

Public Utilities Objectives and Policies



Green Bay Smart Growth 2022

Public Utilities Plan

Relationship to the Issues and the Concept Plan ... 24-1

Summary of Issues 24-1
Guidance from the Concept Plan..... 24-1

Plan Overview 24-3

Summary of Objectives 24-3

Objectives and Policies 24-4

Objective 1 – Existing Water and Sewer System
Infrastructure..... 24-4
Objective 2 – New Water and Sewer System
Infrastructure..... 24-4
Objective 3 – Interagency Coordination 24-6
Objective 4 – Environment 24-9

Implementation Program 24-10

List of Figures

Figure 24-1: Water System Plan24-5
Figure 24-2: Sanitary Sewer Infrastructure Plan 24-7

List of Tables

Table 24-1: ESA Setback Requirements24-9
Table 24-2: Implementation Program for Public Utilities. 24-10

Public Utilities Plan

This chapter presents objectives, actions and policies that will guide the maintenance and construction of Green Bay’s public utilities including water and sanitary sewer.

The Green Bay Water Utility operates the water system while the Metropolitan Sewerage District operates the sanitary sewer system. Planning is led by Brown County. As previously noted, development and planning of the water and sanitary sewer systems in the City of Green Bay is guided by two documents:

- City of Green Bay *Water System Strategic Plan*
- 2002 *Brown County Sewage System Plan*

This chapter presents general criteria to guide the planning and construction of sewer and water facilities. The intent is that future updates to sewer and water planning documents will recognize and include the recommendations developed as a part of *Green Bay Smart Growth 2022*. For detailed infrastructure discussion and construction staging plans, refer to the documents listed above.

Relationship to the Issues and the Concept Plan

The Green Bay Public Utilities System Plan provides general guidance to the design, construction and maintenance of the City’s water and sanitary sewer systems in an effort to achieve consistency with the land use and growth recommendations presented in document.

Summary of Issues

Several issues were identified during the Analysis of Conditions and Issues are:

Annexation: How can Green Bay best utilize public utilities as an incentive for the annexation of new lands into the City?

Sanitary Sewer Service Area: How will the requirements developed as a part of Sanitary Sewage System Plan update affect development within the City?

Agency Coordination: How can differences between published plans for water and sewer be reconciled with the vision for the City developed as a part of *Smart Growth 2022*? What steps are needed to advise and coordinate with the staff at the Green Bay Water Utility, the Metropolitan Sewerage District and the Brown County Planning Commission?

Preservation of Natural Resources: How can sewer and water extensions be designed and constructed to minimize impact to the surrounding environment?

Guidance from the Concept Plan

The Concept Plan for *Smart Growth 2022* provides the following direction to the development of public utilities and the maintenance of existing public utilities:

24. Public Utilities Plan

General

Maintenance of Existing Investments: Green Bay should give priority to the maintenance and enhancement of existing public and private investments relative to investments in new facilities on the fringe of the city.

Compact Growth: Where possible, new development should occur in areas served by public infrastructure. In the City's fringe areas, development should be encouraged to occur in a contiguous, controlled manner.

Annexation: With the support of Brown County, the City of Green Bay should negotiate agreements with adjacent towns for staged annexation and service.

Sanitary Sewer System

Existing Lines: Green Bay should emphasize maintaining sewers in presently developed neighborhoods.

System Expansion: The Green Bay Metropolitan Sewerage District should limit perimeter trunk sewer extensions consistent with Brown County's recent growth plan that emphasizes compact and contiguous growth.

Rural Development: All future rural housing in the region except farm buildings should either be served by community sanitary sewer systems or be built at a density no greater than one house per 35 acres.

Water System

Existing Lines: Green Bay should emphasize maintaining the water system in presently developed neighborhoods.

System Expansion: On a targeted basis, Green Bay should continue to provide distribution and storage facilities designed to accommodate potential growth in northeast and southeast fringe areas. The City of Green Bay should provide booster stations and additional storage facilities as needed.

Annexation: Green Bay should use its water utility as a major inducement for annexation petitions from landowners in adjacent Towns. The policy of the City of Green Bay to not extend water service without annexation or equivalent benefits to the City should be continued.

Plan Overview

The Green Bay Public Utilities Plan directs the City to continue to maintain existing water and sewer infrastructure in a high state of repair and to extend public utilities to capture regional growth.

Major initiatives of the plan include: promoting controlled urban development by extending utilities in a staged, orderly fashion; and doing so in an environmentally sound manner.

The plan also includes recommendations for reconciling differences between *Smart Growth 2022* and existing utility planning documents. This plan also promotes interagency coordination.

Goal: To maintain the existing public utility system and extend urban services to fringe areas in a planned, staged manner, while minimizing the impacts to the natural environment.

Summary of Objectives

Based on the Analysis of Conditions and Issues, the following objectives were established for the Public Utilities System Plan.

Objective 1 – Existing Water and Sewer System

Infrastructure. The City of Green Bay will maintain and improve the condition of the existing sanitary sewer and water infrastructure.

Objective 2 – New Water and Sewer System Infrastructure.

The City will extend public utilities to areas currently without urban services to attract a share of the regional growth. Utility extensions will be staged in a planned, contiguous manner with minimal disruption to the natural environment.

Objective 3 – Interagency Coordination. The City of Green Bay will continue to coordinate with agencies such as the Green Bay Water Utility, the Brown County Planning Commission, the Metropolitan Sewerage District and surrounding communities to plan for growth and maximize the return on utility infrastructure investments.

Objective 4 – Environment. The City will maintain the existing public utility system and plan and construct new public utility infrastructure in a manner that minimizes disturbance to the natural environment.

Objectives and Policies

Objective 1 – Existing Water and Sewer System Infrastructure

The City of Green Bay will maintain and improve the condition of the existing sanitary sewer and water infrastructure.

Recommended Policies:

- 1. Assess the Condition of the Existing System:** The City will inventory the condition of existing sewer services, trunks, structures, pumps and water mains.
- 2. Implement Recommended Improvements:** The City will implement sewage treatment plant and water treatment plant improvement that are necessary to maintain the existing system and consistent with approved plans. These improvements include: additional water pumps, process modifications and new transmission mains, along with regular replacement of deteriorating sewer trunks, water mains and services.
- 3. Minimize Infiltration and Inflow:** The City will maximize the efficiency of the existing sanitary sewer system by implementing an infiltration and inflow reduction program.
- 4. Coordinate the repair/replacement of sanitary and water lines with Street Improvement Projects:** The City will coordinate the street resurfacing and reconstruction program with the replacement and repair of public utilities.

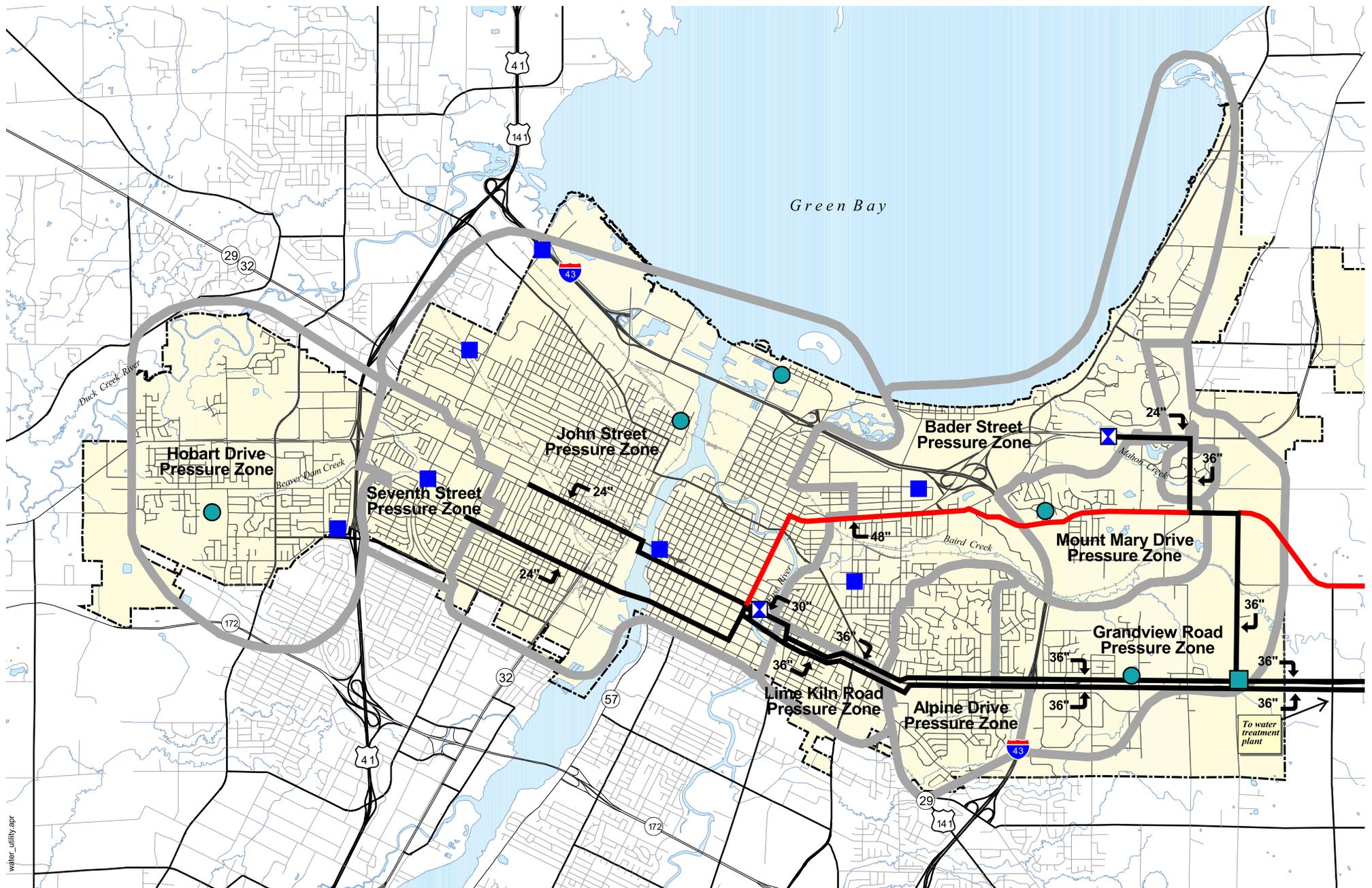
Objective 2 – New Water and Sewer System Infrastructure

It is the intent of the City to capture a portion of the regional growth that is occurring. This plan recognizes the need for utility extensions into fringe areas. New utilities will be staged to promote sound and efficient growth surrounding the present urbanized area.

The City will extend public utilities to areas currently without urban services to attract a share of the regional growth. Utility extensions will be staged in a planned, contiguous manner with minimal disruption to the natural environment.

Recommended Policies:

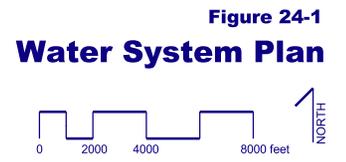
- 1. Follow Development Districts Policy:** The City will continue the Development Districts Policy, which discourages utility extensions across substantial amounts of vacant land. This is consistent with the recommended Concept Plan, which promotes compact growth. It is also consistent with principles outlined in the update to the Brown County Sewage Plan (described later in this chapter).



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- Well
- Tank/Standpipe
- ⊠ Well & Reservoir
- Reservoir
- Water Pressure Zones
- Existing Water Transmission Main
- 30" Pipe Diameter
- Proposed Water Transmission Main
- 30" Pipe Diameter



24. Public Utilities Plan

- 2. Follow Currently Approved Plans:** The City will follow and implement currently approved plans for water and sewer. Major planned water main improvements are shown on Figure 24-1.

Major planned sewer interceptor extensions are shown on Figure 24-2. The only interceptor sewer line need to serve planned growth between 2002 and 2022 is the extension of the Baird Creek interceptor along the north branch of the creek and along Grandview and Erie Avenues.

- 3. Coordinate the Construction of New Public Infrastructure:** The City will construct water and sewer extension concurrently with new streets. Water and sewer will be extended concurrently to newly developing lands.
- 4. Require Annexation:** The City will require annexation of surrounding undeveloped lands as a condition for extending public utilities.
- 5. Minimize disturbance to Environmental Sensitive Areas (ESAs):** The City will minimize the construction of public utilities in ESAs. When construction in ESAs is necessary, great care shall be taken to design facilities and provide erosion control measures that will minimize short and long-term impacts.

Objective 3 – Interagency Coordination

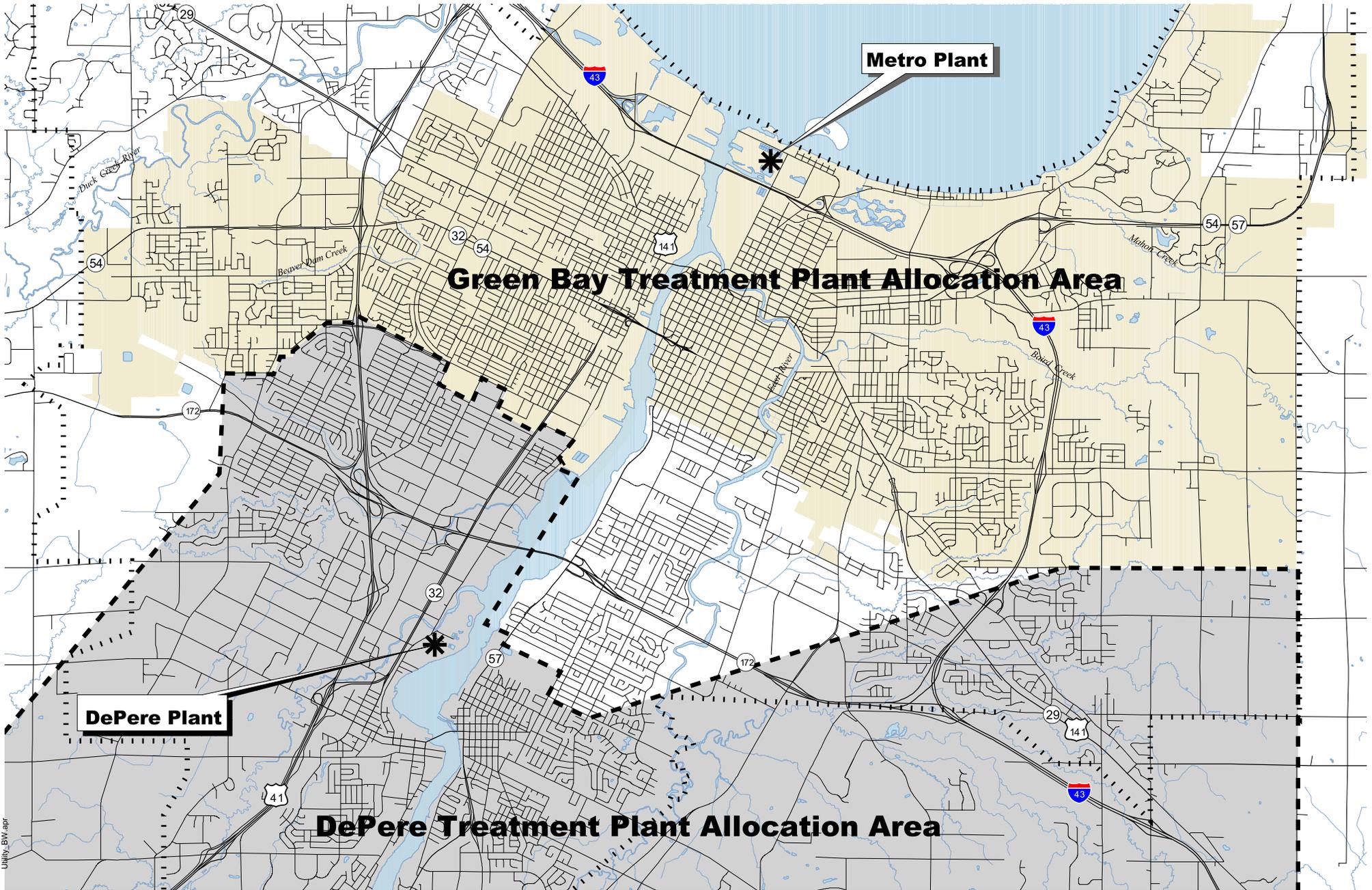
A number of government agencies are involved in planning, design and operating public utilities in the Green Bay area. These agencies include: The City of Green Bay, the Green Bay Water Utility, the Metropolitan Sewerage District, the Brown County Planning Commission and numerous surrounding communities.

The City of Green Bay will continue to coordinate with agencies such as the Green Bay Water Utility, the Brown County Planning Commission, the Metropolitan Sewerage District and surrounding communities to plan for growth and maximize the return on utility infrastructure investments.

Recommended Policies:

- 1. Approve 2002 Sewage Plan Update:** The update to the Sewage Plan is generally consistent with the principles of *Smart Growth 2022*. Green Bay should approve the plan and work toward reconciling minor differences through future, planned amendments to the Sewage Plan.

As previously noted, the Brown County Sewage Plan was going through the approval process in 2003. The plan was prepared using interim population projections provided by the Department of Administration. It is estimated the 2020 population of the City of Green Bay will be 110,313. This represents an increase in population of approximately 8,000 people between 2000 and 2020.

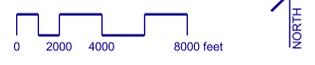


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-  Treatment Plant
-  Year 2015 Sanitary Sewer Service Area (Approx.)
-  Treatment Plant Allocation Area Boundary

Figure 24-2
Sewage Treatment Service Areas



24. Public Utilities Plan

The 2022 population forecast used in the development of *Smart Growth 2022* is 111,000. The official population projections based on the 2000 census will be released later in 2003. At that time, Brown County will amend the Sewage Plan.

Brown County used the population data described above to compute the net acreage of development required to accommodate the population increase. Factors that represented historic land use ratios were applied to determine the amount of commercial, industrial, institutional and recreational lands. Based on this method, the Sewer Service Area (SSA) for Green Bay was calculated to be 3,300 Net Developable Acres.

The proposed Sewage Plan recommends the following adjustments to the 3,300 Net Developable Acres:

- A 50 percent market flexibility factor (applied uniformly to all communities).
- A 30 percent concurrency factor (10 percent each for extending water concurrently, implementing stormwater management and implementing nonpoint source pollution control).
- A 30 percent stormwater factor (10 percent each for having: an adopted stormwater management plan, a stormwater management ordinance and financing in place to implement the plan).
- A 10 percent density factor if new development over the last five years is greater than the 2.5 units per acre countywide average.
- A 10 percent phasing factor for holding 10 percent or more of developable lands in reserve for an as yet to be determined period of time.
- A 10 percent Smart Growth factor for having an adopted Smart Growth plan.

Smart Growth 2022 includes the following development needs:

- 1,247 total net residential acres (Central Acres 54, Fringe Acres 1,193);
- 200 total net commercial acres;
- 220 total net industrial acres.

Overall, it appears the Sewer Plan Update will yield a Sewer Service Area that is consistent with *Smart Growth 2022* recommendations and will allow for flexibility in future differences. Minor discrepancies can be remedied through planned amendment processes.

- 2. Pursue annexation of surrounding lands as a condition of sewer and water extensions:** Green Bay will only extend water or sewer lines outside its present borders in exchange for annexation of land or some other benefit to the City such as a boundary agreement or shared tax revenue.



Objective 4 – Environment

This section of the Public Utilities Plan recommends ways that existing and new utilities be maintained and constructed in a manner that protects the natural environment to the greatest extent possible.

The City will maintain the existing public utility system and plan and construct new public utility infrastructure in a manner that minimizes disturbance to the natural environment.

Recommended Policies:

- 1. Minimize Disturbance to Environmentally Sensitive Area (ESAs):** The city will minimize the extension of water and sewer infrastructure into designated ESAs.

As defined in the Sewage Plan, “ESAs are defined are portions of the landscape including valuable natural resource features that should be protected from intensive development. ESAs shall include all lakes, rivers, streams, wetlands, floodways, and certain other significant and unique natural resource features. ESAs shall also include a setback or buffer from these features. Furthermore, areas of steep slopes (slopes 12% or greater) when located wholly or partially within these natural resource features shall also be included as an ESA.” Following is a summary of required setbacks from ESAs:

Table 24-1: ESA Setback Requirements

ESA Feature/Element	Setback/Buffer
Navigable Waters	100' from the Ordinary High Water Mark
Non-Navigable Waters	25' from the Top of Bank
Channels of Concentrated Flow	10' from the Edge of Feature
Floodways	No Setback/Buffer
Wetlands	50' from the Leeward Edge of Wetlands 2 Acres or Larger
Niagara Escarpment	Special (10' Normal)
Other Significant Natural Resource Features	Special (Case-by Case)
Steep Slope	20' Building Setback from Slopes 20% or Greater

These are considered minimum requirements. Where unique resources are present or serious erosion is possible, the City should consider a 50 foot or greater setback from steep slopes.

Land uses permitted in ESAs have changed with the Sewage Plan Update. In general, roads, storm sewers, sanitary sewers and water mains are allowed to cross ESAs if the care is taken to minimize disturbance. In addition, the plan update will allow for private utilities, stormwater management facilities and recreational facilities to be constructed within an ESA.

Implementation Program

This section describes the major actions involved in implementing the *Smart Growth* Public Utilities System Plan and indicates the relative priority of each, the responsible agency and any required

coordination. Numerous specific actions are described in the body of this plan while the items listed below are only the major short-term and long-term actions.

Table 24-2: Implementation Program for Public Utilities

Priority	Action	Lead and Coordinating Agencies
1	Continue to inventory the condition of the sewer and water system.	Public Works Department
1	Continue to follow the Development Districts policy.	Public Works Department
1	Implement sewage treatment plant and water treatment plant improvements to maintain the system.	Public Works Department
1	Use the water system as an incentive to encourage annexation petitions.	Public Works Department Planning Department
2	Implement and inflow and infiltration reduction program.	Public Works Department
2	Extend the Baird Creek Interceptor line.	Metropolitan Sewerage District Public Works Department
3	Review applications for new sewer and water services	Public Works Department, GBWU, Brown County Planning Department, Metropolitan Sewerage District