Chapter 7
Natural, Cultural, and Agricultural Resources

Summary

- Bellevue has many miles of rivers and streams but limited amounts of large wetlands and large woodlots.
- Large areas of property along the East River are located within the 100-year floodplain and experience periodic inundation during large storm events.
- Development can have a negative effect on the Village's remaining natural resources.
- The Village's natural, cultural, and agricultural resources are an important part of its identity.
- Agriculture is a significant part of Bellevue's history.
- The Village has provided accommodations for limited urban-agriculture opportunities for its residents.
- The preservation of existing natural resources and the expansion of green spaces and parks are important, particularly within the East River and Bower Creek corridors.
- Community design elements can enhance the identity of the Village.
- The Village has limited historical and archeological sites, but they can be incorporated into the future development of the Village.

Introduction

In growing communities like the Village of Bellevue, planning often focuses on such issues as land use, transportation, and infrastructure. Issues pertaining to natural, cultural, and agricultural resources tend to receive less attention. However, these resources are critical to the long-term health, vitality, sustainability, and identity of the Village.

Because of the vital functions performed by natural, cultural, and agricultural resource features, unplanned urban development into these areas is often inappropriate and should be discouraged.

The natural features in Bellevue, such as the East River, Bower Creek, its varied terrain, and numerous small wetlands and woodlands, all combine to help create the Village's character. These natural features also continue to attract increasing numbers of new residents and, therefore, new development. In order for the Village to maintain these features that make Bellevue desirable to both new and existing residents alike, it must strike a balance between development and the natural environment.

This chapter will examine ways to build upon these resources to establish and promote a community identity, while preserving the land and character that the residents enjoy.

Inventory and Analysis

This section of the Village of Bellevue Comprehensive Plan inventories the natural, cultural, and agricultural resources within the Village, notes current and future issues associated with each resource, and proposes actions and programs that the Village may undertake to address those issues.

Soils

Soil is one of the major building blocks of the environment. It is the interface between what lies above the ground and what lies underneath. The relationship between soil and agriculture are obvious. Little attention is often given to soils in regard to the location and type of future development it may support. In some cases, the financial and environmental costs associated with overcoming soil limitations can often be prohibitive.

Bellevue's soils are composed of glacially eroded rock material that was deposited when the ice sheets melted that, together with other soil forming factors, including vegetation, have formed the soil that covers the Village today.

According to the Soil Survey of Brown County, Wisconsin, there are two major soil associations present in the Village of Bellevue: Kewaunee-Manawa Association and Oshkosh-Allendale-Tedrow.

Kewaunee-Manawa

The Kewaunee-Manawa Association consists of deep, well drained to somewhat poorly drained, nearly level to steep soils that have dominantly clayey subsoil. This association, located in the eastern two-thirds of the Village, is the most common soil in the Village. Most of the soils in this association are cultivated and are suited for agricultural uses. Controlling erosion, tilth, and maintaining soil fertility are common management concerns. The clayey subsoil is a severe limitation to use for home sites or other non-farm purposes, particularly for those with conventional septic systems though other types of private on-site wastewater treatment systems may be used.

Oshkosh-Allendale-Tedrow

The Oshkosh-Allendale-Tedrow Association consists of deep, well drained to somewhat poorly drained, nearly level to steep soils that have clayey and sandy subsoil. This association is located in the western one-third of the Village, generally along and east of the East River. Some of the soils in this association are cultivated and used for farming. Controlling drainage, erosion, and fertility are common management concerns. Slow permeability, wetness, and high shrink-swell potential are limitations for non-farm development though additional measures may be incorporated to address the limitations.

Productive Agricultural Lands

The Brown County Farmland Preservation Plan identifies Brown County's farmlands as irreplaceable resources that are necessary to the continued well-being of the County's economy. The protection of these farmlands and orderly rural and urban growth are deemed to be in the broad public interest. Brown County's most recent update to the Farmland Preservation Plan was conducted in 2017 with a plan horizon year of 2027. The plan was certified by the Wisconsin Department of Trade and Consumer Protection (DATCP) on December 11, 2017 and ensures access to program benefits such as landowner eligibility for farmland preservation program (FPP) tax credits for those enrolled.

The Brown County Farmland Preservation Plan recognized that Bellevue was one of the fastest growing communities in Brown County and identified a significant proportion of the agricultural lands in Bellevue as transition areas (lands currently in agricultural uses but envisioned to be converted to urban uses within the near future). The Village had adopted an Agricultural Farmland Preservation Ordinance in 2014 but eliminated it in 2016 since none of the existing farmers re-zoned their properties into the district, thereby not meeting DATCP's criteria.

Most of Bellevue consists of prime agricultural soils. Although agriculture is still a significant land use in the Village, the acreage has long been decreasing. Most of the land taken out of production has been converted to residential development; although, a significant amount is idle agricultural lands slowly converting back to woodlands, wetlands, or other open lands.

Productive agricultural lands include soils defined as being prime farmland without any limitations and soils that are currently in a productive state, regardless of prime farmland classification. Bellevue's productive agricultural lands are mapped in Map 7-1.

For communities such as Bellevue, agricultural lands function as a "land bank" that allows the Village room to grow. Still, it is recommended that farmlands comprised of larger or numerous contiguous parcels continue to be farmed as unobtrusively as possible until such time as infrastructure can be extended in a cost-effective manner and development can be accommodated in a compact and efficient manner.

Agricultural trends show that farms are continuing to grow in size. At the same time, more new farms are operating as direct market farms. Producers are promoting the "farm to table" concept to improve profitability and capture the growing interest in fresher, healthier food alternatives. These types of farms typically provide meat and produce for farmers markets, restaurants, and Community Supported Agriculture (CSA's) and have grown out of the local food movement.

Municipalities in Brown County are seeing the creation of more large dairy farms. These larger farms, including Concentrated Animal Feeding Operations (CAFO's) are regulated through various county and state regulations including an Animal Waste Management Ordinance (Brown County), the Wisconsin Pollutant Discharge Elimination System (WPDES) CAFO Permits, and the State Livestock Facility Siting Law (ATCP 51).

Map 7-1
Productive Agricultural Lands

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Legend

Productive Agricultural Lands

Source: Village of Bellevue, Land Use Inventory, 2020

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At the other end of the spectrum, communities have also enacted urban agriculture ordinances that allow and set parameters for small scale production and distribution of local food within an urbanized area. The Village of Bellevue had recently amended its ordinances to allow for the raising of chickens as well as beekeeping, if in compliance with permitting standards.

Furthermore, two community gardens have been established at Josten Park and Moonrise Park through the Bellevue Community Garden program which provides gardening opportunities for the physical and social benefit of Village residents. The program is administered through the Village, however the gardens themselves are developed and operated by resident volunteers who rent space to grow fresh produce and flowers. Garden plots are assigned on a first come, first served basis with new plots being awarded by mid-May. If no plots are available in the garden, a waitlist is created.

In general, low impact, conservation-oriented farming practices within and adjacent to the Village should be encouraged to help ensure a minimum of conflicts between the farm operations and adjacent urban development. It is also recommended that the Village focus its development efforts upon those farmlands that are immediately adjacent to current development and infrastructure.

Surface Water

Surface water is one of the most important natural resources available in a community. Surface water provides opportunities for recreation, habitat for countless plants, fish, and animals, an end source for drainage after heavy rains, a source of drinking water for communities, and a source of process water for industry and agriculture.

Lands immediately adjacent to such waters also have cultural and archeological significance because they were often the location of Native American and early European settlements.

There are many miles of perennial streams in the Village of Bellevue. These streams provide scenic and recreational value to the community. Many of the Village's intermittent streams and wetlands do not show up on maps and are poorly protected. Yet, these intermittent waterways provide sites for infiltration of surface water into groundwater reservoirs and provide habitat for many plants and animals. Small intermittent waterways and wetlands are where most nutrients and many contaminants enter the waters that are used for drinking and recreation.

Stormwater runoff can also be considered a surface water resource. As water flows across the surface of the land, it picks up nutrients and contaminants and these dissolved substances are then carried into larger surface water bodies and into groundwater. As a result, anything applied to the land's surface almost immediately enters surface waters and, eventually, the groundwater.

The most heavily regulated waters are those that are determined to be natural and "navigable" but intermittent waterways are poorly protected by state and federal statutes and warrant protection at a more local level.

The Village of Bellevue has regulations and plans that address surface water protection. These are:

1. **Conservancy District Zoning District:** The purpose of this district is to provide adequate natural areas for the drainage of surface and stormwaters and to protect natural resource areas containing swamp, wildlife habitat, and natural water or drainage courses.

2. **Stormwater Management Plan and Ordinance (Chapter 400):** Originally completed in June 1996, the plan recommends a variety of physical and institutional elements to achieve the desired stormwater management goals of the community. The ordinance manages the long-term, post construction stormwater discharges from land development and redevelopment activities by setting performance standards. Through the implementation of the stormwater management practices, the adverse impacts associated with uncontrolled stormwater runoff can be minimized and mitigated.

3. **Stormwater Utility:** In 2002, Bellevue created a stormwater management utility district. Fees are collected to help maintain and improve the Village's stormwater system.

As shown in Map 7-2, the primary surface water features in the Village of Bellevue are the East River and Bower Creek. In addition to these two resources, the Village also has a number of small unnamed streams, ditches, and swales that are considered surface water resources. The protection and preservation of the Village's surface waters should be one of its highest natural resources priorities.

East River

The East River is a major tributary of the Fox River. It is a navigable river that flows northward 39 miles from its headwaters in northern Calumet County to one mile upstream of the Bay of Green Bay/Fox River mouth. It drains about 148 square miles of the County. In Bellevue, it is 4.8 miles long and, with its tributaries, drains the entire Village.

It is a sluggish, hard water, and very turbid stream. The northernmost third of the river is classified as a Warm Water Sport Fishery. While urban development is adjacent to approximately the northern third of the stream including most of the Village of Bellevue, agricultural lands are adjacent to the remainder of the stream. Many of its banks have been pastured and are badly eroded. Sediments have blanketed the streambed (filling in pools and riffles), thereby degrading habitat for fish species and associated fauna.

The East River continues to be exposed to many adverse environmental impacts, including sedimentation, excessive nutrient inputs, low levels of dissolved oxygen for a Warm Water Sport Fishery, loss of in-stream habitat, excessive suspended solids leading to turbidity, and fish kills due to nonpoint source pollution, cropland erosion, and barnyard runoff. For these reasons, the East River has also been identified as an Impaired Water.

Map 7-2
Surface Waters

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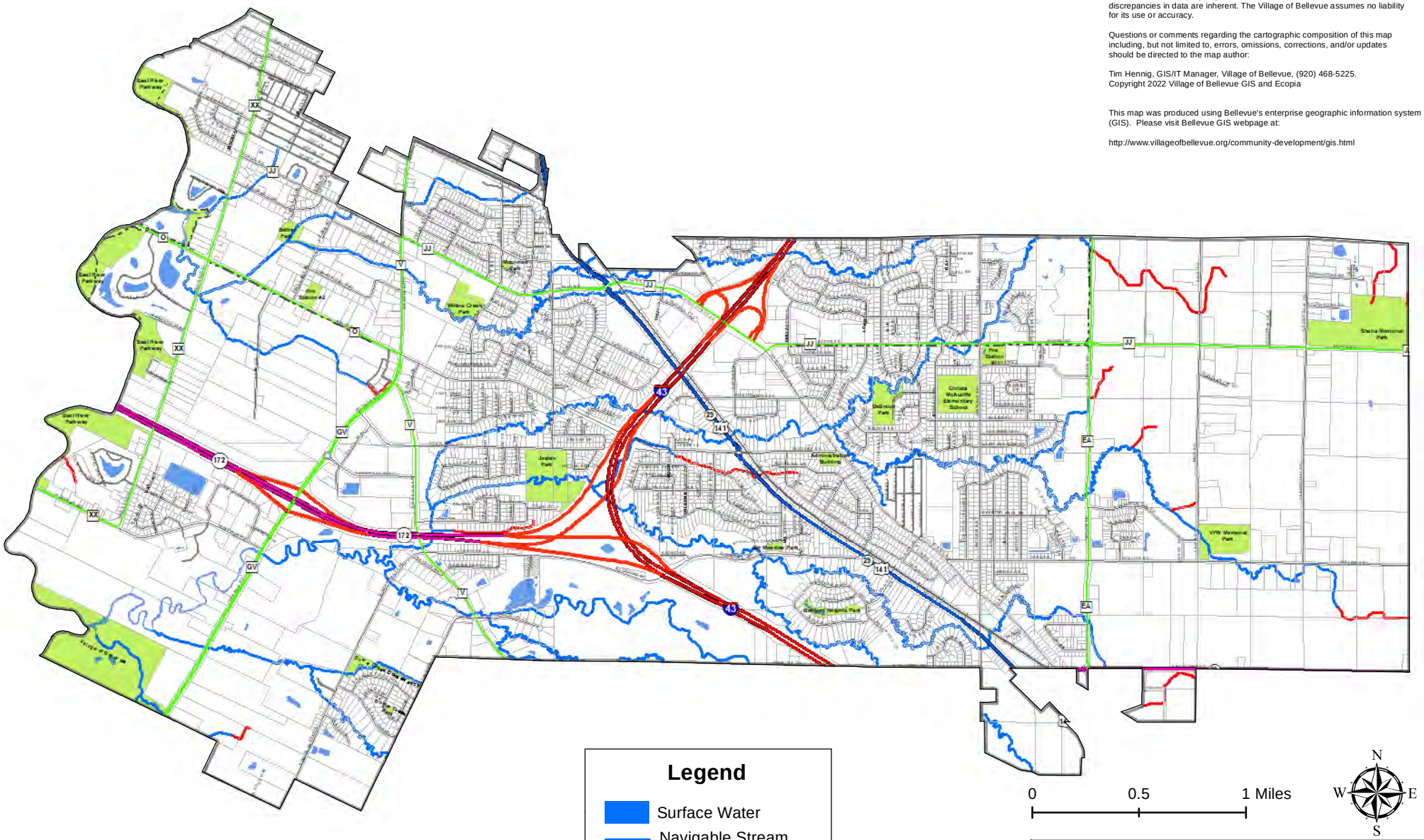

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In 1987, the East River was designated as a priority watershed under the Wisconsin Nonpoint Source Water Pollution Abatement Program. Subsequently in March 1993, a consortium of state, county, and local agencies prepared a report titled “Nonpoint Source Control Plan for the East River Priority Watershed Project.” The intent of the plan is to guide the implementation of nonpoint source control measures within the East River watershed and to provide the basis for the WDNR to enter into cost-share and local assistance grants to implement water quality improvement measures. The plan’s implementation recommendations, including education, installation of vegetative buffer strips, and other techniques, should continue to be implemented throughout the East River Watershed to continue the East River’s improvement in overall water quality.

The East River provides an opportunity for the Village to establish buffers and plant native grasses and shrubs along the river to improve its wildlife habitat and stormwater management capabilities. Additionally, the Village can work with local conservation or school groups to restabilize the shoreline along the East River by planting native grasses and plants in order to further reduce shoreline erosion.

Watersheds

A watershed is an area of land where all the water on it and under it drains to the same place. Within this area of land, all living things are linked by the common waterway. The East River Watershed drains the entire Village to the Fox River.

In the past, field observations by County staff and others indicate that agricultural and development activities have significantly disturbed many of the smaller streams within the Village. These activities degrade or entirely remove the natural bed and bank of the stream, thus increasing erosion, removing vegetation and wildlife habitat, and damaging downstream water quality.

Floodplains

Floodplains are natural extensions of waterways. All surface waters possess them, but the size of the floodplain can vary greatly. They store floodwater, reduce flood peaks and velocities, and reduce sedimentation. They also provide habitat and serve as filters for pollution.

Like surface waters, the importance of floodplains is also recognized and is regulated by federal, state, county, and local governments. The State of Wisconsin mandates floodplain zoning for all communities under Wisconsin Administrative Code NR 117.These minimum standards must be implemented in order to meet eligibility requirements for federal flood insurance.

The Village of Bellevue has adopted a zoning ordinance that includes provisions for floodplain regulations. The regulations concern the establishment of districts, location of floodplain boundaries, removal of lands from floodplain, as well as identifying permitted and prohibited uses within the various floodplain districts.

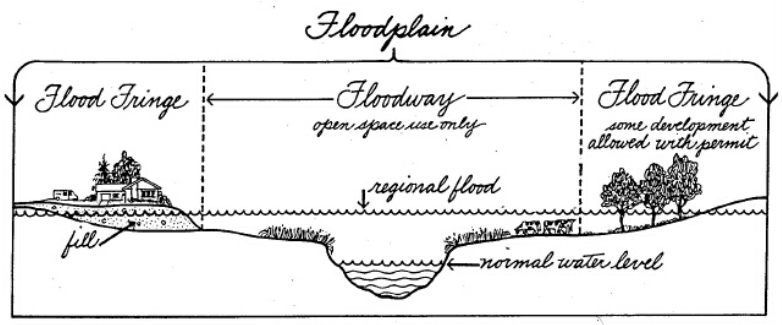
For regulatory, insurance, and planning purposes, the 100-year recurrence interval flood hazard (or regional flood) area is most often used. This is the land that has a 1 percent chance of being flooded in any given year. Mapped floodplains within Bellevue include the East River, Bower Creek, as well as many of the smaller streams. The Village's 100-year floodplains that have been mapped are shown in Map 7-3. The illustration on the next page presents a diagram of a floodplain and identifies its constituent parts, including both the floodway and flood fringe.

There are several threats to floodplains and the resource values that they represent including:

1. **Filling:** This might diminish the flood storage capacity of the floodplain.
2. **Grading:** This can degrade the resource functions of floodplains, such as filtering pollutants, or providing habitat.
3. **Impediments:** This can include encroachment of buildings or undersized culverts and bridge openings.
4. **Impervious surfaces:** This can increase the velocity of the flood flows, increase the number of pollutants, reduce the amount of natural wildlife habitat, and limit the amount of infiltration of stormwater into the ground.

Due to the importance of floodplains for environmental, regulatory, and insurance purposes, the Village may want to encourage (and require where appropriate) flood studies for all rivers and streams where development is proposed. Such flood studies should map both the floodway and the flood fringe portions of the 100-year recurrence interval flood hazard area and should be reviewed and approved by both the Wisconsin Department of Natural Resources and the Federal Emergency Management Agency (FEMA).

Under current regulatory requirements, the floodways would generally be off limits to development. However, development could occur within the flood fringe areas with the receipt of appropriate permits and approvals, and agricultural activities could continue within the floodplain.



Floodplain: That land which has been or may be covered by floodwater during the regional flood. The floodplain includes the floodway and flood fringe areas.

Floodway: The channel of a river or stream and those portions of the floodway adjoining the channel required to care the regional flood discharge. The floodway is the most dangerous of the floodplain. It is associated with moving water.

Flood Fringe: The portion of the floodplain outside of the floodway, which is covered by floodwater during the regional flood. It is associated with standing water rather than flowing water.

Regional Flood: That area where large floods are known to have occurred in Wisconsin, or which may be expected to occur, at a frequency of one percent during any given year. Also referred to as the 100-year floodplain or 100-year recurrence interval flood hazard area.

Map 7-3
FEMA Floodplains

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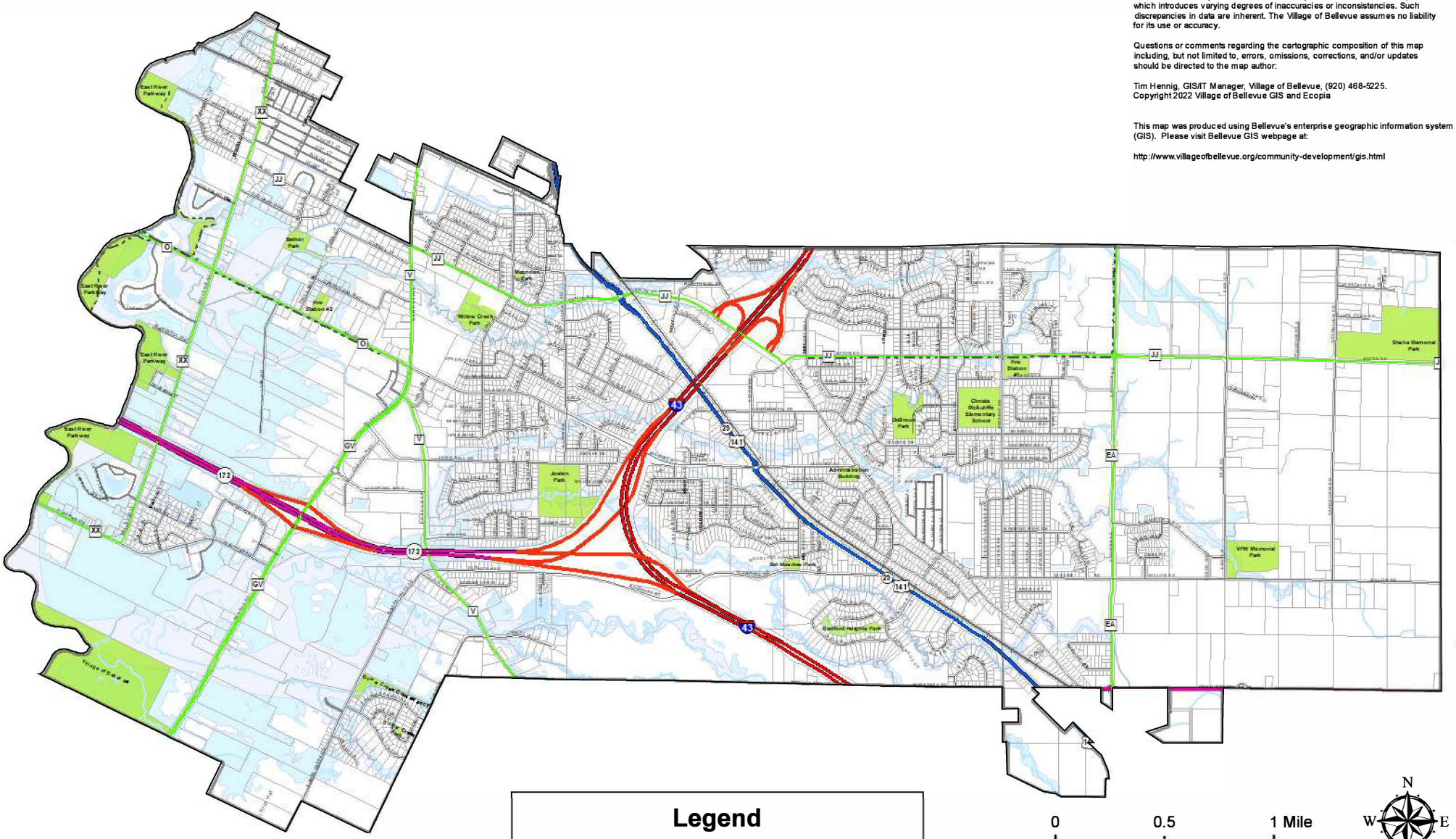

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Source: 2010 FIRM (Flood Insurance Rate Map),FEMA (Federal Emergency Management Agency)

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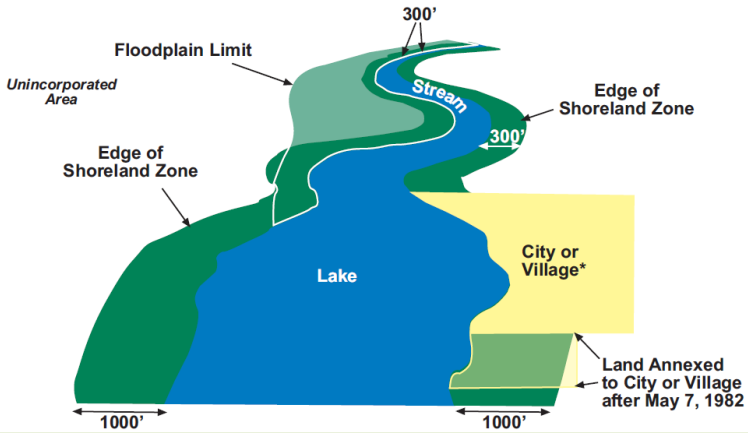
Shorelands and Stream Corridors

Shorelands are the interface between land and water. In their natural condition, shorelands are comprised of thick and diverse vegetation that protect lakes, rivers, and streams. If these areas are developed, this vegetation is lost, and fish, wildlife, and water quality are damaged.

Shoreland zoning is primarily intended to control the intensity of developments near and to create a buffer around lakes, rivers, and streams. The buffer is intended to remain an undeveloped strip of land that protects the water from the physical, chemical, hydrological, and visual impacts of nearby development. Wisconsin mandates shoreland zoning for all unincorporated communities and those parts of incorporated cities and villages that were annexed after May 7, 1982.

Since Bellevue was incorporated in 2003, it must also follow the state-mandated minimums listed under Wisconsin Administrative Code NR 115. The Village therefore developed and adopted Chapter 500, Part 500-2200 of its ordinances to create shoreland/wetland regulations meeting the State standards. The Village of Bellevue currently contracts with the Brown County Zoning Office to administer and enforce these regulations within the Village. The graphic below shows the state-mandated minimum shoreland zoning requirements.

Shorelands and Shoreland Zoning



Shoreland Zone: The shoreland zone is located within 1,000 feet of the ordinary high-water mark (OHWM) of a navigable lake, pond, or flowage or within 300 feet of the OHWM of a navigable stream or river or the landward side of the floodplain, which ever distance is greater.

Ordinary High-Water Mark: The ordinary high-water mark is the boundary between upland and lake or riverbed. It is the point on the bank or shore up to which the presence and action of the water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation, or other easily recognized characteristics.

Navigable: Generally, a waterway is navigable if it has a bed and banks and can float a canoe at some time each year – even if only during spring floods. Even small intermittent streams that are seasonally dry may meet the test of navigability. Navigable lakes and streams are public waterways protected by law for all citizens.

Source: Wisconsin Department of Natural Resources

The shoreland restrictions do not apply to those waters that are determined to be non-navigable waters. However, all lakes, rivers, and streams, no matter how small, should be assumed to be navigable until determined otherwise by the DNR.

As shorelands are closely related to floodplains, so are the threats to the resource values shorelands represent. Under current regulatory requirements, the 75 feet closest to navigable waters are generally off limits to development, but development could occur within the remainder of the shoreland area with receipt of appropriate permits and approvals, and agricultural activities could continue within the shoreland area.

Based upon the importance of the Village's shorelands and their relationship to surface water and the Village's rural character, Bellevue should encourage greater protection of the shoreland area. In this regard, the Village should take full advantage of federal, state, and county funding and other assistance in the establishment of vegetative stream buffers to further filter out sediments and other associated pollutants.

Wetlands

Wetlands are characterized by water at or near the ground level, by soils exhibiting physical or chemical characteristics of waterlogging, or by the presence of wetland adapted vegetation.

Wetlands are significant natural resources that have several important functions. They enhance water quality by absorbing excess nutrients within the roots, stems, and leaves of plants and by slowing the flow of water to let suspended pollutants settle out. Wetlands help regulate storm runoff, which minimizes floods and periods of low flow. They also provide essential habitat for many types of wildlife and offer recreational, educational, and aesthetic opportunities to the community.

There are two broad classifications of wetlands: perennial wetlands and intermittent wetlands. Perennial wetlands are inundated with water for much of the year and develop classic wetland characteristics, such as soil mottling. Perennial wetlands usually support populations of water-loving plants. Intermittent wetlands, due to soil type and topography, often do not develop classic wetland characteristics since they are flooded only part of the year.

Most of the Village of Bellevue's wetlands are contained within and along its numerous streams. Its largest wetland complexes are located along the East River and Bower Creek.

The Wisconsin Wetlands Inventory map identifies wetlands scattered throughout the Village. As shown on Map 7-4, the WDNR digital wetlands inventory identified approximately 609.2 acres of wetlands within the Village. There may be additional wetlands in the Village that would need to be delineated prior to being developed.

The primary threat to wetlands is filling. Although an array of federal, state, and local regulations helps with protection, wetlands (especially smaller ones) are still lost to road construction and other development activities. The draining of wetlands can also occur through the placement of drain tile and rerouting of surface water. Some agricultural areas are actually former wetlands that would probably revert back to wetland character if left alone for a period of time.

Map 7-4
Wetlands

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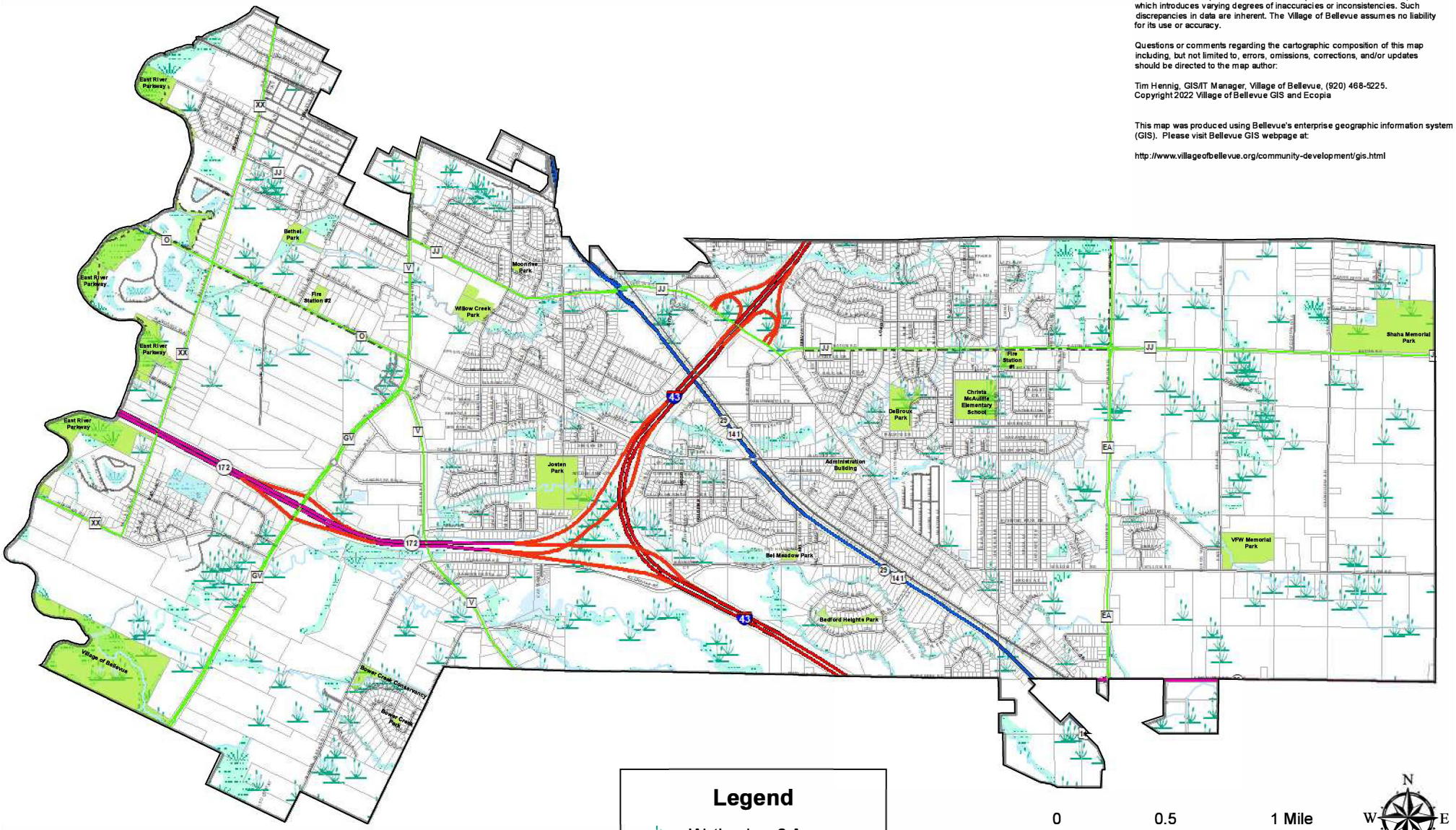

Legend

- Wetlands < 2 Acres
- Wetlands > 2 Acres

Source: Wisconsin Department of Natural Resources

0 0.5 1 Mile

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Even if wetlands are not directly filled, drained, or developed, they still can be impacted by adjacent uses. Siltation from erosion or pollutants entering via stormwater runoff can destroy the wetland. Invasive plant species, such as purple loosestrife, can also negatively affect wetlands.

Under current regulatory requirements, all wetlands are off limits to development unless appropriate permits and approvals are obtained. In addition, under certain situations, agricultural activities may also be regulated within wetlands. In this regard, the Village should take full advantage of federal, state, and county funding and other assistance in the protection of existing wetlands and restoration of drained wetlands.

Environmentally Sensitive Areas

Environmentally sensitive areas (ESAs) are defined by the Brown County Planning Commission as portions of the landscape consisting of valuable natural resource features that should be protected from intensive development. They include all lakes, rivers, streams, wetlands, floodways, areas of steep slopes (slopes 12 percent or greater) when located within or adjacent to any of the features previously noted, and other locally designated significant and unique natural resource features. ESAs also include a setback or buffer from these features. Map 7-5 shows the locations of the ESAs in the Village.

Identification and protection of ESAs are required by both state and county regulations under Wisconsin Administrative Code NR 121 and the Brown County Sewage Plan, as well as the Brown County Subdivision Ordinance. They are enforced during the review and approval of all land divisions and/or public sanitary sewer extensions. The intent of the ESAs is to protect water-related natural resource features from the adverse impacts often associated with development.

ESAs provide many benefits to the Village including:

- Recharge of groundwater.
- Maintenance of surface water and groundwater quality.
- Attenuation of flood flows and stages.
- Maintenance of base flows of streams and watercourses.
- Reduction of soil erosion.
- Abatement of air pollution.
- Abatement of noise pollution.
- Favorable modification of microclimates.
- Facilitation of the movement of wildlife and provision of game and non-game wildlife habitat.
- Facilitation of the dispersal of plant seeds.
- Protection of plant and animal diversity.
- Protection of rare, threatened, and endangered species.

The Village has taken recent steps to ensure that ESAs are protected through their identification on CSM's and Subdivision Plats, as well as establishing setbacks through their Shoreland/Wetland Ordinance.

Map 7-5
Environmentally Sensitive Areas

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Source: Brown County Planning Commission, 2022

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Threats to ESAs are similar to floodplains and shorelands. In addition, the quality and effectiveness of ESAs can be severely reduced should adjacent development change drainage patterns or remove native vegetation from the lands within or immediately adjacent to the ESAs. Such disturbances can also introduce invasive plant species to the ESAs, which can result in loss of native vegetation, diversity, and habitat.

While some level of protection of ESAs occurs via various levels of county, state, and federal government through enforcement of shoreland, floodplain, and wetland regulations, ultimate protection of these important areas is best accomplished by the local unit of government. Local protection is sometimes afforded these natural areas through the Village zoning ordinance via the conservancy zoning classification. Bellevue should consider conservancy zoning protection or conservation easements for the ESAs located within the Village.

Groundwater

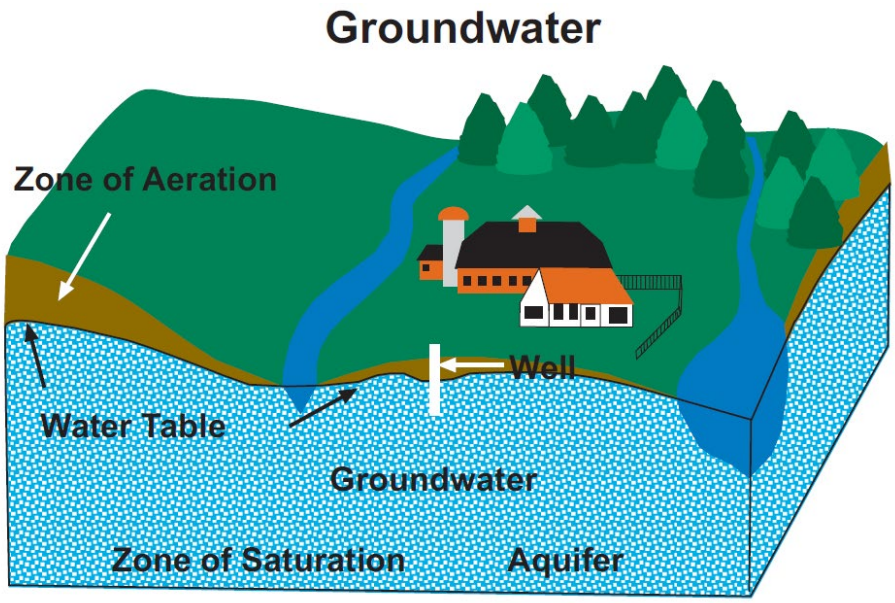
Groundwater begins as precipitation. This precipitation (rain or snow) falls upon the land. Some of the precipitation runs off into lakes, rivers, streams, or wetlands. Some evaporates back into the atmosphere, and plants absorb some.

Groundwater is precipitation that soaks into the ground past plant roots and down into the subsurface soil and rock. A layer of soil or rock that is capable of storing groundwater and yielding it to wells is called an aquifer. The top of the aquifer closest to the ground's surface is called the water table. It is the area below which all the openings between soil and rock particles are saturated with water. Like surface water, groundwater moves from high areas to low areas. It discharges at those places where the water table intersects the land's surface, such as in lakes, streams, and wetlands, providing a base flow for those water features.

As with all communities, it is very important that groundwater be protected. The greatest threats to groundwater are contamination and overuse. As with any urbanizing or suburbanizing community, the most common sources of contamination within the rural areas include feedlots, manure storage and spreading, manure pits, irrigation, fertilizers, and pesticides, and within the urbanizing areas include scrap/junkyards, leaking underground storage tanks, and various contaminants found in urban stormwater runoff.

In order to protect groundwater, the Village has adopted a Wellhead Protection ordinance (Chapter 450, Article III) which restricts certain land uses with the wellhead protection area. The Village should also support Brown County's "time of sale" program of inspecting private onsite wastewater treatment systems to guard against failing systems. Ensuring functioning septic systems will serve as a protection against groundwater contamination.

Although maintaining groundwater quality will continue to be a priority, quantity may become less of an issue since the Village has stopped drawing groundwater and now receives potable water from Lake Michigan a member of the Central Brown County Water Authority.



Groundwater: The water below the water table contained in void spaces (pore spaces between rock and soil particles or bedrock fractures).

Water Table: The surface water in an unconfined aquifer; the level below which the pore spaces in the soil or rock are saturated with water; the upper surface of the zone of saturation.

Aquifer: A saturated geologic formation (rock or sediment) capable of storing, transmitting, and yielding reasonable amounts of ground water to wells and springs.

Zone of Saturation: The zone in which the pore spaces between soil and rock particles are completely filled with water. The water table is the top of the zone of saturation.

Zone of Aeration: The zone between the land surface and the water table in which the pore spaces between soil and rock particles contain water, air, and/or other gases.

Source: Wisconsin Department of Natural Resources

Woodlands

Few woodlands are remaining in the Village (see Map 7-6). What does exist is small and scattered. In addition, many of these are wooded wetlands. Most of the Village's original woodlands have been cleared for farming and a large portion of that land has since been developed. Remaining woodlands are found within the ravines associated with the streams in the central portion of the Village and typically consist of the American Elm, Silver Maple, Red Ash, Basswood, Black Ash, Swamp White Oak, Red Maple, Red Oak, Sugar Maple, and Big-Tooth Aspen.

Map 7-6
Woodlands

Disclaimer:

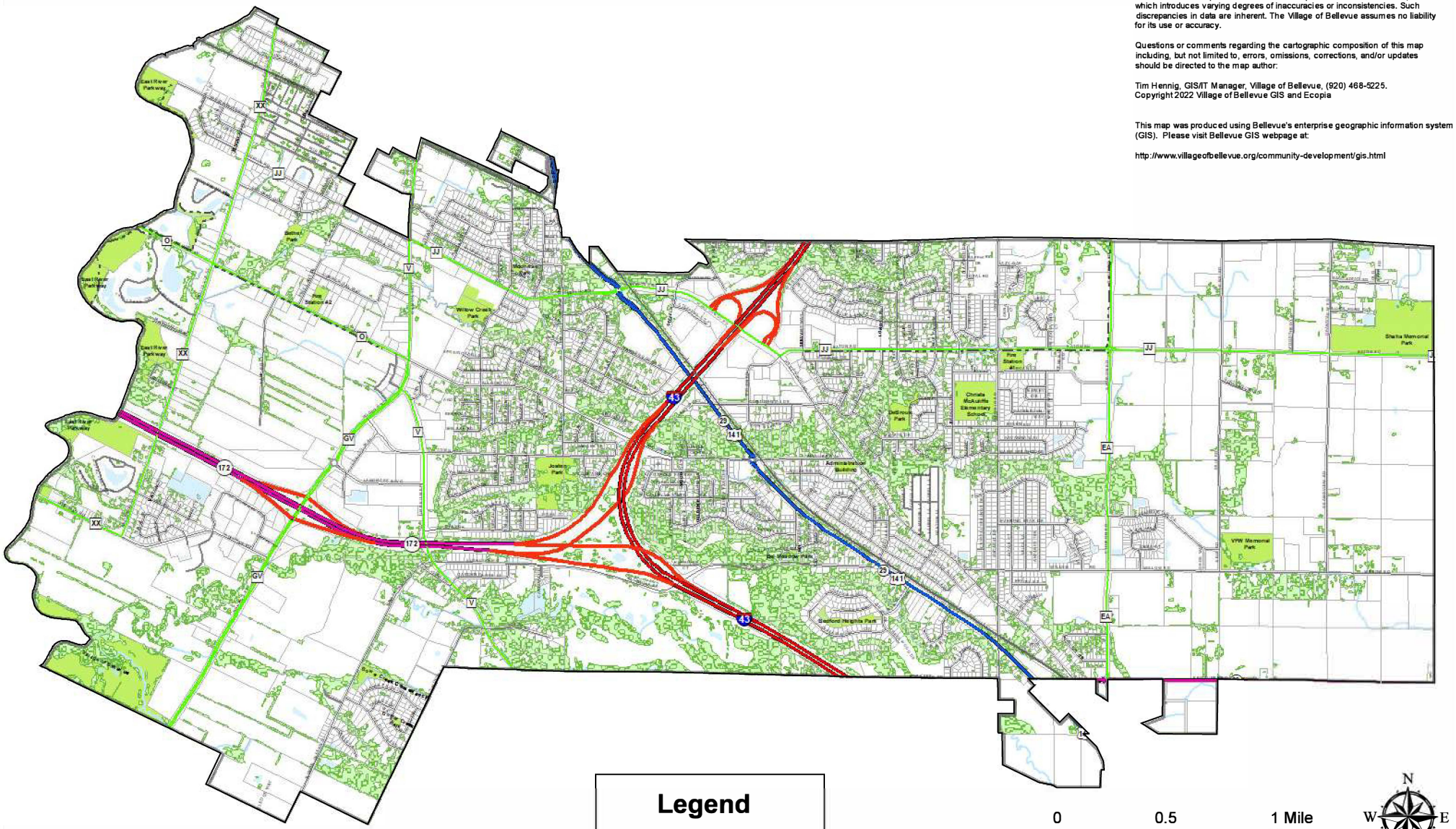
This map was produced for the exclusive use of the officials of the Village of Bellevue. The data presented has been compiled from various sources, each of which introduces varying degrees of inaccuracies or inconsistencies. Such discrepancies in data are inherent. The Village of Bellevue assumes no liability for its use or accuracy.

Questions or comments regarding the cartographic composition of this map including, but not limited to, errors, omissions, corrections, and/or updates should be directed to the map author:

Tim Hennig, GIS/IT Manager, Village of Bellevue, (920) 468-5225.

This map was produced using Bellevue's enterprise geographic information system (GIS). Please visit Bellevue GIS webpage at:

http://www.villageofbellevue.org/community-development/gis.html



Legend

Woodland

Source: Ecopia Tech, Aerial Data Extraction Project, 2020

0 0.5 1 Mile

N W E S

Note: This map is for general reference and general planning purposes only. It is not intended for detailed planning.

Drawn By: Tim Hennig, GIS/IT Manager	
Inspected By: Andrew Vissers, Community Development Director	
File: Q:\Community Development\Comprehensive Plan Maps\Firgure7-6_Woodlands.mxd	
Date: August 8, 2022	Scale: 1 in = 1 miles

Continued development is the primary threat to Bellevue's remaining woodlands. Since these areas are prized as settings for residential subdivisions, they are often targeted for development. Intensive development, especially if improperly planned, can destroy the scenic and natural values of the woodland resource, and can disrupt the blocks and corridors necessary to provide refuge and passage for wildlife.

Where woodlands are not also classified as wetlands and are not located within the protected portions of floodplains and shorelands, they should be preserved as much as possible through such approaches as conservancy zoning, incorporating them into open spaces, or supporting property owners who may want to place wooded areas in conservation easements for their preservation.

The Village of Bellevue should maintain its designation as a Tree City USA to help preserve its more important woodlands and to help establish an urban or community forest. To receive the designation, a community must have a tree board, commission, or municipal department that has legal authority for the care of public trees and for developing and administering a community tree management program. The community must also have a tree ordinance, an annual budget for administering, managing, and implementing the community forestry program, and an Arbor Day observance and proclamation.

Wildlife Habitat

Since much of the land in Bellevue is already developed or actively farmed, the best remaining wildlife habitat within the Village is contained within its woodlands, wetlands, and drainage corridors. However, these areas are still affected by development around their edges, by regional issues (such as water quality), and by potential invasion of exotic species such as Phragmites, Buckthorn, or Garlic Mustard.

Preservation of wildlife habitat is another reason for protecting surface waters, floodplains, shorelands, wetlands, and woodlands. It is assumed if these areas are adequately protected and preserved, so would its wildlife habitat value. The Village's urban forestry program also provides wildlife habitat for a variety of bird and animal species and should be continued with this benefit in mind.

Even with the abundance of natural wildlife habitat, a suburban community like Bellevue also has occasional issues with 'urban wildlife,' mainly Canadian geese, deer, turkeys and the like. Oftentimes, suburban residents enjoy seeing this wildlife right in their backyard and will actually encourage it through feeding, etc. Other residents may object to this understanding that the existence of such wildlife can also be detrimental to the animal or pose a safety risk for humans.

Threatened and Endangered Species

Federal and state laws protect endangered and threatened species. This protection is usually accomplished during the federal and state permit review process. Protection of such species is a valuable and vital component of sustaining biodiversity. An endangered species is one whose continued existence is in jeopardy and may become extinct. A threatened species is one that is likely, within the near future, to become endangered.

The Bureau of Endangered Resources within the Wisconsin Department of Natural Resources monitors endangered and threatened species and maintains the state's Natural Heritage Inventory (NHI). This program maintains data on the locations and status of rare species in Wisconsin. According to the NHI, there are endangered or threatened species potentially found in Bellevue. The exact location of these instances is not made public to prevent human disturbance. According to the Wisconsin DNR, endangered resources reviews are conducted for a wide variety of land management, development, and planning projects, including commercial, residential, industrial, and other development projects. All state agencies must also determine whether any activity or project they conduct, fund, or approve (DNR permit, water quality certification, easement on state lands or construction stormwater discharge permit, etc.) may affect endangered or threatened species.

The primary threat to threatened and endangered species is the loss of habitat due to development and other factors. Federal and state regulations discourage and sometimes prohibit development where such species are located.

Invasive and Exotic Species

Wisconsin Statute Section 23.22 (1) (c) defines invasive species as "nonindigenous species whose introduction causes or is likely to cause economic or environmental harm or harm to human health." According to the WDNR, "As humans move organisms around all the time. Sometimes when we bring a non-native species into a new area the species will take over and spread rapidly and widely throughout the area. When this happens, the spread can cause major harm to the native ecosystem or humans. When non-native plants, animals or pathogens rapidly take over a new location and alter the ecosystem, we consider them invasive species." Invasive species can alter ecological relationships among native species and can affect ecosystem function, the economic value of ecosystems and human health. The net result of allowing such species to exist or expand is the net loss of ecological diversity.

The Village's current Urban Forestry Program addresses invasive species as they relate to trees, however; there are many other invasive or exotic species that exist within both public and private properties such as buckthorn and phragmites. The Village should consider developing a management plan to address the need for reducing these and other species across the community.

Scenic Resources and Topography

The Village's topography ranges from the almost flat floodplain adjacent to the East River and Bower Creek (about 580 feet above sea level) to the ravines of the central portion of the Village to the gently rolling hills of the eastern portion of the Village (about 815 feet above sea level), resulting in a difference in elevation of about 235 feet over approximately six miles. Generally, the areas to the west of CTH V are the areas of the Village with the least amount of variability in topography. This oftentimes results in problems with draining stormwater away from development.

The central third of the Village is higher and much more diverse in terms of its topography. It has a number of ravines from the streams that drain this area and the lands farther east that

have eroded paths through and over the Niagara Escarpment. Erosion continues to be a concern within these ravines.

The hills of the eastern third of the Village provide picturesque views of the rolling terrain and contain the highest elevations within the Village. Since this area has some issues with steeper slopes and terrain changes, stormwater in these areas may increase erosion due to the velocity at which the water drains. Additionally, the underlying geology is karst-prone and there may be sinkholes, small caves, and other underground drainage features that are not visible in the landscape.

As with flood lands, shorelands, wetlands, and woodlands, scenic areas should also be considered for protection where appropriate under conservancy zoning and/or conservation by design subdivision techniques.

Mineral Resources

The State of Wisconsin first passed a nonmetallic mining law in 1994. The law provides an opportunity for all nonmetallic mining deposits to be registered. To be registered, the nonmetallic mineral deposit must be delineated by a professional geologist or registered engineer and certified to be economically viable. Second, if the land is zoned, the existing zoning at the time of registration must allow mining as a permitted use or as a conditional use. The state law further specifies that the registration lasts for ten years and can be renewed for an additional ten years. However, after 20 years, the full registration process must be undertaken once again. In addition, the law states that local zoning officials can deny the mining only if they can prove that the mineral deposit is not marketable or that the zoning at the time of the registration prohibited mining.

Wisconsin passed a second nonmetallic mining law in 2000: Wisconsin State Statute Section 295.13(1) and Wisconsin Administrative Code NR 135. The state statute and administrative code require that all counties in the state adopt an ordinance in 2001 (consistent with the model ordinance prepared by the Wisconsin Department of Natural Resources) to establish a reclamation program capable of ensuring compliance with uniform state reclamation standards.

Brown County adopted its Nonmetallic Mining Reclamation Ordinance in 2001. Most communities in Brown County, including the Village of Bellevue, opted to have Brown County adopt and enforce the reclamation ordinance for their respective municipalities. Wisconsin's nonmetallic mining reclamation program requires that nonmetallic mining operators prepare a reclamation plan to state standards. These standards deal with topsoil salvage and storage, surface and groundwater protection, reclamation during mining to minimize the amount of land exposed to wind and water erosion, revegetation, site grading, erosion control, and a final land use consistent with local zoning requirements.

The Village of Bellevue does not have any operating nonmetallic mines. Only one former gravel pit located in the southern portion of the Village adjacent to CTH V and Tordeur Court is known to have existed.

Historic Buildings

The Wisconsin Architecture and History Inventory (AHI) is an official inventory maintained by the Wisconsin Historical Society (WHS), which tracks historically significant structures, sites, or objects. These sites collectively display Wisconsin's unique culture and history and, therefore, should be noted and protected/preserved when feasible.

There are 22 records listed in the AHI for the Village of Bellevue (Figure 7-7). None are listed in the national or state registry of historic places. The records include residences, school buildings, barns, a mill, a business, and a granary with the listing contained on the following pages. This information was reviewed and updated by the Ad Hoc Committee which noted several buildings on the list have been demolished, have integrity or environmental concerns.

In 1998, the Bay-Lake Regional Planning Commission received a grant from the National Park Service to conduct an intensive historical and architectural survey of selected unincorporated communities in Brown County. Heritage Research, Ltd. conducted the survey and provided recommendations regarding eligibility for the National Historic Register. Heritage Research, Ltd. produced the Historical/Architectural Resources Survey of Selected Unincorporated Communities of Brown County. Within the unincorporated hamlet of Bellevue, eight separate properties were surveyed (five of these were listed with the AHI), and none were identified for further research and evaluation under the National Register of Historic Places criteria.

As the Village develops and redevelops, it should consider these potentially historic structures and work with the property owners to refurbish the buildings in a historically sensitive way. These redeveloped buildings can then be utilized to help draw residents and tourists and serve to maintain and establish the Village. The Village should work with the State Historical Society to consider appropriate designation and preservation of potential historic sites as they are identified to maintain examples of the Village's culture and history. Given the concentration of eight separate AHI buildings on Eaton Road (Figure 7-8), the Village may also wish to consider this corridor as a formal, or informal, Historic District and evaluate methods by which such a designation could inform and reconnect resident's to the Village's past.

Figure 7-7: V. Bellevue – Wisconsin Architecture and History Inventory (AHI) Sites.

2859 EATON RD
Historic Name:
Reference Number: **144068**

3158 EATON RD
Historic Name: **Scory House**
Reference Number: **144063**

2763 EATON RD
Historic Name: **Froelich House**
Reference Number: **144065**

3113 EATON RD
Historic Name:
Reference Number: **144062**

2854 EATON RD
Historic Name: **Josten House**
Reference Number: **144066**

KLONDIKE RD & USH 141
Historic Name: **Burdnick Barn**
Reference Number: **1651**

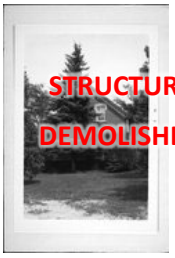
2859 EATON RD
Historic Name:
Reference Number: **144067**

SE SIDE CTH GV
Historic Name:
Reference Number: **1661**

3240 EATON RD
Historic Name: **Duquaine House**
Reference Number: **144064**

3113 EATON RD
Historic Name: **Ranils House**
Reference Number: **144061**

3191 WALL ST (N END)
Historic Name: **Bellevue Feed Mill**
Reference Number: **120304**



EATON RD, 0.5 MI W OF ONTARIO RD
Historic Name:
Reference Number: **1648**

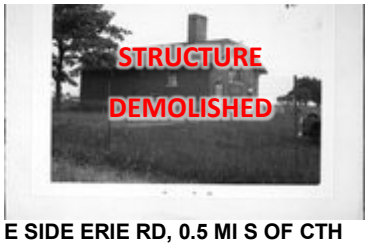
Figure 7-7: AHI Sites, Continued.

MANITOWOC RD, 0.5 MI N OF EATON RD
Historic Name:
Reference Number: **1649**

3163 MANITOWOC RD
Historic Name:
Reference Number: **120310**

3325 BUDDY LN
Historic Name:
Reference Number: **120308**

Source: Wisconsin Architecture and History Inventory (AHI), July 2022.



E SIDE ERIE RD, 0.5 MI S OF CTH JJ
Historic Name: **Wilson School**
Reference Number: **1647**

2876 KLONDIKE DR
Historic Name: **Burdnick House**
Reference Number: **1650**

SW CORNER OF TOWN HALL RD AND MANITOWOC RD
Historic Name: **Spring Crk. Schl.**
Reference Number: **47949**

2090 COTTAGE RD
Historic Name: **Duquain House**
Reference Number: **142043**

2799 COTTAGE RD
Historic Name: **Degreef House**
Reference Number: **120311**

2799 COTTAGE RD
Historic Name:
Reference Number: **120312**

3222 MANITOWOC RD
Historic Name:
Reference Number: **120309**

Figure 7-8: Eaton Road Corridor AHI Sites.

Source: Google Earth, 2022.

Archeological Resources

Archeological sites are windows to the past. They provide information and insight as to the culture of the previous residents of Bellevue. Current state law gives protection to all human burial sites. There are also programs and restrictions relating to other archeological sites. Developing these sites before they can be catalogued and studied is the major threat to this resource. Any residents finding evidence of archeological sites should contact representatives of the Neville Public Museum.

Bellevue should capitalize on the value of these resources, perhaps by including these sites within public neighborhood parks and educating citizens about pre-European settlement life in the Bellevue region. The Village should work with the Wisconsin Historical Society and the Neville Public Museum to identify these sites.

Parks, Recreation, and Open Space

Bellevue has a number of recreational properties, most of which are owned and maintained by the Village. In addition, there are also approximately 329 acres of privately owned recreational land. These range from a private golf course to a private tot lot. The park and recreation facilities are analyzed in the Utility and Community Facilities chapter. However, a few suggestions and recommendations are appropriate to mention within this chapter.

First, it is important to continue to utilize existing natural resources for such uses as trails, picnic areas, and open space when identifying locations for future parks. Second, it is important that the Village continue its efforts to provide additional access to its rivers and streams, the East River in particular. Third, the Village should evaluate the need for greenspace and/or parks within all residential neighborhoods. Finally, the Village should attempt to coordinate future parks and greenspace with adjoining communities and the Brown County Open Space and Outdoor Recreation plan.

Community Design

Community design generally pertains to improving or establishing a community's identity and utilizing design elements, such as signage, landscaping, and architecture, to reinforce the community's desired character and natural beauty. The Village's small town/village character and natural beauty were assets noted by residents as part of the plan's public engagement. To maintain and increase these qualities, the Village should review, update, and implement strong design standards for commercial and industrial development. This section of the plan identifies specific ways that the Village can help to establish its community identity.

A growing community can struggle to create its own distinctive identity especially in an urban area where one community can blend into the other. To create a distinct and attractive identity, to foster community pride, Bellevue may want to consider multiple strategies as listed in the recommendations section.

Natural, Cultural, and Agricultural Goals, Objectives, and Recommendations

Goal 1: Protect and build upon the natural resources of the Village.

Objectives:

1. Maintain and create new access to the Village's natural features.
2. Protect the existing natural resources in the Village.
3. Expand Bellevue's natural resources through the expansion of parks, opens paces, and trees.

Recommendations:

1. Continue to explore the Official Mapping of environmentally sensitive areas (ESAs).
2. Utilize WisDNR Stewardship Grants, Purchase of Development Rights, Transfer of Development Rights, or other mechanisms to protect valuable natural resources and viewsheds.
3. Support community or service organizations that will plant trees, remove invasive species, or restore river and stream banks under supervision as part of a community service project.
4. Continue to preserve and protect the Village's water resources through the use of ordinances, buffer zones, and river/stream bank restoration.

5. Utilize the Village's Conservancy Zoning District to protect environmentally sensitive areas, important woodlands, wildlife habitat, viewsheds, etc.
6. Continue to develop and provide downloadable brochures on the Village's website related to Bellevue's natural resources, their protection, and what residents can do to help protect them (volunteering for community projects, using rain barrels, installing rain gardens, etc.)
7. Continue to promote and maintain Bellevue's Tree City USA designation and its urban/community forestry. Continue to explore pursuing other designations such as Bird City, Wisconsin.
8. Maintain and enhance the accessibility to all public lands where feasible.
9. Expand the overall amount of greenspace in the Village by creating environmental corridors by connecting woodlots, wetlands, and other natural features; requiring parks and greenspace in new residential developments; and locating new parks adjacent to environmental features in the community.
10. Coordinate future parks and greenspace with adjoining communities and the recommendations in the Brown County Open Space and Outdoor Recreation Plan, with a focus on the East River and Bower Creek corridors.
11. Conduct flood studies for drainageways within the Village when land is being developed or as part of the Stormwater Management Plan.
12. Provide educational information on the Village's website related to the testing and maintenance of private wells and Brown County's program of inspecting private onsite sewage disposal systems to guard against failing systems.
13. Review and revise Village code as it relates to natural resource protection, when needed.
14. Support the periodic review and revision of the Brown County Sewage Plan as it relates to the protection of environmentally sensitive areas.
15. Create a list of potential community projects and work with community organizations to carry them out.

Goal 2: Support the documentation, preservation, and promotion of Bellevue's cultural resources.

Objectives:

1. Promote Bellevue's cultural resources as an important part of its identity.
2. Provide opportunities for residents to learn about Bellevue's past.

Recommendations:

1. Create and maintain display cases of historical photographs and artifacts at the Village Offices pertaining to different aspects of the Village's history such as the Fire Department, infrastructure, park system, community events, and daily life.
2. Create and maintain a local history page on the Village's website and periodically include information in the Village's newsletter.
3. Encourage incorporating buildings listed in the Wisconsin Architecture and History Inventory (AHI) into future development and/or redevelopment proposals if/when the opportunities arise.

4. Encourage property owners who are aware of potential historical or archeological sites on their property to work with the Wisconsin Historical Society and the Neville Public Museum to document and preserve these sites.
5. Support the creation of cultural events related to music, art, festivals, etc. that bring the community together.
6. Assist property owners with pursuing federal or state preservation or rehabilitation tax credit programs when possible.
7. Connect with the Brown County Historical Society for information and guidance on how the Village can enhance efforts related to historic preservation.
8. Develop and adopt a historic preservation ordinance to assist in preserving historic structures.

Goal 3: Support the preservation of agricultural practices that complement the growth of the Village.

Objectives:

1. Preserving a way of life important associated with Bellevue's past.
2. Support agricultural practices that complement the Village.

Recommendations:

1. Monitor traditional and urban agriculture trends and consider amendments to the Village's existing codes as appropriate to address new issues or opportunities.
2. Support concepts with agricultural ties such as farmers markets and the continued support of existing community gardens (Josten and Moonrise Parks).
3. Work with landowners and developers to ensure that future development of agricultural lands maximizes compatibility and minimizes potential land use conflicts.
4. Continue to review, revise, and or create ordinances that relate to agriculture and large-scale farming operations if needed to ensure compatibility with the growth of the Village.

Goal 4: Support community design strategies that enhance Bellevue's aesthetics and identity.

Objectives:

1. Differentiate Bellevue from other communities in the Green Bay Metropolitan Area.
2. Maintain the Village as a desirable place to live.

Recommendations:

1. Pursue and design a Village Square concept to include outdoor seating areas, public gathering spaces, and public facilities such as a band shell or pavilion that create a unique space within the Village.
2. Review and revise, as needed, the Physical Development Standards in the Village's Zoning Ordinance and Subdivision Ordinance, which is intended to promote development in an aesthetically pleasing way.
3. Review and revise, as needed, the Physical Development Standards in the Village's Zoning Ordinance and Subdivision Ordinance, to improve the overall 'walkability' of new development.
4. Continue to create community parks, parkways, walkways, and trails to enhance to quality of life of residents.
5. Include greenspace, even small areas, within residential neighborhoods. New developments should set aside small areas for neighborhood greenspace, parks, recreation, or stormwater management areas.
6. Support alternative development concepts that can be used to preserve the unique features of the Village such as rivers, woodlands, and viewsheds.
7. Enhance the main Village entrance corridors with signs and landscaping.
8. Erect signs that identify the names of creeks at road crossings.
9. Incorporating pleasing architectural design features in new public buildings or remodeling projects were feasible.
10. Plant street trees as a means of beautifying the built environment and providing neighborhood character. Preserve selected existing stands of trees either by collaborating with developers to design around such trees or through a tree preservation ordinance.
11. Establish natural corridors or parkways to maintain natural functions, improve water quality and habitat, provide recreational opportunities, and maintain scenic values. It is specifically recommended that the creation of parkways along the Village's primary drainage corridors, such as the East River and Bower Creek, be continued.
12. Educate residents of the importance of the Village's natural, cultural, and agricultural resources.

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