



# Jackson County Planning Commission

Staffed by the Region 2 Planning Commission (R2PC)  
120 W. Michigan Avenue • Jackson, MI 49201  
Phone (517) 788-4426 • Fax (517) 788-4635

## MEETING NOTICE

FOR FURTHER INFORMATION CONTACT:  
Grant E. Bauman  
R2PC Principal Planner  
(517) 768-6711  
[gbauman@co.jackson.mi.us](mailto:gbauman@co.jackson.mi.us)

DATE: April 11, 2019  
TIME: 6:00 p.m.  
PLACE: 5<sup>th</sup> Floor Commission Chambers  
Jackson County Tower Building  
120 W. Michigan Avenue  
Jackson, Michigan 49201

## MEETING AGENDA

1. Call to order and pledge of allegiance
2. Public comment [**3 MINUTE LIMIT**]
3. Approval of minutes  
Approval of the March 14, 2019, meeting minutes [**ACTION**] ..... 3
4. Approval of agenda  
Approval of the April 11, 2019, meeting agenda [**ACTION**]
5. Request(s) for review, comment, and recommendation
  - a. Consideration of township zoning amendment(s)
    - (1) Tompkins Township [**ACTION**] ..... 7
    - (2) Blackman Township [**ACTION**] ..... 21
  - b. Consideration of master plan(s) – *None*
  - c. Farmland and Open Space Preservation Program (PA 116) application(s) – *None*
6. Other business
  - a. Unfinished business
    - (1) Jackson County Master Plan [**DISCUSSION**] ..... 30
      - Mapping ..... 31
      - Chapter 2 (partial) ..... 57
  - b. New business – *None*
7. Public comment [**2 MINUTE LIMIT**]
8. Commissioner comment
9. Adjournment

*The next meeting of the Jackson County Planning Commission is scheduled for May 9, 2019*

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## MEETING MINUTES

March 14, 2019

Jackson County Tower Building • Jackson, Michigan

- Members Present:** Roger Gaede, Environment; Nancy Hawley, At Large; Ted Hilleary, Education; Russ Jennings, At Large; Corey Kennedy, Jackson County Board of Commissioners; and Jim Videto, Agriculture
- Members Absent:** Timothy Burns, At Large; Amy Guerriero, Industry and Economics; and Jennifer Morris, At Large
- Liaisons Present:** Grant Bauman, Principal Planner
- Others Present:** None

- Item 1. **Call to Order and Pledge of Allegiance.** The meeting was called to order at 6:00 p.m. by staff since the Chair and Secretary were absent. Those in attendance rose and joined in the Pledge of Allegiance.
- A motion was made by Comm. Videto, and seconded by Comm. Jennings, to appoint Comm. Hawley as the Acting Chair for the March 14, 2019, meeting. *The motion was approved unanimously.*
- Item 2. **Public Comment.** There was no public comment.
- Item 3. **Approval of Minutes.** A motion was made by Comm. Videto, and seconded by Comm. Hilleary, to **approve** the minutes of the February 14, 2019, meeting as presented. *The motion was approved unanimously.*
- Item 4. **Approval of the Agenda.** Staff requested that letters of support for the Michigan Natural Resources Trust Fund grant applications be added under new business as agenda item #6.b.(1). A motion was made by Comm. Hilleary, and seconded by Comm. Videto, to **approve** the March 14, 2019, meeting agenda as amended. *The motion was approved unanimously.*
- Item 5. **Request(s) for Review, Comment, and Recommendation.**
- Consideration of Township Zoning Amendment(s).** None.
  - Consideration of Master Plan(s).** None.
  - Farmland & Open Space Preservation Program (PA 116) application(s).**
    - FA19-01 – Henrietta Township**

Staff summarized his cover memo explaining that the applicant, Chrisinske Farms, LLC, submitted three farmland agreement applications for seven properties. After studying the applications, staff had some concerns. Ultimately, staff met with the applicant to review them. The applicant stated its intent to resubmit a series of five applications, separating non-contiguous properties and removing duplications and a

property already covered by an existing agreement. Staff told the applicants that there is no reason to pass those applications through the JCPC as long as the comments concerning the original applications are addressed. In the meantime, staff requested that the JCPC make recommendations on those original applications.

(a) **FA #19-01-a – Henrietta Township**

Staff summarized its report regarding the application to enroll the subject property—known as Parcel ID# 000-04-11-202-001-02, and located in Section 11 (T1S,R1E) of the Township—in the PA 116 program. Staff identified some errors/omissions regarding the application (please see the staff report).

A motion was made by Comm. Videto, and seconded by Comm. Hilleary, to recommend **approval** of the application with staff comments. *The motion was approved unanimously.*

(b) **FA #19-01-b – Henrietta Township**

Staff summarized its report regarding the application to enroll the subject property—known as Parcel ID# 000-04-15-276-001-00, and located in Section 15 (T1S,R1E) of the Township—in the PA 116 program. Staff identified significant errors/omissions regarding the application (please see the staff report).

A motion was made by Comm. Kennedy, and seconded by Comm. Jennings, to recommend **disapproval** of the application. *The motion was approved unanimously.*

(c) **FA #19-01-c – Henrietta Township**

Staff summarized its report regarding the application to enroll the subject properties—known as Parcel ID#s 000-04-02-400-001-05, 000-04-10-426-001-00, 000-04-10-451-001-02, 000-04-14-400-001-00, 000-04-15-176-001-00, and 000-04-15-276-001-00, and located in Sections 2, 10, 14, and 15 (T1S,R1E) of the Township—in the PA 116 program. Staff identified significant errors/omissions regarding the application (please see the staff report).

A motion was made by Comm. Kennedy, and seconded by Comm. Jennings, to recommend **disapproval** of the application. *The motion was approved unanimously.*

Commissioner Gaede asked about the purpose of the Farmland and Open Space Preservation Program. He was informed that its purpose is to preserve land for agriculture by giving tax relief on property taxes via Michigan’s income tax. However, there are penalties for removing properties before their terms of enrollment expire.

Item 6. **Other Business.**

a. **Unfinished Business.**

- (1) **Jackson County Master Plan.** Staff summarized his staff report which outlines the progress made on the master plan since the last JCPC meeting (please see the staff report). New maps showing the gas and liquid pipelines traversing Jackson County, and their ownership, were also presented to Commissioners. Staff went on to explain that a primary purpose of a municipal master plan is to provide guidance to a

municipal planning commission, and the legislative body it serves, regarding rezoning requests. Since the County does not have its own zoning ordinance, that is not the case for the Jackson County Planning Commission. Rather, the vision of staff is to provide sufficient maps that illustrate the physical conditions of Jackson County and the physical infrastructure serving it. Those maps will then be available to municipalities in Jackson County when they update their master plans, thereby encouraging some consistency across the County.

b. **New Business.**

(1) **Michigan Natural Resources Trust Fund Letter of Support.**

Staff explained that Jackson County Parks requested letters of support for the two grant applications it is submitting to the Michigan Natural Resources Trust Fund on April 1, 2019.

(a) **Vandercook Lake County Park Development Project**

Staff reviewed the letter of support drafted for the proposed kayak launch site on Vandercook Lake, citing support for the proposed facility in the *Upper Grand River Water Trail Development Plan* and the *City of Jackson & Jackson County Joint Recreation Plan* (please see the letter of support).

A motion was made by Comm. Kennedy, and seconded by Comm. Hilleary, **authorizing** the Recording Secretary to submit the letter of support. *The motion was approved unanimously.*

(a) **Vandercook Lake County Park Development Project**

Staff reviewed the letter of support drafted for the proposed kayak launch site on Little Wolf Lake and the fishing pier on Mellen Camp Lake, citing support for the proposed facilities in the *Upper Grand River Water Trail Development Plan* and/or the *City of Jackson & Jackson County Joint Recreation Plan* (please see the letter of support).

A motion was made by Comm. Hilleary, and seconded by Comm. Videto, **authorizing** the Recording Secretary to submit the letter of support. *The motion was approved unanimously.*

Item 7. **Public Comment.** There was no public comment.

Item 8. **Commissioner Comment.** Comm. Videto stated that Comm. Hawley did a good job as Acting Chair of the Commission.

Item 9. **Adjournment.** The meeting was adjourned by Chair Guerriero at 6:56 p.m.

Respectfully submitted by:  
Grant Bauman, Recording Secretary

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## COORDINATED ZONING REPORT | #19-03

**To:** County Planning Commissioners  
**From:** Grant E. Bauman  
**Date:** April 11, 2019

### Proposal: 'Solar Energy Systems' in Tompkins Township

#### The Request

The Tompkins Township Planning Commission considered zoning ordinance amendments to address the regulation of 'Solar Energy Systems'. The proposed amendments would:

- Add Sec. 7.11, which adds a purpose and intent statement (Sec. 7.11-1); definitions regarding **accessory solar energy systems, community solar energy systems (solar gardens), solar farms,** and solar collection panels; (Sec. 7.11-2), standards for accessory solar energy systems (Sec. 7.11-3), and standards for community solar energy systems and solar farms (Sec. 7.11.-4).
- Amend Sec. 6.00-2 by adding **accessory solar energy systems** to the listing of 'accessory uses' permitted in the 'Agricultural and Open Space District' and **community solar energy systems (solar gardens)** and **solar farms** to the listing of 'conditional uses requiring planning commission authorization' permitted in that District.
- Amend Sec. 6.01-2 by adding **accessory solar energy systems** to the listing of 'accessory uses' permitted in the 'Agricultural' District and **community solar energy systems (solar gardens)** and **solar farms** to the listing of 'conditional uses requiring planning commission authorization' permitted in that District.
- Amend Sec. 6.02-2 by adding **accessory solar energy systems** to the listing of 'accessory uses' permitted in the 'Residential Suburban District' and **community solar energy systems (solar gardens)** and **solar farms** to the listing of 'conditional uses requiring planning commission authorization' permitted in that District.
- Amend Sec. 6.03-2 by adding **accessory solar energy systems** to the listing of 'accessory uses' permitted in the 'Mobile Home Park District'.
- Amend Sec. 6.04-2 by adding **accessory solar energy systems** to the listing of 'accessory uses' permitted in the 'General Business District' and **community solar energy systems (solar gardens)** and **solar farms** to the listing of 'conditional uses requiring planning commission authorization' permitted in that District.

#### Background Information

Tompkins Township makes a differentiation among several types of Solar Energy Systems:

- An **accessory solar energy system** is a small-scale facility designed to supply on-site energy (although excess energy can be sold back to the electrical grid). The maximum size is ≤5 acres.
- A **community solar energy system (solar garden)** is a large scale facility designed to provide retail electric power to multiple community members or businesses The minimum size is >5 acres.

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- A **solar farm** is a large scale facility designed to provide the wholesale sale of electric power to multiple community members or businesses. The minimum size is >5 acres.

### Accessory Solar Energy System

The regulations for **accessory solar energy systems** include.

- **Allowable Districts.** Allowed as an ‘accessory use’ in all zoning districts.
- **Setbacks.** The minimum setback for a ground-mounted facility is equivalent to the required principal building setback. They are prohibited from FEMA flood zones and designated wetlands and must be set back at least 40 feet of a shoreline. There is also a 300-foot setback from wildlife management areas and scenic trail corridors.
- **Size.** Limited to 5% of the area of the property, up to 5 acres.
- **Electrical Cabling.** Cabling must be buried, with exceptions.
- **Height.** Ground-mounted facilities may not exceed a height of 14 feet, *but there are no regulations regarding building mounted facilities (e.g., prohibitions against exceeding maximum building heights and the extension of facilities beyond the roof edge).*
- **Nuisances.** There are some open-ended prohibitions regarding glare. Noise is limited to “5 dB [(decibels)] above ambient sound levels” as measured at the property line. *There is no definition regarding ambient sound levels.*
- **Screening.** *There are no screening regulations.*
- **Reclamation.** *There are no reclamation/restoration regulations.*
- **Solar Access.** *There is no disclaimer regarding guaranteed solar access.*

### Community Solar Energy System (CSES) and Solar Farm

The regulations for **community solar energy systems** and **solar farms** include.

- **Allowable Districts.** Allowable in all districts but the ‘Mobile Home Park District’ as a ‘conditional use requiring planning commission authorization’.
- **Site Assessment Study.** A study conducted by an independent private company is required to determine feasibility.
- **Glare.** There is an open-ended prohibition regarding glare.
- **Noise.** Noise is limited to “5 dB [(decibels)] above ambient sound levels” as measured at the property line, *but there is no definition regarding ambient sound levels.*
- **Setbacks.** The minimum setback for a ground-mounted facility is equivalent to the required principal building setback. There is a minimum setback at least 50 feet of a residential district, *but no setback from residences in other districts (e.g., ‘dwellings’ are a use by right in the AG district).* They are prohibited from FEMA flood zones and designated wetlands and must be set back at least 40 feet of a shoreline. There is also a 300-foot setback from wildlife management areas and scenic trail corridors.
- **Height.** Ground-mounted facilities may not exceed a height of 14 feet. *There are no regulations regarding building mounted facilities (e.g., prohibitions against exceeding the pertinent maximum building height and the extension of facilities beyond the roof edge).*
- **Size.** *There are no size regulations beyond the minimum of >5 acres.*
- **Safety/Access.** There is a requirement for fencing, *but no set standards (e.g., height).*
- **Screening.** There is a requirement that ground-mounted facilities be screened from roads and adjacent residences, *but there are no minimum standards (e.g., the height and spacing of vegetation).*

- **Telecommunications Interference.** Setbacks are required to mitigate potential telecommunications interference.
- **Electrical Cabling.** Cabling must be buried, with exceptions.
- **Reclamation.** Criteria regarding decommissioning plan are provided.
- **Lighting.** *There are no lighting regulations.*
- **Solar Access.** *There is no disclaimer regarding guaranteed solar access.*

**Other Comments**

In addition to the observations listed above, other comments/suggestions include:

- The section and subsection numbers should be renumbered “7.11-x”, according to the preamble to Section I of the Ordinance.
- Consider changing the title of Sec. 7.11-3 to “Accessory Solar Energy System”.
- The reference to “Permitted Uses” should be changed to “Accessory Uses” in the preamble to Sec. 7.11-3.
- Consider adding the “Utilities Interconnection” subsection included in the “Community Solar Energy system and Solar Farm” requirements (Sec. 7.11-4(J)) to the listing of “Accessory Solar Energy System” requirements.
- Consider changing the title of Sec. 7.11-4 to “Community Solar Energy System and Solar Farm”.
- Consider amending the grammar in first sentence/paragraph of the preamble to Sec. 7.11-4.
- Consider including setbacks from residences in other districts to Sec. 7.11-4(D) (e.g., ‘dwellings’ are a use by right in the AG district).
- Consider specifying that the size requirements for the evergreen trees in Sec. 7.11-4(G) are at the time of planting.
- Consider amending “Accessory solar energy systems” to “Accessory solar energy systems (subject to Sec. 7.11-3)” in the proposed amendments to the various listings of permitted uses in Article 6 of the Zoning Ordinance.
- Consider amending “Large solar energy systems” to “Community solar energy systems and solar farms (subject to Sec. 7.11-4)” in the proposed amendments to the various listings of permitted uses in Article 6 of the Zoning Ordinance.
- “Accessory solar energy systems (subject to Sec. 7.11-3)” should be added as Sec. 6.00-2(B)(5) according to the current Zoning Ordinance.
- Consider removing “Community solar energy systems and solar farms (subject to Sec. 7.11-4)” from the proposed listing of permitted uses in the RS Residential Suburban District (Sec. 6.02-2(C)(5)).
- “Accessory solar energy systems (subject to Sec. 7.11-3)” should be added as Sec. 6.00-2(B)(2) and the first item should be labeled (B)(a).

**Staff Advisement** – Based upon this analysis, staff advises the Jackson County Planning Commission to recommend **APPROVAL WITH COMMENTS** (as listed in the staff report) of the amendments regarding ‘Solar Energy Systems’ to the Tompkins Township Board.

**Staff Report Attachment(s):**

- *Background information provided by Tompkins Township*

Suggested Actions:	
(1)	Recommend <b>APPROVAL</b>
(2)	Recommend <b>DISAPPROVAL</b>
(3)	Recommend <b>APPROVAL WITH COMMENTS</b>
(4)	Take <b>NO ACTION</b>

# ZONING AMENDMENT FORM

MAR 27 2019



## JACKSON COUNTY PLANNING COMMISSION (COORDINATING ZONING)

Return to: Jackson County Planning Commission • c/o Region 2 Planning Commission • 120 W. Michigan Avenue • Jackson, Michigan 49201

Please submit the Planning Commission meeting minutes and any reports/exhibits the Commission used to make its recommendation with this form. Use a separate form for each proposed zoning change. Please include a legal description/survey with rezoning requests in addition to the Parcel ID Number.

A copy of this form with the JCPC recommendation will be mailed back to the Clerk, who will return a copy to the JCPC with the Township Board Action.

THE Tompkins TOWNSHIP PLANNING COMMISSION submits the following proposed zoning change to the Jackson County Planning Commission for its review, comment, and recommendation:

(ANSWER EITHER A or B)

### A. DISTRICT BOUNDARY CHANGE (REZONING):

(Provide the legal and popular property descriptions, the Parcel ID Number(s), the number of acres, and the section(s) in which the property is located. Attach additional sheets if more space is needed. Attach a map showing all changes and additions.)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

1. The above described property has a proposed zoning change FROM \_\_\_\_\_ ZONE TO \_\_\_\_\_ ZONE.

2. PURPOSE OF PROPOSED CHANGE: \_\_\_\_\_

### B. ZONING ORDINANCE TEXT AMENDMENT:

The following Article(s) and Section(s) is amended or altered: ARTICLE 7 SECTION 1

The NEW SECTION reads as follows: (Attach additional sheets if more space is needed.) \_\_\_\_\_

C. PUBLIC HEARING on the above amendment was held on: month 3 day 14 year 2019

D. NOTICE OF PUBLIC HEARING was published/mailed on the following date: month 2 day 24 year 2019

(Notice must be provided at least fifteen days prior to the public hearing.)

E. THE NEWSPAPER (having general circulation in Township) carrying the NOTICE: Jackson Citizen Patriot

The PROPOSED ZONING AMENDMENT described herein was duly considered by the Township Planning Commission and will be forwarded to the Township Board with a recommendation to (X) APPROVE or ( ) DISAPPROVE.

Charles Woodburn, Recording Secretary 3 / 14 / 2019 (enter date)

### JACKSON COUNTY PLANNING COMMISSION (JCPC) ACTION:

1. Date of Meeting: month \_\_\_\_\_ day \_\_\_\_\_ year \_\_\_\_\_

2. The JCPC herewith certifies receipt of the proposed amendment on the above date and:

- ( ) Recommends APPROVAL of the zoning change
- ( ) Recommends DISAPPROVAL of the zoning change for the reasons stated in the attached letter.
- ( ) Recommends APPROVAL of the zoning change with comments, as stated in the attached letter.
- ( ) Takes NO ACTION.

\_\_\_\_\_ ( ) Chair or ( ) Secretary \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ (enter date)

### TOWNSHIP BOARD ACTION:

1. Date of Meeting: month \_\_\_\_\_ day \_\_\_\_\_ year \_\_\_\_\_

2. The \_\_\_\_\_ Township Board herewith certifies that a legally constituted meeting held on the above date and that the proposed amendment ( ) PASSED, ( ) DID NOT PASS, or was ( ) REFERRED ANEW to the Township Planning Commission.

Silvane Glavin  
Township Clerk

Tompkins Township  
9999 Tompkins Rd.  
Russell, MI 49277  
4/11/19 JCPC Agenda Packet

**TOMPKINS TOWNSHIP**

**ORDINANCE NO. \_\_\_\_\_**

**ADOPTED: \_\_\_\_\_**

**EFFECTIVE: SEVEN DAYS FOLLOWING  
PUBLICATION AFTER ADOPTION**

An Ordinance to amend the Tompkins Township Zoning Ordinance regarding solar energy systems; to provide definitions for solar energy systems; to provide an approval process for solar energy systems; and to provide an effective date and to repeal all ordinances or parts of ordinances in conflict herewith.

**TOMPKINS TOWNSHIP  
JACKSON COUNTY, MICHIGAN**

**ORDAINS:**

**SECTION I**  
**AMENDMENT TO ARTICLE 7, SUPPLEMENTAL REGULATIONS**  
**FOR DISTRICTS OF TOMPKINS TOWNSHIP ZONING ORDINANCE**

Article 7, Supplemental Regulations for Districts, of the Tompkins Township Zoning Ordinance is hereby amended by adding a new Section 7.11 – Solar Energy Systems, which section shall read as follows:

**7.01 Solar Energy Systems**

**7.01-1 Purpose and Intent**

Tompkins Township determines that it is in the public interest to encourage the use and development of renewable energy systems that enhance energy conservation efforts in a safe and efficient manner that is subject to reasonable conditions that will limit adverse impact on nearby properties, environment, and rural character of the region. The Township resolves that the following regulation and standards shall be adopted to ensure that solar energy systems can be constructed within Tompkins Township while protecting public health, safety, and natural resources.

**7.01-2 Definitions**

- A. **Accessory Solar Energy System:** A small solar energy system which is roof, or building mounted, or architecturally-integrated, or ground mounted panels which are located on a lot or parcel with a principal use such as residence or business designed to supply energy for onsite residential or business use; excess energy produced may be sold back to the grid through net metering or commercial use to generate energy to offset utility costs or

as an additional revenue stream. A small solar energy system generates up to but not exceeding 20kW and can occupy, in total, no more than five (5) acres.

- B. **Community Solar Energy System (CSES) (also called “Solar Garden”):** A large scale facility that converts sunlight into electricity by photovoltaics (PV) array, for the primary purpose of providing retail electric power (or financial proxy for retail power) to multiple community members or businesses residing or located off-site from the location of the solar energy system. Roof or ground-mounted CSES or Solar Gardens are designed to supply energy for off-site users on the distribution grid. A large scale CSES or Solar Garden system exceeds 20kW, and can occupy, in total, more than five (5) acres.
- C. **Solar Farm:** A large scale facility that converts sunlight into electricity by photovoltaics (PV) array, for the primary purpose of wholesale sales of generated electricity to the electric transmission grid. A roof or ground-mounted solar farm is the primary land use for the parcel on which it is located. A large scale solar energy system exceeds 20kW, and can occupy, in total, more than five (5) acres.
- D. **Solar Collection Panels:** Panels and tiles comprised of semiconductor devices and typically referred to as photovoltaic cells, which collect and convert solar energy directly into electricity or solar thermal panels that convert solar energy indirectly to heat a fluid, and can also power solar cooling systems.

### **7.01-3 Permitted Use Standards**

Accessory Solar Energy Systems are a small solar energy system designed and used as an accessory use to serve the needs of a home, farm, or small business. Accessory Solar Energy Systems are Permitted Uses in all zoning districts, shall be reviewed by the Zoning Administrator, and are subject to the following standards:

- A. **Property Set-Backs:** Projects shall follow the district's applicable setbacks of the property's principal use. Ground mounted panel systems shall not be located within a FEMA floodplain or designated wetlands, within forty (40) feet of a riparian shoreline, and/or within three hundred (300) feet of governmental and/or nongovernmental wildlife management areas and scenic trail corridors.
- B. **Construction Standards:** The owner(s) and/or operator(s) shall submit a site plan and obtain all necessary permits from the Township, and other applicable government agencies.
  - 1) An Accessory Solar Energy System may not occupy more than five (5%) percent of the property or up to five (5) acres whichever is less.
  - 2) All electrical interconnection and distribution lines within the project boundary shall be underground, unless determined otherwise by the planning commission because of severe environmental constraints (e.g. wetlands, hard

bedrock), except for wiring between panels in a single solar array, and except for power lines that leave the project or are within the substation. All electrical interconnections and distribution components must comply with all applicable codes and public utility requirements.

- C. Height of ground mounted panels shall not exceed fourteen (14) feet.
- D. Nuisances: Accessory Solar Energy Systems shall not produce glare that is a nuisance to occupants of neighboring properties, or persons traveling neighboring roads, or air routes. Noise produced from Solar Energy Systems shall not exceed above 5dBA of ambient sound levels as measured at the property line. Adequate setbacks shall be provided to comply with these limitations.

**7.01-4 Conditional Use Standards**

Community Solar Energy System, Solar Garden, or Solar Farm is a large solar energy system, designed with the primary use of generating electricity to the electric transmission grid.

The Township Board should adopt an escrow policy by resolution to require that a conditional use applicant or any applicant seeking land use approval be required to pay an escrow deposit to cover the Township's cost in hiring legal, engineering, planning or other professional assistance in reviewing the application.

Community Solar Energy System, Solar Garden, or Solar Farms will be permitted with conditional use approval in all agricultural, residential (except RMH), commercial, and industrial zoning districts, reviewed by the planning commission, and subject to the following standards:

- A. Large solar energy system projects shall require prior to construction approval, a site assessment study conducted by a private company independent of the project applicant(s) and/ or property owner to determine feasibility including the project's description identifying the size, rated power output, project life, development phases, likely market for the generated energy; visual impact using renditions or photos; analysis of onsite traffic; environmental analysis including soils, wetlands, surface water, woodlots, historical features, review of potential impacts on wildlife, corridor preservation at the site, and mitigation measures.
- B. Nuisances: Large solar energy system projects shall not produce glare that is a nuisance to occupants of neighboring properties or persons traveling neighboring roads or air routes.
- C. Noise produced from large solar energy systems shall not exceed above 5 dBA of ambient sound levels as measured at the property line. Adequate setbacks shall be provided to comply with these limitations.
- D. Property Set-Backs shall follow the district's applicable setbacks of the property's principal use. Ground mounted panel systems shall not be located within a FEMA

floodplain or designated wetlands, within forty (40) feet of a riparian shoreline, within fifty (50) of a residential district, and/or within three hundred (300) feet of governmental and/or nongovernmental wildlife management areas, parks, and scenic trail corridors.

E. Construction Standards: project applicant(s) shall submit a site plan, and obtain all pertinent permits from the Township and other applicable government agencies.

1) The maximum property coverage restrictions shall not apply to photovoltaic solar panels. Any other regulated structures on the property are subject to the maximum lot coverage restrictions of the district.

2) All electrical interconnection and distribution lines within the project boundary shall be underground, unless determined otherwise by the Planning Commission because of severe environmental constraints (e.g. wetlands, hard bedrock), except for wiring between panels in a single solar array, and except for power lines that leave the project or are within the substation. All electrical interconnections and distribution components must comply with all applicable codes and public utility requirements.

3) Lighting at the facility must be shielded to prevent atmospheric light pollution. Light pole(s) shall not exceed eighteen (18) feet.

F. Height of ground mounted photovoltaic solar panel arrays shall not exceed fourteen (14) feet.

G. Landscaping: Ground mounted photovoltaic solar panel arrays shall be screened from view with one (1) row, perimeter planting of native evergreen trees – one eight (8) foot tree every twenty-five (25) feet along road and property lines. The Planning Commission may alter the landscaping requirement depending upon the location and existing plant material on the site.

H. Safety/Access: Perimeter security fencing is required around the Solar Energy facility and all electrical equipment (height and material to be established through the conditional use permit process). Keys or code access shall be provided for emergency personnel.

1) Owner(s) and/or operator(s) shall identify emergency and normal shutdown procedures.

2) Owner(s) and/or operator(s) shall identify potential hazards including solid and hazardous waste, generated by the project to adjacent properties, roadways, and to the community in general.

I. Telecommunications Interference: Owner(s) and/or operator(s) shall identify

electromagnetic fields and communications interference generated by the project. Adequate setbacks shall be provided to mitigate the interference.

- J. Utilities Interconnection: No grid-connected photovoltaic system shall be installed until the owner(s) and/or operator(s) submit a completed interconnection agreement with the electric utility in whose service territory the large solar energy system is located.
  
- K. Project Life and Final Reclamation: The owner(s) and/or operator(s) shall submit a decommissioning plan for ground-mounted photovoltaic systems to ensure that the owner(s) and/or operator(s) properly remove the equipment and facilities upon the end of the project life or in the event they are not in use for twelve (12) consecutive months. The plan shall include provisions for the removal of all structures and foundations, the removal of all electrical transmission components, the restoration of soil and vegetation and a soundly-based plan ensuring financial resources will be available to fully decommission the site. The Township may consult with the Township engineer and/or another third party to verify the applicant's estimated decommissioning costs. The Township may require the owner(s) and/or operator(s) to post a bond, letter of credit or other financial guarantee and/or establish an escrow account to ensure proper decommissioning.

The remainder of Article 7 shall remain unchanged.

**SECTION II**  
**AMENDMENT TO ARTICLE 6, ZONING DISTRICTS**

Article 6, Zoning Districts, of the Tompkins Township Zoning Ordinance is hereby amended by adding new subsections to allow accessory solar energy systems as permitted uses in all districts and to allow large solar energy systems with conditional use approval in agricultural and commercial districts, as follows:

**6.00 AGOS Agricultural and Open Space District**

**6.00-2 - Permitted Uses** - add new subsection (B) (4) and new subsection (C)(11)

(B)(4) Accessory solar energy systems

(C)(11) Large solar energy system (permitted with conditional use approval)

**6.01 AG Agricultural**

**6.01-2 - Permitted Uses** - add new subsection (B) (5) and new subsection (C)(15)

(B)(5) Accessory solar energy systems

(C)(15) Large solar energy system (permitted with conditional use approval)

**6.02 RS Residential Suburban**

**6.02-2 - Permitted Uses** - add new subsection (B) (5)

- (B)(5) Accessory solar energy systems
- (C)(5) Large solar energy system (permitted with conditional use approval)

**6.03 RMH Mobile Home Park District**

**6.03 -2 - Permitted Uses** - add new subsection (B) (5)

- (B)(5) Accessory solar energy systems

**6.04 B4 General Business District**

**6.04-2 - Permitted Uses** - add new subsection (B) (1) and new subsection (C)(13)

- (B)(1) Accessory solar energy systems
- (C)(13) Large solar energy system (permitted with conditional use approval)

The remainder of Article 6 shall remain unchanged.

**SECTION III**  
**SEVERABILITY**

Should any provision or part of the within Ordinance be declared by any court of competent jurisdiction to be invalid or unenforceable, the same shall not affect the enforceability of the balance of this Ordinance which shall remain in full force and effect.

**SECTION IV**  
**REPEAL**

All ordinances or parts of ordinances in conflict herewith are hereby repealed.

**SECTION V**  
**EFFECTIVE DATE**

This Ordinance shall take effect seven days following publication after adoption.

Melanie Curran, Clerk  
Tompkins Township

# Planning Commission Meeting Minutes

## Regular Scheduled Meeting

Date 3/14/2019 Minutes submitted By Charles Woodburn

Called to order by Art Bamm Time 7:34

**Commission members present:** Arthur Bamm, Charles Woodburn, Melanie Curran, Alan Southworth

**Absent:** Jason Bivens

**Also present:** John Tuttle (Township Supervisor), James Leonard, Bryan Matts

**Review and approval of 1/9/2019 minutes:** Motion to approve minutes as written made by Charles Woodburn Second by Art Bamm, Vote taken, all approved minutes as written.

### Old Business

**A: Spangler Conditional Use update:** Letter has been sent to Mr. Spangler notifying him of revocation of the Conditional use permit. John Tuttle stated it appears he is still working on vehicles his property and in violation of his permit. John to consult with Township Attorney to determine next step.

**B: Rives Township Master plan:** Melanie Curran reported that Rives Township has changed their Master plan. Melanie recommended that the Planning Commission members visit the Rives Township website and review their Master plan.

**C: Tompkins Township Solar Ordinance:** The proposed Solar Ordinance was passed out for review. Melanie stated that the Notice for Public hearing for the Proposed Ordinance was posted in the Jackson Citizen Patriot Paper on Feb 1<sup>st</sup> 2019. It has also been posted on the public notice board outside the Tompkins Township hall, and on the Township Website. Brief discussion was held on the ordinance between Planning Commission Members. Motion to close Planning Commission Meeting and open Public Comment was made by Melanie Curran Second by Art Bamm. Planning Commission Meeting is now closed at 7:45 PM. Open for Public Comment

### Public Comment:

1. Mr. Leonard asked about the requirement for Pine trees in Section 1, 7.01-4, Part G. He was concerned that this seemed excessive for a home owner to have to comply with.
  - a. It was explained to Mr. Leonard that 7.01-4 applied only to a Community Solar system, Solar Gardens or Solar Farms, none of these would qualify as a under 20KW system that a home owner would install. This requirement would not be required for a typical Accessory system.
2. Discussion was held on the difference between Accessory and larger systems as indicated in Definitions 7.01-2
3. It was discussed that the Solar Ordinance is missing a requirement that for any system that may require a Professional Environmental, Engineering or any third-party assessment by the Township, the applicant will be required to pay the Township for these costs.
4. Public comment time was closed at 8:10PM
5. Planning Commission Meeting motion to reopen made by Art Bamm at 8:11pm Second By Alan Southworth, Planning commission

**Meeting reopened**

## Planning Commission Meeting

1. Melanie Curran recommended that The Commission review all sections, from the 1/9/2019 Meeting minutes, that were to have been added to Ordinance. All reviewed. The Section concerning charging for Professional review charges being paid by the applicant should be added in Section 7.01-4 where it would apply to larger than 20KW systems.
2. Melanie Curran made Motion, Second by Art Bamm to resubmit corrected document to the Township Planning Commission Members and Township Board for review. All in Favor.

**Township Report:** None

**New Business:** None

**Meeting Adjourned By** \_Art Bamm\_\_\_\_\_ **Time** \_\_8:27\_\_\_\_\_

Remaining 2019 Meetings June 13<sup>th</sup> , Sept 12<sup>th</sup> , Dec 12<sup>th</sup> all are scheduled for 7:30 PM

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# Jackson County Planning Commission

Staffed by the Region 2 Planning Commission (R2PC)  
120 W. Michigan Avenue • Jackson, MI 49201  
Phone (517) 788-4426 • Fax (517) 788-4635

## COORDINATED ZONING REPORT | #19-04

**To:** County Planning Commissioners  
**From:** Grant E. Bauman  
**Date:** April 11, 2019

### **Proposal: The rezoning of a portion of a property in Blackman Township**

#### **Request**

Approximately the southern third of the subject property is proposed for rezoning to 'Agricultural (AG-1)' from Suburban Residential (RS-1). The majority of the property is already zoned AG-1.

#### **Purpose**

The purpose of the request is to "make the entire parcel AG-1" (see the Zoning Amendment Form).

#### **Location and Size of the Property**

The subject property (ID# 000-08-20-152-002-01) is situated in Section 20 (T2S-R1W) of the Township (see Figure 1). Located on the east side of Springport Road, southeast of Rives Junction Road, the property has an area of approximately 93 acres. Trillium Pointe Apartment Homes is located to the southwest, on the west side of Springport Road. A Baker College campus is located to the southeast.

#### **Land Use and Zoning**

**Current Land Use** – The southern portion of the subject property is currently farmed (see the Rezoning Worksheet Form and Figures 1, 4a & 4b). However, most of the parcel is wooded. The Wheeler Drain traverses the northern portion of the property. Woodlands also occupy the adjacent portions of surrounding properties to the north, east, and southwest. Homes are located directly to the south. Trillium Pointe Apartment Homes is located further to the southwest, on the west side of Springport Road. The Blue Angels Motorcycle Club is located on the west side of Springport Road, just north of the Wheeler Drain, with a few residential properties located directly to the south of the club.

**Future Land Use** – The Land Use Plan map in the *Blackman Charter Township Master Plan* places the subject property, and a parcel to the southeast, in an area recommended for 'Office/Research' uses (see Figure 2). 'Low Density Residential' uses are recommended for properties to the north and 'High Density Residential' uses are recommended for parcels to the northeast, south, and southwest. 'Local Commercial' uses are recommended for properties to the northwest.

**Current Zoning** – The northern two-thirds of the subject property is zoned 'Agricultural (AG-1)', as are parcels to the north (see Figure 3). The southern third of the property, is zoned 'Suburban Residential (RS-1)', as are parcels to the south. The property to the northeast is zoned 'Mobile Home Residential (MH-1)' and the property to the southeast is zoned 'Office (O-1)'. Parcels to the southwest are zoned 'Planned Residential (PR-1)' and parcels to the northwest are zoned 'General Commercial (C-2)'.

#### **Public Facilities and Environmental Constraints**

**Water and Sewer Availability** – Municipal water is not available and there are no plans to extend that service, according to the Township Zoning Administrator. Municipal sewer service is available.

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[www.region2planning.com/jackson-county-planning-commission/](http://www.region2planning.com/jackson-county-planning-commission/)

**Public Road/Street Access** – Springport Road provides direct access to the subject property. It is a paved county primary road built to Class A standards (see the *Jackson County 2008 Road Map*). The *Blackman Township Master Plan* classifies the roadway as an arterial.

**Environmental Constraints** – The Wheeler Drain traverses the subject property.

**Analysis and Recommendation**

**Township Planning Commission Recommendation** – The Blackman Township Planning Commission recommended **approval** of the proposed rezoning to ‘AG-1’ (see the Zoning Amendment Form).

**JCPC Staff Analysis** – Blackman Township’s Zoning Plan contains the following criteria upon which a rezoning request must be considered:

1. **Is the proposed rezoning consistent with the policies and uses proposed for that area in the Master Plan?**

**No.** ‘Office/Research’ is the plan designation for the subject property (see Figure 2). According to the Zoning Plan, only the ‘Office Research (O-2)’ zoning district equates to the ‘Office/Research’ plan designation.

2. **Will all of the uses allowed under the proposed rezoning be compatible with other zones and uses in the surrounding area?**

**Yes.** Given that the northern two-thirds of the property is already zoned ‘Agricultural (AG-1)’, the rezoning would be compatible with the current zoning pattern in this part of the Township.

3. **Will public services and facilities be significantly adversely impacted by a development or use allowed under the requested rezoning?**

**No.** It is not anticipated that an ‘Agricultural (AG-1)’ rezoning will have an adverse effect on public services and facilities.

4. **Will the uses allowed under the proposed rezoning be equally or better suited to the area than uses allowed under the current zoning district?**

**Yes.** The portion of the property proposed for rezoning to ‘Agricultural (AG-1)’ is currently farmed.

**JCPC Staff Advisement** – The proposed rezoning does not conform to the recently adopted *Blackman Township Master Plan*.<sup>\*</sup> However, it should be recognized the most of the property is zoned ‘Agricultural (AG-1)’ and the portion proposed for rezoning is currently farmed.

Based upon the above analysis, staff advises the Jackson County Planning Commission to recommend **DISAPPROVAL** of the ‘Agricultural (AG-1)’ rezoning request to the Blackman Township Board. The request does not conform to the recently approved municipal master plan.

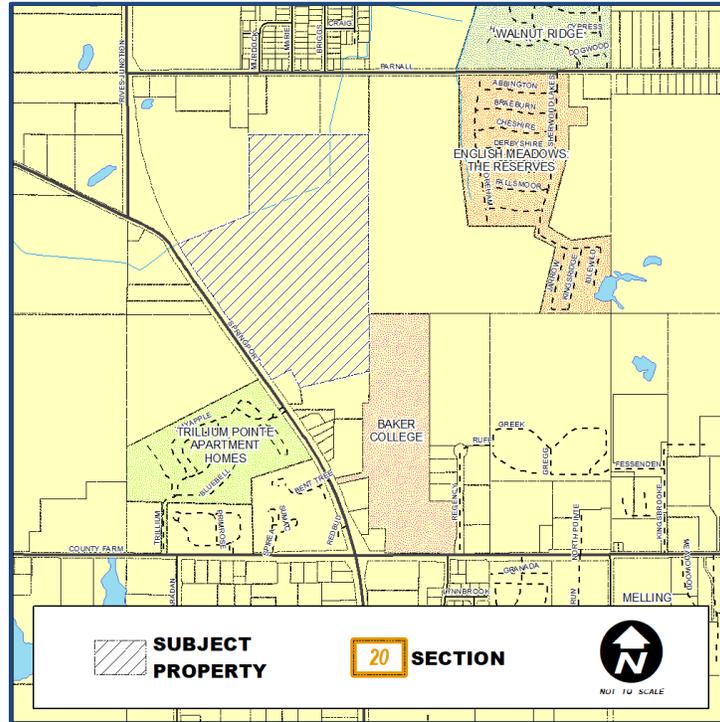
**Staff Report Attachment(s):**

- *Background information provided by Blackman Township*

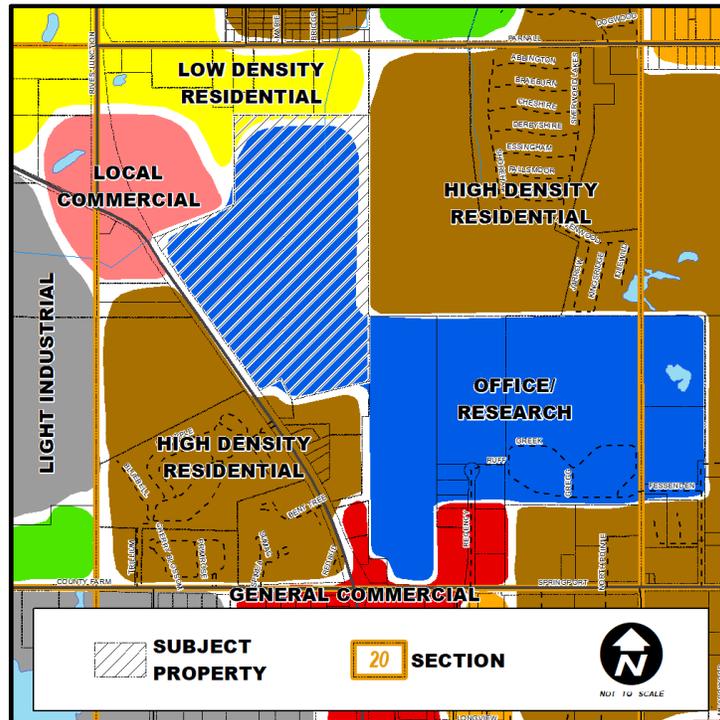
Suggested Actions:	
(1)	Recommend <b>APPROVAL</b>
(2)	Recommend <b>DISAPPROVAL</b>
(3)	Recommend <b>APPROVAL WITH COMMENTS</b>
(4)	Take <b>NO ACTION</b>

<sup>\*</sup> The Blackman Township Planning Commission adopted the 2019 edition of the *Blackman Township Master Plan* on March 19, 2019, and the Blackman Township Board will consider approving the document at its meeting on April 15, 2019.

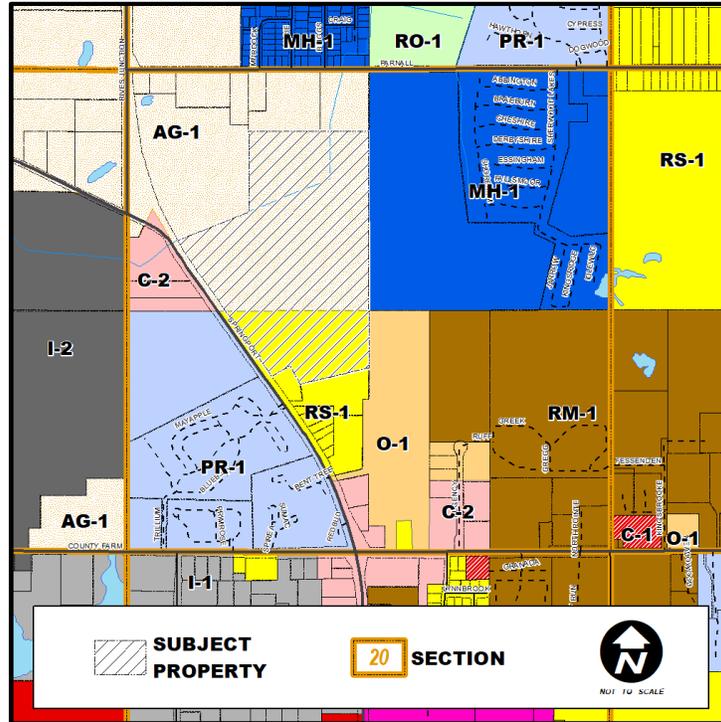
**Figure 1  
Location**



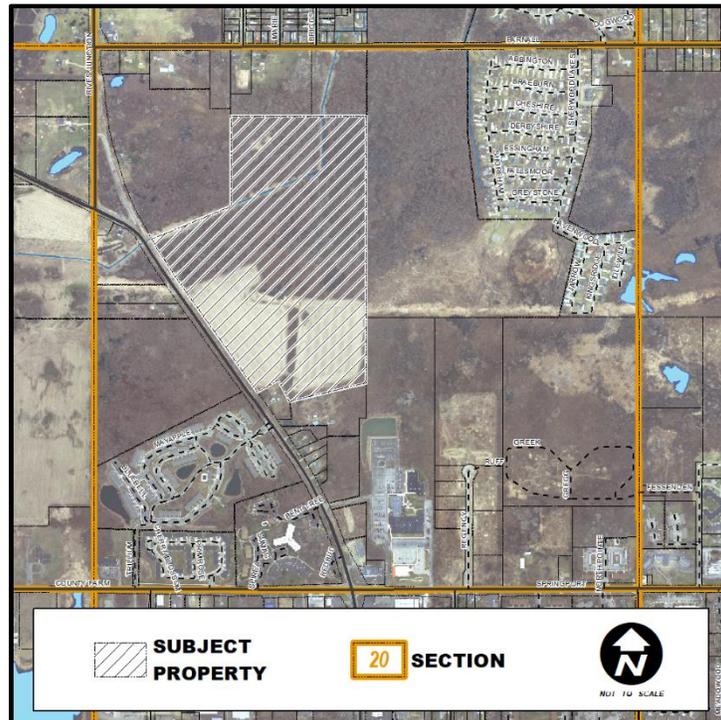
**Figure 2  
Municipal Future Land Use**



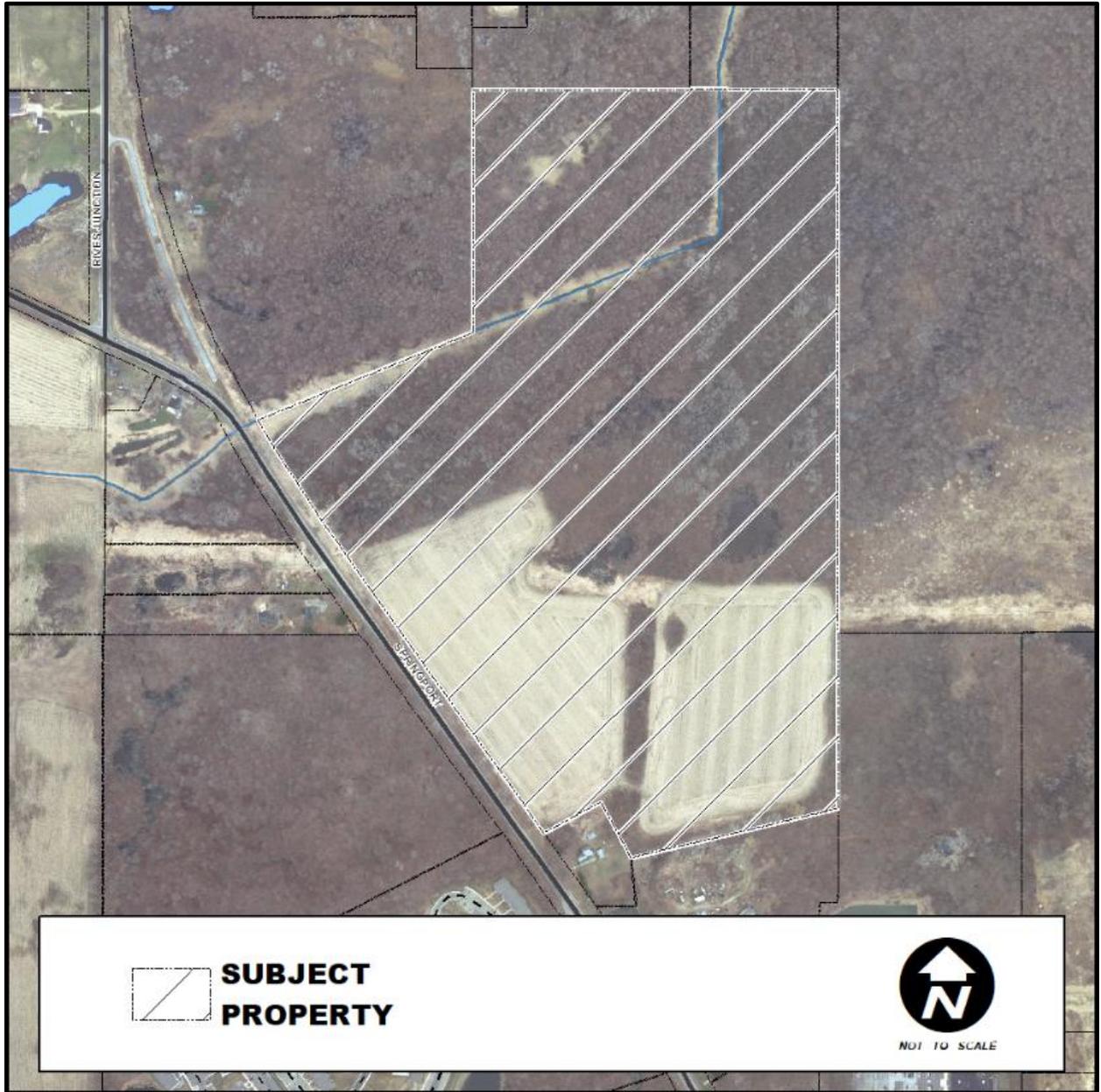
**Figure 3  
Municipal Zoning**



**Figure 4a  
Aerial Photo**



**Figure 4b  
Aerial Photo**



**ZONING AMENDMENT FORM**



**JACKSON COUNTY PLANNING COMMISSION  
(COORDINATING ZONING)**

Return to: Jackson County Planning Commission • c/o Region 2 Planning Commission • 120 W. Michigan Avenue • Jackson, Michigan 49201

Please submit the Planning Commission meeting minutes and any reports/exhibits the Commission used to make its recommendation with this form. Use a separate form for each proposed zoning change. Please include a legal description/ survey with rezoning requests in addition to the Parcel ID Number.

A copy of this form with the JCPC recommendation will be mailed back to the Clerk, who will return a copy to the JCPC with the Township Board Action.

THE Blackman TOWNSHIP PLANNING COMMISSION submits the following proposed zoning change to the Jackson County Planning Commission for its review, comment, and recommendation:

**(ANSWER EITHER A or B)**

**A. DISTRICT BOUNDARY CHANGE (REZONING):**

(Provide the legal and popular property descriptions, the Parcel ID Number(s), the number of acres, and the section(s) in which the property is located. Attach additional sheets if more space is needed. Attach a map showing all changes and additions.)

000-08-20-152-002-01 93.3 ACRES. Change 1/3 of the Property from RS-1 To Ag-1 making entire Property Ag-1

1. The above described property has a proposed zoning change FROM RS-1 To Ag-1 ZONE TO Ag-1 ZONE.
2. PURPOSE OF PROPOSED CHANGE: make entire parcel Ag-1

**B. ZONING ORDINANCE TEXT AMENDMENT:**

The following Article(s) and Section(s) is amended or altered: ARTICLE \_\_\_\_\_ SECTION \_\_\_\_\_

The NEW SECTION reads as follows: (Attach additional sheets if more space is needed.) \_\_\_\_\_

- C. PUBLIC HEARING on the above amendment was held on: month 4 day 2 year 2019
- D. NOTICE OF PUBLIC HEARING was published/mailed on the following date: month 3 day 15 year 2019

(Notice must be provided at least fifteen days prior to the public hearing.)

**E. THE NEWSPAPER (having general circulation in Township) carrying the NOTICE:** \_\_\_\_\_

The PROPOSED ZONING AMENDMENT described herein was duly considered by the Township Planning Commission and will be forwarded to the Township Board with a recommendation to  APPROVE or ( ) DISAPPROVE.

[Signature] (X) Chair or ( ) Secretary \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ (enter date)

**JACKSON COUNTY PLANNING COMMISSION (JCPC) ACTION:**

1. Date of Meeting: month \_\_\_\_\_ day \_\_\_\_\_ year \_\_\_\_\_
  2. The JCPC herewith certifies receipt of the proposed amendment on the above date and:
    - ( ) Recommends APPROVAL of the zoning change
    - ( ) Recommends DISAPPROVAL of the zoning change for the reasons stated in the attached letter.
    - ( ) Recommends APPROVAL of the zoning change with comments, as stated in the attached letter.
    - ( ) Takes NO ACTION.
- \_\_\_\_\_ ( ) Chair or ( ) Secretary \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ (enter date)

**TOWNSHIP BOARD ACTION:**

1. Date of Meeting: month \_\_\_\_\_ day \_\_\_\_\_ year \_\_\_\_\_
2. The \_\_\_\_\_ Township Board herewith certifies that a legally constituted meeting held on the above date and that the proposed amendment ( ) PASSED, ( ) DID NOT PASS, or was ( ) REFERRED ANEW to the Township Planning Commission.

\_\_\_\_\_  
Township Clerk

# BLACKMAN TOWNSHIP ZONING APPLICATION

Print or Type

Case# \_\_\_\_\_

## APPLICATION FOR

- Rezoning\*\*
- Planned Developments
- Variance\*\*
- Conditional Use\*\*
- Site Plan Review
- Home Occupation\*\*
- Site Plan Change/Renewal
- Administrative Site Plan

This application will not be processed if incomplete. \*\*All required materials must be submitted at least twenty one (21) days prior to the Next Planning Commission or Zoning Board of Appeals meeting. Site Plans with all documentation twelve days (12) prior to the next Planning Commission meeting.

### APPLICANT INFORMATION (if different than owner, a letter of authorization from the owner must be attached)

Name(s) Landmark Property Group, LLC (Purchaser) Phone (517) 787-8570  
 Address 405 S. Jackson St. Jackson, MI. (PO Box 450 - 49204)  
 EMAIL ADDRESS \_\_\_\_\_

### OWNER INFORMATION

Name(s) Church Ext. Fund of Mi Dist. (Seller) Phone ( ) \_\_\_\_\_  
 Address 3773 Geddes Rd. Ann Arbor, MI 48105  
 EMAIL ADDRESS \_\_\_\_\_

### PROPERTY INFORMATION

Address or Location Vacant Land - Springport Rd  
 Permanent Parcel # 000-08-20-150-000-01  
 Zone District (Current) C-23 Residential Property Size 93.3 acres - See attached  
 Attach legal description – also a survey, site drawing and pictures may be required.

### NARRATIVE DESCRIPTION OF PROPOSED USE/REQUEST (attach additional pages as needed)

Rezone entire parcel to ag. as a contingency for the purchase of the entire parcel by Landmark Property Group LLC  
 I hereby attest that the information on this application form is, to the best of my knowledge, true and accurate.

Karl Haber Agent \_\_\_\_\_ 3-6-2019  
 Signature of Applicant Signature of Applicant Date

I hereby grant permission for members of the Blackman Township (Planning Commission) (Zoning Board of Appeals) (Township Board) to enter the above described property ( or as described in the attached) for the purpose of gathering information related to this application. (Note to Applicant: This is optional and will not affect any decision on your application.)

Karl Haber - Agent \_\_\_\_\_ 3-6-2019  
 Signature of Applicant Signature of Applicant Date

**\*\*APPLICANT OR APPOINTED REPRESENTATIVE MUST BE PRESENT AT THE MEETING.**

\*\*\*\*\*DO NOT WRITE BELOW THIS LINE\*\*\*\*\*

Date Received \_\_\_\_\_ Fee Paid \_\_\_\_\_ Meeting Date \_\_\_\_\_

Submitted Materials:  Site Plan  # Of Copies  Application  Site Plan Checklist  
 Required Letters:  Legal Description  Survey  Pictures

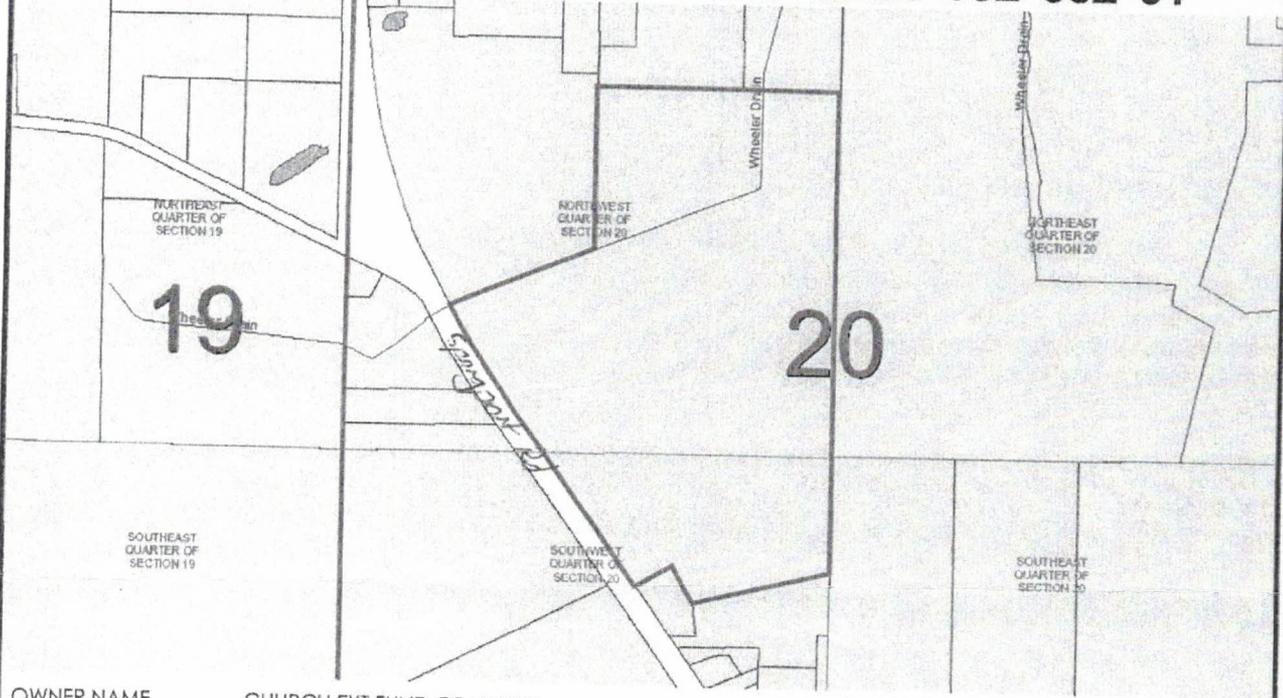
Application Accepted by \_\_\_\_\_  
 NOTE: Please attach all documents as required for each type of request and as listed on the attached sheets.

Zoning Board of Appeals **APPROVE/DENY** request. Chairman \_\_\_\_\_ Date \_\_\_\_\_

Planning Commission recommends **APPROVE/DENY**. Chairman \_\_\_\_\_ Date \_\_\_\_\_

Blackman Charter Township Board of Trustees **APPROVE/DENY** the **Conditional Use** or **Zone Change** as requested by Applicant Clerk \_\_\_\_\_ Date \_\_\_\_\_

# PARCEL DATA SHEET - PARCEL ID: 000-08-20-152-002-01



OWNER NAME: CHURCH EXT FUND OF MI DIST  
 OWNER ADDRESS: 3773 GEDDES RD  
 ANN ARBOR MI 48105-3028  
 HOMESTEAD: 0%  
 PARCEL ADDRESS: 202 - COMMERCIAL VACANT  
 PROPERTY CLASS: Active  
 STATUS: 93.3 Acres  
 ACREAGE: Blackman  
 GOVT UNIT: Blackman  
 TAX UNIT: Blackman  
 SCHOOL DISTRICT: NORTHWEST SCHOOL  
 LIBER/PAGE:

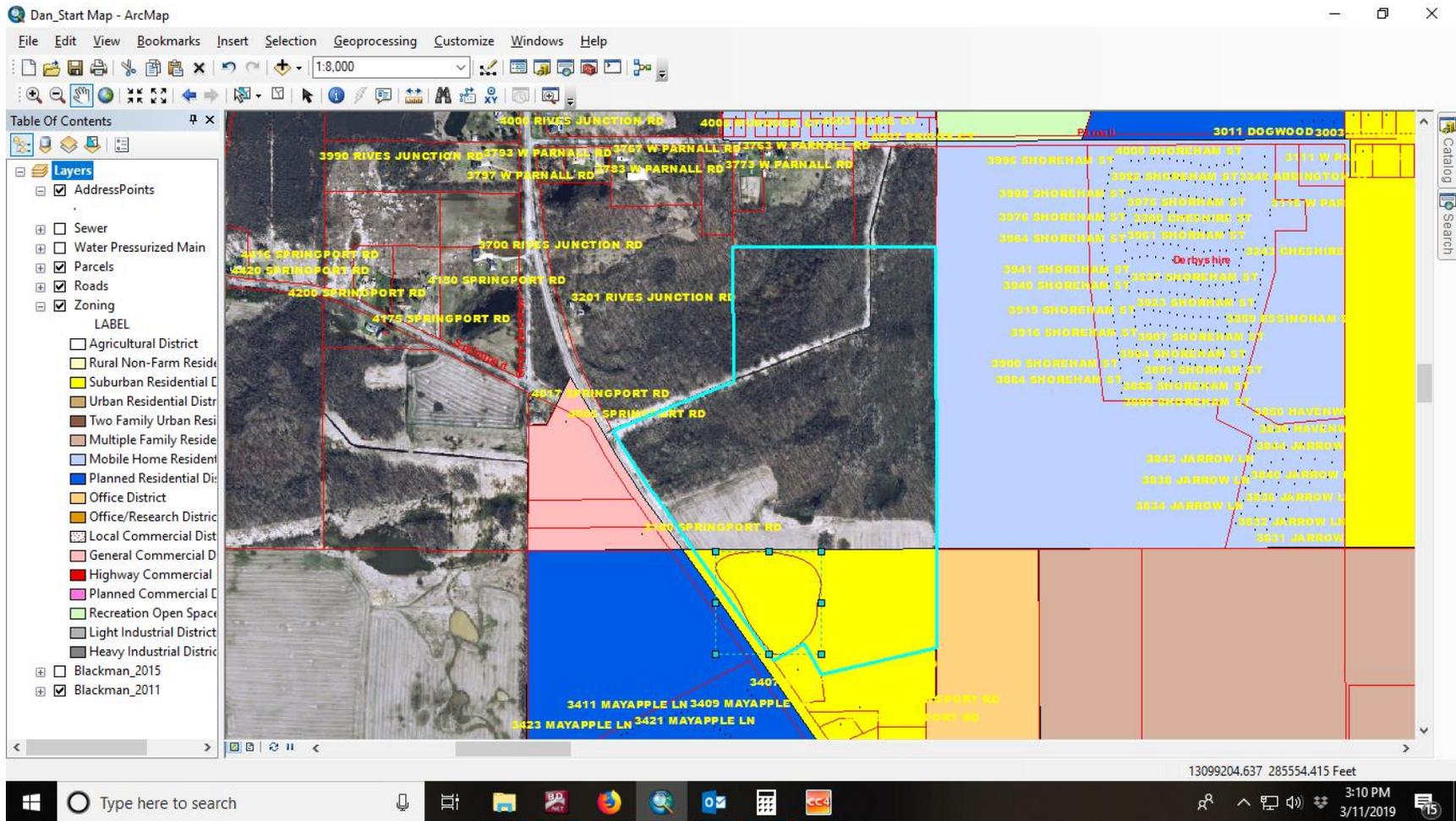
	2016	2017	2018
TAXABLE VALUE	\$60,681	\$61,227	\$62,512
ASSESSED VALUE	\$81,689	\$81,700	\$77,200
TAX DESCRIPTION	COM AT S 1/4 POST OF SEC 20 TH N ALG N&S 1/4 LN OF SD SEC 20 2020.87 FT TO POB TH S77°37'50"W 762.06 FT TH N28°22'10"W 231.17 FT TH S61°37'50"W 322.66 FT TO CEN LN OF SPRINGPORT RD TH N35°22'03"W ALG SD CEN LN 1814.75 FT TO CEN LN OF WHEELER DRAIN TH N67°53'49"E 924.09 FT TH N00°00'43"W 901.84 FT TH N89°45'50"E 1331.57 FT TH S00°01'44"E 1987.31 FT TO CEN O SD SEC TH S ALG N&S 1/4 LN 634.42 FT TO BEG. SEC 20 T2S R1W 97.039 A COMBINED ON 1-09-2001 FROM 000-08-20-126-002-00, 000-08-20-152-002-00, 000-08-20-302-001-00 AND 000-08-20-326-001-01;		



This generated map is provided to allow easy access and visual display of governmental information and services, as well as to information from other sources. Every reasonable effort has been made to ensure the accuracy of the maps and data provided; nevertheless, some information may not be accurate. The burden of determining the accuracy, firmness, completeness, merchantability, and fitness or appropriateness of use rests solely on you, the user. The parcel data on this sheet was last updated on March 05, 2019.



C-2





# Jackson County Planning Commission

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Staffed by the Region 2 Planning Commission (R2PC)  
120 W. Michigan Avenue • Jackson, MI 49201  
Phone (517) 788-4426 • Fax (517) 788-4635

## JACKSON COUNTY MASTER PLAN | 2019 EDITION

**To:** County Planning Commissioners

**From:** Grant E. Bauman

**Date:** April 5, 2019

**Proposal:** **Update on the Planning Process**

Work continues on the master plan. The following items were completed since the last JCPC meeting:

- A compendium of map created (or proposed) for the master plan was updated and reorganized (attached).
- The 'Regional Location', 'Municipalities and Places', 'Population/Demographics', and 'Natural Resources' sections of the 'Community Description and Issue Identification Chapter' (Chapter 2) of the master plan were drafted (attached).

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[www.region2planning.com/jackson-county-planning-commission](http://www.region2planning.com/jackson-county-planning-commission)

## **Mapping Table of Contents**

### **Base**

1. Base Map

### **Municipalities and Places**

2. Municipalities and Places

### **Natural Resources**

3. Topography

#### **Surface Waters**

4. Watersheds
5. Lakes, Ponds, Rivers, and Streams
6. Flood Zones and Wetlands

#### **Soils**

7. Hydric Soils
8. Most Productive Agricultural Soils

### **Community Facilities**

9. *County Facilities and County-Owned Properties*
10. *Municipal Halls and Fire Stations*
11. Public School Districts and Schools
12. Major Community Facilities

### **Transportation Facilities**

13. Road Network
14. Surface Conditions
15. Airports and Railroads
16. Airport Permit Zones

### **Utilities**

17. Gas Pipelines
18. Liquid Pipelines
19. Municipal Wellhead Protection Areas

### **Land Use**

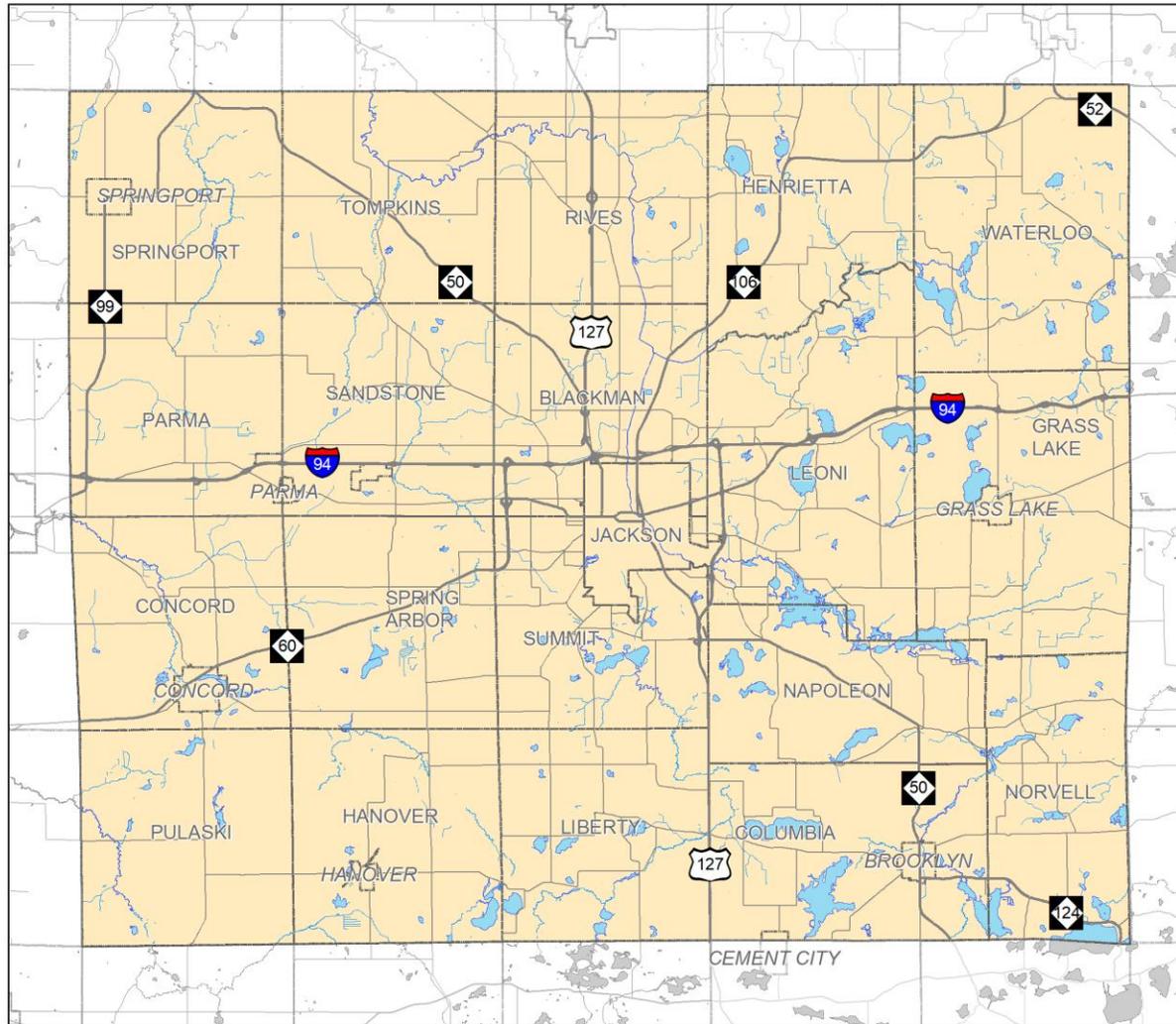
20. Property Assessment
21. Generalized Zoning
22. *Recent New Construction*

*[Maps listed in italics have yet to be created]*

**Jackson County  
Master Plan**



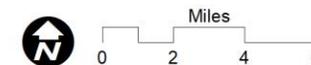
**Base Map**

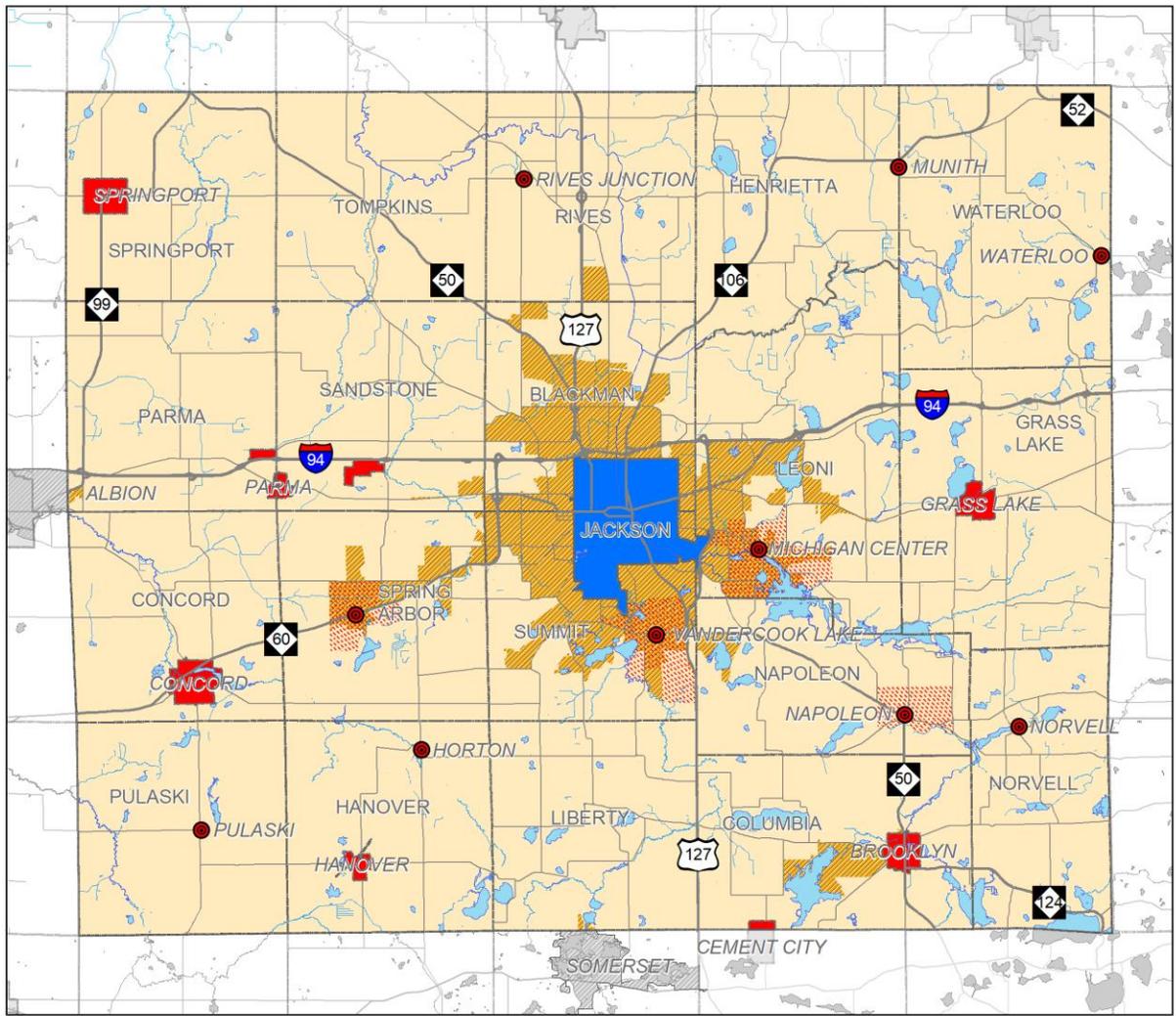


**Legend**

- Governments**
- Municipalities
- Jackson County
- Roads**
- State Highways
- County Primary Roads
- Hydrology**
- Rivers
- Lakes

Map Date: 2/21/19





**Jackson County  
Master Plan**

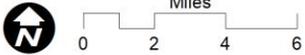


**Municipalities  
and Places**

**Legend**

- Townships
- City of Jackson
- Incorporated Villages
- Census Designated Places
- Other Places
- Urban Areas and Clusters

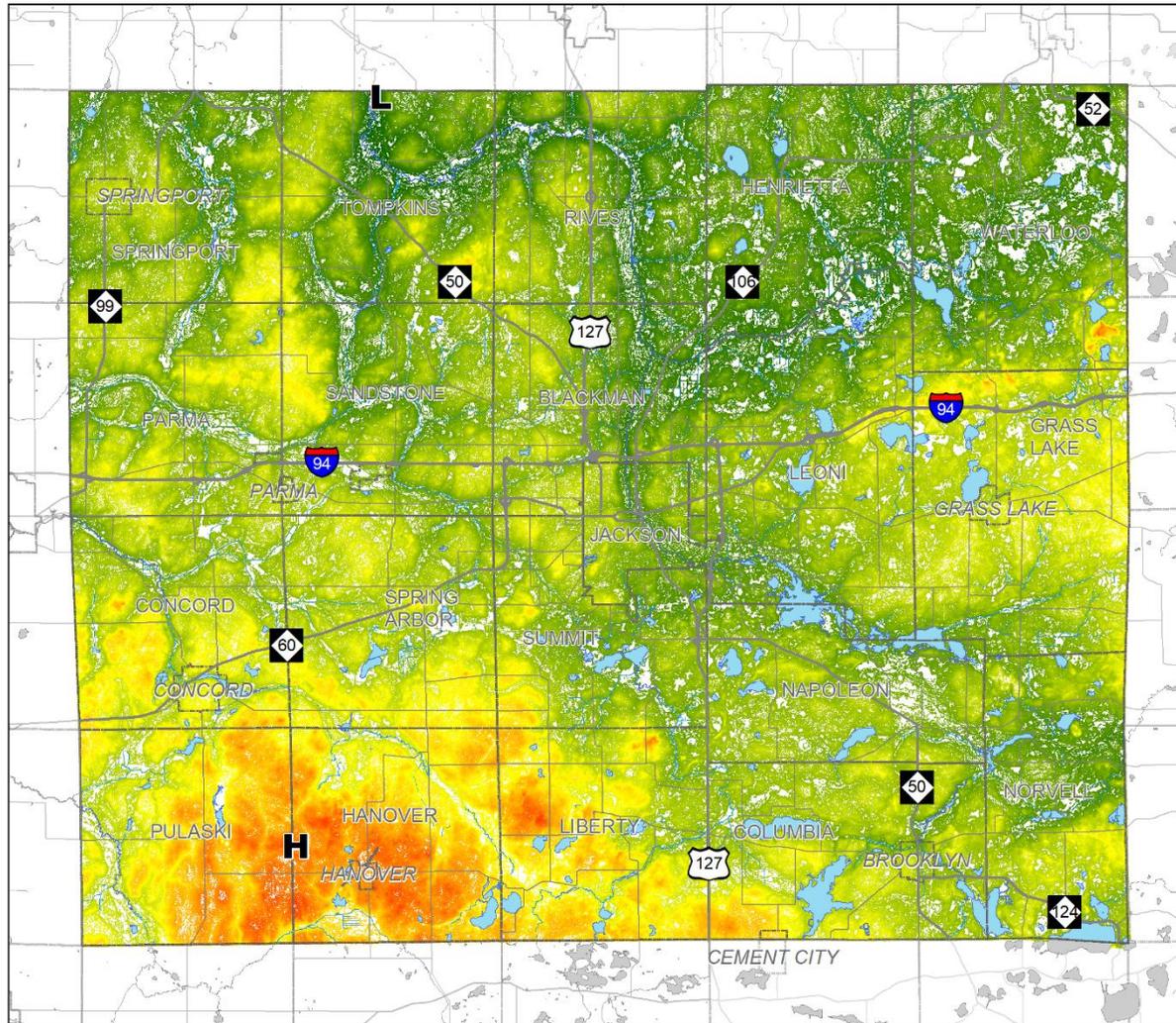
Map Date: 2/21/19



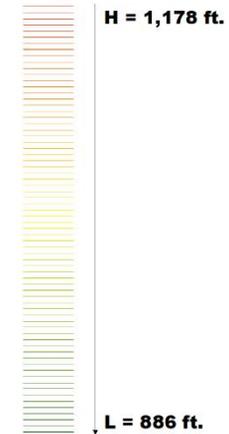
# Jackson County Master Plan



## Topography

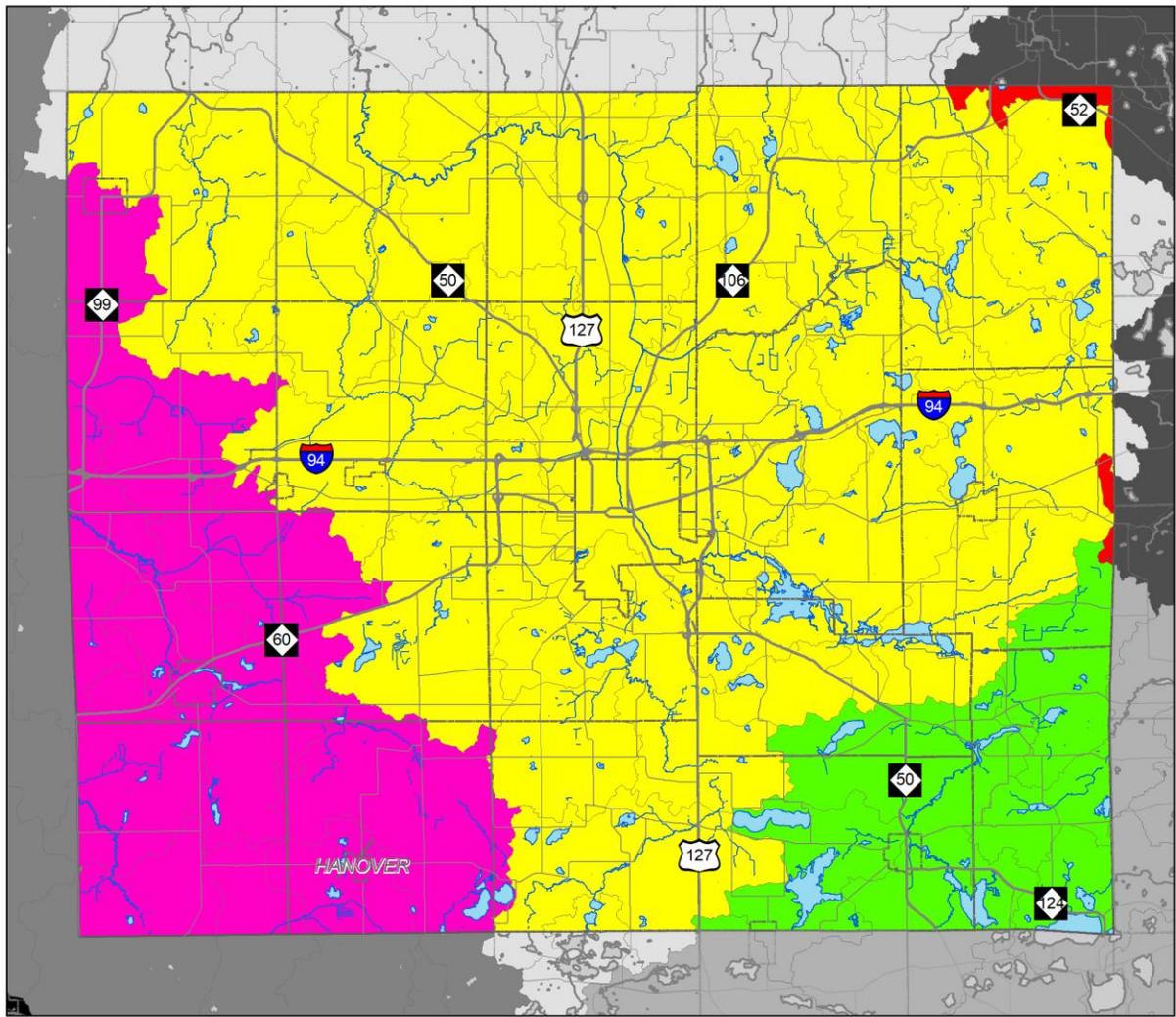


### Legend



Map Date: 2/21/19





**Jackson County  
Master Plan**

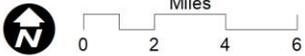


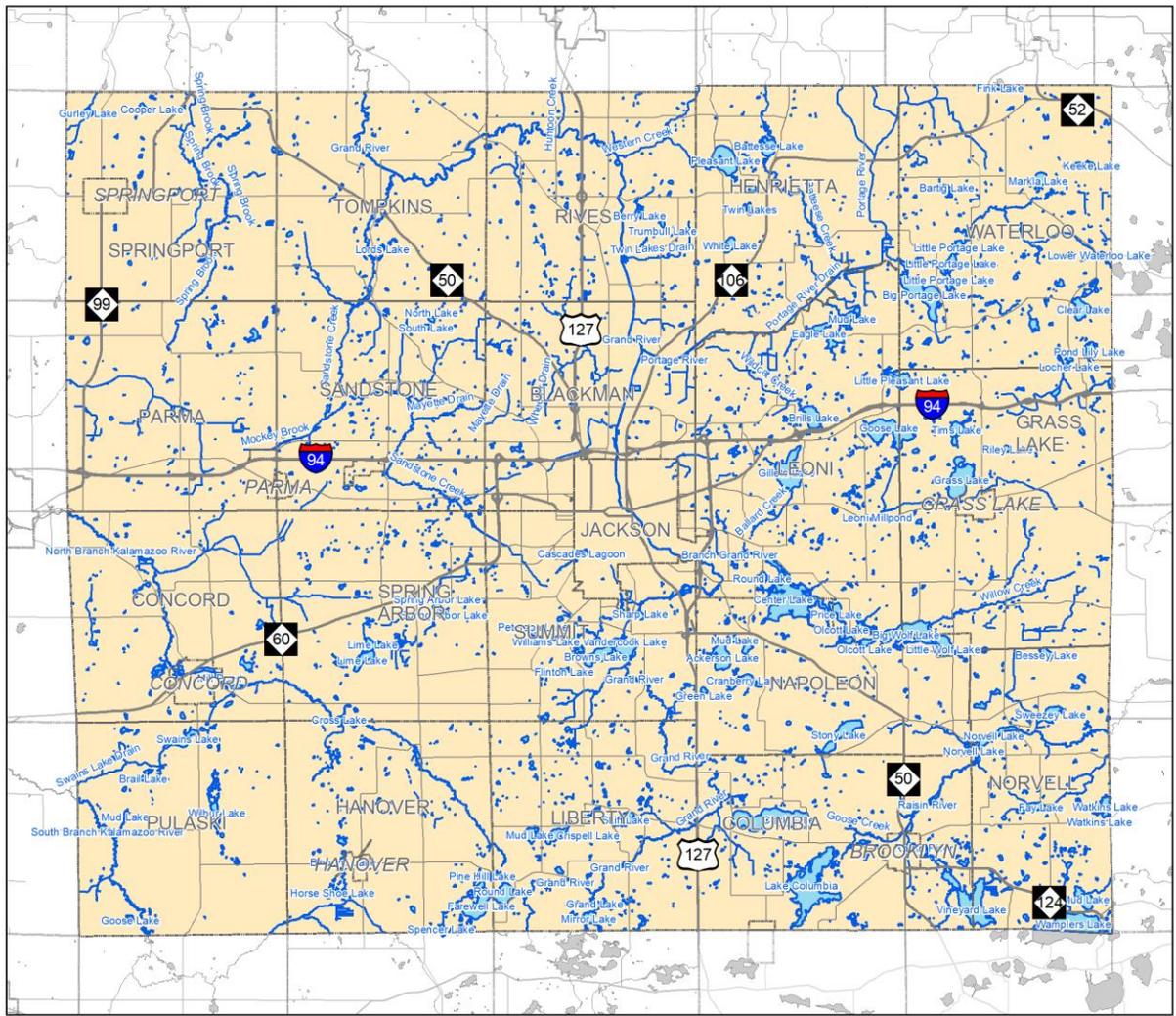
**Watersheds**

**Legend**

- Watersheds**
- Upper Grand River
- Huron River
- Kalamazoo River
- River Raisin
- Surface Water**
- Rivers
- Lakes

Map Date: 2/21/19





**Jackson County  
Master Plan**

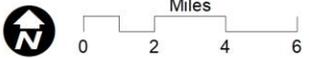


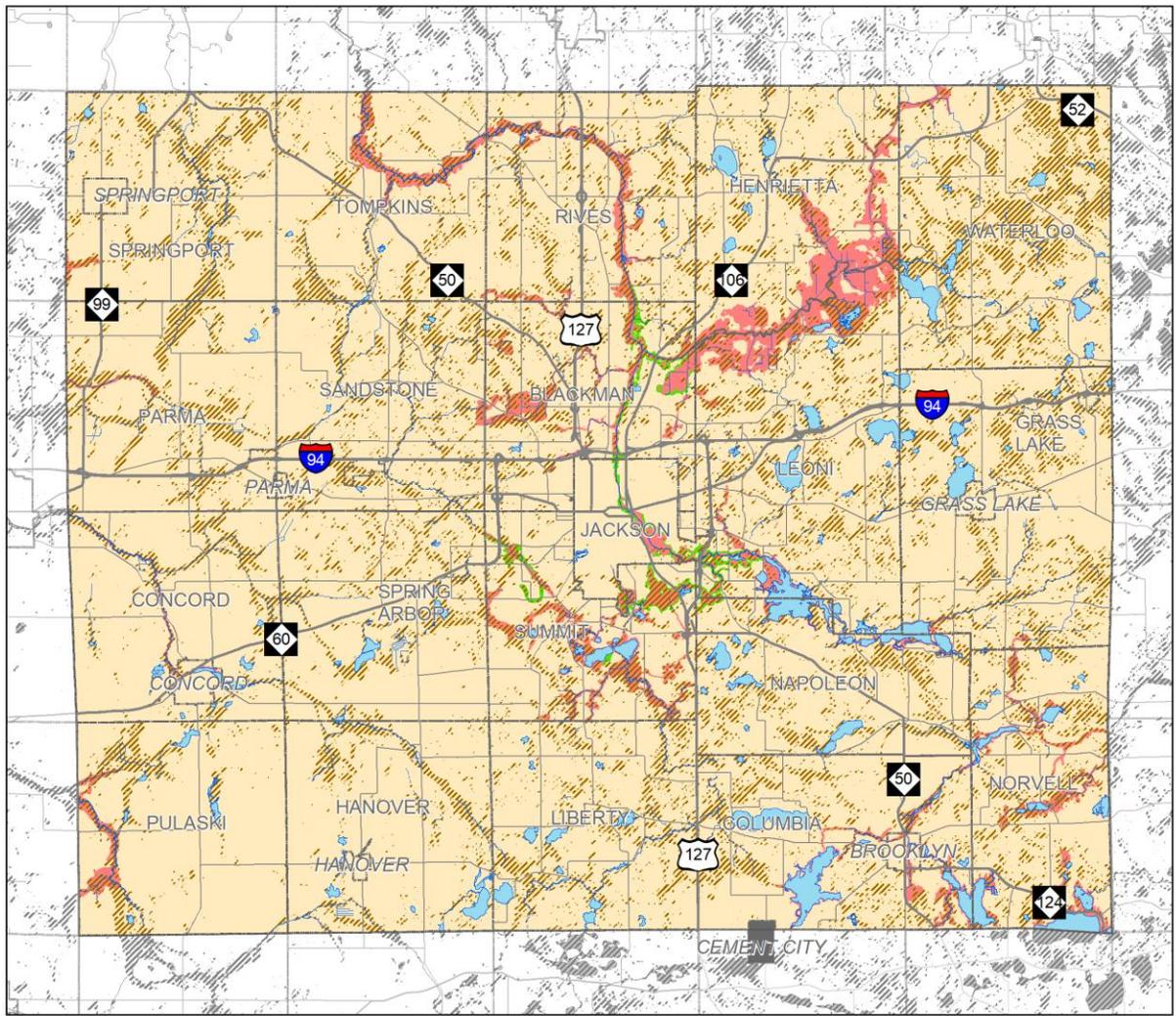
**Lakes, Ponds,  
Rivers, and Streams**

**Legend**

- Lakes and Ponds
- Rivers and Streams

Map Date: 4/4/19





**Jackson County  
Master Plan**

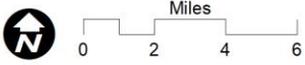


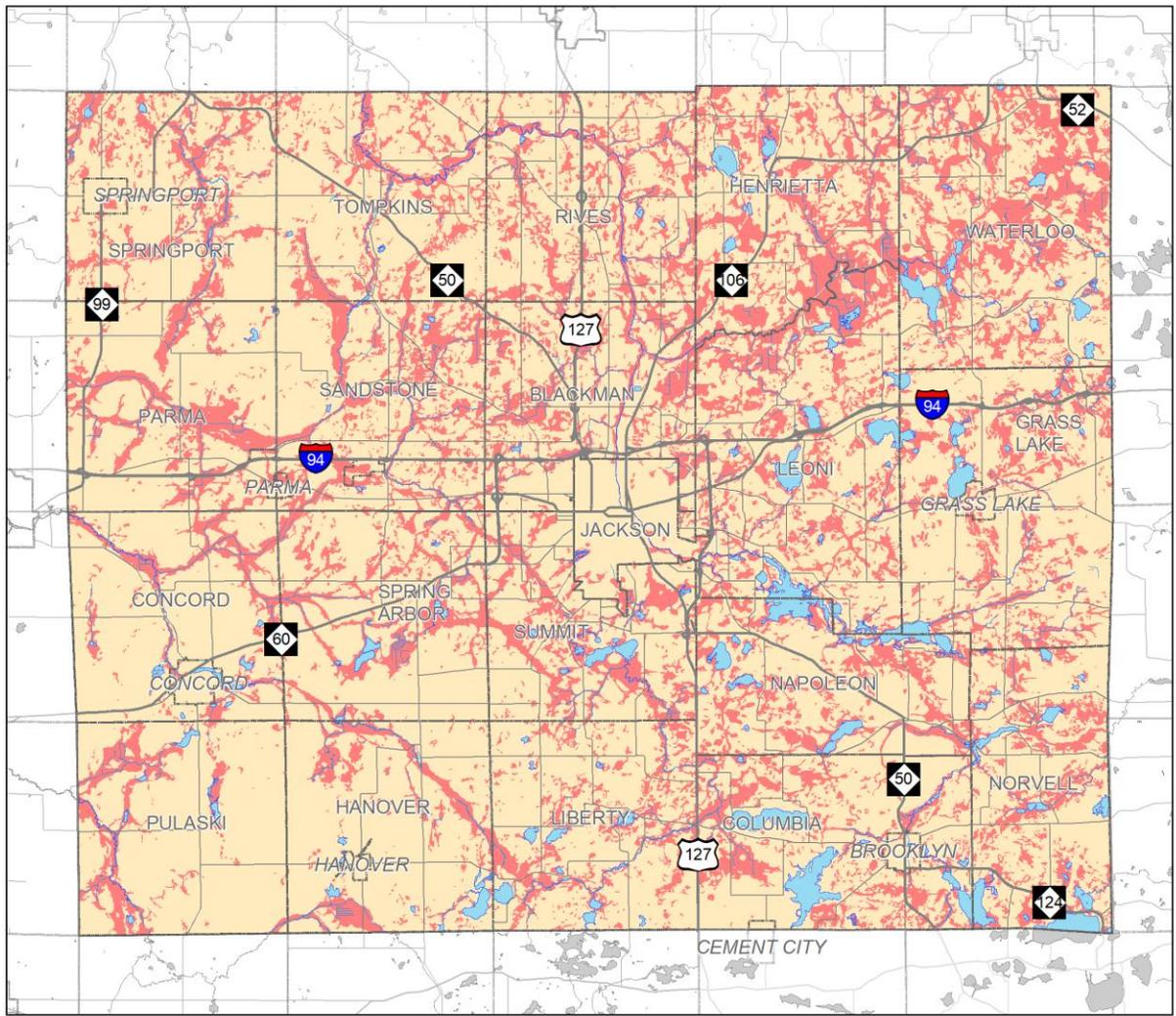
**Flood Zones  
and Wetlands**

**Legend**

- Flood Zones**
- 100-Year Flood Zone
- 500-Year Flood Zone
- Not Mapped
- Wetlands**
- Wetlands

Map Date: 4/4/19





**Jackson County  
Master Plan**

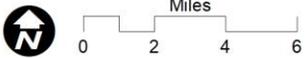


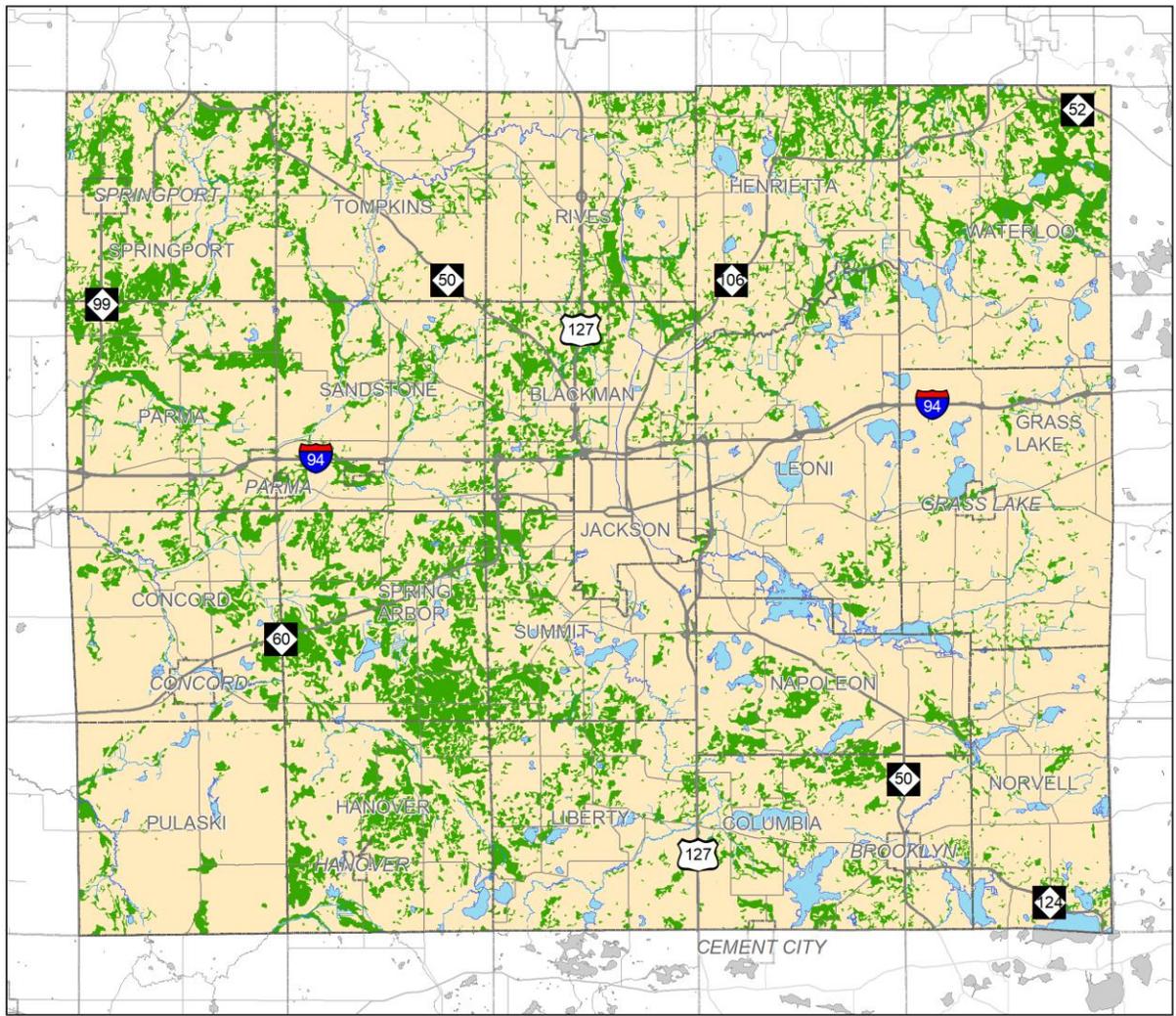
**Hydric Soils**

**Legend**

 Hydric Soils

Map Date: 2/21/19





**Jackson County  
Master Plan**

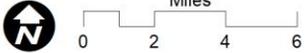


**Most Productive  
Agricultural Soils**

**Legend**

 Most Productive Agricultural Soils

Map Date: 4/4/19



**Placeholder for *County Facilities and County-Owned Properties***

**Placeholder for *Municipal Halls and Fire Stations***

Jackson County  
Master Plan

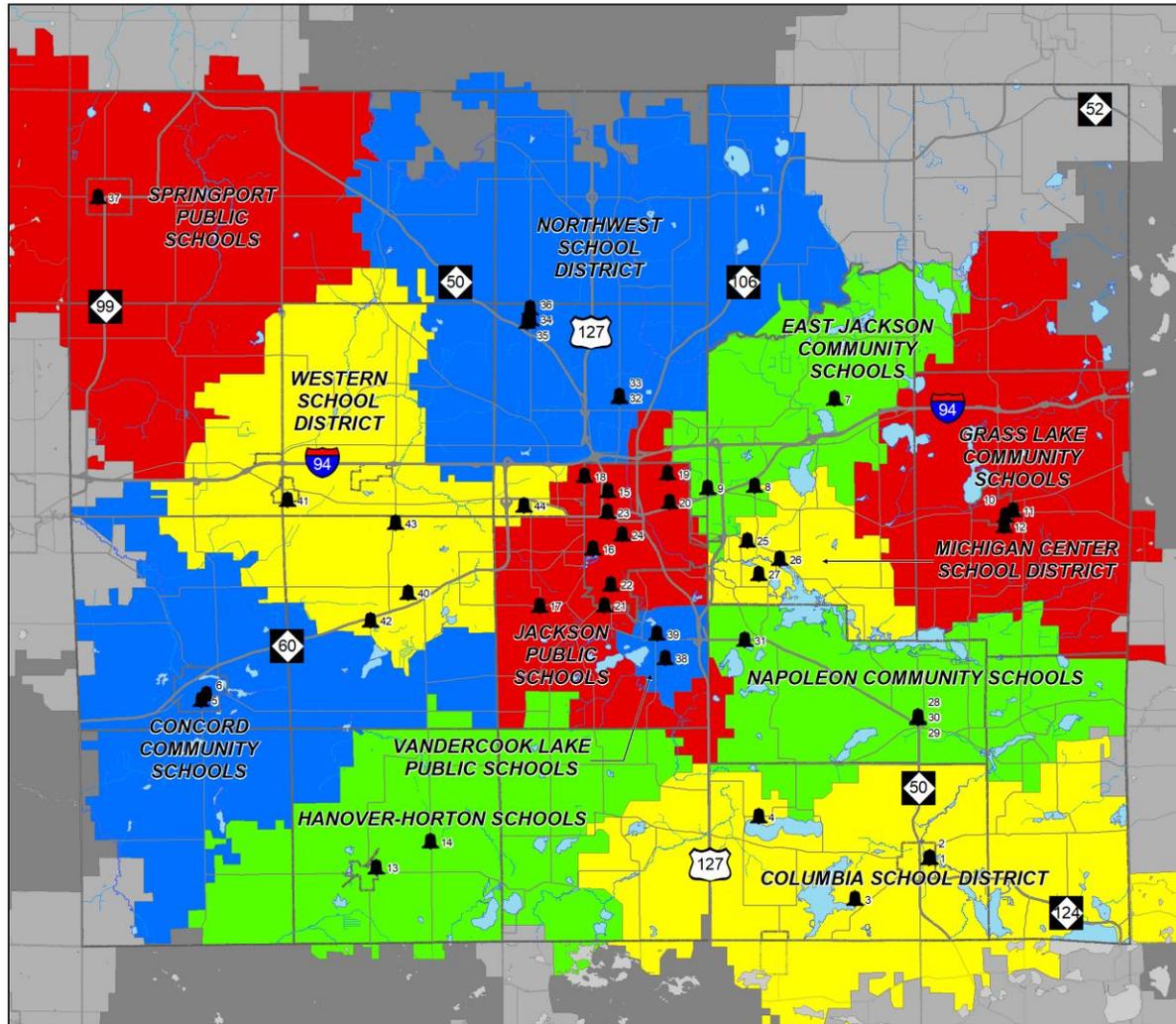
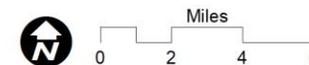


**Public School  
Districts and Schools**

**Legend**

- School Districts in the Jackson Intermediate School District
- School Districts in the Jackson Intermediate School District
- School District
- School District
- School Districts in Other Intermediate School Districts
- School Districts in Other Intermediate School Districts
- Public School Sites

Map Date: 2/21/19



## Public School Districts

### Columbia School District

1. Columbia Elementary School
2. Columbia Upper Elementary School
3. Columbia Central Jr. and Sr. High Schools (Fitness Center)
4. Columbia Options High School

### Concord Community Schools

5. Concord Elementary and Middle Schools
6. Concord High School

### East Jackson Community Schools

7. East Jackson Elementary School
8. East Jackson Secondary School
9. East Jackson Alternative School

### Grass Lake Community Schools

10. George Long Elementary School and Little Warriors Pre-School and Daycare
11. Grass Lake Middle School
12. Grass Lake High School

### Hanover-Horton School District

13. Hanover-Horton Elementary School and Early Impressions Preschool & Childcare Center

14. Hanover-Horton Middle and High Schools

### Jackson Public Schools

15. Bennett Elementary School
16. Cascades and Frost Elementary Schools
17. Dibble Elementary School
18. Hunt Elementary School
19. Northeast Elementary School
20. JPS Montessori Center
21. Sharp Park IB World School
22. Middle School at Parkside and Fourth Street Learning Center
23. Jackson High School and Jackson Pathways
24. T. A. Wilson Academy

### Michigan Center Schools

25. Arnold Elementary School
26. Keicher Elementary School
27. Michigan Center Jr./Sr. High School

### Napoleon Community Schools

28. Ezra Eby Elementary School and Pirates Cove Pre-School and Child Care
29. Napoleon Middle School
30. Napoleon High School

31. Ackerson Lake High School and Community Center

### Northwest Community Schools

32. Northwest Early Elementary School
33. Northwest Elementary School
34. R.W. Kidder Middle School
35. Northwest High School
36. Northwest Alternate High School

### Springport Public Schools

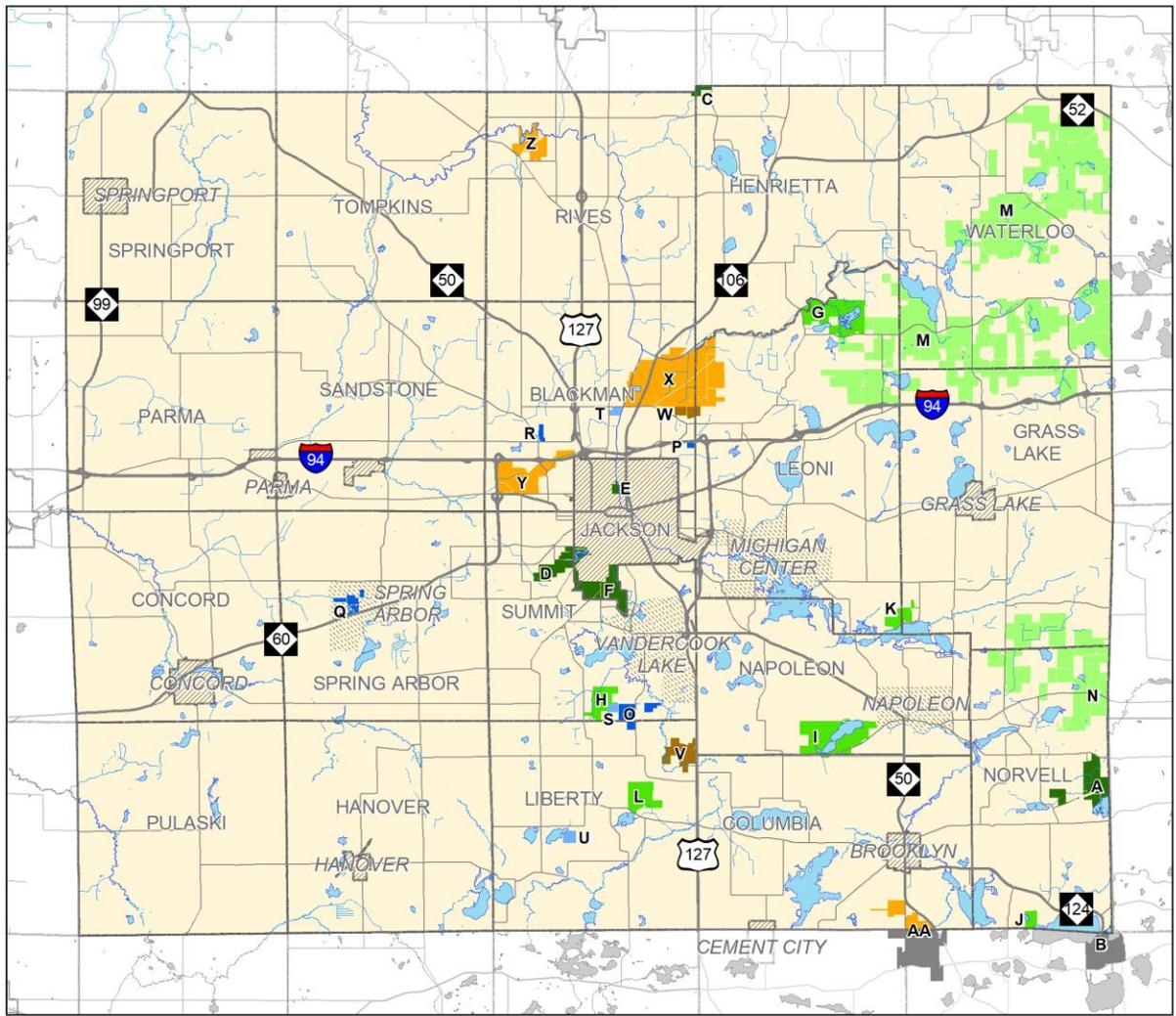
37. Springport Elementary, Middle, and High Schools

### Vandercook Lake Public Schools

38. Townsend Elementary School
39. Vandercook Lake Middle/High School

### Western School District

40. Bean Elementary School
41. Parma Elementary School
42. Warner Elementary School
43. Western Middle and High Schools
44. Western Career Prep High School



**Jackson County  
Master Plan**

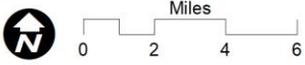


**Major  
Community  
Facilities**

**Legend**

- State, County, and City Parks
- Camps and Nature Preserves
- State Game & Recreation Areas
- Colleges
- Jackson County ISD
- Landfills
- Other Major Facilities
- Cities and Villages
- Census Designated Places

Map Date: 2/21/19



## Major Community Facilities

### State, County, and City Parks

- A. Watkins Lake State Park
- B. W.J. Hayes State Park
- C. Meridian Baseline State Park
- D. Sparks Foundation (Cascades) County Park
- E. James J. Keeley County Park (Jackson County Fairgrounds)
- F. Ella Sharp Park

### Camps and Nature Preserves

- G. Phyllis Haehnle Memorial Audubon Sanctuary
- H. Dahlem Center
- I. YMCA Storer Camps
- J. Camp O' the Hills (Girl Scouts of America)
- K. Camp Teetonkah (Boy Scouts of America)
- L. MacCredy Reserve (MSU)

### State Game and Recreation Areas

- M. Waterloo State Recreation Area
- N. Sharonville State Game Area

### Colleges

- O. Jackson College (Central Campus)
- P. Jackson College (W. J. Maher Campus)
- Q. Spring Arbor University
- R. Baker College

### Jackson County ISD (Intermediate School District)

- S. Jackson Area Career Center
- T. Tarrant and Kit Young Center
- U. Camp McGregor

### Landfills

- V. Liberty Landfill
- W. McGill Road Landfill

### Other Major Facilities

- X. State of Michigan Prisons
- Y. Jackson County Airport – Reynolds Field
- Z. Youth Haven
- AA. Michigan International Speedway

**Jackson County  
Master Plan**



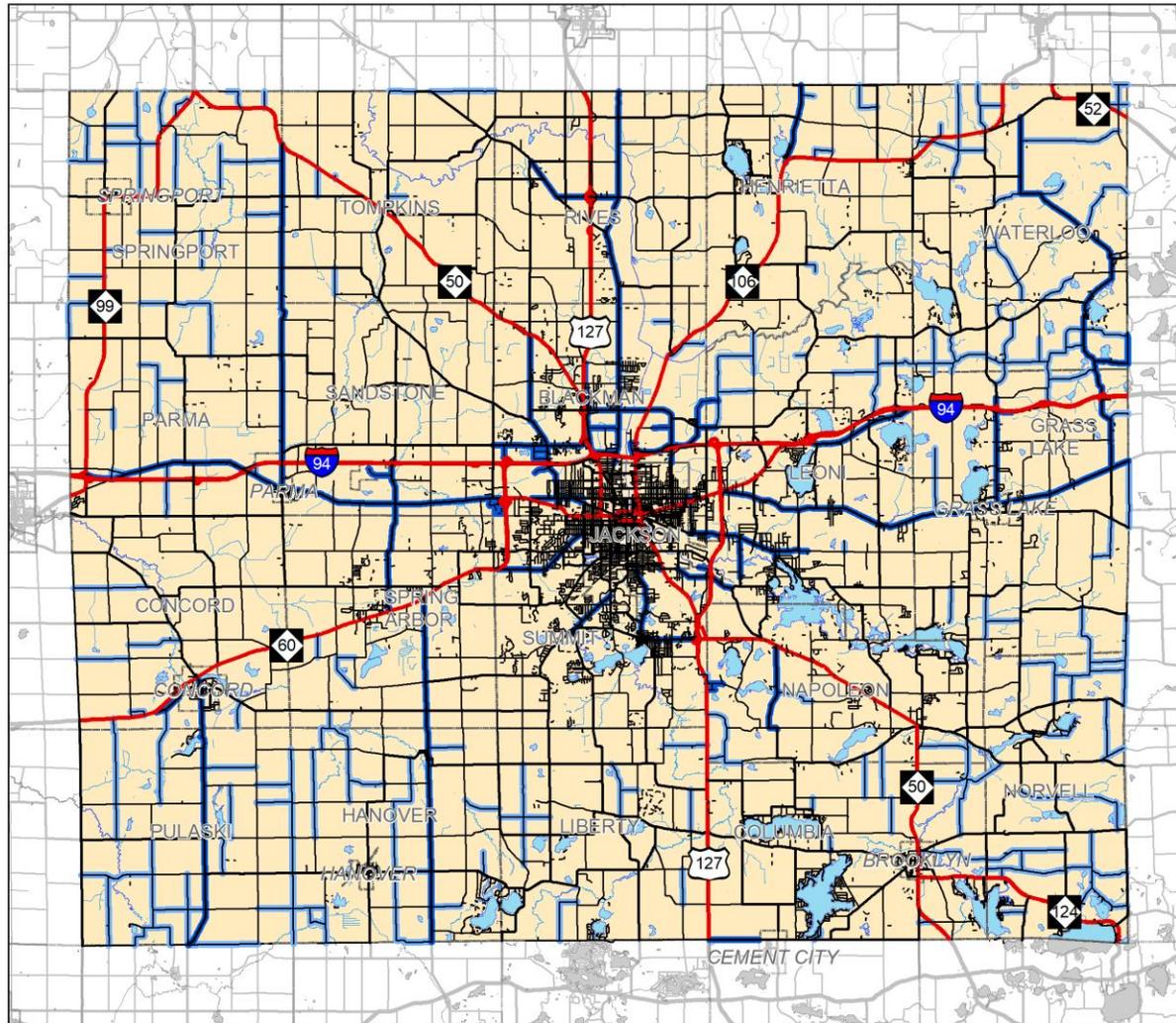
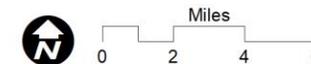
**Road Network**

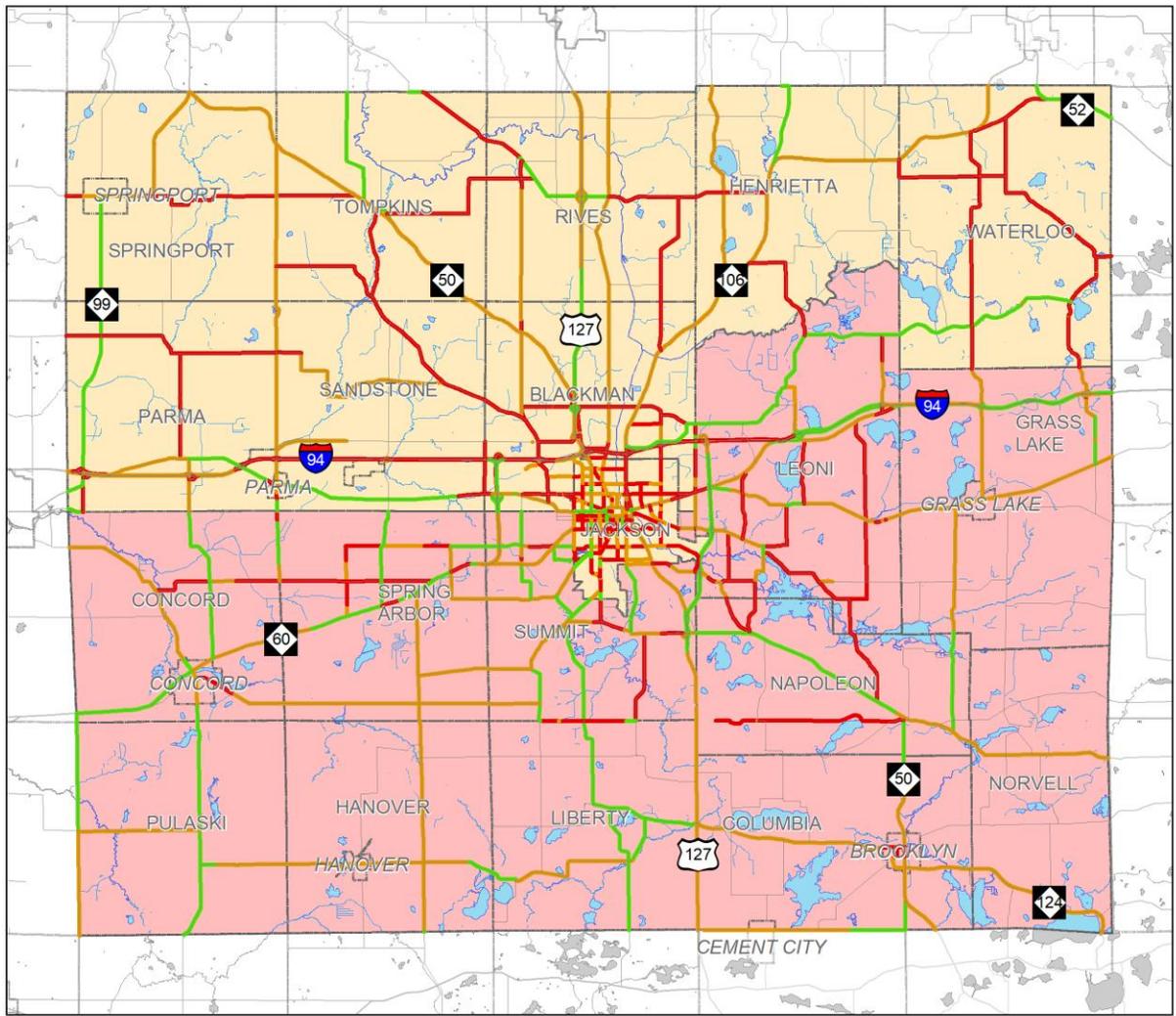
**Legend**

**Act 51 Classification**

- State Highways
- County Primary Roads
- County Local Roads
- - - - Private Roads
- All Season and Gravel Roads
- All Season Roads
- Gravel Roads

Map Date: 2/21/19





**Jackson County  
Master Plan**

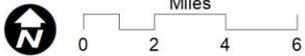


**Surface Conditions  
Federal-Aid Eligible Roads**

**Legend**

- Surface Conditions**
- Very Good or Excellent
- Fair or Good
- Poor or Very Poor
- Year of Survey**
- Area Surveyed in 2017
- Area Surveyed in 2018

Map Date: 2/21/19





**Jackson County  
Master Plan**

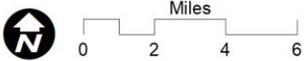


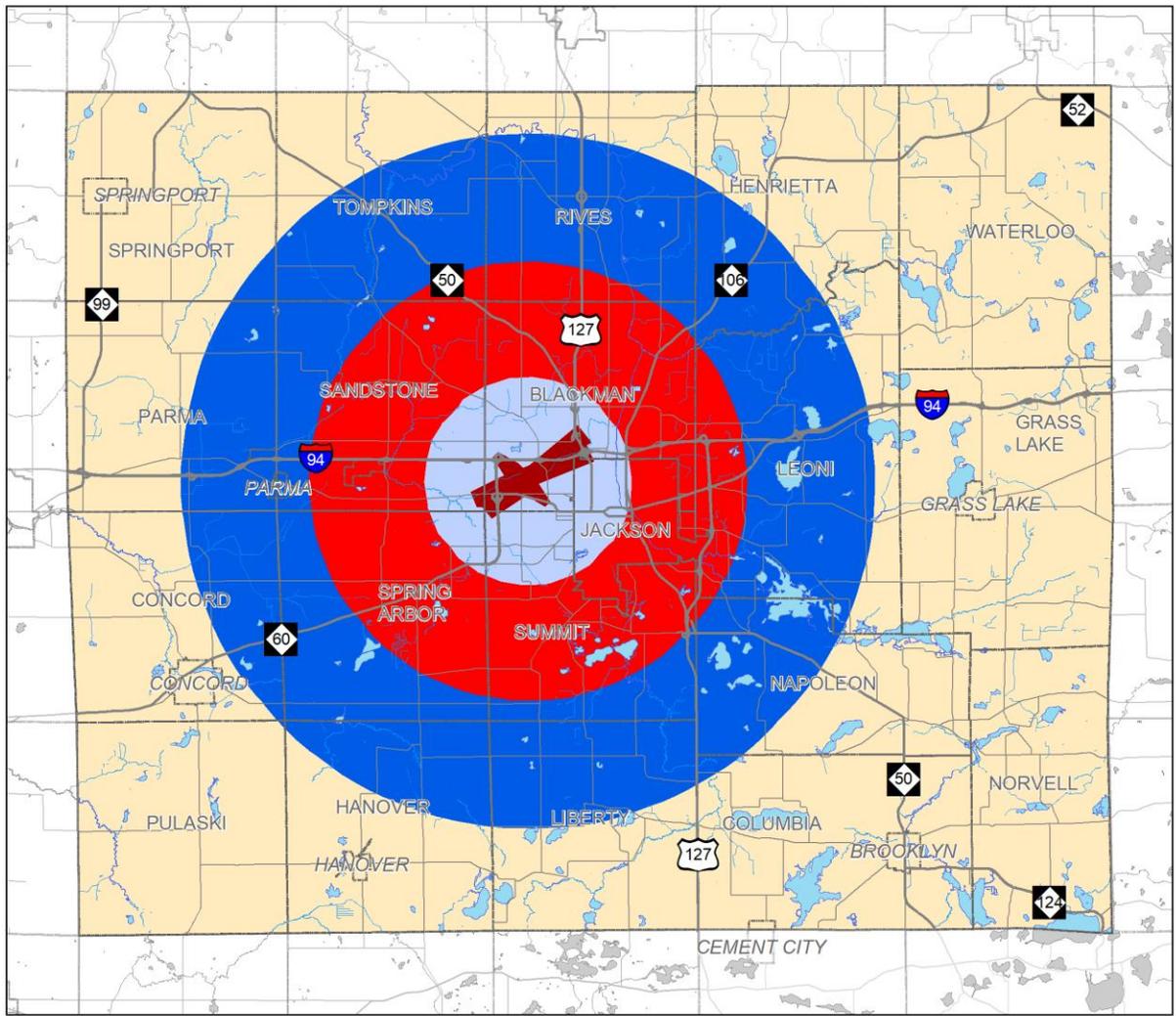
**Airports and  
Railroads**

**Legend**

- Airports**
- Jackson Co. Airport - Reynolds Field
- Other Airports
- Railroads**
- Norfolk Southern Railway
- Jackson and Lansing Railroad
- AMTRAK Route

Map Date: 2/21/19





**Jackson County  
Master Plan**



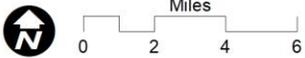
**Airport Permit Zones**

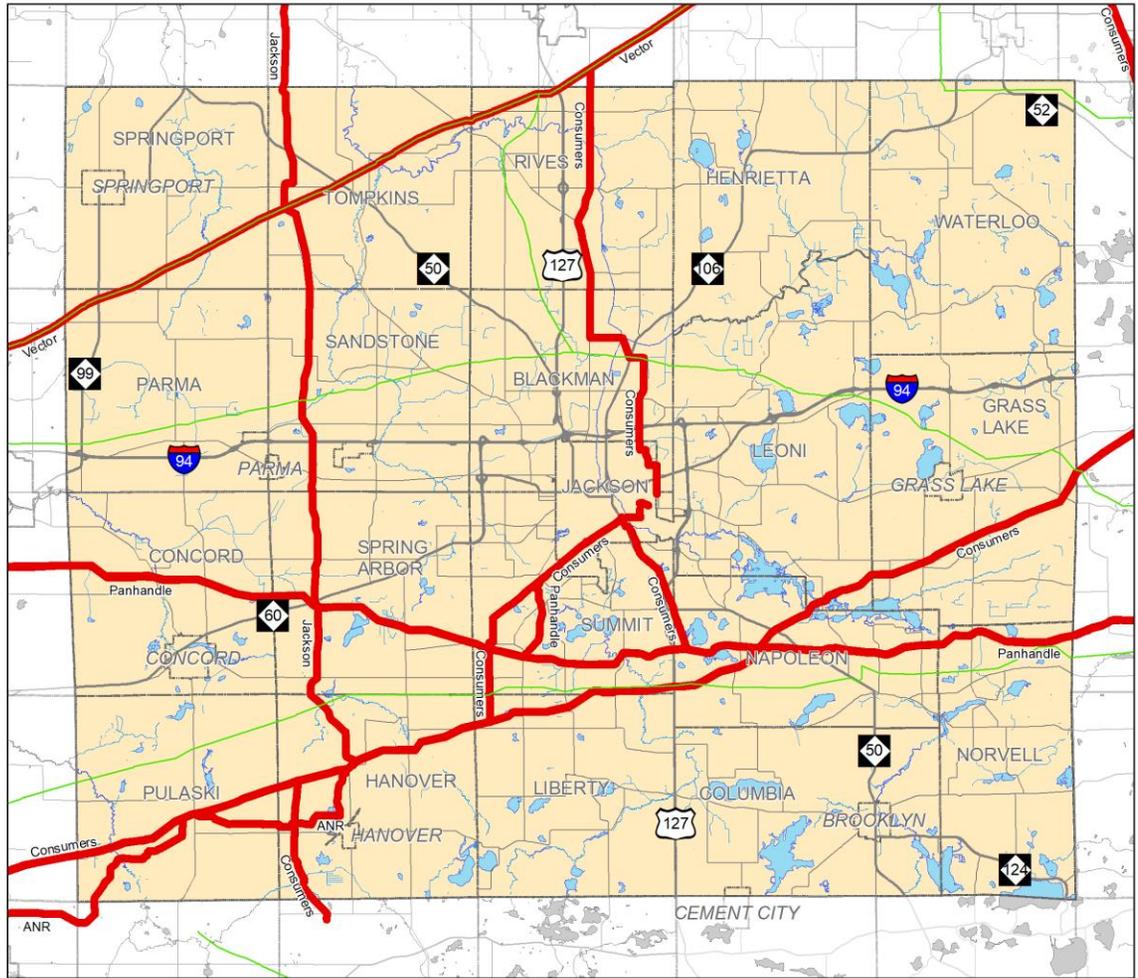
**Legend**

**Reynolds Field Permit Zones**

- Zone A -- Any Structure
- Zone B - Any Structure over 35 ft
- Zone C -- Any Structure over 100 ft.
- Zone D - Any Structure over 200 ft.

Map Date: 2/21/19





**Jackson County  
Master Plan**



**Gas Pipelines**

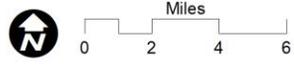
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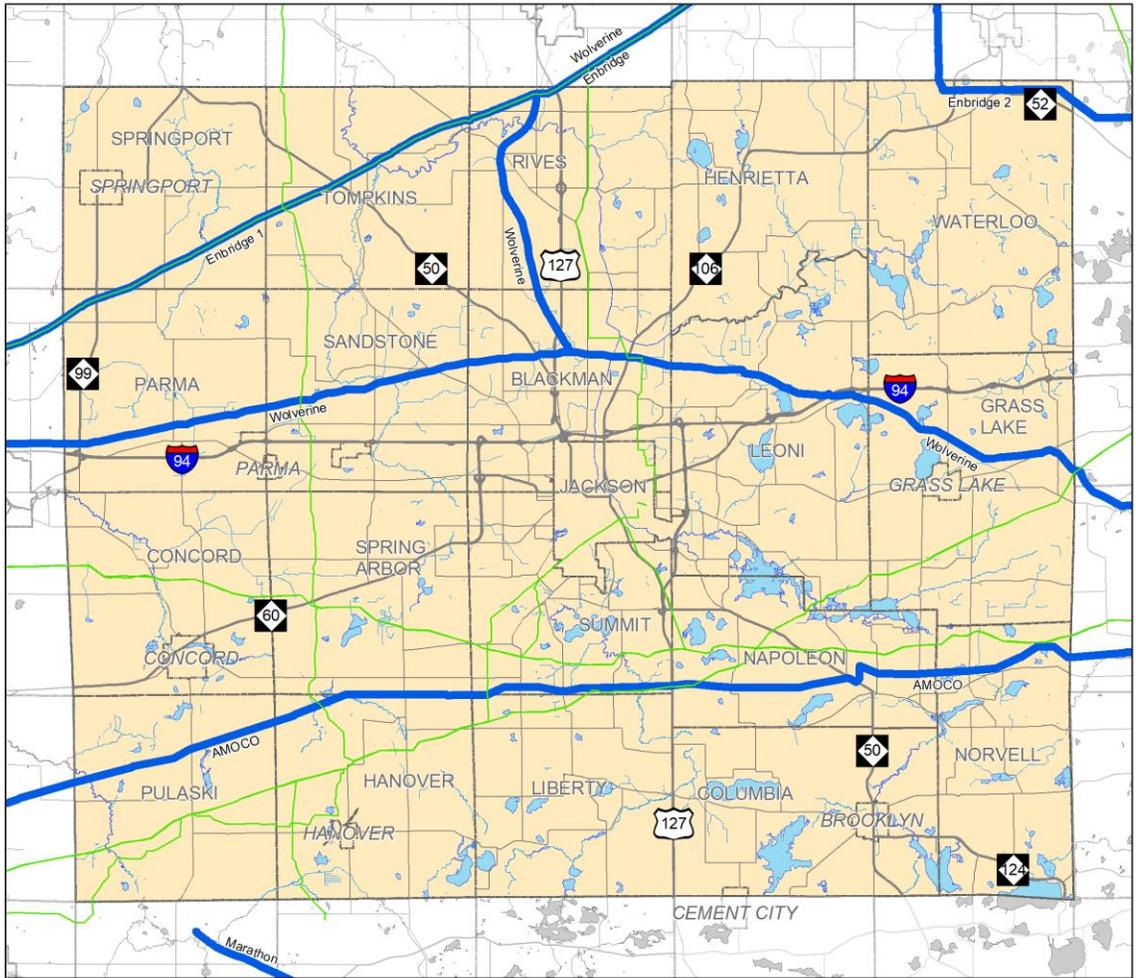
- Gas Pipelines
- Liquid Pipelines

**Ownership**

- AMOCO = Amoco Oil Co.
- ANR = ANR Pipeline
- Consumers = Consumers Energy Co.
- Enbridge 1 = Enbridge Energy Limited Partnership
- Enbridge 2 = Enbridge Pipelines (Toledo), Inc.
- Jackson = Jackson Pipeline Co.
- Marathon = Marathon Pipe Line, LLC
- Panhandle = Panhandle Eastern Pipeline Co.
- Vector = Vector Pipeline, L.P.
- Wolverine = Wolverine Pipeline Co.

Map Date: 3/13/19





**Jackson County  
Master Plan**



**Liquid Pipelines**

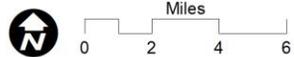
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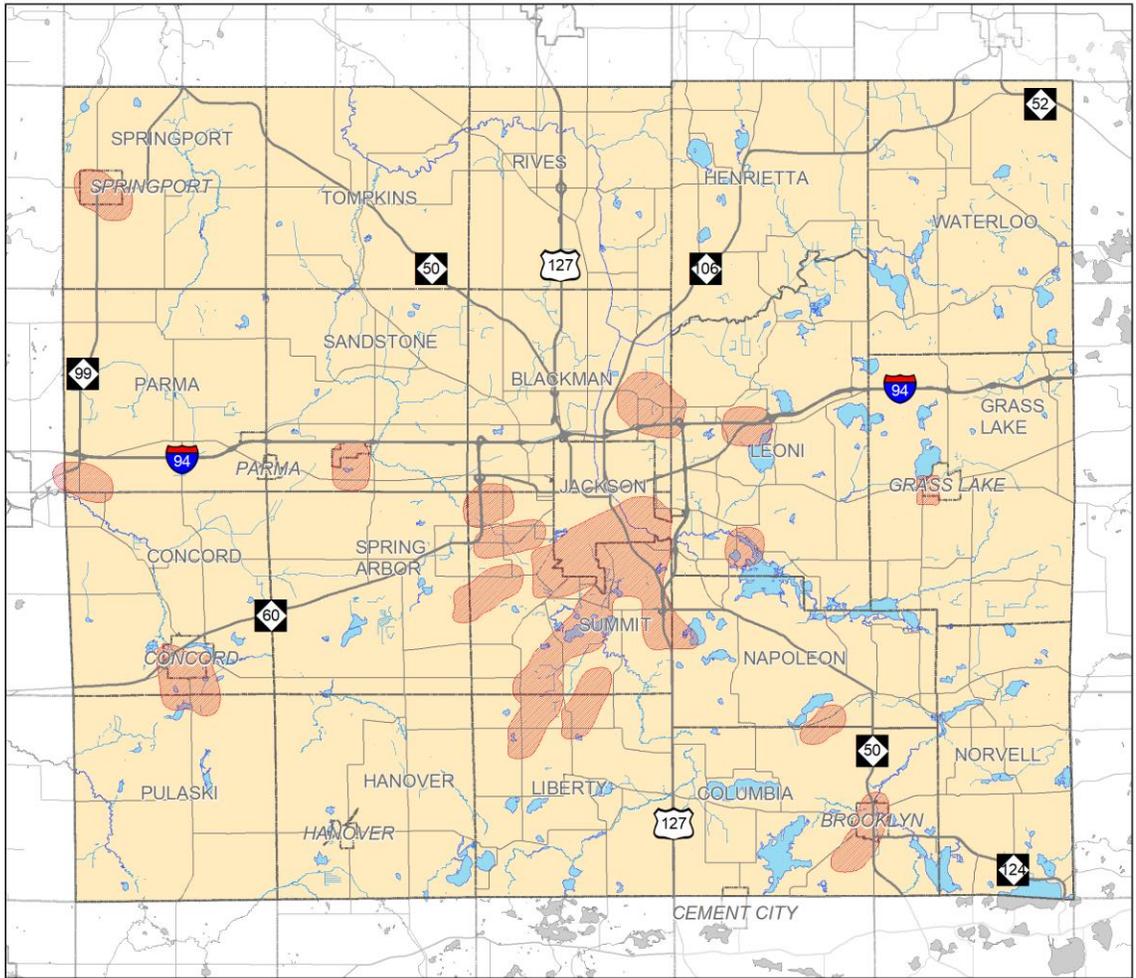
- Liquid Pipelines
- Gas Pipelines

**Ownership**

- AMOCO = Amoco Oil Co.
- ANR = ANR Pipeline
- Consumers = Consumers Energy Co.
- Enbridge 1 = Enbridge Energy Limited Partnership
- Enbridge 2 = Enbridge Pipelines (Toledo), Inc.
- Jackson = Jackson Pipeline Co.
- Marathon = Marathon Pipe Line, LLC
- Panhandle = Panhandle Eastern Pipeline Co.
- Vector = Vector Pipeline, L.P.
- Wolverine = Wolverine Pipeline Co.

Map Date: 3/13/19





**Jackson County  
Master Plan**

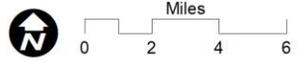


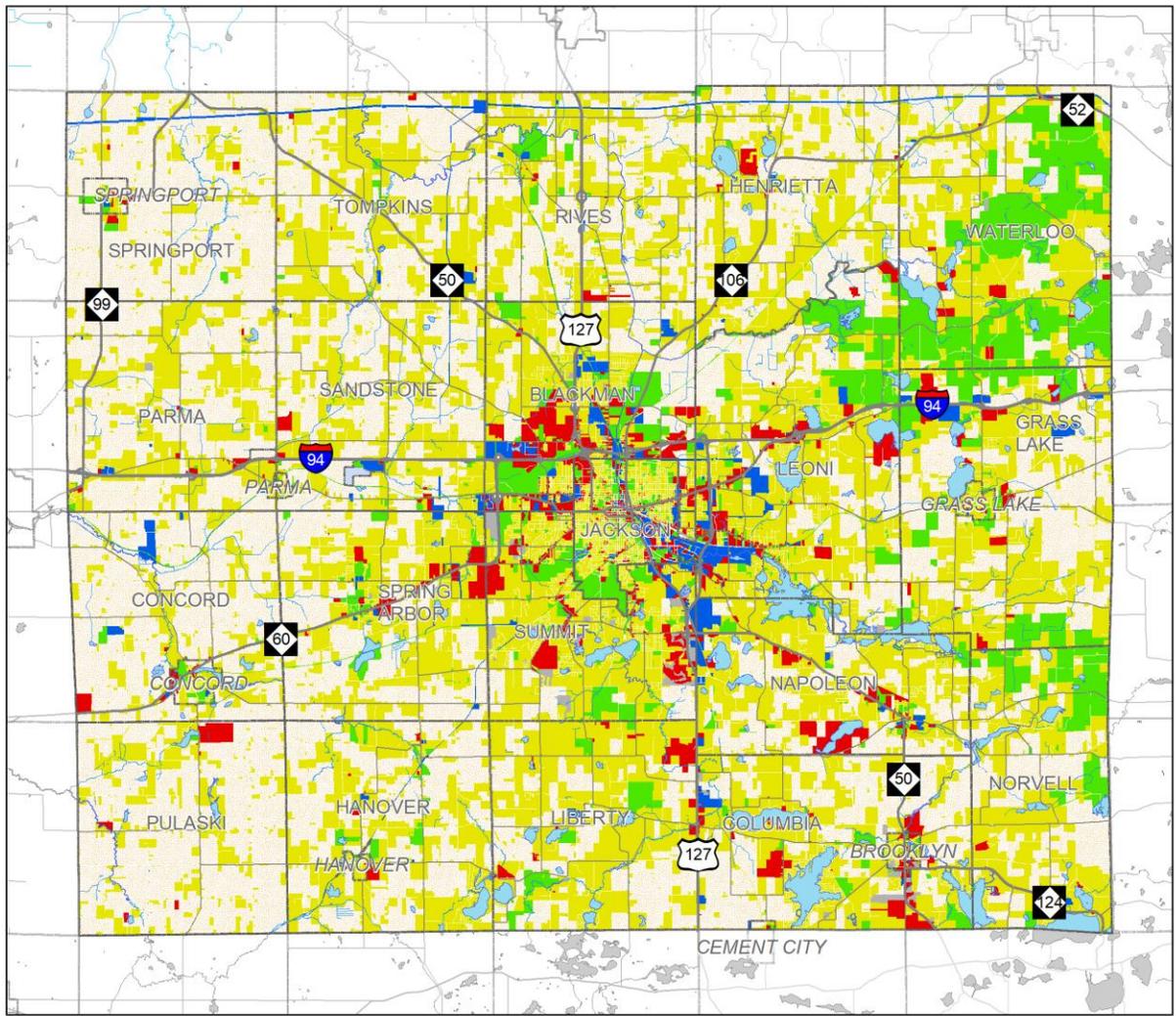
**Municipal Wellhead  
Protection Areas**

**Legend**

-  Municipal Wellhead Protection Areas

Map Date: 3/13/19





**Jackson County  
Master Plan**



**Property  
Assessment**

**Legend**

- Agricultural
- Residential
- Commercial
- Industrial
- Exempt
- Other

Map Date: 2/21/19  
Assessment Data Date: 1/11/19

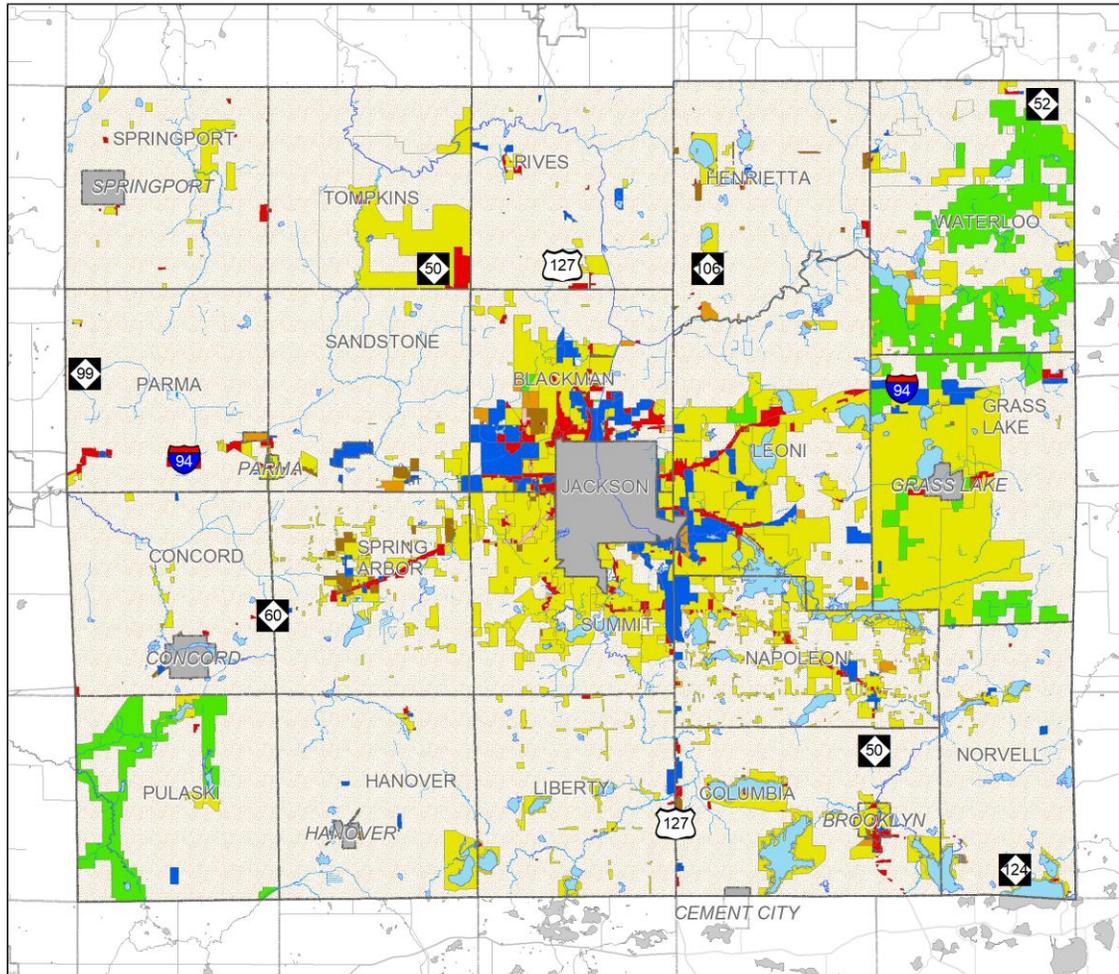


## Property Assessment

- An inventory of existing land use is an important factor in the development of a future land use map for Jackson County.
- Assessing data compiled by the city, villages, and townships was utilized to determine existing land use in December of 2018 as a substitute to a full existing land use survey.
- Assessors assigned a numeric code to each property as part of the assessment process which was then translated into a broad land use category.
- Using this process, Jackson County can be divided into various land use categories (see the Property Assessment map).
  - Approximately 46% of the County was comprised of agriculturally assessed properties.
  - Residentially assessed properties comprised approximately 40% of the County.
  - Approximately 3% of the County was comprised of commercially assessed properties. It should be noted that commercially assessed property include parcels used for fraternal societies, golf courses, and apartments with more than four units.
  - Industrially assessed properties comprised approximately 2% of the County.
  - Approximately 8% of the County was comprised of exempt (i.e., institutional) properties.
  - Other assessed properties comprised approximately less than a ½% of the County. The various assessment categories included under ‘other’ have no analogous land use category. For example, developmental property includes parcels with a market value in excess of its value in use.
- It should also be noted the entire county is not assessed (e.g., public rights-of-way, some water bodies, etc.). Consequently, those non-assessed land areas are not included in this analysis.

### 2018 Property Assessment Jackson County

Agricultural	46.2%
Residential	40.0%
Commercial	3.3%
Industrial	1.7%
Exempt (Institutional)	8.4%
Other	0.4%
<b>Total</b>	<b>100%</b>



**Jackson County  
Master Plan**



**Generalized  
Zoning Districts**

**Legend**

- Agricultural
- Residential
- Mobile Home Residential
- Multiple-Family Residential
- Office
- Commercial/Business
- Industrial
- Public/Recreation
- Not Mapped

Map Date: 4/4/19



Placeholder for *Recent New Construction*

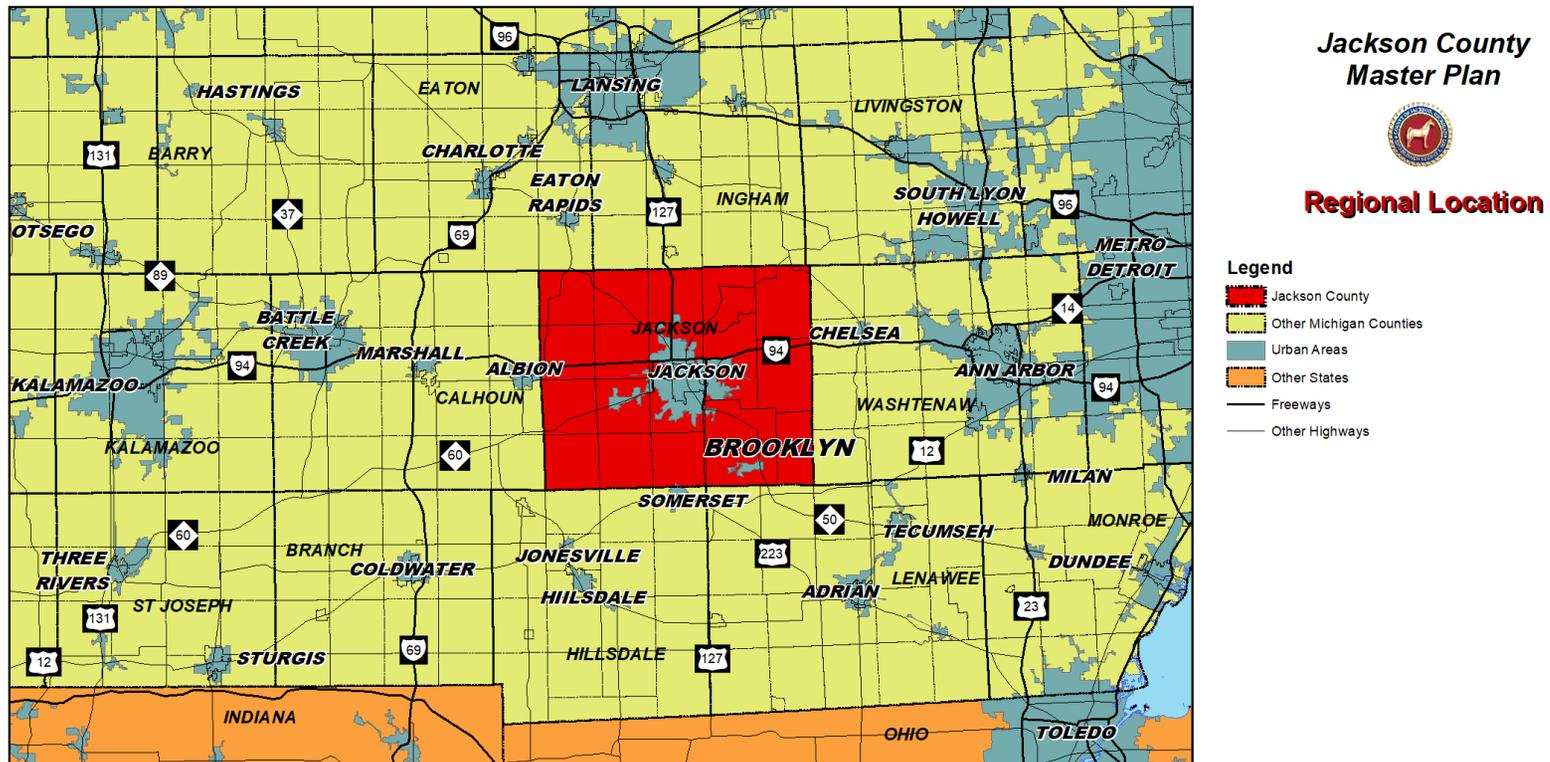
CHAPTER 2

**COMMUNITY DESCRIPTION AND ISSUE IDENTIFICATION**



## Regional Location

Jackson County is located in south-central Lower Michigan, northeast of border with the States of Indiana and Ohio. It is surrounded by Eaton and Ingham Counties to the north, Livingston County to the northeast, Washtenaw County to the east, Lenawee and Hillsdale Counties to the south, and Calhoun County to the west. The City of Jackson is the County Seat and the Jackson Urban Area is located in the center of the County. I-94 provides access to the Ann Arbor Metro Detroit Urban Areas to the east and the Battle Creek and Kalamazoo Urban Areas to the west. US-127 provides access to the Lansing Urban Area to the north and US-127/US-223 provides access to the Toledo Urban Area to the southeast.



## Municipalities and Places

Jackson County is comprised of 1 city, 7 villages, and 19 townships (see the Municipalities and Places map in Appendix X):

### City

- City of Jackson

### Villages

- Village of Brooklyn
- Village of Cement City
- Village of Concord
- Village of Grass Lake
- Village of Hanover
- Village of Parma
- Village of Springport

### Townships

- Blackman Township
- Columbia Township
- Concord Township
- Grass Lake Township
- Hanover Township
- Henrietta Township
- Leoni Township
- Liberty Township
- Napoleon Township

- Norvell township
- Parma Township
- Pulaski Township
- Rives Township
- Sandstone Township
- Spring Arbor Township
- Summit Township
- Summit Township
- Tompkins Township
- Waterloo Township

In addition to its municipalities, Jackson County also contains other places (see the Municipalities and Places map in Appendix X). The Jackson Urban Area encompasses the City of Jackson; significant portions of the Townships of Blackman, Leoni, Spring Arbor, and Summit; and also extends into the Townships of Napoleon and Rives. The Brooklyn Urban Cluster encompasses portions of the Village of Brooklyn and the north shore of Lake Columbia in Columbia Township. Jackson County also contains a variety of other unincorporated villages: Horton, Michigan Center, Munith, Napoleon, Norvell, Pulaski, Rives Junction, Spring Arbor, Vandercook Lake, and Waterloo.

## Population/Demographics

See Appendix A for detailed information on Jackson County’s population trends. However, the data contained in that appendix is summarized below:

- **General Population.** The population of Jackson County was 160,248 in 2010, according to the U.S. Census. It is projected that the population will grow to 164,796 by 2035 and the decrease slightly to 163,650 by 2045. The City of Jackson and the seven incorporated villages comprised 24% of the countywide population in 2010, down from 64% in 1930.

- **Age and Gender.** The median age of County residents was estimated to be 41.0 years in 2017, according to the American Community Survey [39.6 years statewide]. Generation X —people between 35 and 54 years of age in 2017— was estimated to be the largest age group, comprising an estimated 26% of residents [26% statewide]. Millennials —people between 15 and 34 years of age— were estimated to be the second largest age group, comprising an estimated 25% of residents [26% statewide]. Baby Boomers —people between 55 and 74 years of age— were estimated to be the third largest age group, comprising an estimated 24% of residents [23% statewide]. The iGeneration and younger —people 14 years of age and younger— was estimated to be the fourth largest age group, comprising an estimated 18% of residents [18% statewide]. The Silent Generation and older —people 75 years of age and older— was estimated to be the smallest age group, comprising an estimated 7% of residents [7% statewide]. Males comprised an estimated 51% of Jackson County’s population [49% statewide].
- **Race and Ethnicity.** The County has a fairly homogeneous population. An estimated 87% of Jackson County residents were white in 2017 [79% statewide]. An estimated 8% were black [14% statewide]. Native Americans, Asians, Native Hawaiians/Pacific Islanders and members of other races comprised 2% of the population [5% statewide]. Members of two or more races comprised an estimated 3% of the population [3% statewide]. Only an estimated 3% of residents considered themselves to be Hispanic (i.e., Latino/Latina) [5% statewide].
- **Disabilities.** An estimated 15% of County residents were disabled in some way in 2017 [14% statewide] and 8% had an ambulatory disability [8% statewide]. The rate of disability rises with age. For example, an estimated 47% of residents at least 75 years of age had some type of disability [49% statewide] and 30% had an ambulatory disability [32% statewide].
- **Educational Attainment.** An estimated 90% of the 109,293 Jackson County residents at least 25 years old in 2017 graduated from high school [90% statewide]. An estimated 31% had some type of college degree (i.e., associate’s, bachelor’s, or graduate) [37% statewide].
- **School Enrollment.** An estimated 46% of 38,295 County residents at least 3 years of age and enrolled in school in 2017 attended elementary school (i.e., grades K-8) [44% statewide]. An estimated 22% attended high school [21% statewide]. An estimated 6% attended nursery school [6% statewide]. An estimated 25% attended college or graduate school [29% statewide].
- **Households and Families.** Most residents lived in the estimated 61,418 Jackson County households in 2017. Families comprised an estimated 66% of households [65% statewide]. However, an estimated 29% of households consisted of a single person [29% statewide]. Other non-family households comprised an estimated 5% of households [6% statewide]. The estimated size of the average household

was 2.43 people [2.49 statewide] and the average family size was 2.98 people [3.08 statewide]. An estimated 6% of the population lived in group quarters [2% statewide].

- **Income and Poverty.** The County's median household income in 2017 was estimated to be \$49,715 [\$52,688 statewide]. The median family income was \$61,359 [\$66,653 statewide] and the median non-family income was \$29,676 [\$31,333 statewide]. The per capita income was \$25,952 [\$28,938 statewide]. An estimated 15% of the 148,916 people for whom the poverty status was determined lived in poverty [16% statewide]. An estimated 25% of residents less than 18 years old lived in poverty [22% statewide]. An estimated 14% of residents between the ages of 18 and 64 lived in poverty [15% statewide]. An estimated 6% of residents 65 years or older lived in poverty [8% statewide].
- **Employment by Industry.** An estimated 24% of the 67,486 employed County residents at least 16 years old in 2017 worked in the educational services and healthcare and social assistance industry [24% statewide]. An estimated 19% were employed in the manufacturing industry [18% statewide]. An estimated 12% worked in the retail trade industry [11% statewide]. Each of the other industries employed less than 10% of residents.
- **Employment by Occupation.** An estimated 31% of the 67,486 employed Jackson County residents at least 16 years old in 2017 were employed in management, business, science, and arts occupations [36% statewide]. An estimated 24% worked in sales and office occupations [23% statewide]. An estimated 19% worked in service occupations [18% statewide]. An estimated 18% were employed in production, transportation, and material moving occupations [16% statewide]. An estimated 8% worked in natural resources, construction, and maintenance occupations [8% statewide].
- **Means of Travel to Work.** Of the 66,605 employed Jackson County residents at least 16 years old in 2017, an estimated 84% drove alone [83% statewide]. An estimated 9% of workers carpooled [9% statewide]. An estimated 4% of workers used some other form of transportation [5% statewide]. An estimated 3% of workers worked at home [4% statewide].
- **Travel Time to Work.** Of the 64,326 employed County residents at least 16 years old in 2017 who commuted to work, an estimated 37% had a commute time of 15-29 minutes [38% statewide]. An estimated 18% had a commute time of 10-14 minutes [15% statewide]. An estimated 15% had a commute time of 60-89 minutes [16% statewide]. An estimated 13% had a commute time of 5-9 minutes [11% statewide]. An estimated 12% had a commute time of 30-59 minutes [15% statewide]. An estimated 3% had a commute time of less than 5 minutes [3% statewide]. An estimated 2% had a commute time at least 90 minutes [2% statewide].

- **Dwellings and Vacancy Rates.** It is estimated that the County contained 69,438 dwellings in 2017. An estimated 89% were occupied [85% statewide]. An estimated 3% was used seasonally or occasionally [6% statewide]. An estimated <1% were used to house migrant workers [<1% statewide]. The remaining estimated 8% were vacant [8% statewide].
- **Housing Types.** It is estimated that 78% of Jackson County's 69,438 dwellings in 2017 were single-family homes [77% statewide]. Approximately 16% of units were estimated to be located in multi-unit buildings [18% statewide]. An estimated 6% of dwellings were mobile homes [5% statewide].
- **Housing Costs.** It is estimated that 25% of the County's 27,939 owner-occupied households with a mortgage in 2017 spent at least 30% of household income on housing [25% statewide]. An estimated 12% of Jackson County's 16,993 owner-occupied households without a mortgage spent at least 30% of household income on housing [15% statewide]. It is also estimated that 52% of the County's 15,259 renter-occupied households spent at least 30% of household income on housing [50% statewide].

## Natural Resources

A variety of natural resources are pertinent to land use planning in Jackson County.

### Topography

Jackson County's topography can be described as gently rolling, moderately hilly morainal uplands. Elevations range from approximately 886 to 1,178 feet above sea level (see the Topography map in Appendix X).

Topographic limitations to development are mainly due to slope. Steeply sloped areas pose development constraints for land use because of practical difficulties and the cost of construction. Land development on steeply sloped areas also increases runoff and non-point pollution loads which have a negative impact on water quality.

The vast majority of land area in the County has a slope from 0% to 8%, which can be described as gently sloping. These types of slopes are suitable for all types of development and there is relatively little sediment runoff associated with development. The County does have numerous small areas with slopes from 8% to 16% which are categorized as "moderately sloping". These areas are often suitable for limited residential development. Caution is required in these moderately sloping areas because disturbed soils may result in erosion which increase sediment loads and therefore, negatively affect surface water quality. Very few areas in Jackson County have slopes which exceed 16%.

Jackson County's highest elevations appear in the Hanover Township area and in a few scattered locations between Waterloo and Grass Lake Townships along a ridgeline extending in an east/west direction. The lowest elevations in the County are at the location where the Grand River exits the County in Tompkins Township. Lands in the County form a drainage divide with the areas in the northern and western parts of the County draining to Lake Michigan through the Grand River and Kalamazoo River Watersheds, and the southeast area of the County draining to Lake Erie through the River Raisin Watershed.

### Surface Waters

Jackson County's lakes, ponds, rivers, streams, and wetlands are features of the County which attract population and contribute to quality of life for County residents.

- **Watersheds.** The area of Jackson County includes parts of four Michigan Watersheds (see the Watersheds map in Appendix X). The largest of these, the Upper Grand River Watershed, provides drainage to most of Jackson County including the City of Jackson. The southwest part of Jackson County is drained by the Kalamazoo River Watershed. This area includes all of Concord and Pulaski Townships, and most of the townships of Hanover and Parma with portions of Spring Arbor Township and Springport Township. Both the Grand River and Kalamazoo River Watersheds drain to Lake Michigan. The southeast corner of Jackson County drains into the River Raisin Watershed. Most of Norvell and Columbia Townships are included in the watershed area and parts of Napoleon and Grass Lake. The River Raisin drains to Lake Erie. Very small portions of Waterloo and Grass Lake Townships are included in the Huron River Watershed which also drains to Lake Erie. A watershed council has been established for each of the watersheds and they have engaged in watershed management planning. Links to the websites for the councils follow:
  - Upper Grand River Watershed Council – [www.uppergrandriver.org](http://www.uppergrandriver.org)
  - River Raisin Watershed Council – [www.riverraisin.org](http://www.riverraisin.org)
  - Kalamazoo River Watershed Council – [kalamazooriver.org](http://kalamazooriver.org)
  - Huron River Watershed Council – [www.hrwc.org](http://www.hrwc.org)
- **Lakes, Ponds, Rivers, and Streams.** Jackson County has 188 bodies of water, including lakes and ponds, which attract residential development (see the Lakes, Ponds, rivers and Streams map in Appendix X). Consequently, most of the natural areas which surrounded lakes have been replaced with development. As a result, the riparian buffers which help to maintain water quality have been eliminated. For example, several area lakes were quickly developed with summer cottages. In recent times many of these cottages have been converted to year-round dwellings, or, demolished to be replaced by new year-round dwellings. These areas have their own unique set of

challenges. Many of the subdivisions surrounding lakes were comprised of small lot areas. As a result, high densities of dwelling units are located around many of the lakes. Cottages in these areas were served by private wells and septic tanks. In many lakes the water quality was affected by on-site sewage disposal. Several of the lakes are now served by sanitary sewer. Most of the lakes, and lakeside development, are located in the eastern half of Jackson County.

In addition to Jackson County's lakes and ponds, there are 679 miles of rivers and streams within the County's borders (see the Lakes, Ponds, rivers and Streams map in Appendix X). They have value for the recreational use, wildlife, their drainage function, and are an important component of Jackson County's unique natural system. Rivers and streams in Jackson County are in the head waters of the four watersheds noted above. The Grand River, flows north from Liberty Township, through the City of Jackson, and exits into Ingham County from Tompkins Township; the Portage River flows west from Waterloo Township into the Grand River in Blackman Township. The River Raisin flows northeast from Lenawee County into Columbia Township through the Village of Brooklyn, and exits into Washtenaw County from Norvell Township. The North Branch of the Kalamazoo River flows west from Concord Township, through the Village of Concord, and exits into Calhoun County. The South Branch of the Kalamazoo River flow northwest from Pulaski Township and exits into Calhoun County.

- **Flood Zones and Wetlands.** Flood zones have been established in Jackson County by the Federal Emergency Management Agency (FEMA). A 100-year flood zone is defined by FEMA as an area having a 1-percent chance of being flooded in any given year. A 500-year flood zone is defined by FEMA as the area having a 0.2-percent-annual-chance of being flooded. Flood zones are associated with the rivers and streams flowing through Jackson County as well as some of its lakes, and ponds (see the Flood Zones and Wetlands map in Appendix X). Wetlands in the County have been delineated by the National Wetlands Inventory (NWI). Numerous small wetlands exist in a scattered fashion, and larger wetland areas associated with surface water and drainage systems meander through the County (see the Flood Zones and Wetlands map in Appendix X).

## Soils

Soils that are agriculturally productive and those that poorly drained and subject to flooding are important to identify:

- **Hydric Soils.** Soil types that are poorly drained and subject to occasional flooding (i.e., hydric) have been identified by the Natural Resources Conservation Service (NRCS). Hydric soils are often located in the vicinity of the County's lakes, ponds, rivers, streams, and wetlands as well as other low-lying areas (see the Hydric Soils map in Appendix X).

- **Most Productive Agricultural Soils.** Soil types that are the most agriculturally productive in Jackson County have been identified, taking into consideration prime farmland, as identified by the Natural Resources Conservation Service (NRCS), and average yields for various crops. Most of the productive agricultural soils are located in the western half of Jackson County, and these soils are generally scattered about rather than unified in large areas of contiguous soils (see the Most Productive Agricultural Soils map in Appendix X). Relatively few areas of prime farmland may be found in Summit Township and townships to the east including Grass Lake, Leoni, Napoleon, Norvell, and Waterloo.