Meeting Agenda - LAND INFORMATION COUNCIL

County Board Room, 1st Floor Government Center, Room C101
421 Nebraska Street, Sturgeon Bay
Tuesday, October 6, 2020 at 9 am

Due to the declared state of emergency to mitigate the impact of COVID-19 this meeting will be conducted by teleconference or video conference. Members of the public may join the meeting remotely or in-person in the Peninsula Room (C121) 1st Floor Government Center (*please note public in-person has limited capacity and is on a first come, first served basis*).

To attend the meeting via computer go to:
https://doorcounty.webex.com/doorcounty/onstage/g.php?MTID=ec2fbcca1b2e7ebf4a1a765bd075a59e9
Event Password: Oct6lic2020

To connect via phone; **Call:** 1-408-418-9388 **Access Code:** 146 570 5872

Those who cannot attend remotely should call (920) 746-2323 or e-mail (Lriemer@co.door.wi.us). W will attempt to facilitate reasonable access for people who cannot attend remotely. Likewise, if on the day of the meeting you have issues with virtual meeting, please call (920) 746-2323 or e-mail Lriemer@co.door.wi.us for assistance.

1. Call Meeting to Order, 9 ***AM*** ←
2. Establish a Quorum – members present
3. Adopt the Agenda
4. Approve Land Information Council August 4th, 2020 meeting minutes
5. Open Forum of comments or questions from any person in attendance.
6. Approve Amended Door County Land Information Plan
7. Future Projects for Land Information Plan(s)
8. New Land Records System
   - 8.1. Treasurer & Real Property Listing – LandNav modules
   - 8.2. Zoning, Sanitary, and Conservation – Municity Permitting modules
9. Other Projects
10. Training / Conference opportunities / Announcements
11. Next Meeting
12. Adjourn

Council Member	Position
Tom Haight	GIS / LIO Coordinator
Dave Enigl	County Board Supervisor
Jason Rouer	Technology Services Director
Aaron LeClair	Emergency Services Director
Holly Hansen	Real Property Lister
Carey Petersilka	Register of Deeds
Jay Zahn	Treasurer
Brian Frisque	Registered Land Surveyor
Jeff Isaksen	Realtor Association Member

****** Please Note: Deviation from order shown may occur ******

In compliance with the Americans with Disabilities Act, any person needing assistance to participate in this meeting, should contact the Office of the County Clerk at (920) 746-2200. Notification 72 hours prior to a meeting will enable the County to make reasonable arrangements to ensure accessibility to that meeting. Door County is committed to making its electronic and information technology (e.g., website and contents) accessible for all persons. If you encounter difficulty accessing the posted materials for this meeting, located on-line at https://www.co.door.wi.gov/AgendaCenter *under the committee name, please call (920) 746-2323, or send a FAX to (920) 746-2387, or send an e-mail* Lriemer@co.door.wi.us *so that we may determine how to assist you.*

These minutes have not been reviewed by the oversight committee and are subject to approval or revision at the next regular committee meeting.

MINUTES: LAND INFORMATION COUNCIL

County Board Room, 1st Floor Government Center, Room C101
421 Nebraska Street, Sturgeon Bay

Tuesday, August 4, 2020

1. Meeting was called to Order at 9:03 am by Chairman Tom Haight.

2. Establish a Quorum:

   Members present included Tom Haight, Holly Hansen, Jay Zahn, Aaron LeClair, David Enigl and Jeff Isaksen.

   Jason Rouer, Carey Petersilka, and Brian Frisque were excused.

   Also present was Mariah Goode, Land Use Services Director.

3. Motion by Zahn, seconded by Enigl, to adopt the agenda. Motion carried.

4. Approve Land Information Council January 9th, 2020 meeting minutes: Motion by LeClair, seconded by Enigl, to approve the minutes of January 9th, 2020 meeting as presented. Motion carried.

5. Open Forum of comments or questions from any person in attendance: None.

6. Land Records System status

   6.1. Treasuer & Real Property Listing modules on LandNav by GCS

   Haight reported that the new LandNav land records system went “Live” March 2nd for RPL and Treasurer modules. The transition has been a lot of change for staff, familiar with the prior and very capable system for their entire careers. Real Property Listing has had to work through some programming fixes and conversion issues following the “Go Live” date. However, GCS staff has been working with the County to resolve outstanding issues, and more recently is working on custom reporting. Treasurer appeared to be more standardized from county-to-county under LandNav, and had fewer variables to work through as compared to Real Property. Hansen reported that this will be the first year of printing tax bills under the new LandNav system and that she would like to clean-up how some name records are displayed prior to beginning that process. The LandNav portal has been fairly intuitive as few calls have been generated from users as to not knowing where to find some data or how to use the site. The Covid outbreak and stay home orders had quickly followed the transition to “Go Live” timing but was still fairly smooth under the circumstances.

6.2. Zoning, Sanitary, and Conservation on Municity Permitting modules

Municity permitting software is being provided through a GCS business partner. Haight reported that the three modules are progressing well through weekly meetings with developer and the three-separate groups of county staff. The process may be taking longer than first anticipated but the three custom programs are steadily advancing. Zoning and Sanitary will likely have training and "Go Live" about the same time as the permitting conversion records is from existing as400 system and involves cross-training staff from Land Use Services Department. The Conservation module of Chapter 23 and Farmland Preservation compliance tracking may "Go Live" a little earlier as conversion is mainly from MS-Excel - Access, and paper records. It is anticipated that staff will receive training and that the three programs will "Go Live" by sometime in September.

7. LiDAR derivatives

Haight stated that the County received LiDAR data in 2019 and demonstrated how to view derivative products of 1-foot contours and culvert locations from the Door County Web Map. Haight reported that the County is now looking into a web-based Lidar viewer that would provide users a 3-D perspective of the County's landscape. Development of the viewer application would be $9,500 and then $2,500 annually for hosting. Soil and Water Conservation staff are also looking into having closed depressions mapped and potentially karst features for field verification. The County has some karst feature data generated by the WI-DNR about 25-30 years ago, but is not positionally accurate or complete. The County may be interested in a karst point-of-interest inventory generated from Lidar if reasonably priced and could save time with field verifications. The cost for closed depression mapping would be $5,760 and karst points of interest still needs to be determined.

8. Aerial Imagery

Haight reported that 2019 imagery is the default imagery shown on the Door County Web Map with historic digital imagery also available. Door County has been on a two-year cycle for the imagery and plans a spring 2021 flight at a 9-inch resolution countywide for about $41,000. The cost to go to a 6-inch resolution would increase the costs $29,000 and was not recommended for this cycle. In past acquisition cycles, the resolution and product has varied some depending on the needs and funds at that time, but the County has adhered to the two-year cycle since 2007. A number of departments and applications find the aerial imagery to be quite useful at the two-year cycle and there appeared to be consensus that this should continue. The City of Sturgeon Bay has the option to purchase a higher-resolution product (3-inch) for the incorporated area or a portion thereof.

9. Other Projects

Haight reported that Land Information Office (LIO) funds were recently requested to advance a potential Register of Deeds document imaging project. The proposed project would be about $200,000 to scan, index, and import remaining documents to existing Fidlar system. The request would be to use $50,000 from LIO through applying as the 2021 WLIP Strategic Initiative grant. To do this, the County will need to amend the 2019-21 Land Information Plan to include as a project, and appears to be the most likely project scenario for 2021.

Haight showed the project list at the end of the existing Plan that currently lists 7 projects. Haight stated that the first six items in Plan are all being addressed and should be implemented as of next year. The 7th item of "Local Elevation Benchmarks" was a place holder as little information was gathered as to what the project would entail and costs associated. Haight questioned the timing of the Benchmark project for 2021 with the acquisition of Lidar data, high water level conditions, and the perceived benefits. There was consensus that the Benchmark project should remain on list and reviewed on next plan cycle for benefits, costs, and prioritizing a potential time-frame.

10. Training / Conference opportunities / Announcements

Haight announced that the WLIA fall regional will be a virtual meeting for October 15-16 but can be a benefit for those to participate in a webinar that would otherwise not be able to attend at all. The next WLIA Annual Conference is scheduled to be Feb. 17th – 19st in Wisconsin Dells, currently planned for in-person, but may also need to go virtual.

Haight then took time to recognize the SWCD staff and Chris Moe for their recent contributions for advancing the County with new technology. Specifically, SWCD has benefited from those first 6 items on the project list of the existing Land Information Plan, and have had significant technology advancements with use of Lidar derivatives, implementation of Municity for Chapter 23 & Farmland Preservation compliance tracking, and use of Collector app on phones and tablets for invasive plant inventory & treatments. Chris Moe was recognized for her involvement in the Land Records System upgrade that involves her learning and contributing to modules for Real Property, Treasurer, Zoning, and Sanitary. All staff have should be thanked for their contributions during the transition.

11. Next Meeting was scheduled for Tuesday, October 6th at 9 am and include an agenda item for approving an amended 2019-21 Land Information Plan.

12. Adjourn. Motion by Zahn, seconded by Enigl, to adjourn. Motion carried.

Time: 9:50 a.m. Recorded by Tom Haight

Door County
Land Information Plan
2019-2021

**Wisconsin Land Information Program
Wisconsin Department of Administration
101 East Wilson Street, 9th Floor
Madison, WI 53703
(608) 267-3369
www.doa.wi.gov/WLIP

Version: 2020-09-02
Approved/Adopted by Land Information Council on: 2020-10-06

CONTENTS

EXECUTIVE SUMMARY 3

1 INTRODUCTION 4

2 FOUNDATIONAL ELEMENTS 7

PLSS 8
Parcel Mapping 9
LiDAR and Other Elevation Data 11
Orthoimagery 12
Address Points and Street Centerlines 13
Land Use 15
Zoning 16
Administrative Boundaries 17
Other Layers 20

3 LAND INFORMATION SYSTEM 23

Public Access and Website Information 28

4 CURRENT & FUTURE PROJECTS 30

Project #1: LiDAR derivatives 31
Project #2: Land records management system 31
Project #3: Parcel mapping integration 32
Project #4: In-field data collection with mobile GPS/GIS technology 32
Project #5: Trining & Education 33
Project #6: Aerial photography acquisition 33
Project #7: Benchmarks 34
Project #8: Document Imaging – Register of Deeds 34

EXECUTIVE SUMMARY

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

WLIP Background. The WLIP, administered by the Wisconsin Department of Administration, is funded by document recording fees collected by register of deeds at the county-level. In 2018, Door County was awarded $27,968 WLIP base-budget grant, a $1,000 training & education grant, and a $50,000 strategic initiative grant; and the annual retained fees collected in 2017 was $70,328.

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

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

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

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

Door County Land Information Projects: 2019-2021	
Project #1	**Acquire elevation and terrain information through LiDAR technology**
Project #2	**Implement a new Land Records System**
Project #3	**Integrate parcel mapping to section control remonumentation with survey grade GPS coordinates**
Project #4	**Expand use of mobile GPS/GIS technology and in-field data collection**
Project #5	**Provide training opportunities for staff to learn and use GIS applications**
Project #6	**Acquire new aerial photography**
Project #7	**Set elevation benchmarks**
Project #8	**Scan & index remaining Register of Deeds documents to imaging system**

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

1 INTRODUCTION

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

The WLIP and the Land Information Plan Requirement

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

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

LAND INFORMATION

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

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

– Wis. Stats. section 59.72(1)(a)

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

Act 20 and the Statewide Parcel Map Initiative

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

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

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

WLIP Benchmarks (For 2016-2018 Grant Years)

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

More information on how Door County is meeting these benchmarks appears in the Foundational Elements section of this plan document.

County Land Information System History and Context

The history of land information in Door County has seen steady progress with modernizing land records since the inception of the WLIP in 1989; below is a list of significant milestones with Door County's efforts:

1990 – Established a Land Information Office within existing Data Processing Department.
1992 – Adopted original "Door County Land Information Modernization Plan"
1995 – Acquired County base map consisting of shoreline, hydrology features, road centerlines, and GPS control on section corners.
1996 – Received WLIP grant award for $95,000 to support pilot parcel mapping, acquired digital soils mapping, and received digital orthophotography.
1998 – Parcel mapping completed and process established for Real Property Office to maintain; Acquired watershed and wetland mapping from WI-DNR. A Geographic Information System (GIS) was established on network of County computers with ESRI software.
1999 – Received digital soils map from Natural Resources Conservation Service (NRCS) of USDA. Converted paper, county zoning maps to digital format.
2000 – Rural Addressing Ordinance adopted and Addressing Specialist position was created and filled to maintain records and assign addresses.
2002 – Acquired elevation data (digital terrain model & 2-foot contours) through Lidar technology via a joint project with the US Army Corp of Engineers (US-ACE). Document imaging implemented in Register of Deeds, Real Property Listing, and Sanitarian offices.
2003 – Received prior year digital orthophotography through joint project with US-ACE. Published original version of Door County Web Map, and provided initial internet access.
2007 – Acquired orthophotography & oblique images through Pictometry Inc. Land Records programming change to RPG/CGI for internet access. Inventoried land use in digital GIS format.
2008 – Received FEMA flood hazard study that included digital floodplain boundary.
2009 – Acquired orthophotography & oblique images through Pictometry Inc. A new Door County Web Map service provided additional features, and direct access from or to Land Records site.
2010 – Land Information Technical Council formed and began meeting semi-annually.
2011 – Acquired orthophotography & oblique images through Pictometry Inc.
2013 – Acquired orthophotography & oblique images and accessed through Pictometry Inc. cloud servers. Provided online access to surveyor "tie sheets" of monumented corner locations.
2014 – Developed ArcGIS Online service for mobile access of county tax parcels with land records link.
2015 – Acquired orthophotography & oblique images and accessed through Pictometry Inc. cloud servers. Provided online access to surveyor control reference sheets, which provide coordinates and show distances & bearings between section corners. Converted a number of parcel related features (ease ments, road right-of-ways, plat-of-surveys, certified survey maps, plats) in AutoCAD or tabular format to GIS shapefile and made layers available on Web Map.
2016 – Converted parcel maintenance to ESRI Parcel Fabric for more complete management of tracking layers associated with land conveyance and cadastral system. Acquired GPS coordinates on PLSS sections.
2017 – Acquired survey-controlled orthophotography from Ayres Assoicates. Acquired GPS coordinates on PLSS section monuments to support accurate parcel mapping. Researched new Land Records Systems. Installed a new Register of Deeds system by Fidlar Systems.
2018 – Entered into contract with Ayres to acquire LiDAR derivative products that includes 1-foot contours and detailed culvert mapping to support drainage analysis.

Reviewing the above list, it may appear that some years showed great progress where others had none; in reality, there was a continuum of effort and progress, with some projects standing out more than others for various reasons. Many layers of information developed or acquired were not listed, nor were the software tools and versions that were evaluated, installed, and trained on. The effort to modernize and provide access to Door County land information has often consisted of a number of steps and tasks, sometimes taking months or years to complete.

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

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

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

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

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

This plan was prepared by the Door County Land Information Council, and others as listed below.

Door County Land Information Council and Plan Workgroup				
Name	**Title**	**Affiliation**	**Email**	**Phone**
+ Tom Haight	GIS / Land Information Office Coordinator	Door County Land Use Services	thaight@co.door.wi.us	920-746-2391
+ Holly Hansen	Real Property Lister	Door County Land Use Services	hollyhansen@co.door.wi.us	920-746-2352
+ Carey Petersilka	Register of Deeds	Door County Register of Deeds	cpetersilka@co.door.wi.us	920-746-2271
+ David Enigl	County Board Member	Door County Board Supervisor	district17@co.door.wi.us	920-493-2294
+ Jay Zahn	Treasurer	Door County Treasurer	jzahn@co.door.wi.us	920-746-2286
+ Bob Starr	Realtor	Local Realtor	rstarr@itol.com	920-743-4321
+ Aaron LeClair	Public Safety Officer	Door County Emergency Services Director	aleclair@co.door.wi.us	920-743-5461
+ Brian Frisque	Land Surveyor	Private land surveying firm – Brian Frisque Surveys Inc.	brianfrisquesurveysinc@gmail.com	920-743-7183
+ Jason Rouer	Technology Services Director	Door County Technology Services Director	jrouer@co.door.wi.us	920-746-5983
Mike McCarty	Contracted County Land Surveyor	Private land surveying firm – Baudhuin Inc.	mmccarty@baudhuin.com	920-743-8211
Chris Moe	GIS Technician	Door County Land Use Services	cmoe@co.door.wi.us	920-746-2354
Sue Vanden Langenberg	Zoning Administrator	Door County Land Use Services – Zoning Admin	svanden@co.door.wi.us	920-746-2221
Mariah Goode	Land Use Services Director	Door County Land Use Services Director	mgoode@co.door.wi.us	920-746-2224
Brian Forest	Conservationist	Door County Soil & Water Conservationist	bforest@co.door.wi.us	920-746-2366

+ Land Information Council Members designated by the plus symbol

2 FOUNDATIONAL ELEMENTS

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

FOUNDATIONAL ELEMENTS

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

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

PLSS

Public Land Survey System Monuments

Layer Status

PLSS Layer Status	
	Status/Comments
Number of PLSS corners (selection, ¼, meander) **set in original government survey** that can be remonumented in your county	• 2,142
Number and percent of PLSS corners capable of being remonumented in your county that **have been remonumented**	• 2,142 (or 100 percent)
Number and percent 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	• 2,142 (or 100 percent) have survey grade coordinates
Number and percent of survey grade PLSS corners integrated into county digital parcel layer	• 2,142 (or 100 percent)
Number and percent of non-survey grade PLSS corners integrated into county digital parcel layer	• Zero (or 0 percent)
Tie sheets available online?	Yes, (http://pubinfo.co.door.wi.us:10088/RPLLIB/index.php)
Percentage of remonumented PLSS corners that have **tie sheets available online** (whether or not they have corresponding coordinate values)	• 100 percent
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	• 98.37 percent
PLSS corners believed to be remonumented based on filed tie-sheets or surveys, but do not have coordinate values	• Zero
Approximate number of PLSS corners believed to be lost or obliterated	• Zero
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)?	• Door County unique corner point identification within Town-Range of corners based on rows numbered 1-13 from bottom up and columns assigned A-M going left to right. See example: (http://pubinfo.co.door.wi.us:10088/RPLLIB/index.php)
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, Plats, Condominums, and CSM's. PLSS areas have a number of Meander Corners located along frontage of Green Bay and Lake Michigan.
Total number of PLSS corners along each bordering county	• 37
Number and percent of PLSS corners remonumented along each county boundary	• 37 (or 100 percent)
Number and percent of remonumented PLSS corners along each county boundary with survey grade coordinates	• 37 (or 100 percent)
In what ways does your county collaborate with or plan to collaborate with neighboring counties for PLSS updates on shared county borders?	• Share information on PLSS corners

Custodian

- Real Property Lister, within Land Use Services Department

Maintenance

- Contracted out with a local land surveying firm on an annual basis for maintenance of PLSS section corners.

Standards

- Statutory Standards for PLSS Corner Remonumentation

    - s. 59.74, Wis. Stats. Perpetuation of section corners, landmarks.
    - s. 60.84, Wis. Stats. Monuments.
    - ch. A-E 7.08, Wis. Admin. Code, U.S. public land survey monument record.
    - ch. A-E 7.06, Wis. Admin. Code, Measurements.
    - s. 236.15, Wis. Stats. Surveying requirement.
- SURVEY GRADE standard from Wisconsin County Surveyor's Association:
    - **SURVEY GRADE** – coordinates collected under the direction of a Professional Land Surveyor, in a coordinate system allowed by 236.18(2), and obtained by means, methods and equipment capable of repeatable 2 centimeter or better precision

Other Geodetic Control and Control Networks

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

Layer Status

- A report of a High-Accuracy Reference Network (HARN) for Door County was received in the late 1990's from local surveying firm Baudhuin Incorporated. The network consisted of 22 monuments with GPS coordinates established; 13 points established by Baudhuin Incorporated, five by National Geodetic Survey (NGS), and four along the county-line by Ayres Assoicates.

Custodian

- Door County GIS/LIO Coordinator and Real Property Lister. The Door County HARN report is linked off the County's Land Information Portal page.

Maintenance

- NA

Standards

- NA

Parcel Mapping

Parcel Geometries

Layer Status

- **Progress toward completion/maintenance phase:** In Door County, 100% of the county's parcels are available in a commonly-used digital GIS format. All of Door County tax parcels have been digitally mapped and maintained since 1998.
- **Projection and coordinate system:** Projected Coordinate System:
  NAD_1983_StatePlane_Wisconsin_Central_FIPS_4802_Feet
    - Projection: Lambert_Conformal_Conic
    - False_Easting: 1968500.00000000
    - False_Northing: 0.00000000
    - Central_Meridian: -90.00000000
    - Standard_Parallel_1: 44.25000000
    - Standard_Parallel_2: 45.50000000
    - Latitude_Of_Origin: 43.83333333
    - Linear Unit: Foot_US
- **Integration of tax data with parcel polygons:** The county does <u>not</u> have a parcel polygon model that directly integrates tax/assessment data as parcel attributes. Door County runs a nightly task scheduler that joins assessment data to parcel geometry.
- **Esri Parcel Fabric/LGIM Data Model:** The county does use the Esri Parcel Fabric Data Model, and may expand more layers to Esri's Local Government Information Model in the future. Door County converted from AutoCAD to the Esri Parcel Fabric in the first half of 2016.
- **Online Parcel Viewer Software/App and Vendor name:** The Door County Web Map (http://map.co.door.wi.us/map) runs on open-source software of Map Server and GeoMoose. Door County received technical assistance with site development and server installation from Houston Engineering Inc (HEI) out of Minnesota in 2009. Door County currently houses and

maintains the system but this may be reviewed for potential change, primarily out of security concerns from technology services. Door County has also developed an Esri Web AppBuilder with ArcGIS Online (AGO) for mobile users to view parcels and access related information (http://doorcounty.maps.arcgis.com/apps/webappviewer/index.html?id=d95e51c9d2ff46b1a17bcc9c042a2ba2). This app was developed and is maintained in-house using Esri AGO cloud.

- **Unique URL path for each parcel record:** The Door County Web Map site does allow for a unique URL path for each parcel record for viewing the parcel map with link to URL of land records system for viewing associated assessment data, tax bill, permits, surveys, or other related information. The URL values include the parcel identification numbers and are stable so that they could be exported.

Custodian

- The Door County Real Property Lister (RPL) maps the parcel geometry, the RPL Assistant typically enters assessment and attribute information into land records system, and the GIS / LIO Coordinator updates the online sites.

Maintenance

- **Update Frequency/Cycle**. Parcel polygons are generally updated twice a month on the Door County Web Map. This site by far still gets the most activity.
- The Esri Web AppBuilder AGO site is generally updated once every three months (quarterly).

Standards

- **Data Dictionary**: The Esri parcel fabric process is documented as well as the process for posting tax parcels online, and are separate from the tax parcel metadata.
- Door County's annual submission to DOA as part of WLIP requirements meets their standard for acceptance. The 2018 submission was version 4 and Door County plans to adhere to future submission requirements, as they are potentially updated or changed.

Assessment/Tax Roll Data

Layer Status

- **Tax Roll Software/App and Vendor name:** Door County currently has a custom AS400 Land Records System in-house that is supported through the Technology Services (TS) Department, which manages vendor and contractor services as needed.
- **Municipal Notes:** NA, as all tax listings and tax rolls are administered by Door County for all municipalities within the County.

Custodian

- The Door County GIS Technician ensures tax assessment records are entered, tax rolls are prepared, and tax bills are calculated and printed.

Maintenance

- **Maintenance of the Searchable Format standard:** To maintain the Searchable Format standard, the county will continue to contract for programming services through private contractor, Mary Ledvina, for custom AS400 program changes on assessment and tax roll system. The County intends to replace the in-house AS400 land records system with a vendor contracted system (likely Transcendent Technologies or GCS Software in 2019) which would provide support that would meet any future Searchable Format standard.
- **Searchable Format Workflow:** Data is downloaded from County lands record system and the GIS/LIO Coordinator reviews, calculates, and formats data to meet Searchable Format. The submission of parcel/tax roll data requires some significant review and formatting every year to ensure data is to DOA standards.

Standards

- Wisconsin Department of Revenue Property Assessment Manual and attendant DOR standards
- DOR XML format standard requested by DOR for assessment/tax roll data

Non-Assessment/Tax Information Tied to Parcels

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

Layer Status

- Sanitarian Permits

Custodian

- Sanitarian division of Land Use Services Department

Maintenance

- Maintained by Sanitarian staff as permits are indexed to parcel number.

Standards

- NA.

ROD Real Estate Document Indexing and Imaging

Layer Status

- **Grantor/Grantee Index:** All documents are indexed by grantor and grantee.
- **Tract Index:** Tract indexing is based on PLSS and Plats for the following document types: deeds, plats, certified survey maps (CSM's), condominiums, and other instruments referencing real estate.
- **Imaging:** Imaging for Register of Deeds is now on Fidlar system and can be accessed by County staff or business partners with Laredo software agreement and/or general public via Tapestry, a web and fee-based system.
- **ROD Software/App and Vendor Name:** In 2017, Door County replaced its in-house Register of Deeds system to Laredo/Tapestry software by Fidlar.

Custodian

- County Register of Deeds

Maintenance

- Fidlar maintains system.

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:** LiDAR will be collected on Door County in 2018 under FEMA funding. LiDAR was otherwise last collected for Door County in 2002.
- **Accuracy:** New LiDAR (2018 collection) will meet same specifications as that of 3-Dimensional Elevation Program (3DEP).
- **Post spacing:** Cell Size 1.0 meter GSD Resolution
- **Contractor's standard, etc.:** LAS v1.4, Point Record Format 6
- **Next planned acquisition year:** There are no plans to identify a year for next LiDAR acquisition as time-span was 16-years between first two, and 2018 acquisition project was very much dependent upon funding sources, updates to technology, and potential benefits of new information supporting better analysis, planning, and conservation practices. A subsequent planned LiDAR acquisition will probably not be planned for at least ten years, allowing for sound review of 2018 project and its benefits. Future LiDAR projects would be evaluated for potential benefits with the technology, as well as be dependent on funding sources and budgets as those cycle years approach.

Custodian

- FEMA is funding 100 percent of the base 2018 LiDAR collection. Door County is then acquiring derivative products contracted with Ayres Associates for the post-processing of add-on products (that will include 1-foot contours, detailed streams, and culvert identification). Door County GIS/LIO Coordinator will be the custodian of the LiDAR data and associated derivatives received.

Maintenance

- NA

Standards

- National Geospatial Program LiDAR Base Specification Version 1.2

LiDAR Derivatives

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

Layer Status

- Bare-Earth Digital Elevation Model (DEM); 1-foot elevation contours; hydro flattening breaklines; bare-earth point dataset; and intensity imagery

Custodian

- Ayres Associates will be processing deliverables to Door County GIS/LIO Coordinator with an anticipated delivery in the first-quarter of 2019.

Maintenance

- NA

Standards

- NA

Other Types of Elevation Data

Layer Status

- Elevation contours of 1-foot interval

Custodian

- Ayres Associates will be processing deliverables to Door County GIS/LIO Coordinator with an anticipated delivery in the first-quarter of 2019.

Maintenance

- NA

Standards

- NA

Orthoimagery

Orthoimagery

Layer Status

- **Most recent acquisition year:** 2017
- **Resolution:** 6-inch
- **Contractor's standard:** Ayres Associates with photo identifiable survey-control points.
- **Next planned acquisition year:** 2019, probably to include oblique acquisition.
- **WROC participation in 2020:** No plans to participate.

Custodian

- Door County GIS/LIO Coordinator

Maintenance

- NA

Standards

- NA

Historic Orthoimagery

Layer Status

- Several different years (1938 – 1992) of full county aerial coverage in black & white prints (see http://map.co.door.wi.us/gis-lio/Historical-Aerial-Photography.pdf). Each digital version year can be viewed on Web Map - http://map.co.door.wi.us/map by expanding "Historic Aerial Photos" subfolder to select. There are no plans to convert the older years to a digital format.

Custodian

- Door County GIS/LIO Coordinator, Land Use Services Department; Soil & Water Conservation Department, and USDA Farm Services Agency

Maintenance

- Since 2007, the County has been on a two-year cycle to acquire updated aerial imagery.

Standards

- NA

Other Types of Imagery

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

Layer Status

- Imagery years from 2007, 2009, 2011, 2013, and 2015 all included full county coverage of oblique imagery. From the Door County Web Map, the Aerial Viewer tool allows user to select oblique imagery off of Pictometry cloud servers (see http://map.co.door.wi.us/gis-lio/pictometry.htm). Oblique imagery is next planned to be acquired in spring of 2019.

Custodian

- Door County GIS/LIO Coordinator

Maintenance

- Pictometry cloud servers house and manage all years of historic oblique imagery. Door County GIS/LIO Coordinator maintains the GIS layers (of road centerlines, address points, and parcel polygons) on Pictometry servers that can be viewed and accessed in conjunction with oblique imagery.

Standards

- **

Address Points and Street Centerlines

Address Point Data

Layer Status

- Addressing points are complete and maintained countywide.

Custodian

- Land Use Services GIS Technician

Maintenance

- Addressing is maintained as changes occur and new assignments are made.

Standards

- NA

Building Footprints

Layer Status

- An inventory from 2009 in conjunction with aerial imagery project.

Custodian

- Door County GIS/LIO Coordinator

Maintenance

- No current plans to maintain or to acquire an updated inventory.

Standards

- NA

Other Types of Address Information

e.g., Address Ranges

Layer Status

- Address ranges are included attributes of road centerline layer

Custodian

- Land Use Services GIS Technician

Maintenance

- Maintained as needed

Standards

- NA

Street Centerlines

Layer Status

- Complete and maintained countywide.

Custodian

- Land Use Services GIS Technician

Maintenance

- Maintained as needed.

Standards

- NA

Rights of Way

Layer Status

- Complete and maintained countywide

Custodian

- Door County Real Property Lister

Maintenance

- As changes occur and managed in conjunction with parcel edits as part of Esri parcel fabric.

Standards

- Esri parcel fabric

Trails

e.g., Recreational Trails

Layer Status

- Snowmobile trails, Ice-age trail, Ahnapee State Trail, bicycle routes, and The Nature Conservancy trails are updated as changes are reported.

Custodian

- Door County GIS/LIO Coordinator

Maintenance

- As reported and needed.

Standards

- NA

Land Use

Current Land Use

Layer Status

- Land Use Services has a countywide land use inventory from 2014.

Custodian

- Planning Division of Land Use Services

Maintenance

- Door County GIS/LIO Coordinator will maintain as requested.

Standards

- NA

Future Land Use

Layer Status

- Land Use Services has a countywide future land use map

Custodian

- Planning Division of Land Use Services

Maintenance

- Door County GIS/LIO Coordinator will maintain as requested.

Standards

- s. 66.1001, Wis. Stats. Comprehensive planning.

Impervious Surface

Layer Status

- Land Use Services has a countywide inventory of area designated as being impervious surface

Custodian

- Planning Division of Land Use Services as used by Zoning Administrators

Maintenance

- Door County GIS/LIO Coordinator will maintain every two years and/or as requested.

Standards

- NA

Protected Lands

Layer Status

- Land Use Services has a countywide protected lands map inventory

Custodian

- Planning Division of Land Use Services

Maintenance

- Door County GIS/LIO Coordinator will maintain as requested.

Standards

- NA

Zoning

County General Zoning

Layer Status

- The County does maintain a GIS representation of county comprehensive zoning boundaries. Door County Comprehensive Zoning is administered only for those towns that adopted County Zoning (9 of the 14 towns).

Custodian

- Land Use Services Department

Maintenance

- Door County GIS/LIO Coordinator updates map/layers when changes are adopted.

Standards

- NA

Shoreland Zoning

Layer Status

- The County does maintain a GIS representation of county shoreland zoning boundaries. Shoreland Zoning is administered for all towns within Door County and is based on buffer distances from designated navigable lakes, bays, streams, and ponds.

Custodian

- Land Use Services Department with assistance from Wisconsin DNR on determinations of the various water bodies.

Maintenance

- Door County GIS/LIO Coordinator changes as reported.

Standards

- NA

Farmland Preservation Zoning

Layer Status

- The County does maintain a GIS representation of county farmland preservation zoning boundaries.
- **Year of certification:** 2014

Custodian

- Land Use Services department

Maintenance

- Door County GIS/LIO Coordinator will maintain layer in conjunction with Comprehensive Zoning as changes are adopted.

Standards

- NA

Floodplain Zoning

Layer Status

- The County does maintain a GIS representation of floodplain zoning boundaries.
- The county's floodplain zoning GIS data is the same as/identical to the FEMA map.
- 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.

Custodian

- Land Use Services Department

Maintenance

- Letters of Map Amendment are placed with Land Use Services parcel record but floodplain zoning GIS data is not updated by the County.

Standards

- NA

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

- Land Use Services Department and Cherryland Airport manager

Maintenance

- Door County GIS/LIO Coordinator will update as changes are reported.

Standards

- NA

Municipal Zoning Information Maintained by the County

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

Layer Status

- Door County has maintained Zoning Information for the Village of Sister Bay in the past, based on work rates for custom mapping.

Custodian

- Staff currently under the umbrella of Door County Land Use Services Department.

Maintenance

- As requested by the Village of Sister Bay (or any other municipality, and based on County rates for GIS/mapping services).

Standards

- NA

Administrative Boundaries

Civil Division Boundaries

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

Layer Status

- Municipal Civil Districts are mapped and maintained for all municipal boundaries within the County.

Custodian

- Door County GIS/LIO Coordinator

Maintenance

- Door County GIS/LIO Coordinator maintains layer as annexations occur or changes reported.

Standards

- NA

School Districts

Layer Status

- **Progress toward completion/maintenance phase:** Countywide school district layer has been completed for a number of years.
- **Relation to parcels:** School district is an attribute of parcel data.

Custodian

- Real Property Listing and assistant maintains school district attribute on each parcel.

Maintenance

- Door County GIS/LIO Coordinator maintains school district mapping as reported and needed.

Standards

- NA

Election Boundaries

Wards, Polling Places

Layer Status

- Municipal wards are mapped countywide and polling address is an attribute of wards.
- Polling places are also maintained as a point shapefile.

Custodian

- County Clerk

Maintenance

- Door County GIS/LIO Coordinator

Standards

- NA

Voting Districts

Layer Status

- Various voting districts of school districts, supervisory districts, aldermanic districts, and municipal ward number are all tracked with different attributes within wards.

Custodian

- County Clerk

Maintenance

- Door County GIS/LIO Coordinator

Standards

- NA

Utility Districts

Sanitary District

Layer Status

- Sanitary districts for voting and/or billing is a layer that was developed through the parcel maintenance and management

Custodian

- Real Property Lister

Maintenance

- Parcel attributes maintained by Real Property Lister, and Door County GIS/LIO Coordinator will continue to provide maps as updates are requested.

Standards

- NA

Sanitary Service Areas and Private Sanitary Systems

Layer Status

- Public sanitary serviced areas and private sanitary systems layers were developed by Land Information Office with input from Sanitarian Department staff.

Custodian

- Sanitarian Division of Land Use Services Department

Maintenance

- Door County GIS/LIO Coordinator maintains information when made aware of needed changes or necessary updates.

Standards

- NA

Public Safety

Emergency Response Zones

Layer Status

- Emergency Response zones have been mapped with individual attribute fields for responding agency type – Police, Fire, Ambulance, and First-Response.

Custodian

- Emergency Services and/or Sheriff's Dispatch

Maintenance

- Door County GIS/LIO Coordinator maintains information when made aware of needed changes to any of the four types of response zones.

Standards

- NA

Lake Districts

Layer Status

- Door County does not have a Lake District layer.

Native American Lands

Layer Status

- Door County does not have a Native American Lands layer.

Other Administrative Districts

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

Layer Status

- Door County does maintain a Parks layer of State and County Parks.
- Door County maintains a Managed Forest layer based on active lands participating in either of the WI-DNR Forest Tax programs (Managed Forest Law or Forest Crop Law).

Custodian

- Door County Parks and Wisconsin Department of Natural Resources.

Maintenance

- Door County Real Property Lister and GIS/LIO Coordinator maintain layers when made aware of changes.

Standards

- NA

Other Layers

Hydrography Maintained by County or Value-Added

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

Layer Status

- Hydrography is maintained as part of parcel management with Esri Parcel Fabric.

Custodian

- Door County staff

Maintenance

- Door County Real Property Lister and Door County GIS/LIO Coordinator

Standards

- NA

Cell Phone Towers

Layer Status

- Cell towers were inventoried about 10 years ago but not reported/maintained

Custodian

- Land Use Services Department

Maintenance

- Currently not maintained

Standards

- NA

9-1-1 Radio Communication Towers

Layer Status

- Critial radio towers and communication paths

Custodian

- Door County Emergency Management Services

Maintenance

- Door County GIS/LIO Coordinator as changes are reported

Standards

- NA

Bridges and Culverts

Layer Status

- Planned to be inventoried as part of 2018 LiDAR project derivatives. Currently, only included in individual project designs and drawings

Custodian

- Door County Soil and Water Conservation Department (SWCD)

Maintenance

- Door County SWCD and GIS/LIO Coordinator to potentially maintain as reported and needed

Standards

- NA

Other

Non-Metallic Mining

Layer Status

- Identifies all mine locations in the County and depicts footprint of unclaimed/reclaimed areas for determining financial assurance calculations related to annual changes.

Custodian

- Door County Soil and Water Conservation Department (SWCD)

Maintenance

- Door County SWCD updates annually

Standards

- Requirements of Door County Code Chapter 36 and WI Administrative Code Chapter NR135

Sinkholes and Other Karst Features

Layer Status

- Different karst feature types were inventoried over the years and are on a number of layers

Custodian

- Door County Soil and Water Conservation Department (SWCD)

Maintenance

- Door County SWCD updates as needed

Standards

- Requirements of NRCS 590, Door County Code Chapter 23, and WI Administrative Code Chapter NR151

Manure Storage Facilities, etc.

Layer Status

- Records are tracked with spreadsheets/database, but not in a formal GIS layer

Custodian

- Door County Soil and Water Conservation Department (SWCD)

Maintenance

- SWCD maintains records as needed

Standards

- Requirements of Door County Code Chapter 23

Invasive Species

Layer Status

- Identifies historic and existing inventories of Phragmites australis along county shorelines and all county priority species Phragmites australis, wild parsnip, common/cut-leaved teasel, and Japanese Knotweed along right-of-ways and private property populations visible from the right-of-way. Additionally, partners of the Door County Invasive Species Team provide inventory of invasive species found within and adjacent to their private public accessible properties.

Custodian

- Door County Soil and Water Conservation Department (SWCD)

Maintenance

- Door County SWCD updates annually

Standards

- WI Department of Natural Resources NR-40 classification and priority species identified within the Door County Invasive Species Strategic Plan

Nutrient Management Plans

Layer Status

- Cropped fields that receive nutrients in the form of manure or commercial fertilizers are required to do so in a accordance with a Nutrient Management Plan which manages the amount (rate), source, placement (method of application), and timing of plant nutrients and soil amendments. All fields in current and historic plans are mapped.

Custodian

- Door County Soil and Water Conservation Department (SWCD)

Maintenance

- Door County SWCD updates annually and as plans are updated

Standards

- Requirements of NRCS 590, Door County Code Chapter 23, and WI Administrative Code Chapter NR151

3 LAND INFORMATION SYSTEM

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

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

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

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

Current Land Information System

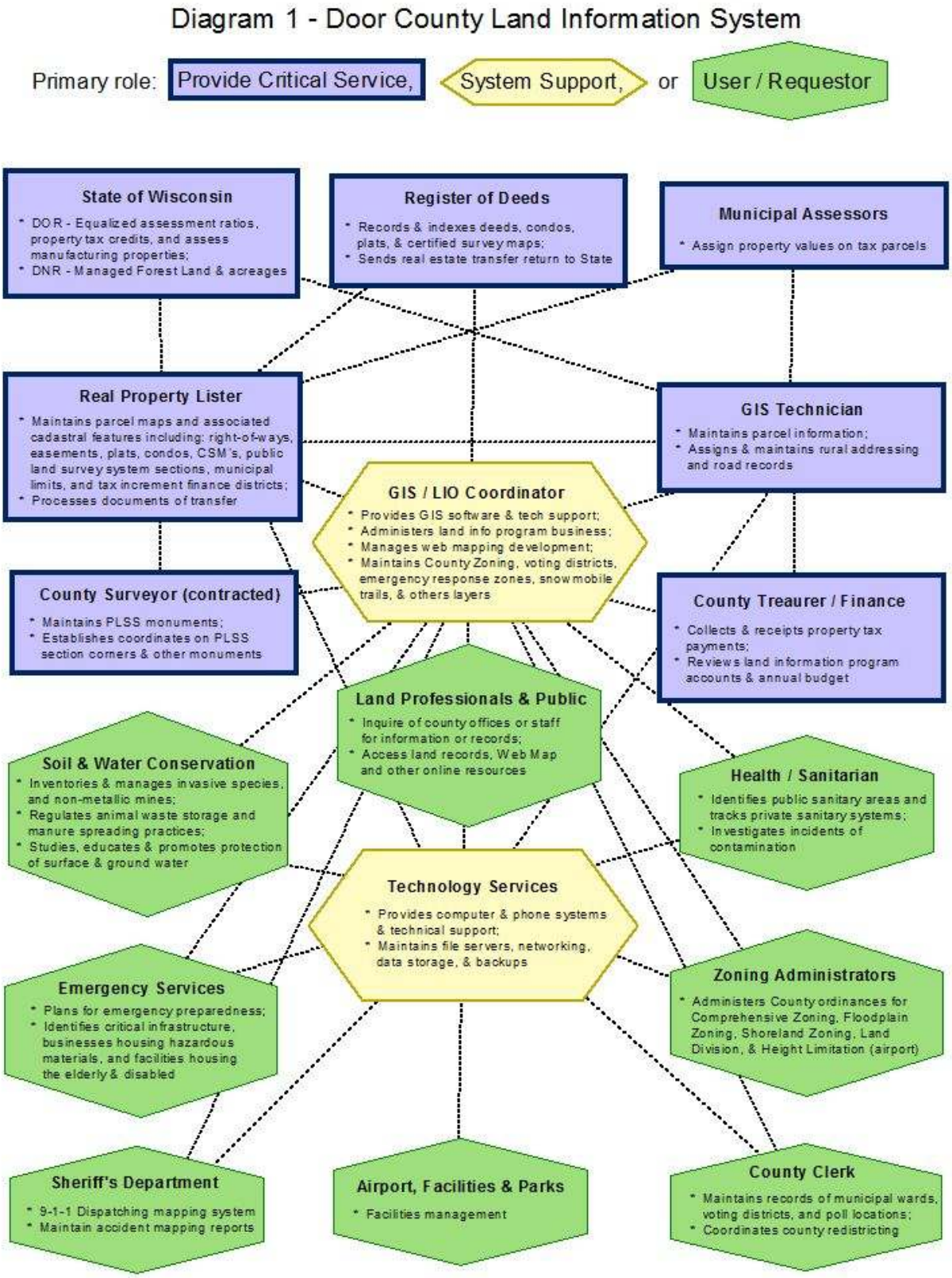
Door County land information is made up of the staff from a variety of departments interacting with one another and the general public to provide, request, or process maps and land records as part of performing their regular business functions; a system diagram on the following page represents those business interactions. The diagram only represents land information interactions; the diagram makes no reference to volume or critical need. As one may expect, the Land Information Officer/GIS Coordinator coordinates with the greatest variation of departments and agencies with regards to land records.

The GIS/LIO Coordinator position and Technology Services Department are critical for supporting the land information system (shown in light-red box in center of first diagram). Newer technology, software systems, and networks/internet connectivity are the backbone for a land information system and much of that planning and support is provided by the LIO and Tech Services.

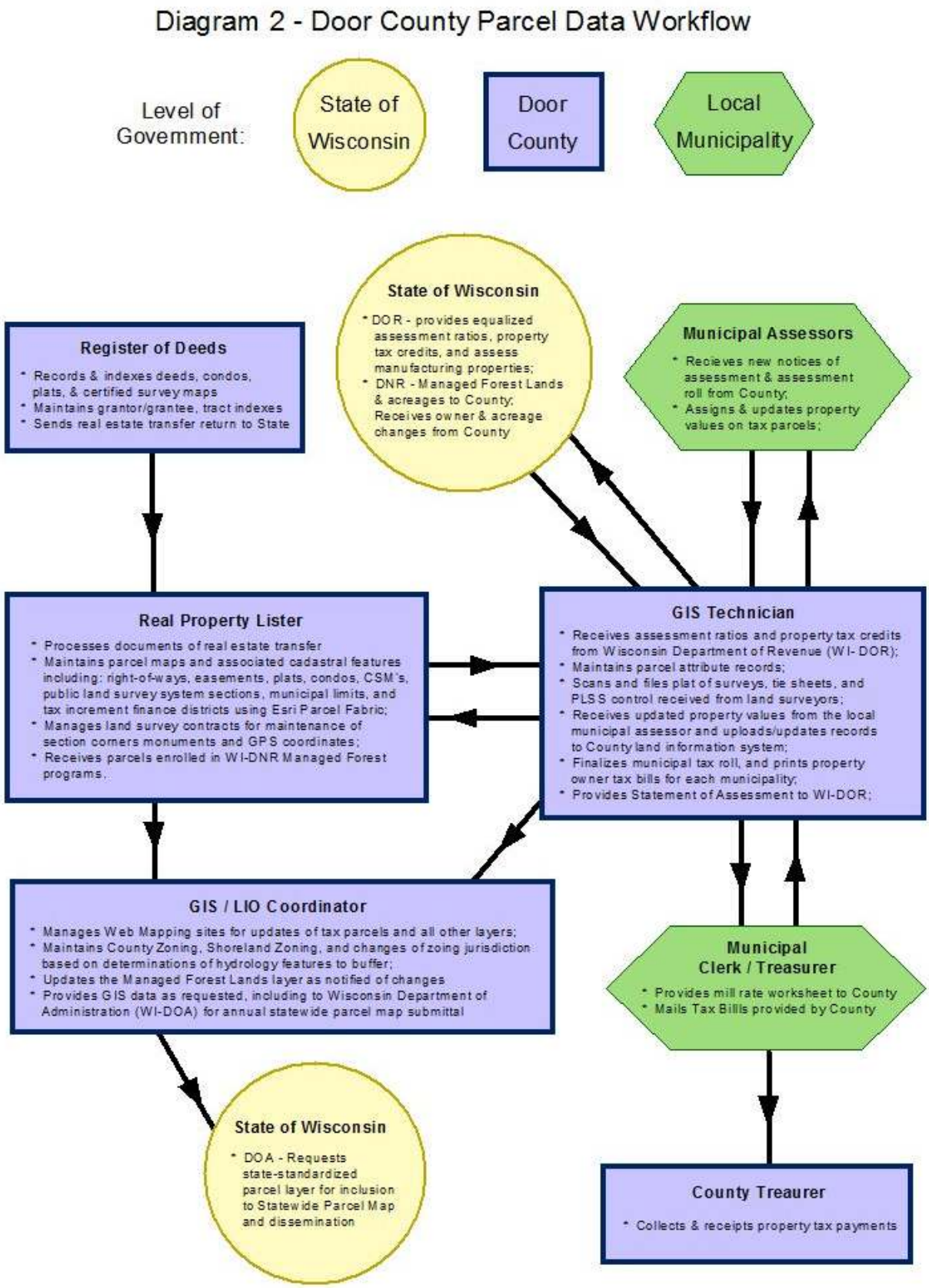
There are a number of departments that provide a value-added service in managing records (gray box) that are deemed extremely useful to a land information system, whether or not the user is aware. Door County's critical land information that is almost universally used would include tax parcels and road centerlines, and also the survey and description records that supports their positional accuracy and provides the framework reference for most other GIS data layers. The second diagram identifies the importance of Parcel Data Workflow and provides more detail with regards to responsibilities and interactions. The various system users and requestors (green boxes) also provide value and enhance the land information program at the County, but differentiated more due to a specialized focus versus a universal benefit to almost all users.

A number of departments benefit directly (green box in diagram 1) from the services and tools provided through an implemented land information system. The professional land use community and general public would also fall into this category and is located in center box of diagram, as serving the general public directly needs to continue to be a focus of the land information program. Any specialized group or department that could benefit from the land information system need to be welcomed and encouraged to inquire of and request assistance, as appropriate.

Diagram of County Land Information System



County Parcel Data Workflow Diagram



Technology Architecture and Database Design

This section refers to the hardware, software, and systems that the county uses to develop and operate computer systems and communication networks for the transmission of land information data. Door County's land information system involves a number of programs and software to track and process records. Door County's land information system runs on the County's local area network and is supported by the Technology Services (TS) Department. The TS department manages file storage, software maintenance, and new system development and implementation. Almost all in-house client workstations are virtual computers being served up from central servers. In addition, County web sites and remote-access software such as Citrix provide access to Land Records for mobile County workers through a variety of portable devices.

Hardware

- Aside from computer workstations, other hardware used on a regular basis to support land information system functions would include compute servers, network storage, rugged tough-book PC's, rugged camera (for inspecting sanitary systems), smart phones, scanners, printers, plotters, copiers, and GPS units. The IBM Power 720 Express server is also the central hub and houses the index for the County's document imaging system, which maintains images of plat of surveys, tie sheets, LOMA's (FEMA Floodplain Letter of Map Amendment), recorded documents back to 1966, and tax bills back to 2006 as part of the County's Land Records system. Document image files are redundantly stored on two Unix servers and a Windows-based storage area network (SAN).

Software

- Software used regularly includes Esri's ArcGIS10 Desktop (… and Parcel Fabric structure), ArcPad on rugged laptops, and old versions of ArcView3 licenses. Soil & Water Conservation Department (SWCD) makes use of AutoCAD licenses for design drawings and uses Watershed Modeling Software (WMS) by Aquaveo for modeling water flow. GeoExpress10 by LizardTech has also been used to convert ortho-imagery from one coordinate system to another and may be used for processing new LiDAR data.

  An IBM Power 720 Express server running the IBM I operating system serves: the land records database systems for Real Property Listing parcel management and tax bills; Treasurer tax bill receipting; Planning permit tracking; and Sanitarian permitting, system evaluation, and system maintenance tracking. All of these systems use a DB2 relational database, which allows for close integration between the various Land Records applications.

Website Development/Hosting

- Door County Web Map was developed by a consultant (Houston Engineering Inc. of Minnesota) using open-source software MapServer and GeoMoose. The Door County Web Map allows non-technical users and the general public to access GIS layers and land records through an intuitive map interface. Pictometry collected imagery can be viewed from their hosted server for accessing a number of county-wide collection years of oblique and ortho-imagery. Door County has also utilized ArcGIS Online for creating thematic map applications that are mobile friendly. Public access to Real Property, Treasurer, Planning, and Sanitarian Land Records database systems and document images is provided through free and fee-based web applications. A separate Sanitarian web application enables septic haulers to enter their monthly holding tank pumping records directly into the Sanitarian system from their office. These web sites are served from virtual HTTP server instances and Zend PHP server software all running on the IBM Power 720 platform. In 2017, Register of Deeds converted to Laredo and Tapestry by Fidlar Systems to provide fee-based online access to Register of Deeds documents. Door County plans to convert its land records system in this next planning cycle to retire its IBM server for a web-based solution (probably with GCS or Transcendent Technologies).

Sometime in 2019, Door County Technology Services Department may look into having all Door County websites externally hosted. Effort and coordination by GIS/LIO Coordinator would need to occur to transfer the Door County Web Map application to an off-site server. Also, routine data updates and display changes would then occur through a secured logon internet connection. It is likely that the web applications would be hosted from a number of different service providers for serving up their specific programs (such as permitting and land records, on-line mapping, aerial imagery, Register of Deeds documents, department information and contacts, and allowing on-line credit card payments), but be interlinked for providing seamless navigation for the user.

Metadata and Data Dictionary Practices

Metadata Creation

- **Metadata creation and maintenance process:** Door County has created metadata on its more critical, commonly requested GIS layers, including tax parcels, road centerline, and address points, but does not regularly update the metadata files.

Metadata Software

- **Metadata software:** Esri's ArcCatalog has been the software used to develop and maintain geospatial metadata
  - 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:** Field description (attributes) are manually populated if created for a GIS layer.

Metadata Policy

- **Metadata Policy:** Door County has not implemented a policy on minimum metadata requirements for any of its datasets. However, GIS layers acquired under contract from a private vendor typicallly include metadata as part of the deliverables.

Municipal Data Integration Process

- For the most part, data layers are created and maintained countywide. The City of Sturgeon Bay and four villages do not fall under the County's jurisdiction with County Zoning and various planning support. The County inherited the City parcel mapping and tax database in about 1994, and therefore the City parcel numbering is somewhat different than the rest of the County. However, these exceptions have been fairly minor and have not been problematic integrating into the County's system.

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
http://map.co.door.wi.us/map	None	http://map.co.door.wi.us/RPL/	http://www.co.door.wi.gov/localgov_departments_details.asp?deptid=48&locid=137

Single Landing Page/Portal for All Land Records Data
URL
http://map.co.door.wi.us/

Municipal Website Information	
Municipal Website	Municipal Website URL
City of Sturgeon Bay	http://www.sturgeonbaywi.org/
Village of Egg Harbor	http://www.villageofeggharbor.org
Village of Ephraim	http://www.ephraim-wisconsin.com/
Village of Forestville	http://www.villageofforestville.com/
Village of Sister Bay	http://www.sisterbaywi.gov/
Town of Baileys Harbor	http://www.townofbaileysharbor.com/
Town of Brussels	http://www.townofbrussels.com/Home/Index
Town of Clay Banks	http://www.townofclaybanks.org/
Town of Egg Harbor	http://www.townofeggharbor.org/
Town of Forestville	http://www.forestvilletown.com/
Town of Gardner	http://www.townofgardner.org
Town of Gibraltar	http://www.townofgibraltar.com/
Town of Jacksonport	http://www.jacksonport.org
Town of Liberty Grove	http://www.libertygrove.org/
Town of Nasewaupee	http://www.townofnasewaupee.com
Town of Sevastopol	http://www.townofsevastopol.com/
Town of Sturgeon Bay	http://www.townofsturgeonbay.us/
Town of Union	http://www.townofuniondoor.com/
Town of Washington	http://www.washingtonisland-wi.gov/

Data Sharing

Data Availability to Public

Data Sharing Policy

- Door County's GIS data policy deals with native GIS data requests and was adopted in 2015 and is posted from the GIS-LIO Home page for easy online access - http://map.co.door.wi.us/gis-lio/GIS%20Data%20Policy.pdf. This link is posted under "Data Requests" of the Door County GIS-LIO Home page - http://map.co.door.wi.us/gis-lio/home.htm. Data viewing and access for many types of records are available to the public 24 x 7 x 365 for free from the portal page - http://map.co.door.wi.us/. Register of Deeds documents are also available continuously but are fee-based and hosted through Fidlar Systems.

Open Records Compliance

- Door County has always strived to comply with Wisconsin's Open Records Law regarding requests for GIS data and records in a timely, professional manner.

Data Sharing Restrictions and Government-to-Government Data Sharing

Data Sharing Restrictions

- Door County Distribution Agreement - http://map.co.door.wi.us/gis-lio/DISTRIBUTION%20AGREEMENT.pdf is required to be signed and submitted with all formal data request for GIS information. This link is posted under "Data Requests" of the Door County GIS-LIO Home page - http://map.co.door.wi.us/gis-lio/home.htm.

Government-to-Government Data Sharing

- For mutual projects with Door County, there is no fee for data. However, for independent projects where another government agency (whether a local municipality, or a State or Federal level) requests County GIS data, the government agency is charged just like any other requestor. Please refer to GIS Data Policy - http://map.co.door.wi.us/gis-lio/GIS%20Data%20Policy.pdf.

Training and Education

- Door County's Land Information Office provides funding for county staff to attend software training and conferences. In the past, the LIO has paid for registrations and incidentals for board members and staff to attend WLIA annual conferences. Whether staff training occurred online, traveling off-site, or having a trainer visit Door County, the LIO has provided financial support for all types of GIS related training in different disciplines and venues as requested.

- In past years, the County has also provided training to realtors and other land professionals regarding the County's Web Map and other systems as requested.

4 CURRENT & FUTURE PROJECTS

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

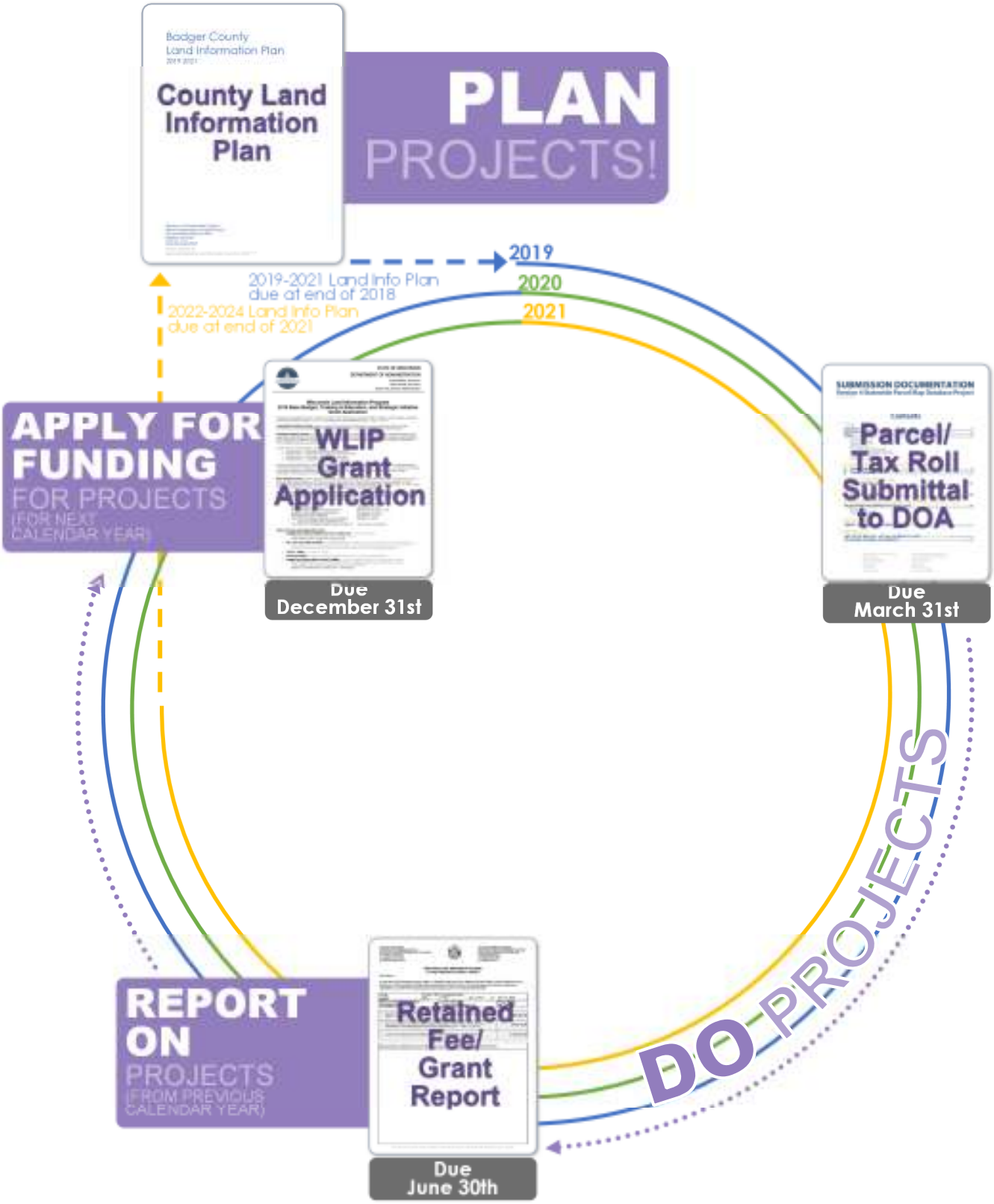


Figure 1. The WLIP Land Information Plan/Grant Project Cycle

Project #1: LiDAR derivatives

Project Description/Goal

- Acquire elevation and terrain derivative products from 2018 base LiDAR data acquired through FEMA funding. Ayres Associates will be under contract to process base LiDAR data to create derivative information, including 1-foot contours, hydro flattening breaklines, hydro-enforced DEM, bare earth DEM & point dataset, and intensity imagery.
- **Land Info Spending Category:** LiDAR

Business Drivers

- Increased accuracy of elevation contours (currently have 2-foot contours but intend to post 1-foot contours layer acquired) available to general public on Door County Web Map
- Better understanding of water flow events for evaluating proposed development/use to limit adverse impacts
- More accurately make map determinations for implementing conservation practices and restricting inappropriate areas and types of development/use
- Establish base line for determining past soil erosion and sedimentation for areas over time, and possibly compare to 2002 LiDAR inventory for identifying extent of soil change

Objectives/Measure of Success

- Data derivatives received and made available to staff and public
- Staff trained in new software and/or using the new LiDAR elevation data to support business functions on a regular basis

Project Timeframes

Timeline – Project #1 Title		
Milestone	**Duration**	**Date**
Project #1 start (Ayres contract)	1 week	March 2018
FEMA contracted acquisition	Approx.. 20 hours	May 2018
Ayres Process data	6 months	June 1–Nov 30, 2018
Deliverables	3 months	Feb 2019
Project complete	–	March 2019

Responsible Parties

- Contractor Ayres Associates, and Door County GIS/LIO Coordinator and SWCD.

Estimated Budget Information

- $50,700

Project #2: Land records management system

Project Description/Goal

- Evaluation of land records management systems and potentially acquire new system/services for managing records associated with Real Property Listing parcel management and tax bills; Treasurer tax bill receipting; Planning office permit tracking; Sanitarian permitting, system evaluation, and system maintenance tracking; and Soil & Water Conservation records management for various conservation programs and associated participants
- **Land Info Spending Category:** Software / Hosting Services

Business Drivers

- Improved business efficiency
- Reduced operating costs and risk

Objectives/Measure of Success

- Number and efficiency of business functions served

Project Timeframes

Timeline – Project #2 Land records management system		
Milestone	**Duration**	**Date**
Project #1 start	-	March 2019
Existing data loaded to new system, tested, cleaned	3 months	April - June 2019
Training	1 month	July 2019
Live	1 week	Oct 2019
Finalize/maintenance mode	–	Mar 2020

Responsible Parties

- Contracted vendor, Door County Technology Services and GIS/LIO Coordinator

Estimated Budget Information

- $225,000.

Project #3: Parcel mapping integration

Project Description/Goal

- Integrate parcel mapping to recently received survey grade GPS coordinates on PLSS sections
- **Land Info Spending Category:** Parcel Mapping

Business Drivers

- Improved accuracy of tax parcels and other cadastral mapping features

Objectives/Measure of Success

- Greater confidence and reliability of map records

Project Timeframes

Timeline – Project #3 Parcel mapping integration		
Milestone	**Duration**	**Date**
Project #1 start	-	Jan 2018
On-going re-mapping of areas to new PLSS control coordinates	12 months	Jan 2018 - Jan 2019
Realigned parcel mapping	–	Feb 2019

Responsible Parties

- Door County Real Property Lister

Estimated Budget Information

- Percent of time associated with Real Property Lister duties over next year

Project #4: In-field data collection with mobile GPS/GIS technology

Project Description/Goal

- County staff would collect data in field with mobile GPS/GIS technology to support on-going programs and County records.
- **Land Info Spending Category:** Web Host / Hardware

Business Drivers

- Reduced costs and more efficient technologies for collecting, maintaining, and sharing records.

Objectives/Measure of Success

- Accurate, easily-shared records with cost-effective technology

Project Timeframes

Timeline – Project #4 Data collection		
Milestone	**Duration**	**Date**
Project #1 start	-	Feb 2019
Consultant set-up / training	3 months	Mar 2019 - May 2019
Data collection testing and manage records	6 months	Jun 2019 – Nov 2019

Responsible Parties

- Door County SWCD and GIS/LIO Coordinator

Estimated Budget Information

- Hosted Web Service - $5,000; Training/Set-up - $5,000; and GPS equipment - $5,000 initial investment and then annual maintenance of $4,000.

Project #5: Training & Education

Project Description/Goal

- Provide new training opportunities for staff to learn and use GIS applications
- **Land Info Spending Category:** Training and Education, and Website Development

Business Drivers

- More efficient record management and sharing of data; manage & analyze LiDAR data

Objectives/Measure of Success

- More County staff use GIS technology within their routine job responsibilities and able to share their projects using ArcGIS Online applications

Project Timeframes

Timeline – Project #5 Training & Education		
Milestone	**Duration**	**Date**
Project #1 start	-	Jan 2019
Training	12 months	2019
Staff efficient with new data & technologies	-	Dec 2019

Responsible Parties

- Door County SWCD and GIS/LIO Coordinator

Estimated Budget Information

- Training - $5,000 per year

Project #6: Aerial photography acquisition

Project Description/Goal

- Acquire new aerial imagery
- **Land Info Spending Category:** Ortho-imagery

Business Drivers

- Provides an established record of current land and the ability to monitor changes from that point in time for a number of different applications, including public safety, planning and land use, assessment, conservation, and recreation.

Objectives/Measure of Success

- Identified staff, land use professionals, and the public that find imagery a useful resource on a regular basis for different applications

Project Timeframes

- Imagery acquisition planned for springs of 2019 and 2021 with deliveries to occur sometime in summer of same year.

Responsible Parties

- Imagery contractor and Door County GIS/LIO Coordinator

Estimated Budget Information

- $60,000 per acquisition

Project #7: Benchmarks

Project Description/Goal

- Elevation Benchmark on strategically placed survey monuments
- **Land Info Spending Category:** Other – establish local elevation benchmarks

Business Drivers

- New benchmarks would help support floodplain determinations

Objectives/Measure of Success

- Benchmarks would reduce surveying costs in areas where elevation delineations are critical for determining floodplain boundaries

Project Timeframes

- Door County may contract for establishing local benchmark locations sometime over the next three years, based on need, scope, and funding

Responsible Parties

- Door County would seek services from a licensed land surveyor firm and be coordinated by the GIS / LIO Coordinator. Records received would be kept with the Real Property Listing division of the Land Use Services Department.

Estimated Budget Information

- $55,000

Project #8: Document Imaging – Register of Deeds

Project Description/Goal

- Digital conversion of remaining books and documents in Register of Deeds office
- **ROD Real Estate Document Indexing and Imaging Spending Category:** Scan & Index

Business Drivers

- Allow all Register of Deeds records to be accessible remotely with conversion of remaining documents to digital format. County offices, business partners and the public benefit from electronic access during COVID-19 pandemic and also allows for enhanced disaster recovery

Objectives/Measure of Success

- All Register of Deeds records in digital format and accessible remotely

Project Timeframes

- Door County may contract with vendor to complete conversion to scanned images, index, and upload to existing imaging system (Fidlar)

Responsible Parties

- Door County would seek services from reputable vendor for conversion of documents and upload to Fidlar system. Door County Register of Deeds staff would perform quality control checks.

Estimated Budget Information

- $200,000

Completed Projects

- Implemented Esri Parcel Fabric in 2016 for management of tax parcel mapping and other cadastral features that includes: rights-of-way, easements, plats, condos, CSM's, hydrology boundaries, municipal boundaries, and PLSS section lines
- Acquired survey grade GPS coordinates on PLSS section monuments in 2016 and 2017 to support a greater accuracy of parcel mapping and other cadastral features
- Acquired survey-controlled orthophotography in 2017
- Entered into agreement in March 2018 with Ayers Associates to receive LiDAR derivatives based on FEMA funded base LiDAR collection project
- Provided letters of encouragement and support for an elevation study area for the three inland lakes of Clark, Kangaroo, and Europe Lakes, to support FEMA approved floodplain delineations.
- Conducted preliminary reviews of land records management systems in spring of 2017 after inviting three different vendors to provide in-house demonstrations to County staff.

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) LiDAR derivatives	Ayres Associates	$50,700.	Pages 11, 12, & 30	
				50,700
2) Land records management system	Web-based system host & service	$225,000	Pages 22, 23, 25, 27, 28, and 30 & 31	–
				225,000
3) Parcel mapping integration	RPL position	10% of $60,000 = 6,000	Pages 8 – 10, 24, & 31	–
				6,000
4) Data Collection	Contractor/vendor	$5,000	Pages 25 and 31 & 32	
	Hosting	$5,000		
	Training	$5,000		
				15,000
5) Training & Education	On-site trainer, web classes, or traditional classroom	$5,000 per year	Pages 28 & 32	
				15,000
6) Imagery acquisition	Imagery contractor	$60,000 per acquisition (or $30,000 per year)	Pages 12, 13, and 32 & 33	
				90,000
7) Local Elevation Benchmarks	Surveying Firm	$55,000	Page 34	
				55,000
8) Register of Deeds Imaging	Fidlar Technologies to scan, process, index, & import documents	$200,000	Pages 11 and 34	
				200,000
			GRAND TOTAL	**656,700**

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