

Dane County Land Information Plan 2019-2021



Dane County
Land Information Office
210 Martin Luther King Jr Boulevard, Room 339
Madison, WI 53703
<https://lio.countyofdane.com/>

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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 government 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

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)

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) 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.

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)

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.

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 2019-2021 plan, completed at the end of 2018, is the second post-Act 20 required update.

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

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

Dane County Land Information Council and Plan Workgroup

Name	Title	Affiliation	Email	Phone
+ Kristi Chlebowski	Register of Deeds, Land Information Officer	Register of Deeds, Land Information Office	chlebowski@countyofdane.com	608-267-8814
+ Adam Gallagher	County Treasurer	Treasurer's Office	gallagher@countyofdane.com	608-266-4151
+ Todd Violante	Director	Department of Planning & Development	violante@countyofdane.com	608-266-4021
+ Tanya Buckingham	County Board Member	County Board	buckingham.tanya@countyofdane.com	608-237-6712
+ Greg Brockmeyer	Director	Department of Administration	Brockmeyer@countyofdane.com	608-266-4355
+ Byron Chase	Realtor	Realtor	byronchase@realtor.com	608-203-8401
+ Rich McVicar	Technical Services Manager	Public Safety Communications	mcvicar@countyofdane.com	608-283-2911
+ Dan Frick	County Surveyor	Department of Planning & Development	frick@countyofdane.com	608-266-4252
+ Brian Berquist	President	Town & Country Engineering Inc.	brian@tcengineers.net	608-273-3350
+ Laura Hicklin	Director	Land & Water Resources Department	hicklin.laura@countyofdane.com	608-224-3765
Tim Confare	Senior GIS Analyst	Land Information Office	confare@countyofdane.com	608-267-1598
Fred Iausly	Senior GIS Analyst	Land Information Office	iausly@countyofdane.com	608-266-4398
Dave Watson	Senior GIS Systems Administrator	Land Information Office	watson@countyofdane.com	608-266-4265
Troy Everson	Land Records Administrator	Department of Planning & Development	everson@countyofdane.com	608-261-9750
Elizabeth Caulfield	Chief Deputy	Register of Deeds	caulfield@countyofdane.com	608-267-1515
Michelle Richardson	GIS Analyst	Land & Water Resources Department	richardson@countyofdane.com	608-224-3744
Jeremy Balousek	WRE Division Manager	Land & Water Resources Department	balousek@countyofdane.com	608-224-3747
Aaron Krebs	GIS Specialist	Department of Planning & Development	krebs@countyofdane.com	608-266-4254
Curt Kodl	Senior Planner	Department of Planning & Development	kodl@countyofdane.com	608-266-4183

+ 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.

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 counties 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.

FOUNDATIONAL ELEMENTS

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

PLSS

Public Land Survey System Monuments

Layer Status

PLSS Layer Status

	Status/Comments
Number of PLSS corners (selection, ¼, meander) set in original government survey that can be remonumented in your county	● 4200+/-
Number and percent of PLSS corners capable of being remonumented in your county that have been remonumented	● 3780+/-, 90%
Number and percent of remonumented PLSS corners with survey grade coordinates (see below for definition) <ul style="list-style-type: none"> ● SURVEY GRADE – coordinates collected under the direction of a Professional Land Surveyor, in a coordinate system allowed by 236.18(2), and obtained by means, methods and equipment capable of repeatable 2 centimeter or better precision ● SUB-METER – point precision of 1 meter or better ● APPROXIMATE – point precision within 5 meters or coordinates derived from public records or other relevant information 	● 1890+/-, 45%
Number and percent of survey grade PLSS corners integrated into county digital parcel layer	● 500+/-, 12%
Number and percent of non-survey grade PLSS corners integrated into county digital parcel layer	● 3700+/-, 88%
Tie sheets available online?	● Yes, By subscription access only
Percentage of remonumented PLSS corners that have tie sheets available online (whether or not they have corresponding coordinate values)	● 3780+/- , 90% ● By subscription access only
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	● None
PLSS corners believed to be remonumented based on filed tie-sheets or surveys, but do not have coordinate values	● 1890+/- , 45%
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	● 50+/- Green, 37+/- Rock, 48+/- Jefferson, 13 +/- Dodge, 72+/-Columbia, 50+/- Iowa
Number and percent of PLSS corners remonumented along each county boundary	● 240+/- 90%
Number and percent of remonumented PLSS corners along each county boundary with survey grade coordinates	● 25+/- Green, 25+/- Rock, 0 for remainder
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.

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.

Parcel Mapping

Parcel Geometries

Layer Status

- **Progress toward completion/maintenance phase:** County-wide parcel layer contains 100% of the county's parcels and 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 published 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.
- **Esri Parcel Fabric/LGIM Data Model:** The county does not use or plan to implement the Esri Parcel Fabric Data Model, and/or Esri's Local Government Information Model.
- **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 and Development.
- Parcels are updated using coordinate geometry provided in recorded documents.
- The Land Information Office provides a weekly publication of the countywide tax parcels to the Enterprise Data Repository.
- Parcel updates are published daily, based on documents recorded with the Register of Deeds and are about one week behind recording.
- The City of Madison provide city parcel once a month 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 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 convert 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

Non-Metallic Mineral Extraction Sites

Layer Status

- Extract from the tax parcel data based on a parcel number managed by Zoning.

Custodian

- Planning & Development, Zoning Division
- Land Information Office

Maintenance

- Maintained by zoning staff as new sites are permitted.

Standards

- Zoning permit tracking

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 until back indexed with PLSS based tract indexes and grantor/grantee names. Current day documents which accepted for recording are scanned/imaged prior to stamping of the recording stamp. Each document image and index is available for searching/viewing minutes after recording.
- **ROD Software/App and Vendor Name:** Laredo/Tapestry and AVID by Fidler

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
- 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.

Custodian

- Land Information Office
- Fly Dane Partnership

Maintenance

- Currently, the update cycle is every 8 years.

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), etc.

Layer Status

- 2017 countywide, 10-foot pixel, bare-earth digital elevation model (DTM)
- 2017 countywide, 10-foot pixel, first-return digital surface model (DSM)
- 2017 countywide, 1-foot contours

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.

Other Types of Elevation Data

Layer Status

- Dane County does not have additional Elevation Data.

Orthoimagery

Orthoimagery

Layer Status

- **Most recent acquisition year:** 2017
- **Resolution:** Countywide, 6-inch resolution, 4-band color imagery
- **Contractor's standard:**
 - Contractor shall meet the established standards established in the Fly Dane 2017 contract and listed below.
- **Next planned acquisition year:** 2020
- **WROC participation in 2020:**
 - Unsure about participation. A number of factors go into this decision that includes, but not limited to, county contracting requirements, project cost share, delivery timeline, and contracting flexibility.
- 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.
- There are fees for copies of this data for entities that are not Fly Dane Partners. These fees provide equity between those that joined the cost for the acquisition of the imagery and those that did not. It also funds the Fly Dane Reserve Fund that reduces the cost of future Fly Dane projects.

Custodian

- Land Information Office
- Fly Dane Partnership

Maintenance

- With the acquisition of imagery in 2017, Fly Dane has a 3-year update cycle.

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
- 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
- 2014 countywide area, 6-inch resolution, 4-band color imagery
- There are fees for copies of these data for entities that are not Fly Dane Partners. These fees provide equity between those that joined the cost for the acquisition of the imagery and those that did not. It also funds the Fly Dane Reserve Fund that reduces the cost of future Fly Dane projects.

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

- Dane County does not have additional types of imagery.

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 Zoning, is developed and 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.
- Future maintenance will look to leverage other addressing authorities whenever possible.

Custodian

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

Maintenance

- Daily

Standards

- Dane County Address Point Standard
- 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 – Address Data Content Standard
 - Esri – Local Government Model
 - NENA Standard for NG9-1-1 GIS Data Model
 - US Postal Service Address Content Standard

Building Footprints

Layer Status

- The dataset has been updated for 2017 building footprint dataset, based in the 2017 aerial imagery.

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 Address Point Standard
- Esri Community Map Program Standard

Other Types of Address Information

Highway Mile Markers

Layer Status

- Represents the location of WisDOT mile markers on the limited access highways.

Custodian

- Land Information Office

Maintenance

- Updated as needed

Standards

- NA

Highway Reference Markers

Layer Status

- Represents the location of WisDOT .2 and .5 mile reference markers on the limited access highways.

Custodian

- Land Information Office

Maintenance

- Updated as needed

Standards

- NA

Street Centerlines

Layer Status

- The county maintains a complete countywide street centerline dataset 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 on a weekly basis.

Standards

- Dane County Street Centerline Standard
- The standard was developed in conjunction with the City of Madison Information Management.
- Other standards that were evaluated include, but not limited to:
 - FDGC – Street Address Data Standard
 - Esri – Local Government Model
 - NENA Standard for NG9-1-1 GIS Data Model
 - US Postal Service Address Content Standard
- 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.

Custodian

- Planning & Development, Records & Support Division

Maintenance

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

Standards

- Esri Topology Rules

Recreational Trails

Layer Status

- The county maintains land and water trail features as part of the Dane County Parks & Open Space Plan. In addition, the county uses trail data from other sources including bicycle trail and ice age trail.

Custodian

- Land & Water Resources Department, Parks Division
- Madison Area Transportation Planning Board
- Ice Age Trail Alliance

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. Bicycle trail and ice age trail are updated every year or two in the EDR through data imports.

Standards

- No specific standards identified.

Land Use

Current Land Use

Layer Status

- 2015 countywide Land Use Inventory.

Custodian

- Capitol Area Regional Planning Commission

Maintenance

- Land use updates are done in conjunction with the availability of updated aerial imagery.
- Locally developed or NAIP imagery is used.

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

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

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

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

Maintenance

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

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

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.

Administrative Boundaries

Civil Division Boundaries

Towns, City and Villages

Layer Status

- The civil division boundaries are maintained as part of the parcel mapping system.

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

- Official action taken by a municipality.
- Based on documents recorded with the Register of Deeds.

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 maintains a separate countywide 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.
- 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

- A tables that is related to a point and polygon feature.
- Updates made in advance of each election.

Standards

- No standards are specified.

Utility Districts

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 & Water Resources Department
- 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.

Public Safety

Police, Fire, and Emergency Medical Service Districts

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

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.

Lake Districts

Layer Status

- Dane County does not manage lake districts.

Native American Lands

Layer Status

- Dane County does not manage Native American lands.

Other Administrative Districts

Public Lands

Layer Status

- Dane County manages a countywide County Parks dataset.
- Features are defined by the 2012-17 Dane County Parks & Open Space Plan and include Recreation Parks, Natural Resource Areas, Wildlife Areas, Historical/Cultural Sites and Forests.
- Base dataset to publish other derivative datasets.

Custodian

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

Maintenance

- Feature boundaries are derived from the tax parcel data and LWRD records and dissolved by feature name.
- 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
- Esri Local Government Data Model

Other Layers

Hydrography Maintained by County or Value-Added

Layer Status

- Countywide orthophoto-derived hydrography dataset developed in 2005.
- Geometry updates were made using 2014 imagery and 2009 terrain data.

- 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 does not maintain a bridge or culvert dataset.

Other

Railroads

Layer Status

- A complete inventory of railroad lines in Dane County.
- Digitized off of 2017 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

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.

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.

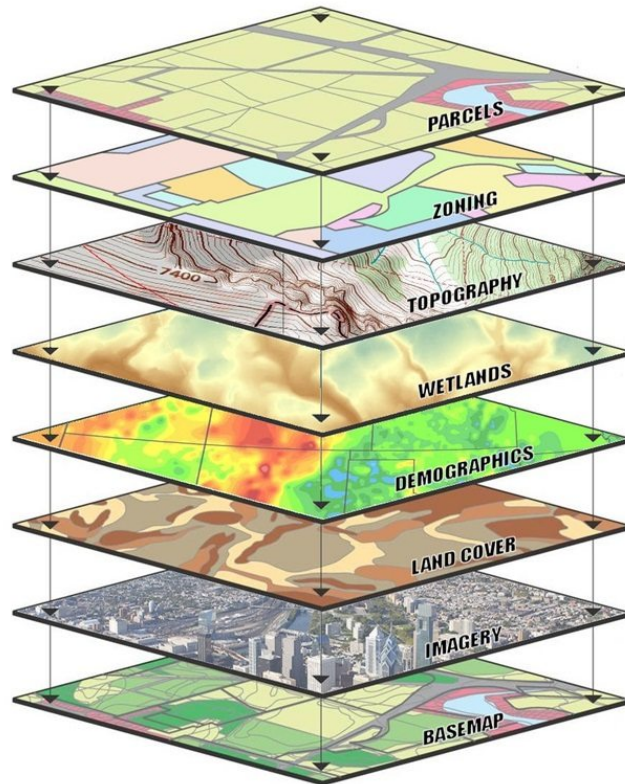


Figure 1. GIS Data Layers Visualization (Courtesy USGS)

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.

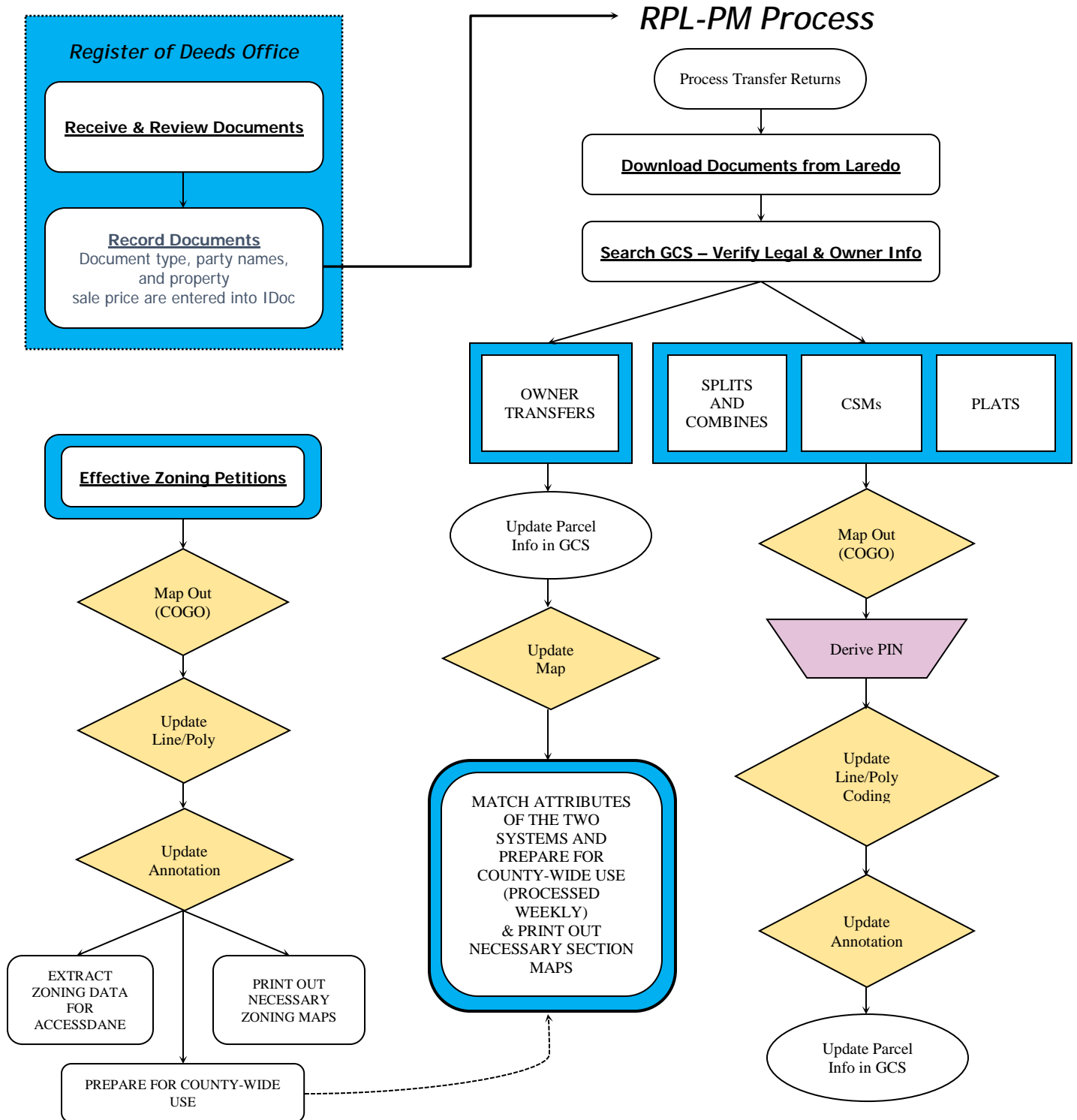
Figure 2.



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.

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 2012 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.

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. FGDC-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 FGDC Content Standard for Digital Geospatial Metadata.

Metadata Software

- **Metadata software:** ArcGIS - ArcCatalog
 - The software does generate metadata consistent with the FGDC Content Standard for Digital Geospatial Metadata, and ISO geographic metadata standard 19115.
- **Metadata fields manually populated:** 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 not specific policy, but every effort is made to develop and maintain metadata that meets at least the minimum FGDC Content Standard for Digital Geospatial Metadata. 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 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/	
http://countyofdane.maps.arcgis.com/apps/MapSeries/index.html?appid=dfe3fcd1c4604f878c2f65922d72af66			
http://countyofdane.maps.arcgis.com/apps/webappviewer/index.html?id=fb3b66a903a84ff781385b741d9cb690			
https://dcimapapps.countyofdane.com/lwrviewer/			
https://dcimapapps.countyofdane.com/assessorsviewer/			
https://dcimapapps.countyofdane.com/municipalviewer/			

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/surveyoroffice/			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/>

Municipal Website Information

Municipal Website	Municipal Website URL
City of Fitchburg	http://www.fitchburgwi.gov/151/Mapping
City of Madison	http://gis.cityofmadison.com/MADMAPS/GISHome.html
	http://www.cityofmadison.com/planning/dataService.html
	http://data-cityofmadison.opendata.arcgis.com/
City of Middleton	http://rmgis.ruekert-mielke.com/middleton/
	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://deforest.ags.ruekert-mielke.com/
Village of McFarland	http://www.mcfarland.wi.us/index.asp?SEC=6217F779-B989-446B-9F11-D49BD59898F7&Type=B_LIST
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	https://waunakee.ags.ruekert-mielke.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

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.
- Recent action by the Dane County Land Information Council has required the LIO to make the county GIS data holdings part of an Open Data requirement by the WLIP. This requirement does not apply to aerial imagery acquired through the Fly Dane Partnership.
- The County has adopted fees for some GIS data or custom data/mapping services, some fees may be waived. See the online data and map catalogs at <https://www.countyofdane.com/lio/datacatalog.aspx> for details. Data requests are handled through an online data ordering application process and orders are delivered via FTP. In some situations, some data elements or attributes may be restricted.
- 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 new 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.

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.

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 in 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

- 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 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:** PLSS, Digital Parcel Mapping, and Other Layers

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	2018 -2025
The recompiled tax parcels moved into maintenance	Ongoing	2018 -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 Description/Goal

- A joint project with Dane County and the City of Madison to provide a comprehensive address point dataset across the county.
- A future phase of this project will be to develop an integrated workflow to manage addressing updates, leveraging various departments that produce, manage and use address point data.
- **Land Info Spending Category:** Address Points

Business Drivers

- 911 Computer Aided Dispatch (CAD) address verification, location and routing.
- Reference data for use in mobile CAD that is used by 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.
- Improved inventory of address points for Dane County Zoning and municipal addressing authorities.

- Improved address information related to tax parcels.

Objectives/Measure of Success

- To develop a county address point dataset for Dane County.
- Increase address resolution for 911 Communications.
- Enhanced Geocoding functionality

Project Timeframes

Timeline – Address Points		
Milestone	Duration	Date
Complete address point development - rural	Compete	-
Complete address point development - municipal	7 months	Current-Winter 2019
Integrate City of Madison address points	6 month	Winter-Summer 2019
Develop and test tools to allow municipalities to support maintenance	4 months	Fall 2018-Winter 2019
Train and mentor municipalities in maintenance procedures	6 months	Winter-Summer 2019
Transition to Maintenance	2 months	Summer-Fall 2019

Responsible Parties

- Land Information Office
- City of Madison, IT Department
- Local Municipalities
- 911 Communications

Estimated Budget Information

- See table at the end of this chapter.

Project 5: Open Data

Project Description/Goal

- To develop 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 and Open Data Portal.

Project Timeframes

Timeline – Open Data		
Milestone	Duration	Date
Develop Open Data Services	-	Fall 2018 – Fall 2019

Responsible Parties

- Land Information Office
- WLIP

Estimated Budget Information

- See table at the end of this chapter.

Project 6: 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 – staffing/support to the development & maintenance of land information systems and departmental support.

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	-	Summer 2018-Fall 2020

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 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.
- 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	7 months	Current-Winter 2019
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	4 months	Current – Winter 2019
Ad-hoc App Development based on short term needs		Ongoing

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 2020

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, 2017 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.
- **Land Info Spending Category:** Orthoimagery

Business Drivers

- Update reference imagery for web-based applications, desktop applications and hard copy maps.
- Provides base data for updating building footprint, street centerline, land use, hydrography and other data updates.
- Reference base for Public Safety applications.
- Municipal business 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 2020		
Milestone	Duration	Date
Select and contract with vendor	2 months	Spring 2019
Solicit municipal interest in project upgrades	6 month	Summer-Fall 2019
Finalize project specifications	1 months	Winter 2019
Data acquisition	1 months	Spring 2020
Data delivery	4 months	Fall 2020

Responsible Parties

- Land Information Office
- Municipalities

Estimated Budget Information

- See table at the end of this chapter.

Project 9: Hydrography Review and Update

Project Description/Goal

- Complete a comprehensive review and update of the county hydrography dataset, based off of the 2017 aerial imagery and terrain data.
- **Land Info Spending Category:** Other Data Layers

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	6 months	Spring-Fall 2019

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 Description/Goal

- To provide updated address information to the US Census in advance of the 2020 Census.
- To establish County Board of Supervisor district boundaries as outlined in federal law following the 2020 Census.
- **Land Info Spending Category:** Other Data Layers. May require new category.

Business Drivers

- Support for the 2020 Census
- Legislative Redistricting
- Demographic geography

Project Timeframes

Timeline –US Census Updates & Redistricting		
Milestone	Duration	Date
PSAP Boundary Review	3 Months	Winter 2019
Secondary LUCA Update	3 Months	Summer 2019
Development and approval of Supervisory Districts	2 Months	Spring 2021

Responsible Parties

- Dane County – Board Office
- Dane County – Clerk’s Office
- Local Municipalities
- Land Information Office

Estimated Budget Information

- See table at the end of this chapter.

Project 11: Staff Training & Education

Project Description/Goal

- To 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.
- This includes 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.

Completed Projects

Since the completion of the 2015 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 2017.

- Updating the building footprint dataset to include changes identified on the 2017 imagery.
- Supported Dane County Sheriff's Office with incorporation of GIS data into the new records management system.
- Contributor to the Esri Community Maps Program.
- Submitted annual countywide parcels to the Statewide Parcel Map Database Project.
- Assisted Dane County Emergency Management in update of the "Dane County All Hazards Plan".
- Developed Pilot Damage Assessment application to test functionality and workflow to collect damage assessment data following 2018 flooding.
- 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.
- Developed and implemented enhancements to AccessDane to assist local assessors in local assessment and data exchange with the county.
- 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, Local Update of Census Address (LUCA) 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.

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 32	~\$2,000
2) PLSS Remonumentation (Benchmark 4)	Project management	~\$30,000/year	Page 32	
	Consulting Services	~\$75,000/PLSS Township		~\$2,800,000
3) Recompilation of Tax Parcels to PLSS Remonumentation	Recompilation	~\$145,000/year	Page 34	~\$435,000
4) Address Points	a) Municipal Data Development	~\$80,000	Page 34	
	b) Development of municipal maintenance tools	~12,000		
	c) Project Management	~\$4,000/year		~\$104,000
5) Open Data	LIO Staff	~\$50,000	Page 35	
	Maintenance	~\$8,000/year		~\$58,000
6) Land Conservation Management System	LIO Staff	~\$15,000/year	Page 36	
	Departmental Staff	~\$120,000/year		~\$135,000
7) Web Services	Development/Enhancement	~\$50,000/year	Page 36	~\$150,000
8) Fly Dane 2020	a) Project management	~\$8,000	Page 37	
	b) Contracting for imagery acquisition, processing and delivery	~\$100,000		~\$108,000
9) Hydrography Review and Update	LIO Staff	~\$50,000	Page 38	~\$50,000
10) US Census Updates & Redistricting	PSAP	~\$10,000	Page 38	
	LUCA Revisions	~\$10,000		
	Redistricting	~\$10,000		~\$30,000
11) Staff Training & Education	All Staff	~\$2,000/year	Page 39	~\$2,000
			GRAND TOTAL	\$3,874,000

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

