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# 3.B Resources, Energy & Communications

This sub-section of the Plan addresses State of Wisconsin statutory requirements for the natural resources, agricultural resources, utilities and community facilities, and implementation elements of a comprehensive plan.



# Resources, Energy & Communications

This section includes:

## 1. Resources, Energy & Communications Data

- **Hard Data:** What is the current and future state of resources, energy, and communications in the City?
- **Community Input:** What are people saying about resources, energy, and communications in the City?
- **City Plans and Policies:** What existing plans and policies impact resources, energy, and communications in the City?

## 2. Resources, Energy, & Communications Themes:

How does the data inform the City’s resources, energy, and communications goals?

## 3. Resources, Energy, & Communications Policy Framework:

What are the City’s resources, energy, and communications goals and how will they be achieved?

## Definitions

- **Moraines:** Deposits of glacial debris indicating the extent of the glacier’s movement southward, in the City’s southwest (Johnstown) and central (Milton) portion
- **Riparian areas:** Lands along watercourses and water bodies, typical examples include flood plains and streambanks.
- **Priority agricultural soils:** A soil receiving a Soil Suitability Score of 90 or higher, per Appendix A—Resources of the City’s Agricultural Plan (2017).
- **Steep slopes:** Areas with slopes of 12 to 20% that have severe development limitations
- **Tree canopy:** The above ground portion of a tree community, formed by mature tree crowns
- **Hydric soils:** Soils permanently or seasonally saturated by water, resulting in anaerobic conditions, as found in wetlands.

## Resources, Energy, & Communications Data

Resources, energy, and communications (hereafter “REC”) data presented includes:

### 1. **Hard Data:** Maps and inventory of the following:

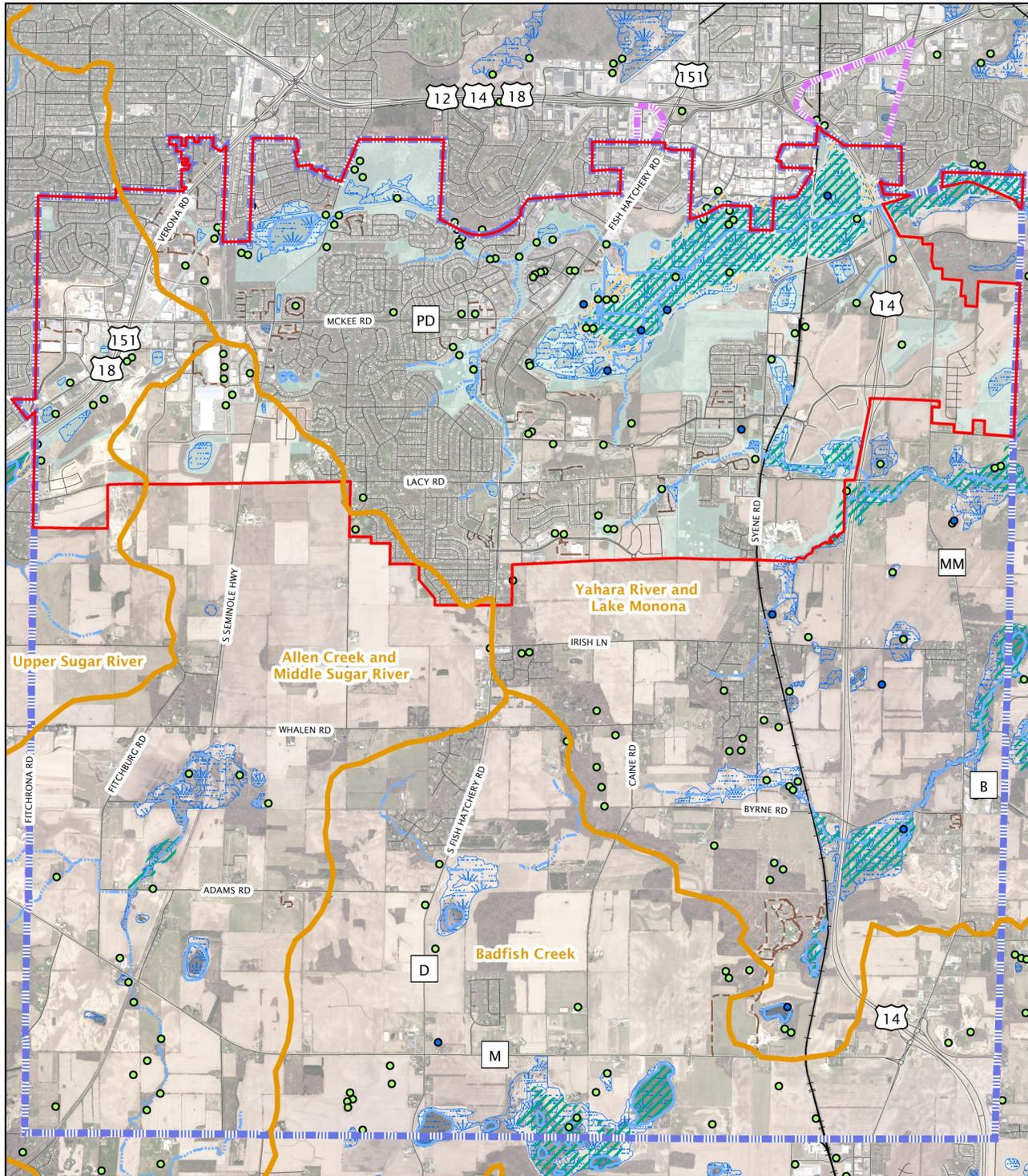
- Resources: Water, air, soils, mining, trees, wildlife, and waste
- Energy and Communications

### 2. **Community Input:** Summary of REC input gathered from City residents via a public opinion survey and public meetings, as well as input from various City committees

### 3. **City Plans and Policies:** Inventory of existing City plans and policies (including ordinances and committees) that impact REC in the City

# Hard Data

Map 3.B.1: Resources—Water

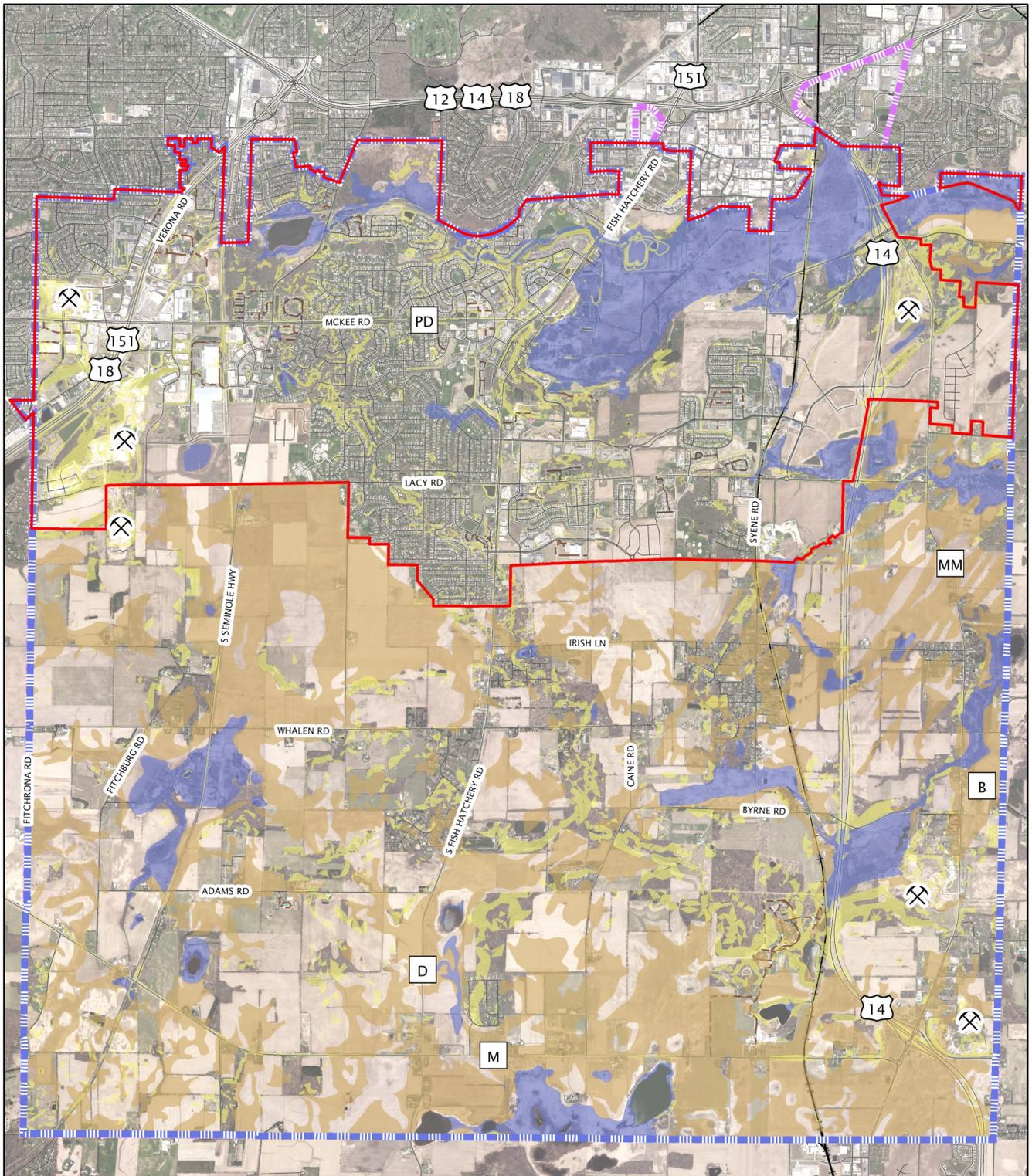


- Watershed Boundary
- Open Water (Streams, Creeks, Ponds, and Lakes)
- Intermittent Streams
- Springs
- Wetlands <2 Acres (Not Regulated)
- Wetlands
- 100-year Floodplain (1% Annual Chance of Flooding)
- 500-year Floodplain (0.2% Annual Chance of Flooding)
- Environmental Corridors
- City Boundary
- Town of Madison Lands (Annexed to City by 2022)
- Urban Service Area
- Roads
- Private Roads
- Rail



Source: City of Fitchburg, Dane County LIO, CARPC, WDNR

Map 3.B.2: Resources—Soil

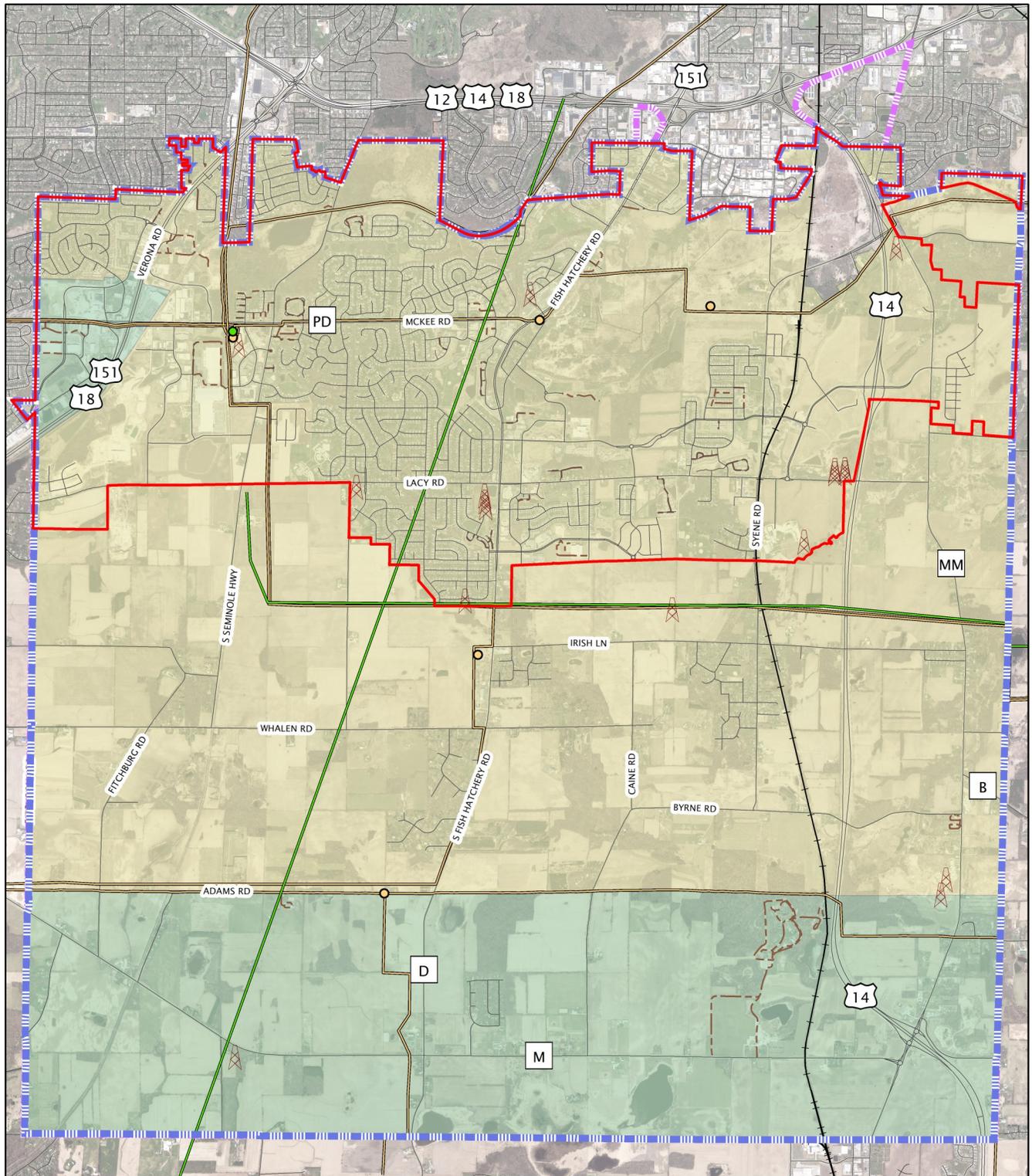


- Priority Agricultural Soils
- Steep Slopes
- Hydric Soils (>85% Hydric)
- Non-Metallic Mining Sites
- City Boundary
- Town of Madison Lands (Annexed to City by 2022)
- Urban Service Area
- Roads
- Private Roads
- Rail



Source: City of Fitchburg, Dane County LIO

Map 3.B.3: Energy and Communications



|                          |                             |   |
|--------------------------|-----------------------------|---|
| Cell Towers              | Electric Transmission Lines | City Boundary                                   |
| <b>Energy Providers</b>  | Electric Substations        | Town of Madison Lands (Annexed to City by 2022) |
| Alliant Energy           | Natural Gas Pipelines       | Urban Service Area                              |
| Madison Gas and Electric | Natural Gas Powerplant      | Roads   |
|                          | Private Roads               | Rail  |

0 0.25 0.5 1 Miles

Source: City of Fitchburg, Dane County LIO, US EIA

## Resources

(see Map 3.B.1 for further detail)

The last Continental Glacier (12,000 to 15,000 years ago) formed the City’s topography, with the Milton Moraine generally dividing the City from southeast to northwest, into the relatively flat glaciated areas and the rolling hills of the driftless (unglaciated) areas. Glaciated areas have layers of sand, clay, and gravel. The driftless areas have well-drained soils .

The City is located within two major river basins and four watersheds, with various streams, lakes, and wetlands in these basins and watersheds.

| River Basin            | Watersheds  | Major Streams or Lakes   | Wetlands   |
|------------------------|---|--|--|
| Lower Rock River       | Yahara River and Lake Monona, Badfish Creek           | Murphy’s Creek, Swan Creek, Nine Springs Creek, Lake Monona, Lake Waubesa, Lake Barney | Dunn’s Marsh, Nine Springs E-Way, Waubesa Wetlands, Lake Barney Wetlands |
| Sugar-Pecatonica River | Allen Creek and Middle Sugar River, Upper Sugar River | Badger Mill Creek, Lake Harriet, Goose Lake  | Various unnamed wetlands   |

Increased development leads to higher impervious surface ratios, with the following effects on the City’s watersheds:

1. Limiting of infiltration, reduced groundwater recharge, and additional impacts when development is dependent on wells and water that is diverted out of the watershed rather than being returned to groundwater at the same location
2. Increased stormwater runoff and velocity, soil erosion, pollutants, and water temperature
2. Greater water level fluctuations and higher peak flows
3. Degradation of stream channels and biological habitat
4. Decline in aquatic and fish diversity and reproduction
5. Reduced base flow in streams and wetlands during dry weather conditions

A typical low-density “suburban” sub-division has an impervious surface ratio of greater than 30%.

Additionally, sediments and nutrients washed from land are the primary cause of accelerated eutrophication (weed and algae problems) of the area’s water bodies. The largest source of these pollutants is soil erosion of agricultural lands. Soil erosion and runoff from non-agricultural activities, primarily construction and surface mining sites, is also a significant contributor of sediment and nutrients to local water bodies.

Finally, the City’s groundwater and surface watersheds are also seeing increasing nitrate levels from overuse of fertilizers and increasing salt (chloride and sodium) concentrations from street salting and water softeners.

## Resources

(see Map 3.B.1 for further detail)

In 2005, Dane County adopted a classification system for the water bodies in the County to identify management strategies and techniques where they are most needed.

| Stream or Creek*   | Class          | Management      | 2000 ISR (%)** |
|--------------------|----------------|-----------------|----------------|
| Badfish Creek      | I (Sensitive)  | Protect         | 4.87           |
| Murphy's Creek     | II (Impacted)  | Protect/Restore | 8.07           |
| Swan Creek         | II (Impacted)  | Protect/Restore | 9.27           |
| Badger Mill Creek  | III (Degraded) | Protect/Enhance | 19.58          |
| Nine Springs Creek | III (Degraded) | Protect/Enhance | 28.83          |

Riparian areas are critical in their support of not only a high number of wildlife species, but also a wide array of ecological functions and values.

| Lake or Pond* | Class | Management      | 2000 ISR (%)** | Sensitivity | Development |
|---------------|-------|-----------------|----------------|-------------|-------------|
| Lake Barney   | I     | Protect         | .48            | A           | A           |
| Lake Harriet  | I     | Protect         | 5.57           | A           | A           |
| Goose Pond    | II    | Protect/Restore | 27.06          | A           | C           |

### Sensitivity Rating:

A = High Sensitivity, with shallow seepage/spring fed pond or lake.

B = Medium Sensitivity, with deep seepage/spring pond or lake, or shallow drainage

C = Low Sensitivity, deep drainage lakes

### Development Rating:

A = Low development level

B = Medium development level

C = High development level

\*\*Impervious surface ratio

\*Source: Dane County Water Body Classification Study, Phase 1, 2005

Vegetated buffers, at various distances around water bodies, appear to aid in reducing some development effects on said water bodies, including:

- Improving water quality and wildlife protection
- Mitigating impacts of flooding and stormwater runoff
- Slowing habitat fragmentation and potentially allowing for re-establishment of a connected natural landscape

Recommended buffer widths vary from 75 to 300 feet, entailing a diversity of native species, including trees, shrubs, and groundcover to achieve maximum effect. The City utilizes buffers, per various policies. The majority of buffers in the City, also known as environmental corridors, consist of the 75-foot minimum.

## Resources

(see Map 3.B.1 for further detail)

Groundwater is the primary source of drinking water in Dane County, as well as providing base flow to streams and wetlands.

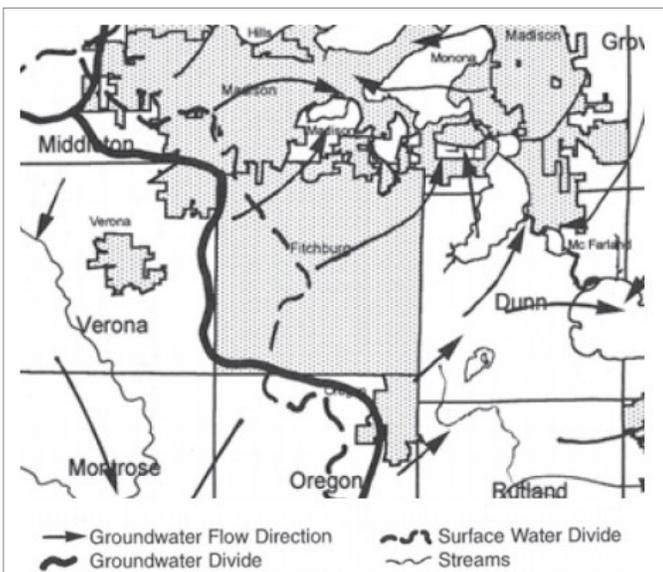
City water supply is dependent upon municipal wells into the deep Mount Simon and Eau Claire aquifers, making groundwater recharge important to the long-term viability of this supply.

Available information indicates that the majority of the City, with the exception of its extreme southwest corner, is in the same upper-level groundwater watershed, with groundwater movement to the northeast. This groundwater feeds the streams, creeks and wetlands of the City’s watersheds. The deep aquifers have a similar, although less easterly flow direction. City well protection zones are set up with an offset to the south, in recognition of a general groundwater movement to the north. The image below identifies groundwater flow in the City.

## Water Supply, Storage and Usage

- Dane County per capita water usage, per day: ~100 gallons\*
- City wells: 6, with 4 serving the urban service area and two serving the rural Greenfield neighborhoods
- Urban service area average water usage, per day: 2 million gallons
- City wells required for peak water demand: 6 wells
- Maximum daily well pumpage: 4 million gallons
- New well(s) and storage facilities will be required to accommodate growth.

\*Source: Dane County Groundwater Protection Planning Framework, 2017



Source: Dane County Water Quality Plan Summary, 2004; Wisconsin Geological Natural History Survey, 1995

## Resources

(see Map 3.B.1 for further detail)

### Water Supply, Storage and Usage

Groundwater pumping for drinking water supply draws down the water table, with effects including:

1. “Dewatered” wetlands and altered base flow in streams and lakes, causing area lakes to be suppliers to the groundwater system, rather than being fed by groundwater.
2. Shifts in regional groundwater divide, indicating groundwater movement from adjacent basins, particularly from the Sugar-Pecatonica River basin to the Lower Rock River basin.
3. Formation of “cones of depression” in the lower water table, indicating a decline in groundwater elevations
4. Inducing more rapid movement of contaminants to water supplies (municipal and private wells)

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Potential groundwater recharge areas in the City include:

1. Eastern border of City, running west along both sides of County Highway M to Oak Hall cemetery area
2. Stoner Prairie area, running south generally along the former rail corridor to just south of County Highway M.
3. McKee Farms Park
4. U.S. Highway 151
5. Irish Lane south to County Highway B along the rail corridor

### Wastewater

The Madison Metropolitan Sewerage District (MMSD) provides for wastewater treatment in the City. MMSD operates a collection system of interceptors, as well as the Nine Springs Sewerage Treatment Plant.

- MMSD service territory: 184.97 square miles
- MMSD maximum peak hourly flow: 145 million gallons per day (mgd)
- MMSD expects to increase their peak hourly flow capacity to 180 mgd in the next 1-2 years
- MMSD average gallons of wastewater treated per day: 44.85 mgd
  - City percentage of total MMSD wastewater treated: 4%
- MMSD interceptors serving the City: Nine Springs Valley interceptor
  - MMSD expects the Nine Springs Valley interceptor to reach capacity in the next 5-10 years
- MMSD has installed an effluent outfall at Badger Mill Creek to help off set the inter-basin water transfer.

Surface water quality in Dane County streams is generally not declining, thought to be attributed to MMSD sewage treatment plan upgrades.

## Resources

(see Map 3.B.1 for further detail)

### Wastewater

The City also maintains a local wastewater collection system, serviced around four main local interceptors. These interceptors, along with current capacity, are identified below:

- Seminole Highway (North of McKee Rd): Capacity 7.444 cubic feet per second (cfs) through 18" reinforced concrete pipe (RCP) at a 0.5% slope
- Seminole Highway (North of Market Place Dr): Capacity 4.466 cfs through 18" RCP at a 0.18% slope
- McKee: Capacity 6.658 cfs through 18" RCP at a 0.4% slope
- Syene (South of E. Cheryl Pkwy): Capacity 13.369 cfs through 36" RCP at a 0.04% slope
- Syene (North of Central Park Place): Capacity 14.947 cfs through 36" RCP at a 0.05% slope
- Woods Hollow: Capacity 2.474 cfs through 12" PVC pipe at a 0.23% slope

### Air

- Outdoor air quality in the Madison metropolitan area currently meets all National Ambient Air Quality Standards. Regional surface ozone levels are just below these standards.
- Vehicle emissions contribute to increased levels of regional surface ozone and other outdoor air pollutants.
- Indoor and outdoor air pollutants are identified as contributing causes of cardiovascular disease, asthma, and other respiratory illnesses.

### Stormwater

- City Erosion Control and Stormwater Management Ordinance (Chapter 30) requires detention of various storm events up to and including the 100-year event, and also addresses water quality issues.
- The City has 239 stormwater facilities entailing 125 acres.
- The City's revegetation practices for stormwater facilities is to seed with either low-grow fine fescue grasses or native prairie species to minimize mowing needs and enhance recharge to the groundwater table.
- Urban development is prominent in areas surrounding Badger Mill Creek, Nine Springs Creek, and Swan Creek. The City has undertaken several projects to stabilize stream banks along parts of Nine Springs Creek. Overflow from the Quarry Ridge Wet Pond (Badger Mill Creek area) goes to Goose Lake (glacial kettle pond) in the Town of Verona, while overflow from Goose Lake goes to Badger Mill Creek.

## Resources

(see Map 3.B.2 for further detail)

### Soils and Mining

- Soils in the City are predominately silt loam, entailing prime agricultural soils suitable for development, with 2-6% slopes. (Soils with 6 to 12% slopes have moderate limitations to development, whereas soil types with 12 to 20% slopes have severe limitations to development.)
- **Dominant soil types:** Dresden, Dodge, St. Charles Grays, Plano, and Ringwood
- Alluvial land, marsh, muck, silty clay loam and silt loam soils are located within the floodplains of the City’s major drainage ways including Nine Springs, Swan, and Murphy’s Creeks .

These soils have very severe development limitations resulting from various combinations of high compressibility, very low bearing capacity, a seasonal high water table, steep slopes, and periodic flooding. Development is usually unsuitable in these areas.

- The northwest portion of the City has significant quarry activity, including the following active mining sites:
  - Wingra Stone
  - Hammersly
  - Fitchburg Minerals

### Trees and Wildlife

- The City has 300 acres of woodlands within its borders, and 22% canopy coverage in its urban service area.

Wisconsin’s Natural Heritage Inventory (NHI), established in 1985 by the State Legislature, is supported by the Wisconsin Department of Natural Resources (WDNR) and maintains data on the locations and status of rare species, natural communities, and natural features in the state. The City has one significant site known to support some of these heritage species and communities, as follows:

- Waubesa Wetlands State Natural Area (SNA): This 372-acre wetland complex at the southwestern edge of Lake Waubesa contains sedge meadow, fen, and shrub-carr habitat, supporting a northern pike spawning area, sandhill cranes, and the state threatened Blanding’s Turtle.

### Waste

- **Refuse collection and disposal:** Automated curbside collection provided by private entity, once every week, with disposal at the Dane County Landfill
- **Recycling collection and processing:** Automated curbside collection provided by private entity, once every two weeks
- **Brush and yard waste collection and disposal:** Curbside collection provided by City seasonally

## Energy and Communications

(see Map 3.B.3 for further detail)

### Energy

- Electricity and natural gas service providers:
  - Madison Gas and Electricity (MG&E)
  - Alliant Energy

### Communications

- Local television:
  - City-run FACTv operates video and audio production, origination, editing and distribution facilities, including broadcasting of all City-held public meetings. FACTv can be viewed free of charge on the internet or via various paid cable packages.
- High-speed internet/cable providers:
  - AT&T
  - Verizon
  - TDS Telecom
  - Charter Communications
- Cellular infrastructure: Several towers throughout the City

## Community Input

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The following summarizes REC input gathered from the community, including City residents and committees, via a public opinion survey and public meetings:

- Develop a tree canopy goal/policy
- Maintain land/soils for agricultural production
- Prudent stormwater management needed on both urban and rural lands, including proactive studies/analysis
- Increase renewable energy capacity
- Manage invasive species on public lands
- Open space needed for ecosystem “services”
- Latest iterations of high-speed broadband should be available to all residents

## City Plans & Policies

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The following identifies various existing City plans and policies (including ordinances and committees) that impact REC in the City:

Erosion Control and Stormwater Management Ordinance (Chapter 30)

Well Abandonment Ordinance (Chapter 30)

Non-Metallic Mining Ordinance (Chapter 30)

Water Utility Ordinance (Chapter 40)

Stormwater Utility Ordinance (Chapter 40)

Solid Waste and Recycling Ordinance (Chapter 41)

Board of Public Works

Resource Conservation Committee

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## Resources, Energy & Communications Themes

The following identifies common resources, energy, and communications themes as gleaned from analysis of the various resources, energy, and communications data pieces, including hard data, City resident and Committee feedback, and existing City plans and policies.

### Regional Stormwater Management

The City should continue to work with landowners, private development interests, and other regional government units to ensure that stormwater originating and terminating in the City is managed to appropriate water quality standards and in a manner that maintains property values.

### Renewable Energy

The City should continue to be a leader in the region and work with all interested parties to promote and implement various types of renewable energy infrastructure within its borders.

### Ecosystem Services

The City should continue to grow and develop in a manner that recognizes the intrinsic and monetary values of clean water and air, trees, stormwater management, and open space preservation.

### Waste Collection and Disposal

The City should continue to build on its long-held reputation as a recycling leader, and explore new trends and best management practices in waste collection and disposal that provide efficiency and economy to its users.

### Partnerships

The City should work collaboratively with its residents/businesses, other governmental units, and the private development sector to maintain and enhance its resources, and energy and communications infrastructure and service delivery.

## Resources, Energy & Communications Themes

### Funding

The City should utilize various revenue streams, both internal and external, to maintain and enhance its resources, and energy and communications infrastructure and service delivery.

### Technology

The City should continue to ensure that its residents and businesses have access to required technological needs, including the latest iterations of high-speed broadband.

## Resources, Energy & Communications Policy Framework

The following identifies a policy framework for Growing Fitchburg’s Resources, Energy, and Communications from 2020 to 2030, including the following:

1. Growth Principles
2. Goals, Objectives, & Policies

### Growth Principles

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Sustainable



Vibrant



Equitable



Cooperative

## Goals, Objectives & Policies

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### Goal 1: Protect and rehabilitate the natural environment.

**Objective 1.1:** Protect natural areas of pre-settlement natural environment, particularly endangered or threatened species.

**Policy 1.1.1:** Consult with the University of Wisconsin, Arboretum, Wisconsin Department of Natural Resources, Dane County, Fitchburg Historical Society, and other interested parties to determine if the City has any pre-settlement sites and if those sites are unique to Dane County and/or the State of Wisconsin.

**Policy 1.1.2:** Encourage, where appropriate, the protection and preservation of unique pre-settlement sites through City funding or other methods, such as Transfer of Development Rights programs, other governmental grants or funds, or like sources.

**Policy 1.1.3:** Combine unique pre-settlement areas into environmental corridors, when tied to other resource systems, to help assure preservation.

**Objective 1.2:** Encourage the protection and enhancement of sensitive natural areas.

**Policy 1.2.1:** Map lands outside the urban service area (USA) that would qualify as environmental corridors, and designate them as a rural environmental corridors, or resource system corridor.

**Policy 1.2.2:** Inventory existing land uses within rural environmental corridors.

**Policy 1.2.3:** Develop guidelines for acceptable land uses within the Rural Environmental Corridor.

## Goals, Objectives & Policies

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**Policy 1.2.4:** Identify gaps in both the environmental corridor and the rural environmental corridor and determine logical areas for parkland or public ownership to provide environmental and wildlife connections.

**Policy 1.2.5:** Examine linkages between environmental corridors, woodlands, steep slopes, pre-settlement areas, and other natural areas to determine any patterns for preservation of a resource and wildlife system.

**Policy 1.2.6:** Promote the re-establishment and re-generation of wetlands and related natural systems when and where appropriate.

**Objective 1.3:** Protect all natural resources.

**Policy 1.3.1:** Continue to enforce the Stormwater Control Ordinance and adopt/support additional management mechanisms as demand dictates, and as policies and methods evolve, including but not limited to development of a drainage district, per State Statute.

**Policy 1.3.2:** Continue to enforce the Erosion Control Ordinance and adopt additional controls as policies and methods evolve.

**Policy 1.3.3:** Continue to enforce Floodplain and Wetland Ordinance(s).

**Policy 1.3.4:** Continue to enforce the Wellhead Protection Ordinance.

**Policy 1.3.5:** Discourage development on private septic, unless associated with Rural Cluster Development or Rural Residential Development Criteria (RRDC).

**Policy 1.3.6:** Develop a Tree Protection Ordinance, a Tree Diversity Plan, and a tree canopy of 30% of the urban service area.

**Policy 1.3.7:** Protect good natural infiltration areas from development.

**Goal 2: Provide public access to unique natural areas.**

**Objective 2.1:** Continue to require new developments or sub-divisions to dedicate sufficient land acreage for recreational purposes, or contribute funds for future recreation and open space land acquisition.

## Goals, Objectives & Policies

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**Policy 2.1.1:** Provide accessible, well-maintained parks and playgrounds within convenient distance (1/4 mile) from all residences.

**Objective 2.2:** Preserve and maintain selected wooded areas, vegetative cover, streams, ponds, natural drainage ways, steep slopes and other natural resources in and around the City.

**Policy 2.2.1:** Coordinate natural resource protection and enhancement efforts with appropriate local, state, and federal agencies.

**Policy 2.2.2:** Maintain and protect mature trees on public property and along public streets to enhance the urban forest and urban wildlife habitat.

**Policy 2.2.3:** Manage invasive vegetation on public lands.

**Goal 3: Provide an opportunity for the use and harvest of significant commercial natural resources.**

**Objective 3.1:** Protect mineral deposits where practical from urban encroachment.

**Policy 3.1.1:** Establish effective planning policies and ordinances that allow for the possible removal of aggregate resources before land development.

**Policy 3.1.2:** Protect existing residential areas by assuring that mineral extraction areas are properly buffered.

**Objective 3.2:** Ensure all extraction of resources takes place under conditions which foster compatibility with existing surrounding land uses.

**Policy 3.2.1:** Identify key sand and gravel and timber sites that may exist in the City and plan for compatible land uses adjacent to key sites.

**Objective 3.3:** Provide for restoration of extraction sites for future development, agriculture, open space, recreational or other appropriate uses.

**Policy 3.3.1:** Provide educational material summarizing the costs and benefits of sand and gravel utilization and timber harvests.

**Policy 3.3.2:** Establish reclamation plans and future land uses when approving mineral extraction operations.

## Goals, Objectives & Policies

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**Objective 3.4:** Develop a comprehensive sustainability plan that encourages the use of wind, solar, geothermal and other “green” resources for energy efficiency.

**Policy 3.4.1:** Develop a wind power ordinance.

**Policy 3.4.2:** Develop a solar power ordinance that supersedes architectural control committee influences.

**Policy 3.4.3:** Encourage the use of geothermal resources and solar resources, especially in development utilizing TIF incentives.

**Policy 3.4.4:** Develop ordinances and policies that encourage electrification and alternative-fuel usage in commercial and passenger vehicles, and expand the supply of electric vehicle charging stations.

**Goal 4: Provide and maintain high-quality and energy/resource-efficient public water supply, sanitary sewer and treatment, stormwater management, recycling and refuse.**

**Objective 4.1:** Provide and maintain an adequate supply of safe water for drinking and fire protection needs at a reasonable price.

**Policy 4.1.1:** Meet all requirements of the federal Safe Drinking Water Act.

**Policy 4.1.2:** Encourage all water users to practice water conservation techniques to reduce demand for water wherever practices are feasible, to be accomplished through conservation programs or incentives or by implementing a more restrictive ban on lawn sprinkling.

**Policy 4.1.3:** Continue to monitor the Wellhead Protection Plan to address possible contamination of drinking water.

**Policy 4.1.4:** Continue to study well capacity analysis to assure adequate service under drought, well contamination, or other conditions.

**Policy 4.1.5:** Evaluate the option to examine the feasibility of infiltrating treated MMSD effluent to recharge the groundwater or use for agricultural irrigation or industrial graywater.

**Policy 4.1.6:** Evaluate the feasibility of establishing or enhancing groundwater preservation areas, including potential landowner compensation.

## Goals, Objectives & Policies

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**Objective 4.2:** Maintain stormwater drainage and infiltration systems to meet or exceed legally required standards.

**Policy 4.2.1:** Update the City's Erosion Control and Stormwater Management Ordinance to maintain the highest possible standards based on the latest innovative practices and current information.

**Policy 4.2.2:** Provide educational sessions and information to City residents regarding stormwater programs and mitigation practices.

**Policy 4.2.3:** Encourage all City residents to implement on-site stormwater management practices.

**Objective 4.3:** Provide programs and options to meet the City resident recycling and refuse collection needs.

**Policy 4.3.1:** Ensure a high quality of service from recycling and refuse collection contractors and evaluate the latest innovations in technology.

**Policy 4.3.2:** Utilize the Resource Conservation Commission to continue to give advice and offer programs for City residents and businesses to reduce, reuse, and recycle.

**Goal 5: Maintain the existing public and private utility system and extend urban services within urban development boundary areas defined in a neighborhood plan, while minimizing the impacts to the environment.**

**Objective 5.1:** Maintain and improve the condition of the existing sanitary sewer and water infrastructure.

**Policy 5.1.1:** Inventory the condition of existing sewer services, trunks, structures, pumps and water mains and implement an improvements schedule based on the condition. Inventory use of lead in services and remediate.

**Policy 5.1.2:** Coordinate the street reconstruction and resurfacing program with the replacement and repair of public utilities.

**Policy 5.1.3:** Work with cooperative and investor-owned utility companies in order to coordinate their replacement of utilities with the street reconstruction and resurfacing program.

## Goals, Objectives & Policies

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**Policy 5.1.4:** Favor gravity flow sewer growth, in accord with the long-term growth boundary and phasing policies.

**Objective 5.2:** Expand public utilities to areas without urban services only after a neighborhood plan has been approved and subsequent urban service adjustment requests have been approved by the Capital Area Planning Commission and Wisconsin Department of Natural Resources. Public utility extensions will be staged in a contiguous manner from the existing infrastructure with minimal disruption to the environment and in accord with any staging plans provided by the neighborhood plan.

**Policy 5.2.1:** Discourage utility extensions across substantial vacant land.

**Policy 5.2.2:** Construct water and sewer extensions concurrently with new streets.

**Policy 5.2.3:** Avoid utility placement in wetlands and other environmentally sensitive areas.

**Objective 5.3:** Ensure that utility services are provided throughout the City.

**Policy 5.3.1:** Guarantee equitable access for cooperatives and investor-owned utility service providers in reaching their customers.

**Policy 5.3.2:** Ensure that cooperatives and investor-owned utilities are extended as the City develops and promote the underground installation of these lines.

**Policy 5.3.3:** Encourage cooperatives and investor-owned utility providers to develop an assertive funded program to bury facilities in established neighborhoods.

**Policy 5.3.4:** Support renewable energy and conservation techniques to reduce energy demands.

**Policy 5.3.5:** Ensure that the utility service providers or the City provides state of the art broadband with the highest level of connectivity at any given time, available to all City residents and businesses.