Jefferson County
Land Information Plan
2022-2024

**Wisconsin Land Information Program
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EXECUTIVE SUMMARY

About this Document. This document is a land information plan for Jefferson County prepared by the land information officer (LIO) and the Jefferson County land information council. Under state statute 59.72(3)(b), a "**countywide plan for land records modernization**" is required for participation in the Wisconsin Land Information Program (WLIP). The purpose of this document is twofold: 1) to meet WLIP funding eligibility requirements necessary for receiving grants and retaining fees for land information, and 2) to plan for county land records modernization in order to improve the efficiency of government and provide improved government services to businesses and county residents.

WLIP Background. The WLIP, administered by the Wisconsin Department of Administration, is funded by document recording fees collected by register of deeds at the county-level. In 2020, Jefferson County was awarded $43,648 in WLIP grants and retained a total of $153,096 in local register of deeds document recording fees for land information.

This plan lays out how funds from grants and retained fees will be prioritized. However, as county budgets are determined on an annual basis with county board approval, this plan provides estimated figures that are subject to change and are designed to serve planning purposes only.

Land Information in Jefferson County. Land information is central to county operations, as many essential services rely on accurate and up-to-date geospatial data and land records. A countywide land information system supports economic development, emergency planning and response, and a host of other citizen services. The Jefferson County land information system integrates and enables efficient access to information that describes the physical characteristics of land, as well as the property boundaries and rights attributable to landowners.

Mission of the Land Information Office. In the next three years, Jefferson County's Land Information Office strives to be recognized for its exceptional webmapping site, gains in governmental efficiencies by broadening the utilization of GIS, improvements in parcel mapping accuracy, and responsiveness to meeting the land records needs of residents, businesses, internal and external stakeholders.

Land Information Office Projects. To realize this mission, in the next three years, the county Land Information Office will focus on the following projects:

Badger County Land Information Projects: 2022-2024	
Project Plan	**Maintain Searchable Format**
Project Plan	**Maintain PLSS**
Project #1	**Back Indexing of ROD Documents**
Project #2	**Develop Activity/Department Focused GIS Websites**
Project #3	**Mobile GIS and Data Collection**
Project #4	**Update County-wide Orthoimagery**
Project #5	**Map County Parks and Facilities**
Project #6	**Develop Digital Maps/Story Maps of County Park System**
Project #7	**Update NR151 Tracking Database**
Project #8	**Convert County Data to Meet State/Federal NexGen 911 Standards**
Project #9	**Link PIN to Legal Description and Address in ROD System**
Project #10	**Implement Open Data Platform**
Project #11	**Update and Upgrade web-based GIS**
Project #12	**Provide Support for Redistricting**

Project #13	**Development of Department Specific GIS Layers and Inventory of Existing Data**
Project #14	**Development and Maintenance of Metadata**
Project #15	**Transition from ArcMap to ArcPro**
Project #16	**Update and Maintain Land Records Software and Application Development**
Project #17	**Enhance and Extract Current LiDAR/Elevation Data**
Project #18	**Update County Pictometry**

The remainder of this document provides more details on Jefferson County and the WLIP, summarizes current and future land information projects, and reviews the county's status in completion and maintenance of the map data layers known as Foundational Elements.

1 INTRODUCTION

In 1989, a public funding mechanism was created whereby a portion of county register of deeds document recording fees collected from real estate transactions would be devoted to land information through a new program called the Wisconsin Land Information Program (WLIP). The purpose of the land information plan is to meet WLIP requirements and aid in county planning for land records modernization.

The WLIP and the Land Information Plan Requirement

In order to participate in the WLIP, counties must meet certain requirements:

- Update the county's land information plan at least every three years
- Meet with the county land information council to review expenditures, policies, and priorities of the land information office at least once per year
- Report on expenditure activities each year
- Submit detailed applications for WLIP grants
- Complete the annual WLIP survey
- Subscribe to DOA's land information listserv
- Coordinate the sharing of parcel/tax roll data with the Department of Administration in a searchable format determined by DOA under s. 59.72(2)(a)

LAND INFORMATION

Any physical, legal, economic or environmental information or characteristics concerning land, water, groundwater, subsurface resources or air in this state.

'Land Information' includes information relating to topography, soil, soil erosion, geology, minerals, vegetation, land cover, wildlife, associated natural resources, land ownership, land use, land use controls and restrictions, jurisdictional boundaries, tax assessment, land value, land survey records and references, geodetic control networks, aerial photographs, maps, planimetric data, remote sensing data, historic and prehistoric sites and economic projections.

– Wis. Stats. section 59.72(1)(a)

Any grants received and fees retained for land information through the WLIP must be spent consistent with the county land information plan.

Act 20 and the Statewide Parcel Map Initiative

A major development for the WLIP occurred in 2013 through the state budget bill, known as Act 20. It directed the Department of Administration (DOA) to create a statewide digital parcel map in coordination with counties.

Act 20 also provided more revenue for WLIP grants, specifically for the improvement of local parcel datasets. The WLIP is dedicated to helping counties meet the goals of Act 20 and has made funding available to counties in the form of Strategic Initiative grants to be prioritized for the purposes of parcel/tax roll dataset improvement.

For Strategic Initiative grant eligibility, counties are required to apply WLIP funding toward achieving certain statewide objectives, specified in the form of "benchmarks." Benchmarks for parcel data—standards or achievement levels on data quality or completeness—were determined through a participatory planning process. Current benchmarks are detailed in the WLIP grant application, as will be future benchmarks.

WLIP Benchmarks (For 2016-2021 Grant Years)

- Benchmark 1 & 2 – Parcel and Zoning Data Submission/Extended Parcel Attribute Set Submission
- Benchmark 3 – Completion of County Parcel Fabric
- Benchmark 4 – Completion and Integration of PLSS

More information on how Jefferson County is meeting these benchmarks appears in the Foundational

Elements section of this plan document.

County Land Information System History and Context

The Jefferson County Board of Supervisors formed the Land Information Office by Resolution 90-22 on June 12, 1990. The statutory Land Information Office duties include coordinating land information projects, developing a County-wide Land Information Plan, and reviewing and recommending projects from local units of government for Wisconsin Land Information Board grants. Resolution 90-22 also established a Land Information Advisory Committee which up until recently guided the development and implementation of the County-wide Land Information System.

The 2009 Wisconsin Act 314 required counties to form a Land Information Council to remain eligible for participation in the Land Record Modernization Program. Pursuant to Wisconsin Statute 59.72 (3m) the County Board formed the Jefferson County Land Information Council with the adoption of Ordinance 2010-09 on July 13, 2010. The Land Information Council shall review the priorities, needs, policies, and expenditures of the Land Information Office and advise the County on matters affecting the Land Information Office.

The Land Information Council works in an advisory capacity to the Jefferson County Planning and Zoning Committee and the County Board of Supervisors. Land Information Office submits policies developed by the Council to the Planning and Zoning Committee for review and recommendation to the County Board for official action.

The Jefferson County Board of Supervisors first adopted a Land Information Plan in 1992. The County revised the plan in 2000, 2005, 2011, 2016 and 2019. The Land Information Council must approve final Land Information Plan and document that approval in the final submission of the plan to DOA. County Board approval of Land Information Plans is encouraged, but not required.

Jefferson County has accomplished many of the goals and objectives outlined in 1992, 2000, 2005, 2011, 2016 and 2019 Land Information Plans. Notable projects completed included: County High Precision Geodetic Control Network, Digital Parcel Mapping, Digital Soils Survey, Digital Zoning Mapping, Digital Land Use Mapping, Zoning Permit Tracking, Document Imaging of Register of Deeds and many other land records, Public Access Interface to Geographic Information System (GIS) Layers. In most recent years, Light Detection and Ranging (LiDAR) Terrain Mapping, updates to Land Records Search and Interactive GIS websites.

County Land Information Plan Process

County land information plans were initially updated every five years. However, as a result of Act 20, counties must update and submit their plans to DOA for approval every three years. The 2022-2024 plan, completed at the end of 2021, is the third post-Act 20 required update.

County Land Information Plan Timeline

- DOA release of finalized instructions by March 31, 2021.
- April – June: County complies a draft Plan with prioritized goals and projects
- July: Land Information Council reviews and comments on draft plan
- July: Draft plan submitted to DOA, prior to the September 30, 2021 due date
- September: DOA comments addressed and final edits completed
- October: Land Information Council reviews and approves plan
- October 25: Planning and Zoning Committee reviews and recommends approval of the plan to the County Board
- November 9: Jefferson County Board of Supervisors review and adopt the Land Information Plan
- Final adopted plan submitted to DOA

Plan Participants and Contact Information

Another requirement for participation in the WLIP is the county land information council, established by legislation in 2010. The council is tasked with reviewing the priorities, needs, policies, and expenditures of a land information office and advising the county on matters affecting that office.

According to s. 59.72(3m), Wis. Stats., the county land information council is to include:

- Register of Deeds
- Treasurer
- Real Property Lister or designee
- Member of the county board
- Representative of the land information office
- A realtor or member of the Realtors Association employed within the county
- A public safety or emergency communications representative employed within the county
- County surveyor or a registered professional land surveyor employed within the county
- Other members of the board or public that the board designates

The land information council must have a role in the development of the county land information plan, and DOA requires county land information councils to approve final plans.

This plan was prepared by the county LIO, Planning and Zoning Director, the Jefferson County Land Information Council, and others as listed below.

Jefferson County Land Information Council and Plan Workgroup

Name	Title	Affiliation	Email	Phone
*Staci Hoffman	Register of Deeds	Jefferson County Register of Deeds Office	stacih@jeffersoncountywi.gov	920-674-7235
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*Tracy Saxby	Real Property Lister/LIO	Jefferson County Land Information Office	tracys@jeffersoncountywi.gov	920-674-7254
*Steve Nass	County Board Member	Jefferson County Board	steven@jeffersoncountywi.gov	920-648-8513
*Joanne Larson	Realtor Representative	Wayne Hayes Real Estate	waynehayesre@compufort.com	920-723-0199
*Todd Lindert	Communications Supervisor	Jefferson County Sheriff's Office	toddl@jeffersoncountywi.gov	920-674-7310
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Gerald Kokkonen	GIS & Land Use Specialist,	Jefferson County Land and Water Conservation	geraldk@jeffersoncountywi.gov	920-674-7117

* Land Information Council Members designated by the plus symbol

2 FOUNDATIONAL ELEMENTS

Counties must have a land information plan that addresses development of specific datasets or map layer groupings historically referred to as the WLIP Foundational Elements. Foundational Elements incorporate nationally-recognized "Framework Data" elements, the major map data themes that serve as the backbone required to conduct most mapping and geospatial analysis.

FOUNDATIONAL ELEMENTS

PLSS
Parcel Mapping
LiDAR and Other Elevation Data
Orthoimagery
Address Points and Street Centerlines
Land Use
Zoning
Administrative Boundaries
Other Layers

In the past, Foundational Elements were selected by the former Wisconsin Land Information Board under the guiding idea that program success is dependent upon a focus for program activities. Thus, this plan places priority on certain elements, which must be addressed in order for a county land information plan to be approved. Beyond the county's use for planning purposes, Foundational Element information is of value to state agencies and the WLIP to understand progress in completion and maintenance of these key map data layers.

PLSS

Public Land Survey System Monuments

Layer Status

PLSS Layer Status	
	Status/Comments
Number of PLSS corners (selection, ¼, meander) **set in original government survey** that can be remonumented in your county	• Approximately 2,100 • Many of the meander corners are permanently inundated by the surface water or otherwise inaccessible
Number of PLSS corners capable of being remonumented in your county that **have been remonumented**	• 1912 or 91%
Number of remonumented PLSS corners with survey grade coordinates (see below for definition) • **SURVEY GRADE** – coordinates collected under the direction of a Professional Land Surveyor, in a coordinate system allowed by 236.18(2), and obtained by means, methods and equipment capable of repeatable 2 centimeter or better precision • **SUB-METER** – point precision of 1 meter or better • **APPROXIMATE** – point precision within 5 meters or coordinates derived from public records or other relevant information	• Approximately 1015 – 53%
Number of survey grade PLSS corner coordinates integrated into county digital parcel layer	• Approximately 1015 – 53%
Number of non-survey grade PLSS corner coordinates integrated into county digital parcel layer	• Approximately 897 - 47%
Tie sheets available online?	• Yes
Percentage of remonumented PLSS corners that have **tie sheets available online** (whether or not they have corresponding coordinate values)	• 100%
Percentage of remonumented PLSS corners that have tie sheets available online (whether or not they have corresponding coordinate values) **and a corresponding URL path/hyperlink value** in the PLSS geodatabase	• 91%
PLSS corners believed to be remonumented based on filed tie-sheets or surveys, but do not have coordinate values	• 0-5
Approximate number of PLSS corners believed to be lost or obliterated	• 189
Which system(s) for **corner point identification/ numbering** does the county employ (e.g., the Romportl point numbering system known as Wisconsin Corner Point Identification System, the BLM Point ID Standard, or other	• The county uses a corner numbering system that is based on the rural address system grid. The system increases from the lowest number of 101 at the southeast corner of the county to the northwest corner of the county numbered 9797. Each

corner point ID system)?	section corner has a unique number.
Does the county contain any **non-PLSS areas** (e.g., river frontage long lots, French land claims, private claims, farm lots, French long lots, etc.) or any special situations regarding PLSS data for tribal lands?	• No
Total number of PLSS corners along each bordering county	• 220
Number of PLSS corners remonumented along each county boundary	• 220
Number of remonumented PLSS corners along each county boundary with survey grade coordinates	• Approximately 115 – 52%
In what ways does your county collaborate with or plan to collaborate with neighboring counties for PLSS updates on shared county borders?	• Jefferson County has collaborated with all adjoining counties to maintain PLSS corners and will do so in the future

Custodian

- Jefferson County employs a full time Professional Land Surveyor to maintain the PLSS system monuments and records

Maintenance

- The goal of the County Surveyor is to perform maintenance on 100 PLSS corner monuments a year and add survey grade coordinates where needed.

Standards

- Statutory Standards for PLSS Corner Remonumentation
  - s. 59.74, Wis. Stats. Perpetuation of section corners, landmarks.
  - s. 60.84, Wis. Stats. Monuments.
  - ch. A-E 7.08, Wis. Admin. Code, U.S. public land survey monument record.
  - ch. A-E 7.06, Wis. Admin. Code, Measurements.
  - s. 236.15, Wis. Stats. Surveying requirement.
- SURVEY GRADE standard from Wisconsin County Surveyor's Association:
  - **SURVEY GRADE** – coordinates collected under the direction of a Professional Land Surveyor, in a coordinate system allowed by 236.18(2), and obtained by means, methods and equipment capable of repeatable 2 centimeter or better precision
  - **SUB-METER** – point precision of 1 meter or better
  - **APPROXIMATE** – point precision within 5 meters or coordinates derived from public records or other relevant information

Other Geodetic Control and Control Networks

e.g., HARN, Height Mod., etc.

Layer Status

- Jefferson County installed a High Precision Geodetic Control Network in 1993 as a tri-county project with Dodge and Rock Counties under the guidance of the Wisconsin Department of Transportation (WDOT). The countywide network consists of 47 stations and 47 azmith stations. Digital data is reported in State Plane Coordinate System, NAD83(91). WDOT conducted a Height Modernization Project adding vertical othometric height data to about half of these stations in 2003 stations. Additional vertical control monuments were installed along level lines throughout the county.

Custodian

- WDOT has assumed custodial responsibility for the maintenance of the 47 original network stations set in 1993 in addition to the WHMP vertical stations added in 2003. The county assumes custodial responsibility for the 47 azmith stations.

Maintenance

- The County Surveyor performs brush cutting and signage when using control stations.

Standards

- Jefferson County adheres to Standards for Geodetic Reference Systems (FGDC/FGCC standards and specifications) and Wisconsin Statutes Chapter 236.18.

Parcel Mapping

Parcel Geometries

Layer Status

- **Progress toward completion/maintenance phase:** In Jefferson County, 100% of the county's parcels are available in a commonly-used digital GIS format.
- **Projection and coordinate system:** The parcel map data is stored and maintained in an ESRI Enterprise Geodatabase in State Plane Coordinate System, South Zone, NAD 83(91) projection.
- **Integration of tax data with parcel polygons:** The county does have a parcel polygon model that directly integrates tax/assessment data as parcel attributes.
- **Online Parcel Viewer Software/App and Vendor name:** ESRI Web AppBuilder for ArcGIS was implemented to provide access to parcel data. Symbiont Inc. implemented the site and did some customization of tools that are not yet available in the standard toolset for Web App Builder.
- **Unique URL path for each parcel record:** There is a unique path to parcel related data for ever parcel that is stored in the parcel polygons. The following information is available from this path: owners, site address, billing address, property size, brief legal, assessment information, tax information, special assessments, tax credits, school district, technical college, special districts, transfer document reference, sale dates, sale amounts and link to document number. The unique URL to the additional parcel data is in the LRSURL field i.e. https://apps.jeffersoncountywi.gov/jc/jclrs/parcel_info?pnmun=014&pntown=06&pnrang=15&pnsect=18&pnqtr=42&pnid=000

Custodian

- The Jefferson County Land Information Office is the legal custodian of the parcel data.

Maintenance

- **Update Frequency/Cycle:** Parcel polygons are updated by the GIS Specialist on a weekly basis for new lots and other property changes recorded in the Register of Deeds Office.

Standards

- **Data Dictionary:** A Data Dictionary for all attributes linked to the Property Ownership, Assessment and Tax System data have a dictionary in human-readable form for all information required by s. 59.72(2)(a).
- Metadata for the spatial components of the parcel mapping have been compiled in Federal Geographic Data Committee (FGDC) compliant format.

Assessment/Tax Roll Data

Layer Status

- **Progress toward completion/maintenance phase:** NA
- **Tax Roll Software/App and Vendor name:** Jefferson County maintains a custom Property Ownership, Assessment and Tax Roll data on a Custom IBM DB2 database. The County purchased programs developed by Marathon County in 1995. Management Information System Analysts have made numerous custom up-grades and changes required by state law to these programs over the past years.
- **Municipal Notes:** NA

Custodian

- Land Information Office and County Treasurer
- The Land Information Office Real Property Lister (RPL) and Administrative Assistant maintain the property ownership and upload the assessment data from local assessors on a daily basis. Special assessments, charges and taxes are computed in the fall of each year from levy information supplied by local clerks and treasurers.

Maintenance

- **Maintenance of the Searchable Format standard:** To maintain the Searchable Format standard, the county has developed a software program to export and convert fields from the assessment and tax database into a table that can be joined to the parcel mapping polygons.

- **Searchable Format Workflow:** The county maintains parcel/tax roll data in such a way that requires significant formatting every year by the county staff in-house. A searchable format conversion program is run when all of the land splits, combinations and deletions have been completed by the Real Property Lister. This table exported by the conversion program.

Standards

- Wisconsin Department of Revenue Property Assessment Manual and attendant DOR standards
- DOR XML format standard requested by DOR for assessment/tax roll data
- s70.09 Wis. Stats. Official real property lister; forms for officers
- s. 73.03(2a), Wis. Stats. Department of Revenue (DOR) – Powers and duties defined.
- s. 59.72(2)(a), Wis. Stats. Act 20 attributes are present in this data.
- s. 59.72(2)(a), Wis. Stats. Select fields are downloaded from the Property Ownership, Assessment and Tax Roll data to the GIS.

Non-Assessment/Tax Information Tied to Parcels

e.g., Permits, Easements, Non-Metallic Mining, Brownfields, Restrictive Covenants

Layer Status

- The County Planning and Zoning Department maintains an IBM DB2 database on Private Onsite Waste Systems, Land Use Permits, Rezoning, Variance, Conditional Use and Violation based on parcels in the Property Ownership, Assessment and Tax system. Scanned Images of these records are also stored in the County's FileDirector Document Imaging System. These records all have the potential to link to the parcel geodatabase via the parcel identification number.

Custodian

- The Planning and Zoning Department is the legal custodian of these records.

Maintenance

- The databases are updated after the process for the issuance has been completed and the file is complete

Standards

- Standard database maintenance procedures.

ROD Real Estate Document Indexing and Imaging

Layer Status

- **Grantor/Grantee Index:** Recorded Document reference information is stored in Fidlar's Laredo system beginning with data from January of 1987. Scanned and indexed Grantee/Grantor books used before 1987 dating back to 1838 are stored in the FileDirector Document Imaging System.

- **Tract Index:** The Jefferson County Tract Index is based on the Public Land Survey System 16th section, government lot or recorded subdivision plat or certified survey map lot and block. The Tract Index started in 2009 currently contains document information back to 2005. The tract includes legals descriptions and is parcel PIN-based for documents from 1997 to current. Document previous to 1997 are based on legal description only; Fidlar does offer a program that will create the pin number for documents previous to the 1997 parcel ordinance based on the legal description for a fee that will be requested in the next Land Records Modernization budget. All documents with a legal description are included in the tract index.

- **Imaging:** Recorded documents are stored in the Fidlar Avid Imaging System. All recorded documents dating back to 1838 (the first recordings) are contained in the imaging system. They are searchable by document number or volume and page where early recordings did not use document numbers, tract and parcel identification numbers where applicable.

- **ROD Software/App and Vendor Name:** Jefferson County utilizes Fidlar Technologies software:
- AVID – county recording software
- Laredo – subscription based software provides index and images
- Tapestry – online single access software
- Monarch – subscription based software provides electronic data, used by title companies and the county to transfer data to the land information system

Custodian

- County Register of Deeds

Maintenance

- The Register of Deeds office scans indexes and receives paper and electronic recorded documents daily. All images are backed up monthly onto a portable hard drive.

Standards

- s. 59.43, Wis. Stats. Register of deeds; duties, fees, deputies.
- ch. 706, Wis. Stats. Conveyances of real property; Recording; Titles.

LiDAR and Other Elevation Data

LiDAR

Layer Status

- **Most recent acquisition year:** 2019
- **Accuracy:** NVA equates to 10 cm RMSEz, or 19.6 cm (0.64 ft) at the 95% confidence level.
- **Post spacing:** 0.71 m or 2 points per square meter
- **Contractor's standard, etc.:** Data QC results are verified using survey checkpoints as well as any vertical checkpoints provided by the client to conduct an internal blind test of the vertical accuracy. The test within GeoCue is called a "z-probe." The z-probe results are reviewed by the supervisor as well as a certified photogrammetrist to ensure that the vertical accuracy of the data meets or exceeds the specification. Any anomalies detected in the results are immediately investigated to determine the root cause, and corrective action is taken to mitigate any impact on schedule or quality.
- **Next planned acquisition year:** No planned acquisition
- **QL1/QL2 acquisition plans:** USGS QL2

Custodian

- Land Information Office

Maintenance

- Future acquisition

Standards

- USGS Lidar Base Specification

LiDAR Derivatives

e.g., Bare-Earth Digital Terrain Model (DTM), Bare-Earth Elevation Contours, Bare-Earth Digital Elevation Model (DEM), Digital Surface Model (DSM), Hydro-Enforced DEMs, etc.

Layer Status

- Building Footprints
- 1 and 2 foot contours
- Bare-Earth Digital Elevation Model (DEM)
- Hill shading

Custodian
- Land Information Office

Maintenance
- Update frequency every 7 to 10 years

Standards
- The project was undertaken to create a elevation modeling of Jefferson County capable of mapping 1 foot contour intervals

Other Types of Elevation Data

Layer Status
- 2004 LiDAR for the north half of the county
- 2005 for the south half of the county along with 2 foot contours and Triangular Irregular Network (TIN)
- 2012 LiDAR for entire County, 2 foot contours, bare earth points and Digital elevation model

Custodian
- Land Information Office

Maintenance
- Update as needed

Standards
- Standards followed at time of project

Orthoimagery

Orthoimagery

Layer Status
- **Most recent acquisition year:** 2020 4-band orthoimagery – Wisconsin Regional Orthoimagery Consortium (WROC)
- **Resolution:** 6 inch pixel
- **Contractor's standard:** Aerial imagery was collected to support 0.5 foot ground sample distance (GSD) orthoimagery to meet ASPRS Class II horizontal accuracy specifications at 1"=100' map scale. The 6-inch pixel orthoimagery was produced to meet or exceed 1.4 foot RMSE according to ASPRS Positional Accuracy Standards for Digital Geospatial Data._
- **Next planned acquisition year:** 2023 or 2025

Custodian
- Land Information Office

Maintenance
- Update every 3-5 years or as determined by the Land Information Council

Standards
- American Society for Photogrammetry and Remote Sensing Accuracy Standards (ASPRS) Class II at 1" = 100' map scale.

Historic Orthoimagery

Layer Status
- 2018 Color 6 inch pixel developed areas and 9 inch pixel rural areas -not certified
- 2015 Color 6 inch pixel
- 2010 Color 1 foot pixel,
- 2005 Black and White 6 inch pixel for South half of County
- 2005 Black and White 6 inch pixel for North half of County,
- 2000 Black and White 1 foot pixel
- 1996 Black and White 1 foot pixel

Custodian
- Land Information Office

Maintenance

- Static

Standards

- 1996, 2000 and 2010 - ASPRS standards for 1 inch =200 feet mapping scale.
- 2004, 2005 and 2015 ASPRS for Class 1, large scale maps at 1 inch = 100 feet
- 2018 Not certified

Other Types of Imagery

e.g., Oblique Imagery, Satellite Imagery, Infra-red, etc.

Layer Status

- April 2018 Oblique Pictometry 625 community (9 inch pixel) and sectors county-wide and 114 neighborhood (6 Inch pixel) sectors in developed areas of the county.
- April 2008 Oblique Pictometry 625 community (12 inch pixel) and sectors county-wide and 107 neighborhood (5 Inch pixel) sectors in developed areas of the county.

Custodian

- Land Information Office

Maintenance

- 5 to 10 year intervals or as determined by the Land Information Council

Standards

- Proprietary - Pictometry International Incorporated

Address Points and Street Centerlines

Address Point Data

Layer Status

- An address point layer for each structure is in the enterprise geodatabase. The address points are joined to the address database maintain in the Property Ownership, Assessment and Tax system by parcel identification number and suffix to accommodate parcels with multiple addresses.

Custodian

- Land Information

Maintenance

- Weekly

Standards

- Wisconsin GIS NG9-1-1 Data Standard (Site/Structure Address Point)
- US Postal Addressing Standards Publication 28

Building Footprints

Layer Status

- Building footprints were extrapolated on a County wide basis from the 2019 LiDAR data and project

Custodian

- Land Information Office

Maintenance

- In coordination from LiDAR data collection projects or as needed

Standards

- LiDAR and LiDAR derivative standards

Other Types of Address Information

e.g., Address Ranges

Layer Status

- Address points for Modular Home Park Units

Custodian
- Land Information Office

Maintenance
- 2021 complete review and update. Future updates and review as needed

Standards
- US Postal Addressing Standards Publication 28

Street Centerlines
Layer Status
- Street Centerlines for all public roads and private roads with addressing such as modular home parks

Custodian
- Land Information Office

Maintenance
- 2021 update and review as County prepares for NG9-1-1 requirements

Standards
- Wisconsin GIS NG9-1-1 Data Standard (Road Centerline)

Rights of Way
Layer Status
- Ingress and egress right of ways are contained in the parcel database
- How maintained: Currently maintained as ROW lines and will be maintained within Parcel Fabric as a polygon as its own layer.

Custodian
- Land Information Office

Maintenance
- As needed

Standards
- Alignment with parcel geometries

Trails
Recreational Trails, Snowmobile Trails
Layer Status
- Bike trails, snowmobile trails (Club and County), Town Road ATV trails, hiking trails within County Parks

Custodian
- Land Information Office

Maintenance
- As needed

Standards
- Sufficient spatial accuracy for general guide maps and brochures purposes

Land Use
Current Land Use
Layer Status
- 2008 and 2018 Land Use Inventory for 16 Townships in Jefferson County

Custodian
- Land Information Office

Maintenance
- Update Frequency is 8 to 10 years as needed for general planning purposes in conjunction with updated orthoimagery.

Standards

- American Planning Association Land Based Classification Standard

Future Land Use

Layer Status

- Urban Service Areas, Limited Urban Service Area, 15 Year Growth Areas and Farmland Preservation Areas

Custodian

- Land Information Office

Maintenance

- Updated with the Comprehensive Plan and Agricultural Preservation and Land Use Plan

Standards

- s. 66.1001, Wis. Stats. Comprehensive planning.
- Farmland Preservation Planning

Zoning

County General Zoning

Layer Status

- The County does maintain a GIS representation of county general zoning boundaries.
- Layer represents all 16 Towns.

Custodian

- Land Information Office and Planning and Zoning Department

Maintenance

- As needed – zoning changes typically are approved monthly by the County Board. The zoning change takes affect once a Certified Survey Map is recorded with the Register of Deeds.

Standards

- Jefferson County Zoning Ordinance

Shoreland Zoning

Layer Status

- The County does maintain a GIS representation of county shoreland zoning boundaries.

Custodian

- Land Information Office and Planning and Zoning Department

Maintenance

- Updated as needed or required by State Law change

Standards

- Wi Stat Chapter NR 115

Farmland Preservation Zoning

Layer Status

- The County does maintain a GIS representation of county farmland preservation zoning boundaries.
- Year of certification: 2021 and 2022
- GIS Dataset is updated to reflect rezones

Custodian

- Land Information Office and Planning and Zoning Department

Maintenance

- As needed – zoning changes typically are approved monthly by the County Board. The zoning change takes affect once a Certified Survey Map is recorded with the Register of Deeds.

Standards

- Farmland Preservation Plan (Agricultural Preservation and Land Use Planning)

Floodplain Zoning

Layer Status

- The County does maintain a GIS representation of floodplain zoning boundaries.
- The county's floodplain zoning GIS data is the same as/identical to the FEMA map.
- Limited Boundary Adjustment/Fill in Flood Fringe 2015
- Letters of Maps Amendments
- Flood Insurance Study Reach Elevations 2015
- Flood Storage Areas 2015

Custodian

- FEMA and Planning and Zoning Department

Maintenance

- As required by DNR or FEMA

Standards

- FEMA Floodplain Mapping Standards

Airport Protection

Layer Status

- Not administered by the county.

Municipal Zoning Information Maintained by the County

e.g., Town, City and Village, Shoreland, Floodplain, Airport Protection, Extra-Territorial, Temporary Zoning for Annexed Territory, and/or Zoning Pursuant to a Cooperative Plan

Layer Status

- City and Village zoning is maintained by the respective municipalities.
- The County maintains extra-territorial plat review and zoning layer.

Custodian

- Local municipalities
- Land Information Office

Maintenance

- As needed

Standards

- Local ordinances

Administrative Boundaries

Civil Division Boundaries

e.g., Towns, City, Villages, etc.

Layer Status

- Municipal boundaries – county wide

Custodian

- Land Information Office

Maintenance

- Updated as needed for annexations, etc.

Standards

- Spatial alignment to parcel layer

School Districts

Layer Status

- Progress toward completion/maintenance phase: Complete
- Relation to parcels: Spatial
  - Attributes linked to parcels: Boundaries only

Custodian

- Land Information Office

Maintenance

- Boundary changes are updated as needed and when notified

Standards

- Spatial alignment to parcel layer

Election Boundaries

e.g., Voting Districts, Precincts, Wards, Polling Places, etc.

Layer Status

- Voting Wards and Supervisory District Boundaries - completed

Custodian

- Land Information Office

Maintenance

- Adjustments occur as needed or required

Standards

- Spatial alignment to parcel layer

Utility Districts

e.g., Water, Sanitary, Electric, etc.

Layer Status

- Sanitary Districts in progress

Custodian

- Land Information Office

Maintenance

- Updated and created as information is received

Standards

- Spatial alignment to parcel layer

Emergency Service Boundary – Law/Fire/EMS

Layer Status

- Law Enforcement: Completed
- Fire: Completed
- EMS: Completed

Custodian

- Land Information Office

Maintenance

- Updated as information is received

Standards

- Wisconsin GIS NG9-1-1 Data Standard (Emergency Service Boundary)

Public Safety Answering Points (PSAP) Boundary

Layer Status

- PSAP Boundary: Same as County Boundary

Custodian

- Land Information Office

Maintenance

- Update as needed and working to meet current standards

Standards

- Wisconsin GIS NG9-1-1 Data Standard (PSAP Boundary)

Provisioning Boundary

Layer Status

- Same as PSAP

Standards

- Wisconsin GIS NG9-1-1 Data Standard (Provisioning Boundary)

Lake Districts

Layer Status

- Complete – Three districts mapped

Custodian

- Land Information Office

Maintenance

- As amendments are recorded or made

Standards

- Spatial alignment with parcel data

Native American Lands

Layer Status

- None

Other Administrative Districts

e.g., County Forest Land, Parks/Open Space, etc.

Layer Status

- Parks and Open Spaces

Custodian

- Land Information Office

Maintenance

- Updated as needed

Standards

- Spatial alignment with parcel data

Other Layers

Hydrography Maintained by County or Value-Added

e.g., Hydrography maintained separately from DNR or value-added, such as adjusted to orthos; Elevation-Derived Hydrography

Layer Status

- Hyrdography – surface water break lines from elevation-derived hydrography from 2019 LiDAR project

Custodian

- Land Information Office

Maintenance

- Static

Standards

- USGS Elevation-Derived Hydrography Specifications

Cell Phone Towers

Layer Status

- Complete

Custodian

- Land Information Office

Maintenance

- Updated as new towers are permit through Planning and Zoning Department

Standards

- Location based on orthoimagery and available data

Bridges and Culverts

Layer Status

- Complete
- County Hwy Culverts

Custodian

- Highway Department

Maintenance

- Updated during inspections

Standards

- Standard database procedures, sub-meter positional accuracy

Other/Miscellaneous – Land Information Office

e.g., Pipelines, Railroads, Non-Metallic Mining, Sinkholes, Manure Storage Facilities, etc.

Layer Status

- Railroads
- Non-metallic mining
- Manure Storage Facilities
- Farmland Preservation, conservation easements
- Parks Infrastructure and maintenance

Custodian

- Land Information Office

Maintenance

- Updated as needed

Standards

- Spatial alignment to parcel data

Other/Miscellaneous – County Hwy Department

Layer Status

- Maintenance Sections,
- Signs
- Invasive Species Spraying
- Beam Guard
- Road Centerlines
- Pavement Age & PASER Rating
- Segment ID
- Pavement & Shoulder Width
- Advisory Curves
- Speed Limits
- Passing zones
- Utility Permits
- Driveway/Work in Right-of-way Permits
- Retaining Walls

Custodian

- Hwy Department

Maintenance

- Updated as needed

Standards

- Standard database procedures, sub-meter positional accuracy for most features

3 LAND INFORMATION SYSTEM

The WLIP seeks to enable land information systems that are both modernized and integrated. Integration entails the coordination of land records to ensure that land information can be shared, distributed, and used within and between government at all levels, the private sector, and citizens.

One integration requirement is listed under s. 16.967(7)(a)(1), Wis. Stats., which states that counties may apply for grants for:

> The design, development, and implementation of a land information system that contains and integrates, at a minimum, property and ownership records with boundary information, including a parcel identifier referenced to the U.S. public land survey; tax and assessment information; soil surveys, if available; wetlands identified by the department of natural resources; a modern geodetic reference system; current zoning restrictions; and restrictive covenants.

This chapter describes the design of the county land information system, with focus on how data related to land features and data describing land rights are integrated and made publicly available.

Current Land Information System

Diagram of County Land Information System

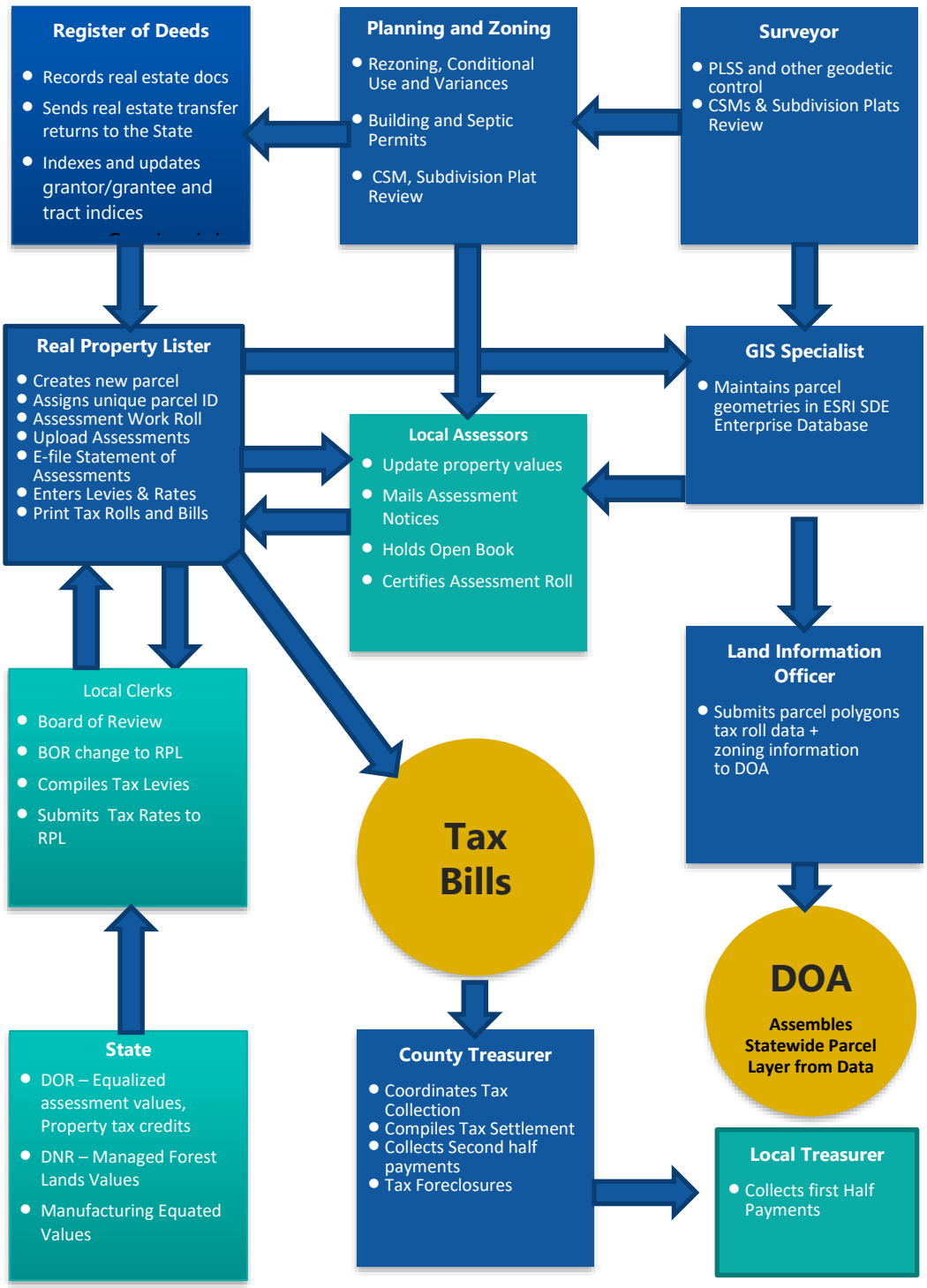
Figure 1. Jefferson County Land Information System

County Parcel Data Workflow Diagram

The workflow diagram for GIS parcel and property assessment and tax workflow depicts:

- Major components of parcel data, referenced by s. 59.72(2)(a), including:
- parcel polygons, 2) tax roll data, and 3) zoning information
- Integration of parcel polygons with other data/attributes, if applicable
- Departments/offices/staff involved with the creation and maintenance of parcel data

Figure 2. GIS Parcel and Property Assessment and Tax Workflow



Technology Architecture and Database Design

This section refers to the hardware, software, and systems that the county uses to develop and operate computer systems and communication networks for the transmission of land information data.

Hardware

- The County Management Information Systems (MIS) Department maintains HP servers running in a virtual windows environment process GIS, Fidlar Register of Deeds, FileDirector and public access websites. IBMi hardware is used to process property assessment, tax and land use permitting programs. A Nimble storage area network (SAN) is used to store data in multiple locations. Unitrends backup hardware is utilized as a strategy for continuity of operations. All major county facilities are connected through a fiber optics network. A large format scanner/copier/printer is located in the Land Information office. Two mid-size plotters are located in Land and Water Conservation.
- UAS/Drone - Quadcoptor with 12 mega-pixel camera – still photo, video and 3D modeling and utilize ESRI Drone2Map.

Software

- ESRI Desktop, ArcGIS Server, ArcGIS Web App Builder, ArcGIS online software and SQL databases are the main software components county GIS systems. Fidlar Technologies software AVID, Laredo and Tapestry are used in the Register of Deeds Office. FileDirector software is used for storage of larger volume document outside of the Register of Deeds recorded documents.
- **County currently uses ArcGIS Pro:** Yes
- **County plans to upgrade to ArcGIS Pro:** Yes, be estimated date: 2023

Website Development/Hosting

- The Land Records Search site for general public access to property ownership, assessment, permits, petitions, and taxes was developed by MIS Systems Analysts and is hosted by the county.
- The county GIS site was developed in ArcGIS Web App Builder by a contracting with Symbiont as GIS consultant out of West Allis Wisconsin. The website is hosted and maintained by the county GIS staff.

Metadata and Data Dictionary Practices

Metadata Creation

- **Metadata creation and maintenance process:** Metadata has been compiled on most major layers and is updated as time allows or when changes are required.

Metadata Software

- **Metadata software:** Metadata for map layers is created with ArcCatalog and stored within the geodatabase
  - The software does generate metadata consistent with the FGDC Content Standard for Digital Geospatial Metadata, and ISO geographic metadata standard 19115.
- **Metadata fields manually populated:** Description, Data Use and Attributes are manually populated.

Metadata Policy

- **Metadata Policy:** The County does not have a minimum metadata policy.

Municipal Data Integration Process

- Local assessors submit assessed values for uploading to the IBM DB2 database for municipality. Assessors provide summaries for review and verification of the upload process. Tax bill information is exported to local Treasurer for first half collection. First half payments are uploaded to the county system for settlement and collection of second half payment. The City of Watertown is the only municipality that collects all payments through the end of July.

Public Access and Website Information

Public Access and Website Information (URLs)

Public Access and Website Information			
GIS Webmapping Application(s) Link - URL	**GIS Download Link – URL**	**Real Property Lister Link - URL**	**Register of Deeds Link - URL**
https://jeffarcgis.jeffersoncountywi.gov/apps/Publicgismr/	No download site available at this time. Data requests can be made to the Land Information Office	https://apps.jeffersoncountywi.gov/jc/JCLRS	https://tapestry.fidlar.com/Tapestry2/Default.aspx

Single Landing Page/Portal for All Land Records Data
URL
https://www.jeffersoncountywi.gov/departments/land_information/land_records_online.php

Web Services/REST End Points
URL
https://jeffarcgis.jeffersoncountywi.gov/ArcGIS/rest/services

Data Sharing

Data Availability to Public

Data Sharing Policy

- The Land Information Office has a fee schedule for making copies of GIS data and other custom services.

Open Records Compliance

- The fee and service charges are consistent with the Wisconsin's Open Records Law

Data Sharing Restrictions and Government-to-Government Data Sharing

Data Sharing Restrictions

- Jefferson County does not restrict use or license data provided under the fee schedule

Government-to-Government Data Sharing

- Jefferson County has a standing policy of sharing data with other government entities and some non-profits at no charge. Parties receiving this data are required to implement a data sharing agreement that puts some restrictions on the redistribution of data provided under fee waivers.

Training and Education

- Jefferson County is a group member of the Wisconsin Land Information Association and sends three to five staff to the annual conference each year. County Departments are active members of educational organizations such as Land Information Officers Network, Register of Deed Association, County Code Administrators, Wisconsin Real Property Lister Association, County Land Water Conservationist Association and County Treasurer Association.

4 CURRENT & FUTURE PROJECTS

This chapter lists the current and future land information projects the county is currently undertaking or intends to pursue over its planning horizon. A project is defined as a temporary effort that is carefully planned to achieve a particular aim. Projects can be thought of as the means to achieving the county's mission for its land information system.

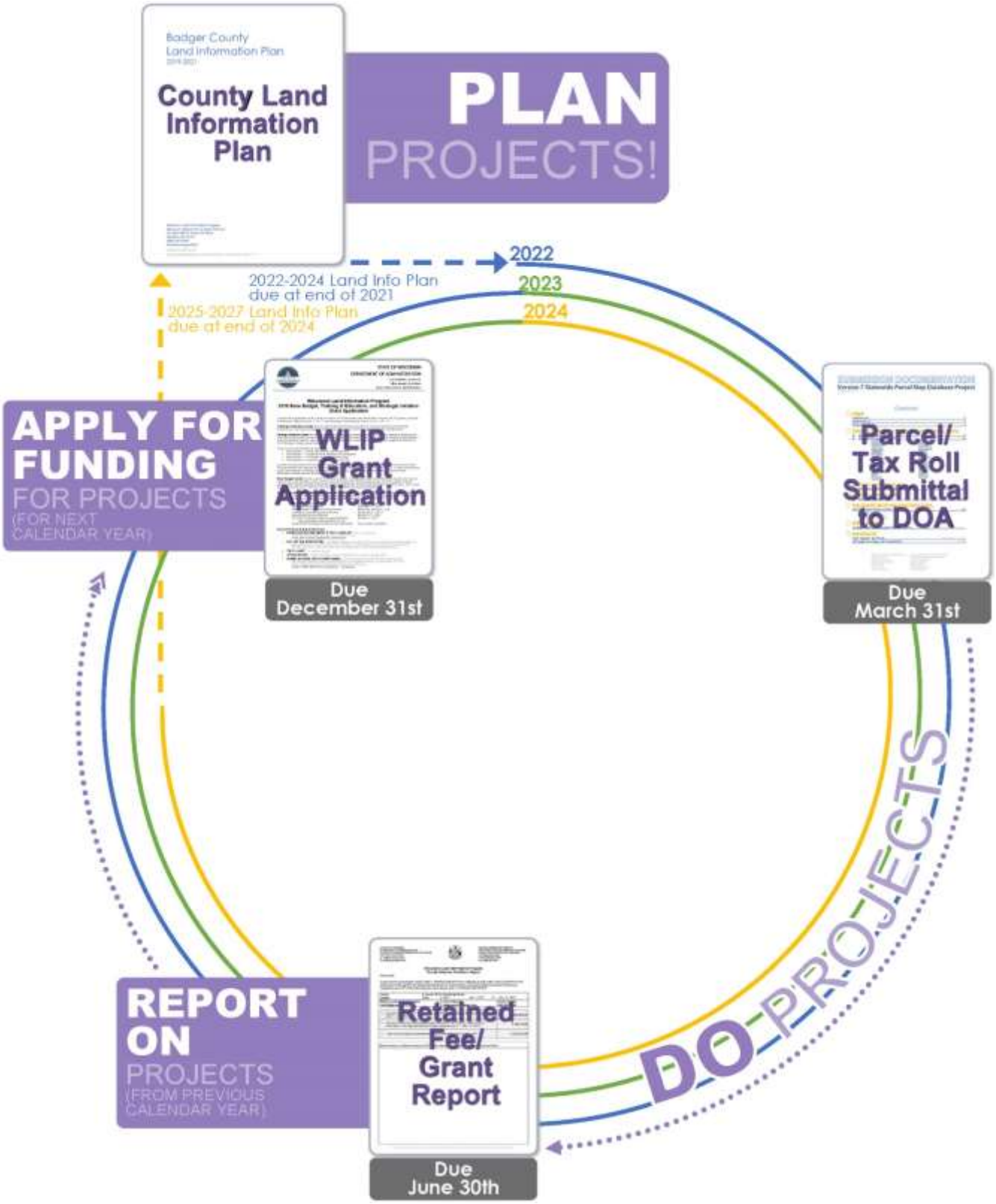


Figure 2. The WLIP Land Information Plan/Grant Project Cycle

Project Plan to Maintain Searchable Format (Benchmarks 1 & 2)

Project Title: Project Plan to Maintain Searchable Format (Benchmarks 1 & 2)

Project Description/Goal

How Searchable Format Will Be Maintained

- Implement a time and cost-effective process for maintaining searchable format standards as established by DOA.
- County staff (Land Information Office Director, GIS Specialist, Real Property Lister and MIS Systems Analyst) will work together to prepare, clean and upload County parcel data into a form acceptable by the DOA.
- Land Info Spending Category: Other Parcel Work

Business Drivers

- The Project Plan to Maintain Searchable Format for Benchmarks 1 & 2 is a requirement for those counties who utilize Strategic Initiative funds for parcel/tax roll formatting to prepare the data submission to DOA.
- Yearly review of the County's parcel data allows the County to maintain accurate data and minimize imperfections

Objectives/Measure of Success

- The objective is to continue to meet the Searchable Format for Benchmarks 1 & 2 (Parcel and Zoning Data Submission, Extended Parcel Attribute Set Submission).

Project Timeframes

- Yearly maintenance begins shortly after January 1st of each year and concludes by March 31st or once the data is submitted to the State

Responsible Parties

- Land Information Office and Management Information System

Estimated Budget Information

- See table at the end of this chapter for project budget information.

Project Plan for PLSS (Benchmark 4)

Project Title: Project Plan for PLSS (Benchmark 4)

Project Description/Goal

Planned Approach

- The County Surveyor reviews and remonuments corners as time permits. Corners are prioritized by their importance, location, need and availability. Local surveyors may request certain corners to be reviewed by the County Surveyor. During the winter or slower time periods, the County Surveyor will review corners to identify corners that need to be remonumented.

Current Status

- **Tally of the total number of corners:** See PLSS Layer Status table in Chapter 2.
- **Remonumentation status:** See PLSS Layer Status table in Chapter 2.
- **Coordinate status (accuracy class) if known:** See PLSS Layer Status table in Chapter 2.

Goals

- **Number of corners to be remonumented and/or rediscovered:** 75 per year
- **Number to have new coordinates established:** 5 per year
- **Accuracy class for these new coordinates:** Survey Grade
- **Way in which these points will be integrated into the parcel fabric:** As new corners are found or old corners are remonumented, the data will be provided to the GIS Specialist who will then update the County's parcel fabric.

Missing Corner Notes

- **Documentation for any missing corner data:** Many of the meander corners are permanently inundated by surface water or otherwise inaccessible to due to wetlands, floodplain or other features.

County Boundary Collaboration

- Jefferson County collaborates with adjoining counties to maintain PLSS corners and will do so in the future. Adjoining counties have different methods, priorities, and coordinate systems which makes it important to collaborate with them.
- The County will share PLSS data with adjoining counties.

Business Drivers

- The Project Plan for PLSS is a requirement for those counties who utilize Strategic Initiative funds for work related to PLSS completion and integration.
- Accurate PLSS data is the backbone of an accurate GIS system.
- Local surveyors rely on the County to maintain an accurate and reliable PLSS system for surveyors to complete their daily jobs.

Objectives/Measure of Success

- Remonument, Rediscovery, or perform maintenance to at least 75 corners per year.

Project Timeframes

- Yearly and on-going

Responsible Parties

- County Surveyor

Estimated Budget Information

- See table at the end of this chapter.

Project #1: Back Indexing of Documents in the Register of Deeds

Project Description/Goal

- Back index recorded documents in grantor/grantee and tract index back to 1955. The computer grantor/grantee index has data going back to 1987. The Register of Deeds Office has been tract indexing prior years as time allows and have completed back to 1982.
- Land Info Spending Category: Other Parcel Work

Business Drivers

- Title searchers are required to go back 30 to 60 years in some cases
- Manual searching is time consuming
- The County finds it beneficial to have as many documents indexed as possible

Objectives/Measure of Success

- Complete indexing of recorded documents back to 1955

Project Timeframes

- Yearly until objective is met

Responsible Parties

- Register of Deeds

Estimated Budget Information

- See table at the end of this chapter.

Project #2: Develop Activity or Department Focused GIS Websites

Project Description/Goal

- Develop activity focused GIS websites to provide easily accessible information for specific users and other development focused needs such as County Parks, Land and Water conservation, Zoning, Emergency Management, Health Department, Highway Department and Fair Park. These more focused GIS Websites would contain concentrated subject matter that brings information to the end user in a way that is designed to display needs based information.
- Land Info Spending Category: Website Development/Hosting Services

Business Drivers

- Provides for a better experience in parks, trails and outdoor recreation. Data is coalesced into a platform where end users can easily find what they need. Affords the opportunity to deliver additional information that may not be noticed in the general GIS Public Viewer

Objectives/Measure of Success

- GIS site(s) focused on particular needs and delivers information in an efficient and effective manner

Project Timeframes

- Ongoing

Responsible Parties

- Land Information Office in collaboration with affected Departments

Estimated Budget Information

- See table at the end of this chapter.

Project #3: Mobile GIS and Data Collection

Project Description/Goal

- Expand Utilization of mobile GPS/GIS technology to access, collect and maintain land information during field operations. Eliminate duplication by updating databases directly from the field with phones or tablets. Currently information for many field inspections are handwritten and entered on return to the office. This technology would be used by Planning and Zoning for documenting inspections of private onsite waste treatment systems and investigations of ordinance violations, Land and Water Conservation for compliance inspections on farms and mines and Parks

Department for facility management in parks and flood mitigation properties. This could also include other departments who complete field work such as the County Highway Department.
- Land Info Spending Category: Hardware and software, Administrative Activities and Management

Business Drivers

- Mobile access will reduce time needed for printing and organizing maps and documents. Database updates from the field will eliminate the need for some manual forms (less paper).
- Data could be projected onto the internal and public GIS website for easy access by the public and county staff

Objectives/Measure of Success

- Efficient and effective method of collecting field data and importing into County Database or reports

Project Timeframes

- 2023

Responsible Parties

- Land Information Office in collaboration with affected Departments

Estimated Budget Information

- See table at the end of this chapter.

Project #4: Update County-wide Orthoimagery

Project Description/Goal

- Update County-wide orthoimagery at the direction of the Land Information Council (every 5 years or less)
- Land Info Spending Category: Orthoimagery

Business Drivers

- High accuracy orthoimagery is used by multiple county departments on a daily basis. The imagery is also used by local, state and federal agencies. The more up to date the imagery is the more reliable the information.

Objectives/Measure of Success

- Provide up to date othroimagery on County GIS

Project Timeframes

- 2023 or 2025

Responsible Parties

- Land Information Office

Estimated Budget Information

- See table at the end of this chapter.

Project #5: Map County Parks Assets for Facility Management

Project Description/Goal

- Map county park facilities including shelters, paved and unpaved trails, bike route signs, kiosks, park signage, benches, and managed plantings. Categorize facility condition, projected life cycle or maintenance schedule. Develop a mobile based system for facility inspections and work order assignments. Develop a system to analyze future park facility maintenance and planning.
- Integrate GIS mapping and data into the County's financial software to incorporate budgeting and future planning
- Map and expand existing mapping of bike and pedestrian trails
- Land Info Spending Category: Administrative Activities and Management

Business Drivers

- Jefferson County partners and donors have made significant investment in parks facilities. A GIS park facility inventory would facilitate paperless system for assignment of work order, facility inspections and future maintenance or replacement needs.

Objectives/Measure of Success
- Map and categorize county park facilities and assets

Project Timeframes
- 2022-2024

Responsible Parties
- Land Information Office and Parks Department

Estimated Budget Information
- See table at the end of this chapter.

Project #6: Develop Digital Maps/Story Maps of County Park System

Project Description/Goal
- Develop a digital map/story maps of county parks and areas of interest to provide a self-guided tour.
- Land Info Spending Category: Administrative Activities and Management

Business Drivers
- Providing areas of interest and an interactive system will help draw stakeholders to the area and increase county tourism

Objectives/Measure of Success
- Completed digital maps and available to stakeholders

Project Timeframes
- 2022-2024

Responsible Parties
- Land Information Office and Parks Department

Estimated Budget Information
- See table at the end of this chapter.

Project #7: Update the County's NR151 Tracking Database

Project Description/Goal
- Reformat and update the County's current NR151 tracking database to include interface development and Farmland Preservation attributes
- Land Info Spending Category: Software

Business Drivers
- Jefferson County participates in Farmland Preservation Planning, which requires the County to track information on participates. An efficient program is beneficial to county staff for maintaining the data.

Objectives/Measure of Success
- NR151 database and interface for county staff

Project Timeframes
- 2022

Responsible Parties
- Land Information Office and Land, MIS Department and Water Conservation Department

Estimated Budget Information
- See table at the end of this chapter.

Project #8: Convert County Data To Meet State and Federal NexGen 911 Standards

Project Description/Goal
- Convert, update and implement County data to meet the State standard for NexGen 911
- Land Info Spending Category: Address Points, Street Centerlines

Business Drivers
- Uniform data across the state for emergency responders

Objectives/Measure of Success
- Data in an acceptable format that meets State requirements

Project Timeframes
- 2022 - 2024

Responsible Parties
- Land Information Office

Estimated Budget Information
- See table at the end of this chapter.

Project #9: Link County Parcel Identification Number to Legal Description and Address to Register of Deeds System

Project Description/Goal
- Implement Fidlar Pintegrity to link Parcel Identification Number to legal description and address in Register of Deeds system
- Land Info Spending Category: Other Parcel Work

Business Drivers
- Increase searching capabilities and ease of identifying documents

Objectives/Measure of Success
- Provide easier searches by Parcel Number or address in Register of Deeds System

Project Timeframes
- Begin 2021 end 2022

Responsible Parties
- Register of Deeds and Land Information Office

Estimated Budget Information
See table at the end of this chapter.

Project #10: Implement an Open Data Platform

Project Description/Goal
- Create an open data platform for stakeholders to access and download county data
- Land Info Spending Category: Software

Business Drivers
- Data requests occupy county staff time and creating an open data platform would reduce staff time and make data easily available to stakeholders

Objectives/Measure of Success
- Interface for stakeholders to access and download data

Project Timeframes
- 2022 - 2023

Responsible Parties
- Land Information Office

Estimated Budget Information
See table at the end of this chapter.

Project #11: Update and Upgrade web-based GIS

Project Description/Goal
- Review the County's current web-based GIS for inefficiencies and implement updates to create a reliable and fast web-based GIS for internal and external stakeholders
- Implement new and enhance existing web mapping tools

- Land Info Spending Category: Website Development/Hosting Services

Business Drivers

- The web-based GIS is a tool for external and internal stakeholders to access data, many of which utilizes it daily. It is important for the County to have a reliable GIS system to stakeholders to use.

Objectives/Measure of Success

- Reliable, efficient, and effective web-based GIS for stakeholders to use

Project Timeframes

- 2022

Responsible Parties

- Land Information Office and contractors

Estimated Budget Information

See table at the end of this chapter.

Project #12: Provide Support for 2021/2022 Redistricting

Project Description/Goal

- Provide support to county staff and local municipality staff during the 2022 redistricting process
- Update maps to reflect new boundaries as determine through the redistricting process
- Land Info Spending Category: Other Parcel Work

Business Drivers

- The redistricting process involves a level of technical knowledge that some county departments or local municipalities may not have. The Land Information Office can assist through out the redistricting process with technical knowledge and creation of maps

Objectives/Measure of Success

- Timely approval of redistricting

Project Timeframes

- 2022

Responsible Parties

- Land Information Office

Estimated Budget Information

See table at the end of this chapter.

Project #13: Development of Department Specific GIS Layers and Inventory of Existing Data

Project Description/Goal

- Development department specific GIS layers to streamline daily workflows. Example: POWTS permits and soil tests, emergency management plans
- Land Info Spending Category: Other Parcel Work

Business Drivers

- County Departments have large amounts of data that are used frequently but are not available electronically. Mapping and incorporating this data will help provide more data to stakeholders.

Objectives/Measure of Success

- New specific GIS layers
- Inventory of all GIS layers

Project Timeframes

- 2023-2024

Responsible Parties

- Land Information Office

Estimated Budget Information

See table at the end of this chapter.

Project #14: Development and Maintenance of Metadata

Project Description/Goal

- Develop and maintain metadata for county created and maintained data
- Update metadata for all datasets that are part of the County Land Information Office.
- Land Info Spending Category: Administrative Activities/Hosting Services

Business Drivers

- Some current data sets contain missing or outdated metadata and enhancing the metadata creates a more user friendly system.

Objectives/Measure of Success

- Updated and complete metadata

Project Timeframes

- 2024-2025

Responsible Parties

- Land Information Office

Estimated Budget Information

See table at the end of this chapter.

Project #15: Transition from ArcMap to ArcPRO

Project Description/Goal

- Transition County staff from ArcMap to ArcPro/ArcGIS Online and provide sufficient training to all staff members
- Land Info Spending Category: Software

Business Drivers

- ArcMap will no longer be maintained and the County will need to transition to ArcPro

Objectives/Measure of Success

- Implementation and successful transition of ArcPro

Project Timeframes

- 2024-2025

Responsible Parties

- Land Information Office

Estimated Budget Information

See table at the end of this chapter.

Project #16: Update and Maintain a Land Records Software and Application Development for Jefferson County

Project Description/Goal

- The County currently uses an iBMI software system designed and maintained by the Management Information System. Upgrades are needed to the system as well as the development of new applications (DOA import application, farmland preservation module, permitting, etc.).
- The County may also explore purchasing a system from a contractor.
- Land Info Spending Category: Software

Business Drivers

- Many County Departments utilize the current system and rely on the current system for data entry, management and public view.

Objectives/Measure of Success

- Land Records Software and applications that meet the needs of the County

Project Timeframes

- Ongoing

Responsible Parties

- Land Information Office

Estimated Budget Information
See table at the end of this chapter.

Project #17: Enhance and Extract Current LIDAR/Elevation Data

Project Description/Goal
- The County has 2019 LiDAR data, but does not have an effective method of displaying the data in a user friendly format. Options include contracting with a vendor to create a user friendly method to display and utilize the data. Pictometery may be explored as part of this project.
- Land Info Spending Category: Lidar

Business Drivers
- The County has useful and accurate Lidar data that could be used by many stakeholders, however, the data is not in a user friendly version for the public to utilize.
- The County finds value in providing data to internal and external stakeholders in a format that is easy to use and understand.

Objectives/Measure of Success
- Projection of elevation data in a format that is available an understandable to the general public

Project Timeframes
- 2023-2024

Responsible Parties
- Land Information Office

Estimated Budget Information
See table at the end of this chapter.

Project #18: Update Pictometry

Project Description/Goal
- The County has contracted multiple times to acquire Pictometry imagery for internal and external use. Most recently the data was updated in 2018. The goal is to update the County's Pictometry data and collect accurate and updated data.
- Land Info Spending Category: Lidar

Business Drivers
- The County has contracted multiple times to acquire Pictometry imagery for internal and external use. Pictometyr imagery creates a 3D model of the topography and buildings for use by internal and external stakeholders. The Planning and Zoning Department, Land Information Office, Land and Water Conservation, Parks and Sheriff's Department benefit from the Pictometry imagery.
- The County finds value in providing data to internal and external stakeholders in a format that is easy to use and understand.

Objectives/Measure of Success
- Updated Pictometry that is easily viewed by internal and external stakeholders.

Project Timeframes
- 2023

Responsible Parties
- Land Information Office

Estimated Budget Information
See table at the end of this chapter.

Estimated Budget Information (All Projects)

Estimated Budget Information

Project Title	Item	Unit Cost/Cost	Land Info Plan Citations Page # or section ref.	Project Total
Project Plan to Maintain Searchable Format (Benchmarks 1 &2)	County Staff (GIS Specialist, MIS Analysist, Real Property Lister)	~$3,000/year Staff rate of $40/hr	Page 28	**$3,000**
Project Plan for PLSS	County Surveyor	~500 hours/year	Page 29	**Appx. $20,000**
Project #1: Back indexing of ROD documents	Contractor	$0.95/document $5,000 to integrate documents into ROD system	Page 30	**Appx. $210,000**
	ROD Staff (current or retired)	Hourly rate to be determined Estimated cost of $0.50/document		**$106,000**
Project #2: Focused GIS Websites	GIS Specialist	Staff hourly rate to be determined or $35/hr	Page 30	**$10,000**
Project #3: Mobile GIS and Data Collection	GIS Specialist	Staff hourly rate to be determined or $35/hr 80-100 hours	Page 30	**$2,800 - $3,500**
	Hardware (tablets, GPS, etc.)	$300/tablet		**$1,800**
Project #4: Update County-wide Orthoimagery	Consultant Cost	$45,000	Page 31	**$45,000**
Project #5: Map County Parks	Land Information Office or Parks Department Staff	~$6,000 Staff hourly rate to be determined or $35/hr	Page 31	**$6,000**
Project #6: Develop Digital Maps/Story Maps for County Parks	Land Information Office or Parks Department Staff	~$6,000 Staff hourly rate to be determined or $35/hr	Page 32	**$6,000**
Project #7: Update NR151 Database	Consultant Cost	$20,000	Page 32	**$20,000**
	Or County Staff (LWCD Staff and MIS Staff)	~$8,000 Staff hourly rate to be determined or $35/hr		**$8,000**
Project #8: Convert Data to NexGen 911	Consultant Cost	$20,000	Page 32	**$20,000**
Project #9: Link County PIN to Legal Description and Address	Consultant Cost	$6,000	Page 33	**$6,000**
	GIS Specialist	~$5,000 Staff hourly rate to be determined or $35/hr		**$5,000**
Project #10: Open Data Platform	GIS Specialist	~$2,000 Staff hourly rate to be determined or $35/hr	Page 33	**$2,000**
	License/software	$5,000		**$5,000**
Project #11: Update and Upgrade web-based GIS	Consultant	$10,000	Page 33	**$10,000**
Project #12: Redistricting	GIS Specialist	~$3,000 Staff hourly rate to be determined or $35/hr	Page 34	**$3,000**

Project #13: Develop GIS Layers	GIS Specialist	~$3,000 Staff hourly rate to be determined or $35/hr	Page 34	**$3,000**
Project #14: Develop Metadata	GIS Specialist	~$6,000 Staff hourly rate to be determined or $35/hr	Page 35	**$6,000**
Project #15: Transition from ArcMap to ArcPro	Training	$5,000	Page 35	**$5,000**
	License fees (if needed)	To be determined		
Project #16: Update and Maintain Land Records Software	MIS Staff	$25,000-$50,000	Page 35	**$50,000**
	Consultant and software	~$200,000 Includes software and modules for all departments		**$200,000**
Project #17: Enhance and Extract LIDAR Data	Consultant for web-based platform	$15,000	Page 36	**$15,000**
Project #18: Update Pictometry	Consultant	$80,000	Page 36	**$80,000**
			GRAND TOTAL	Appx. $372,000-647,000

Note: These estimates are provided for planning purposes only. Budget is subject to change.

Other Long Term Projects Identified by County Departments

Economic Development Consortium

- Collaborate with the cities and villages to make Zoning Map and Ordinance information easily accessible in a consistent manner throughout the county

Emergency Management

- Develop an interactive web portal for maintaining and displaying the geospatial information in the All Hazards Mitigation Plan and computation of population estimates for hazardous materials (HAZMAT) site planning
- Develop a GIS road closer application to track and alert 911 dispatch, emergency responders and the general public of closers and alternative routes. Utilize recently completed inundation mapping for some areas along Lake Koshkonong and the Rock River
- Develop flood inundation mapping based on stream gauge on Crawfish River near Milford
- Develop GIS projects, routines and recourses that provide Emergency Operations Center (EOC) personnel with geospatial information that provides a clear situational awareness
- Implement routines for integrating critical and special facilities GIS data in the Computer-Aided Management of Emergency Operations (CAMEO) program, Aerial Locations of Hazardous Atmospheres (ALOHA) program and the All Hazards Mitigation Plan
- Create a GIS layer for major pipelines in the county
- Implement an interactive system for updating the flood hazard cost estimates in the All Hazards Mitigation Plan by integrating previous damage assessment data with the 2015 Flood Insurance Rate Maps (FIRM) and the upcoming floodplain restudy of the Rock River

Fair Park

- Scan and Index Fair Park Architectural and Development Plans
- Develop GIS layer for online camping registration system

Highway Department

- Develop a GIS inventory of storm water, curb and gutter and lighting facilities
- Continue Integrating Unmanned Aircraft Systems (UAS) capabilities into stockpile management, construction and mapping operations
- Continue Implementing GIS traffic safety analysis that incorporates the state accident database with the accident GIS layer.
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- Incorporate town road record index maps into GIS mapping system with road segment links to town road resolution documents
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- Develop GIS traffic studies and functional classifications layer
- Verify all highway GIS layers after construction projects are completed
- Create a GIS layer containing all highway maintenance agreements with bordering counties

- Update culvert database through culvert inspection and new ratings

Human Services

- Create a Group Housing and Adult Day Care Facilities GIS layer.
- Implement an automated GIS application for routing and scheduling of the volunteer driver program. The program coordinates the transportation needs of elderly/disabled people with about 15 volunteer drivers, part time staff drivers and the veterans van. All drivers have variable availability and home locations

Land and Water Conservation

- Scan and rectify historical aerial photographs for GIS overlay
- Update non-metallic mining portion of the property assessment and tax system to facilitate data input, permit tracking and data distribution
- Implement program oriented web mapping services for distribution of Land and Water Conservation Program data to internal and external customers
- Correlate surface water data for rivers, lakes, streams, ponds and ditches to the terrain model to identify drainage patterns and watershed boundaries
- Develop metadata for all county-wide map layers maintained for Land and Water Conservation purposes
- Develop an aquatic invasive species inventory GIS layer and distribute this data on a web mapping application
- Develop high priority conservation areas by utilizing an updated LiDAR dataset, USDA HUC-12 sub-watersheds and available processing tools
- Attain local geologic data pertaining to areas of thin soils and exposed bed rock for localized nutrient management restrictions
- Create baseline aerial photography utilizing UAV technology of all current NR 135 permitted sites and update over time as needed
- Add to baseline documentation aerial photography utilizing UAS technology of all Conservation Easements where the County is a named holder or responsible for annual monitoring
- Format and Incorporate UAV gathered data with appropriate web map enabled data
- Attain local geologic data pertaining to areas of thin soils and exposed bedrock for localized nutrient management restrictions

Land Information Office

- Develop a dashboard web page to incorporate Land Record Search, document imaging and GIS capabilities into one web browser application
- Further Develop a multi department UAS program mapping and aerial photography capabilities

Management Information Systems

- Move appropriate GIS data to cloud based storage

Parks

- Implement biking and water trail suitability assessment system for roadways and waterways designated for biking and paddling
- Use GIS modeling capabilities to develop a Land Evaluation and Site Assessment (LESA) system to locate and assess potential sites for land and river based parks, natural areas, and land or water trail linkages for outdoor recreation
- Utilize county UAS program aerial photography to develop and promote county parks and outdoor recreation

Planning and Zoning Department

- Create a City and Village Master Plan GIS layer for land use assessments.
- Develop a flood damage assessment application to integrate GIS, property assessment, Survey and FEMA assessment data from past and future flood events to evaluate substantial flood damage. Facilitate sharing of damage assessment data for ongoing mitigation efforts. Scan and link previous flood damage assessment paper records to damage assessment system.
- Develop database and GIS application for rezoning, conditional use and variance petitions to streamline workflows of applications, map compilation and finding of the facts to minimize duplication of data entry
- Implement workflow processing for appropriate land records processes that require actions by several county staff and or departments such as land divisions approval, intensive agricultural permits, non-metallic mining and shore land permitting
- Develop a GPS and GIS application to map new and replacement private sanitary sewage system components during the inspection process

Register of Deeds

- Develop a Tract Index GIS layer to be linked to the tract index and other search programs for quick access to parcel maps and other geospatial data

Sheriff's Department

- Integrate state accident database with accident mapping GIS layer for geospatial analysis
- Develop crime-mapping analysis that utilizes the Sheriff Department records system databases

County Treasurer

- Implement remote posting and collection system for taxes collected by local treasurers to improve the accuracy and timeliness of county tax payment records during first payment collection process
- Scan historic tax rolls