OFFICIAL NOTICE AND AGENDA

of a meeting of a City Board, Commission, Department Committee, Agency, Corporation, Quasi-Municipal Corporation, or Sub-unit thereof.

Meeting:	**SUSTAINABILITY, ENERGY AND ENVIRONMENT COMMITTEE**
Members:	Mary Kluz (C), Carol Lukens, Jean Abreu, Jay Coldwell, Christine Daniels, Jesse Kearns
Location:	Maple Room of Wausau City Hall, 407 Grant Street.
Date/Time:	**Thursday, October 3, 2024 at 5:00 p.m.**

1. Welcome and Introductions
2. Public Comment
3. Approval of the Minutes of the September 5, 2024 Meeting
4. Update: Solar Array, Dept Public Works Director and staff meeting, WLGCC
5. Discussion and Possible Action: Sustainability Manager position
6. Discussion and Possible Action: Work Plan development
7. Next meeting date: October 3
8. Adjourn

It is likely that members of, and a quorum of the Council and/or members of other committees of the Common Council of the City of Wausau will be in attendance at the abovementioned meeting to gather information. **No action will be taken by any such groups.**

In accordance with the requirements of Title II of the Americans with Disabilities Act of 1990 (ADA), the City of Wausau will not discriminate against qualified individuals with disabilities on the basis of disability in its services, programs or activities. If you need assistance or reasonable accommodations in participating in this meeting or event due to a disability as defined under the ADA, please call the ADA Coordinator at (715) 261- 6622 or ADAServices@ci.wausau.wi.us to discuss your accessibility needs. We ask your request be provided a minimum of 72 hours before the scheduled event or meeting. If a request is made less than 72 hours before the event the City of Wausau will make a good faith effort to accommodate your request.

Questions regarding this agenda may be directed to the City Planning Office @ (715) 261-6760.

This Notice was posted at City Hall and emailed to the Media on 09/25/2024
Any person wishing to offer public comment may email City Clerk Kaitlyn Bernarde at clerk@ci.wausau.wi.us with "SEEC comment" in the subject line prior to the meeting start. All public comment, either by email or in person, will be limited to items on the agenda at this time. The messages related to agenda items received prior to the start of the meeting will be provided to the Chair.

Other Distribution: Media, Alderpersons, Mayor, City Departments

City of Wausau **Sustainability, Energy and Environment Committee**

MINUTES

September 5, 2024

Members Present: Jay Coldwell, Mary Kluz, Jesse Kearns, Carol Lukens,

Others Present: Andrew Lynch, Susan Woods, Joel Lewis

In compliance with Chapter 19, Wisconsin Statues, notice of this meeting was posted and transmitted to the Wausau Daily Herald in the proper manner.

1. Welcome and Introductions

Meeting started at 5:03 pm

2. Public Comment

n/a

3. Approval of the Minutes of the August 8 Meeting

Kearns/Lukens motion/second to approve. All vote in favor.

4. Presentation: City Hall Pollinator Friendly Garden – Natalie Doering

Natalie was not able attend due to a school conflict. Jean Abreu sent along an essay written by Natalie about her project. Lukens will follow up with Natalie to see if a presentation at Council is possible.

5. Discussion and Possible Action: Committee Work Plans

Kluz discussed the desire to have a focused set of items the committee would work on. These items are informed by the committee directives and the various resolutions and plans that guide committee work. Coldwell suggested creating a vision of what the city would look like in 2050 and working back from there. Kluz suggested an outside facilitator to lead a process that would determine the vision of the committee and the priorities to make that happen. Kluz will look into a facilitator. Lukens suggested making sure there was a clear understanding of the definition of sustainability and the scope of the committee. Lynch will help find dates in October to have some extended sessions, possibly the next meeting time.

6. Discussion and Possible Action: Fall Yard Care Promotion

Abreu, Lukens, and Kluz contributed to writing an article for the city newsletter on Fall yard care. The initiative, related to Slow Your Mow, is called Leave Your Leaves and encourages keeping leaves on yards over the winter. Lynch is checking with the graphic artist about creating an image to promote the effort. Lukens also noted that a winter effort around salt use could be up for discussion at future meetings. Lynch suggested the statewide resource of Salt Wise.

7. Discussion and Possible Action: Sustainability Manager Position Description

Lynch provided an updated position description that consolidated the various examples and narrowed the scope to municipal operations. Kluz suggested a more explicit statement on clarity of purpose which could include the directives of the GHG resolution, the future Climate Action Plan, creating cost savings for the city, and includes a description of success. Kearns noted that the task before the HR committee was to describe why this position would be beneficial. To better outline the benefits to the city as a whole. Kearns offered to do research on the impact a Sustainability Manager could have on similar sized cities.

8. Update: Solar Array timeline, Committee Report to Council

Lynch noted that there were two different actions related to the Solar Array project. The ARPA funds and the authorization of the project itself. The ARPA funds were due for a vote at Council but have not come up yet. There seemed to be a lack of information on how the Array project will move forward. Lynch will follow up with Finance and DPW. Several members voiced the desire to encourage people to provide public comment and submit petitions in favor of the project.

Kluz will present the committee report to Council on September 10.

9. Next meeting date: October 3

10. Adjourn

Motion/Second by Coldwell/Kearns. Approved unanimously. Adjourned at 6:39 pm

https://wlgcc.org/newsletters

WISCONSIN LOCAL GOVERNMENT CLIMATE COALITION

Summer/Fall 2024 Newsletter

WELCOMING OUR NEWEST TEAM MEMBER

We are excited to welcome Hussain Mahmood, our new Energy & Sustainability Advisor! As Energy & Sustainability Advisor, Hussain will lead the resilient and efficient buildings municipal support program, help members complete greenhouse gas (GHG) emissions inventories and identify strategies to reduce emissions, and provide general support and assistance to member communities. We are thrilled that Hussain will be bringing such impressive talents and expertise to WLGCC. Learn more about Hussain's background in our most recent **blog post**!

POLICY & PROGRAM UPDATES

Request for proposals: Local Government Greenhouse Gas Reduction Playbooks Project

WLGCC expects to soon launch the Local Government Greenhouse Gas (GHG) Reduction Playbooks Project in partnership with the Environmental Protection Agency (EPA), which aims to provide support to local governments by identifying best practice strategies for reducing GHG emissions. We are seeking consulting services to identify high-impact, best practice strategies to help local governments reduce GHG emissions and layout implementation steps for the identified strategies in the form of "playbooks." Proposals are requested by Monday, September 30th.

View the full RFP

Updating statewide rules to better leverage clean energy technologies in multi-family housing

The Public Service Commission (PSC) recently kicked off a process to update individual electric metering rules within Chapter PSC 113. In the first step of the process, the Coalition provided comments regarding the positive economic impacts of updating the rule to allow multi-family building developers and owners to better leverage cost-effective whole-building clean energy technologies like rooftop solar and heat pumps. Making this change would reduce costs for building owners, residents of multi-family housing, and ratepayers. To participate in this process, subscribe to docket #01-AC-257 on the PSC's website.

Read our full comments

Resilient & Efficient Buildings Municipal Support Program launched!

WLGCC officially launched the new Resilient & Efficient Buildings Municipal Support Program in partnership with Slipstream and a team of state and regional organizations. Through this program, we will create a buildings roadmap for local governments, develop resources and tools in support of local efforts, and offer other technical assistance to help increase the efficiency & resiliency of buildings in communities across the state. We have convened a network of local

government advisors to provide input and feedback on the creation of the roadmap and resources. Our team developed the network of advisors that met for the first time in June to help identify aspects of the future roadmap. Stay tuned as this exciting program develops!

Learn more

Focus on Energy rolls out IRA Home Energy Rebates to residents!

Wisconsin was the first state in the nation to launch the Home Efficiency Rebates program (HOMES), supported by the Inflation Reduction Act. Rebates are now available through Focus on Energy for energy-saving home improvements like insulation and efficient heating & cooling equipment. Keep an eye out for more information on the Home Electrification and Appliance Rebate Program (HEAR), which is expected to launch later this year.

Encourage contractors in your area to become **IRA Registered Contractors** so they can deliver these rebates to their customers!

Learn how to take advantage of these rebates!

focus on energy

LOCAL GOVERNMENT PROJECTS RECEIVE FEDERAL FUNDING

Dane County & City of Milwaukee awarded federal funding to expand access to EV charging stations

Dane County and the City of Milwaukee received grant awards from the Charging & Fueling Infrastructure (CFI) Grant Program to expand electric vehicle charging infrastructure! Milwaukee received $15 million to install EV chargers at 53 locations across the city, specifically in places that currently lack access to charging. A total of $13.2 million will be awarded to Dane County for the installation of 92 EV charging stations with 368 publicly accessible ports! Important investments in public charging, like these, will help close gaps in charging availability and increase the accessibility of EVs for everyone.

City of Appleton receives a $25 million grant to build a new transit center

The City of Appleton secured $25 million in federal funds to reconstruct the Valley Transit Center! The new transit center will have better community accessibility, more energy-efficient features, and affordable housing units above the transport hub. An incredible project that will have big impacts for the community.

Cities of Eau Claire, Racine, Wausau, and Stevens Point awarded Urban Forestry Grants for local forestry projects

The Urban Forestry Grant program, made available by the Inflation Reduction Act, funds projects that positively impact trees and people in disadvantaged communities in WI. Examples of funded projects include removing hazardous trees, increasing the forest canopy through planting, supporting urban forestry workforce development, and using trees to reduce urban heat. WI Department of Natural Resources & Governor Tony Evers announced the list of funding recipients, including four WLGCC members! Read the full announcement.

Applications for DNR's Regular Urban Forestry Grants are still being accepted through October 1, 2024!

Learn more

City of Sun Prairie uses direct pay to help fund new solar array at wastewater treatment plant

The City recently installed a solar array at the wastewater treatment plant, making it the City's third municipal array and largest they've deployed to date! They creatively utilized a number of funding streams to make this project happen, including over $200,000 from direct (elective) pay made available to local governments through the Inflation Reduction Act! An incredible milestone and

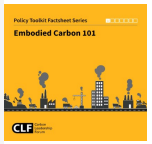
huge step toward the City's clean energy goals. Many local governments are

Learn more about direct pay for local governments

RESOURCES

"Confronting Wisconsin's Climate Costs" report by The Center for Climate Integrity

This CCI report estimates that it will cost $16.7 billion to protect Wisconsin communities from climate change through 2040. This study is the first-ever attempt to calculate the cost of certain climate adaptation measures and climate-induced public health threats for municipal, county, state, and federal governments across Wisconsin. **Read more**



Carbon Leadership Forum's resources on embodied carbon and building decarbonization

The Carbon Leadership Forum provides a variety of resources aimed at helping designers, policy-makers, consultants, businesses, and building owners reduce the greenhouse gas emissions attributed to materials used in buildings and infrastructure (also known as embodied carbon). Check out CLF's **Resource Library**

Lawyers for Good Government Direct (Elective) Pay & Tax Incentives Resources

Lawyers for Good Government (L4GG)'s legal experts have developed worksheets, factsheets, webinars, and other resources to help local governments take advantage of Direct Pay to fund clean energy projects in their communities. We recommend checking out their **suite of resources**

For more resources like these, check out our **Resources Hub**!

MEMBER SPOTLIGHT

City of La Crosse awarded $50,000 to fund youth-led climate projects

The City received funds from Bloomberg Philanthropies to distribute microgrants to youth-led and youth-serving organizations to support creative and innovative projects addressing climate challenges in La Crosse. **Learn more.**

Green Bay Police Department unveils first set of electric vehicles in its fleet

The City of Green Bay Police Department recently purchased the first all-electric vehicles in their fleet! This marks the launch of the department's electric vehicle pilot program, which aims to reduce transportation emissions to help the City reach its goals of 100% clean energy cross city operations and carbon neutrality community-wide by 2050. **Learn more.**

Stevens Point passes clean energy resolution

The City of Stevens Point committed to achieving 100% clean energy and carbon neutrality by 2050! Cheers to yet another Wisconsin city paving the path to healthy, thriving communities. **Learn more.**

JOIN US!

As a member, you'll have access to our network of peers and a variety of resources and technical support to help your community reach its climate action goals. Contact us at info@wlgcc.org to learn more!

WISCONSIN LOCAL GOVERNMENT CLIMATE COALITION

2.60.090 Sustainability, Energy and Environment Committee.

(a) *Purpose.* The relationship between the built environment and the natural environment has a major effect on the quality of life. The Sustainability, Energy and Environment Committee is hereby created to act as an advisory body to the Common Council in the development of policies, programs, and decisions that affect the relationship between the City and the environment. The committee researches, advises, and recommends to the City Council policies and programs that advance sustainability in Wausau, with particular attention paid to sustainability in the following areas:

(1) Energy management (City operations and the City as a whole);

(2) Large scale climate;

(3) Local food and agriculture;

(4) Ecology and wildlife;

(5) Livable neighborhoods and happy communities;

(6) Land use and development;

(7) Building practices;

(8) Purchasing practices;

(9) Economic development (green jobs);

(10) Solid waste, recycling, and hazardous waste;

(11) Water and wastewater management;

(12) Stormwater and watershed health;

(13) Transportation;

(14) Light pollution;

(15) Air quality;

(16) Environmental justice;

(17) Preparedness and resiliency.

(b) *Definition.* "Committee" means the Sustainability, Energy and Environment Committee.

(c) *Structure.* The committee shall be staffed by the Department of Planning and Community and Economic Development and the Department of Public Works and shall assist and work with the Economic Development Committee, as well as the committees of the Common Council, as needed.

(d) *Composition.*

(1) *Committee membership.* The committee shall consist of seven members, including one Alderperson. The remaining members shall be citizen members who are Wausau residents and are actively involved as business representatives, preferably from a business that is recognized as a leader in sustainability; representatives from a sustainability industry; teachers, students, or staff from a Wausau public high school; faculty, staff members, or students from the UW-system or North Central Technical College; representatives of related government agencies or related non-profit entities; or other citizens with a related expertise. Members shall be appointed by the Mayor and confirmed by the Council.

(2) *Terms.* The terms of all committee members shall be for three years or until their successors are qualified. However, the term of the Aldermanic member shall expire with the expiration of her/his

term as Alderperson, and the members appointed to the first term following the effective date of this ordinance shall be appointed to staggered terms. Two members shall serve an initial term of one year, two shall serve an initial term of two years, and two shall serve an initial term of the full three years. No member shall serve more than two consecutive three-year terms. However, the members appointed to the first term after the effective date of this ordinance who serve an initial term of less than three years, and any member appointed to fill the unexpired term of a former member, shall be eligible to serve two full consecutive three-year terms thereafter.

(e) *Committee authority.* The committee shall have the following powers and duties in advising the Mayor and the Common Council:

(1) Research, advise, and recommend to the City Council and other City committees policies and programs that advance sustainability in Wausau, with particular attention to the subjects referred to in [section] 2.60.290(a);

(2) Establish and administer guidelines and procedures for securing and distributing grants, and securing private funding for energy and sustainability upgrades;

(3) Advise municipal efforts to engage citizens, professionals and advocates and the community in a broach range of civic initiatives;

(4) Coordinate and support efforts to unite and focus municipal programs and services as they relate to the environment, energy and sustainability;

(5) Organize group purchases of services and products related to energy and sustainability;

(6) Develop goals to achieve a more sustainable City;

(7) Recommend specific actions, strategies, and policies to achieve these goals;

(8) Form working groups within the committee to work on specific actions.

(Ord. 61-5789 §2, 2018, File No. 18-0706)

CITY OF WAUSAU, 407 Grant Street, Wausau, WI 54403

RESOLUTION OF THE PUBLIC HEALTH & SAFETY COMMITTEE	
Supporting Reduction of Greenhouse Gas Emissions and Energy Security. Committee Action: Fiscal Impact: Undetermined	
File Number:	**Date Introduced:**

RESOLUTION

WHEREAS, the city's Sustainability, Energy and Environment Committee (SEEC) was created to act as an advisory body to the Common Council in the development of policies, programs, and decisions that affect the relationship between the City and the environment; and

WHEREAS, the city of Wausau desires to be among the communities leading on critical environmental and societal issues, having approved a Resolution in support of environmental justice; and

WHEREAS, the city of Wausau has embraced Energy Independence, evidenced by the passing of an energy independence resolution in 2008; and

WHEREAS, the City declared itself an eco-municipality in 2009, and among the guidelines for sustainable practices are reducing dependence upon fossil fuels and reducing dependence upon harmful chemicals and other manufactured substances that can accumulate in nature; and

WHEREAS, the Wisconsin Initiative on Climate Change Impacts (WICCI) shows continued warming, increases in rain and snow, and more frequent extreme rainfall events; and,

WHEREAS, in 2020, the city of Wausau joined other communities in leading a healthier future as a Green Tier Legacy Community through the Wisconsin Department of Natural Resources; and,

WHEREAS, the Green Tier Legacy Community scorecard encourages member communities to commit to achieving a science-based, community-wide Green House Gas reduction goal, and

WHEREAS, The Federal legislation known the Bipartisan Infrastructure Law and the Inflation Reduction Act, have created historic opportunities for communities and individuals to transition to renewable energy sources and reduce their greenhouse gas emissions, and

WHEREAS, Future availability and price of fossil fuels for energy production may be volatile due to circumstances beyond the control of the City of Wausau.

NOW THEREFORE, BE IT RESOLVED, the city commits to…

- Determine the level of energy use and greenhouse gas emissions in City government operations
- Develop a municipal energy plan with the goal of moving City government operations to a more secure, and 100% clean energy by 2050
- Provide resources and information to residents and businesses to support them in the transition to a cleaner energy future.
- Create cost savings through efficiency upgrades and clean energy technologies that will reduce the burden of City government operations on the tax levy.

Approved:

Katie Rosenberg, Mayor

Chapter Two
Natural Resources

Sustainable land use patterns that protect natural resources are necessary for the environmental health of the City. The conservation and sustainable use of natural resources are fundamental to maintaining the quality of the environment, achieving strong and stable physical and economic development, promoting health of residents, and preserving community identity. Implementation of this chapter will maintain the quality of the environment and preserve the City's natural beauty.

This chapter presents basic inventory information regarding existing natural resources, grouped by land, water, and biological, current issues, and numerous policies.

Previous Plans

It is important to understand that natural resource features do not follow community boundaries; therefore it is important to consider their patterns and inter-relationships on a broader scale. Further, many of the programs for protecting or mitigating impacts to natural resources are administered at the County, State or Federal level.

These plans were prepared specifically to address the protection and management of natural resources.

Marathon County Land and Water Resource Management Plan - 2010

The Marathon County Land and Water Resource Management Plan outlines a comprehensive strategy for the implementation of soil and water conservation in Marathon County from 2010 to 2020. The Land Conservation and Zoning Committee identified the following long-term program outcomes for the natural resource protection efforts in Marathon County:

- Land Use activities are well planned to enhance community development, minimize conflicts, maximize infrastructure investments, and protect rural character.
- Maintain the soil and water resources as productive assets through topsoil and organic matter conservation.
- Marathon County agriculture and woodlot producers are economically strong.

The plan was developed with the assistance of partner agencies, including the Wisconsin Department of Agriculture, Trade and Consumer Protection; Wisconsin Department of Natural Resources; Farm Services Agency; Natural Resources Conservation Service; and the Wisconsin Cooperative Extension.

Marathon County Farmland Preservation Plan - 2013

The purpose of this plan is to guide and manage growth and development in a manner that will preserve the rural character; protect the agricultural base and natural resources; and contribute to the County's goal of promoting public safety, health and prosperity within the County. This plan is the primary policy document promoting preservation of agricultural production capacity, farmland preservation, soil and water protection, and future land development, while respecting private property rights and individual units of government. Many of the towns surrounding the City have identified preservation areas, which limit development.

Marathon County Groundwater Protection Guide - 2001

This guide is an extension of the efforts established with adoption of the Marathon County Groundwater Plan in 1988. It is intended to guide local and County officials in setting policy. It also serves as a resource of information about groundwater and other natural resources and recommends strategies to address issues related to groundwater protection.

Marathon County Forest Comprehensive Land Use Plan - 2006

The Marathon County Forest Comprehensive Land Use Plan is a management guide for the Marathon County Forests and is updated every fifteen years. The mission of the plan is to manage and protect natural resources on a sustainable basis for the ecological, economic, educational, recreational, and research needs of present and future generations. The report includes a number of recommendations for: Multi-Use Trail Management, Wildlife Habitat and Game Management, Public Information and Education, Land Acquisition and Forest Boundary Management, Biodiversity Management, Watershed Management, and Tourism.

City of Wausau Wellhead Protection Plan - 1997

The wellhead protection plan encourages environmentally safe land uses near well recharge areas. Currently, there are 4 wells located on the north side of the city west of the Wisconsin River and a fifth well is located on the east side of the river. The well head protection area is divided into a Zone A nearest the well and a Zone B where contamination would take more than 5 years to reach the wells. The Wausau City Wellhead Protection Ordinance provides restrictions for commercial development in the wellhead protection area to discourage businesses that are likely to cause groundwater contamination from locating there.

City of Wausau Sewer Service Area Plan- 2007

The purpose of the SSA plan was to establish a sewer service boundary for the Wausau Urban Area. This boundary sets the 20-year maximum limit for the extension of sanitary sewer services in a cost effective, environmentally sound manner. Property located within the sewer service boundary line is eligible to receive sanitary sewer service during the 20-year planning period; any property lying outside this sewer service area boundary would not be eligible to receive this utility service unless the boundary were amended. Thus, the sewer service boundary also functions as a community growth boundary for Wausau since all development in the City must have sanitary sewer service. Several other communities were included in this planning process. There are current discussions to update this plan.

Steep hill on 28th Ave.

Land Resources

The City land area is about 13,000 acres. Much of that is devoted to uses, such as residential, roadways, water, commercial and industrial areas. However, there are substantial areas that are open or wooded within the City. See Natural Resources Map.

The topography in the City of Wausau varies from nearly level to quite steep. Much of the area immediately adjacent to the Wisconsin River is extremely flat. This flat topography has helped support high-density residential and commercial development on relatively small parcels of land. On the east side of the river, a hill and valley topography becomes evident several thousand feet east of the river. The valleys tend to be oriented in an east-west direction and are defined by small streams that originate only a few miles east of the City limits in the Town of Wausau. On either side of these intermittent streams are relatively steep-sloped hills that terminate in fairly flat, high plateau areas. Several of the arterial streets that carry traffic east of the City, including Town Line Road, McIntosh Street, Franklin Street and Wausau Avenue, are constructed on top of these plateau areas.

On the west side of the Wisconsin River, the general topographic conditions are quite different than on the east side. While the area adjacent to the Wisconsin River is quite flat for a considerable distance west of the river, the streams and steep hill and valley topography are not nearly as pronounced. The principal topographic feature on the west side of Wausau is a large, steep hill located between Bridge Street and Stewart Avenue that rises in elevation west of Fourth Avenue. Much of the topography near the Big Rib and Little Rib Rivers is also relatively flat. Farther from these rivers, hilly topography is encountered and the prospect of finding bedrock near the surface increases.

Steep Slopes

As shown on **Map 2** there are several steep, hilly areas within and adjacent to the City that are likely to remain undeveloped for a considerable period of time due to the high costs of constructing public and private improvements in these areas. Elevations range from 1,160 feet above sea level on the shores of Lake Wausau to approximately 1,500 feet above sea level near the intersection of West Wausau Avenue and 28th Avenue. High construction costs can be encountered when developing in these steep slope areas. Development in such areas increases stormwater runoff and erosion.

Building Constraints

Buildings constructed on steep slopes must be designed to conform to the terrain. Constructing a basement in rock or leveling a site for a large building can dramatically increase construction costs. In addition, the density of development must often be lower in steep areas because of the cost of making large areas level enough to support parking facilities and building sites. Retaining walls, which are also costly to build and maintain, are often needed to support high-density building development. Often, retaining walls are needed to prevent one parcel of land from falling onto the adjacent parcel. Development limitations resulting from steep slopes are particularly apparent on the east side of Wausau due to the physical constraints in this area, however, several large tracts of land have been annexed to the City and subdivided in this area.

Stormwater Management

Topography also influences the rate of stormwater runoff. Care must be taken to ensure that development in steep areas does not result in downstream flooding. This is especially true on the east side of Wausau where most of the downstream property close to the Wisconsin River has been completely developed. As construction activities have proceeded upstream and onto the adjacent hillsides, existing storm sewers in some portions of the City have reached their capacity and are no longer capable of accommodating additional runoff. Thus, the frequency of flooding in certain drainage basins has increased dramatically.

Where down slope storm water drainage is a concern, keeping development relatively low density and/or maintaining a natural conservancy area will maximize runoff infiltration and help protect other property in the watershed from flooding. The utilization of green infrastructure could also alleviate these concerns. Regardless of the existing conditions in the watershed, stormwater management practices need to be incorporated into all development in order to reduce runoff and help improve water quality. Stormwater management is further discussed in the Utilities Chapter.

Road Construction Constraints

Special consideration must be given to the design of streets so that the grade follows the contours as closely as possible. Where the grade does not follow contours, streets must be shaped by cutting and filling, a costly construction method. Snow removal and salting must also be given a higher priority on roads with steeper grades, especially those with a north-facing exposure.

The relatively steep hill-and-valley topography in the Wausau area has limited the development of a north-south arterial street that would extend from Town Line Road (CTH N) north to Evergreen Road. A planning and engineering study completed for a Grand Avenue alternative route concluded that, due the topographic conditions, the 41st Street/Camp Phillips Road (CTH X) corridor is the nearest opportunity for an arterial street in this area which would connect Town Line Road to Evergreen Road.

Utility Constraints

Installation of public services in areas of steep slopes is usually more costly than in flatter terrain. Depending upon the direction of slope and the elevation, sanitary sewer lift stations and water reservoirs or booster stations may be required. In addition, more manholes in the sanitary sewer system are generally required on steep slopes.

Soil Types

As shown on **Map 3**, there are generally two types of soils in the Wausau area that were formed as a result of the last glacial period. These include upland soils that are dominantly stratified drift (Mahtomedi-Fordum-Sturgeon soil association) and upland soils over bedrock (Fenwood-Rietbrock-Rozellville soil association). The stratified drift is a result of layering of water-carried glaciated materials in outwash plains as the glacier melted. These outwash plains are the nearly level to level areas where the soils range from moderately coarse, medium, and fine sandy loam to silt loam over sand and gravel. The upland soils over the bedrock are a result of glaciation before the Wisconsin glacier and erosion of igneous and metamorphic rocks. These soils are found in upland areas and range from medium and moderately fine subsurface loamy soils with loam to silty clay loam subsoil over granitic and gneissic bedrock.

Within these two general soil associations are several types of soils with differing physical characteristics in regards to depth to groundwater, flooding, depth to bedrock, slope and stoniness. These physical characteristics affect the suitability of the soil for certain types of urban development.

Several soils in the Wausau area are characterized by large stones and rock outcrops, which can present problems when developing the land. Large stones can be removed by bulldozing, but rock outcrops must be either designed around or removed by blasting which will increase development costs significantly.

Prime Farm Soils

Areas of prime farm soils extend into the City on the east and northwest. There are also some prime farm soils along the Wisconsin River. These class designations refer to the quality of soils for growing crops and are based on United States Department of Agriculture (USDA) classifications. These soils have been identified as prime farm soils according to the Marathon County Cropland Evaluation System (CES). This system establishes a basis from which one parcel of land can be compared to another. It rates soils on their ability to produce food, feed, forage, and fiber

crops. It is based upon the knowledge that soil properties affect yields.

Both Class 1 and Class 2 soils are found in the area. Class 1 soils are the best soils in Marathon County for growing all crops. Class 2 soils are also very good agricultural soils; however, they may be prone to wetness and are therefore less desirable than Class 1 soils. It should be noted that not all prime farm soils are used for farming; some have been developed with residential or other uses. The "prime farm soils" designation simply indicates that these soils are good productive farmland.

Soils with Shallow Depth to Groundwater

Soils with a shallow depth to groundwater create several problems if they are developed. Oftentimes, depth to groundwater is directly related to landscape position, with low-lying areas having a shallow depth to groundwater. Generally, soils with a depth to water table of zero to one foot are found adjacent to rivers and streams and are in the floodplain. These areas are poorly suited to any type of urban development because of a seasonally high water table and the possibility of flooding.

Those soils with a depth to groundwater of one to three feet and three to six feet may also have problems with wetness and flooding if they are developed. The problems may be overcome by filling the area or draining the soil by utilizing some type of subsurface drainage system. Oftentimes, installation of these systems is cost prohibitive and problems may still occur in the future with settling and cracking of foundations and seasonal flooding of basements.

Soils with a shallow depth to groundwater are also poorly suited for roads because of wetness and frost-heave action. Frost heave tends to break up the pavement and increase maintenance costs. Filling the road bed or constructing a subsurface drainage system may mitigate the frost heave problem. Both measures can increase the cost of roadway construction. Shallow depths to groundwater can also increase the cost of installing sewer and water and can lead to the infiltration of water into the sewer system.

Perched water tables can be found in some of the soils in the Wausau area. A perched water table occurs where a layer of clay or other tight material restricts the downward movement of water and creates a saturated area above the normal water table. Seasonally, this may create wetness problems if that particular soil is developed. In addition, in areas of steep slopes, a perched water table can be exposed to create a seepage (an area where water continually flows from the surface, similar to a spring).

Soils with Shallow Depths to Bedrock

Soils will also vary according to depth to bedrock. A depth to bedrock of 60 inches or more has only slight limitations to urban development. Soils with a depth to bedrock of less than 60 inches do pose problems in terms of development, especially in areas of steep slopes. Shallow depths to bedrock are common in the upland soils in Wausau, particularly along the eastern City limits and north of the Wausau hospital complex. Generally, the majority of these soils average a depth to bedrock between 42 and 48 inches. The bedrock is typically fractured igneous and metamorphic rock.

Soils that are shallow to bedrock are unsuitable for septic systems because the soil depth is inadequate for absorption fields. Although Wausau is served by public sewer and water, there may be older residences built over shallow bedrock with failing septic systems in areas contiguous to the City. Failing septic systems pose both a water quality and health hazard. It is important to identify such areas because they may require sewer extensions in the future. Roads constructed on soils that are shallow to bedrock are susceptible to frost heave during spring thaw. Frost heave increases maintenance costs and will decrease the life of the roadway.

Cost is a major consideration when developing on soils with shallow depths to bedrock. Constructing dwellings with basements and installation of public services such as sewer and water usually require removal of the rock, which can increase development costs significantly. Some building sites may also require filling or constructing dwellings with partially exposed basements in areas with high bedrock.

Soils shallow to bedrock are commonly found on steep slopes in the Wausau area. Development on steep slopes poses many challenges and usually requires more extensive

Lake Wausau

earth moving than in level areas. Removal of vegetation on steep slopes increases stormwater runoff and creates erosion problems. The soil removed by erosion can cause property damage down slope, clog and overburden storm sewers, and adversely affect surface water quality. Dwellings constructed on steep slopes that are shallow to bedrock are subject to slippage. Utilizing a retaining wall may mitigate the slippage problem.

Water Resources

The City of Wausau and Marathon County contain abundant water resources. Many have remained in a fairly pristine state and others are in need of focused efforts to improve water quality. Outstanding Resource Waters (ORW) and Exceptional Resource Waters (ERW) designations are derived from an amendment to the U.S. Clean Water Act, which directed states to identify waters that were largely unaffected by pollution and should remain that way. States were required to develop "anti-degradation" policies to protect these waters from pollution. As a result, wastewater entering an ORW must be as clean as the water in the "outstanding" water body. The anti-degradation policies only apply to point sources of pollution, such as an industrial discharge pipe. However, Wisconsin has other programs in place to control non-point source pollution, such as animal waste and pesticides in farm runoff, urban runoff, and failing septic systems.

The Wisconsin Natural Resources Board also wanted to extend higher levels of protection to top trout waters. As such, the WDNR established a second category of waterways to be protected under the anti-degradation policy; these are the ERW. Wastewater entering ERW must meet minimum clean water standards, although higher standards are encouraged where feasible. There are no designated ORW or ERW in the City of Wausau.

Streams/Rivers

The Wisconsin River is the most significant natural resource in the City of Wausau. It bisects the City, resulting in a large amount of riverfront property in both public and private ownership. Between the confluence of the Wisconsin and Big Rib Rivers and the dam in Rothschild, the river widens to form Lake Wausau. The Big Rib River flows along the southern edge of the City's western "panhandle" and enters the Wisconsin River at the north end of Lake Wausau, which forms the southern boundary of the City. The Little Rib River flows through the "panhandle" area before entering the Big Rib River. On the north end of the City, Moore Creek flows through the Tribute Golf Course before entering the Wisconsin River. Streams and rivers in the City are shown on **Map 2**.

Floodplain

Floodplains consist of land likely to be covered by floodwater during the regional (100-year) flood. Floodplain areas are based on information compiled by the Federal Emergency Management Agency (FEMA) on Flood Insurance Rate Maps (FIRM). The floodplain includes the floodway and the flood fringe.

Areas within the 100-year floodplain are located immediately adjacent to the rivers and streams flowing through the City. In the last ten to fifteen years, there have been mounting concerns by City officials over the effects of changing land use patterns on flood flows and flood hazards in the City. Managing the water that runs off during a rainstorm or when the snow melts is becoming a more difficult issue for the City, especially as growth extends farther upstream into relatively undeveloped areas. The Wisconsin River, Big Rib River, Little Rib River, Eau Claire River, and the tributaries that drain into these rivers are all impacted by urban development. It is important to note that a number of the smaller tributaries "disappear" as they enter the City limits. These streams actually enter the City's storm sewer system and are conveyed to the receiving water in large storm sewer pipes.

General flooding has been a particular problem where many of the smaller tributary streams are enclosed in storm sewers yet development continues in the adjacent, natural areas. Development increases the amount of impervious surface, which then increases the probability of flooding downstream.

The City of Wausau initiated a stormwater management program to provide some assurance that additional development does not overload the existing storm sewer system and cause downstream flooding. The City's stormwater management program includes a review of impacts of new development projects and requirements for the construction of retention basins and other infrastructure necessary to manage stormwater runoff. However, these stormwater management regulations only apply within the City and not the adjacent communities where runoff from development can flow into the City's storm sewer system or the natural streams entering the City, thus increasing the overall amount of runoff.

Wetlands

Wetlands in Wisconsin were defined by the State Legislature in 1978 as: "an area where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic (water-loving) vegetation and which has soils indicative of wet conditions."

Programs at three levels of government - local, State and Federal - regulate activities in wetlands. There are dozens of wetland types in Wisconsin, characterized by vegetation, soil type, and degree of saturation or water cover. Some of the more prominent wetland types are:

- Aquatic Bed wetlands contain plants growing entirely on or in a water body no deeper than 6 feet. Plants may include pond-weed, duckweed, lotus and water-lilies.
- Marshes are characterized by standing water and dominated by cattails, bulrushes, pickerel-weed, lake sedges and/or giant bur-reed
- Sedge or "Wet" Meadows wetlands may have saturated soils, more often than standing water. Sedges, grasses and reeds are dominant, but look also for blue flag iris, marsh milkweed, sneeze-weed, mint and several species of goldenrod and aster.
- Scrub/Shrub wetlands include bogs and alder thickets and are characterized by woody shrubs and small trees such as tag alder, bog birch, willow and dogwood.
- Forested wetlands include bogs and forested floodplain complexes. They are characterized by trees 20 feet or more in height such as tamarack, white cedar, black spruce, elm, black ash, green ash and silver maple.

Many wetland areas in Wausau, especially along the Wisconsin River, were drained and filled as the City developed. Most existing wetlands in the Wausau area are located near surface water drainage ways such as the Big Rib River or Little Rib River. Due to springs, seeps and unusual soil conditions, however, some wetlands are located on relatively steep slopes and even in depressions on hilltops.

Most known and suspected wetlands in the City have been mapped, but a site specific study is often necessary to determine with a higher degree of certainty whether a "green field" development project will have a negative impact on wetlands. There is also strong public interest in preserving wetlands since these areas have important natural functions, such as stormwater management and wildlife habitat, which make them particularly valuable natural resources.

Groundwater

Depth to groundwater varies throughout the City. Sand and gravel aquifers adjacent to the Wisconsin River provide an abundant and easily accessible drinking water supply. The shallow depth to water and permeable soils also make the water supply susceptible to contamination and necessitate the responsible use of potential contaminates. The City adopted a Wellhead Protection Ordinance in 1997 to protect its groundwater resources. The wellhead protection area is generally located between USH 51 and the Wisconsin River, north of Randolph Street.

Biological Resources

Vegetation

Wausau is mostly developed, so the predominant vegetation consists of urban landscaping such as trees, shrubs and private gardens. More natural wooded areas and wetlands occur in parks, along the rivers, or in undeveloped areas. The City's extensive tree planting program, in parks and along streets, has been nationally recognized. For many years, Wausau has been identified as a "Tree City USA". Trees located in urban areas are essential. They clean the air, provide natural flood defenses, mask noise, calm traffic and promote a general sense of wellbeing. This makes trees an important part of the City.

Wildlife Resources and Habitat

Wildlife resources include a variety of game and non-game species of birds, mammals, fish, reptiles and amphibians that live in Marathon County. Common types of wildlife include deer, bear, coyotes, wild turkeys, raccoons, squirrels, songbirds, waterfowl and raptors. Wildlife resources are abundant in the many undisturbed sanctuaries, refuges, reserves, and scattered habitats located throughout the County. Numerous other species of migrating birds use habitat in Marathon County for food, shelter, and resting stops during seasonal migration.

There is a significant amount of wildlife habitat in Marathon County. Natural areas within the City serve as wildlife corridors connecting larger habitats, and also add value as recreational areas. Habitats along the Wisconsin River are a good example of a corridor. In addition to area parks and other natural areas, major wildlife habitat areas include Rib Mountain State Park.

Threatened and Endangered Species

Both aquatic and terrestrial endangered, threatened, or special concern species are present within the City. These include:

Flora:

- Snowy Campion (Silene nivea)
- Vasey's Pondweed (Potamogeton vaseyi)

Fauna:

- Black Redhorse (Moxostoma duquesnei)
- Cyrano Darner (Nasiaeschna pentacantha)
- Elktoe (Alasmidonta marginata)
- Osprey (Pandion haliaetus)
- Pygmy Snaketail (Ophiogomphus howei)
- Skillet Clubtail (Gomphurus ventricosus)
- Stygian Shadowfly (Neurocordulia yamaskanensis)

Natural Resource Issues

Development Constraints – In some parts of the City, natural features such as shallow bedrock, steep slopes, and wetlands pose constraints that limit urban-type development. The higher cost of construction on steep slopes or in areas with high bedrock often reduces the development feasibility of these areas. As a result, these areas are often left undisturbed while land with fewer constraints around it is developed, which can result in inefficient land use patterns. As land prices increase, developers become more willing to take on the added expense of developing these more challenging sites.

Wetlands – Some relatively small, poor quality wetland areas in the City have limited or significantly delayed the type and scope of several proposed developments. The delays have been costly to both the developer and the City as significant time and other resources devoted to wetland issues have, nonetheless, resulted in the elimination of the wetland area.

Conservancy Areas – There are three large, very significant environmentally sensitive areas in Wausau that have not received the type of public protection from development that may be warranted. The wetland/floodplain complex of the Big Rib River, Little Rib River, and the Eau Claire River provides relatively undisturbed habitat for many species of wildlife in a near-urban environment. However, there are not any local programs established to protect these environmental corridors, and high density, urban-type development is continuing to encroach into these areas.

Brownfields – Cleaning up soil and groundwater contamination and other types of environmental hazards in the City of Wausau will foster redevelopment of certain properties and expand the City's tax base as well as increase the utilization of otherwise underdeveloped properties. Reuse of the former industrial lands in the downtown along the river is a priority. Development in these areas also maximizes use of existing infrastructure and services, and reduces new development in natural areas.

Wisconsin River – The Wisconsin River is a major asset to Wausau. Continuing to improve the natural resources qualities of the Wisconsin River and the public's access to this water way is a major community issue. Through the planning and implementation activities by a variety of stakeholders, much has been accomplished but there is still work to be done.

Phosphorous Loading - Currently there are new EPA rules being developed related to total maximum daily loads or TMDLs. These rules are intended to reduce pollutants in all navigable waterways; however some restrictions may be placed on those that discharge into the Wisconsin River.

Goal, Objectives and Action Steps

Natural Resources Goal: The City of Wausau will continue to protect and enhance the quality of significant natural resources.

Objective A: Protect vulnerable natural resources.

1. Establish buffer areas between urban development and environmentally sensitive lands.

2. Engage in public education campaigns that will increase awareness of environmental issues and good stewardship practices .

3. Continue to require the use of sediment and erosion control best management practices for all new development and redevelopment projects.

4. Continue efforts to reduce soil erosion.

5. Work with Marathon County, adjacent communities, local conservation groups and the Wisconsin Department of Natural Resources to identify opportunities to acquire land or easements for park and public open space purposes in environmentally sensitive areas.

6. Consider adopting a tree preservation ordinance to restrict removal of mature trees and woodlands in the City.

7. Continue the street tree and park tree planting programs that have earned the City numerous "Tree City" awards.

8. Monitor, update and revise the construction site and erosion control ordinance to ensure that the latest best management practices have been included in the protection requirements.

Objective B: Protect and enhance surface water and groundwater resources.

1. Protect the quality of groundwater from all sources of pollution.

2. Improve the quality of water in streams and in the storm sewer system that flows through Wausau and into the Wisconsin River.

3. Update stormwater management requirements with current Best Management Practices (BMP).

4. Develop and implement programs that will preserve and protect the wetland and floodplain complexes of the Big Rib River, Little Rib River, and Eau Claire River near their confluence with the Wisconsin River.

5. Continue to implement elements of the City's Wellhead Protection Plan including the Wellhead Protection Overlay zoning ordinance (Section 24.54 of the Wausau Municipal Code).

6. Update, as necessary, and continue to enforce the shore land and floodplain zoning ordinances.

7. Consider developing a program for restoring damaged or filled wetlands.

8. Investigate the establishment of a wetland mitigation bank as a means of replacing wetlands that are impacted by public works, industrial development, or redevelopment projects.

9. Monitor wetlands on City-owned property for the presence of invasive plant species and develop a plan to control and/or eliminate them.

10. Work with the U.S. Army Corps of Engineers and the Wisconsin Department of Natural Resources to identify all navigable waters within the Long-Term (2050) City Growth Planning Boundary.

Objective C: Manage solid waste and contaminants to limit their negative impacts.

1. Continue to promote and participate in annual spring roadside litter clean-up efforts.

2. Continue to provide recyclable solid waste collection service for City residents.

3. Provide a household hazardous waste disposal program for City residents that are cost effective in keeping these materials out of the sanitary sewer system, the storm water system and from being land spread.