Dane County
Land Information Plan
2022-2024

Dane County
Land Information Office
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EXECUTIVE SUMMARY

About this Document

This document is a Dane County Land Information Plan, prepared by the Land Information Office (LIO) staff, department staff, and the Dane County Land Information Council (LIC). 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 to meet WLIP funding eligibility requirements necessary for receiving grants and retaining fees for land information. It also provides county and municipal officials, public agencies, private entities, and other interested parties with basic knowledge of Dane County's plans for land information modernization and integration. The intent of this information is to foster greater efficiencies 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. Dane County has benefited greatly from the WLIP and will continue, as appropriate; to build on the investments it has made in modernizing land information and GIS/LIS systems. The County has received many advantages from the use and application of modern land information and related technologies. As GIS/LIS grows from collection and design systems, into decision support systems and services, more and more Dane County departments, communities, and citizens will be using GIS/LIS technology and services. This plan acts as a guide that will support that growth and 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 general planning purposes only.

Land Information in Dane County

The Dane County Land Information Program is a well-established local and regional resource for geographic and land information services. The County has made great progress since 1991 by establishing the Land Information Office and Council, hiring and training staff, acquiring hardware and software, modernizing key land information data sets, developing computer applications and Internet services, and forming cooperative relationships with local land information partners. The County has established a solid framework for the modernizing of land information and is concentrating on maintaining/enhancing the enterprise GIS/LIS framework, and further deployment of modernized land information and technology throughout the County and its communities.

Mission of the Land Information Office

In the next three years, the LIO will continue to build on its successes and continue to provide a leadership role in the coordination and support of land record modernization activities in the county. There will be a focus on improving government efficiencies, and responsiveness to the land record needs of citizens. The LIO will continue to leverage partnerships with other public agencies and the private sector to develop, enhance and maintain high quality data and services that benefit the residents of the county and state. Provide public access by leveraging new web services to provide authoritative data and support state initiatives for the development and access of statewide data.

Land Information Office Projects

The follow are some of the major projects that the Land Information Office is currently undertaking or planning to undertake in the next 3-years. Some or all of these project may extend beyond the 3-year window depending on funding, staffing or other reasons. There may be other projects that have not be identified, at the time that this plan was written, that may become a priority and require additional resources.

Dane County Land Information Projects: 2019-2021	
Project 1	**Maintain Searchable Format (Benchmarks 1 & 2)**
Project 2	**PLSS Remonumentation (Benchmark 4)**
Project 3	**Recompilation of Tax Parcels to PLSS Remonumentation**
Project 4	**Address Points**
Project 5	**Open Data**
Project 6	**Land Conservation Management System**
Project 7	**Web Services**
Project 8	**Fly Dane 2020**
Project 9	**Hydrography Review & Update**
Project 10	**US Census Updates & Redistricting**
Project 11	**Staff Training & Education**
Project 12	**Street Centerlines**

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 part of the 2013 state budget bill, known as Act 20, the Department of Administration (DOA) was to create a statewide digital parcel map in coordination with counties. It also provided additional 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 established funding to counties through Strategic Initiative grants. These grants are prioritized for the purposes of parcel/tax roll dataset improvement.

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

WLIP Benchmarks

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

County Land Information System History and Context

The Dane County Board of Supervisors (Resolution 295, 1989-1990) established the Dane County Land Information Office (LIO), in response to state legislation creating a program to modernize of local government land records and land information systems. The enabling legislation established the Wisconsin Land Information Program (WLIP) with oversight by the Wisconsin Land Information Board (WLIB), a funding mechanism, and local government participation via Wisconsin county governments. Statutory changes in 2005 dissolved the WLIB and moved management of the WLIP to Wisconsin Department of Administration, Division of Intergovernmental Relations (DOA-DIR). In 2015, additional statutory changes placed the State Geographic Information Officer (GIO) under WILP and established an advisory group called the Wisconsin Land Information Council (WLIC).

The mission of the LIO is to establish a countywide land information system dedicated to serving the needs of county departments and communities in Dane County. This effort involves sharing and improving access to modern (digital) data, pooling resources, and maintaining an adequate level of technology to support land related information needs. The LIO plays a critical role in the development of key foundational datasets and applications. Where and when appropriate the LIO transfers ongoing maintenance to custodial departments, while still providing ongoing support. Although other departments and municipalities use and manipulate GIS information to meet their unique needs, the LIO develops the basic, fundamental information used by other departments and municipalities. Due to the cross jurisdictional nature of the Land Information Office, it is subject to legislative mandates from the state and county governments.

LAND RECORD MODERNIZATION

Part of Governor Tommy Thompson's opening day luncheon address at the 1990 Annual Conference of the Wisconsin Land Information Association in Steven Point.

"The concept of the land records modernization program is on which puts local government on the same information plane as state and federal government. The decentralized and independent nature of this infrastructure will better equip local government to confront, evaluate and resolve local and regional problems..."

"If we choose, Wisconsin has the opportunity to seize the future. Our opportunity is at hand to fundamentally change how we handle information in the age of information. Let us set our course in the most thoughtful and sensible way."

Wis. Mapping Bulletin, Vol. 16 No.2 March 1990

Governance

The Land Information Office (LIO) is part of the Division of Information Management, in the Department of Administration. The LIO is under the authority of the Personnel & Finance Committee of the Dane County Board of Supervisors. The Dane County Land Information Council (LIC) provides oversight and an advisory role to the Land Information Office. The LIC is comprised of 10 members in accordance with s. 59.72(3m), Wis. Stats., and the chair of the LIC is the Dane County Land Information Officer. The LIC meets on a bi-monthly basis and tasked with reviewing the priorities, needs, policies, and expenditures of the LIO and advising the county on matters affecting the office.

County Land Information Plan Process

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

County Land Information Plan Timeline

- DOA release of finalized instructions by March 31, 2021.
- April–September 2021: Counties work on land info plans.
- Draft plans due to DOA by September 30, 2021 (but sooner is advised).
- Final plans with county land info council approval due by December 31st, 2021.

Plan Participants and Contact Information

In 2010, legislation s. 59.72(3m), Wis. Stats., required that a county establish a county Land Information Council (LIC), as a requirement for participation in the WLIP. 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. The preparation of this plan included the county LIO, the Dane County Land Information Council, and others as listed below. LiDAR & derivative data

Dane County Land Information Council and Plan Workgroup				
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+ Land Information Council Members designated by the plus symbol

2 FOUNDATIONAL ELEMENTS

The WLIP Foundational Elements are specific datasets or map layer groupings that have been specified by the state. These elements incorporate nationally-recognized "Framework Data" elements, the major map data themes that serve as the backbone required by users 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. Continuing work done by the Wisconsin Land Information Association (WLIA) and the Wisconsin Land Information Council, the list of foundational elements and been further refined and expanded. The Uniform Instructions place priority on certain elements, which must be addressed in order for the county's land information plan to be approved.

FOUNDATIONAL ELEMENTS

PLSS
Parcels
LiDAR and Derivative Elevation Data
Orthoimagery
Address Points & Street Centerlines
Land Use
Zoning
Administrative Boundaries
Other Layers

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 Elements has evolved with each update of the county land information plan instructions. The layers listed in this document represent but a subset of all the data that the LIO manages or maintains. While most of the data that the LIO manages in the county's Enterprise Data Repository (EDR) have broad access and use, there are some that have restricted access or limited application. The elements list below are focused on the key layers that the WLIP has identified.

PLSS

Public Land Survey System Monuments

Layer Status

PLSS Layer Status	
	Status/Comments
Number of PLSS corners (selection, ¼, meander) **set in original government survey** that can be remonumented in your county	• 5,394 (Note: includes center of section)
Number of PLSS corners capable of being remonumented in your county that **have been remonumented**	• 5,394
Number of remonumented PLSS corners with survey grade coordinates (see below for definition) • **SURVEY GRADE** – coordinates collected under the direction of a Professional Land Surveyor, in a coordinate system allowed by 236.18(2), and obtained by means, methods and equipment capable of repeatable 2 centimeter or better precision • **SUB-METER** – point precision of 1 meter or better • **APPROXIMATE** – point precision within 5 meters or coordinates derived from public records or other relevant information	• 3,376
Number of survey grade PLSS corners integrated into county digital parcel layer	• 1,835
Number of non-survey grade PLSS corners integrated into county digital parcel layer	• 3,559
Tie sheets available online?	• Yes, By subscription access
Percentage of remonumented PLSS corners that have **tie sheets available online** (whether or not they have corresponding coordinate values)	• 100% • By subscription access
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	• Provided through PLSS FinderBy subscription access
PLSS corners believed to be remonumented based on filed tie-sheets or surveys, but do not have coordinate values	• 1,590
Approximate number of PLSS corners believed to be lost or obliterated	• 5+/- , 0.1%
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)?	• Wisconsin Corner Point Identification System
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?	• Yes, Lots with river frontage, but all tied to the rectangular system
Total number of PLSS corners along each bordering county	• 52 Green, 37 Rock, 52 Jefferson, 13 Dodge, 75 Columbia, 50 Iowa
Number of PLSS corners remonumented along each county boundary	• 240+/-
Number of remonumented PLSS corners along each county boundary with survey grade coordinates	• # survey grade/total 27/52 Green, 37/37 Rock, 37/52 Jefferson, 0/13 Dodge, 50/75 Columbia, 0/50 Iowa
In what ways does your county collaborate with or plan to collaborate with neighboring counties for PLSS updates on shared county borders?	• As necessary as problem areas come to light. Will share PLSS data with adjoining counties.

Custodian

- Planning & Development, County Surveyor
- Planning & Development, Records & Support Division
- Land Information Office

Maintenance

- Contracting with local surveying companies to research, establish and document new PLSS monuments.
- County Surveyor budgeting to complete about three to four townships a year.
- County Surveyor and Land Records Division perform closing line computations and Section subdivision.
- Recompilation of parcel mapping to new PLSS control.

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 requirements.
- Wisconsin County Surveyor's Association survey grade standard:
  - **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
- Coordinates collected under the direction of a Professional Land Surveyor, in a coordinate system allowed by s. 236.18(2), and obtained by means, methods and equipment capable of repeatable 2 centimeter or better precision.

Other Geodetic Control and Control Networks

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

Layer Status

- Dane County does not have additional geodetic control that it supports or maintains.

Parcel Mapping

Parcel Geometries

Layer Status

- **Progress toward completion/maintenance phase:** County-wide parcel layer contains 100% of the county's parcels and is available in a commonly-used digital GIS format. Dane County does not maintain the tax parcels for the City of Madison, but does receive bimonthly publishes that are incorporated into the county parcel dataset.
- **Projection and coordinate system:** Wisconsin Coordinate Reference System – Dane County (WISCRS-Dane), supported by Esri ArcGIS
- **Integration of tax data with parcel polygons:** The County does have a parcel polygon model that directly integrates tax/assessment data as parcel attributes.
- **Online Parcel Viewer Software/App and Vendor name:**
  - **Esri Web AppBuilder for ArcGIS** – DCiMap, developed In-house
  - **Custom (**Specify)** – AccessDane, developed In-house
- **Unique URL path for each parcel record:** Yes
  - Detailed assessment data, the tax bill for that parcel, information on recorded documents, permits, link to assessor's record for that specific parcel, zoning information, etc.
  - Yes, the URL stable
  - https://accessdane.countyofdane.com/
  - https://dcimapapps.countyofdane.com/dcmapviewer/

Custodian

- Planning & Development, Records & Support Division
- Land Information Office
- City of Madison, Engineering Department

Maintenance

- Countywide tax parcels, excluding the City of Madison, are maintained by Planning & Development, Records & Support Division.
- Parcels are updated using coordinate geometry provided in recorded documents.
- The Land Information Office provides business week, nightly publication of the countywide tax parcels to the Enterprise Data Repository.
- Parcel updates are based on documents recorded with the Register of Deeds and are about one week behind recording.
- The recompilation of the tax parcels, to the new remonumented PLSS control, is in progress and will take many years to complete.
- The City of Madison provides city parcel bi-weekly that is integrated into the weekly publish.

Standards

- **Data Dictionary:**
  - Developed in house based on tax database and county departmental needs.
  - Maintained as dataset metadata and published for external uses.
  - Based on County specifications
- 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
- s. 59.72(2)(a), Wis. Stats. Crosswalk of attributes
- Statewide Parcel Map Database Project Searchable Format standard

Assessment/Tax Roll Data

Layer Status

- **Progress toward completion/maintenance phase:** NA
- **Tax Roll Software/App and Vendor name:**
  - **Property Assessment & Tax Billing Module –** contractor/vendor GCS Software
- **Municipal Notes:** City of Madison does its own tax listing and the county gets a load to incorporate the tax information into a county wide dataset.

Custodian

- County Treasurer
- Municipal Clerks
- Municipal Assessors
- Planning & Development, Records & Support Division
- Land Information Office

Maintenance

- **Maintenance of the Searchable Format standard:** To meet the Searchable Format standard, the county has developed a database view that converts the county parcel publish and any related tables to meet the state format standard. Modification are made to meet any changes in the state publishing requirements.
- **Searchable Format Workflow:**
  - The county maintains parcel/tax roll data in a County Format, but is able publish to the State Searchable Format, requiring limited staff interaction for the annual submission of parcel/tax roll data to DOA.

Standards

- 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
- s. 59.72(2)(a), Wis. Stats. Crosswalk of attributes
- DOR XML format standard requested by DOR for assessment/tax roll data

Non-Assessment/Tax Information Tied to Parcels

Deed Restrictions

Layer Status

- Point file indicating location and petition number.

Custodian

- Planning & Development, Zoning Division
- Land Information Office

Maintenance

- Maintained by Zoning staff as new petitions come in.

Standards

- NA

Easements

Layer Status

- Line file representing access easements

Custodian

- Planning & Development, Records & Support Division

Maintenance

- Maintained with the parcel mapping process.

Standards

- NA

ROD Real Estate Document Indexing and Imaging

Layer Status

- **Grantor/Grantee Index:** Digitized grantor/grantee consistently back to mid-1970's and then several years prior with some cleanup of records in early 1970s and before.
- **Tract Index:** PLSS based tract index consistently back to mid-1970's and then several years prior with some cleanup of records in early 1970s and before. Early paper based tract index book pages have been copied and those pages scanned into software and now searchable in database.
- **Imaging:** TIFF images for all real estate documents recorded by the Dane County Register of Deeds office and searchable by independent document numbers and back indexed with PLSS based tract indexes and grantor/grantee names. Current day, documents that are accepted for recording, are scanned/imaged prior to stamping of the recording stamp. Each document image and index are available for searching/viewing minutes after recording.
- **ROD Software/App and Vendor Name:** Laredo/Tapestry and AVID by Fidlar

Custodian

- County Register of Deeds

Maintenance

- The responsibilities of all County Register of Deeds offices are set forth in the State of Wisconsin Statutes and are described as ministerial. The Register of Deeds files, records, issues and maintains instruments and documents of significance both to the community as a whole and to its individual citizens. The Register of Deeds has no discretion about whether or not to perform tasks required by the statutes. The Register of Deeds must read the law and exercise judgment whether statutory conditions are met before accepting documents.
- Record deeds, mortgages, plat maps, certified survey maps, and other real property related documents are scanned and indexed upon recording.

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:** 2017
- **Accuracy: Vertical:** 0.107 meters (0.352 survey feet) NVA at the 95 percent confidence level.
- **Post spacing:** 0.7 meters
- **Contractor's standard, etc.:** U.S. Geological Survey National Geospatial Program LiDAR Base Specification, Version 1.2, and Dane County
- **Next planned acquisition year:** 2025
- **QL1/QL2 acquisition plans:** Will continue to monitor USGS and FEMA requirements, but anticipate that QL2 will be a minimum requirement.
- The terrain data was developed through voluntary, multi-agency partnership called the Fly Dane Partnership. The partnership brings together municipal, state agency and private agencies that are interested in reducing management and leveraging an economy of scale for the development of this much needed data. The project also relied on USGS funding to make the acquisition of the high cost product possible.

Custodian

- Land Information Office
- Fly Dane Partnership

Maintenance

- Currently, the update cycle is every 8 years.
- Will rely on county, municipal and federal funding.

Standards

- U.S. Geological Survey National Geospatial Program LiDAR Base Specification, Version 1.2
- Countywide one-foot contours that meet national map accuracy standards and attributed based on 2009 one-foot contours.

LiDAR Derivatives

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

- 2017 countywide, classified point cloud
- 2017 countywide, 2-foot pixel, bare-earth, hydro-enforced DEM
- 2017 countywide, 2-foot pixel, first-return DSM
- 2017 countywide, 1-foot contours
- 2017 countywide tree canopy dataset
- 2017 countywide hydro features

Custodian

- Land Information Office
- Fly Dane Partnership

Maintenance

- Currently, the update cycle is every 8 years.
- Developed through the Fly Dane Partnership
- The terrain data was developed through voluntary, multi-agency partnership called the Fly Dane Partnership. The partnership brings together municipal, state agency and private agencies that are interested in reducing management and leveraging an economy of scale for the development of this much needed data.

Standards

- Countywide one-foot contours that meet national map accuracy standards and attributed based on year 2009 one-foot contours.

- A final "Bare Earth" and "First Return", Digital Elevation Model (DEM), Digital Surface Model (DSM), delivered as an Esri GRID with 2-foot pixel size.
- The data is managed in the Wisconsin Coordinate Reference System – Dane County (WISCRS-Dane), supported by Esri ArcGIS.
- USGS 3DEP standards or other federal and state requirements.

Other Types of Elevation Data

Layer Status

- Dane County departments produce terrain data for small project areas using a number of UAVs.
- Terrain data is produced for surveys, cut and fill calculation for the landfill and other construction sites, and as-built slope and grade verification
- Additional, applications will be explored based on needs.

Custodian

- Land & Water Resources Department
- Department of Waste and Renewables

Maintenance

- Small area, project specific acquisition.

Standards

- Project specific requirements.

Orthoimagery

Orthoimagery

Layer Status

- **Most recent acquisition year:** 2020
- **Resolution:** Countywide, 6-inch resolution, 4-band color imagery; urban-area, 3-inch resolution, 4-band color imagery
- **Contractor's standard:**
  - Contractor shall meet the minimum standards established by the WROC contract and additional standards specified in the contract between the contractor and Dane County.
- **Progress towards acquisition:** Completed 2020
- **Next planned acquisition year:** 2022
- The imagery was developed through voluntary, multi-agency partnership called the Fly Dane Partnership. The partnership brings together municipal, state agency and private agencies that are interested in reducing management and leveraging an economy of scale for the development of this much needed data.
- The County will continue to look at programs like WROC to participate in and evaluate factors that includes, but not limited to, county contracting requirements, project cost share, delivery timeline, and contracting flexibility

Custodian

- Land Information Office
- Fly Dane Partnership

Maintenance

- Acquisition of imagery is on a 2-year update cycle.
- Will provide a base project to acquire 6-inch resolution, 4-band color imagery countywide.
- Provide municipal option to acquire 3-inch resolution, 4-band color imagery over urban areas.

Provide derivative compress format imagery based on various departmental needs.

Standards

- Imagery must be acquired during leaf-off conditions in the spring, as close to the April 1 as possible.
- Final orthophotography shall meet or exceed ASPRS Class I accuracy standards

- FGDC-compliant metadata based on current county GIS metadata files and guidelines
- Ortho-rectification shall eliminate feature displacement, loss or distortion of features along mosaic seam lines.
- Image manipulation should be used to minimize harsh seam lines across large water bodies.
- Imagery must have consistent tonal balance and contrast within each image and across images. The imagery must be free of defects such as dust, blemishes, tonal changes, significant building lean and other discrepancies.
- Imagery will be acquired after snow melt with no ice on the lakes.
- There will be a spot shot over the Capitol Building at true nadir with no building lean that will be stitched into the mosaic.
- 4-band color imagery
- 3-band color mosaic imagery, specific for some applications
- 6-inch resolution county wide
- The data is managed in the Wisconsin Coordinate Reference System – Dane County (WISCRS-Dane), supported by Esri ArcGIS.

Historic Orthoimagery

Layer Status

- 1995 countywide, 1-meter resolution, black & white imagery
- 2000 countywide, 1-foot resolution, black & white imagery
- 2000 urban area, 6-inch resolution, black & white imagery
- 2005 countywide, 1-foot resolution, black & white imagery
- 2005 urban area, 6-inch resolution, black & white imagery
- 2010 countywide, 1-foot resolution, 3-band color imagery
- 2010 countywide, 1-foot resolution, black & white color imagery
- 2010 countywide, 1-foot resolution, infra-red color imagery
- 2010 urban area, 6-inch resolution, 3-band color imagery
- 2010 urban area, 6-inch resolution, black & white color imagery
- 2010 urban area, 6-inch resolution, infra-red imagery
- 2017 countywide area, 6-inch resolution, 4-band color imagery
- 2020 countywide area, 6-inch resolution, 4-band color imagery
- 2020 urban area, 3-inch resolution, 4-band color imagery

Custodian

- Land Information Office

Maintenance

- Add to inventory as new imagery is captured.

Standards

- Varying standards based on the year and resolution of the imagery captured.
- Imagery must be acquired during leaf-off conditions in the spring.
- Image manipulation should be used to minimize harsh seam lines across large water bodies.
- Imagery must have consistent tonal balance and contrast within each image and across images. The imagery must be free of defects such as dust, blemishes, tonal changes, significant building lean and other discrepancies.
- Imagery will be acquired after snow melt with no ice on the lakes.

Other Types of Imagery

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

Layer Status

- Currently, Dane County does not have additional types of imagery. However, the County constantly evaluates the need for other imagery products based on department/municipal needs and funding.

Small Area Imagery

Layer Status

- Dane County departments produce aerial imagery for small project areas using a number of UAVs.
- Imagery produces is used for promotional needs, review of design and as-built of construction projects, review of water ways for hazards, search and rescue.
- Additional, applications will be explored based on needs.

Custodian

- Land & Water Resources Department
- Emergency Management
- Department of Waste and Renewables

Maintenance

- Small area, project specific acquisition.

Standards

- Project specific requirements.

Address Points and Street Centerlines

Address Point Data

Layer Status

- The site address points for the unincorporated parts of the county, under the addressing authority of Dane County Planning & Development; Zoning Division, are under ongoing maintenance.
- The LIO, in conjunction with the City of Madison, is undertaking the development of an address point project that will develop a comprehensive address point dataset for all of Dane County. The LIO, in conjunction with the City of Sun Prairie, is undertaking an address point project that will include the city's data into a comprehensive address point dataset for all of Dane County.
- Future maintenance will look to leverage other addressing authorities whenever possible.
- Develop tools and workflows to assist addressing authorities to manage their address points.
- Studying workflow improvements for the integration of address data.

Custodian

- Land Information Office
- Planning and Development, Zoning Division
- City of Madison – Information Management
- City of Sun Prairie
- Local municipalities with addressing authority

Maintenance

- Updates published daily for areas outside the City of Madison and City of Sun Prairie

Standards

- Dane County Address Point Standard
- US Postal Service Content Standard
- WLIA Address Point Standard (Address Standard)
- Wisconsin GIS NG9-1-1 Data Standard (Site/Structure Address Point)
- The standard was developed in conjunction with the City of Madison Information Management. The standard was developed to meet a number departmental needs and to provide for other publishing requirements.
- Other standards that were evaluated include, but not limited to:
  - FDGC–US Thoroughfare, Landmark, and Postal Address Data Standard (Address Standard)
  - NENA Standard for NG9-1-1 GIS Data Model (Address Points)

Building Footprints

Layer Status

- The dataset has been updated for 2020 building footprint dataset, based in the 2020 aerial imagery.
- Future updates with acquisition of imagery in 2022 and 20224.

Custodian

- Land Information Office

Maintenance

- Data updates follow the acquisition and delivery of the digital aerial imagery.
- Digitize footprint from aerial imagery
- Building permit records associated with tax parcel data, identifies areas of change, where records are available.
- Manual review of areas of change are done when no other documentation is available.
- Building footprints are digitized off of the digital aerial imagery.
- Identify the primary use of the structure
- Identify whether the footprint is a primary of secondary structure.

Standards

- Dane County Building Footprint Standard
- Esri Community Map Program Standard

Other Types of Address Information

Highway Reference Markers

Layer Status

- Represents the location of WisDOT and municipal mile markers/reference markers on the limited access highways.
- Represents the location of WisDOT 1 mile markers on the limited access highways.
- Represents the location of WisDOT .2 and .5 mile reference markers on the limited access highways.
- Represents the location of City of Madison .2 mile reference markers on the Beltline Highway.

Custodian

- Land Information Office

Maintenance

- Updated as needed

Standards

- Dane County Land Information Office Standard
- WLIA Address Point Standard
- NENA Standard for NG9-1-1 GIS Data Model

Trail Markers

Layer Status

- Developing a comprehensive trail marker dataset
- Working with Dane County – Parks Division and municipalities to implement US National Grid – Emergency Location Markers.
- Working with municipalities to implement US National Grid – Emergency Location Markers.
- Working to collect trail markers.

Custodian

- Land Information Office
- Land & Water Resources Department, Parks Division
- Municipalities

Maintenance

- Update process is being developed

- Updated as needed

Standards

- Dane County Land Information Marker Standard
- NENA Standard for NG9-1-1 GIS Data Model

Pier Numbers

Layer Status

- Developed a pier numbering system to provide a lake facing address marker for public safety and general navigation.

Custodian

- Land & Water Resources Department, Lake Management Division
- Land Information Office

Maintenance

- Updated as needed

Standards

- Dane County Land Information Marker Standard

Street Centerlines

Layer Status

- The county maintains a complete countywide street centerline dataset with address ranges that can be used for geocoding and routing.
- Detailed street centerline data is maintained for all of Dane County, which includes attribution for street name, address ranges, travel flow, speed limits, status and jurisdiction.

Custodian

- Land Information Office
- Planning & Development, Records & Support Division
- 911 Communications
- Municipalities

Maintenance

- Coordinate with Plan & Development to identify and modify data, based recorded document for new roads, vacation of road, modification in the road route, street name changes or addressing changes.
- Coordinate with 911 to identify errors or corrections based on conflicts with dispatch.
- Coordinate with WI DOT on route changes, land closures for major, multi-year road projects.
- Revisions made with acquisition of new aerial imagery.
- Updates published daily.

Standards

- Dane County Street Centerline Standard
  - Developed in conjunction with the City of Madison Information Management.
- WLIA Street Centerline Standard (Street Centerline Standard)
- Wisconsin GIS NG9-1-1 Data Standard (Road Centerline)
- Other standards that were evaluated include, but not limited to:
  - US Postal Service Address Content Standard
  - FDGC–US Thoroughfare, Landmark, and Postal Address Data Standard (Address Standard)
  - NENA Standard for NG9-1-1 GIS Data Model (Street Centerlines)
- Maintain theoretical address ranges to support address validation.
- Maintain topology to support network connectivity.
- Link Street Names to Master Street Name Database.

Rights of Way

Layer Status

- Rights-of-way are a feature type in the parcel database and maintained by the Planning & Development.
- **How maintained:** Part of the parcel mapping process.

Custodian

- Planning & Development, Records & Support Division

Maintenance

- Maintained as part of the parcel mapping process based on recorded documents.

Standards

- Esri Topology Rules

Trails

e.g., Recreational Trails, Snowmobile Trails

Bicycle and Hiking Trails

Layer Status

- The county maintains land and water trail features as part of the Dane County Parks & Open Space Plan.
- Bicycle trail data is provided by the Madison Area Transportation Planning Board.
- Acquire trail data from other sources and ice age trail.

Working with municipalities to include trail data.

Trails are updated/adjusted as needed using aerial imagery, terrain data and GPS units.

Custodian

- Land & Water Resources Department, Parks Division
- Madison Area Transportation Planning Board
- Wisconsin Department of Natural Resources
- Land Information Office
- Ice Age Trail Alliance

Municipalities

Maintenance

- The Dane County Parks & Open Space Plan is updated every five years; the current plan 2018-23 was adopted by the Dane County Board in March 2018.
- Trails are updated/adjusted as needed using orthophoto, terrain data and GPS units.
- Bicycle trail data is updated once a year.
- Ice Age Trail data is updated every year or two in the EDR through data imports.

Standards

- No specific standards identified.

Snowmobile Trails

Layer Status

- The county maintains a snowmobile trail dataset.

Custodian

- Land & Water Resources Department, Parks Division
- Dane County Snowmobile Clubs
- Land Information Office

Maintenance

- Work with snowmobile clubs to update trails on an annual basis.
- Publish update of snowmobile trails annually or if trail geometry or attribute changes are provided.
- Trails are updated/adjusted as needed using aerial imagery, terrain data and GPS units.

Standards

- No specific standards identified.

Land Use

Current Land Use

Layer Status

- 2015 countywide Land Use Inventory.
- 2020 Land Use inventory under development.

Custodian

- Capitol Area Regional Planning Commission (Urban)
- Planning & Development, Planning Division (Rural)

Maintenance

- A 2020-2022 update is being undertaken using 2020 imagery and parcel data.
- Land use updates are done in conjunction with the availability of updated aerial imagery and coincide with the official decennial census.
- Locally developed or NAIP imagery is used for crop field identification.

Standards

- The County uses a local government compliant land use classification for the county-wide land use inventory (Capitol Area RPC).

Future Land Use

Layer Status

- Filed as a digital image of each municipal future land use.

Custodian

- Local municipality
- Planning & Development, Planning Division

Maintenance

- When a community updates the future land use map and/or requests County adoption

Standards

- The future land use mapping is a patchwork of maps developed and adopted by a municipality during the comprehensive planning process.
- Dane County, Planning & Development receives copies of Town Plan amendments, Cities and Villages are checked periodically by staff for updates.
- The maps are maintained as reference maps in JPEG format and a PDF format is also available online for Towns.
- Comply with s. 66.1001, Wis. Stats. Comprehensive planning.

Zoning

County General Zoning

Layer Status

- The County maintains a GIS representation of county general zoning boundaries for those towns that are under county zoning.

Custodian

- Planning & Development, Zoning Division
- Land Information Office

Maintenance

- The rural zoning is based off of the tax parcel geometry, linking attributes to the parcel number.

- Zoning polygons that are not related to a parcel are managed as a separate feature that is integrated as part of the publish process.
- As part of the publish process the tax parcel base and unique features are merged to create a countywide zoning layer.
- Updated weekly.
- The county does not manage zoning data for areas under municipal zoning authority.
- Submit updates to the Wisconsin Department of Administration as prescribed in statute and administrative rule.

Standards

- Based on tax parcel geometry
- Dane County Chapter 10: Zoning

Shoreland Zoning

Layer Status

- The County does maintain a GIS representation of county shoreland zoning boundaries.
- Dane County Shoreland Zoning is a composite of various data elements, buffers and restrictions as defined in Chapter 11 – Shoreland, Shoreland-Wetland and Inland-Westland Regulations.
  - A 300 foot buffer around lakes, streams or ponds designated by the Wisconsin Department of Natural Resources (DNR)
  - The 1 Percent Annual Flood Chance Area defined by FEMA
  - A 75 foot buffer around wetlands greater than 2 acres in size, designed by the DNR
  - A 300 to 1,000 foot buffer around lakes designated by the DNR

Custodian

- Planning & Development, Zoning Division
- Land & Water Resources Department
- Land Information Office

Maintenance

- Update derived datasets after source data updates have been made.

The representation of Shoreland Zoning consists of multiple datasets and queries to display numerous components of the Shoreland Zoning outlined in County Ordinance.

Standards

- Dane County Chapter 11: Shoreland, Shoreland-Wetland and Inland-Wetland Regulations

Farmland Preservation Zoning

Layer Status

- The County does maintain a GIS representation of county farmland preservation as part of the zoning.
- **Year of certification:** 2012

Custodian

- Planning & Development, Zoning Division

Maintenance

- The rural zoning is based off of the tax parcel geometry, linking attributes to the parcel number.
- Zoning polygons that are not related to a parcel are managed as a separate feature.
- As part of the publish process the tax parcel based and unique features are merged to create a countywide zoning layer.
- Updated weekly.
- The county does not manage zoning data for areas under municipal zoning authority.
- Submit updates to the Wisconsin Department of Administration as prescribed in statute and administrative rule

Standards

- Based on tax parcel geometry
- Dane County Chapter 10: Zoning

Floodplain Zoning

Layer Status

- The County does administer a floodplain zoning ordinance, Chapter 17 Flood Plain Zoning
- The GIS representation of floodplain zoning boundaries is developed and managed by the Federal Emergency Management Administration (FEMA).
- The county's floodplain zoning GIS data is the published FEMA map.
- **Letters of Maps Change** – FEMA Flood Insurance Rate Maps (FIRMs) can be changed through "Letters of Maps Change," which is comprised of a few things: Letters of Map Amendment, Letters of Map Revision, and Letters of Map Revision Based on Fill. These are documents issued by FEMA that officially remove a property and/or structure from the floodplain. They are collectively called Letters of Map Change. The County does reference FEMA Letters of Map Change in its administration of the floodplain ordinance.

Custodian

- Federal Emergency Management Administration
- Wisconsin Department of Natural Resources

Maintenance

- Updates are made by FEMA

Standards

- FEMA Guidelines and Standards for Flood Risk Analysis and Mapping

Airport Protection

Layer Status

- The County does maintain a GIS representation of airport protection zoning boundaries.
- **Airport protection zoning map depicts:**
  - Height limitation restrictions

Custodian

- Planning & Development, Zoning Division

Maintenance

- Updates are made as needed, based on requirements in Chapter 78 - Height and Use Limitations Applicable in the Vicinity of the Dane County Regional Airport and other area airports.

Standards

- Department requirements

Municipal Zoning Information Maintained by the County

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

- Dane County does not manage municipal zoning.
- Dane County is exploring methods to include a general reference dataset for municipal zoning.

Administrative Boundaries

Civil Division Boundaries

Towns, City and Villages

Layer Status
- The civil division boundaries are maintain as part of the parcel mapping system.
- Based on documents recorded with the Register of Deeds.

Custodian
- Planning & Development, Records & Support Division
- Land Information Office

Maintenance
- Municipal boundary changes are part of the weekly parcel maintenance process.
- The annexation boundaries are maintained in as a separate feature with date and ordinance number.
- A municipal boundary dataset is published weekly, dissolving on municipal name.

Standards
- Dane County data needs.

Unincorporated Place
Layer Status
- The county maintains an unincorporated places dataset

Custodian
- Planning & Development, Records & Support Division
- Land Information Office

Maintenance
- Updated on an as needed basis.

Standards
- Dane County data needs.

School Districts
Layer Status
- **Progress toward completion/maintenance phase:** Complete
- **Relation to parcels:** The tax system relates a school district and valuation to the tax parcel.
- **Attributes linked to parcels:** The school district name and school district code.
- The county is maintains a separate county-wide school district dataset.
- The tax parcel data is the primary reference source for establishing district boundaries.

Custodian
- Planning & Development, Records & Support Division
- County Treasurer
- Wisconsin Department of Public Instruction
- Land Information Office
- County Clerk

Maintenance
- Updates are driven by school district agreements approved by Department of Public Instruction Orders that are published annually.
- The dataset is also validated against a number of sources that include, tax assessment, municipal sources and records.

Standards
- Department of Public Instruction orders.
- County Real Property Lister updates to the tax system.
- County Clerk voter registration records.
- County Treasurer tax assessment.

Election Boundaries

Wards

Layer Status

- The LIO works closely with the County Clerk's Office to track and update ward boundary changes due to annexation.
- The Land Information Office maintains the ward boundaries under a Consolidated-Boundary & Annexation Survey agreement for all the municipalities in the county.
- The dataset is the foundation for developing various derivative datasets that include, aldermanic, County Supervisory, State Assembly & Senate district boundary datasets.

Custodian

- County Clerk's Office
- Land Information Office

Maintenance

- Ward boundaries are established every ten years as part of the legislative redistricting process
- The ward boundary updates are made on a quarterly basis as new annexation information is provided to the County Clerk.
- Updates need to coincide with county election timeline.
- Ward boundary data updated are submitted to the Wisconsin Legislative Technical Services Bureau (LTSB) as prescribed by state statute.

Standards

- Boundaries are based on tax parcel and municipal boundary data.
- Boundary updates are based on municipal ordinance.
- Statutory Standards for Elections – General Provisions
- SS. 5.15(4)(br), Wis. Stats. Division of municipalities into wards

Polling Places

Layer Status

- The LIO works closely with the County Clerk's Office to update polling locations based on changes by municipalities.

Custodian

- County Clerk's Office
- Land Information Office

Maintenance

- Relate tables to a point and polygon feature.
- Updates made in advance of each election.

Standards

- No standards are specified.

Utility Districts

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

Drainage Districts

Layer Status

- The county maintains a drainage district boundary layer.

Custodian

- Dane County Drainage Board
- Planning & Development, Zoning Division
- Planning & Development, Records & Support Division
- Dane County Treasurer
- Land Information Office

Maintenance

- Changes are driven by the Dane County Drainage Board
- Updates made to the tax base
- Updates are completed to the Drainage District data in the EDR

Standards

- Tax system
- Recorded documents of drainage district boundaries.
- Basic geometry based on tax parcel data.

Emergency Service Boundary – Law/Fire/EMS

Layer Status

- Dane County maintains a countywide Fire Districts dataset.
- Dane County maintains a countywide EMS Districts dataset.
- Dane County maintains a countywide Law Enforcement Districts dataset.

Custodian

- Land Information Office
- Emergency Management
- Public Safety Communications
- Planning & Development, Records & Support Division

Maintenance

- The datasets are derived from other sources data.
- The datasets are recompiled at least twice a year to reflect municipal boundary changes or the renegotiating of municipal contracts for public safety services.

Standards

- Set as special assessment classification in the tax parcel data.
- Based on records maintained by 911 Communications, County Sheriff Office, municipal law enforcement, fire and emergency medical services.

Public Safety Answering Point (PSAP) Boundary

Layer Status

- Dane County maintains a countywide Public Safety Answering Point boundary dataset.

Custodian

- Land Information Office
- Public Safety Communications

Maintenance

- The dataset is developed with guidance from Dane County Public Safety Communications.

Standards

- NENA Standard for NG9-1-1 GIS Data Model
- Wisconsin-NENA Standard

Provisioning Boundary

Layer Status

- Dane County maintains a countywide Provisioning boundary dataset.

Custodian

- Land Information Office
- Public Safety Communications

Maintenance

- The dataset is developed with guidance from Dane County Public Safety Communications.

Standards

- NENA Standard for NG9-1-1 GIS Data Model
- Wisconsin-NENA Standard

Other Public Safety

Healthcare Facilities, Fire/EMS stations

Layer Status

- Dane County maintains a countywide point file of Hospitals.
- Dane County maintains a countywide point file of Fire and EMS stations.

Custodian

- Land Information Office
- Public Safety Communications

Maintenance

- The dataset is developed with guidance from Dane County Public Safety Communications.

Standards

- Dane County Data Requirements
- NENA Standard for NG9-1-1 GIS Data Model

Lake Districts

Layer Status

- Dane County maintains Lake District information as part of the assessment attributes.

Custodian

- County Treasurer
- Municipal Clerks
- Municipal Assessors
- Planning & Development, Records & Support Division
- Land Information Office

Maintenance

- The datasets are derived from the assessment data and related to tax parcel geometry.

Standards

- Set as special assessment classification in the tax parcel data.

Native American Lands

Layer Status

- Dane County does not manage Native American lands.

Other Administrative Districts

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

Public Lands

Layer Status

- Dane County manages a countywide Public Lands database.
- County properties defined by the 2012-17 Dane County Parks & Open Space Plan.
- Federal, state and municipal properties are identified and included.
- The dataset is a derivative of the Tax Parcel data.

Custodian

- Land Information Office
- Land & Water Resources Department
- Planning & Development, Records & Support Division
- Municipalities

Maintenance

- Parcels numbers associated with public lands are used to populate a Public Lands table.
- Attributes are managed for each parcel number.
- The table is joined to the tax parcel features and published daily.
- Updates are made as needed when property boundaries and/or attributes change.

Standards

- Dane County Tax Parcel data
- Land & Water Resources Department records.
- In-house requirements

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

- Countywide orthophoto-derived hydrography dataset developed in 2005.
- Geometry updates were made using 2014 imagery and 2009 terrain data.
- Geometry updates made from 2017 terrain data.
- Geometry updates made from 2020 aerial imagery.
- Attributes include perennial and intermittent stream information, feature name, WI DNR Designation and Docket Number (for navigability).

Custodian

- Land Information Office
- Land & Water Resources Department
- Planning & Development, Zoning Division

Maintenance

- Updates are done on a periodic basis.
- Navigable stream determinations are completed by the WI DNR or County Zoning, hydrography attributes and/or geometry are modified as needed.
- Attribute and geometry updates drive the republishing of various derivative products.

Standards

- Dane County EGIS Migration Hydrography Project Specifications
- Dane County Hydrography Geodatabase and Maintenance System Report

Cell Phone Towers

Layer Status

- A point dataset of antenna location in Dane County.

Custodian

- Federal Communication Commission (FCC)
- Planning & Development, Records & Support Division
- Land Information Office

Maintenance

- Download tables, of antenna locations in the county, from the FCC.

Standards

- Federal registry of antenna locations.

Bridges and Culverts

Layer Status

- Dane County has a limited collection of bridge data.
- Dane County has a limited collection of culvert data.

Custodian

- Dane County Highway
- Wisconsin Department of Transportation
- Local Municipalities
- Land Information Office

Maintenance

- To be Determined

Standards

- To be Determined

Other/Miscellaneous

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

Railroads

Layer Status

- A complete inventory of railroad lines in Dane County.
- Digitized off of 2020 imagery.

Custodian

- Land Information Office

Maintenance

- Changes are made when informed by WI DOT or Madison Area MPO.
- Reviewed with updated imagery.

Standards

- Developed by LIO in conjunction with Madison Area MPO

Airports

Layer Status

- A complete inventory of airports and heliports in Dane County.
- Updated off of 2020 imagery.

Custodian

- Land Information Office

Maintenance

- Changes made on an as needed basis.
- Reviewed with updated imagery.

Standards

- LIO developed.

Non-Metallic Mineral Extraction

Layer Status

- A complete inventory of non-metallic mineral extraction sites in Dane County.
- Extract from the tax parcel data based on a parcel number managed by Zoning.

Custodian

- Planning & Development, Zoning Division
- Land Information Office

Maintenance

- Changes made on an as permits are approved.
- Derivative of the tax parcel data.

Standards

- Zoning developed permit tracking.

3 LAND INFORMATION SYSTEM

This chapter provides a general overview of the Dane County land information system. Dane County has established a system that is concentrated on maintaining and enhancing its enterprise GIS/LIS framework. This is a distributed system with various departments and agencies contributing to a central repository. This allows departments to focus on their regulatory responsibilities and manage only those datasets that they have jurisdiction over. In turn, it provides departments with access to a larger clearing house of data that is managed by the LIO.

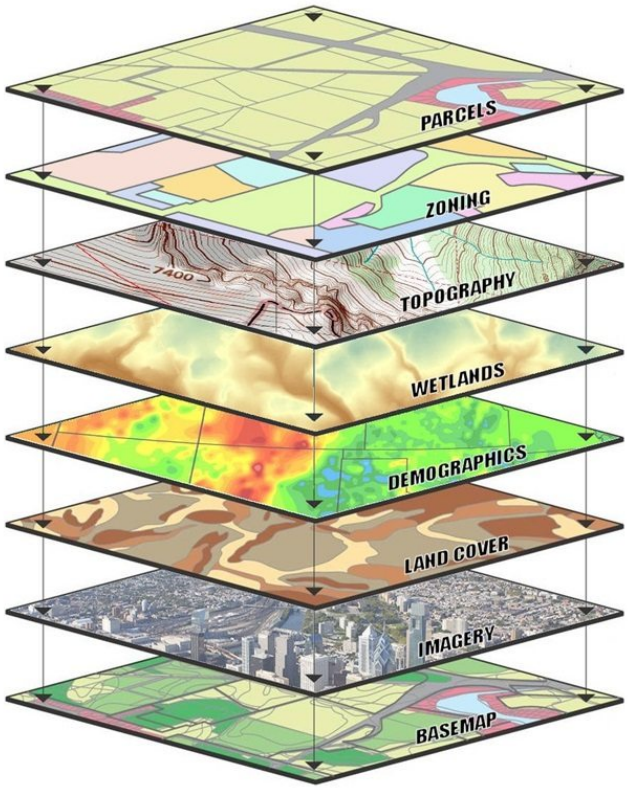


Figure 1. *GIS Data Layers Visualization (Courtesy USGS)*

For some datasets, the Land Information Office takes on an initial custodial role for the development a new dataset. This allows the LIO to use its resources to cover the higher costs related to development and management of a new dataset. As a dataset moves from development to maintenance, the management of the data is transitioned from the LIO to the custodian department. This provides custodial department's time to setup staffing and procedures involved in the ongoing maintenance of data.

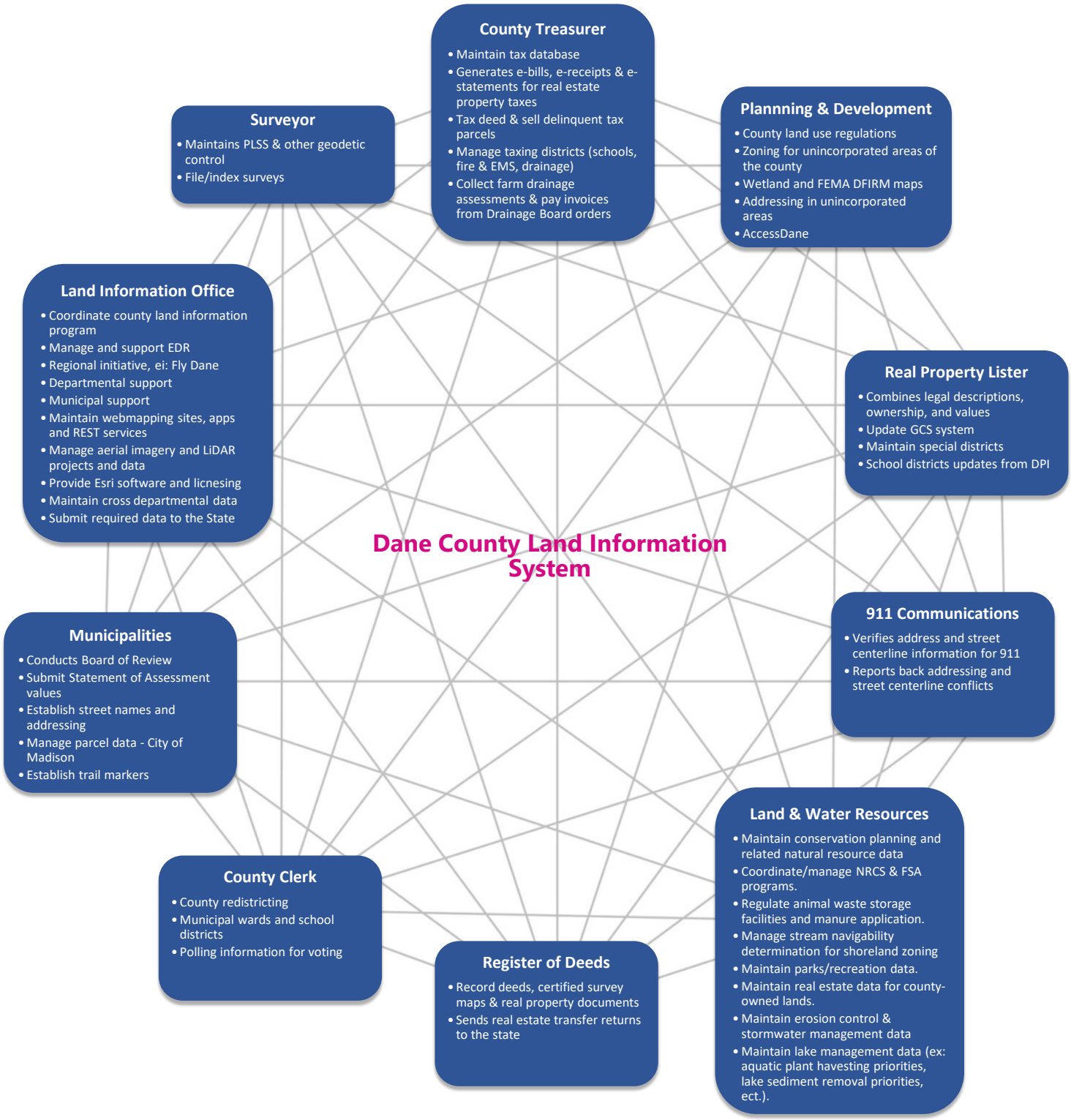
Changes in technology will allow easier access to data and services for the county to provide and to consume. The LIO will continue to monitor and take advantage of opportunities to advance land information modernization efforts. This includes building cooperative research and development partnerships with other agencies and educational institutions. In addition, the county will develop information policies to support the deployment and use of land information and land information systems.

Current Land Information System

Diagram of County Land Information System

Figure 2 provides a general overview of the major departments that are involved with the Dane County Land Information System.

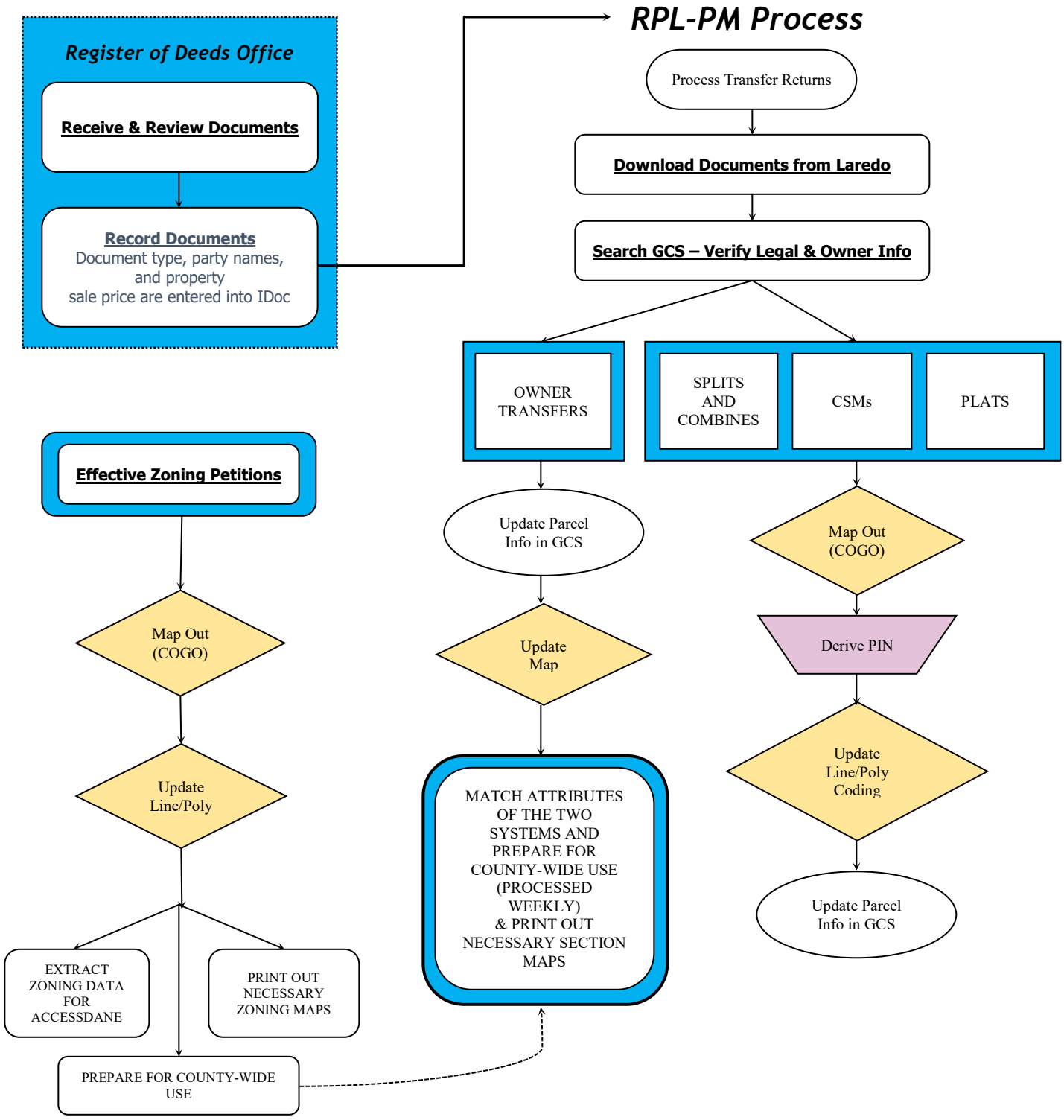
Figure 2.



County Parcel Data Workflow Diagram

This required section features a diagram of Dane County's parcel mapping and tax roll process. Figure 3 provides a general overview of the parcel data creation and maintenance effort.

Figure 3.



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. Updates and upgrades are ongoing with new hardware, software and system architecture.

Hardware

- Dane County follows industry accepted standards for database design and system architecture. The County's technology environment is based on Window Server technologies built on a VMWare virtual environment. The County will continue to use commonly accepted hardware platforms. Beyond this, the County specific future design and system architecture are unknown, but will be developed as technology evolves. The LIO relies on the recommendations of LIO Staff, the Division of Information Management and our consultant services to ensure a secure technology environment.

Software

- The GIS software platform is Esri ArcGIS product suite. Microsoft SQL Server 2016 with Esri ArcGIS Server Spatial Database Engine provides the data access tier while users will use ArcGIS Desktop and ArcGIS Server to consume the data. The County's GIS environment is currently comprised of a virtual architecture dedicated to GIS/LIS data maintenance and publication, including Internet publication. The maintenance environment, limits access to users that have rights to update authoritative datasets. The development of single use or a versioned Geodatabase structure is determined by the number of editors required for the development and maintenance of the data. Final publication of the data to the Enterprise Data Repository (EDR) is done once the dataset has been finalized. The publication of updates is established based on the data maintenance requirements.
- **County plans to upgrade to ArcGIS Pro:** Yes

Website Development/Hosting

- The County maintains several Internet websites that act as portals for land information searches and services, including online access to data and data ordering. The Land Information Office does much of the website development in-house, leveraging the services of Information Management when necessary. Where appropriate, the county may use third-party consultants and contractors to provide and support web applications and hosting. The County also has public access terminals available in several county offices to support public searching of property information and viewing of GIS data. The County is looking to leverage more web-mapping services in the future, not only as a provider, but also as a consumer. These services will allow greater integration between the county and municipalities, and streamline the maintenance of cycle between the two. The County is also looking at providing web-mapping services to contractors that are supporting various municipal and other agency applications. It is hoped that the state will be able to host reliable and scalable web-mapping services that will leverage a state enterprise data repository, making it easier to use state wide datasets.

Metadata and Data Dictionary Practices

Metadata Creation

- **Metadata creation and maintenance process:** The creation and maintenance of metadata is an ongoing effort. ISO-compliant metadata is developed for enterprise GIS data sets using Esri, ArcCatalog Metadata tools. Every effort is made to develop and maintain metadata that meets at least the minimum ISO Geographic Metadata Standard.

Metadata Software

- **Metadata software:** Esri ArcGIS - ArcCatalog
  The software does generate metadata consistent with the ISO Geographic Metadata Standard and FGDC Content Standard for Digital Geospatial Metadata.
- **Metadata fields manually populated:** Limitation in the metadata tools requires some manual updating of publication dates and versions. Changes in contact information also

require periodic manual updates. The LIO is continually looking to additional automation tools that will assist in the update process.

Metadata Policy

- **Metadata Policy:** There is no specific policy, but every effort is made to develop and maintain metadata that meets at least the minimum ISO-compliant metadata requirements. The latest version of Esri Metadata tools does present some challenges in producing metadata in alternate digital formats.

Municipal Data Integration Process

- Dane County encourages and supports integration and cooperation activities related to land records modernization as cited elsewhere in this plan. There are several County supported application that allow municipalities to submit taxation data, address and street name updates. The County plans to continue and expand upon these relationships as appropriate. The County has a particular goal to further the relationship with the cities, villages and towns within the County to enhance a county based data repository available to these units of government. The County also looks to further relationship with stakeholders in other public agencies, utilities, private firms, and educational institutions.

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://dcimapapps.countyofdane.com/dcmapviewer/	https://gis-countyofdane.opendata.arcgis.com/	https://accessdane.countyofdane.com/	
https://dcimapapps.countyofdane.com/datadownload/	https://dcimapapps.countyofdane.com/datadownload/		
https://dcimapapps.countyofdane.com/supervisordemographics/	https://data-carpc.opendata.arcgis.com/		
https://dcimapapps.countyofdane.com/supervisors/			
https://dcimapapps.countyofdane.com/lwrviewer/			
https://dcimapapps.countyofdane.com/assessorsviewer/			
https://dcimapapps.countyofdane.com/municipalviewer/			
https://dcimapapps.countyofdane.com/planningviewer/			
https://dcimapapps.countyofdane.com/municipalviewer/			
https://daneclimateaction.org/maps			
https://dcimapapps.countyofdane.com/zlrviewer/			
https://gis-countyofdane.opendata.arcgis.com/apps/fa3986eda4c3421d9713fef814cb6128/explore			

Subscription Based Website Information			
GIS Webmapping Application(s) Link - URL	**GIS Download Link - URL**	**Real Property Lister Link - URL**	**Register of Deeds Link - URL**
https://dcimapapps.countyofdane.com/surveyorsoffice/			http://www.fidlar.com/laredo.aspx
https://dcimapapps.countyofdane.com/publicnotification/			https://tapestry.fidlar.com/Tapestry2/

Single Landing Page/Portal for All Land Records Data
URL
https://lio.countyofdane.com/

Web Services/REST End Points
URL
https://dcimapapps.countyofdane.com/arcgissrv/rest/services +

+Request that when using our services, pull in the full service and not the indexed layer.

Municipal Website Information

Municipal Website	Municipal Website URL
City of Fitchburg	http://www.fitchburgwi.gov/151/Mapping
City of Madison	http://data-cityofmadison.opendata.arcgis.com/
	https://cityofmadison.maps.arcgis.com/home/index.html
	https://www.greatermadisonmpo.org/maps/gisData.cfm
City of Middleton	https://middleton.maps.arcgis.com/home/index.html
	www.ci.middleton.wi.us/index.aspx?NID=104
City of Monona	http://www.monona.wi.us/1022/Monona-Interactive-Maps
City of Stoughton	https://ci.stoughton.wi.us/plans
City of Sun Prairie	http://www.cityofsunprairie.com/430/Maps-GIS
City of Verona	http://www.ci.verona.wi.us/225/Planning-Development
Village of Belleville	http://gis.msa-ps.com/bellevillegis/
Village of Cottage Grove	https://cottagegrove.maps.arcgis.com/home/index.html
	http://www.village.cottage-grove.wi.us/211/Economic-Development
Village of Cross Plains	http://www.cross-plains.wi.us/index.asp?SEC=91107D2C-1C6F-4207-860D-5FF0264CA334&Type=B_BASIC
Village of DeForest	https://www.vi.deforest.wi.us/index.asp?Type=B_BASIC&SEC=%7BD9E76344-0B13-42B8-BDE5-C80A010B15BA%7D
Village of McFarland	https://wi-mcfarland.civicplus.com/327/Village-Maps
Village of Mount Horeb	http://www.mounthorebwi.info/village-map
Village of Oregon	http://www.vil.oregon.wi.us/index.asp?Type=B_BASIC&SEC={0818C4AD-0D51-491B-AA60-F9CA12DC5ECA}&DE=
Village of Waunakee	http://www.vil.waunakee.wi.us/289/Mapping
Village of Windsor	https://public-mapping-villageofwindsor.hub.arcgis.com/
Town of Cross Plains	http://www.townofcrossplains.org/maps.html
Town of Middleton	https://town.middleton.wi.us/index.asp?SEC=40858E6C-3CF3-4412-9958-CF953E0E37D9&Type=NONE
Town of Perry	https://www.perry-wi.gov/?page_id=999
Capitol Area Regional Planning Commission	https://www.capitalarearpc.org/services/mapping-assistance/

Data Sharing

Data Availability to Public

Data Sharing Policy

- The County's data sharing policies are within the spirit of the Wisconsin Open Records Law and provides for a broad range of possibilities regarding data access, exchange and distribution. The County will comply with statutory requirements relating to land records as deemed applicable.

Open Records Compliance

- The County has done much to provide the public with access to information in an efficient and convenient manner. Public access terminals are available in several county offices to support public searching of property information and viewing of GIS data. Public-facing web

services provide general access the county's land records and acts as a portal for land information searches and services. In addition, the County provides subscription-based web services to enhanced records, with fees going to the maintenance of said records. Survey and base map data, along with thematic GIS layers are all available for cooperative efforts.

- With new Open Date requirements specified by the WLIP, Dane County is looking to the state to provide a central data repository that will provide a cleaning house for access to county data, statewide. This would provide a one stop shopping location for data and remove the burden on the county for data requests and streaming services.

Data Sharing Restrictions and Government-to-Government Data Sharing

Data Sharing Restrictions

- The County adheres to the Wisconsin Open Records Law and complies with all relevant state statutes for access to restricted records. Requirements by the WLIP are resulting in modifications to Dane County's data sharing policy.
- The County has adopted an opt-out policy for property owner name published in that tax parcel dataset or displayed on the AccessDane website. This policy is extended to published tax parcel data.

Government-to-Government Data Sharing

- The County has a positive working relationship with local municipalities and other public agencies. Efforts continue to further these relationships with local municipalities providing more local content to a centralized data repository that can be served back as county wide data. Local agencies and the County benefit from large regional initiatives, such as the Fly Dane partnership and the AccessDane website, by reducing redundancy and leveraging greater economies of scale. At the regional and state level, Dane County will continue to support initiatives for the development of statewide datasets. It is envisioned that these efforts will provide shared benefits to allow ease of data sharing for regional needs. The County will work with the state in developing data exchange standards and provide content that respects local policies.
- With Open Date requirements specified by the WLIP, Dane County is looking to the State to provide a central data repository that will simplify government-to-government data sharing.
- Have exposed REST endpoints for the majority of datasets for use by other governmental agencies.

Training and Education

- Dane County has a strong commitment to acquiring, providing and assisting with training and education efforts. It will continue to leverage opportunities to coordinate educational opportunities with other agencies, associations and institutions. The County uses the education and training grant funds provided by the WLIP to enable LIO and other county staff to participate in land information seminars, workshops and training. Training and education is provided through a number of venues that include conferences, workshops, seminars, user groups, webinars, etc. as appropriate and budgets allow. We will continue to work with land information consultants for additional technical assistance where needed.

4 CURRENT & FUTURE PROJECTS

This chapter identifies some of the major projects that Dane County is currently undertaking or planning to undertake in the next 3-years. Some or all of these project may extend beyond the 3-year window depending on funding, staffing or other reasons. However, there may be other projects that have not be identified, at the time that this plan was written, that may become a priority and require additional resources.

The WLIP allows this plan to be amended in the future should other significant projects be identified.

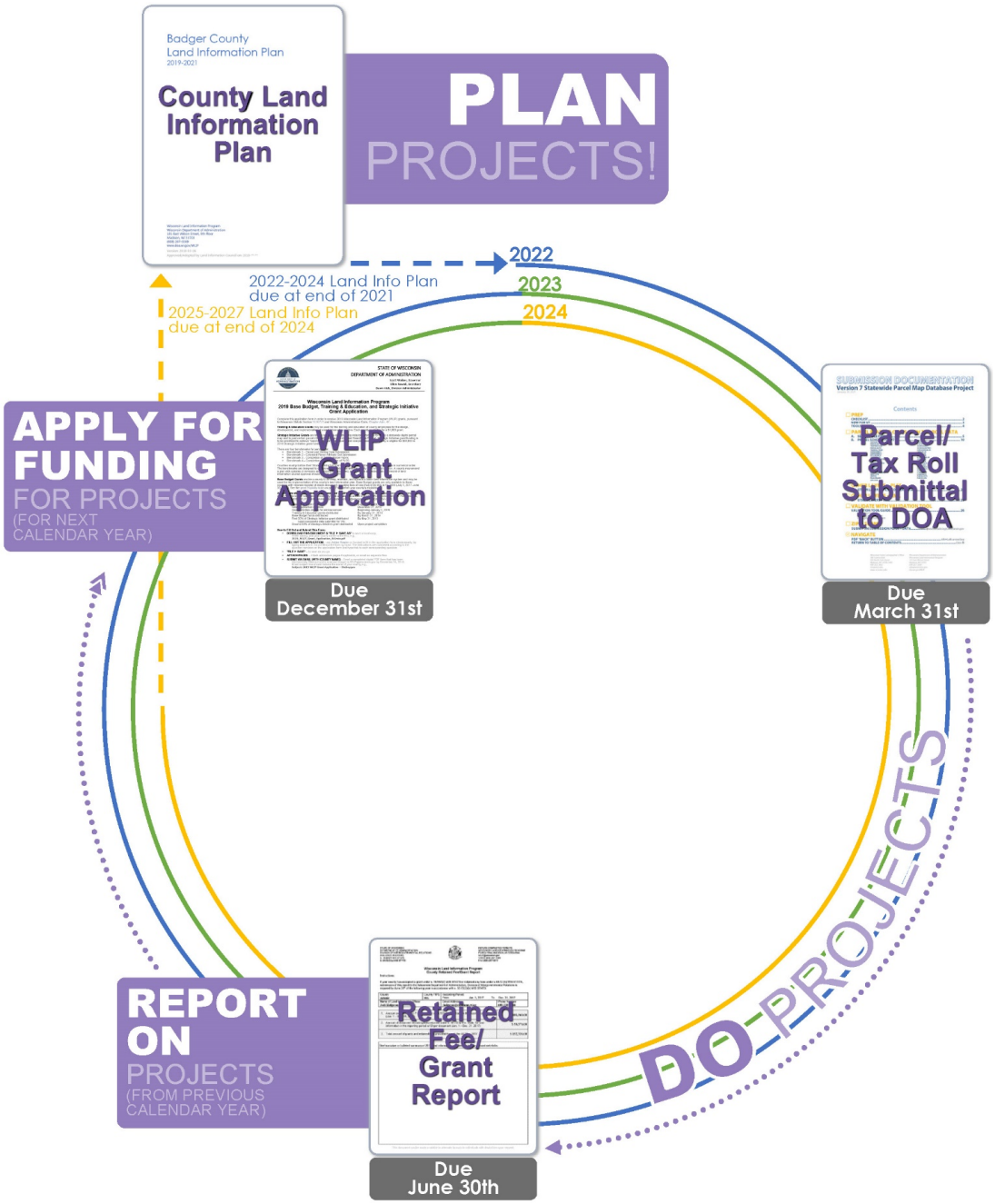


Figure 1. The WLIP Land Information Plan/Grant Project Cycle

Project 1: Maintain Searchable Format (Benchmarks 1 & 2)

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

Project Description/Goal

How Searchable Format Will Be Maintained

- Develop procedures that meet publishing requirements for the annual submittal of County Tax Parcel Data.
- Use Esri and SQL Server toolsets to access related databases, and publish to state benchmark.
- **Land Info Spending Category:** Other Parcel Work

Business Drivers

- The Project Plan to Maintain Searchable Format for Benchmarks 1 & 2 is a requirement for those counties who utilize Strategic Initiative funds for parcel/tax roll formatting to prepare the data submission to DOA.
- Additional attribute or format requirements for Searchable Format.

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 –Maintain Searchable Format

Milestone	Duration	Date
Call for Parcel Submission		January 20xx
Develop Publishing tools	1 month	January 20xx
Data Submission		March, 20xx

Responsible Parties

- Land Information Office

Estimated Budget Information

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

Project 2: PLSS Remonumentation (Benchmark 4)

Project Title: PLSS Remonumentation (Benchmark 4)

Project Description/Goal

Planned Approach

- This is a multi-year project to research and re-establish physical monuments and supporting documentation for the PLSS framework of Dane County. This project will require a long term commitment of funding and staff resources to complete. The completion of this project is directly tied to the ability of the county to re-compile the tax parcel data to a solid control network.

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.
- **Land Info Spending Category:** PLSS

Goals

- **Number of corners to be remonumented and/or rediscovered:** All remaining, see PLSS Layer Status table in Chapter 2.
- **Number to have new coordinates established:** 1890+/-, see PLSS Layer Status table, Chapter 2.
- **Accuracy class for these new coordinates:** Survey Grade
- **Way in which these points will be integrated into the parcel fabric:**
  - The PLSS Monument coordinates and the resulting PLSS linework provide the framework from which the parcel data is tied to.

- As each township is remonumented, funding permitted, a complete recompilation of the parcel data is undertaken.

Missing Corner Notes

- **Documentation for any missing corner data:** None, question the purpose of obliterated corner records.

County Boundary Collaboration

- Will work with neighboring counties as necessary, as problem areas come to light.
- The County will share PLSS data with adjoining counties.

Business Drivers

- The Project Plan for PLSS is a requirement for those counties who utilize Strategic Initiative funds for work related to PLSS completion and integration.
- Developing a full inventory of the all the PLSS control in the county.
- Establish survey grade control on the PLSS corners in the county.
- Minimize spatial inaccuracies in the PLSS framework data and related dataset, (example county boundary, municipal boundaries, tax parcels).
- Provide an accurate framework for recompiling the tax parcel data.
- County Board providing Capital funding for the remonumentation project

Objectives/Measure of Success

- The objective is to meet Benchmark 4 (Completion and Integration of PLSS).
- Provide complete witness corners for PLSS monuments.
- Provide complete documentation for PLSS monuments.
- Provide a solid framework for the county and municipal boundaries.
- Provide a solid framework for the recompilation of the county tax parcel data.
- Complete project on or before schedule completion date.

Project Timeframes

Timeline – PLSS Remonumentation

Milestone	Duration	Date
Annual Project	–	Spring-Summer 2018-2024
Remonumentation of townships as funding is available	–	Annually 2018-2024
Anticipated project completion	–	Fall 2024

Responsible Parties

- Planning & Development, County Surveyor – Project development, contracting, management, project management, data entry.
- Contractors – establish survey grade control, deliver related monumentation records.

Estimated Budget Information

- See table at the end of this chapter.

Project 3: Recompilation of Tax Parcels to PLSS Remonumentation

Project Title: Tax Parcel Recompilation to New PLSS

Project Description/Goal

- To produce a tax parcel dataset that is tied to an accurate PLSS framework.
- To resolve remnant features from the ArcInfo Coverage environment such as densified line segments and provide better representation the parcel dataset.
- Provide a more accurate base dataset for the development of various derivative datasets.
- **Land Info Spending Category:** Digital Parcel Mapping

Business Drivers

- The PLSS remonumentation project.
- Improve the accuracy of the tax parcel data.

- Resolve geometric artifacts for the Esri coverage environment (example: segmented curves).
- Better accuracy for derivative products that use the tax parcel data.
- Improved accuracy of municipal boundary and county boundary.

Objectives/Measure of Success

- Improve the accuracy of the tax parcel data.
- Tie parcels to PLSS control.
- Improved accuracy of derivative products that use the tax parcel data.
- Improve accuracy of municipal boundary and county boundary.

Project Timeframes

Timeline – Recompilation of Tax Parcels to PLSS Remon		
Milestone	**Duration**	**Date**
Annual recompilation of townships remonumented	Ongoing	2021 -2025
The recompiled tax parcels moved into maintenance	Ongoing	2021 -2025

Responsible Parties

- Planning & Development, Records & Support Division (85%)
- Planning & Development, County Surveyor (13%)
- Land Information Office (2%)

Estimated Budget Information

- See table at the end of this chapter.

Project 4: Address Points

Project Title: Countywide Address Points

Project Description/Goal

- A joint project with Dane County, City of Madison and City of Sun Prairie to provide a comprehensive address point dataset across the county.
- Enhance processes to provide a more integrated workflow to manage addressing updates, leveraging various departments that produce, manage and use address point data.
- Work with Planning & Development, Records & Support Division on the implementation of a new address management and land records system.
- Assess and integrate error reporting from WI-DMA for acceptance into NextGen911 system.
- Research and implement alternative addressing systems to provide location and emergency services. For example, the adoption of the US National Grid-ELM system for trail markers and integrate it in for 911 Communications.
- **Land Info Spending Category:** Address Points

Business Drivers

- Tracking rural addressing assigned by the County.
- 911 Computer Aided Dispatch (CAD) address verification, location and routing.
- Reference data for use in mobile CAD that is used be fire, EMS and law enforcement in Dane County.
- Improve Geocoding.
    - Sheriff and municipal police department record management and analysis.
    - Emergency Management, Special Needs population and facilities locating services.
    - County and municipal voter registration reporting.
    - Departmental geocoding needs.
- Improved inventory of address points for Dane County Zoning and municipal addressing authorities.
- Address information related to tax parcels.
- WI-DMA NextGen 911 implementation.

- Improved data for address validation for voter registration, disaster reporting and other departmental needs.

Objectives/Measure of Success

- To develop a county address point dataset for Dane County.
- Increase address resolution for 911 Communications.
- Enhanced Geocoding functionality.
- Acceptance by WI-DMA of address point data in NextGen 911 system.

Project Timeframes

Timeline – Address Points		
Milestone	**Duration**	**Date**
Complete address point development - rural	Complete	-
Complete address point development – municipal (exclude City(s) of Madison & Sun Prairie	Complete	-
Updates and maintenance		Ongoing
Integrate City of Sun Prairie address points	9 months	Winter-Summer 2022
Integrate City of Madison address points	12 months	Winter-Fall 2022
Address and Land Records System Upgrade		2022-2025
Train and mentor municipalities in maintenance procedures	Multi-year transition	2023 -2025
USNG-ELM system implementation		2022-2025
Submittal to NextGen911 system	TBD	TBD

Responsible Parties

- Land Information Office
- Planning & Development, Records & Support Division
- Planning & Development, Zoning Division
- Land & Water Resources Department, Parks Division
- Information Management
- City of Madison, IT Department
- City of Sun Prairie
- Local Municipalities
- 911 Communications

Estimated Budget Information

- See table at the end of this chapter.

Project 5: Open Data

Project Title: Open Data Portal

Project Description/Goal

- Support and enhance an Open Data Portal.
- That the state will establish a Central Repository and related Open Data Portal to provide access to county data and lessen the burden on the county.
- **Land Info Spending Category:** Website Development/Hosting Services

Business Drivers

- WLIP Requirements
- Direction by Dane County Land Information Council

Objectives/Measure of Success

- Develop and maintain an Open Data Portal.
- Reduction in staff requests for data.
- Increased use of data in the public and private sector.
- Identified as a reliable data custodian.

Project Timeframes

Timeline – Open Data		
Milestone	**Duration**	**Date**
Develop Open Data Services	-	Ongoing

Responsible Parties

- Land Information Office
- WLIP

Estimated Budget Information

- See table at the end of this chapter.

Project 6: Land Conservation Management System

Project Title: Land Conservation Management System

Project Description/Goal

- Develop a new conservation data management system for the Land Conservation Division (LCD). The new system will integrate existing software and data utilized by Land Conservation Division and provide an efficient workflow.
- **Land Info Spending Category:** Other (specify in second column)

Business Drivers

- The Dane County Land Conservation Division currently uses multiple software programs to manage conservation data. These software programs provide data management, analyses, and report generation, for agricultural-related lands (cropland, farmsteads, wetlands and forestlands).

Objectives/Measure of Success

- Design and develop a new Land Conservation Management System (LCMS).
- Convert data from the existing CPS data store and CPSMap projects into the LCMS.
- Migrate existing tract-based data to a parcel-based spatial system.
- Integrate GIS data layers (i.e. parcels, soils, wetlands, etc.) and scripting.
- Incorporate efficiencies into LCD workflows.
- Incorporate Laserfiche for document management.
- Integrate mobile technologies.

Project Timeframes

Timeline – Land Conservation Management System		
Milestone	**Duration**	**Date**
Development and implementation of all related modules	-	2021-2023

Responsible Parties

- Land & Water Resources Department, Land Conservation Division
- Information Management
- Land Information Office

Estimated Budget Information

- See table at the end of this chapter.

Project 7: Web Services

Project Title: County Web Services

Project Description/Goal

- To develop and consume enhance web services for county departments and local municipalities to foster great data sharing and access.
- Provide web based resources to improve data collection and data sharing
- **Land Info Spending Category:** Website Development/Hosting Services

Business Drivers

- Departmental Business Needs
- Public information
- Cross agency data sharing
- Municipal needs
- Leveraging existing services and reducing redundancy
- Reducing costs for providing web services

Objectives/Measure of Success

- Provide greater data sharing between the county and other agencies
- Reduce overhead for managing data
- Providing greater access to local data

Project Timeframes

- Many of these are multi-year projects, with completion goals that are subject participation from local communities, other agencies and funding availability.

Timeline – Web Services

Milestone	Duration	Date
Application Development		Ongoing
Department focused applications:		
DaneVote	1 month	~ Twice annually
Stormwater	1 month	Annually
DCiMap App Maintenance and Enhancement		Ongoing
AccessDane Enhancements		Ongoing
Assessors Viewer	1 month	~ Twice annually
Municipal Viewer	1 month	~ Twice annually
LIO Website		Ongoing
Webmapping Services		Ongoing
Plat Notification Report		Ongoing Maintenance
Ad-hoc App Development based on short term needs		Ongoing
LWRD Viewer		~ Twice annually
Planning Viewer		~ Twice annually
GIS Date Download		~ Twice annually
ZLR Viewer		~ Twice annually
Highway Projects		Ongoing Maintenance

Responsible Parties

- Land Information Office
- Local municipality
- Contractors – Developing and hosting web services, developing and maintaining supporting data.

Estimated Budget Information

- See table at the end of this chapter.

Project 8: Fly Dane

Project Title: Fly Dane

Project Description/Goal

- Update and enhance the aerial imagery for Dane County.
- Allow partners to leverage an economy of scale and pool local funding to produce the highest level data possible.
- As with previous Fly Dane projects, 2022 and 2024 will provide a base level set of deliverables and allow for partner upgrades to meet higher accuracy local requirements.
- This project will look to leverage other funding sources available while still meeting the objectives of the partners involved.
- Provide contract flexibility for municipal buy-up for higher resolution imagery.
- **Land Info Spending Category:** Orthoimagery

Business Drivers

- 2-year update cycle of county-wide imagery.
- Reference imagery for web-based applications, desktop applications and hard copy maps.
- Base data for updating building footprint, street centerline, land use, hydrography and other data updates.
- Base data for Public Safety applications.
- Coordinate municipal buy-up program for high resolution imagery over urban areas of the county.
- Base data for county departments and municipalities applications and needs.

Objectives/Measure of Success

- Delivery countywide 6-inch, color imagery as a base product.
- Imagery that is seamless and color balanced across tiles.
- Derivative data updates

Project Timeframes

Timeline – Fly Dane 2022 & 2024

Milestone	Duration	Date
Select and contract with vendor	2 months	Summer 2021 & 2023
Solicit municipal interest in project upgrades	6 month	Summer-Fall 2021 & 2023
Finalize project specifications	1 months	Winter 2022 & 2024
Data acquisition	1 months	Spring 2022 & 2024
Data delivery	4 months	Fall 2022 & 2024

Responsible Parties

- Land Information Office
- Municipalities

Estimated Budget Information

- See table at the end of this chapter.

Project 9: Hydrography Review and Update

Project Title: Countywide Hydrography

Project Description/Goal

- Complete a review and spot updates of the county hydrography dataset, based off of the updated aerial imagery and terrain data.

- **Land Info Spending Category:** Other (specify in second column)

Business Drivers

- Revised Hydrography base
- Shoreland zoning restrictive buffers

Objectives/Measure of Success

- Revised hydrography base dataset

Project Timeframes

Timeline – Hydrography Review and Update		
Milestone	**Duration**	**Date**
Review and update dataset	2	Winter-Spring 2022
Review and update dataset	2 months	Fall 2022-Winter 2023
Review and update dataset	2 months	Fall 2024-Winter 2025

Responsible Parties

- Land Information Office
- Land & Water Resources Department, Land Conservation Division

Estimated Budget Information

- See table at the end of this chapter.

Project 10: US Census Updates & Redistricting

Project Title: US Census Geography & Data Updates

Project Description/Goal

- Provide updated municipal boundary information to LTSB as part of Stage 0 of redistricting.
- Establish County Board of Supervisor district boundaries as outlined in federal law following the 2020 Census.
- Provide bi-yearly submittal of ward boundary data to the LTSB.
- LTSB provides updates to the US Census.
- **Land Info Spending Category:** Other (specify in second column), address points

Business Drivers

- Legislative Redistricting
- Demographic geography
- State statutory requirements

Project Timeframes

Timeline –US Census Updates & Redistricting		
Milestone	**Duration**	**Date**
Supervisor District	1 Month	Summer 2021
Municipal Wards	1 Month	Fall 2021
Reconcile Supervisor and Ward Districts	1 Month	Fall 2021
approval of Supervisory Districts	1 Month	Fall 2021

Responsible Parties

- Dane County – Board Office
- Dane County – Clerk's Office
- Planning & Development, Records & Support Division
- Local Municipalities
- Land Information Office

Estimated Budget Information

- See table at the end of this chapter.

Project 11: Staff Training & Education

Project Title: Staff Training & Education

Project Description/Goal

- Provide staff access to conferences and training opportunities to maintain proficiency in technology and to interface with local, state, federal and international members of the GIS and IT community.
- One-on-one and group training, online training, and attending conferences and seminars.
- **Land Info Spending Category:** Training and Education

Business Drivers

- To ensure that staff are informed on changes to technology and that they can maintain the necessary skills to complete their assigned tasks.
- To be proficient in changes in technology.
- To be an education resource to county departments and local municipalities.

Objectives/Measure of Success

- Maintaining infrastructure that is compliant with changes in technology.
- Effective deployment of new applications and tools.
- Provide access to conference and training as budgets allow.

Project Timeframes

- This is an ongoing and annual effort.

Responsible Parties

- Dane County staff

Estimated Budget Information

- See table at the end of this chapter.

Project 12: Street Centerlines

Project Title: Countywide Street Centerlines

Project Description/Goal

- Ongoing updates of the street centerline data to incorporate changes to the street network.
- Provide county departments and municipalities a comprehensive authoritative street centerline dataset.
- **Land Info Spending Category:** Street Centerlines

Business Drivers

- Geocoding and routing solution for 911 system.
- WI-DMA NextGen 911 implementation.
- Provide a comprehensive authoritative street centerline dataset associated with address points.
- County geocoding.
- Provide a comprehensive authoritative street centerline base dataset.

Objectives/Measure of Success

- To develop a county street centerline dataset for Dane County.
- Increase geocoding and routing recommendations for 911 Communications.
- Acceptance by WI-DMA of street centerline data in NextGen 911 system.
- Enhanced Geocoding functionality.

Project Timeframes

- This is an ongoing and annual effort.

Timeline – Address Points		
Milestone	**Duration**	**Date**
Updates and maintenance		Ongoing
In-house or Consultant validation of street centerlines		2022-2025
Submittal to NextGen911 system	TBD	TBD

Responsible Parties

- Land Information Office
- Planning & Development, Land Records & Support Division
- Information Management
- City of Madison, IT Department
- City of Sun Prairie
- Local Municipalities
- 911 Communications

Estimated Budget Information

- See table at the end of this chapter.

Project 13: NextGen 911 Data Compliance

Project Title: NextGen 911Preparation & Support

Project Description/Goal

- To meet data acceptance requirements for address points, street centerlines and other critical dataset needed for the implementation of NextGen 911.
- Select in-house or contractor SaaS solution for street centerline data validation to WI-NENA data requirements.
- **Land Info Spending Category:** Address Points, Street Centerlines, Other (specify in second column)

Business Drivers

- WI-DMA NextGen 911 implementation.
- Dane County adoption and implementation of NextGen 911.
- Error checking of data.
- Provide a comprehensive authoritative datasets.

Objectives/Measure of Success

- Compliance with data requirements set forth by WI-DMA.
- Consider in-house or contractor SaaS solution for data validation to WI-NENA data requirements.

Project Timeframes

- This is an ongoing and annual effort.

Timeline – Address Points		
Milestone	**Duration**	**Date**
Updates and maintenance		Ongoing
In-house or consultant validation of street centerlines		2022-2025
In-house or consultant validation of address points		2022-2025
Submittal to NextGen911 system	TBD	TBD

Responsible Parties

- Land Information Office

- Planning & Development, Records & Support Division
- Information Management
- City of Madison, IT Department
- City of Sun Prairie
- Local Municipalities
- 911 Communications

Estimated Budget Information

- See table at the end of this chapter.

Completed Projects

Since the completion of the 2018 Dane County Land Information Plan, many projects have been undertaken and complete. The following is a list of the major projects that have been completed in the past five years.

- Continued the Fly Dane partnership, acquiring countywide 6-inch resolution, 4-band color imagery in 2020.
- Fly Dane partnership, acquiring 3-inch resolution, 4-band color imagery for 418 square miles over the urban core of the county in 2020.
- Contributor to the Esri Community Maps Program.
- Submitted annual countywide parcels to the Statewide Parcel Map Database Project.
- Rebuilt DCiMap, Dane County's online mapping application, as an in-house project using Esri ArcGIS online templates.
- Enhanced AccessDane municipal services to provide greater data transfer between the county and municipalities.
- Building footprint updated using 2020 imagery.
- Develop a municipal focused web application (Municipal Viewer).
- Rebuilt the LIO homepage.
- Expanded and updated Maps & Apps resource page that includes school district viewer, parcel finder, election district viewer, and departmental viewers.
- Progressing on the remonumentation of PLSS in Dane County.
- Participated in the US Census, Participant Statistical Areas Program (PSAP) program. Provided review and update of addresses to the US Census.
- Submitted legislative Ward Boundary updates to Wisconsin Legislative Technical Services Bureau (LTSB) and Government Accountability Board (GAB) for voter registration boundary updates.
- Participated in the WI-DMA NextGen 911 Gap Analysis for address points and street centerline data. Complete updates based on analysis report.
- Completion of a number of web services
    - Assessors Viewer, Surveyors Office, Open Data Site, Proposed Zoning application, Who is My Supervisor app, District Compare app for Land Records, GIS Download, Supervisor Demographics, Emergency Road Closure app, Highway Projects app, Imagery Viewer, Planning Viewer, ZLR Viewer, Zoning Viewer

Estimated Budget Information (All Projects)

Estimated Budget Information

Project Title	Item	Unit Cost/Cost	Land Info Plan Citations Page # or section ref.	Project Total
1) Maintain Searchable Format (Benchmarks 1 & 2)	Scripting, publishing and review	~$2,000/year	Page 37	**~$2,000**
2) PLSS Remonumentation (Benchmark 4)	Project management	~$30,000/year	Page 37	
	Consulting Services	~$75,000/PLSS Township		**~$2,800,000**
3) Recompilation of Tax Parcels to PLSS Remonumentation	Recompilation	~$145,000/year	Page 38	**~$435,000**
4) Address Points	a) Project Management and Maintenance	~$35,000/year	Page 39	
	b) Development of municipal maintenance tools	~$20,000		**~$125,000**
5) Open Data	LIO Staff	~$30,000	Page 40	
	Maintenance	~$8,000/year		**~$38,000**
6) Land Conservation Management System	LIO Staff	~$15,000/year	Page 41	
	Departmental Staff	~$120,000/year		**~$135,000**
7) Web Services	Development/Enhance-ment	~$50,000/year	Page 41	**~$150,000**
8) Fly Dane	a) Project management	~$8,000/project	Page 42	
	b) Contracting for imagery acquisition, processing and delivery	~$100,000/project		**~$216,000**
9) Hydrography Review and Update	LIO Staff	~$20,000	Page 43	**~$20,000**
10) US Census Updates & Redistricting	Redistricting	~$9,000	Page 44	
	LTSB Updates	~$1,000		**~$9,000**
11) Staff Training & Education	All Staff	~$10,000/year	Page 45	**~$30,000**
12) Street Centerlines	LIO Staff services	~$10,000/year	Page 45	**~$30,000**
13) NextGen 911 Data Compliance	Data validation - LIO Staff or consulting services	~$70,000/year	Page 46	**~$210,000**
			GRAND TOTAL	**~$4,200,000**

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