report*.

Wetlands

Wetlands, (Map 4), are essential environmental features for providing wildlife habitat, scenic open spaces, flood water retention and groundwater discharge areas. Wetlands act as a natural filtering system for nutrients such as phosphorus and nitrates. They provide a buffer zone protecting shorelines and stream banks. Two wetland complexes exist in the south-central portion of the 2050 Forest Junction planning area. These wetlands are classified as forested and/or forested emergent types.

The 2050 Forest Junction planning area contains a total of 52.9 acres of designated, mapped wetlands and a total of 30.4 acres of fifty foot buffers. Wetlands are considered to have development limitations and development within these areas is discouraged. The community of Forest Junction operates under Calumet County Shoreland Ordinances developed in 1993. This ordinance regulates development within 1, 000 feet from ordinary high water mark of a

lake, pond or flowage and within 300 feet from the ordinary high water mark of a river or stream. The Forest Junction community is encouraged to implement the goals, objectives and policies found in Chapter 1 of this report and more particularly the Growth Management element pertaining to Environmentally Sound Development.

Wisconsin Administrative Code NR 115 and NR 117 mandate that wetlands be protected in both the rural and urban areas of the state. In the unincorporated areas, NR 115 protects wetlands or portions of wetlands within the shoreland zone that are designated on Wisconsin Wetland Inventory maps prepared by the Wisconsin Department of Natural Resources. To protect wetlands in incorporated areas, NR 117 was enacted in 1983 and requires that all wetlands or portion of 5 acres or more in size located in the shoreland zone be protected and outlines minimum shoreland zoning standards for Wisconsin cities and villages. In addition to NR 115 and NR 117, NR 103 outlines water quality standards for wetlands and requires that all practicable alternatives be considered to avoid and minimize wetland disturbance and to ensure preservation, protection, restoration and management of wetlands. Any alterations that are to be made to any wetland, regardless of size, need to be reviewed and approved by the U.S. Corps of Engineers and the WDNR before any action can be taken.

Floodplains

Mapped FEMA Floodplains and flood prone areas are primarily confined south and east of the 2050 Forest Junction planning area. There are no mapped flood hazard areas within the immediate area of the community of Forest Junction. Areas susceptible to flooding are considered unsuitable for any type of development due to the potential health risks and property damage. As an unincorporated place, the Forest Junction community and the Town of Brillion is regulated by Calumet County's Floodplain Zoning Ordinance.

Soils

Soils support the physical base for development within the 2050 Forest Junction planning area. Knowledge of the limitations and potential difficulties of soil types is important in evaluating land use proposals such as residential development, utility installation and other various projects. Some soils exhibit characteristics such as slumping, compaction, erosion, and high water tables which place limits on development. Severe soil limitations do not necessarily indicate areas cannot be developed, but rather indicate more extensive construction measures must be taken to prevent environmental and property damage. These construction techniques generally increase the costs of development and the utilities needed to service that development.

According to the *Soil Survey of Calumet and Manitowoc Counties*, prepared by the USDA in 1980, one major soil association is present within the 2050 Forest Junction planning area:

- **Kewaunee-Manawa-Poygan Association:** This soil association is located in the extreme northeast portion of the Town of Brillion and comprises approximately 5 percent of the total area. Glacial ground moraines, terminal moraines and areas underlain by lacustrine deposits can be found. The well-drained, nearly level to steep Kewaunee soils formed under forested areas and are subject to erosion for agricultural uses. The Manawa and Poygan soils are somewhat poorly drained and nearly level to gently sloping. Their use is limited due to its wetness. Most of this association is used for crops with the steeper areas used for permanent pastures or woodlots.

Additionally, based on this soils information, steep slopes, (6%-12% and greater), are identified in areas of the planning area, (Map 4). Identifiable steep slopes are located in the extreme north central portion of the 2050 Forest Junction planning area accounting for 10.8 acres or less than .5% of the total 2050 planning area.

Bedrock conditions are not evident within the 2050 Forest Junction planning area therefore posing no limitations to development.

Groundwater

The groundwater resources within the Forest Junction area are generally plentiful, however, of poor quality. Groundwater conditions within the 2050 Forest Junction planning area are linked directly to the surficial glacial deposits and underlying bedrock structure. Forest Junction is located west of the Niagara Dolomite formation, (also known as an escarpment), and has three aquifers present. These aquifers are generally described as follows:

- **The Water Table Aquifer** – This aquifer is present throughout the Town of Brillion and consists of glacial sediments deposited by several glacial advances that covered Calumet County. The thickness of this aquifer is variable whereby its greatest thickness is found in pre-glacial bedrock valleys and is least prominent over topographic highs in the bedrock surface. Sand and gravel seams, present throughout the aquifer, transmit adequate amounts of water for private well systems.
- **The Platteville-Galena Aquifer** – Located below the Water Table Aquifer as well as the Mequoketa Shale layer this aquifer is comprised primarily of dolomite and performs as a somewhat porous layer over the sandstone aquifer. It does not transmit water as readily as the underlying sandstone, however, is capable of providing adequate amounts of water to private water systems due to secondary fractures.
- **The Cambrian (St. Peter's) Sandstone Aquifer** - The area's thickest and most important aquifer in Calumet County. It is the most widely used for sustained high capacity wells for municipal and industrial uses.

The vertical flow of water is hampered due to the presence of the Mequoketa Shale. Groundwater recharge within the 2050 Forest Junction planning area is considered as high, 4 -8 inches per year, as suggested in the 2011 report *Groundwater Recharge in Calumet, Outagamie and Winnebago Counties, Wisconsin, Estimated by a GIS-based Water-Balance Model* conducted by East Central Regional Planning Commission and the Wisconsin Geological and Natural History Survey. Additional typical recharge areas include wetlands and permeable soils within the area for the Water Table Aquifer. The main recharge areas for the Platteville-Galena and Sandstone Aquifers occur further west of Forest Junction. While groundwater within 2 feet of the surface exists primarily in the southern portion of the 2050 Forest Junction planning area and accounts for 4% of the total planning area or 79.6 acres. Failing on-site waste disposal systems, abandoned or active landfills, agricultural practices, quarries and other land uses have the potential to be a direct source of contamination of these aquifers if not managed properly.

The Forest Junction Utility District provides its residents with public drinking water from a municipal system drawing water from the Sandstone Aquifer.

This somewhat deeper aquifer is not as susceptible to contamination due to a layer of Mequoketa Shale. Individual, private and shallower wells outside the Forest Junction Utility District, more particularly, the 2050 Forest Junction planning area tend to be more susceptible to the threat of contamination. The Town of Brillion, for the most part, does not possess an abundance of good quality groundwater. The *City & Town of Brillion Coordinated Comprehensive Plan* identifies sulfur and nitrates from farm operations as a source contributing to the overall poor quality regarding groundwater. This circumstance results in deeper well drilling for new development within the Town of Brillion.

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Map 4 - ESA's and Limiting Environmental Conditions

BACK OF MAP 4

DESIGNATED MANAGEMENT AREAS

Map 5 illustrates the existing Designated Management Areas (DMAs) within the 2035 Forest Junction Sewer Service Area. DMAs are the legal entities (communities, sanitary districts, or utility districts), responsible for the collection and/or treatment of wastewater. Within the 2050 Forest Junction planning area there are three governmental entities that exist, one of which is the Designated Management Agency.

- Forest Junction Utility District*
- Town of Brillion
- Calumet County

Short descriptions of each DMA, including basic information on their involvement in land use planning and intergovernmental cooperation activities is contained below:

Forest Junction Utility District – The community of Forest Junction formed the Forest Junction Sanitary District in 1977 to begin addressing failures of private on-site systems due to poor soil conditions and groundwater issues. As a result, a public water distribution system in conjunction with sanitary sewer mains were installed in 1980. The Forest Junction Utility District, (FJUD), covers an area of approximately 1.2 square miles or 749.5 acres. In the 2010 Census count the Town of Brillion had a population of 1,486 persons with 2.7 persons per household. The 2010 population for the Forest Junction Utility District was estimated at 664 with 2.7 persons per household. The Forest Junction Utility District is sole provider of sewer service for the unincorporated areas of the town.

The Forest Junction Utility District holds monthly meetings at the Brillion municipal facility, a relatively new building, located at the east end of Forest Junction on the south-side of USH 10. The Brillion Fire Department is also housed at this municipal facility. A collaborative effort between the Town of Brillion and City of Brillion resulted in the development of the *City & Town of Brillion Coordinated Comprehensive Plan* in 2003.

Town of Brillion – A portion of the Town of Brillion is within the *2035 Forest Junction Sewer Service Area Plan*. The Town of Brillion portion in this plan totals approximately 94.2 acres or nearly 16.5% of the total service area. Sewer service is provided to the mobile home park located west of STH 54/32 and south of USH 10. The southern two-thirds of this development, however, is not within the Forest Junction Utility District. As mentioned earlier in this document the Forest Junction Utility District has been encouraged to amend the district's boundaries to bring this development into the district. The most likely remedies to this may be in the form of a petition by the homeowners or via an enforceable ordinance by the utility district. The majority of residents within the Town of Brillion rely on individual on-site wastewater treatment systems, (conventional, mound or holding tank). Calumet County prohibits the use of holding tanks for new development, however, under certain circumstances may be used as a replacement system for existing development. Based on the 2010 Census the Town of Brillion had a total of 580 households with a persons per household factor of 2.7 equating to 1, 486 persons. The Forest Junction wastewater treatment facility is also located outside the Forest Junction Utility District and in previous updates to this plan had not been part of the approved sewer service area. This circumstance has been rectified during this update process. The lagoon ponds and

* Indicates DMA designation

immediate adjacent lands were included as part of this plan's allocation of acreage as an 'administrative addition'. In addition, the influent to the plant via a six-inch force main was also included as part of this addition. This manifests itself as an one hundred foot easement commencing from the Rusch Road lift station heads just east of Keuer Road where it then turns north to the treatment facility.

Calumet County – Calumet County has certain jurisdictional authority within the townships in the county. County ordinances, among others, include land subdivisions, on-site sanitary systems and various ordinances pertaining to shoreland, wetlands and floodplains. In addition, Calumet County oversees the maintenance of county roadways.

Map 5 - Political Jurisdictions and DMA's

BACK OF MAP 5

SEWERAGE COLLECTION AND TREATMENT SYSTEM

There is no public sewerage system present within the Town of Brillion other than those described for the Forest Junction Utility District and the City of Brillion. The majority of the town relies on private, individual on-site septic systems that include conventional types, mound systems or approved holding tanks. The Forest Junction Utility District was formed in 1977 to begin addressing the preponderance of failing individual on-site sanitary systems. These systems failed due to poor soil conditions related to slow permeability and the presence of high groundwater. This report identifies areas of groundwater within two feet of the surface, however, given the soil types present the vast majority of the Forest Junction Utility District experiences saturated groundwater to within 5 feet of the surface.

The Forest Junction Utility District, formed in 1977, utilizes two stabilization lagoons and operates on a fill and draw basis. The wastewater treatment facility was originally constructed in 1980 with various modifications performed in 1982. The facility is located within the northern portion of the SW ¼, Section 9, T20N, R20E, Town of Brillion. As the sludge blanket becomes too deep the system is drained and the sludge is spread on nearby agricultural fields. The maximum average design flow for this facility is 29,000 gallons per day, (.029 mgd). As development increased through the years the treatment facility's influent flow and loadings also increased. Based on the 2014 Compliance Maintenance Annual Report, (CMAR), the treatment facility had an average daily flow of 43,000 gallons per day exceeding the maximum average design flow by 14,000 gallons per day. This scenario resulted in failing grades for influent flow and loadings as well as failing effluent grades for biological oxygen demand, (BOD), total suspended solids, (TSS) and phosphorus. An additional wastewater facilities plan was undertaken and submitted to the WDNR for approval in May, 2002. Among the several alternatives detailed in the facilities plan the most cost-effective alternative proved to be a modification of the stabilization pond. This alternative would incorporate a second secondary pond which would provide additional storage capacity. The modification is calculated to have a minimum of 260 days of storage which would bring the treatment facility in compliance with required effluent limits. At the present time, Forest Junction is in the process of upgrading the wastewater treatment facility. This treatment facility discharges to Plum Creek being part of the Plum and Kankapot Creeks watershed.

The Forest Junction Utility District provides sanitary sewer to the vast majority of residents within the community. The public sewer network is comprised mostly of eight inch gravity sewers. There are segments of ten inch diameter sewer mains within the Forest Junction Utility District located on Randolph Street exiting from its western cul-de-sac to Humble Lane and connecting to an existing ten inch sewer located on Church Street. The Church Street interceptor commences from Main Street north, (crossing USH 10), to approximately Daisy Lane. Additionally, a 10 inch sewer main located on the north right of way of USH 10 at the STH 57/32 roundabout runs east to Campground Road then along Campground Road to the intersection of Main and Church Streets. A shorter segment of ten inch sewer main commencing at Randolph Street runs easterly along USH 10 terminating at a lift station located near the Brillion town hall. There are two lift stations within the FJUD with one being located at Stanelle and Church Streets and is associated with a four inch force main. One other lift station is located south of Rusch Road just west of the Brillion town hall. At this location there is a six inch force main that transports wastewater to the treatment facility.

There are no serious issues with respect to inflow/infiltration of clearwater into the plant or sewer infrastructure system. While all treatment facilities and sewer systems experience this

phenomenon during heavy wet weather conditions the Forest Junction sewer network is relatively new thereby accounting for the low infiltration rate. There is no requirement in the current WPDES permit for a Capacity, Management, Operation and Maintenance Plan, however, an Operating and Maintenance program is in effect. The Forest Junction Utility District inspects 30% of their manholes annually and corrects any issues when detected. In addition, the FJUD enforces a local sewer ordinance, conducts inspections on private lateral installation and repairs and monitors clearwater originating from sump pumps, roof runoff and foundation drains.

In summary, the permit and design information for the Forest Junction treatment plant is as follows:

- **WPDES Permit Number:** WI 0032123-07-0, Expiration Date December 31, 2011
- **Receiving Water:** Plum Creek, (LF03), Lower Fox River Drainage Basin
- **Design Flow:** .029 mgd
- **Average Flow (Jan.- Dec., 2014):** .043 mgd
- **Design BOD (lb./day):** 55
- **Average BOD Influent (lb./day, Jan.-Dec., 2014):** 43
- **Average BOD Effluent (lb./day, Jan.-Dec., 2014):** 9.6
- **Treatment Type:** Stabilization Lagoons
- **Sludge Treatment:** None required.
- **Sludge Disposal:** When sludge blanket becomes too deep the lagoons are drained, sludge is removed and spread on agricultural lands

Table 1: Forest Junction 2014 WWTF Performance Report

Month	INFLUENT			EFFLUENT		BOD Removal Efficiency
	Avg. Monthly Flow (mgd)	Average Mo. (C)BOD Concentration (mg/l)	Avg. Monthly (C)BOD Loading (lbs/day)	Avg. Monthly (C)BOD (mg/l)	Avg. Monthly TSS (mg/l)	
JAN	0.0277	176	41	0	0	100.00%
FEB	0.0262	226	49	0	0	100.00%
MAR	0.0558	133	62	0	0	100.00%
APR	0.0843	71	50	25	16	64.79%
MAY	0.0541	105	47	18	25	82.86%
JUN	0.0403	135	45	0	0	100.00%
JUL	0.0268	162	36	0	0	100.00%
AUG	0.0293	89	22	21	36	76.40%
SEP	0.0369	108	33	0	0	100.00%
OCT	0.0422	138	48	0	0	100.00%
NOV	0.0411	116	40	21	22	81.90%
DEC	0.0529	98	43	30	38	69.39%
Total	0.52	1,557	516	115	137	
Average	0.043	129.8	43	9.6	11.4	89.61%

Map 6 - WWTF and Infrastructure Locations

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FORECAST GROWTH AND DEVELOPMENT

The 2035 Forest Junction Sewer Service Area is expected to have a slight increase rate of growth as compared to previous years, (Table 2). The total sewer service area is projected to increase by 100 people, thus bringing the population of 664 in 2010 to 764 persons in the year 2035, (the town population also shows an increase in their population over the plan period by 234). Department of Administration population projections are stated in this plan update for the Town of Brillion while the Forest Junction population projections are estimates based on information supplied by the Forest Junction Utility District in the form of actual sanitary connections by type, i.e., commercial/industrial, multi-family and single family residential. In addition, the Town of Brillion population projections are referenced in this plan, however, were partially used in the growth allocation acreage to the extent that new development will be directed to sewerred areas offered within the town. It is anticipated there will be modest growth within the community of Forest Junction in light of the proposed update to the treatment facility. New development may now be accepted given the increased capacity anticipated at the treatment facility. Based on the 2010 Census the population share of the county by municipality using a total county population of 48, 971 is as follows; the Town of Brillion represents approximately 3.03% or 1, 486 persons and the community of Forest Junction being 1.38% of the total or 664 persons. The sewer service area is projected to increase by 100 bringing the estimated figure of 664 to 764 by the year 2035. This plan update uses 2.4 units/per/acre for single family residential densities equating a need for 41 acres for future residential acreage needs and approximately 1 acre for multi-family residential needs are projected for this plan period. This plan identifies 93.25 vacant acres for future single family and multi-family development.

Projections for industrial and commercial development within the service area show a need of an additional five acres for future development. This update identifies nearly 21 acres being available for future commercial and industrial development which may be a more realistic figure. The year 2035 *Forest Junction Sewer Service Area Plan*, as revised and updated, (Map 8), now has a total of 574.64 acres of land, an increase of 182.21 acres from the 2000 plan as amended.

Table 2: Forest Junction SSA Population/Housing Projections

MCD	Projections***							Difference 2010 - 2035	Difference '10-'30 w/10% Increase
	2010*	2015**	2015	2020	2025	2030	2035		
T. Brillion	1,486	1,508	1,505	1,590	1,650	1,705	1,720	234	257
Forest Junction	664	669	667	706	733	757	764	100	110
Total	2,150	2,177	2,172	2,296	2,383	2,462	2,484	334	367

Source: 2010 US Census Bureau, Dept. of Administration Pop. Projections 2015-2040, ECWRPC

MCD	2010*		2015**		2015		2020		2025		2030		2035		Difference '10-'30
	No. HH	Persons per HH	No. HH	Persons per HH	No. HH	Persons per HH	No. HH	Persons per HH	No. HH	Persons per HH	No. HH	Persons per HH	No. HH	Persons per HH	
T. Brillion	550	2.7	571	2.64	570	2.64	624	2.55	663	2.49	702	2.43	726	2.37	175
Forest Junction	246	2.7	253	2.64	253	2.64	277	2.55	294	2.49	312	2.43	322	2.37	76

Source: *2010 Census data; **DOA 2013 Estimate; ***DOA 2015 - 2040 Pop Projections (2013)

GROWTH ALLOCATION AREAS AND 2035 SSA

The policy basis for allocating acreage for future development is outlined in the Sewer Service Area Delineation and Planning Process on page 4-1. These policies take into account a broad range of land use and environmental concerns directed toward encouraging orderly, cost-effective and environmentally sound development. Working within the broad policy base, the sewer service area plan also considers sewer system capacities, land development market trends, development plans and preferences of the individual communities. New vacant lands available for development within the updated SSA boundary total 299 acres.

Priority Development Area Mapping

During the SSA plan update an assessment regarding the phasing, or 'priority' areas of development was determined by the community of Forest Junction. During the working meetings and email exchanges with the Forest Junction Utility District, a map was developed which indicated their general thoughts of development timing based on their local comprehensive plan, landowner knowledge and planned capital improvements. Three levels of 'priority' were assigned to overall areas requested for addition to the current plan update and can be simply described as follows: Priority #1 – generally felt to develop in the next 5 to 10 years; Priority #2 – generally felt to develop in 10 to 20 years, and; Priority #3 – generally thought to develop in 20 or more years, primarily based on the need for and timing of major sewer infrastructure. Allocations for this plan update were minor in nature thereby altering the priority designations slightly. For the entire SSA, the 'priority area requests', were as follows:

- Priority #1 areas – 97.34 acres;
- Priority #2, areas – 41.59 acres;
- Priority #3, areas – 11.54 acres;
- Administrative Additions – 28.39 acres, and
- Administrative Deletions – 2.90 acres.

Map 7 illustrates the 'priority areas' and their location based on the utility district's request. Administratively, the existing sewer service area was contracted by 2.91 acres to be consistent with the utility district boundary. There are various areas within the district that do not coincide with the existing sewer service area. Attempts were made in this update to address that situation wherever possible. It is anticipated the utility district will correct this issue in the future via ordinances, resolutions, detachments or annexations. Administrative additions include the wastewater treatment facility and the influent six-inch forcemain accounting for 28.39 acres. It is generally accepted by East Central and the Wisconsin Department of Natural Resources that sewer infrastructure and wastewater treatment facilities be in conformance with an approved or designated sewer service area. While East Central will not formally hold each community to these development priorities, they will serve to remind the Commission, community, and public of the basic thoughts of development timing determined in 2014. It should be noted that East Central may, and in some cases has, recommended conditions be attached to WDNR sewer extension approvals where needed to deal with conflicts related to development timing issues or to preserve designated environmentally sensitive areas that lie within the growth allocation areas.

The 97.34 acres listed as a Priority #1 is located east of an established residential subdivision, (1st Addition to Stanelle Acres), and is generally bisected by a vacated rail line. This priority

area continues east to the utility district boundary along Holmes Road. According to the 2003 *City & Town of Brillion Coordinated Comprehensive Plan* this area will develop as single family and duplex residential with some multi-family developments along Holmes Road. This is a compatible land use given the location and would be a logical extension of the established subdivisions to the west. There are 7.41 acres of stream buffer within this allocation along with a very small pocket of groundwater within two feet of the surface. There are no other known limitations to development associated with this allocation.

Priority #2 is an area totaling approximately 41.59 acres and is described as two distinct areas. The first area is located south of STH 57/32 and west of Wildflower Lane, (Junction Meadows Subdivision), totaling approximately 26.29 acres. The northern portion of this area is scheduled to develop as light industrial while, generally speaking, the southern portion slated for public/institutional use. Also evident are 7.2 acres of stream buffer dividing this allocation in a north/south fashion. The second part of this priority area is located north of USH 10 at the far western reaches of the sewer service area. This allocation totals 15.39 acres with the southern 10.67 acres scheduled for commercial development and the northern 4.63 acres designated as industrial development. There are no environmentally sensitive areas within this portion of the Priority #2 allocation. Given the confluence of highways in this allocation area gives credence to these land use types.

The final allocation, Priority #3, is situated on the southside of USH 10 at the most western edge of the sewer service area. This area totals approximately 11.54 acres and contains 7.31 acres of vacant lands, 3.12 acres of existing highway, (USH 10), and 1.1 acres of stream buffer. The future development in this area calls for single family residential with the potential of highway commercial along USH 10. Based on the allocations north of USH 10 it is reasonable to add this small area in the event sewer is extended westward. This scenario would then allow service for the north and south sides of USH 10. In addition, the inclusion of this allocation alleviates the possibility of an amendment to the plan in the future.

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Map 7 - Priority Development Areas

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TABLE 3: - SUMMARY OF 2020 & PROPOSED 2030 SSA CONDITIONS

SSA Characteristics	2020 SSA	2035 SSA	2020-2035 Difference
Developed Land Uses	212.37	236.76	24.39
Vacant Lands (see below for breakdown by proposed land use)	162.72	298.96	136.24
Environmentally Sensitive Areas*	16.93	38.80	21.87
Water Areas	0.12	0.12	0.00
Total SSA	392.14	574.64	182.50

Vacant Land By Proposed Land Use Type	2020 SSA	2035 SSA	2020-2035 Difference
Single Family Residential (incl. duplex & mobile homes)	88.89	146.54	57.65
Multi-Family Residential	8.55	38.00	29.45
Commercial/Industrial/Mixed Use	54.59	82.88	28.29
Public Institutional**	5.18	15.44	10.26
Agriculture/Woodlands/Undevelopable/Unplanned	5.51	16.10	10.59
Total Vacant Acreage	167.72	298.96	136.24

Source: ECWRPC, 2014 Land Use
 * Includes designated wetlands, stream & wetland buffers
 ** Includes Open Space, Utilities, Roadways, Other Public uses

Year 2035 Sewer Service Area

The year 2035 Sewer Service Area for the Forest Junction WWTF is illustrated in Map 8 and contains a total of 574.64 acres. Of this total, 38.92 acres, including open water areas, have been designated as environmentally sensitive areas (ESAs) and 298.96 acres are considered to be vacant/developable areas. Public or institutional uses based on the community's comprehensive planning have been allocated in this plan update in the amount of 15.44 acres thus leaving 283.52 acres to accommodate traditional residential, commercial, and industrial development, (non-designated land uses such as resource protection areas, unplanned areas, conservation areas and rural preservation areas totaling approximately 16.1 acres further reducing developable lands to approximately 267.42 acres). Table B-11, Appendix B details the 2035 existing land use figures for this update.

East Central has long maintained that extensive development between the current sewer service area and planning area boundaries be discouraged. By limiting planned subdivisions in these areas will greatly reduce the cost of retro-fitting utilities as the community expands outward. These

recommendations and policies may be found on page 5-1 referencing Addendum Policy 1.4. This policy targets primarily urbanized developments, however, the Town of Brillion and, more particularly, the Forest Junction Utility District could well benefit from its stated purpose.

Holding Tank Service Areas

According to the *2014 Compliance Maintenance Annual Report* the Forest Junction Utility District received no outside sewage from holding tanks, septic tanks or grease trap material. At the time of this writing it is unclear on the number of registered holding tanks within the Town of Brillion. Calumet County does not allow holding tanks for new construction except in very limited circumstances.

Map 8 - Year 2030 Sewer Service Area

Back of Map 8

WATER QUALITY ASSESSMENT AND DEVELOPMENT IMPACTS

As urbanization continues of the Forest Junction planning area impacts to surface and groundwater resources would be imminent. Short term impacts include the increase in surface water runoff and pollutant loadings as well as a reduction in groundwater recharge areas. Long term, cumulative development impacts include the loss of baseflow in streams and enhanced stream flashiness in areas prone to flooding. The scope of these impacts cannot be precisely determined because specific development characteristics (location, type, density) are unknown. However, it is possible to generally estimate water quality impacts by applying assumptions concerning the nature of future development.

The identification of impaired waters is crucial when determining future development scenarios. Within the 2035 Forest Junction Sewer Service Area Plum Creek has been identified as an impaired waterway. Plum Creek receives treated effluent from the Forest Junction wastewater treatment facility. Notable pollutants to this waterway include degraded habitat, elevated water temperatures and, in general, considered to be of poor water quality. Fish and aquatic life associated with Plum Creek is considered to be in poor condition. In 1998 this waterway was added to the impaired waters list for sediment/total suspended solids and re-affirmed its place on this listing in 2008 for total phosphorus. Additionally, a 2016 assessment of Plum Creek revealed continued impairment for total phosphorus.

The Plan Implementation and Recommendations section of this plan addresses and promotes sound development practices for future development, (see page 3-39). Additional information and detail regarding impaired waters can be researched by visiting the WDNR's Water Condition Viewer by following this link: <http://dnrmaps.wi.gov/sl/?Viewer=water>.

Point Source Water Quality Impacts

Population growth and commercial / industrial development will slightly increase loadings to the wastewater treatment plant and ultimately to surface waters of Plum Creek. Without a wastewater engineering assessment it is not possible to analyze specific flows for the different existing land uses and estimate future flows for comparison to treatment plant design capacity. A rough estimate comparing existing average daily flows of current development can be made, (see Table 4). Based upon this analysis, the average flows are expected to increase by .23 mgd.

Non-Point Source Water Quality Impacts

The Forest Junction Sewer Service Area lies primarily within the Plum and Kankapot Creek watershed being part of the Lower Fox River Basin Sub-Basin and Lakeshore Sub-Basin. The diversity of land uses within the Plum Creek and Kankapot Creeks watershed may contribute significant amounts of sediment loads, nutrients and other pollutants into the watershed. These loadings are carried via existing ditches, stream corridors and wetland areas found throughout the 2035 Forest Junction Sewer Service Area. Directly or indirectly, these loadings are ultimately deposited in Lake Michigan.

It is anticipated that surface runoff and pollutant loadings will increase with the forecast growth for the 2035 Forest Junction SSA. The placement of roads, buildings, parking lots and other large impervious areas increase the amount of water run-off thus carrying organic and inorganic pollutants associated with these land use types. The Department of Natural Resources has

general guidelines for estimating unit area loadings of pollutants by land use categories. Within the 2035 Forest Junction SSA, four pollutants, (sediment, phosphorus, zinc and lead), have been analyzed for seven generalized land use categories. The estimated loadings address both existing and future land uses. The estimates only relate to land uses within the service area with resultant impacts on the local rivers, streams and open water. Specific subwatershed analysis was not performed.

The estimated annual pollutant loadings for the existing development area, (based on 2014 land use), within the 2035 Forest Junction SSA are listed in Table 5. The land uses within this area consist primarily of older development with significant infrastructure therefore stormwater mitigation is more difficult and costly in these areas.

Table 6 illustrates the future annual pollutant loadings expected based on the total amounts of development which could occur by 2035 within the Forest Junction SSA if all the available vacant lands were developed. The pollutant loadings are estimates for the proposed land uses with no significant stormwater mitigation measures or practices adopted. Proposed land uses are shown in Map 9, Year 2035 SSA and Proposed Land Use. Utilization of stormwater detention facilities, site development controls, preservation of green space and other measures can help mitigate urban non-point source impacts on water quality. These loadings can serve as a baseline for proposed areawide stormwater reduction efforts.

Groundwater Impacts

Increased development of the recharge areas could have long-term impacts on the groundwater recharge. Conversion of rural/agricultural lands to urban uses may impact both the quality and quantity of groundwater as development continues. Groundwater recharge will decrease as areas are paved over or built upon. At the same time, withdrawal of groundwater on a regional basis is likely to increase for domestic, commercial and industrial use.

Water Quality Protection and Stormwater Management

Cumulative impacts, including loss of base flow in streams from increased development of impervious surfaces and enhanced stream flashiness and the resulting stream bank erosion from alterations to headwaters and tributaries, will occur with full build-out of the sewer service area. Stormwater management actions other than large-scale detention ponds are available for older urban areas such as enhanced street sweeping, comprehensive stormwater management and other nonstructural best management practices.

There is no stormwater management plan within the Town of Brillion and, subsequently, the Forest Junction community. The community of Forest Junction relies on natural drainage patterns involving drainage ditches, wetlands and agricultural drainage practices. The absence their own stormwater ordinance Forest Junction and town rely on Calumet County for ordinance administration services. The *City & Town of Brillion Coordinated Comprehensive Plan* does, however, acknowledge issues regarding stormwater within Forest Junction. The apparent degradation of drainage ditches has contributed to stormwater problems. East Central has designated environmentally sensitive areas, (75 foot stream buffers), throughout the 2050 Forest Junction planning area and strongly urges maintaining the integrity of these buffered areas. In addition, the *City & Town of Brillion Coordinated Comprehensive Plan* specifies actions the community should pursue, chiefly among them are watershed planning, land conservation techniques, aquatic buffers, site design techniques, stormwater best management

practices, erosion and sediment control and more broadly coordination with Calumet County on land management policies.

East Central recommends receipt of preliminary subdivision plats for review for a conformance check with the sewer service area and water quality plan. Recommendations would be made for final plat approval based on water quality, stormwater management, environmental and cultural resource concerns.

East Central also provides mandatory sewer extension review comments. Where sanitary sewer extensions are proposed in mapped environmentally sensitive areas or on other lands whose physical characteristics indicate susceptibility to erosion or flooding, or where development of such lands is likely to impair surface or groundwater quality or uses, East Central may identify mitigating conditions to be incorporated into the development proposal. East Central may also request the WDNR to attach such conditions to any sewer extension approval for the proposed development. Where the impacts of development pose significant water quality impacts or negatively impact environmentally sensitive areas, the Commission may recommend denial of the proposed extension.

Voluntary preliminary plat review and mandatory sewer extension review are the primary mechanism for service area plan implementation and the attainment of water quality plan objectives.

Table 4: Wastewater Flow Projections

Table 4.1: Forest Junction SSA - Projected 2035 Residential Wastewater Flows

SSA	2010 Population	2035 Population	2010-2035 Increase	2010-2035 SSA Population Increase (includes additional 10% of 2010-2035 increase)	Additional Flows (@ 80 gallons per day per person)		Peak Flows (@4.0 factor)	
					gallons per day (gpd)	millions of gallons (mgd)	gallons per day (gpd)	millions of gallons (mgd)
Forest Junction	675	774	99	109	8,712	0.009	34,848	0.035

Source: Forest Junction 2014 CMAR; ECWRPC

Table 4.2: Forest Junction SSA - Projected 2035 Commercial/Industrial Flows

SSA	2010-2035 Employee Increase	2035 Acres Needed for C/I Uses	Acres + 20% Market Factor*	Projected Flows (@ 1100 gal./ac./day)	
				Gallons per day (gpd)	Millions of Gallons per Day (mgd)
Forest Junction	236	6	7	7,920	0.0079

Source: Forest Junction 2014 CMAR; ECWRPC

Table 4.3: Forest Junction SSA - Summary of Projected Flows & WWTF Capacities

SSA	Additional Residential Flows (mgd)	Additional Comm/Ind. Flows (mgd)	Total Additional Flows (mgd)	Existing WWTF Flows (Avg. of 2014 mo. Avg. flows - mgd)*	Existing / Planned* WWTF Design Capacity (mgd)	Difference (Ex. / Planned Capacity - Existing & Projected Flow s)
Forest Junction	0.009	0.008	0.017	0.043	0.290	0.230

* WWTF design flow based on 2014 CMAR

Source: Forest Junction 2014 CMAR; ECWRPC

Table 5: Forest Junction SSA - Existing (2014) Non-Point Source Pollution Loading Estimates

2014 Acres*	Development Type	Unit Area Loads by Land Use (lbs/acre/yr)				Calculated Loadings			
		Sediment	Phosphorus	Zinc	Lead	Sediment	Phosphorus	Zinc	Lead
96.98	Single Family Res. (2-6 units/ac)	190.0	0.5	0.2	0.2	18,426.2	48.5	19.4	19.4
1.91	Multi-Family Res. (3+ units / 1-3 stories)	420.0	1.0	0.7	0.8	802.2	1.9	1.3	1.5
7.74	Commercial (strip/downtown)	1,400.0	1.5	2.1	2.7	10,836.0	11.6	16.3	20.9
1.63	Industrial	900.0	1.5	2.1	2.4	1,467.0	2.4	3.4	3.9
84.14	Transportation	600.0	0.9	1.9	2.5	50,484.0	75.7	159.9	210.4
167.02	Undeveloped / Vacant	25.0	0.0	0.0	0.0	4,175.5	0.8	0.0	0.4
19.64	Institutional / Governmental	700.0	0.5	0.6	1.1	13,748.0	9.8	11.8	21.6
379.06	TOTALS					99,938.9	150.8	212.1	278.1
					Tons	49.97	0.08	0.11	0.14

* Does not include ESA or Stormwater detention acreage

Table 6: Forest Junction SSA - Future (2035) Non-Point Source Pollution Loading Estimates

2035 Acres	Development Type	Unit Area Loads by Land Use (lbs/acre/yr)				Calculated Loadings			
		Sediment	Phosphorus	Zinc	Lead	Sediment	Phosphorus	Zinc	Lead
100.14	Single Family Res. (2-6 units/ac)	190.0	0.5	0.2	0.2	19,026.6	50.1	20.0	20.0
2.36	Multi-Family Res. (3+ units / 1-3 stories)	420.0	1.0	0.7	0.8	991.2	2.4	1.7	1.9
7.74	Commercial (strip/downtown)	1,400.0	1.5	2.1	2.7	10,836.0	11.6	16.3	20.9
1.63	Industrial	900.0	1.5	2.1	2.4	1,467.0	2.4	3.4	3.9
92.92	Transportation	600.0	0.9	1.9	2.5	55,752.0	83.6	176.5	232.3
309.41	Undeveloped / Vacant	0.0	0.0	0.0	0.0	0.0	3.1	0.0	1.5
31.35	Institutional / Governmental	700.0	0.5	0.6	1.1	21,945.0	15.7	18.8	34.5
545.55	TOTALS					110,017.8	168.9	236.7	315.1
					Tons	55.01	0.08	0.12	0.16

Source: ECWRPC, 2014

Note: Total SSA acres is less than previously noted due to water features and other misc. land uses not being included in these calculations.

Map 9 Year 2030 SSA and Proposed Land Use

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PLAN IMPLEMENTATION AND RECOMMENDATIONS

1. Continue to implement existing plans and programs to control infiltration and inflow to the wastewater treatment plant so as to increase capacity for new developments.
2. Monitor new development and loadings to the WWTF in order to determine the appropriate time for the village to initiate facility planning efforts to address potential capacity deficiencies.
3. Close coordination for the planning of any sewered development in the transitional areas should be undertaken by the Forest Junction Utility District and the Town of Brillion.
4. Efforts should be made to direct development to areas where sewers are already in place before extending new sewers into undeveloped areas. Efforts should also be made to maximize use of gravity sewers as well as capacity of existing wastewater pumping stations to avoid the capital, operating and maintenance costs associated with constructing new pumping facilities.
5. Environmental conditions in the planning area warrants concern with regard to construction site erosion, destruction of wetlands and impacts on ground and surface water quality. Development should either be directed away from wetlands and areas of steep slopes or appropriate erosion control measures should be applied to minimize the erosion hazard.

Although sewer service area planning was initiated at the state and federal levels, successful implementation of each plan rests primarily at the local level with some guidance provided by East Central Planning. In the state-approved *Areawide Water Quality Management Plan*, certain local units of government were assigned water quality-related management functions. Entities with adequate authority to plan, construct, operate and maintain wastewater collection and treatment facilities were designated as management agencies for portions of the planning area within their jurisdictions.

The Forest Junction Utility District has been designated as a Class III Designated Management Agency (DMA) to provide wastewater collection and treatment within its planning area. As a Designated Management Agency for wastewater treatment and collection the village should do the following:

1. Adopt the *2035 Forest Junction Sewer Service Area Plan*;
2. Review and update development policies and regulations in light of the sewer service plan and recommendations;
3. Submit preliminary land subdivision plats which are proposed to be sewered to the East Central Wisconsin Regional Planning Commission for review for consistency with sewer service area plans for the area;
4. Submit sanitary sewer extension requests to the East Central Wisconsin Regional Planning Commission for review for consistency with sewer service area plans prior to being submitted to the WDNR for approval;

5. Submit wastewater facilities plan elements and amended plan elements to the East Central Wisconsin Regional Planning Commission for review for consistency with sewer service area plans prior to submittal to the WDNR for approval; and
6. Carry out their management responsibilities for treatment facilities and collection systems as specified by state and federal requirements.

Implementation of the SSA plan relies mainly on local government actions which use the plan recommendations as a guide for the extensions of new sewers to service development. However, ECWRPC plays an advisory role in these decisions in two distinct ways:

1. ECWRPC requests that communities within the region require developers to submit "preliminary" subdivision plats for staff review and comment (advisory only). Staff not only checks the proposed plat, (whether sewered or using on-site treatment), for conformance with the municipality's SSA plan, but also reviews the subdivision's overall design and, more specifically, check the following items: potential water quality impacts to environmental corridors; groundwater aquifer / private well concerns; impacts to other natural and cultural features; construction site erosion control methods; storm-water management methods and concerns; internal vehicle/bicycle/pedestrian transportation system design; and other social / service provision impacts.
2. Sewer extension requests are required to be submitted to ECWRPC for review and comment. Hopefully, staff has reviewed the preliminary plat prior to the extension request which can reduce conflicts at this point. However, staff normally requests that a copy of the final plat be submitted with the extension request. ECWRPC then issues a "208 Water Quality" letter if the extension request is in conformance with the municipality's current SSA plan. In general, if the extension request is within the designated SSA and does not have negative impacts to defined environmental corridors, a letter will be issued. Sometimes a request falls outside of the SSA Boundary and moreover initiates an SSA Amendment Request for consideration. If negative water quality impacts will occur to designated environmental corridors, a denial of the extension will occur, or recommended mitigation measures (i.e., stormwater management / erosion control devices, etc.) will be attached to the approval.

Utilizing these two methods, a majority of the water quality concerns relating to construction and development can be effectively monitored by ECWRPC for individual projects; thereby, assisting to attain the water quality objectives outlined within the plan's goals. In addition to ECWRPC's role in implementing sewer service area plans, local units of government may exercise other authority conferred upon them by state statute to preserve and protect water quality.

Local units may use this authority to plan and manage land use and development through subdivision, zoning and other development ordinances. Criteria can be written into existing ordinances or new ordinances can be adopted which promote orderly development and address water quality concerns. Additional actions by local units of government which are recommended for water quality protection include the adoption of construction site erosion and stormwater management ordinances and the preservation of greenways along existing drainage corridors.

CHAPTER 4: SEWER SERVICE AREA DELINEATION AND PLANNING PROCESS

A sewer service area is a geographic area which is currently served or anticipated to be served with sanitary sewers within a 20-year planning period. Sewer service areas, sometimes called "urban service areas," were first delineated for the East Central region in 1978 in the plan *New Directions for Growth and Development*. In the initial plan, a generalized methodology was used for the estimation and allocation of growth which led to the identification of service area boundaries. Various state and federal guidelines, as well as regional policies, were utilized in the planning process. Since the initial delineation of service areas, the planning and management process has become much more complex and multi-faceted, thus greater detail in the explanation of the updating process is required.

The process of updating and refining sewer service area plans consists of the following major steps:

1. Identification of planning area limits;
2. Delineation of environmentally sensitive areas;
3. Identification and quantification of existing conditions;
4. Refinement of goals, objectives and policies;
5. Forecast of urban growth and re-delineation of service area limits;
6. Public and community input; and
7. Adoption and publication of final plans.

IDENTIFICATION OF PLANNING AREA LIMITS

The first step in delineating sewer service areas is the outlining of broad planning areas which include all feasible options for where urban growth might occur within a 40 to 50 year planning period (in this instance through the year 2050). Planning area boundaries generally include all areas within existing city, village or sanitary district limits. These areas may also include clusters of development and adjacent areas where there is potential for the installation of a sanitary sewerage system in the foreseeable future. Areas which could be serviced by the existing infrastructure (lift station service areas or gravity sewers) are generally included within this boundary. Planning areas generally extend beyond the existing or potential development areas to the nearest quarter section line. Planning areas serve as the study areas for wastewater facilities planning efforts.

DELINEATION OF ENVIRONMENTALLY SENSITIVE AREAS

Environmentally sensitive areas are geographic areas consisting of all lakes and streams shown on the USGS quadrangle maps and adjacent shoreland buffer areas as defined in Map 4. All wetlands shown on the State of Wisconsin Wetland Inventory Maps and floodways as delineated on the official Federal Emergency Management Administration Flood Boundary and Floodway Maps are also designated environmentally sensitive. The environmentally sensitive areas are mapped on the Commission's GIS system and are also shown on the maps contained in this plan.

The purpose of designating environmentally sensitive areas is to preserve significant environmental features from encroachment by sewered development. Environmentally sensitive areas perform a variety of important environmental functions including stormwater drainage, flood water storage, pollutant entrapment, and the provision of wildlife habitat. They can also provide desirable green space to enhance urban aesthetics.

In the 1978 sewer service area plans only major wetlands as shown on the USGS quadrangle maps were considered environmentally sensitive. Since that time, the Department of Natural Resources through Wisconsin Administrative Code NR-121.05(g)(2)(c), has developed guidelines which serve as minimum criteria for the identification and delineation of environmentally sensitive areas. Department of Natural Resource guidance states, "Environmentally sensitive areas will be used for all environmental features that should be excluded from sanitary sewer service areas."

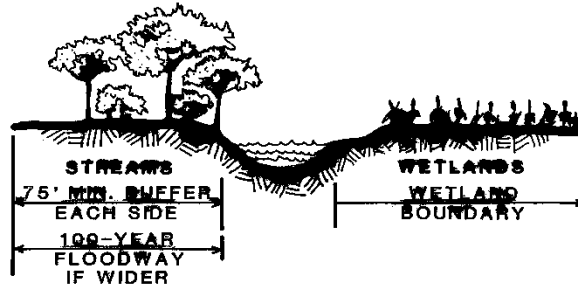
East Central, after deliberations with technical and policy advisory committees, defined environmentally sensitive areas in a manner that complements existing local, state and federal regulations which protect various environmental amenities. While NR-121 authorizes sewer service area plans to identify a broad array of natural features as environmentally sensitive areas, only those features which were believed vital in the East Central Wisconsin Region to preserve environmental quality were so designated.

Although the delineation of environmentally sensitive areas is intended to provide adequate long term and uniform environmental protection for all sewer service areas within the East Central Wisconsin Region, the environmentally sensitive area classification may be changed in two ways in response to specific local development proposals.

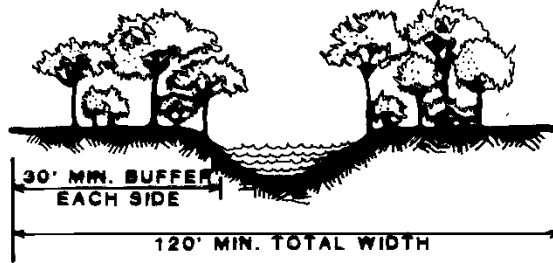
Figure 1: Environmentally Sensitive Area Standards

ENVIRONMENTALLY SENSITIVE AREA STANDARDS

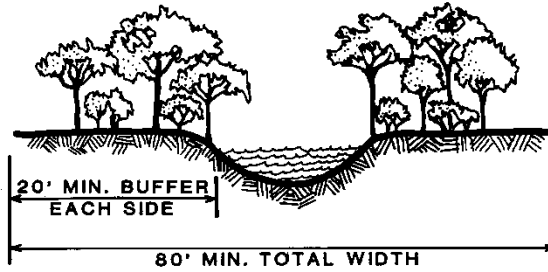
NAVIGABLE STREAMS & WETLANDS



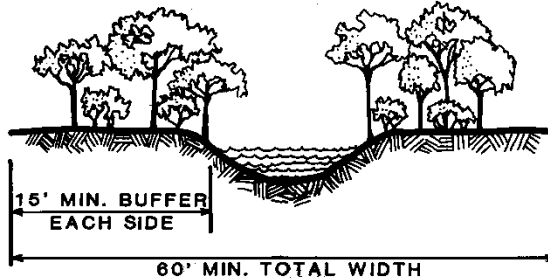
**NON-NAVIGABLE STREAMS & DRAINAGEWAYS
DRAINAGE AREA GREATER THAN APPROXIMATELY 2000 ACRES**



**NON-NAVIGABLE STREAMS & DRAINAGEWAYS
DRAINAGE AREA APPROXIMATELY 300-2000 ACRES**



**NON-NAVIGABLE STREAMS & DRAINAGEWAYS
DRAINAGE AREA LESS THAN APPROXIMATELY 300 ACRES**



First, the classification can be removed provided that the conditions outlined in Section (E) of the Sewer Service Area Amendment Process are met. This re-designation is considered a major change. Major changes have the potential for significant impacts on water quality and would require the concurrence of the East Central Wisconsin Regional Planning Commission and the Department of Natural Resources before these changes would become effective for the purpose of reviewing sanitary sewer extensions. Examples include:

- Removal of any mapped wetland area for sewered development, unless resulting from an activity exempted by state administrative rules governing wetland protection [NR-117.05(2)] or state approved rezoning of wetlands.
- Reduction of a delineated floodway of any navigable stream or river, or removal of any area below the ordinary high water mark of a navigable stream, pond, or lake.
- Total removal or change in the continuity of any corridor segment including floodways, wetlands, shoreland buffer strips, or steep slopes adjacent to water bodies. The water quality benefit that was associated with the portion of the corridor removed must be provided in the development proposal.

In the second instance, the environmentally sensitive areas may be modified by a minor change. Refinements and minor changes would not require prior approval of the East Central Wisconsin Regional Planning Commission or the Department of Natural Resources. However, East Central would have to be informed of the change before it would be effective for the purposes of reviewing sanitary sewer extensions. East Central would then be responsible for informing the Department of Natural Resources of the change.

Refinements and minor changes are generally of two types. The first type involves changes resulting from revised, improved or more detailed background resource information to include:

- Improved or revised WDNR certified floodway delineations resulting from revised flood studies.
- Revised wetland boundaries on the Wisconsin Wetland Inventory Maps resulting from field inspections by WDNR personnel or resulting from an approved rezoning.

The second type involves changes which would not seriously affect water quality and are the result of specific development proposals to include:

- Relocation of a non-navigable stream or drainageway as long as the environmental integrity of the stream or drainageway is preserved.
- Shortening of a non-navigable stream or drainageway based upon field determination of its point of origin.
- Adjustments to the widths of shoreland buffer strips along non-navigable streams and drainageways within the guidelines established in Map 4.
- Changes which would reduce the width of shoreland buffer strips below the minimum guidelines provided there are locally adopted stormwater drainage criteria that establish

corridor widths for drainageway preservation. Locally adopted criteria must be based upon sound engineering and environmental protection criteria.

- Changes which result from utility or roadway maintenance or construction which meet the criteria set forth in NR-115 or NR-117. It is not the intent of the environmental corridors to prevent or obstruct maintenance, expansion or construction of transportation or utility facilities intended to serve areas outside of the corridors, needed to maintain or improve continuity of those systems, or designed to serve compatible uses in the corridors, such as park shelters or facilities. Facilities intended to serve new sewered residential, commercial or industrial development in the corridors would not be permitted.

It should be noted, that as of the date of this plan, ECWRPC and WDNR staff are considering a revision of the regional definition of environmentally sensitive areas which may include additional features based on water quality concerns. Communities with existing SSAs will be notified and offered an opportunity to give input during this process.

IDENTIFICATION AND QUANTIFICATION OF EXISTING CONDITIONS

The ability to inventory existing conditions both quantitatively and qualitatively is paramount to evaluating land use and development trends and impacts. Aerial photos are the basis for conducting land use inventories for the individual SSAs. Comparing aerial photos (land use inventories) at different time intervals can establish trends in types and magnitude of land uses. East Central's 1980 land use inventory has been updated utilizing more recent photos (where available) or spot field surveys for this purpose. Acreages for major land use categories have been computer digitized and aggregated by section and township-range. Totals were also calculated for each unit of government within the planning area. In conjunction with the land use mapping program, all city and village municipal boundaries, as well as sanitary district limits, were identified and transferred to the sewer service area maps.

Sanitary sewerage systems for all communities have been identified on the sewer service area file aerial photos. The location and size of all sewer collectors, mains, interceptors and forcemains are mapped in detail. In addition, the locations of all lift stations, pump stations and wastewater treatment facilities are shown. These maps are continually updated as new sewer extensions are reviewed by East Central.

Important for analyzing the planning areas, existing urban development areas were delineated as part of the original land use inventory. Urban development areas consist of all concentrations of development within the planning area, together with undeveloped lands which are either sewered or otherwise committed for development. These urban development areas are, in most instances, the minimal land areas which should be designated as sewer service areas.

The urban development areas have been further broken down into areas which are (1) both developed and sewered, (2) developed and unsewered, (3) undeveloped and sewered and (4) undeveloped and unsewered. In order to be classified as sewered, areas must be adjacent to public sewer lines, with the ability to connect either through private laterals or, in certain instances, private sewers. In general, lands within 200 feet of a public sewer are assumed to connect via a private sewer lateral.

In addition to the development information, the existing sewer service area boundaries were identified to determine the location and amount of land currently available for development outside of the urban development areas.

In addition to the designations of environmental sensitive areas (shorelands, wetlands and floodways), other areas with natural characteristics that could impact environmental quality or development potential have been identified. These areas have been termed areas with "limiting environmental conditions" and include areas with seasonal high groundwater (within one foot of the surface), floodplain areas, lands with shallow bedrock (within five feet of the surface) and areas with steep slopes (12 percent or greater). Unlike the environmentally sensitive areas, development is not excluded from land with limiting environmental conditions. The primary purpose of identifying these areas is to alert communities and potential developers of environmental conditions which should be considered prior to the development of such an area.

Complementing this information, additional data was collected on existing population, numbers of dwelling units, mixes and densities of residential development, existing employment by type and amount, and densities of industrial and commercial development.

Much of this information was available from the 1990 and later census materials; other information was gathered from state and local sources. This data is contained in East Central's information files for each sewer service area.

REFINEMENT OF GOALS, OBJECTIVES AND POLICIES

The conceptual and philosophical bases for sewer service area planning are the goals, objectives and policies. As stated earlier, the service area planning process has become much more complex since it was first initiated. In response to changing conditions, minor refinements have been made over time to the 1985 goals, objectives and policies (Appendix B). This effort was done in order to give direction to decisions involving the amount of growth in a given service area, especially the allocation and location of future growth.

FORECAST OF URBAN GROWTH

The forecasting of urban growth and development within the East Central region involves two primary analytical processes. These are 1) population projections and related dwelling unit and employment estimates, and 2) allocation of land use acreage. This process answers the question of the quantity and location of new growth. The process utilizes the sewer service area policies and various planning and development standards as a technical basis.

Population Projections

Population projections are important in forecasting urban growth. The projections used are the 2010-2040 Department of Administration (DOA) population projections by five year increments for individual counties and municipalities. DOA utilizes the cohort component method of population projection. These are the official state projections, consistent with U.S. Bureau of Census State of Wisconsin projections. The DOA county projections are required to be used as control totals in accordance with Wis. Admin. Code NR-121 for the development of sewer

service area plans. A detailed description of the population projection process is included in the East Central report *Population Characteristics of the East Central Region*, April 1994, (at the time of this writing, East Central, based on 2010 Census data and DOA's most current forecasts, is preparing in-house population projections for 2010-2040). The official DOA projections, first received in 1992, have been updated annually using the DOA annual population estimates for the counties and individual MCD's.

East Central has developed a process for breaking down the county population projections to the minor civil division (MCD) level. This estimating process uses the "share-of-the-county trending methodology." This methodology was used for all communities within the East Central region, with the exception of the Fox Cities, Sherwood and Fond du Lac. In these areas, a special procedure was used which established "urban area" control totals.

For the purposes of this plan update, East Central used population projections from the Department of Administration by municipality. These population projections are in five year increments from 2010 to 2040. This report has also been approved by the Wisconsin Department of Natural Resources on March 11, 2016.

Residential Development

In addition to population projections, household size and housing densities are required to determine residential land needs. Household formation rates were estimated and translated into household size. The household size thus represents a typical dwelling unit which can be compared to population projections for estimating future dwelling units. The household size for the East Central region has been steadily declining and is anticipated to continue to decline. Thus, an anomaly occurs in which a community may not be increasing in population, but still is forming new households which require new housing construction.

Once household size was established, residential development densities and the mixture of single-family/multifamily uses was determined. The number of dwelling units per acre were determined from existing residential development densities for the three major urban areas. These densities were also used for larger outlying urban communities. Several smaller communities in the outlying areas were found to have less dense development and therefore a somewhat lower density was used.

The mix of residential development was determined from development and construction records from various communities as well as census materials for the urbanized area. The residential mix was found to vary greatly from community to community. Community specific mixes were used for freestanding communities; however, standardized splits for the Fox Cities, Oshkosh and Fond du Lac areas were developed and applied within the growth forecast method.

Population projections divided by household size established the number of dwelling units. The number of dwelling units by type (single or multifamily) divided by the density per acre resulted in the number of acres of residential land required. The resultant acreage was allocated as residential growth for land areas within each planning area.

Non-Residential Development

Forecasts of nonresidential development were also based upon population projections for sewer service area planning. There is, however, a significant difference between the methodology used for the three urban areas and the outlying planning areas. Within the urban areas the population projections served as a basis for estimating future employment. These employment estimates were used in conjunction with documented employment densities (number of employees per acre) for various land use types and employment categories to determine acreage needs for future nonresidential employment. Similar to the household participation rates for calculating dwelling units, labor force participation rates were used to calculate employment for various employment categories. These employment categories were broken down into two types of nonresidential development consisting of commercial and industrial land uses. After future employment was estimated for commercial and industrial uses, densities were applied (employees per acre) and total acres of the land needs were calculated. This acreage was then allocated within particular planning areas.

In the outlying areas, a much simpler process for forecasting nonresidential growth was required because of deficiencies in labor force and employment data available for small communities. Furthermore, because of the small commercial and industrial base of these communities, a refined process for estimating future employment could be subject to extreme error.

Local initiative for promoting development is a greater factor in future growth than statistical trends. A simple forecast method was used which calculated the existing amount of nonresidential development per capita within the area then multiplying this amount by the population growth for the planning period resulting in the amount of non-residential acreage required.

Growth Allocation

After the amount of growth is calculated for residential and non-residential uses within each planning area, the process of allocating this growth acreage is undertaken. The allocation process, (where growth should occur), is complex, and must integrate service area growth policies, planning standards and criteria as well as historical and market growth trends for a particular planning area. The allocation process establishes the future growth areas within each sewer service area.

A major product of the allocation process is the mapping of growth areas. Again, the Commission's GIS system was used to designate these growth areas. The following criteria and standards were utilized in the designation of growth areas:

- All areas within a planning area which are currently served with public sanitary sewers shall be designated sewer service areas. Areas along existing and proposed (WDNR approved) sewer collector or interceptor lines (forcemains excluded) shall be designated sewer service areas. The depth of the sewer service area boundary line shall be to the average lot depth (maximum 400 feet) bordering the sewer or where average lot depths cannot be distinguished. Development within this area is generally considered to be serviceable by a private sewer lateral.

- Unsewered areas of development within close proximity to existing sanitary sewer lines where the cost-effectiveness of the extension of sewers is not questionable shall be included in the service area. These areas have generally been designated as an urban development area.
- Areas of existing development with approved wastewater facility plans shall be designated sewer service areas. (Note: Various areas of existing development previously designated may have been dropped because of lack of approved wastewater facilities plans.)
- The acreage allocations of future development areas should approximate residential, commercial and industrial growth projections.
- Environmentally sensitive areas shall be excluded from the sewer service area.
- Holding tank service areas shall be designated for existing large holding tanks defined in NR-113 and for areas of existing development where no cost-effective alternative to the installation of a large holding tank is available. The cost-effective analysis is to be prepared by the owner. All large and individual holding tank wastes are to be disposed of in accordance with NR-113.

The standards and criteria for allocating future growth areas are policy based. These considerations are:

- Urban development patterns should incorporate planned areas of mixed use and density that are clustered and compatible with adjacent uses.
- The allocation of future urban development should maximize the use of existing urban facilities and services.
- Future urban development should be encouraged to infill vacant developable lands within communities and then staged outward adjacent to existing development limits.
- Future commercial and industrial development should expand upon existing areas and be readily accessible to major transportation systems.
- The boundaries of urban development should consider natural and man-made features such as ridge lines, streams and major highways.
- Residential land use patterns should maximize their accessibility to public and private supporting facilities.
- Urban development should be directed to land suitable for development and discouraged on unsuitable land, such as floodplains, areas of high bedrock, and areas of high groundwater.
- Environmentally sensitive areas shall be excluded from the sewer service area to protect water quality.

- Future urban development should pose no significant adverse impacts to surface or groundwater.
- Urban development should be located in areas which can be conveniently and economically served by public facilities.
- The waiver of acreage allocations based on density standards for large lot developments will be considered if the installation of sewers is cost-effective, the community adopts a development plan and subdivision plat for the area specifying no smaller subdivision of parcels will be allowed.

Combined with the policy-based criteria for allocating future development areas were various considerations involving the direction of growth trends and short term "market" factors. These considerations primarily involved experienced judgments by planning staff and consultations with local planning officials.

Early in the planning process, a policy decision was made that the total allocated growth acreage for individual sewer service areas delineated in the 1985 adopted plans and subsequent amendments would not be reduced in quantity. This policy was applied to all sewer service areas which have a sewerage system or which have WDNR approved wastewater facilities plans for a sewerage system. The impact of this policy is that the areas available for future growth in various sewer service areas sometimes were greater than the updated forecast growth which was to be allocated. The result of this policy is that there were fewer service areas where the existing service area boundaries needed to be expanded.

PUBLIC AND COMMUNITY PARTICIPATION

Citizen participation during the update of the service area plans has been and encouraged throughout the planning process. In this service area planning update goals, objectives and policies were refined in conjunction with the transportation/land use plan update process. Ad hoc Technical Advisory Committees, (TAC's), were formed and refined the policies 2004 and 2005.

General public participation is sought from communities and counties during the plan update process through individual meetings with affected entities. Public information meetings were held for each sewer service area once draft maps were completed. The purpose of sewer service area planning, the overall planning process, existing conditions of the service area and growth forecasts are explained. As a follow-up to these meetings, (in smaller communities these meetings may be combined), additional meetings are held for communities within each service area to address specific issues. The designated service area boundaries are reviewed as part of these meetings. Public information meetings are listed in Appendix A of the service area plan. A final public hearing is noticed and held as part of the Community Facilities Committee meeting and approval.

ADOPTION AND PUBLICATION OF FINAL PLANS

Each individual sewer service area is adopted by the East Central Wisconsin Regional Planning Commission as an element of the Commission's regional land use plan. After adoption, the plans are submitted to the Wisconsin Department of Natural Resources for certification as an element of the *Water Quality Management Plan*. After WDNR certification the plan becomes effective and copies of the final plans are distributed to the affected communities.

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CHAPTER 5: SEWER SERVICE AREA AMENDMENT AND UPDATE PROCESS

POLICIES AND PROCEDURES

The East Central Wisconsin Regional Planning Commission has adopted "An Amendment Policy and Procedure for Sewer Service Areas" to enable sewer service area plans to be amended in response to changing conditions and community plans. This procedure provides a flexible, yet equitable and uniform basis for revising sewer service area boundaries. This chapter was updated with, input from the Land Use Advisory Committee, during 1999-2000 as part of addressing policy issues related to the "Long-Range Fox Cities, Oshkosh and Fond du Lac Transportation/Land Use Plan Addendum" and certain provisions may apply to the communities illustrated in Map 10.

East Central recommends that a representative from the government entity with Designated Management Agency (DMA) status meet with East Central staff to discuss the proposal. Most documentation and questions needed for the evaluation of the amendment can be addressed at that time.

EAST CENTRAL REVIEW AND RECOMMENDATION

East Central's Community Facilities Committee will review the proposed amendment within approximately 30 days of receipt of the request. The review will include a staff evaluation of the consistency of the proposal with East Central's amendment policies and criteria. The review will also include an evaluation of comments and recommendations received from local units of government and agencies notified of the proposal by East Central. The applicant may be requested to appear at the Community Facilities Committee meeting if there are significant issues involved. The Community Facilities Committee shall recommend approval or disapproval of the amendment. Upon approval, the amendment request shall be submitted to the Wisconsin Department of Natural Resources to request revision of the *Water Quality Management Plan*.

WDNR REVIEW AND APPROVAL

The Wisconsin Department of Natural Resources will review the East Central recommendations for the service area amendment. This review is an equivalent analysis action under s. NR 150.20 (2) (a) 3, Wis. Adm. Code. Once a WDNR decision is made, and if approved, East Central can review sewer extensions and submit comments to the WDNR for sewer extension plan conformance.

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Map 10 - SSA Amendment Standards and Update Procedures Application Area

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The formal amendment process includes the following elements:

Section I: Amendment Policies

- A. Sewer service area boundaries may be modified (acreage swap) provided there is no increase in the total acreage of the specific sewer service area.
- B. Sewer service area boundaries may be expanded provided there is a documented need for a sanitary sewer collection system for areas of existing urban development.
- C. Sewer service area boundaries may be expanded provided there is a documented need for sanitary sewers to serve a proposed unique facility or development.
- D. Sewer service areas may be expanded to provide communities with the flexibility to accommodate unanticipated short-term development. The community shall certify through plan commission action that the proposed amendment area is required for reasonable community growth and is consistent with adopted development plans.
- E. Sewer service area boundaries may be modified by the re-designation of previously identified environmentally sensitive areas consistent with all the following standards:
 - 1. The environmentally sensitive area is immediately adjacent to an existing sewer service area.
 - 2. Appropriate local, state and federal environmental permits are granted for the proposed development.
 - 3. Major re-designations shall pose no significant adverse water quality impacts. Major re-designations include:
 - a. Removal of any mapped wetland area for sewered development unless resulting from an activity exempted by state administrative rules governing wetland protection [NR 117.05(2)] or state approved rezoning of wetlands.
 - b. Any change which would reduce a delineated floodway of any navigable stream or river, or which would remove any area below the ordinary high water mark of a navigable stream, pond or lake.
 - c. Any change resulting in the total removal or in the continuity of any corridor segment including floodways, wetlands, shoreland buffer strips or steep slopes adjacent to water bodies. The water quality benefit that was associated with the portion of the corridor removed must be provided for in the development.
 - 4. The re-designated acreage will be added to the service area total acreage.
- F. Sewer service area boundaries may be modified or expanded to correct an error in the maps, data, transporting sewer designations, projections or allocations of the adopted sewer service area plan.

Section II: Amendment Criteria

Any proposed amendment shall be reviewed according to the following criteria:

- A. The cost-effectiveness of the proposed amendment compared to other alternatives. East Central may require this determination from the applicant.
- B. The environmental impacts of the proposed amendment shall be assessed in accordance with the criteria established in the Wisconsin Department of Natural Resources environmental assessment checklist. The Commission will evaluate the ability of the existing sewerage facilities to transport and treat the projected flows and will provide a water quality evaluation statement. East Central may also prescribe safeguards or impose additional conditions deemed necessary to protect the water quality in the area.
- C. Amendments within the Urbanized Area Sewer Service Areas, (see Map 10), should be consistent with East Central's "Long-Range Transportation/Land Use Plan Addendum" goals, objectives and policies particularly for density standards as follows:

Policy 1.4 Conformance:

- 1. The average net residential density of the buildable plat area is more than or equal to 1 unit per acre; or
 - 2. The community has illustrated that development proposals meet the density requirements by being part of an overall "mixed density" concept documented in its local land use plan which meets the policy intent. (Note: Should amendments occur over time primarily low density development which does not meet the one acre requirement and no higher density development occurs, Section V, Urbanized Area Standard (1)(d) will apply at the next scheduled plan update).
 - 3. If an amendment takes place which includes lands planned for residential development, without being platted prior to the amendment, ECWRPC will require an assurance from the community in the form of a resolution stating that the development will meet these requirements. At the time of platting, ECWRPC will require that a copy of the preliminary plat be submitted for review.
- D. Amendment areas under Section I Policy A and D shall have a common boundary with the current sewer service area and shall not create a void within the service area.
 - E. Policy B, (existing development), amendments must be contained within an approved SSA planning area. This boundary can be reviewed and considered for modification as a separate process, if necessary.
 - F. Amendment areas under Section I, Policy A and B involving the "swap" of land acreage shall, to the extent possible, utilize consistent land use areas on an acre for acre basis, based on the community's locally adopted and Commission certified comprehensive land use plan, (for Urbanized Area communities). Should the community not have enough of a particular type of land designated in its locally adopted comprehensive land use plan to allow for a swap, the community should consider utilizing the "regional swap" policy prior to

submitting the amendment under Policy D. Any community affected by a “regional swap” shall be notified and given an opportunity to comment prior to Commission approval of the amendment.

- G. Amendments submitted under Policy C, (Unique Facilities), must not only fit the definition contained in this plan, but the applicant must also submit additional information which illustrates that all impacts, including secondary land use impacts and their effects on water quality, transportation and public service provision be addressed prior to the Commission recommending approval of the amendment. Such amendment requests must also be consistent with locally adopted comprehensive land use plans. Amendments under this policy may be approved conditionally by the Commission so that other necessary approvals can occur concurrently.

Section III: Amendment Procedures

Proposed sewer service area amendments shall be reviewed according to the following procedure:

- A. Requests for sewer service area amendments should be made by the governmental entity that will be expected to serve the area. Units of government seeking an amendment to the sewer service area boundary should transmit a letter requesting the amendment to East Central along with the following documentation:
1. A map of the proposed expansion area and, if required, reference area or any area to be deleted (swapped) which affects the boundary modification;
 2. Estimates of existing and anticipated population, wastewater generation and means of collection from the area;
 3. A description of the type of existing development and/or the type of future development expected to occur;
 4. Ability of the treatment facility to treat the anticipated wastewater;
 5. Methods of stormwater management and regulation for the added service area and surrounding areas which may be impacted; and
 6. Documentation that all property owners in areas proposed to be deleted (swapped) was notified of this request by the unit of government seeking the amendment. Landowners potentially affected by the removal of property from the SSA shall be notified by the requesting entity at least 14 days prior to the scheduled Community facilities Committee meeting at which the amendment will be addressed. Failure to do so could result in the tabling of the amendment request until the next regularly scheduled CFC meeting, (policy amendment approved by WDNR on 08/26/04).
 7. Plan Commission or Board action as required under Section I, Policy D.

8. Amendments submitted under Section I, Policy B, for Urbanized Area communities, (see Map 10), will require that additional information be submitted and criteria be met as follows:
 - a. Documentation that the community's locally adopted comprehensive land use plan illustrates the area as a future urban growth area which will provide a full range of services as spelled out in the "Long-Range Transportation/Land Use Plan Addendum's" density standards;
 - b. A determination of the cost-effectiveness of providing public sanitary sewer versus on-site system replacement. This determination should be consistent with NR-110 requirements;
 - c. Documentation that 30% of the existing on-site systems within the proposed amendment area be considered failing, (direct need); and
 - d. Documentation that approximately 30% or more of the balance of existing on-site systems within the proposed amendment area are subject to failure based on the physical condition of the on-site system itself and/or the physical characteristics of the subject site, (indirect need).

Documentation for c) and d) above can be in the form of: copies of county or state orders for on-site system replacement; copies of existing on-site system inspection reports; letters from the County Sanitarian indicating that the systems are failing or have the potential to fail; or documentation of recent private well tests which show bacterial contamination likely resulting from on-site system failure.

- B. Based on this information the Community Facilities Committee, designated as the review committee by the East Central's bylaws, will review the proposed amendment to determine whether it meets the standards set forth in the Sewer Service Area Amendment Process. If no significant adverse water quality impacts are involved, East Central shall recommend approval of the plan amendment and submit it to the Wisconsin Department of Natural Resources for state plan certification.
- C. Requests for amendments under Section I, Policy F, pertaining to the addition of 'transporting sewers', (interceptors and forcemains which do not directly service new development), may be initiated by East Central staff upon written request of the DMA and would be submitted directly to the Wisconsin Department of Natural Resources for review and certification without the need for Community Facilities Committee approval. The WDNR would review and certify such amendments within 5 to 10 business days from receipt of East Central staff's submittal. Please note that the information needs, as noted above, as well as the conformance with existing review criteria are still required for East Central and the WDNR to process such amendments, (policy amendment approved by WDNR on 08/26/04).

Section IV: Appeal

If an applicant feels that a hardship exists in the strict interpretation and application of the amendment standards and criteria, consideration may be given to providing relief through a variance subject to the following requirements:

- A. The hardship is significant and widespread owing to substantial pre-existing financial or legal commitments for sanitary sewer service.
- B. The major objectives of the sewer service area plans can be met. The appeal shall be submitted to the Chairman of East Central for action at a regularly scheduled meeting of the Commission. Further appeals may be submitted to Wisconsin Department of Natural Resources.

Section V: SSA Plan Update Procedures and Standards

Even though local, regional and state levels of government engage in planning activities to direct their future, individual or multiple conditions can change over time. Some can be predicted and handled proactively, (COMM 82, demographics, etc.), while some occur rapidly and generally without much warning, (economic conditions, regional growth patterns and rates, market demands, etc.). Sewer service area plans are meant to be proactive type of plan which identifies future sewer growth areas based on cost-effectiveness service provision, water quality and regional cooperation/coordination. When conditions change these plans need to be updated to reflect those changes. This section describes the conditions under which sewer service area plans are updated and how previously developed and approved regional goals, objectives and policies, (i.e. "Long-Range Transportation/Land Use Plan Addendum"), will apply prior to, during or after the Update process.

Minimum Update Procedures and Standards (for all Sewer Service Areas)

SSA plans will be updated on an approximate 5 year rotation. Funding, staff availability, urban growth demands and regional/state policy changes/proposals may alter this time interval. When updated the following items will be addressed:

1. A review and update of population, housing and employment trends and projections;
2. A review and update of land use demands based on socio-economic conditions and projections;
3. A review and update of existing physical conditions including:
 - a. Existing land uses;
 - b. Proposed land uses, (based on local, county, regional and state plans); and
 - c. Water quality and natural resource, (ESA), characteristics, changes and issues.
4. A description of relevant events since the last plan update pertaining to sanitary sewer or having an impact on future sewer service including:

- a. Major WWTF improvements or changes;
 - b. Major collection system improvements or changes;
 - c. Local governmental changes, (i.e. sanitary district formations, intergovernmental boundary/service agreements, comprehensive land use plan updates, regulations and requirements); and
 - d. SSA plan amendments and acreage consumption since the last plan update.
5. A review and modification of mapping elements, if necessary, to accommodate future sewered growth and development including:
 - a. Proposed major sewer system improvements and/or regional connections;
 - b. A revised twenty year sewer service area boundary;
 - c. A revised forty to fifty year planning area boundary; and
 - d. Environmentally Sensitive Area (ESA).
 6. A review of local governmental actions and regulations which have implemented the sewer service area plan;
 7. An update of citizen information/education and participation efforts;
 8. A review of the institutional structure for plan update and amendment review/approval and for plan implementation;
 9. A review/revision of goals, objectives and policies, if necessary; and
 10. The development of recommendations and strategies for plan implementation.

Urbanized Area Procedures and Standards

The Urbanized Area Procedures and Standards will apply to the following communities: the Cities of Appleton, Kaukauna, Menasha, Fond du Lac, Neenah and Oshkosh; the Villages of Combined Locks, Harrison, Kimberly, Little Chute, Sherwood, North Fond du Lac; the Towns of Buchanan, Grand Chute, Greenville, Kaukauna, Vandebroek, Harrison, Calumet, Empire, Fond du Lac, Friendship, Taycheedah, Algoma, Black Wolf, Menasha, Neenah, Nekimi, Oshkosh and Vinland. While this policy targets primarily urbanized developments the Town of Brillion and the Forest Junction Utility District could well benefit from its stated purpose.

The Urbanized Area Standards and Procedures include the above listed “minimum” items in addition to the following reviews of local conformance with policies and requirements as spelled out in the “Long-Range Transportation/Land Use Plan Addendum” including:

1. Addendum Policy 1.3 Conformance – A review of local development densities within the SSA occurring between plan updates and their conformance with the minimum residential density requirement will need to be met as follows:

- a. Areas within the SSA prior to the WDNR certification date of 1997, (or subsequently), are not required to meet this policy, however; East Central staff will consider new residential developments which have occurred after this date as part of the overall density calculation, (therefore this will not penalize communities for recent development meeting the criteria and being 'banked' for lower densities elsewhere within the SSA);
 - b. Areas allocated and approved as part of the 1997, (or subsequent), plan update are required to meet policy;
 - c. Areas amended to the SSA after a 1997 update are required to meet policy, (see SSA Plan Amendment Policies and Procedures section for additional information); and
 - d. If an individual community does not meet the density requirements spelled out in the "Long-Range Transportation/Land Use Plan Addendum" it will not be eligible for additional Sewer Service Area acreage allocations in subsequent plan updates.
2. Addendum Policy 1.4 – A review of local unsewered development patterns and locations and advisory recommendations pertaining to such information; and
 3. Comprehensive Plan Guidelines – A review of local land use planning for conformance with the Guidelines and the communities' plan certification status.

Section VI: Definitions

Sewer Service Area: A geographic area currently or anticipated to be served with sanitary sewers within the planning period as specified in the sewer service area plan element of the *Water Quality Management Plan*. This boundary delineates areas which can be provided public sanitary sewer more cost-effectively than on-site treatment methods over a 20 year period. ECWRPC determines this boundary based on the following information, (all of which are not necessarily listed in NR-121):

- A. Definition and mapping of environmentally sensitive areas, (ESA's);
- B. Justified acreage allocations based on projected 20 year growth and development using ECWRPC accepted methodologies;
- C. Projected available 20 year capacity of the wastewater treatment facility from publicly sewered development and established holding tank receiving areas;
- D. Facilities plan listed projects and improvements;
- E. Projected available 20 year capacity of interceptor sewers, force mains and lift stations;
- F. Location of existing sewer lines;

- G. Existing and projected 20 year development patterns, (based on local comprehensive land use planning and zoning maps);
- H. Proximity to development with known failing privately owned treatment works, (POTW's), or other on-site wastewater treatment systems;
- I. Ability to provide recommended levels of urban service per the addendum matrices;
- J. Intergovernmental growth/service agreements, (advisory only); and
- K. The boundary itself is located, for administrative purposes, on the location of:
 - 1. Environmentally Sensitive Area (ESA's);
 - 2. Watershed, sub-watershed and drainage basin boundaries;
 - 3. One lot depth, (300 feet), buffer from existing sewer line locations;
 - 4. Quarter-section lines based on the Public Land Survey System, (PLSS);
 - 5. Municipal and Sanitary District Boundaries;
 - 6. Road centerlines;
 - 7. Lift station service areas, (topography and depth); and
 - 8. Gravity and interceptor sewer service areas, (topography and depth).

Sewer Service Planning Area: An area defined and approved by the Department of Natural resources under Wisconsin Administrative Code, NR-121 with the assistance and recommendation from the East Central Wisconsin Regional Planning Commission and input from involved communities. This is an area where urban growth is anticipated to occur over a longer period of time, (40 to 50 years), where short-term conflicting land use development should be discouraged. This boundary serves the purpose of delineating long-term, (40-50 year time horizon), cost-effective, urban growth areas. ECWRPC determines this boundary based on the following information, (all of which are not necessarily listed in NR-21):

- A. Definition and mapping of environmentally sensitive areas, (ESA's);
- B. Justified acreage allocations based on projected 50 year growth and development using ECWRPC accepted methodologies;
- C. Projected available 50 year capacity of interceptor sewers, force mains and lift stations;
- D. Projected available 50 year capacity of the wastewater treatment facility from publicly sewer development and establish holding tank receiving areas;
- E. Existing and projected 50 year development pattern, (based on local/county comprehensive land use plans and zoning maps);
- F. Location of existing development with known private septic problems or potential risk for on-site system failures;
- G. Intergovernmental growth/service agreements; and
- H. The boundary itself is located for, administrative purposes, on the location of:

1. Environmentally sensitive areas, (ESA's);
2. Watershed, sub-watershed and drainage area boundaries;
3. Nearest quarter-section lines of the Public Land Survey System, (PLSS);
4. Municipal and Sanitary District boundaries;
5. Wastewater treatment plant service areas, (when multiple plants available);
6. Road centerlines;
7. Lift station service areas, (topography and depth);
8. Proposed and existing interceptor sewer service areas, (topography and depth);
and
9. Extraterritorial review jurisdiction of involved incorporated communities, (this would be utilized only at the discretion of all affected communities).

Existing Urban Development: A geographic area with densities of development suitable for the efficient and economic provision of urban services such as sanitary sewer, water, transportation and storm drainage. (E.g. single family residential development greater than two units per gross acre)

Reference Area: A geographic area currently within the existing sewer service area which is at least 50 percent developed.

Unique Facility or Development: A proposed facility that, regardless of location, is considered to be "unanticipated"; and is of "regional importance". "Unanticipated" is defined as not being illustrated in a local community's or county's comprehensive plan and was not anticipated or projected in the sewer service area plan during the previous update. "Regional importance" is defined as a facility which, if constructed, would provide a widespread benefit to multiple local governmental jurisdictions within the Sewer Service Area. Examples of facilities fitting this criteria include state prisons, county landfills, regional public specialty facilities such as EAA, public museums or performing arts centers, churches, private, (commercial), specialty facilities such as the Kaukauna dog track, opportunistic park/recreation/open space acquisitions, public golf courses, other state and federal facilities as deemed appropriate. Not eligible are any type of school facility, local government administrative office or facility, residential golf course developments, local parks, private campgrounds, local airports or related facilities. These types and locations of future facilities should be addressed and, their needs quantified, in the community's local land use plans and the sewer service area plan update process. These listings may be added to from time to time based on individual SSA plan amendment proposals. Those specific facilities not listed above would be reviewed based on their merits and conformance with the intent of this definition.

Expansion Area: The geographic area proposed to be added to the existing sewer service area through the amendment process.

Cost-effectiveness: Analysis of sanitary sewerage system alternatives. The analysis shall include monetary costs and environmental as well as other non-monetary costs.

Environmentally Sensitive Area: Geographic areas consisting of all lakes and streams shown on USGS quadrangle maps and their adjacent shoreland buffer areas. Also all wetlands shown on the State of Wisconsin Wetland Inventory Maps and floodways as delineated on the official Federal Emergency Management Administration Flood Boundary and Floodway Maps.

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Forest Junction Sewer Service Area Plan Update Meeting Record

Date

Description

In addition to the meetings written correspondence was also used to communicate with the Forest Junction Utility District. There were also numerous emails to the stakeholders in this process to clarify certain issues and to provide explanations throughout the process

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SUMMARY OF PROCEEDINGS

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(Forest Junction Utility District Approval)

(Town of Brillion Approval)

(WDNR Certification Letter)

(WDNR Certification Letter back)

Proposed Resolution ##-##
(Forest Junction Utility District _signed)

Proposed Resolution back

Appendix B

Back of Appendix B

APPENDIX C: ENDANGERED RESOURCE PROTECTION AND 2035 SSA ALLOCATIONS

The Forest Junction 2035 SSA acreage allocations are contained in four areas within the proposed sewer service area. Environmental issues are elements to this planning process are described below. If known, aquatic invasive species, elevated nitrate levels in groundwater, loss of natural shorelines, etc., are identified.

Forest Junction 2035 SSA Allocation – Area 1	
Location	Town of Brillion, T20N R20E, S ½, SW ¼, SW ¼, Section 17 and N ½, NW ¼, NW ¼, Section 18 This area totals 26.8 acres.
General Physical Features	This area is currently in agricultural use and bisected by USH 10.
Current Development	No existing development is present.
Planned or Proposed Development	The southern allocation area has the potential for highway commercial, however, mixed use residential is more likely. The northern allocation is slated for commercial and light industrial.
Limiting Environmental Conditions*	The southern allocation is clipped by 1.11 acres of designated stream buffer in its southeastern corner.
Water Features	An unnamed stream associated with the stream buffer is present.
WDNR Natural Heritage Inventory	According to the WDNR Natural Heritage Inventory data there are approximately one endangered species, (Blanchard’s Cricket Frog), and one species with special concern, (Pickerel Frog, town-wide. Additionally, a migratory bird concentration site has been identified. A more detailed analysis may be required to determine the extent of these conditions prior to development. It is unclear any of these species exist in this portion of the town. (The ER Preliminary Assessment can be found at the end of this appendix).

Forest Junction 2035 SSA Allocation – Area 2	
Location	Town of Brillion T20N, R20E, SE ¼, Section 7. This area totals 26.3 acres.
General Physical Features	Generally level to gently sloped this allocation has minimal limitations for development.
Current Development	This area has a mix of agricultural use, woodlands and a small amount of vacant areas.
Planned or Proposed Development	This particular area is planned for light industrial and public/institutional uses. The southern allocation within this area is owned by the United Methodist Church giving rise to thje public/institutional land use.
Limiting Environmental Conditions*	The agricultural land use in this allocation is split by a north-south unnamed stream and buffer area totaling approximately 7.2 acres.
Water Features	An unnamed stream associated with the stream buffer is present.
WDNR Natural Heritage	According to the WDNR Natural Heritage Inventory data there are approximately one endangered species, (Blanchard’s Cricket Frog), and one species with special concern, (Pickerel Frog, town-wide. Additionally, a migratory bird concentration site has been identified. A more detailed analysis may be required to determine the extent of these conditions prior to development. It is unclear any of these species exist in this portion of the town. (The ER Preliminary Assessment can be found at the end of this appendix).

Forest Junction 2035 SSA Allocation – Area 3	
Location	Town of Brillion T20N, R16E, SW ¼, Section 8 and includes a lot-depth strip on the east side of Holmes Road. This area totals 103.5 acres.
General Physical Features	This area is generally level or gently sloping and has a variety of existing uses.
Current Development	This area is predominately in agricultural use. Other land uses include existing farmsteads, a dedicated trail segment, existing roadways and multi-family residential. Very small pockets of woodlands are also evident.
Planned or Proposed Development	Single family residential will dominate the future development in this area. This area is the logical extension of the Stanelle Acres Subdivision to the west. Multi-family residential is also scheduled for this area particularly along Holmes Road.
Limiting Environmental Conditions*	An unnamed stream buffer east of the trail runs north and crosses the trail to the west side and continues north through the allocation area totaling 7.4 acres. A designed forested wetland is located in the northern most portion just west of Holmes Road totaling 4.9 acres and its 50 foot wetland buffer measuring approximately 1.2 acres.
Water Features	No open water features are evident in this allocation.
WDNR Natural Heritage	According to the WDNR Natural Heritage Inventory data there are approximately one endangered species, (Blanchard’s Cricket Frog), and one species with special concern, (Pickerel Frog, town-wide. Additionally, a migratory bird concentration site has been identified. A more detailed analysis may be required to determine the extent of these conditions prior to development. It is unclear any of these species exist in this portion of the town. (The ER Preliminary Assessment can be found at the end of this appendix).

Forest Junction 2035 SSA Allocation – Area 4	
Location	Town of Brillion T20N, R20E, E ½, NW ¼, Section 9. This area totals 28.4 acres.
General Physical Features	This area is generally level or gently sloping and the surrounding lands are currently in agricultural use.
Current Development	Area 4 is considered an administrative allocation that includes the Forest Junction wastewater treatment facility and the influent force main to the plant. The force main is established as an one hundred foot wide easement commencing from the plant southward to USH 10 where it heads west to a lift station located near the Brillion town hall.
Planned or Proposed Development	There is no planned development within this area as related to the force main, (no hook-ups are currently allowed), however, there are lands adjacent to the treatment lagoons for expansion of the plant..
Limiting Environmental Conditions*	None evident within this allocation. There is, however, a large designated wetland complex directly wets of the plant totaling 16.4 acres and its associated 50 foot wetland buffer totaling 7.9 acres.
Water Features	No open water features are evident in this allocation.
WDNR Natural Heritage	According to the WDNR Natural Heritage Inventory data there are approximately one endangered species, (Blanchard’s Cricket Frog), and one species with special concern, (Pickerel Frog, town-wide. Additionally, a migratory bird concentration site has been identified. A more detailed analysis may be required to determine the extent of these conditions prior to development. It is unclear any of these species exist in this portion of the town. (The ER Preliminary Assessment can be found at the end of this appendix).

*Natural occurring environmental conditions where development may not be suitable such as: groundwater within 1 foot of the surface, slopes greater than 12%, and bedrock occurring within 5 feet of the surface. Sources: ECWRPC, WDNR’s Ecological Landscapes of Wisconsin, Ecosystem Management Planning Hand Book, WDNR’s 2006 Impaired Waters List (303d list), and WDNR’s Natural Heritage Inventory Working List.

ENDANGERED RESOURCE PROTECTIONS

Species listed as Threatened or Endangered under Wisconsin's Endangered Species Law (**s. 29.604 Wis. Stats**):

- **State-listed animals** - Vertebrates and invertebrates are protected on all lands and waters of the state.
- **State-listed plants** – Protected on public lands and on lands that the person does not own or lease, except in the course of forestry, agriculture, bulk sampling associated with mining or utility actions.

Species protected by the Federal Endangered Species Act of 1973, as amended includes those federally-listed as endangered or threatened and their designated critical habitats:

- **Federally-protected animals** – Protected on all lands.
- **Federally-protected plants** – Protected on federal lands and in the course of projects that include federal funding. They are also protected on other lands if they are removed, cut, dug up or damaged in knowing violation of any law or regulation of any state or in violation of a criminal trespass law.

Special Concern Species, High-Quality Examples of Natural Communities

High Conservation Value areas and unique natural features such as caves or animal aggregation sites are not legally protected by state or federal endangered species laws. However, other laws and policies related to Forest Certification or master planning or granting and permitting processes may require or strongly encourage protection of these resources. The main purpose of the Special Concern classification is to focus attention on species about which some problem of abundance or distribution is suspected before they become endangered or threatened.

State Natural Areas

SNA's protect outstanding examples of Wisconsin's native landscape of natural communities and significant geological formations. Endangered species are often found within SNA's. SNA's are protected by law from any use that is inconsistent or injurious to their natural values, (**s. 23.28 Wis Stats**).

Appendix C includes data on the township range areas included in the sewer service area plan. Prior to development or land disturbance these lists should be consulted to determine if there might be endangered resources in the area. If endangered resources are indicated the developer or municipality should take the project area through the **Natural Heritage Inventory Public Portal** prior to requesting an Endangered Resources Review to ensure a review is necessary. If the Endangered Resources Preliminary Assessment you receive from the NHI Public Portal indicates that no further actions are necessary, you can submit the Endangered Resources Preliminary Assessment report with other WDNR permit applications to indicate the Endangered Resources issues have been addressed. If, on the other hand, the Endangered Resources Preliminary Assessment indicates further actions are recommended or required, the

next step would be to complete the Endangered Resources Review Request Form. By including the Endangered Resources Preliminary Assessment report with the Endangered Resources Review Request the Endangered Resources reviewer will have the ability to call up the project area from the NHI Public Portal ensuring the project area is accurately accessed thus reducing the time needed to complete the review. To learn more about the Natural Heritage Inventory please use this link: <http://dnr.wi.gov/topic/nhi/>.

ENDANGERED RESOURCE PRELIMINARY ASSESSMENT

(NHI_Prelim Report)

NATURAL HERITAGE INVENTORY PROTECTED LIST

(NHI_Protected List)