



**DISCOVER.
CONNECT.
PROSPER.**

Washington County Land Information Plan

2021 Update

Washington County IT – GIS Division
Herbert J. Tennes Government Center
432 E Washington St.
West Bend, WI 53095-7986
(262) 365-6569
gis@washcowisconsin.gov
<https://maps.washcowisconsin.gov/portal/apps/sites/#/maps>

Version: 2021-10-22

Adopted by Land Information Council on: 2021-10-22

CONTENTS

EXECUTIVE SUMMARY	3
1 INTRODUCTION	5
2 FOUNDATIONAL ELEMENTS	8
PLSS.....	9
Parcel Mapping.....	11
LiDAR and Other Elevation Data	15
Orthoimagery.....	17
Address Points and Street Centerlines.....	19
Land Use	22
Zoning.....	23
Administrative Boundaries.....	25
Other Layers	29
3 LAND INFORMATION SYSTEM.....	30
Public Access and Website Information	35
4 CURRENT & FUTURE PROJECTS	37
Project Plan to Maintain Searchable Format (Benchmarks 1 & 2)	38
Project Plan for PLSS (Benchmark 4)	39
Project #1: Public Land Survey System Monument Maintenance.....	41
Project #2: Land Use Sanitation/Zoning Modernization	42
Project #3: Land Use/Land Conservation/Highway Online Permitting	43
Project #4: Floodplain Mapping	44
Project #5: Historic Tax Roll Scanning	45
Project #6: Major Hardware Acquisitions.....	46
Project #7: Electronic Survey Submittal	48
Project #8: Other Parcel Related Scanning Projects.....	49
Project #9: Orthophotography Acquisition.....	50
Project #10: LiDAR Acquisition.....	51
Project #11: Grantor/Grantee Book Access.....	52
Project #12: Document Imaging Solution	53
Project #13: NG911 Data Prep	54
Project #14: WSR52022 Conversion.....	55
Project #15: Ongoing Costs Not Associated with a Specific Project.....	56

EXECUTIVE SUMMARY

About this Document. This document is a land information plan for Washington County prepared by the land information officer (LIO) and the 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, Washington County was awarded \$41,000 in WLIP grants and retained a total of \$253,024 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 Washington 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 Washington 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. The Washington County Land Information Office will create and maintain a countywide framework of shared geographic information that conforms to standards enabling data sharing and collaborative decision making.

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

Washington County Land Information Projects: 2022-2024	
Project #1	Public Land Survey System Monument Maintenance
Project #2	Land Use Sanitation/Zoning Modernization
Project #3	Land Use/Land Conservation/Highway Online Permitting
Project #4	Floodplain Mapping
Project #5	Historic Tax Roll Scanning
Project #6	Major Hardware Acquisitions
Project #7	Electronic Survey Submittal
Project #8	Other Parcel Related Scanning Projects
Project #9	Orthophotography Acquisition
Project #10	LiDAR Acquisition
Project #11	Grantor/Grantee Book Access
Project #12	Document Imaging Solution
Project #13	NG911 Data Prep
Project #14	WSRS2022 Conversion
Project #15	Ongoing Costs Not Associated with a Specific Project

The remainder of this document provides more details on Washington 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.

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 Washington County is meeting these benchmarks appears in the Foundational Elements section of this plan document.

County Land Information System History and Context

The original Land Information Plan for Washington County, completed in March 1992, identified two basic goals.

Goal 1: To implement in Washington County, over time, a multipurpose, multi-user, parcel-based, automated mapping and land information system consisting of the following five basic elements:

- a) Geodetic reference framework.
- b) Large-scale planimetric and topographic base maps.
- c) Overlays, including cadastral boundaries and boundaries of various cultural and natural resources.
- d) Identifiers, including parcel numbers and codes associated with various cultural and natural areas.
- e) Non-spatial land information files, including cadastral parcel records and various cultural and natural resource data.

Goal 2: To reach agreement among Washington County, the local units of government in Washington County, and the various public and private utilities operating in Washington County on the design of a common automated mapping and land information systems so as to ensure economy of efficiency in the development and use of that system and so as to ensure the ready entry, retrieval, and exchange of data by and between the various users of the system.

As framework layers were completed, additional goals were developed and included in plan updates. Slowly, goals focused less on data creation and more on the vertical and horizontal integration of land information.

Some of the significant achievements made at Washington County include:

- 100% of PLSS corners are remonumented with horizontal and vertical control (100 PPM coordinate accuracy).
- 100% of parcels are digitized using coordinated geometry and referenced to the PLSS network.
- Countywide historic aerial imagery from 1941, 1950, 1963, 1970, 1980, 1985 and 1990 that is scanned, edge matched and georeferenced.
- Countywide digital orthophotography from 1995, 2000, 2005, 2010, 2015 and 2020.
- Countywide oblique and ortho imagery from 2013 and 2017.
- Countywide LiDAR data from 2006 (1.0 m point spacing) and 2015 (0.7 m point spacing) as well as older photogrammetric contours for select areas of the county.
- Countywide site addresses and road centerlines that are used for a variety of county applications including emergency response.
- Surface water and shoreland/wetland/floodplain zoning features are digitized.
- Through partnerships and county funded projects, all floodplains in Washington County were studied. These studies are in various stages of the FEMA approval process.
- A large number of planning layers used for comprehensive and other planning efforts.
- All real estate documents recorded in the register of deeds are scanned and available on-line.
- Register of Deeds pioneered e-recording in Wisconsin.
- All surveys filed with the county surveyor are scanned and available on-line.
- Access to POWTS and zoning records that are tied to parcels and available on-line with the ability to electronically submit pumping maintenance reports.
- POWTS permits are scanned, associated with the appropriate parcel and publicly available. A project to do the same with zoning is underway.
- Development of a traditional land information website displaying most data and a growing suite of on-line applications providing simplified access to property sales, parks, supervisory districts, addressing, etc...
- Data is available for free public download.

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.

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**

*** Other members of the Washington County Land Information Council named in County Ordinance 15-24 include: Deputy Administrator (Planning and Parks Department), County Conservationist and 2 additional members.*

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 land information officer and the land information council.

Washington County Land Information Council and Plan Workgroup				
Name	Title	Affiliation	Email	Phone
+ Eric Damkot	Data and GIS manager/Land Information Officer	IT Department	eric.damkot@washcowisconsin.gov	262-306-2218
+ Todd Bultman	LIC Chair/Supervisor – District 19	Washington County Board of Supervisors	todd.bultman@washcowisconsin.gov	608-333-1234
+ Brian Braithwaite	Real Property Lister/LIC Vice-Chair	Register of Deeds Department	brian.braithwaite@washcowisconsin.gov	262-335-4370
+ Justin Drew	Director of Community Development	City of Hartford	jdrew@ci.hartford.wi.us	262-673-8272
+ Katrina Hanson	Broker/Realtor	Hanson & Co. Real Estate	khanson@hansoncompanyhomes.com	262-353-1800
+ Scott Henke	Treasurer	County Treasurer Department	scott.henke@washcowisconsin.gov	262-335-4324
+ Sharon Martin	Register of Deeds	Register of Deeds Department	sharon.martin@washcowisconsin.gov	262-335-4318
+ Scott Schmidt, PE, PLS	County Surveyor	Highway Department	scott.schmidt@washcowisconsin.gov	262-335-6881
+ Martin Schulteis	Sheriff	Sheriff Department	marty.schulteis@washcowisconsin.gov	262-335-4420
+ Paul Sebo	Conservation and Zoning Manager	Planning and Parks Department	paul.sebo@washcowisconsin.gov	262-335-4800
+ Debora Sielski	Deputy Administrator	Planning and Parks Department	deb.sielski@washcowisconsin.gov	262-335-4445

+ Land Information Council Members designated by the plus symbol

Approved by the Land Information Council: 10/22/2021

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.

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. The list of WLIP’s Foundational Layers has evolved over time.

For more information, view the Wisconsin Land Information Association’s *Status of Selected Wisconsin Foundational Layers* and *Foundational Layers Completeness Discoverability Accessibility Scorecard*. Note: the WLIA documents include layers that are typically outside the area of county responsible and therefore not referenced in this plan. <https://www.wlia.org/resources/foundational-layers/>

FOUNDATIONAL ELEMENTS

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

PLSS

Public Land Survey System Monuments

Layer Status

PLSS Layer Status

	Status/Comments
Number of PLSS corners (section, ¼, meander) set in original government survey that can be remonumented in your county	<ul style="list-style-type: none"> 2066 (Including section centers)
Number of PLSS corners capable of being remonumented in your county that have been remonumented	<ul style="list-style-type: none"> 2066 (Including section centers)
Number of remonumented PLSS corners with survey grade coordinates (see below for definition) <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 1,929 observed - 2nd Order, Class I Horizontal Acc. NAD83/2011 137 computed - 3rd Order, Class I Horizontal Acc. NAD83/2011 The computed monuments will be observed as weather and other conditions permit
Number of survey grade PLSS corner coordinates integrated into county digital parcel layer	<ul style="list-style-type: none"> 0
Number of non-survey grade PLSS corner coordinates integrated into county digital parcel layer	<ul style="list-style-type: none"> 2066
Tie sheets available online?	<ul style="list-style-type: none"> Yes - https://gis.sewrpc.org/portal/apps/webappviewer/index.html?id=9b49d9d04b294b8c8d1b667c9996b8ac
Percentage of remonumented PLSS corners that have tie sheets available online (whether or not they have corresponding coordinate values)	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 100%
PLSS corners believed to be remonumented based on filed tie-sheets or surveys, but do not have coordinate values	<ul style="list-style-type: none"> 0%
Approximate number of PLSS corners believed to be lost or obliterated	<ul style="list-style-type: none"> 0%
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 corner point ID system)?	<ul style="list-style-type: none"> SEWRPC Standard
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?	<ul style="list-style-type: none"> No
Total number of PLSS corners along each bordering county	<ul style="list-style-type: none"> Dodge County – 52 monuments Fond du Lac County– 46 monuments Ozaukee County – 55 monuments Sheboygan County – 24 monuments Waukesha County – 73 monuments
Number of PLSS corners remonumented along each county boundary	<ul style="list-style-type: none"> Dodge County – 52 monuments Fond du Lac County– 46 monuments Ozaukee County – 55 monuments Sheboygan County – 24 monuments Waukesha County – 73 monuments
Number of remonumented PLSS corners along each county boundary with survey grade coordinates	<ul style="list-style-type: none"> 231 observed - 2nd Order, Class I Horizontal Acc. NAD83/2011 15 computed - 3rd Order, Class I Horizontal Acc. NAD83/2011
In what ways does your county collaborate with or plan to collaborate with neighboring counties for PLSS updates on shared county borders?	<ul style="list-style-type: none"> We share updated tie sheets with neighboring county surveyor offices on an annual basis. We inform neighboring county surveyor offices when we find

	<p>discrepancies with PLSS data on shared county borders.</p> <ul style="list-style-type: none"> • We plan and share field work responsibilities with neighboring county surveyors when required to preserve and maintain the PLSS corners on our borders.
--	---

Custodian

- Washington County Surveyor

Maintenance

- Washington County has a monument maintenance program where approximately 1/12 of all PLSS corners, including ties, are inspected annually. Any deficiencies found are repaired and brought to current county standards
- Every year the county reaches out to local governments and paving contractors requesting information about road projects that could damage monuments. Response has been very good and through this outreach, monuments are prepped prior to construction and, if necessary, replaced after construction.
- Each year the county repairs or replaces monuments reported by surveyors and other professionals reliant on the monuments.

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
- Esri ArcGIS Professional Parcel Fabric Data Model

Other Geodetic Control and Control Networks

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

Layer Status

- Washington County does not have other Geodetic Control and Control Networks layers

Parcel Mapping

Parcel Geometries

Layer Status

- **Progress toward completion/maintenance phase:** In Washington County, 100% of the county's parcels are available in a commonly-used digital GIS format. When the entire PLSS survey network has been occupied and updated coordinate values delivered, the entire parcel fabric will be adjusted. Currently parcels are tied to monuments with 3rd Order, Class I Horizontal Accuracy that has been projected from NAD 1927 to NAD 1983 (2011).
- **Projection and coordinate system:** NAD 1983 (2011) StatePlane Wisconsin South FIPS 4803 (US Feet)
- **Integration of tax data with parcel polygons:** Washington County has a parcel polygon model that directly integrates tax/assessment data as parcel attributes. The parcel feature includes the tax key as an attribute. Using the tax key, the parcel polygons can be joined to tax/assessment data, POWTS, or any other database that is also associated with a tax key. An automated routine runs nightly to extract the most commonly used tax roll attributes from the tax program, joins those attributes to the parcel polygons and publishes the joined data as a new service.
- **Online Parcel Viewer Software/App and Vendor name:** Internally hosted and developed using Esri's Web AppBuilder for ArcGIS Developer edition.
<https://maps.washcowisco.gov/apps/washcogis/>
- **Unique URL path for each parcel record:**
 - **Tax Listing Application:**
 - Sample URL for parcel T4-066600B:
<http://landrecords.co.washington.wi.us/LandRecords/PropertyListing/RealEstateTaxParcel/DetailByMuniCodeParcelNumber?municipalCode=T4&parcelNumber=066600B>
 - Accessible information includes ownership, physical address, mailing address, short legal description, assessment classes and values, taxing districts, tax and payment history, parcel lineage and links to scanned tax bills.
 - The domain is expected to change within the next 6 months
 - The link is easily calculated using the municipality and parcel ID attributes.
 - The unique URL launches an application with data shown for the selected parcel, but can't directly be used to export the parcel specific data. Washington County provides other options for obtaining tabular and geographic land records data.
 - **POWTS/Land Use Zoning Application:**
 - Sample URL for T4-066600B:
<http://landrecords.co.washington.wi.us/LandRecords/PropertyListing/RealEstateTaxParcel/PermitDetail?muni=T4&parcelNumber=066600B>
 - Accessible information includes POWTS and shoreland zoning permits, POWTS maintenance history and links to scanned permit files.
 - The domain is expected to change within the next 6 months
 - The link is easily calculated using the municipality and parcel ID attributes.
 - The unique URL launches an application with data shown for the selected parcel, but can't directly be used to export the parcel specific data. Washington County provides other options for obtaining tabular and geographic land records data.
 - **GIS Mapping Application**
 - Sample URL for T4-066600B:
https://maps.washcowisco.gov/apps/washcogis/index.html?query=Current%20parcel,TaxKey,T4_066600B
 - Accessible information includes current and historic orthophotography, address and road centerlines, landmarks, districts, soils, topography, shoreland/floodplain/wetland zoning, environmental features, etc...
 - The link is expected to be stable

- The link is easily calculated using the municipality and parcel ID attributes.
- The unique URL launches an application with a map zoomed to the selected parcel, but can't directly be used to export the parcel specific data. Washington County provides other options for obtaining tabular and geographic land records data.

Custodian

- IT Department – GIS Division

Maintenance

- **Update Frequency/Cycle:** Parcel polygons are updated throughout the year as documents are recorded or surveys filed.
- Parcels that are retired are maintained in a history file.

Standards

- **Data Dictionary:** Washington County has FGDC compliant metadata and documented domain values. There is an internal project planned that will create the key metadata components in a user friendly format.
- Esri ArcGIS Professional Parcel Fabric Data Model

Assessment/Tax Roll Data

Layer Status

- **Progress toward completion/maintenance phase:** NA
- **Tax Roll Software/App and Vendor name:** Ascent Land Records Suite from Transcendent Technologies.
- **Municipal Notes:**
 - Assessment data is maintained by local assessors and Washington County has limited access to the assessment data found on the Residential Property Record Card (PA-500)

Custodian

- Washington County Register of Deeds - Real Property Lister Division

Maintenance

- **Maintenance of the Searchable Format standard:** To maintain the Searchable Format standard, the county pays an annual maintenance fee for a program that exports data from the tax listing software to the searchable format. The exported data is then joined to the parcel geometries and subjected to additional automated and manual validation and clean-up processes before being submitted to the Wisconsin Department of Administration.
- **Searchable Format Workflow:** The county maintains parcel/tax roll data in the Searchable Format or close enough to the Searchable Format that little to no human labor is required for the annual submission of parcel/tax roll data to DOA. Note that any change to the searchable format schema requires automated processes to be redeveloped.

Standards

- Wisconsin Department of Revenue [Property Assessment Manual](#) and attendant DOR standards
- DOR XML format standard requested by DOR for assessment/tax roll data
- s. 73.03(2a), Wis. Stats. Department of Revenue (DOR) – Powers and duties defined.
- Department of Revenue Property Assessment Manual – Chapter 5 and DOR format standard requested by DOR for assessment/tax roll data
- s. 59.72(2)(a), Wis. Stats. Presence of all nine "Act 20" attributes: The only zoning information maintained by Washington County is shoreland/floodplain/wetland zoning in the unincorporated areas of the county. That information is available as an overlay. The other 8 "Act 20" attributes are present.
- s. 70.09, Wis. Stats. Real Property Lister

Non-Assessment/Tax Information Tied to Parcels - POWTS

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

Layer Status

- Private On-Site Wastewater Treatment Systems (POWTS) permit and maintenance history is

tied to the parcel and maintained in the Transcendent Technologies suite of products.

Custodian

- Planning and Parks Department – Land Resources Division

Maintenance

- The data is actively maintained by department staff when permits are issued.
- Maintenance information is entered by pumpers through an on-line portal or by department staff.
- The software is tightly integrated with the tax system. This ensures the integrity of the links between POWTS, tax information and parcel geometries are maintained.

Standards

- Consistent with all state statutes and county ordinances.

Non-Assessment/Tax Information Tied to Parcels – Zoning Records e.g., Permits, Easements, Non-Metallic Mining, Brownfields, Restrictive Covenants

Layer Status

- Shoreland/Wetland/Floodplain zoning is tied to the parcel and maintained in the Transcendent Technologies suite of products. Note: Washington County does not administer any general zoning and only administers shoreland/floodplain/wetland zoning in the unincorporated areas of the county.
- Specific Best Management Practices (BMP) typically installed on private lands through federal, state or local programs.
- Inventory of sites that have been permitted and comply with the County's Erosion Control and Stormwater Management (ECSM) Ordinance. Permanent storm water practices are identified for future inspections and maintenance requirements as identified in County Ordinance.
- Inventory of nonmetallic mines that are permitted through the County's Nonmetallic Mining Reclamation Ordinance

Custodian

- Planning and Parks Department – Land Resources Division

Maintenance

- Zoning data is actively maintained by department staff when permits are issued. The software is tightly integrated with the tax system. This ensures the integrity of the links between zoning, tax information and parcel geometries are maintained.
- BMPs are kept current as applicants receive project funding.
- ECSM sites are identified and mapped during the permitting process.
- Approved reclamation plans are on file in the Planning and Parks Department.

Standards

- Consistent with all state statutes and county ordinances.

ROD Real Estate Document Indexing and Imaging

Layer Status

- **Grantor/Grantee Index:** Washington County has a digital, searchable grantor/grantee index from 1/1/1945 to the present.
- **Tract Index:** Washington County has a digital, searchable tract index from 7/1/1996 to the present. Tract books from 1830 through 12/31/1996 are scanned. The tract index is based on the PLSS (1/16 section) except for subdivisions and condominiums where the tract index is based on Subdivision/Condominium lot and block. All real estate documents recorded in the Register of Deeds are included in the tract index.
- **Imaging:** All real estate documents recorded in the register of deeds are scanned and stored in IMS21 software.

- **ROD Software/App and Vendor Name:** Landshark, Trimin

Custodian

- Register of Deeds

Maintenance

- The Register of Deeds continually adds and updates records as documents are recorded

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:** 2015
- **Accuracy:** The RMSEz was computed to be 0.041 meters (0.135 feet) and AccuracyZ to be 0.080 meters (0.264 feet). RMSEz has been tested to 0.5 feet or better per the task order specifications. AccuracyZ has been tested to meet 18.13 cm Fundamental Vertical Accuracy at 95 Percent confidence level using $RMSE(z) \times 1.9600$ as defined by the National Standards for Spatial Data Accuracy (NSSDA); assessed and reported using National Digital Elevation Program (NDEP)/ASPRS Guidelines
- **Post spacing:** 0.7m
- **Next planned acquisition year:** Tentatively planned for 2023-2025
- **QL1/QL2 acquisition plans:** Current date meets QL2 standards. Future projects are expected to at least meet QL2 standards.
- **Historic:** Dec 2006. The post spacing is approximately 1m. Per NSSDA/FEMA guidelines: $RMSEz \times 1.960 = 95\%$ confidence level; $0.29 \times 1.9600 = 0.57$ ft. Per NDEP/ASPRS guidelines: 95th percentile (CVA) = 95% confidence level = 0.64 ft

Custodian

- Information Technology – GIS Division

Maintenance

- There is little maintenance with LiDAR data. The data and its derivative products are made available in a variety of formats.
- There is not a specific update schedule for LiDAR data. The county will look to acquire an updated LiDAR dataset when the benefits of an updated surface outweigh the costs. The next flight is tentatively planned between 2023 and 2025.

Standards

- The 2015 flight was designed to meet USGS LiDAR Base Specifications QL2.

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

- The 2015 deliverable included a countywide DTM and 1' contour file. Washington County developed a countywide 5' DEM. Other derivative products are created on a site specific basis as needed.

Custodian

- Information Technology – GIS Division

Maintenance

- There is not a specific update schedule for LiDAR data. The county will look to acquire an updated LiDAR dataset when the benefits of an updated surface outweigh the costs. The next flight is tentatively planned between 2023 and 2025

Standards

- The 2015 flight was designed to meet USGS LiDAR Base Specifications QL2.

Other Types of Elevation Data

Layer Status

- 1994 photogrammetric project covering 12 sections around and including the Village of Kewaskum. The deliverable included topographic features consisting of geodetic and geographic reference elements, hydrographic elements, planimetric elements, and hypsometric elements.
- 1995 photogrammetric project covering the 36 sections that make up the Town of Erin. The deliverable included topographic features consisting of geodetic and geographic reference

- elements, hydrographic elements, planimetric elements, hypsometric elements and a DTM.
- 1997 photogrammetric project covering 14 sections around and including the Village of Slinger. The deliverable included topographic features consisting of geodetic and geographic reference elements, hydrographic elements, planimetric elements, hypsometric elements and a DTM.
- 2003 photogrammetric project covering 18 sections in the Oconomowoc River sub-watershed. The deliverable included topographic features consisting of geodetic and geographic reference elements, hydrographic elements, planimetric elements, hypsometric elements and a DTM.
- 2005 photogrammetric project covering 111 sections in various Washington County communities. The deliverable included 2' contours and a DTM.

Custodian

- Information Technology – GIS Division

Maintenance

- This dataset is made available in a variety of formats, but is not actively maintained.
- The photogrammetric elevation data has been updated by 2 countywide LiDAR projects

Standards

- National Map Accuracy Standards for 1:2400 scale mapping

Orthoimagery

Orthoimagery

Layer Status

- **Most recent acquisition year:** 2020
- **Resolution:** 3"
- **Contractor's standard:** Leaf-off, 4 -band
- **Next planned acquisition year:** 2022

Custodian

- Information Technology – GIS Division

Maintenance

- Washington County typically acquires orthophotography as part of a consortium organized and facilitated by the Southeastern Wisconsin Regional Planning Commission (SEWRPC). That consortium has a history of acquiring imagery every 5 years.
- In 2013 Washington County initiated a program with Pictometry to acquire imagery between the regional projects. A Pictometry data capture was repeated in 2017.
- Orthophotography acquisition is planned for 2022 through a consortium organized by SEWRPC and this more frequent update schedule is expected into the future. This will enable Washington County to combine its two existing and complimentary orthoimagery programs.

Standards

- ASPRS

Historic Orthoimagery

Layer Status

- Washington County has the following historic countywide digital orthophotographic datasets.
 - 2020 – 3" pixel, leaf-off, 4-band
 - 2017 – 9" pixel, leaf-off, true color (Pictometry project – not AccuPLUS)
 - 2015 – 6" pixel, leaf-off, true color
 - 2013 – 9" pixel, leaf-off, true color (Pictometry project – not AccuPLUS)
 - 2010/2011 – 6" pixel, leaf-off, true color (The entire county was flown in 2010. Snow, in an amount exceeding the project specification, required about 25% of the county to be re-flown in 2011)
 - 2005 – 1' pixel, leaf-off, true color
 - 2000 – 1' pixel, leaf-off, black and white
 - 1995 – 2' pixel, leaf-off, black and white
- Washington County has the following countywide historic orthoimagery datasets. In each case the original negatives were scanned and georeferenced using an analytical aerotriangulation solution. Although georeferenced, the positional accuracy is not defined. The pixel resolution is one foot.
 - 1990 – Leaf-off. Black and White, 1:19200, Source of historic aerial negatives: SEWRPC
 - 1985 – Leaf-off. Black and White, 1:20000, Source of historic aerial negatives: SEWRPC
 - 1980 – Leaf-off. Black and White, 1:20000, Source of historic aerial negatives: SEWRPC
 - 1970 – Leaf-off. Black and White, 1:20000, Source of historic aerial negatives: SEWRPC
 - 1963 – Leaf-off. Black and White, 1:24000, Source of historic aerial negatives: SEWRPC
 - 1950 – Leaf-on, Black and White, 1:20000, Source of historic aerial negatives: National Archives
 - 1941 – Leaf-on, Black and White, 1:20000, Source of historic aerial negatives: National Archives

Custodian

- Information Technology – GIS Division

Maintenance

- The goal was to scan and georeference at least one set of historic imagery per decade for as far back as possible. With this goal met, there is no current plan to scan additional years of

historic digital data.

Standards

- Undefined – 1941, 1950, 1963, 1970, 1980, 1985, 1990, 2013, 2017
- National Map Accuracy Standards for 1:4800 scale mapping – 1995
- National Map Accuracy Standards for 1:2400 scale mapping – 2000, 2005
- National Map Accuracy Standards for 1:1200 scale mapping – 2010/2011

Other Types of Imagery – Oblique Imagery (Pictometry)

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

Layer Status

- 4-way Countywide, Community (9" GSD) oblique imagery from 2017
- 4-way Countywide, Community (9" GSD) oblique imagery from 2013

Custodian

- Information Technology – GIS Division

Maintenance

- In 2013 Washington County initiated a program with Pictometry to acquire imagery between the regional orthophotography projects.
- Orthophotography acquisition is planned for 2022 through a consortium organized by SEWRPC and this more frequent update schedule is expected into the future. This will enable Washington County to combine its two existing and complimentary orthoimagery programs.
- Oblique imagery is expected to be included in periodic orthoimagery capture projects.

Standards

- None

Address Points and Street Centerlines

Address Point Data

Layer Status

- Complete when City of West Bend data is merged with Washington County data.

Custodian

- Information Technology – GIS Division
- City of West Bend Department of Development

Maintenance

- Washington County does not assign any addresses. All address assignment is done at the local level and Washington County is reliant on the local governments to report addresses that are created, modified, or retired.
- Washington County created a geoform to facilitate the communication of addresses from the local governments to the county.
- Address points are continually updated. The geographic feature is placed on the structure as observed on orthophotography. When structures are newer than the available orthophotography, the point is placed at an approximate location. The location of the point is refined when new photography is acquired.
- The County and City of West Bend have an agreed 'area of responsibility' and maintain similar data models. The data from the county and city can be combined to create a seamless data layer.
- Washington County is actively making the necessary updates to correct errors reported in the 2020 Department of Military Affairs' NG911 Gap Analysis

Standards

- Wisconsin Land Information Association Address Point Standard (WLIA Standards)
- Wisconsin Land Information Wisconsin GIS NG9-1-1 Data Standard (Site/Structure Address Point) A cross walk is planned from the WLIA standard to the NG911 standard

Building Footprints

Layer Status

- Building footprints were one of the planimetric features captured as part of legacy photogrammetric topographic projects. Those projects include:
 - 1994 – 12 sections around and including the Village of Kewaskum.
 - 1995 – 36 sections that make up the Town of Erin.
 - 1997 – 14 sections around and including the Village of Slinger.
 - 2003 – 18 sections in the Oconomowoc River sub-watershed.
- Building footprints for the City of West Bend are available from the City Department of Development.

Maintenance

- Building footprints are not actively maintained by Washington County.
- A project to expand building footprint mapping is not in the current plan.

Standards

- None

Other Types of Address Information – Address Ranges

e.g., Address Ranges

Layer Status

- Washington County maintains left and right addresses ranges on its road centerline features. This layer is complete for Washington County.

Custodian

- Information Technology – GIS Division

Maintenance

- Washington County does not assign any addresses. All address assignment is done at the local

level and Washington County is reliant on these local governments to report addresses that are created, modified, or retired.

- Address ranges are continually updated using the best data available to Washington County.
- Washington County is actively making the necessary updates to correct errors reported in the 2020 Department of Military Affairs' NG911 Gap Analysis

Standards

- Wisconsin Land Information Association Street Centerline Point Standard (WLIA Standards)

Street Centerlines

Layer Status

- Complete

Custodian

- Information Technology – GIS Division

Maintenance

- Street centerlines are added using new subdivisions and road plans. Locations are refined using current orthophotography.

Standards

- Wisconsin Land Information Association Street Centerline Point Standard (WLIA Standards)
- Wisconsin GIS NG9-1-1 Data Standard (Road Centerline) A cross walk is planned from the WLIA standard to the NG911 standard

Rights of Way

Layer Status

- Complete
- **How maintained:** Right of way is maintained within the ConveyanceDivision feature class in the Esri ArcGIS Professional parcel fabric. The right of way polygons are identified within this feature class by selecting 'Lot or Unit Type = Public Right of Way'

Custodian

- Information Technology – GIS Division

Maintenance

- Continually updated as part of the parcel mapping workflow. Data is maintained using the Esri Parcel Fabric.

Standards

- Esri ArcGIS Professional Parcel Fabric Data Model

Trails – Major Recreational Trails

e.g., Recreational Trails, Snowmobile Trails

Layer Status

- Major state and local trails. (I.e. Ice Age Trail, Eisenbahn Trail, West Bend River Walk, etc...) This layer does not include local park trails. This layer is believed to be complete.

Custodian

- Planning and Parks Department
- Information Technology – GIS Division

Maintenance

- As Needed

Standards

- None

Trails – Snowmobile Trails

e.g., Recreational Trails, Snowmobile Trails

Layer Status

- This layer is believed to be complete.

Custodian

- Planning and Parks Department
- Information Technology – GIS Division

Maintenance

- Whenever updated information is presented to the county

Standards

- None

Land Use

Current Land Use

Layer Status

- 2015 Land Use is complete for Washington County.
- 2020 Land Use is in development by the Southeastern Wisconsin Regional Planning Commission with an anticipated completion date of early 2022.

Custodian

- Southeastern Wisconsin Regional Planning Commission

Maintenance

- Traditionally updated every 5 years in conjunction with the regional orthophotography program

Standards

- SEWRPC land use mapping standards

Future Land Use

Layer Status

- 2050 Land Use is complete and part of SEWRPC's Vision 2050

Custodian

- Southeastern Wisconsin Regional Planning Commission
- Planning and Parks Department – Planning Division

Maintenance

- As needed

Standards

- s. 66.1001, Wis. Stats. Comprehensive planning.
- SEWRPC land use mapping standards

Zoning

County General Zoning

Layer Status

- Not administered by the county

Shoreland Zoning

Layer Status

- The County maintains a GIS representation of county shoreland zoning boundaries
- The layer is 100% complete for the unincorporated areas of the county.
- The county does not have regulatory authority for the incorporated areas of the county and does not maintain a GIS representation for these areas.

Custodian

- Planning and Parks Department – Land Resources Division
- Information Technology – GIS Division

Maintenance

- Washington County uses FEMA floodplains in the determination of shoreland zones, but has, and continues to aggressively complete floodplain mapping projects that will remove all Zone A floodplain in the County.
- Shorelands are modified when navigability studies are completed or when the floodplain is studied.

Standards

- s. 59.69 Wis. Stats. Planning and Zoning Authority
- s. 59.692 Wis. Stats. Zoning of shorelands on navigable waters
- s. 87.30 Wis. Stats. Floodplain Zoning
- s. 281.31 Wis. Stats. Navigable waters protection law
- Washington County Ordinance 275

Farmland Preservation Zoning

Layer Status

- Not administered by county

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](#)
- A flood storage district, created by the DNR, is available for Rock River Watershed and incorporated into the floodplain zoning maps. At this time no such layer exists for the Milwaukee River watershed.

Custodian

- Federal Emergency Management Agency
- Wisconsin Department of Natural Resources
- Planning and Parks Department – Land Resources Division
- Information Technology – GIS Division

Maintenance

- Washington County uses FEMA floodplains, but has and continues to aggressively complete floodplain mapping projects that will remove all Zone A floodplain in County*

Standards

- FEMA floodplain mapping standards

Wetland Zoning

Layer Status

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

- The layer is a simplified version of the Wisconsin Wetland Inventory that has been enhanced to show site specific wetland delineations where available.
- The layer is 100% complete for the unincorporated areas of the county.
- The county does not have regulatory authority for the incorporated areas of the county and does not maintain a GIS representation for these areas.

Custodian

- Planning and Parks Department – Land Resources Division
- Information Technology – GIS Division

Maintenance

- Washington County uses a simplified version of the most current Wisconsin Wetland Inventory that has been further improved by the Washington County board based on site specific wetland determinations.
- County regulated wetlands are modified as Shoreland zones shrink or expand

Standards

- s. 59.69 Wis. Stats. Planning and Zoning Authority
- s. 59.692 Wis. Stats. Zoning of shorelands on navigable waters
- s. 87.30 Wis. Stats. Floodplain Zoning
- s. 281.31 Wis. Stats. Navigable waters protection law
- Washington County Ordinance 275

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

- Complete for the Village of Germantown and the Village of Richfield

Custodian

- Village of Germantown
- Village of Richfield
- Information Technology – GIS Division

Maintenance

- There is an MOU in place with each Village to maintain their zoning maps.
- Any zoning change approved at the local level is sent to the county for mapping

Standards

- Village of Richfield Ordinance
- Village of Germantown Ordinance

Administrative Boundaries

Civil Division Boundaries

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

Layer Status

- Complete

Custodian

- Information Technology – GIS Division

Maintenance

- Continually updated as part of the parcel mapping workflow. Data is maintained using the Esri Parcel Fabric.

Standards

- Esri ArcGIS Professional Parcel Fabric Data Model

School Districts

Layer Status

- **Progress toward completion/maintenance phase:** Complete
- **Relation to parcels:** All parcels are attributed with the school district(s) to which it belongs. Parcels were merged based on the school district attribute to create school district polygons.
 - **Attributes linked to parcels:** District name and district tax code

Custodian

- Register of Deeds – Real Property Lister Division
- Information Technology – GIS Division

Maintenance

- On-going as part of the tax listing database maintenance workflow.
- The county has worked with specific school districts in the past to correct errors. Additional verification in some areas is needed.
- Washington County participates in voluntary data submittals to the Wisconsin Department Public Instruction with the hope of improving district boundary maps at the state and local level as well as in US Census Bureau maps.

Standards

- None

Election Boundaries - Wards

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

Layer Status

- Complete
- Wards are attributed with polling location/address, alder/trustee district, supervisor district, state assembly and senate districts, congressional district, court of appeals district, sanitary districts, and school districts

Custodian

- County Clerk
- Local Government Clerks
- Information Technology – GIS Division

Maintenance

- Wards were developed in 2011 by the local units of government with assistance from Washington County
- Ward polygons are modified whenever annexations occur
- The ward layer will be redrawn following the 2020 decennial census. Due to delays in release of the redistricting dataset, wards will be redrawn in late 2021 or early 2022.

Standards

- s. 5.15 Wis. Stat. Division of municipalities into wards

Election Boundaries – County Supervisory Districts

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

Layer Status

- Complete

Custodian

- County Clerk
- Information Technology – GIS Division

Maintenance

- Current Supervisor Districts were created to coincide with a board size reduction effective with the April 2016 election. Wards were developed in 2011 by the local units of government with assistance from Washington County
- This feature will not change until the redistricting effort following the 2020 census.
- . Due to delays in release of the redistricting dataset, supervisory districts will be redrawn in late 2021 or early 2022.

Standards

- s. 59.10 Wis. Stat. Boards: composition; election; terms; compensation; compatibility

Election Boundaries – Polling Places

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

Layer Status

- Complete

Custodian

- County Clerk
- Local Government Clerks
- Information Technology – GIS Division

Maintenance

- Modified whenever there are changes to polling places

Standards

- None

Utility Districts

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

Layer Status

- Some utility districts have taxing authority and are maintained as an attribute in the tax roll. For these districts, the layer is complete. Washington County does not maintain data for districts that are not included as a tax roll attribute.**

Custodian

- Register of Deeds – Real Property Lister Division
- Information Technology – GIS Division

Maintenance

- On-going as part of the tax listing database maintenance workflow

Standards

- None

Emergency Service Boundary – Law/Fire/EMS

Layer Status

- **Law Enforcement:** Complete
- **Fire:** Complete
- **EMS:** Complete

Custodian

- Sheriff's Department
- Register of Deeds – Real Property Lister Division
- Information Technology – GIS Division

Maintenance

- Updated as needed
- Washington County is actively making the necessary updates to correct errors reported in the 2020 Department of Military Affairs' NG911 Gap Analysis

Standards

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

Public Safety Answering Points (PSAP) Boundary

Layer Status

- **PSAP Boundary:** Complete

Custodian

- Sheriff's Department
- Register of Deeds – Real Property Lister Division
- Information Technology – GIS Division

Maintenance

- Updated as needed
- Washington County is actively making the necessary updates to correct errors reported in the 2020 Department of Military Affairs' NG911 Gap Analysis

Standards

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

Provisioning Boundary

Layer Status

- Complete

Custodian

- Sheriff's Department
- Register of Deeds – Real Property Lister Division
- Information Technology – GIS Division

Maintenance

- Washington County is actively making the necessary updates to correct errors reported in the 2020 Department of Military Affairs' NG911 Gap Analysis

Standards

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

Lake Districts

Layer Status

- Parcels are attributed with the lake district to which it belongs. Parcels were merged based on the lake district attribute to create lake district polygons

Custodian

- Register of Deeds - Real Property Lister
- Information Technology – GIS Division

Maintenance

- On-going as part of the tax listing database maintenance workflow.

- The county has worked with specific lake districts in the past to correct errors. Additional verification in some areas is needed.

Standards

- None

Native American Lands

Layer Status

- Washington County does not have any Native American lands

Other Administrative Districts

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

Layer Status

- The layer is believed to be complete for all local, county, and state parks. The layer also includes areas owned by land trusts, or others, which are open to the public. The layer may not be complete for privately held land that is open to public
- The polygons are attributed with the amenities available at the park or public open space. The amenity list may not be current.

Custodian

- Planning and Parks Department – Planning Division
- Information Technology – GIS Division

Maintenance

- Updated as changes are reported to the county

Standards

- None

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

- Believed to be 100% complete. Includes flowing water and lakes/ponds (> 2 ac) as seen on, and digitized to match, current orthophotography

Custodian

- Information Technology – GIS Division

Maintenance

- This layer is critical to and maintained as part of the shoreland/floodplain/wetland zoning feature dataset

Standards

- s. 59.69 Wis. Stats. Planning and Zoning Authority
- s. 281.31 Wis. Stats. Navigable waters protection law
- Washington County Ordinance 275
- USGS Elevation-Derived Hydrography Specifications – Washington County is designed to meet local standards/needs and not this federal standard.

Cell Phone Towers

Layer Status

- Washington County does not maintain cell phone tower information

Bridges and Culverts

Layer Status

- An inventory of county inspected bridges is complete. This is not a comprehensive inventory of all bridges in the county.
- An inventory of culverts under county highways is being considered

Custodian

- Highway Department
- Information Technology – GIS Division

Maintenance

- As needed

Standards

- None

Other/Miscellaneous - Railroads

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

Layer Status

- Complete for the County

Custodian

- Information Technology – GIS Division

Maintenance

- Railroad right of way is maintained in the parcel database and railroad centerlines were digitized to match current orthophotography.

Standards

- None

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.

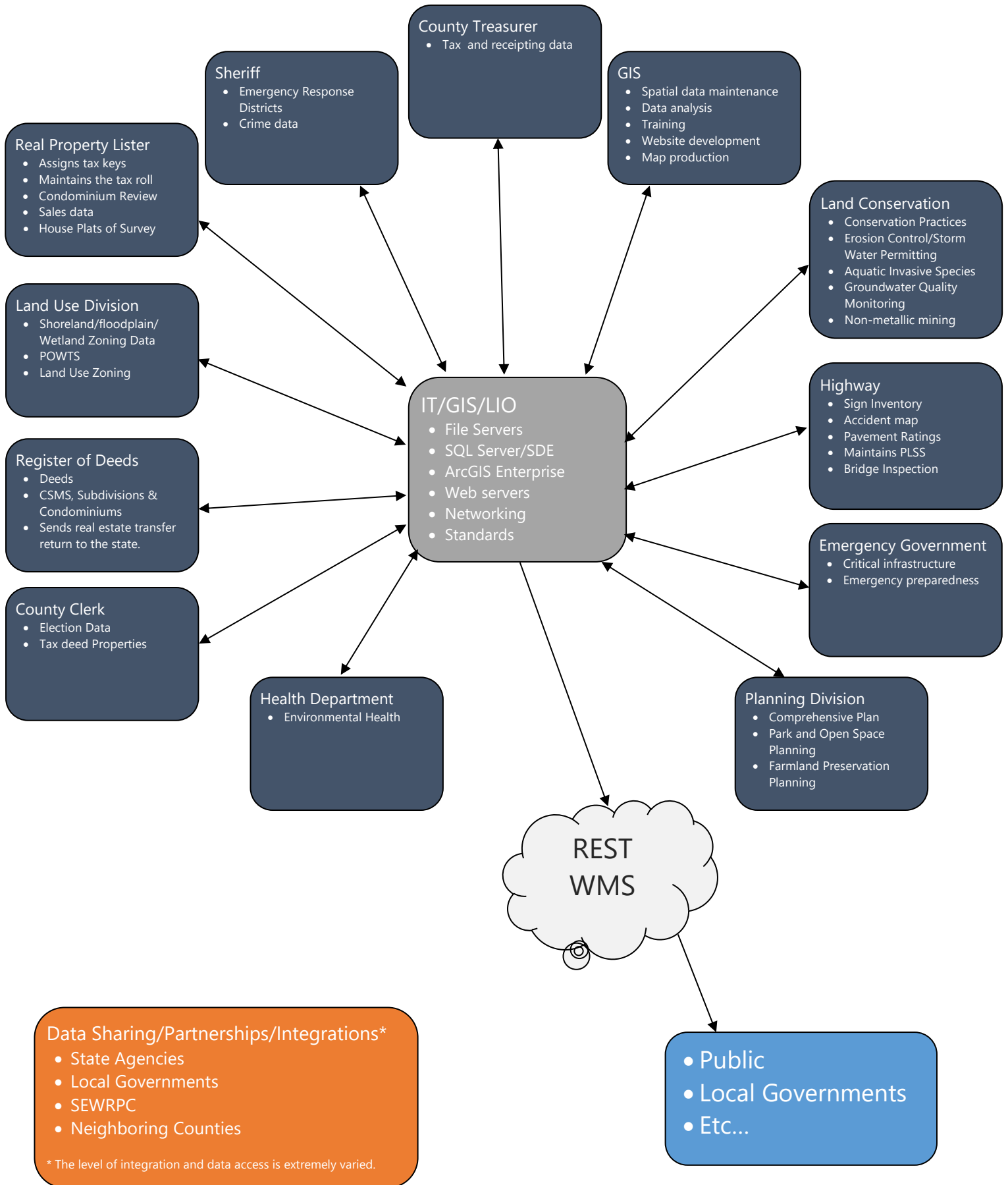
One integration requirement is listed under s. 16.967(7)(a)(1), Wis. Stats., which states that counties may apply for grants for:

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.

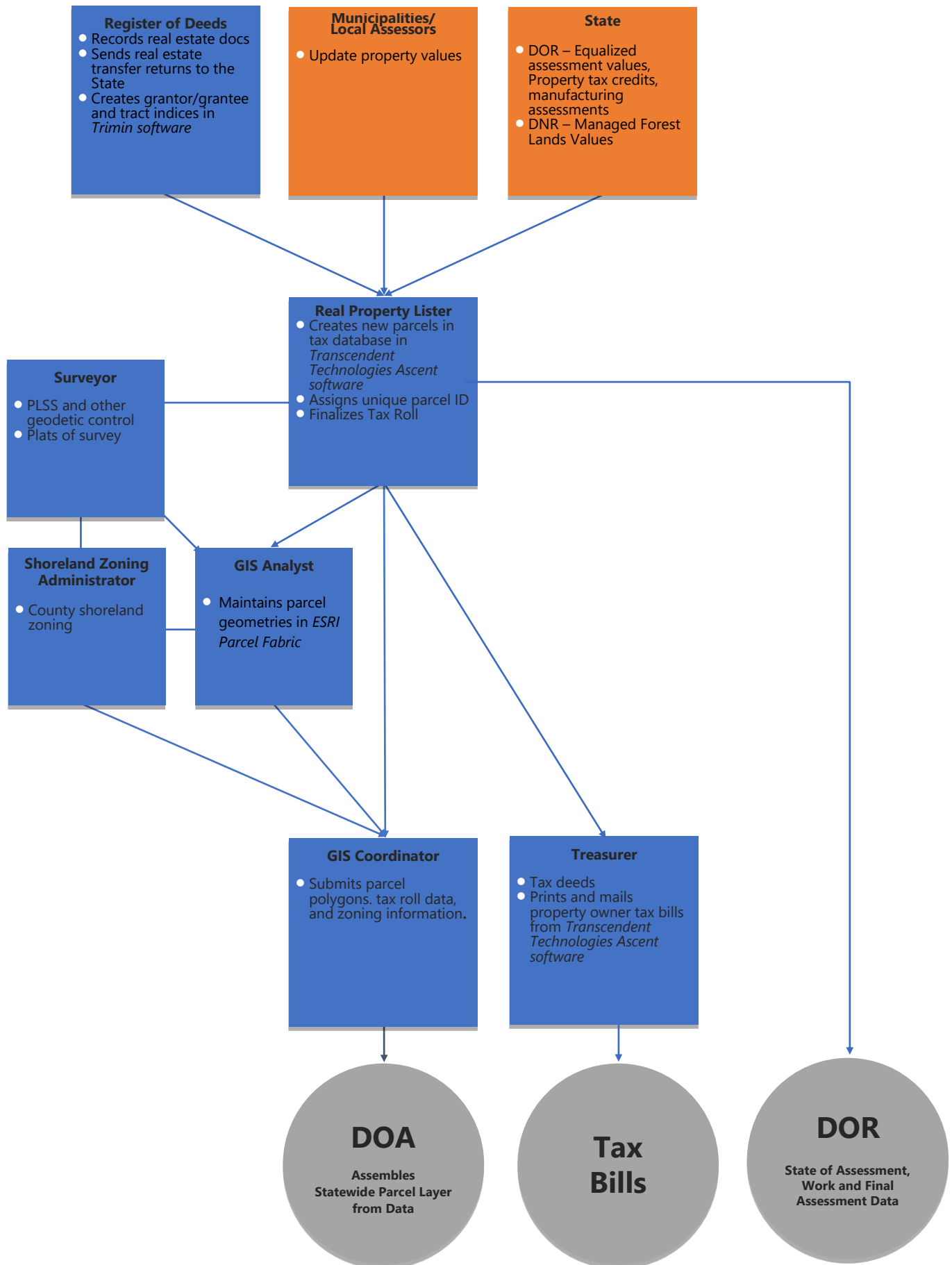
This chapter describes the design of the county land information system, with focus on how data related to land features and data describing land rights are integrated and made publicly available.

Current Land Information System

Diagram of County Land Information System



County Parcel Data Workflow Diagram



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

Land information systems are integrated into the general county IT environment. Servers are created in the county's virtualized server environment and integrated in enterprise maintenance, back-up and disaster recovery plans/systems. All servers are in a climate controlled environment and served with backup power.

Endpoints are selected based on the need of the end user. Endpoints range from thin clients for nongraphic data entry to high-end workstations for those with graphic intensive workflows. Mobility continues to be a driving factor with laptops and increasingly tablets and smart devices being deployed. All devices are networked, with the option of disconnected editing when needed.

Peripherals include large format plotters and a large format scanner in addition to the more routine office print and scan devices.

Survey grade GPS, mapping grade GPS, and other surveying equipment are available and frequently used to collect land information.

Washington County operates a Mavic 2 Pro drone. Common uses include detailed aerial photography for project planning and mapping.

Software

County currently uses ArcGIS Pro: Yes

Esri's ArcGIS Desktop and ArcGIS Professional, with extensions, are used for nearly all desktop GIS needs. Licenses are pooled to maximize investment and the availability of GIS software to county staff. ArcGIS online and Portal for ArcGIS use continues to expand. This includes site specific mapping apps, field collection apps, dashboards and storymaps. Blue Marble's Global Mapper is available for specific desktop needs.

Bentley's Power InRoads and OpenRoads designer is the primary software used for CAD/Civil engineering projects. Licenses are pooled to maximize investment and the availability of CAD software to county staff. Internal policies and procedures are in place to easily share data between Esri and Bentley software.

Washington County has ArcGIS Enterprise and the core GIS datasets are maintained in an Esri enterprise geodatabase using Microsoft SQL Server. This provides a robust, multi-user environment to store, update and serve data to all county users. The database design of the GIS features includes the necessary primary keys to ensure integration with related tabular data. National and State standards and vendor supplied best practices are considered whenever databases are designed.

Register of Deeds records are maintained in the Trimin suite of products. Washington County selected Transcendent Technologies' Ascent suite for tax, POWTS and zoning data. IMS21 is the county's enterprise imaging system and used to store scanned documents.

Preference is always given to systems that can be integrated to reduce redundancy and create an efficient and user friendly environment.

Website Development/Hosting

ArcGIS Enterprise is currently used to publish data for Internet distribution. The published services are consumed by Portal for ArcGIS and ArcGIS On-line applications. ArcGIS Web AppBuilder, developer

edition, along with industry solution templates are the basis for Washington County's mapping web applications. Because the services are publically available, authoritative data is available for inclusion in applications that are not created or hosted by Washington County.

Metadata and Data Dictionary Practices

Metadata Creation

- **Metadata creation and maintenance process:** Metadata is included as a deliverable whenever new data is acquired. Metadata is created for all core features at the feature dataset level. The metadata is periodically reviewed and updated as needed. The metadata is supplemented with data schema diagrams and data dictionaries

Metadata Software

- **Metadata software:** ArcCatalog and TKME
 - 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:** Currently all fields to make the metadata record FGDC compliant.

Metadata Policy

- **Metadata Policy:** The current policy is to maintain FGDC compliant metadata for all core feature datasets. The overhead of this policy has resulted in metadata that often falls out of date. There is an internal initiative to identify a core set of metadata elements that are supplemental with data dictionaries. A goal of this initiative is to ensure that all required elements are populated to ensure data is properly cataloged and discoverable in applications such as [GeoData@Wisconsin](mailto:GeoData@Wisconsin.gov).

Municipal Data Integration Process

- Washington County and the City of West Bend are connected through a Municipal Area Network. GIS users at the city have read-only access to county GIS database servers. County staff have read only access to city GIS database servers. The MAN is also used as part of an ETL processes that integrates tax and address point data from city systems to county systems to create countywide layers.
- Washington County published nearly all of its data through ArcGIS Server. Multiple municipalities integrate live county data into their own applications through the publicly accessible REST endpoints.

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://maps.washcowisco.gov/apps/washcogis/	https://maps.washcowisco.gov/portal/apps/sites/#/maps	https://landrecords.co.washington.wi.us/landrecords	https://landshark.co.washington.wi.us/LandShark/login

Single Landing Page/Portal for All Land Records Data

URL

<https://maps.washcowisco.gov/portal/apps/sites/#/maps>

Web Services/REST End Points

URL

<https://maps.washcowisco.gov/server/rest/services>

Municipal Website Information

Municipal Website	Municipal Website URL
Village of Germantown Web Map	https://maps.ags.ruekert-mielke.com/Html5Viewer/Index.html?viewer=germantown
Village of Germantown Zoning Hub	https://villageofgermantown.zoninghub.com/home.aspx
City of Hartford App Gallery	https://hartfordwi.maps.arcgis.com/home/index.html

Data Sharing

Data Availability to Public

Data Sharing Policy

- Most land records are accessible to the public through free on-line applications. Statutory fees are changed when accessing documents recorded in the Register of Deeds.
- Access to the data is also available through publically accessible REST/WMS services or free data download.

Open Records Compliance

- Whenever possible, land information is made available on-line and free of charge.

Data Sharing Restrictions and Government-to-Government Data Sharing

Data Sharing Restrictions

- None

Government-to-Government Data Sharing

- Washington County and the City of West Bend are connected through a municipal area network. Read-only access to each other's enterprise geodatabase is provided through this connection.

Training and Education

- Washington County encourages staff to stay current in their field by attending conferences and training. Typically the staff attending the training will report back and present what they learned to the staff unable to attend the training.
- The county has an internal GIS Users group for staff to gather and share experiences.
- For those using our public on-line offerings, the county has provided user manuals, YouTube videos and in some cases in-person classes or presentations.

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.

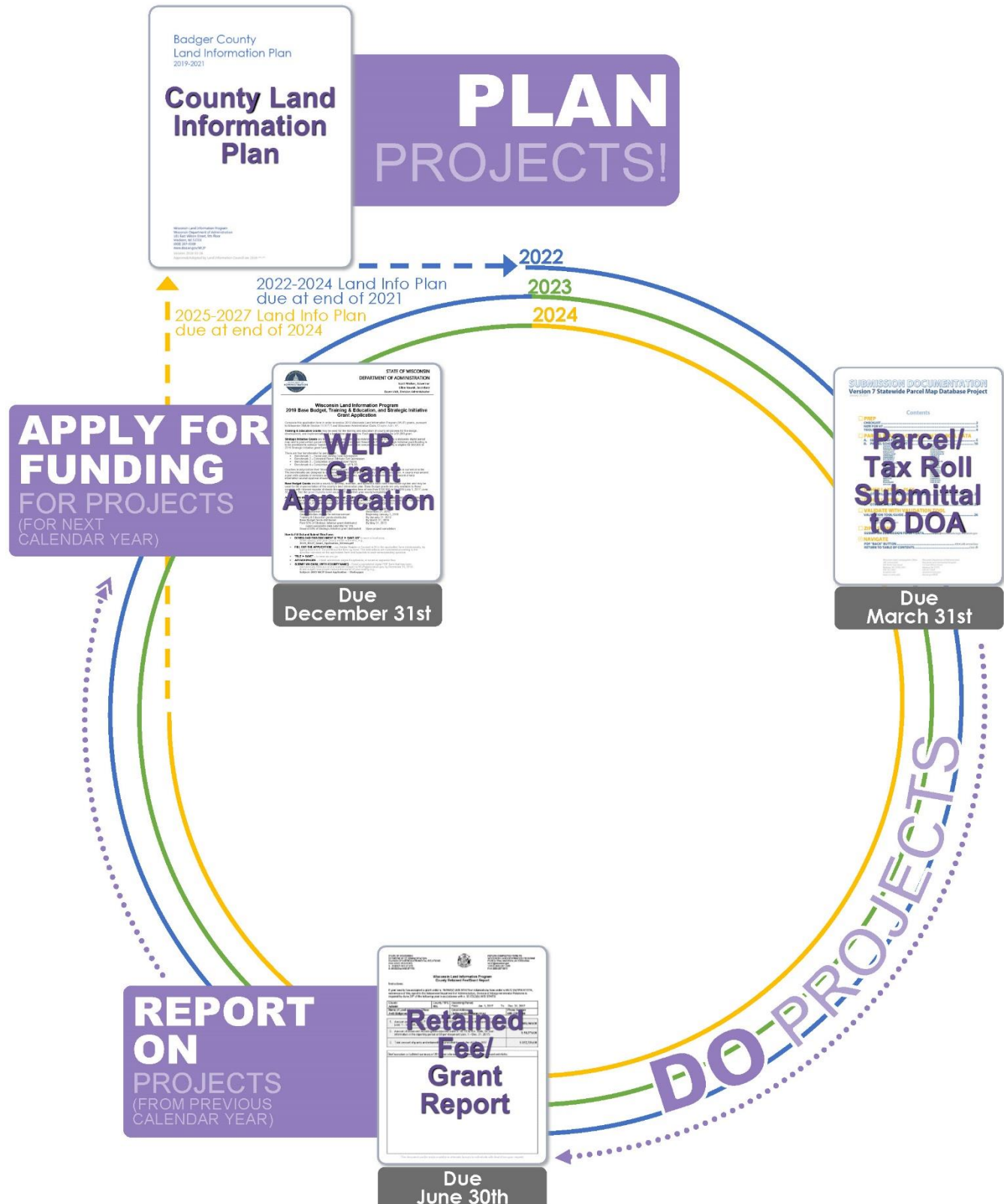


Figure 1. The WLIP Land Information Plan/Grant Project Cycle

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

Project Description/Goal

How Searchable Format Will Be Maintained

- Washington County will continue to support the program/script available from Transcendent Technologies to reformat tax roll attributes to the searchable format and then export those attributes in a way that they can be joined to parcel polygons.

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.

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

Timeline – Project Plan to Maintain Searchable Format		
Example		
Milestone	Duration	Date
Submit data to DOA	–	Annually by March 31

Responsible Parties

- Transcendent Technologies – Keep database view consistent with the searchable format.
- Washington County – Join tax information to parcel geometry, compile zoning data and submit to DOA.

Estimated Budget Information

<\$1000/yr Annual support for customized database view

Project Plan for PLSS (Benchmark 4)

Project Description/Goal

Planned Approach

- Washington County is nearing completion of a project to convert all PLSS Coordinates from NAD27/NGVD29 to NAD83(2011)/NAVD88(2012). To do this, Washington County, through a contract with SEWRPC, will reoccupy all monuments using modern GPS equipment. This will also upgrade the horizontal accuracy from Third Order Class I to 2nd Order, Class I. Currently 1929 monuments have been occupied and their coordinates delivered at the 2nd Order, Class I specification.
- The remaining 137 monuments have NAD83(2011) coordinates that have been calculated and remain at the Third Order Class I accuracy standard. These corners will be occupied when the weather permits. Note that many of these corners are located in wet areas that require specific weather conditions to occupy.
- A final integration of the parcel fabric to the new monuments will be completed after all corners have been occupied and coordinates delivered. The parcel data has been projected to NAD83(2011), only the final adjustment to the more precise corner coordinates remains.

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:** 0
- **Number to have new coordinates established:** 137
- **Accuracy class for these new coordinates:** 2nd Order, Class I
- **Way in which these points will be integrated into the parcel fabric:** Internal project using tools within the ArcGIS Pro parcel fabric

Missing Corner Notes

- **Documentation for any missing corner data:** NA

County Boundary Collaboration

- We share updated tie sheets with neighboring county surveyor offices on an annual basis. We inform neighboring county surveyor offices when we find discrepancies with PLSS data on shared county borders. We plan and share field work responsibilities with neighboring county surveyors when required to preserve and maintain the PLSS corners on our borders.

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.
- Improved accuracy and a modern datum will simplify survey functions in our Highway, Land Conservation, Parks, and Facilities Departments. Surveyors doing work for local governments, Wisconsin Department of Transportation and the private sector will have the same benefit.
- Current workflows often require the conversion of datasets between the older and newer datums. This has the potential to introduce error. This project will dramatically reduce the need for datum conversion. An example of when datum conversion is required is when trying to use Washington County topographic data that was traditionally captured in NGVD29 with FEMA flood elevations published in NAVD88.
- Improved performance of the parcel fabric dataset.

Objectives/Measure of Success

- The objective is to meet Benchmark 4 (Completion and Integration of PLSS) as soon as weather conditions are favorable to occupy the remaining monuments.

Project Timeframes

Timeline – Project Plan for PLSS **Example**		
Milestone	Duration	Date
Project start	–	2017
Delivery of horizontal control network	-	June 1, 2022

Responsible Parties

- SEWRPC – Field survey work, establish horizontal and vertical control networks.
- County Surveyor – QC, Project Management, Reset damaged monuments.
- GIS Coordinator – Parcel integration
- LIO – Project management.

Estimated Budget Information

No additional funds are anticipated for this project.

Project #1: Public Land Survey System Monument Maintenance

Project Description/Goal

- Maintain all public land survey system monuments, ties and references benchmarks in Washington County. In 2006 Washington County completed a pilot project in the Village of Richfield to inspect all monuments and repair the problems found. From 2007 – 2017 similar projects were completed for the remaining townships. In 2018 the second pass through the county began. The purpose of this program is to inspect every monument in the county at least once every 12 years and ensure the integrity of the PLSS network. The intent is to continue with 1 township per year for the duration of this plan with the specific township identified by the County Surveyor.
- **Land Info Spending Category:** PLSS

Business Drivers

- Washington County has spent considerable resources to remonument the entire county. Maintenance is needed to protect this investment.
- If a single monument is lost, it is less expense to relocate one monument than it would be if there was a significant deterioration of the network.
- Surveyors and other professionals rely on the monuments.
- Monuments are the basis for all land descriptions
- Many GIS layers are referenced to the PLSS network.

Objectives/Measure of Success

- 100% of monuments are placed and stable.
- Every monument has at least 4 ties.

Project Timeframes

Timeline – Project #1 Public Land Survey System Monument Maintenance		
Milestone	Duration	Date
Phase I – Monument inspection and reporting	–	Jan - June
Phase II – Monument repair	-	July - Dec

Responsible Parties

- County Surveyor – Project management and Quality Control
- Contracted Surveying Firms – Phase I and Phase II work

Estimated Budget Information

- \$60,000/yr

Project #2: Land Use Sanitation/Zoning Modernization

Project Description/Goal

- Scan all zoning permit files. Scanned shoreland zoning images will be tied to their matching database record and the spatial parcel database
- **Land Info Spending Category:** Other

Business Drivers

- Enhanced public access (all records will be available on-line, including scanned permit files)
- Improved access to records for internal staff
- Better archiving and disaster recovery

Objectives/Measure of Success

- All shoreland zoning permit files are scanned and in the county imaging system, tied to parcel data, and publicly available over the Internet.

Project Timeframes

Timeline – Project #2 Land Use Sanitation/Zoning Modernization		
Milestone	Duration	Date
Scan files	Complete	2020
Validate permit numbers to ensure correct indexing	12 months	2021
Load images and complete required integrations	1 month	Jan 2022

Responsible Parties

- IT Department – GIS Division - Contract and project management
- Planning and Parks Department – File prep and QA/QC
- Contracted services – Scanning of shoreland zoning permit files.

Estimated Budget Information

- \$10,000 Data loading and integration

Project #3: Land Use/Land Conservation/Highway Online Permitting

Project Description/Goal

- Applications for zoning, highway access and related permits are mostly completed using paper or fillable PDF forms. Some, but not all, of the information on the form is copied to a database where it is accessible for queries and further analysis. The remaining information is only accessible by retrieving the scanned image. Collected data is often referenced to a parcel number, but not necessarily the detailed location within that parcel
- The goal of this project is to:
 - Create a one stop system for residents to apply for all county permits.
 - All application data is stored in a database and available for future analysis and reporting.
 - All permit information is tied to a tax key and where appropriate to specific points or lines related to the permitted activity.
 - Processes are automated to reduce customer wait times and staff resources.

Business Drivers

- Current processes are labor intensive.
- Current processes are not customer friendly. It is common for a property owner to move between several departments for a single project.
- Improved mapping of permitted activities will provide benefits for the county, property owner and the public.

Objectives/Measure of Success

- Processes are streamlined for both staff and the property owner.
- Permitted activities are accurately mapped and tied to parcel data.
- Improved public access to permitting data.

Project Timeframes

- TBD

Responsible Parties

- TBD

Estimated Budget Information

- TBD

Project #4: Floodplain Mapping

Project Description/Goal

- Washington County is a developing county in the metro-Milwaukee area. The accuracy of floodplain data does not match current needs. During the FEMA Map Modernization program floodplain studies completed in the 1980's were rejected, which for many owners meant the zoning of their property reverted to unstudied floodplain. Washington County has an ambitious goal of eliminating all zone A floodplains in the County. Over the past decade significant projects were completed to improve floodplains in parts of the County. Previously completed studies are in various stages of DNR and FEMA review.
- Land Info Spending Category:** Other

Business Drivers

- Much of the floodplain in the county, including some areas with development pressure, is approximate.
- Floodplain zoning became more challenging after map modernization when many studied floodplains reverted to unstudied floodplain.
- Accurate floodplains will reduce unnecessary delays for property owners looking to improve their property.
- Accurate floodplains will allow for better zoning administration and reduce the risk of property loss during a flooding event.

Objectives/Measure of Success

- All floodplains in Washington County are studied using modern methods and mapped using detailed topographic information

Project Timeframes

Timeline – Project #3 Floodplain Mapping		
Milestone	Duration	Date
Update zoning maps for Cedar Creek PMR	-	2021
Update zoning maps for Milwaukee River Watershed study	-	2022
Update zoning maps Rock River PMR	-	2023

Responsible Parties

- Planning and Parks Department – Project management, data review, county zoning updates, public hearings
- IT Department – GIS Division – Map production and data integration

Estimated Budget Information

- All floodplain studies are complete and no further expenses are anticipated.
- Incorporation of updated data into floodplain maps will be completed with county staff

Project #5: Historic Tax Roll Scanning

Project Description/Goal

- Washington County has many years of historic tax rolls that are in paper form that the county must maintain in perpetuity. This project would scan and enhance public access to those records
- **Land Info Spending Category:** Other Parcel Work

Business Drivers

- Disaster recovery
- Enhanced county and public access when these records are needed for property or genealogical research.

Objectives/Measure of Success

- Clear and readable scanned images are created for historic tax rolls.
- The scanned images are indexed in a way that they are searchable by the public and county staff.

Project Timeframes

Timeline – Project #4: Historic Tax Roll Scanning		
Milestone	Duration	Date
Prepare RFP and award project	–	Fall 2021
Scan and take delivery of imagery		Fall 2021 – Spring 2022
Provide public access to scanned images		Summer 2022

Responsible Parties

- County Treasurer – Project management and QC
- IT Department – GIS Division – Loading imagery into county document imaging system
- Contracted Services – Scanning and indexing

Estimated Budget Information

- \$175,000 Document scanning and indexing

Project #6: Major Hardware Acquisitions

Project Description/Goal

- Acquire robotic total station. A robotic total station would better suit current workflows for setting monument ties, require less manpower for that part of the process and would be safer because it would help stay out of traffic. The robotic total station would also work well for smaller surveying jobs.
- Acquire survey grade GPS to be used for PLSS, construction and other surveying needs.
- Replace or retrofit existing drone to be remote ID compliant
- Acquire a survey grade drone. With a survey grade drone, a base station communicates locational corrections to the drone for more precise positional accuracy when compared to using GPS satellites alone. Horizontal accuracy of 1cm + 1 ppm and vertical accuracy of 1.5 cm + 1 ppm can be achieved. A survey grade drone would reduce or eliminate the need for setting control points for drone projects that currently require ground control. It would also provide more accurate mapping for construction and other projects.
- Acquire large format plotter. The plotter is used to print parcel and other land information for the general public and county staff.
- Acquire tablets and mapping grade GPS to improvement collection of POWTS and other permitting information tied to parcels and land ownership/use.
- Acquire GIS staff PCs used to create, maintain, analyze and present land information
- **Land Info Spending Category:** Hardware

Business Drivers

- Investing in these technologies provide significant staff efficiency gains.
- Equipment is replaced at the end of its effective usefulness

Objectives/Measure of Success

- Staff time required to complete data acquisition projects is reduced
- Data accuracy is improved
- Staff have access to the tools necessary to collect and maintain foundational elements and other land information datasets.

Project Timeframes

Timeline – Project #5: Major Hardware Acquisitions		
Milestone	Duration	Date
Robotic Total Station		2022
Survey Grade GPS		2022
Drone Replacement		2022
Survey Grade Drone		2022
Large Format Plotter (2)		2022
Field data collection equipment		2022
GIS Staff PCs		2024

Responsible Parties

- IT Department GIS Division – Hardware selection and deployment
- County Surveyor – Hardware selection and deployment
- Planning and Parks Department Land Resources Division – Hardware selection and deployment
- Register of Deeds Real Property Lister Division – Hardware selection and deployment

Estimated Budget Information

- \$30,000 Robotic total station
- \$30,000 Survey grade GPS
- \$4,000 Drone replacement or retrofit
- \$25,000 Survey grade drone
- \$6,000 Large format plotter (RPL)

- \$6,000 Large format plotter (GIS)
- \$5,000 Field data collection equipment
- \$5,000 GIS staff PCs

Project #7: Electronic Survey Submittal

Project Description/Goal

- All surveys completed in the county are required to be filed with the county surveyor. This project would allow those surveys to be submitted electronically
- **Land Info Spending Category:** Parcel Other

Business Drivers

- Quality of digital files could be improved if submitted electronically instead of the current print and scan workflow.
- Staff efficiencies due to less rekeying of information.
- Reduced time lag between survey completion and when that survey is publicly available.

Objectives/Measure of Success

- Easy and intuitive interfaces for professional land surveyors to submit plats of surveys
- Application to submit surveys is integrated with survey search applications and enterprise imaging systems.

Project Timeframes

Timeline – Project #6 County Surveyor Modernization Projects		
Milestone	Duration	Date
Online plat submission	–	2021 or 2022

Responsible Parties

- County Surveyor – Project management and QC
- IT Department – GIS Division – Project support and public access
- Consultant or temporary employee – File scanning

Estimated Budget Information

\$10,000 Online plat submission

Project #8: Other Parcel Related Scanning Projects

Project Description/Goal

- Washington County anticipates donations of historic surveys from retiring surveyors. This project would scan and index those surveys, making them available in the plat of survey search applications.
- The original parcel maps for Washington County were drafted in the 1930's through the Work Projects Administration (WPA). This project would permanently archive and make more accessible these historic records.
- Scan and spatially reference highway access and other permits issued by the Highway Department
- Scan and spatially reference land division files located in the Planning and Parks Department, Land Resources Division.
- Land Info Spending Category: Parcel other

Business Drivers

- There is value to the surveying community and the public by making historic surveys accessible.
- The original tax maps are deteriorating. There is continual value in these historic records.
- Highway permits are archived and accessible. Efficient administration of county ordinance.
- Land division files are archived and accessible.

Objectives/Measure of Success

- Quality scans of historic surveys are obtained and made accessible to internal and external users.
- Original tax maps are archived in perpetuity and access is increased

Project Timeframes

Timeline – Project #7: Other Parcel Related Scanning Projects		
Milestone	Duration	Date
Historic Surveys		2022
Original Tax Maps		2022
Highway Permits		2023
Land Division Files		2023

Responsible Parties

- County Surveyor – Project management and QC
- Register of Deeds Real Property Lister Division – Project management and QC
- Planning and Parks Land Resources Division – Project management and QC
- IT Department – GIS Division – Project support and public access
- Consultant or temporary employee – File scanning

Estimated Budget Information

- \$20,000 Historic surveys
- \$7,500 Original tax maps
- \$20,000 Highway permits
- \$20,000 Land division files

Project #9: Orthophotography Acquisition

Project Description/Goal

- Obtain countywide orthophotography with the possible addition of oblique imagery
- Obtain and deploy Esri's Image Server software to better manage, process and present imagery of increasing frequency and resolution.
- Land Info Spending Category: Orthoimagery and Software

Business Drivers

- Orthophotography is one of the most used layers in the county GIS and is used to determine current ground condition and the measurement of ground features.
- Current orthophotography is important for zoning, planning, law enforcement and other county programs.
- Orthophotography is the base on which other layers like surface water and address points are digitized.
- Enhanced resolution and update frequency will produce more clarity which, in some cases, could prevent field work.
- Increasing resolution and update frequency requires new tools to work efficiently with a that imagery.

Objectives/Measure of Success

- Delivery of Orthophotography meeting all project specifications

Project Timeframes

Timeline – Project #8: Orthophotography Acquisition		
Milestone	Duration	Date
Ortho flight		March-April 2022
Acquire image Server		July 2022
Final ortho delivery		Dec 2022
Ortho flight		March-April 2024
Final Ortho delivery		Dec 2024

Responsible Parties

- SEWRPC – Contract administration, QA/QC, consortium coordination.
- Contracted Firm – Data collection and processing
- IT Department – GIS Division - Project management

Estimated Budget Information

- \$75,000 2022 Data Acquisition
- \$17,000 Image Server
- \$75,000 2024 Data Acquisition.

Project #10: LiDAR Acquisition

Project Description/Goal

- Acquire countywide LiDAR coverage
- Potentially acquire LiDAR derivatives. Possible derivatives include contours, DEM, DSM, elevation derived hydrography, 3D buildings, etc...
- Land Info Spending Category: LiDAR

Business Drivers

- Existing LiDAR was acquired in 2015 and does not include recent developments
- Accurate elevation data is critical for floodplain mapping
- LiDAR data is used for a variety of road and other construction projects by the state, county, local governments as well as the private sector.

Objectives/Measure of Success

- Delivered data meets industry and federal standards.

Project Timeframes

Timeline – Project #9: LiDAR Acquisition		
Milestone	Duration	Date
LiDAR flight		March-April 2024
Final Delivery		Dec 2024

Responsible Parties

- SEWRPC – Contract administration, QA/QC, consortium coordination.
- Contracted Firm – Data collection and processing
- IT Department – GIS Division - Project management

Estimated Budget Information

- \$100,000 LiDAR acquisition
- TBD Derivative products

Project #11: Grantor/Grantee Book Access

Project Description/Goal

- The Washington County Register of Deeds scanned historic Grantor/Grantee books as part of a previous scanning projects. The scans provide an archive, but are not publicly accessible. This project would make the books accessible through the county's existing Landshark/Landlink applications.
- Land Info Spending Category: Other Parcel Work

Business Drivers

- Improved customer service
- Easier access to valuable title and other land information professionals

Objectives/Measure of Success

- Scanned books are available online

Project Timeframes

Timeline – Project #10: Grantor/Grantee Book Access		
Milestone	Duration	Date
Software modification is complete	90 days	Jan – March, 2022

Responsible Parties

- **

Estimated Budget Information

- \$12,000 Vendor Programming and support

Project #12: Document Imaging Solution

Project Description/Goal

- Replace existing document imaging system used to store and access deeds, tax bills, surveys, permits and other scanned land information.
- Land Info Spending Category: Hardware, Software

Business Drivers

- Existing hardware is near end of life
- Sub-par performance and response time for retrieving large documents.
- It is difficult getting support for the legacy system

Objectives/Measure of Success

- A system that is easy to add and retrieve images
- A system that integrates with Trimin, Ascent, GIS maps and other related land information applications

Project Timeframes

Timeline – Project #11: Document Imaging Solution		
Milestone	Duration	Date
Needs analysis and vendor selection	3 months	Oct – Dec 2021
Migration of existing records	6 months	Jan – June 2022
Integrations with related applications	1 Month	July 2022
Go Live		Aug 1, 2022

Responsible Parties

- Information Technology – Vendor selection, project management, data migration, integrations
- Information Technology GIS Division – Project support and integrations
- Vendors – implementation, data migration, integrations

Estimated Budget Information

- \$100,000 Hardware, software, and consulting.

Project #13: NG911 Data Prep

Project Description/Goal

- Enhance existing address points and street centerlines to support NG911
- Land Info Spending Category: Address Points and Street Centerlines

Business Drivers

- GIS data will become an integral component of call routing for NG911.
- Current data does not support all NG911 requirements

Objectives/Measure of Success

- Address points and road centerlines meet all NENA and Wisconsin DMA standards

Project Timeframes

- TBD

Responsible Parties

- TBD

Estimated Budget Information

- TBD (It is anticipated that non-WLIP funding will cover the lion share of this project)

Project #14: WSRS2022 Conversion

Project Description/Goal

- Migrate PLSS Coordinates and related datasets to the North American Terrestrial Reference Frame of 2022 (NATRF2022) and the North American-Pacific Geopotential Datum of 2022 (NAPGD2022)
- Land Info Spending Category: PLSS

Business Drivers

- Data is compatible with modern GPS equipment
- Interoperability to federal and state datasets

Objectives/Measure of Success

- Data is accurately migrated to the new datum

Project Timeframes

- Anticipated to begin in 2024 or later
- Specifics - TBD

Responsible Parties

- TBD

Estimated Budget Information

- TBD

Project #15: Ongoing Costs Not Associated with a Specific Project

Project Description/Goal

- Maintain on-line mapping capabilities. This includes small agreement for enhancements and fixes to online land information applications, hosting fees, a development/testing environment, and internal charges directly related to the maintenance of on-line mapping applications.
- Maintain all Esri software used for creating, maintaining, analyzing and publishing land information
- Maintain software required to display and analyze oblique imagery
- Ensure county staff are appropriately trained in the GIS software
- Land Info Spending Category: Website Development/Hosting Services, Training and Education

Business Drivers

- Public demand for access to public information
- County staff have the tools and training necessary to be efficient

Objectives/Measure of Success

- GIS mapping sites are available to the public and integrated with related systems.
- Staff are appropriately trained and current in their field.
- Software is supported and upgraded to current versions
- Staff have and software tools to be effective.

Project Timeframes

- NA

Responsible Parties

- NA

Estimated Budget Information

- \$10,000/yr Internet Mapping Application Support
- \$35,000/yr Esri Support contract
- \$2,500/yr Oblique Imagery Software Support
- \$10,000/yr Training