DOOR COUNTY

ROLL CALL Board Members	Aye	Nay	Exc.
AUSTAD			
BACON			
BRANN			
BUR			
ENGLEBERT			
ENIGL			
FISHER			
GUNNLAUGSSON			
HAINES			
HALSTEAD			
KOCH			
KOHOUT			
KOK			
LIENAU			
MOELLER			
NEINAS			
SCHULTZ			
SITTE			
SOHNS			
VIRLEE			
ZIPPERER			

Voice Vote

BOARD ACTION

Vote Required: Majority Vote of a Quorum

Motion to Approve — Adopted [X]

1st Enigl — Defeated [ ]

2nd Moeller

Yes: ____ No: ____ Exc: ____

Reviewed by: _____, Corp. Counsel

Reviewed by: _____, Administrator

FISCAL IMPACT: This grant will be used for the specific project under the direction of the GIS/LIO Coordinator with no other fiscal implication. MEJ

Certification:

I, Jill Lau, Clerk of Door County, hereby certify that the above is a true and correct copy of a resolution that was adopted on the 22nd day of December, 2015 by the Door County Board of Supervisors.

Jill M. Lau

Jill Lau
County Clerk, Door County

Resolution No. 2015-93

UPDATED PLAN FOR LAND RECORDS MODERNIZATION AND 2016 WLIP GRANTS – IN – AID TO LOCAL GOVERNMENT APPLICATION

TO THE DOOR COUNTY BOARD OF SUPERVISORS:

WHEREAS, Door County has established a land information office and developed and periodically updated a County-Wide Plan for Land Records Modernization, consistent with § 59.72, Wis. Stats.; and

WHEREAS, § 59.52(19) Wis. Stats. empowers the County Board to accept donations, gifts, or grants of money for any public governmental purpose within the powers of the County; and

WHEREAS, § ADM 47.05 Wis. Adm. Code, requires that all WLIP grant applications "... be submitted on the authority of the county board on behalf of an eligible applicant..." and that "...application authority be obtained by specific action of the county board..."'; and

WHEREAS, The Door County Information Systems Committee has reviewed and approved an updated County-Wide Plan for Land Records Modernization and reviewed and authorized the submission of 2016 WLIP Grant Application(s) totaling $88,896 (See: Addenda A, attached hereto and incorporated herein by reference as if fully set forth).

NOW, THEREFORE, BE IT RESOLVED, That the Door County Board of Supervisors does hereby: approve the updated County-Wide Plan for Land Records Modernization; authorize submission of the aforesaid 2016 WLIP Grant Application(s); and accept any such grant(s) awarded to Door County, consistent with Ch. ADM 47, Wis. Adm. Code, and §§ 16.967(7), 59.52(19) & 59.72, Wis. Stats.

BE IT FURTHER RESOLVED, That the Door County GIS/LIO Coordinator is authorized to: execute the aforesaid grant application(s); execute grant agreement(s) offered; and to administer grant(s) received, all subject to oversight by the Information Systems Committee.

SUBMITTED BY:
Information Systems Committee

David Enigl, Chairman

Joel Gunnlaugsson

Richard Haines

Mark Moeller

Jon Koch

Don Sitte

David Lienau

2016 Grant Eligibility Table

	FY 2015 Retained Fees (July 2014-June 2015)	BB Grant Eligibility ($100k – FY 2015 Retained Fees)	Training & Education Grant Eligibility	Strategic Initiative Grant Eligibility	Total Grant Eligibility Amount
Adams	47,896	52,104	1,000	50,000	103,104
Ashland	22,880	77,120	1,000	50,000	128,120
Barron	71,400	28,600	1,000	50,000	79,600
Bayfield	34,816	65,184	1,000	50,000	116,184
Brown	302,160	NA	1,000	50,000	51,000
Buffalo	23,000	77,000	1,000	50,000	128,000
Burnett	37,816	62,184	1,000	50,000	113,184
Calumet	67,440	32,560	1,000	50,000	83,560
Chippewa	83,632	16,368	1,000	50,000	67,368
Clark	48,552	51,448	1,000	50,000	102,448
Columbia	79,064	20,936	1,000	50,000	71,936
Crawford	22,024	77,976	1,000	50,000	128,976
Dane	662,168	NA	1,000	50,000	51,000
Dodge	103,016	NA	1,000	50,000	51,000
Door	62,104	37,896	1,000	50,000	88,896
Douglas	55,752	44,248	1,000	50,000	95,248
Dunn	49,656	50,344	1,000	50,000	101,344
Eau Claire	119,536	NA	1,000	50,000	51,000
Florence	10,112	89,888	1,000	50,000	140,888
Fond du Lac	117,120	NA	1,000	50,000	51,000
Forest	21,208	78,792	1,000	50,000	129,792
Grant	58,184	41,816	1,000	50,000	92,816
Green	52,160	47,840	1,000	50,000	98,840
Green Lake	28,088	71,912	1,000	50,000	122,912
Iowa	35,088	64,912	1,000	50,000	115,912
Iron	14,584	85,416	1,000	50,000	136,416
Jackson	33,120	66,880	1,000	50,000	117,880
Jefferson	98,712	1,288	1,000	50,000	52,288
Juneau	40,472	59,528	1,000	50,000	110,528
Kenosha	178,432	NA	1,000	50,000	51,000
Kewaunee	28,584	71,416	1,000	50,000	122,416
La Crosse	136,440	NA	1,000	50,000	51,000
Lafayette	26,064	73,936	1,000	50,000	124,936
Langlade	35,472	64,528	1,000	50,000	115,528
Lincoln	43,784	56,216	1,000	50,000	107,216
Manitowoc	95,184	4,816	1,000	50,000	55,816
Marathon	165,792	NA	1,000	50,000	51,000

	FY 2015 Retained Fees (July 2014-June 2015)	BB Grant Eligibility ($100k – FY 2015 Retained Fees)	Training & Education Grant Eligibility	Strategic Initiative Grant Eligibility	Total Grant Eligibility Amount
(Continued)					
Marinette	74,360	25,640	1,000	50,000	76,640
Marquette	25,832	74,168	1,000	50,000	125,168
Menominee	3,784	96,216	1,000	50,000	147,216
Milwaukee	810,768	NA	1,000	50,000	51,000
Monroe	58,440	41,560	1,000	50,000	92,560
Oconto	67,056	32,944	1,000	50,000	83,944
Oneida	80,752	19,248	1,000	50,000	70,248
Outagamie	226,032	NA	1,000	50,000	51,000
Ozaukee	123,632	NA	1,000	50,000	51,000
Pepin	12,224	87,776	1,000	50,000	138,776
Pierce	52,544	47,456	1,000	50,000	98,456
Polk	79,744	20,256	1,000	50,000	71,256
Portage	84,960	15,040	1,000	50,000	66,040
Price	25,224	74,776	1,000	50,000	125,776
Racine	215,600	NA	1,000	50,000	51,000
Richland	26,328	73,672	1,000	50,000	124,672
Rock	188,392	NA	1,000	50,000	51,000
Rusk	27,088	72,912	1,000	50,000	123,912
Sauk	139,656	NA	1,000	50,000	51,000
Sawyer	41,920	58,080	1,000	50,000	109,080
Shawano	61,768	38,232	1,000	50,000	89,232
Sheboygan	134,344	NA	1,000	50,000	51,000
St. Croix	132,136	NA	1,000	50,000	51,000
Taylor	28,024	71,976	1,000	50,000	122,976
Trempealeau	41,016	58,984	1,000	50,000	109,984
Vernon	41,520	58,480	1,000	50,000	109,480
Vilas	64,024	35,976	1,000	50,000	86,976
Walworth	158,208	NA	1,000	50,000	51,000
Washburn	36,600	63,400	1,000	50,000	114,400
Washington	179,384	NA	1,000	50,000	51,000
Waukesha	508,768	NA	1,000	50,000	51,000
Waupaca	74,536	25,464	1,000	50,000	76,464
Waushara	41,136	58,864	1,000	50,000	109,864
Winnebago	191,328	NA	1,000	50,000	51,000
Wood	86,120	13,880	1,000	50,000	64,880
Total	**7,254,720**	**2,738,152**	**72,000**	**3,600,000**	**6,410,152**

STATE OF WISCONSIN
DEPARTMENT OF ADMINISTRATION
DIVISION OF INTERGOVERNMENTAL RELATIONS

WISCONSIN LAND INFORMATION PROGRAM
PO BOX 8944, MADISON, WI 53708-8944
WLIP@wisconsin.gov
VOICE (608) 267-3369
FAX (608) 267-6917

2016 WLIP Grant Application

County Door	Name of Land Information Officer Tom Haight	
Mailing Address 421 Nebraska Street		
City Sturgeon Bay	State: WI	Zip 54235
Telephone (920) 746-2391	E-mail Address thaight@co.door.wi.us	

1. County will submit draft 2016 land information plan to DOA by Dec. 31, 2015	☑ Yes ☐ No
2. Date of last county land information council meeting (mm/dd/yyyy)	07/09/2015
3. LIO subscribed to the Land Information Officer's listserv	☑ Yes ☐ No
4. County's *Retained Fee/Grant Report* for 2014 submitted	☑ Yes ☐ No

TRAINING & EDUCATION GRANT APPLICATION	
5. Training & Education Award Eligible	**$1,000.00**
6. Training & Education Award Amount Requested	$ 1,000.00

7. Brief description of intended expenditures for Training & Education grant

Registration fees and travel expenses associated with Door County staff, or County Board or Land Information Council members attending any one or more of the following:
a. WLIA Annual and Regional Meetings and/or sponsored training provided in association with those meetings;
b. ESRI Wisconsin User Group Seminar;
c. GIS Software training
d. ESRI User Conference

8. **Statement and Authorization of Land Information Officer**
As the Land Information Officer for the above county, I am authorized to submit this application, as an eligible applicant, on the authority of the county board. I understand that application authority shall be obtained by specific action of the county board, and that the WLIP may request evidence of such authority. Project work shall meet all standards and conditions as set forth by the relevant Wisconsin State Statutes, Wisconsin Administrative Code, and policy adopted by the Wisconsin Land Information Program or the Wisconsin Department of Administration. To the best of my knowledge, the information contained in this application is accurate and complete. I understand that Training & Education grant projects must be completed by December 31, 2017.

LIO Name (typed) Tom Haight	Date 09/01/2015

STATE OF WISCONSIN
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2016 WLIP Grant Application

County Door	Name of Land Information Officer Tom Haight

STRATEGIC INITIATIVE GRANT APPLICATION	
1. Strategic Initiative Award Eligible	**$50,000.00**
2. Strategic Initiative Award Amount Requested	$ 50,000.00

3. Summary of intended expenditures for 2016 Strategic Initiative grant (check all that apply)
   - ☐ Benchmark 1
   - ☐ Benchmark 2
   - ☐ Benchmark 3
   - ☑ Benchmark 4
   - ☐ Benchmark 4 waiver in favor of LiDAR project
   - ☑ Other county Strategic Initiative project(s)

BENCHMARK 1

4. County anticipates meeting Benchmark 1 for the **V2** call for data by March 31, 2016 in which format:
   - ☐ Export format
   - ☑ Searchable format
   - ☐ In other format: County will not meet Benchmark 1 for V2

5. Will county use 2016 Strategic Initiative Funding to work toward selected **V2** format for Benchmark 1 in the first quarter of 2016?
   - ☐ Yes
   - ☑ No

6. County anticipates meeting Benchmark 1 for the **V3** call for data by March 31, 2017 in which format:
   - ☐ Export format
   - ☑ Searchable format

7. Will county use 2016 Strategic Initiative Funding to work toward selected **V3** format for Benchmark 1?
   - ☐ Yes
   - ☑ No

8. County anticipates meeting Benchmark 1 for the **V4** call for data by March 31, 2018 in which format:
   - ■ Export format is *not* an option for V4
   - ☑ Searchable format

9. Benchmark 1 Land Information Plan Citations for ***Project Plan to Achieve Searchable Format for Benchmarks 1 & 2*** – Section and page numbers

10. Benchmark 1 Project Activities and Itemized Costs

		11. Benchmark 1 Total Costs	**0.00**

BENCHMARK 2

12. County anticipates meeting Benchmark 2 for the **V2** call for data by March 31, 2016 in which format:
    - ☐ Export format
    - ☑ Searchable format
    - ☐ In other format: County will not meet Benchmark 2 for V2

13. Will county use 2016 Strategic Initiative Funding to work toward selected **V2** format for Benchmark 2 in the first quarter of 2016?
    - ☐ Yes
    - ☑ No

14. County anticipates meeting Benchmark 2 for the **V3** call for data by March 31, 2017 in which format:
    - ☐ Export format
    - ☑ Searchable format

15. Will county use 2016 Strategic Initiative Funding to work toward selected **V3** format for Benchmark 2?
    - ☑ Yes
    - ☐ No

16. County anticipates meeting Benchmark 2 for the V4 call for data by March 31, 2018 in which format:
    - ■ Export format is *not* an option for V4
    - ☑ Searchable format

17. Benchmark 2 Land Information Plan Citations for ***Project Plan to Achieve Searchable Format for Benchmarks 1 & 2*** – Section and page numbers

18. Benchmark 2 Project Activities and Itemized Costs

		19. Benchmark 2 Total Costs	**0.00**

BENCHMARK 3

20. Is your county's digital parcel fabric complete (including incorporated areas)?
    - ☑ Yes, parcel fabric complete (skip to Benchmark 4 section below)
    - ☐ No, county needs to work toward Benchmark 3 ▸ Estimated year of completion ▸

21. Will county use 2016 Strategic Initiative funding to work toward Benchmark 3?
    - ☐ Yes
    - ☐ No

22. Benchmark 3 Land Information Plan Citations for *Project Plan for Parcel Completion* – Section and page numbers

23. Benchmark 3 Project Activities and Itemized Costs ▾

		24. Benchmark 3 Total Costs	**0.00**

BENCHMARK 4

25. Is your county's PLSS network complete and integrated into digital parcel layer?
    - ☐ Yes, PLSS network complete and integrated
    - ☑ No, county needs to work toward Benchmark 4 ▸ Estimated year of completion ▸ 2018

26. Will county use 2016 Strategic Initiative funding to work toward Benchmark 4?
    - ☑ Yes
    - ☐ No

27. Benchmark 4 waiver request: Check the waiver box if you wish to request a waiver from Benchmark 4 in favor of LiDAR costs
    - ☑ N/A
    - ☐ Yes, waiver requested in favor of LiDAR project

28. Benchmark 4 Land Information Plan Citations for *Project Plan for PLSS* – Section and page numbers

Public Land Survey System (PLSS) monuments on page 5
GPS Coordinates on PLSS monuments at bottom of page 21

29. Benchmark 4 Project Activities and Itemized Costs ▾

Establish new corner (42)	34,321.00	Obtain coordinates on monuments (56)	15,400.00
Place ties to monuments (1)	528.00		
		30. Benchmark 4 Total Costs	**50,249.00**

OTHER COUNTY STRATEGIC INITIATIVE PROJECTS

31. County anticipates meeting Benchmarks 1-4 (or 1-3 with LiDAR waiver) ***and*** foresees having some of the 50k Strategic Initiative funding "leftover"?

☐ Yes

☑ No

32. Estimated amount of 50k to be left after applying any costs to achieve Benchmarks 1-4 (or 1-3 for LiDAR waiver counties)

☑ Zero

☐ More than zero ▸ Specify amount ▸ $

If "More than zero" is selected, use the *2016 WLIP Grant Application Addendum* to describe the projects you will use the Strategic Initiative funding for.

33. TOTAL ALL STRATEGIC INITIATIVE PROJECTS	**$ 50,000.00**

34. Statement and Authorization of Land Information Officer

As the Land Information Officer for the above county, I am authorized to submit this application, as an eligible applicant, on the authority of the county board. I understand that application authority shall be obtained by specific action of the county board, and that the WLIP may request evidence of such authority. Project work shall meet all standards and conditions as set forth by the relevant Wisconsin State Statutes, Wisconsin Administrative Code, and policy adopted by the Wisconsin Land Information Program or the Wisconsin Department of Administration. To the best of my knowledge, the information contained in this application is accurate and complete. I understand that Strategic Initiative grant projects must be completed by March 31, 2017.

LIO Name (typed) Tom Haight	Date 10/23/2015

STATE OF WISCONSIN
DEPARTMENT OF ADMINISTRATION
DIVISION OF INTERGOVERNMENTAL RELATIONS

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2016 WLIP Grant Application

County Door	Name of Land Information Officer Tom Haight

BASE BUDGET GRANT APPLICATION	
1. Base Budget Award Eligible (from grant eligibiliy table on page 9)	$ 37,896.00
2. Base Budget Award Amount Requested	$ 37,896.00

3. **Base Budget Grant Project Title 1**
Aerial Photography

4. Land Information Spending Category Orthoimagery

5. Land Information Plan Citations – Section and page numbers
Imagery - page 8

6. Project Activities and Itemized Costs

2016 payment (2nd-half)	22,958.50		
Ortho & oblique imagery			
		7. Base Budget Project 1 Total	**22,958.50**

8. **Base Budget Grant Project Title 2**
Annual software maintenance

9. Land Information Spending Category Software

10. Land Information Plan Citations – Section and page numbers
Technology Architecture at bottom of page 18;
Ongoing costs not associated with a specific project on page 23.

11. Project Activities and Itemized Costs

ESRI ArcGIS Advanced Primary (1)	3,000.00	ESRI ArcGIS Basic (1)	700.00
ESRI ArcGIS Basic Secondary (3)	1,500.00	ESRI Spatial Analyst Primary (1)	500.00
Spillman Public Safety mapping modules	5,390.00	AutoCAD (2)	2,800.00
ESRI ArcPad (3)	750.00		
		12. Base Budget Project 2 Total	**14,640.00**

BASE BUDGET GRANT APPLICATION CONTINUED

13. **Base Budget Grant Project Title 3**
PHP Server and Online Hosting

14. Land Information Spending Category Website development/Hosting services

15. Land Information Plan Citations – Section and page numbers

16. Project Activities and Itemized Costs

PHP Server License	7,250.00	Pictometry Online Hosting	1,875.00
ESRI Online server	100.00		
		17. Base Budget Project 3 Total	**9,225.00**

18. **Base Budget Grant Project Title 4**

19. Land Information Spending Category Click arrow at right to select from drop-down list

20. Land Information Plan Citations – Section and page numbers

21. Project Activities and Itemized Costs

		22. Base Budget Project 4 Total	**0.00**

23. TOTAL ALL BASE BUDGET GRANT PROJECT COSTS **$ 37,896.00**

24. **Statement and Authorization of Land Information Officer**
As the Land Information Officer for the above county, I am authorized to submit this application, as an eligible applicant, on the authority of the county board. I understand that application authority shall be obtained by specific action of the county board, and that the WLIP may request evidence of such authority. Project work shall meet all standards and conditions as set forth by the relevant Wisconsin State Statutes, Wisconsin Administrative Code, and policy adopted by the Wisconsin Land Information Program or the Wisconsin Department of Administration. To the best of my knowledge, the information contained in this application is accurate and complete. I understand that Base Budget grant projects must be completed by December 31, 2017.

LIO Name (typed) Tom Haight | Date 09/01/2015

2016 WLIP Grant Application Addendum

County Door

Addendum Type

- ☐ Base Budget Project(s)
- ☐ Other county Strategic Initiative Project(s)/LiDAR project

1. **Project Title**

2. Land Information Spending Category Click arrow at right to select from drop-down list

3. Land Information Plan Citations – Section and page numbers

4. Project Activities and Itemized Costs

		5. Project Total	**0.00**

6. **Project Title**

7. Land Information Spending Category Click arrow at right to select from drop-down list

8. Land Information Plan Citations – Section and page numbers

9. Project Activities and Itemized Costs

		10. Project Total	**0.00**

TOTAL ALL PROJECTS – Please include total, including addendum project costs, on application itself

Door County Land Information Modernization Plan
Fall 2015

EXECUTIVE SUMMARY

The purpose of this Door County Land Information Modernization Plan is twofold: 1) to meet Wisconsin Land Information Program (WLIP) funding eligibility requirements necessary by Wisconsin statute for receiving grants and retaining fees for land records, and 2) to plan for county land records modernization in an orderly, efficient manner for providing improved government services to businesses and the general public.

The Door County Land Information Modernization Plan was originally adopted in 1992 and has been updated in 1998, 2003, 2005, and 2010. This Plan update was completed using "Uniform Instructions for Preparing County Land Information Plans – June 2015" and will now need to be updated at least once every three years to remain eligible for WLIP funding. A link to the most current Plan adopted by the County will be placed to the internet at http://map.co.door.wi.us/gis-lio/home.htm. The WLIP, administered by the Wisconsin Department of Administration (DOA), is funded by document recording fees collected by register of deeds at the county-level. Beginning January 1st, 2015, deeds, mortgages, and other land record documents recorded with the Register of Deeds office have a $30 flat fee with the revenues distributed as follows:

- $15 to County's general fund
- $8 to County's Land Information Office (LIO)
- $7 to State DOA for administrating program and distributing grants

Beginning in 2016, the WLIP is projecting to fund new Strategic Initiative grants to counties in the amount of $50,000 per year.

This plan identifies how grants and county revenue should be prioritized for various projects and ongoing expenses. However, Door County's budget is determined and adopted on an annual basis with county board approval, so any project figures in this plan are only estimates for planning purposes.

Door County has devoted considerable effort to develop an integrated Geographic Information System (GIS) for providing accurate, reliable information to support timely, well-informed decision making. Many County departments now rely on the tools and easily-accessible information, and have become more efficient with business processes as a result of an implemented GIS. Many businesses and the general public help themselves to land records and information accessed through the Door County Web Map (http://map.co.door.wi.us/map) and from other internet services. The Door County land information office has expanded more and more layers of information available on the Web Map, and added services that can be accessed from mobile devices. To view supporting government internet sites, please visit http://www.co.door.wi.gov/ (Official County site) and http://map.co.door.wi.us/ (Land Records Portal).

The mission of the Door County Land Information Office is to broaden the utilization of GIS among County departments, businesses, and the general public by providing easy, user-friendly access to efficient tools and timely, accurate information; and being responsive to any other land information need(s) that may be requested.

In support of this mission over the next three years, the Door County land information office will focus on the following projects:

1. Explore migration of parcel maintenance to ESRI Parcel Fabric to improve maintenance efficiencies of cadastral layers
2. Expand access and ease of use of GIS through mobile mapping services and other developing technologies
3. Acquire GPS coordinates on additional PLSS monuments and framework, and/or other locations to support improved mapping accuracies
4. Acquire new aerial imagery
5. Expand GIS and Land Records systems with additional layers/records of useful information and greater functionality
6. Elevation benchmarks to support Floodplain mapping
7. Update elevation data through Lidar or other technologies
8. Provide more GIS tools and educational opportunities for County staff

The remainder of this document reviews some of the key changes and accomplishments of the past, provides status on the completion and maintenance of the WLIP map data layers known as Foundational Elements, details the Door County land information workflow processes, and identifies current and future projects in greater detail.

1 INTRODUCTION

Door County has made 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 – Provided mobile device access to an ArcGIS Online service of county tax parcels with land records hyperlink.
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 (easements, 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.

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.

Early years consisted of a lot of planning and coordinating as the effort was to identify program stakeholders and learn developing technology. Significant progress occurred by the turn of the century as the core GIS (network of computers with software) was in place and many foundational layers of information, including tax parcels, soils, hydrography, orthophotos, among others, were already available. Although progress has been made every year, some projects are much more visible than others. The most significant tool to promote GIS and land records in Door County has been publishing services over the internet for anyone to access. Providing integrated, easy-to-use services over a widely used media, has allowed greater numbers and varied users (from businesses to leisure, resident to visitor, public safety to conservation, and county staff to general public). The only common element may have been that users have had a particular interest in some location within Door County (... with no need to have a prior familiarity with the technology or geography). The Door County land information office strives to provide a variety of land records through a number of useful service(s) in an attempt to serve the greatest number of people, in the most-convenient manner possible.

Door County's land information program receives review and input from the Land Information Council, which has met approximately every six months since established in 2010. The Land Information Council consists of 9 members and is advisory to the Information Systems Committee (ISC). ISC is a standing County Board committee, currently made up of seven board members, provides oversight to the Land Information Office and generally meets on a monthly basis. Meeting agendas and minutes can be found online for county committees, including the ***Land Information Council*** and ***Information Systems Committee*** at the following site http://map.co.door.wi.us/Agendas-Minutes/. The unapproved minutes for their most recent meeting are listed by date and committee name with a hyperlink for viewing at http://map.co.door.wi.us/Agendas-Minutes/CountyBoard/Unapproved%20Minutes/.

This document is a land information plan for Door County prepared by the land information officer, with participation from the land information council and other County staff. Participants with plan content included:

- Tom Haight, Door County GIS/LIO Coordinator and Plan Editor
- Holly Hansen, Door County Real Property Lister
- Chris Moe, Door County Real Property Listing Assistant
- Carey Petersilka, Door County Register of Deeds
- Becky Kerwin, Door County Planner II
- Audrey Forslund, Door County Planning Mapping Technician
- Mariah Goode, Door County Planning Director
- Bob Moellenberndt, Door County Information Systems Programmer
- Tim Ullman, Door County Information Systems Manager
- Mike McCarty, contracted County Land Surveyor
- Brian Frisque, Land Surveyor & member of Land Info. Council

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2 FOUNDATIONAL ELEMENTS

Foundational Elements are map layers or datasets that the WLIP has identified as priorities for completion. Eight foundational element categories, as identified in the WLIP instructions and listed below, are addressed with regards to layer status, custodian, maintenance, and standards.

- Public Land Survey System (PLSS) monuments and framework
- Parcel Mapping
- Lidar and other elevation data
- Orthoimagery
- Address Points and Street Centerlines
- Land Use
- County Zoning
- Administrative Boundaries

Public Land Survey System (PLSS) Monuments

- Status: See the table below.

Total number of PLSS corners (section, ¼, meander) set in original government survey	**2225**
Number and percent of PLSS corners that have been Remonumented	**2094; 94.11%**
Number and percent of remonumented PLSS corners with survey grade coordinates (see below for definition)	**2008; 95.89%**
Number and percent of survey grade PLSS corners integrated into county digital parcel layer	**2008; 100%**
Number and percentage of non-survey grade PLSS corners integrated into county digital parcel layer	**217; 100%**
Percentage of PLSS corners that have digital tie sheets (whether or not they have corresponding coordinate values)	**91.60%**
Digital tie sheets available online? Yes or No	**Yes;** http://publinfo.co.door.wi.us:10088/RPLLIB/index.php
Approximate number of PLSS corners believed to physically exist based on filed tie-sheets or surveys, but do not have coordinate values	**86**
Approximate number of PLSS corners believed to be lost or Obliterated	**unknown**
Total number of PLSS corners along each bordering county	**37**
Number and percent of PLSS corners remonumented along each county boundary	**36; 97.30%**
Number and percent of remonumented PLSS corners along each county boundary with survey grade coordinates	**36; 97.30%**
Does your county collaborate with or plan to collaborate with neighboring counties for PLSS updates on shared county borders?	**Yes**

- Custodian: Real Property Listing Office contracts out local surveying firm Baudhuin Incorporated for any necessary field work to maintain PLSS monuments.
- Maintenance: Maintenance on section corner, quarter corners, and meander corners is performed on an annual basis through a multi-year contract managed by the Real Property Listing office.

- Standards: Tie sheets are sketches of monuments and accessory locations for PLSS section corners filed by contracted surveyors. Door County now provides access to tie sheets through the internet - http://pubinfo.co.door.wi.us:10088/RPLLIB/index.php. Survey control reference sheets that provide coordinate values on section corners, and provide distances and bearings between adjacent corners, can also be accessed through the internet - http://map.co.door.wi.us/gis-lio/Survey_Control/Ref_Sheet.htm. Door County also has its PLSS system referenced from the Wisconsin State Cartographers Office PLSSFinder tool - http://maps.sco.wisc.edu/PLSSFinder/#. Statutory Standards for PLSS Corner Remonumentation includes: 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: 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.

Parcel Mapping

Parcel Geometries

- Layer Status: All of Door County tax parcels have been digitally mapped and maintained since 1998.
- Custodian: Real Property Listing Office manages parcels in all municipalities of Door County.
- Maintenance: Real Property Lister maintains all the digital tax parcels using AutoCAD software, and then combines drawing tiles, by PLSS sections, on a monthly basis to an ESRI shapefile format. With assistance from a GIS consulting firm, Door County plans to migrate existing maintenance process and software to ESRI's Parcel Fabric system.
- Standards: Door County has a metadata file available with parcel shapefile that provides a brief description for each attribute. Layer is on Door County Web Map (http://map.co.door.wi.us/map) and listed under "Parcel" folder and named "Tax Parcel"; and is a free data set under current GIS data policy (http://map.co.door.wi.us/gis-lio/GIS%20Data%20Policy.pdf).

Assessment/Tax Roll Data

- Layer Status: Door County maintains data on an IBM Power 720 server to prepare each municipality assessment roll, tax roll, and tax bills.
- Custodian: Real Property Listing Office provides each assessor contracted by the local municipality an assessor work roll, receives assessment changes, prints assessment roll and notices, and then calculates and prints tax bills.
- Maintenance: Local assessors maintain and submit annual assessment records to Real Property Listing Office, for joining assessments to tax parcel maps. Attribute changes are joined to map on a monthly basis.
- Standards

Act 20 Attributes Required by s. 59.72(2)(a)	Field Name(s) in County LIS	Notes on Data or Exceptions
Assessed value of land	LAND_VALUE	*
Assessed value of improvements	IMP_VALUE	*
Total assessed value	TOTL_VALUE	Would need to be added to existing download format

Class of property, as specified in s. 70.32 (2)(a)	LU_RES; LU_COMM; LU_MANU; LU_AG; LU_UNDVLPD; LU_FOREST; LU_OTHER; LU_AGFOR	
Estimated fair market value	EFMV	*
Total property tax	RE_TAX	*
Any zoning information maintained by the county		Not Required; Separate shapefile
Any property address information maintained by the county	FIRENO; FIREST	*
Any acreage information maintained by the county	ACRES	*

Six of the nine attributes (identified with a "*" in table) show on a "Parcel Report" generated from the Door County Web Map (http://map.co.door.wi.us/map). Standards include: 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.

Non-Assessment/Tax Information related to Parcels

- Layer Status: Easements and Right-of-ways have been converted from AutoCAD drawings to ESRI shapefile format
- Custodian: Real Property Listing Office has been past custodian in AutoCAD format. Near future plan is for Real Property Listing Office to continue maintenance in ESRI Parcel Fabric system.
- Maintenance: Real Property Listing Office will continue to maintain easements and right-of-ways in conjunction with tax parcel records.
- Standard:

ROD Real Estate Document Indexing and Imaging

- Layer Status: Deeds, mortgages, plats, and certified survey maps, and condominiums are scanned back to 1966
- Custodian: County Register of Deeds
- Maintenance: Imaging is maintained in IMS21 imaging system on IBM Power 720 server.
- Standards: s. 59.43, Wis. Stats. Register of deeds; duties, fees, deputies; and ch. 706, Wis. Stats. Conveyances of real property; Recording; Titles.

Lidar and other Elevation Data

Lidar Digital Terrain Model

- Layer Status: All of Door County collected in 2002 as a joint project with US Army Corp of Engineers.
- Custodian: Land Information Office
- Maintenance: Data is not maintained or updated.
- Standards: Data was received as X-Y coordinate pairs with a Z-elevation in a txt-file format for bare earth surface; metadata was included with project.

Lidar Contours

- Layer Status: All of Door County collected in 2002 as a joint project with US Army Corp of Engineers.
- Custodian: Land Information Office

- Maintenance: Data is not maintained or updated.
- Standards Data was received in shapefile format showing 2-foot elevation contours and then converted to AutoCAD drawing format due to a number of requests; metadata was included with project by contractor. Layer is on Door County Web Map (http://map.co.door.wi.us/map) and listed under "Elevation Contours" folder and named "2-Foot Contours (2002)".

Lidar Digital Elevation Model

- Layer Status: All of Door County mapped to 10-foot DEM in 2007 by Wisconsin Geologic & Natural History Survey from County DTM provided.
- Custodian: Land Information Office.
- Maintenance: Data is not maintained or updated.
- Standards: Data was received in geodatabase and as a pdf poster for select relief areas of County.

Imagery

Orthoimagery

- Layer Status: Most recent imagery is from 2015 with color, 9-inch resolution, and a detailed area for majority of City of Sturgeon Bay at a 3-inch resolution, in a digital format captured by Pictometry International.
- Custodian: Land Information Office
- Maintenance: Updates have been on a two-year cycle since 2007. Imagery acquisition is next planned for spring 2017 with Pictometry International once again.
- Standards: Layer is on Door County Web Map (http://map.co.door.wi.us/map) and listed under "Aerial Photos" folder and named "2015 Ortho: 9-inch" countywide or for majority of City option "2015 City of Sturgeon Bay: 3-inch".

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: Land Information Office, Planning Department; Soil & Water Conservation Department, and USDA Farm Services Agency
- Maintenance: Since 2007, the County has been on a two-year cycle to receive updated aerial imagery.
- Standards:

Oblique imagery

- 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 2017.
- Custodian: Land Information Office
- Maintenance: No imagery is updated; Door County GIS layers are updated on Pictometry Cloud servers by Land Information Office.

- Standards

Address Points and Street Centerlines

Address Point Data

- Layer Status: Addressing points are complete and maintained countywide.
- Custodian: Planning Department Mapping Specialist
- Maintenance: Addressing is maintained as new assignments or changes are made.
- Standards: Layer is on Door County Web Map (http://map.co.door.wi.us/map) and listed under "Parcel" folder and named "Address Points"; and is a free data set under current GIS data policy (http://map.co.door.wi.us/gis-lio/GIS%20Data%20Policy.pdf).

Building Footprints

- Layer Status: An inventory from 2009 in conjunction with aerial imagery project.
- Custodian: Land Information Office.
- Maintenance: None; no plans for update or updated inventory.
- Standards: Layer is on Door County Web Map (http://map.co.door.wi.us/map) and listed under "Parcel" folder and named "Building Outlines".

Street Centerlines

- Layer Status: Complete and maintained countywide. Several attributes that include the road or street name and address range.
- Custodian: Planning Department Mapping Specialist
- Maintenance: Maintained as needed with location and/or attributes
- Standards: Layer is on Door County Web Map (http://map.co.door.wi.us/map) and listed under "Roads" folder and named "Roads/Streets"; and is a free data set under current GIS data policy (http://map.co.door.wi.us/gis-lio/GIS%20Data%20Policy.pdf).

Rights of Way

- Layer Status: Countywide coverage converted from AutoCAD to shapefile format in 2015 and made available on Web Map.
- Custodian: Real Property Listing Office
- Maintenance: As needed, monthly basis
- Standards: Layer is on Door County Web Map (http://map.co.door.wi.us/map) and listed under "Parcel" folder and named "Right-of-Way".

Trails

- Layer Status: Snowmobile Trails, Ice-age Trail, Ahnapee State Trail, Bicycle Routes, The Nature Conservancy Trails are updated as changes are reported.
- Custodian: Land Information Office
- Maintenance: As reported and needed.
- Standards: Some layers are on Door County Web Map (http://map.co.door.wi.us/map) and listed under "Cultural/Recreation" folder and include "Parks" (Ahnapee State Trail), "Ice-Age Trail", and "Snowmobile Trails".

Land Use

Current Land Use

- Layer Status: Planning Department has a countywide land use inventory from 2014.

- Custodian: Planning Department
- Maintenance: Planning Department
- Standards: Maps in pdf format can be viewed from "Door County Comprehensive & Farmland Preservation Plan 2035" site – (http://map.co.door.wi.us/planning/Comp-Plan_2035.htm) under Volume II section.

Future Land Use

- Layer Status: Planning Department has countywide future land use map.
- Custodian: Planning Department
- Maintenance: Planning Department
- Standards: Completed in conjunction with comprehensive planning – s.66.1001, WI Stats., Comprehensive planning. Maps in pdf format can be viewed from "Door County Comprehensive & Farmland Preservation Plan 2035" site – (http://map.co.door.wi.us/planning/Comp-Plan_2035.htm) under Volume I section.

Zoning

County General Zoning

- Layer Status: Completed countywide for all Towns (excludes 4 villages and City of Sturgeon Bay) as its own layer, separate from parcel attributes. Door County has jurisdiction for enforcement in those towns that adopted County Zoning and areas of all towns within Shoreland Zoning area.
- Custodian: Planning Department
- Maintenance: Planning Department Mapping Technician
- Standards: All areas of County Zoning jurisdiction and zone type are provided on Door County Web Map (http://map.co.door.wi.us/map) and listed under "Themed Maps" folder and subfolder "County Zoning" by checking on layers "County Zoning Solid Color" or "County Zoning Outline"; County Zoning is a free data set under current GIS data policy (http://map.co.door.wi.us/gis-lio/GIS%20Data%20Policy.pdf).

Shoreland Zoning

- Layer Status: Completed countywide based on buffer distances from shoreland and designated navigable lakes, streams, and ponds within Towns.
- Custodian: Land Information Office
- Maintenance: Land Information Office buffers hydrology features and Planning Department Mapping Technician maintains zoning layer.
- Standards: All areas of County Zoning jurisdiction and zone type are provided on Door County Web Map (http://map.co.door.wi.us/map) and listed under "Themed Maps" folder and subfolder "County Zoning" checking on layers "County Zoning Solid Color" or "County Zoning Outline"; County Zoning includes Shoreland Zoning is a free data set under GIS data policy (http://map.co.door.wi.us/gis-lio/GIS%20Data%20Policy.pdf). Door County provides County General Zoning and Shoreland Zoning as a composite layer for showing all areas within County's jurisdiction and designated zoning type.

Farmland Preservation Zoning

- Layer Status: Planning Department has Farmland Preservation Zoning mapping.
- Custodian: Planning Department
- Maintenance: Planning Department
- Standards: All areas of County Zoning jurisdiction and zone type are provided on Door County Web Map (http://map.co.door.wi.us/map) and listed under "Themed Maps" folder

and subfolder "County Zoning" by checking on layers "County Zoning Solid Color" or "County Zoning Outline"; County Zoning is a free data set under current GIS data policy (http://map.co.door.wi.us/gis-lio/GIS%20Data%20Policy.pdf). Farmland preservation zoning exists only in the Town of Clay Banks as the Exclusive Agricultural zoning district. A description of Exclusive Agricultural zoning can be found on page 8 of Chapter 2 from online ordinance (http://map.co.door.wi.us/planning/zoning_ordinance.htm).

Floodplain Zoning

- Layer Status: Federal Emergency Management Agency (FEMA) coordinated a floodplain study and provided Door County a Floodplain layer in 2008. A subsequent 2012 study was conducted, but no updated floodplain determination has been adopted as of yet.
- Custodian: FEMA has provided information to Planning and Land Information Office.
- Maintenance: As map updates are funded, or elevation determinations made through local surveys, Letters of Map Amendments are filed with FEMA, by landowners, in an attempt to eliminate the need to purchase flood insurance from banks securing a mortgage on the improved property.
- Standards: The Floodplain layer is on the Door County Web Map (http://map.co.door.wi.us/map), listed under folder "Themed Maps", subfolder "County Zoning" and named "FEMA Flood Hazard".

Airport Protection

- Layer Status: An airport height limitation zone map was developed for area surrounding Cherryland Airport, in support of Height Limitation Zoning Ordinance.
- Custodian: Airport manager and Planning
- Maintenance: Land Information Office maintains map layer
- Standards: Height Limitation Zoning Ordinance can be accessed from - http://map.co.door.wi.us/planning/ORDINANCE/Height_Limit/Height_Limit.pdf; map on page 8 has been converted to digital GIS format.

Administrative Boundaries

Civil Division Boundaries

- Layer Status: Municipal Civil Districts are mapped and maintained for all municipal boundaries within the County
- Custodian: Land Information Office
- Maintenance: Land Information Office maintains layer as one becomes aware of annexations, changes, or errors.
- Standards: Layer is on Door County Web Map (http://map.co.door.wi.us/map) and listed under "Base Maps and Grids" folder and named "MCD (US Census bounds)"; and is a free data set under current GIS data policy (http://map.co.door.wi.us/gis-lio/GIS%20Data%20Policy.pdf) by being an attribute field of "Wards".

School Districts

- Layer Status: Layer has been completed countywide for at least 13 years, and generated from dissolving on "School" attribute of tax roll data.
- Custodian: Real Property Listing Office and Land Information Office
- Maintenance: Real Property Listing maintains all tax roll attributes and Land Information Office generates GIS file based on "School" attribute field.

- Standards: Layer is on Door County Web Map (http://map.co.door.wi.us/map) and listed under "Themed Maps" folder and named "School Districts"; and is a free data set under current GIS data policy (http://map.co.door.wi.us/gis-lio/GIS%20Data%20Policy.pdf) by being an attribute field of "Wards".

Wards (Election Boundaries)

- Layer Status: Wards is complete countywide
- Custodian: County Clerk
- Maintenance: Land Information Office
- Standards: Layer is on Door County Web Map (http://map.co.door.wi.us/map) and listed under "Themed Maps" folder and named "Wards"; and is a free data set under current GIS data policy (http://map.co.door.wi.us/gis-lio/GIS%20Data%20Policy.pdf).

Polling Locations

- Layer Status: Polling Address is an attribute of Wards and is also available as a point shapefile.
- Custodian: County Clerk
- Maintenance: Land Information Office maintains information when made aware of any changes to polling locations.
- Standards: Information is on Door County Web Map (http://map.co.door.wi.us/map) and appears under Information tab when user uses "Zoom To" > "Ward" with Poll Location and Address. Also, if a user uses the **Identify** *point* tool on the map, the **Information** tab will list **Municipality** header associated, with Ward, Poll Location, and Address.

Sanitary Districts

- Layer Status: Sanitary districts for voting and/or billing is a layer that was developed through the parcel maintenance and management
- Custodian: Real Property Listing Office
- Maintenance: Land Information Office developed, through mapping and parcel attributes maintained by Real Property Listing Office, and will continue to maintain as updates are reported.
- Standards:

Sanitary Serviced 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 Department
- Maintenance: Land Information Office maintains information when made aware of needed changes or necessary updates.
- Standards: Layers are on Door County Web Map (http://map.co.door.wi.us/map) and listed under "Sanitary" folder and named "Private Sanitary Systems" and "Public Sanitary Service".

Emergency Services Response Zones

- Layer Status: Emergency Response zones have been mapped with individual attribute fields for responding agency type – Police, Fire, Ambulance, or First-Responders.
- Custodian: Emergency Services and/or Sheriffs Dispatch

- Maintenance: Land Information Office maintains information when made aware of needed changes to any of the four types of response zones.
- Standards: Layers are on Door County Web Map (http://map.co.door.wi.us/map) and listed under "Themed Maps" folder, "Emergency Response" sub-folder, and can be displayed individually as "Emergency Response Zones", "Police/Law Enforcement", "Fire Department", "Ambulance" or "First Responders".

Parks

- Layer Status: State and Door County Parks are maintained in one polygon file.
- Custodian: Parks Department
- Maintenance: Land Information Office maintains information when made aware of needed changes to any State or County Park boundary or change with attributes.
- Standards: Layer is on Door County Web Map (http://map.co.door.wi.us/map) and listed under "Cultural/Recreation" folder and named "Parks".

Other Layers

Hydrography

- Layer Status: Door County maintains hydrography features of shoreland, lakes, ponds, and streams and this can be separate features for navigable water that can trigger Shoreland Zoning.
- Custodian: Soil & Water Conservation, Planning, Real Property Listing, and Land Information Office.
- Maintenance: Land Information Office maintains information when made aware of needed changes to hydrography.
- Standards: Layer is on Door County Web Map (http://map.co.door.wi.us/map) and listed under "Hydrography" folder with features for "Shore", "Lake", "Stream", "Navigable Stream", and "Navigable Pond".

Wetlands

- Layer Status: Door County received an updated countywide wetlands delineation from Wisconsin Department of Natural Resources (WI-DNR) in 2010.
- Custodian: Soil & Water Conservation, Land Information Office, Planning Department
- Maintenance: Planning Department maintains information to reflect changes following field determinations by qualified staff.
- Standards

3 LAND INFORMATION SYSTEM

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 and Real Property Listing Office coordinate with the greatest variation of departments and agencies with regards to land records. Departments with frequent land records business interactions or support would include the Information Systems Department and GIS Mapping Specialist in Planning. The next group of departments with regular interactions with 4 to 5 other departments regarding land records would include Soil & Water Conservation, Emergency Services, Sanitarian, Sheriffs, and Public Health. Although this last group of departments (Register of Deeds, Treasurer, Finance, County Clerk, Parks & Airport, Building Maintenance, Planners, Human Services, County Surveyor, and Assessors) may not have the variety of contacts with other departments regarding land records/mapping business due to their specialized nature; they each fulfill an important role in the County's land records system. For many departments, land records management or access may be a tertiary function, yet can be critical for conducting their primary business focus in a timely, accurate manner.

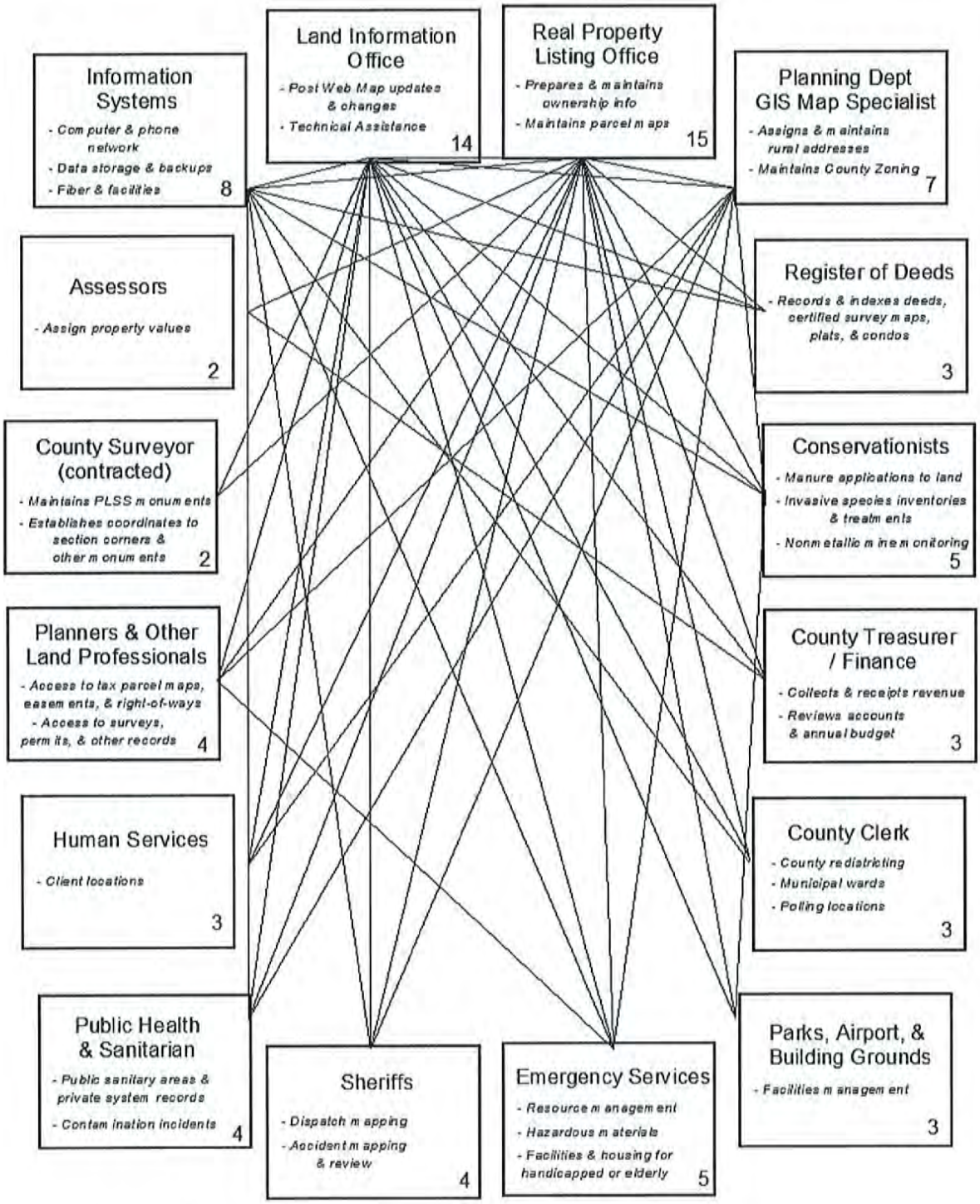

Diagram 1 - Door County Land Information System

Door County Parcel Data Workflow

Door County's parcel data involves a number of departments to complete the process from recording of a deed to having the record reflected on the County's land records site and available to others. Departments and processes include:

- Register of Deeds office
  - records real estate documents in IMS21 imaging system, and
  - creates grantor/grantee, tract indices in an in-house software program hosted on IBM Power 720 server;
  - sends real estate transfer returns to the State.
- Real Property Listing Office
  - processes real estate documents of transfer;
  - receives updated property values from the local municipal assessors;
  - receives assessment ratios and property tax credits from Wisconsin Department of Revenue (WI-DOR);
  - updates parcel maps, currently with AutoCAD software but with intentions to migrate to ESRI's Parcel Fabric within a year;
  - joins assessment attributes to parcel polygons and creates municipal and countywide GIS polygon coverage on a monthly basis;
  - assigns unique parcel ID's;
  - finalizes tax roll;
  - prints property owner tax bills and provides to local municipality;
  - scans and files plat of surveys, tie sheets, and PLSS control received from surveyors;
  - manages contracts for maintenance of section corner monuments and GPS coordinates with Baudhuin Incorporated, a local land surveying and engineering company; and
  - identifies parcels enrolled in WI-DNR Managed Forest programs.
- Planning Department GIS Mapping Specialist
  - maintains County Zoning for adopted rezoning changes, as received.
- GIS/LIO Coordinator
  - maintains any changes to Shoreland Zoning jurisdiction based on determinations of hydrology features to buffer;
  - posts monthly updates of tax parcels and County Zoning, as needed, to County Web Map;
  - provides GIS data as requested, including the submission of parcel polygon shapefile with tax roll data, County Zoning shapefile, and any other GIS requested data to Department of Administration (DOA) – for development and dissemination of information services such as Statewide parcel layer.
  - maintains Managed Forest Lands layer on Web Map
- Treasurer
  - Receives and receipts tax bill payments from property owners.
- Information Systems
  - Provides software, custom programming, network connectivity and general technology support to all County departments involved with parcel work flow.

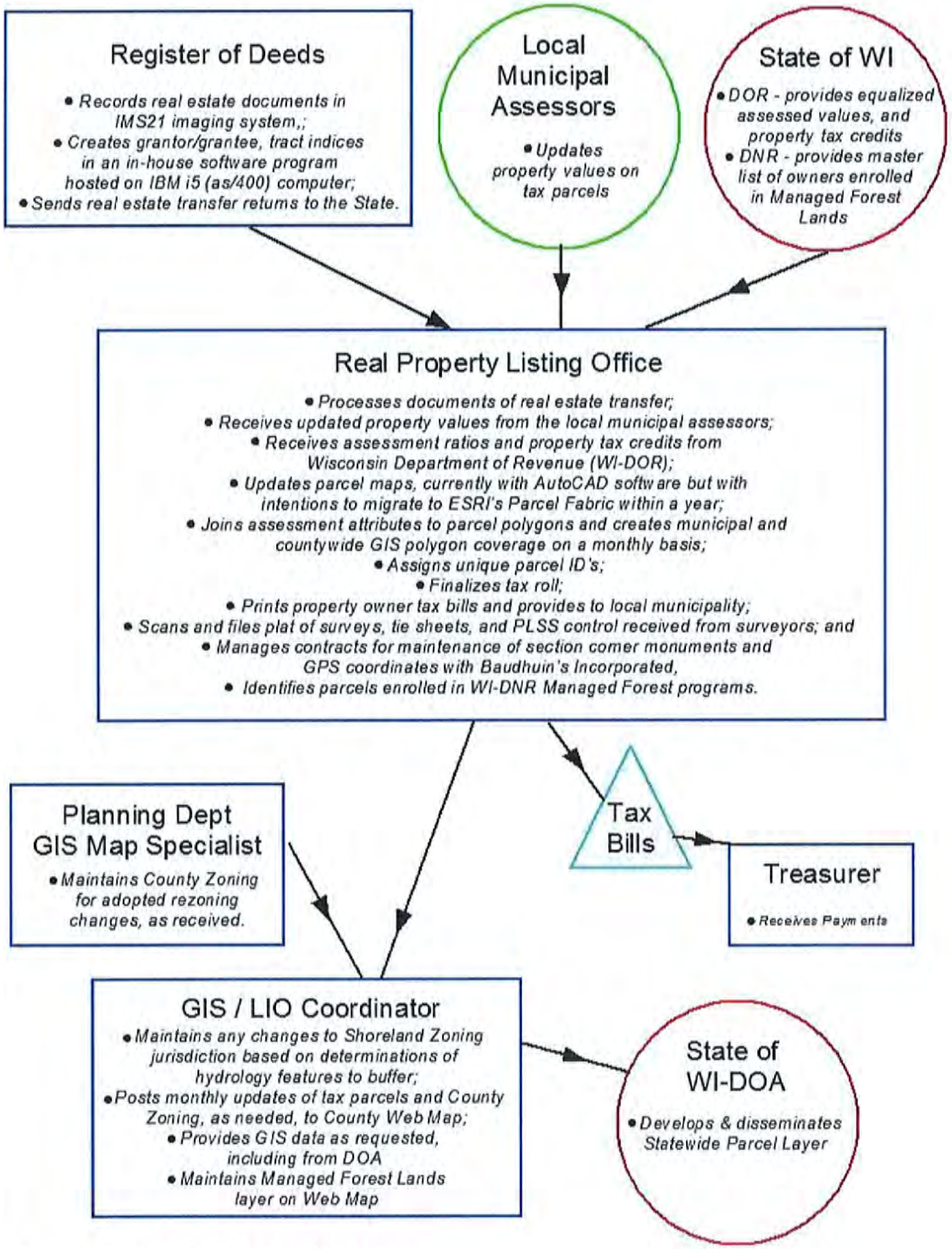

Diagram 2 - Door County Parcel Workflow

Technology Architecture and Database Design

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 Information Systems (IS) Department. The IS department manages file storage, software maintenance, and new system development and implementation. Almost all in-house client workstations are now 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 an increasingly mobile County workforce through a variety of portable devices.

An IBM Power 720 Express server running the IBM I operating system serves: the land records database systems for Register of Deeds Grantor/Grantee and Tracts Index; Real Property Listing parcel management and tax bills; Treasurer tax bill receipting; Planning Department permit tracking; and Sanitarian Department 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.

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).

Public access to these Real Property, Treasurer, Register of Deeds, 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.

Parcel mapping is currently maintained using AutoCAD software on a PLSS section basis, and then joined together monthly with ArcGIS tools to re-create the countywide parcel polygon shapefile. Staff from a handful of land departments, including Planning, Real Property Listing, Soil & Water Conservation, Sanitarian, and Land Information Office use GIS software ArcView3.3 and/or ArcGIS10.x to view, edit, or create shapefiles specific to their business needs. Conservation staff also use watershed modeling software (WMS) by Aquaveo, AutoCAD software for site design, and ArcPad on Panasonic toughbooks for in-field data collection of GIS features. Door County plans

to provide other GIS tools, including ArcGIS Pro, Google Earth Pro, and QGIS, as added options for staff to utilize.

Non-technical users and the general public can use the Door County Web Map for accessing GIS information and Pictometry services for viewing images. The Door County Web Map runs on GeoMoose and MapServer, both being free software; whereas Pictometry images were viewed on proprietary software, and more recently from their licensed servers. The Web Map provides orthophotography as a back-drop, directly links parcel geometry to land records database and vice-versa, and provides a direct link to imagery from Pictometry servers. Pictometry cloud servers house oblique and ortho imagery of every odd year since 2007 with select GIS shapefiles (parcels, address points, and road centerline) that the County posts as available overlays or reference searches. There is limited overlap between services; however, the Web Map strength is the GIS map records and interface, whereas Pictometry's focus is the variety of imagery. The Land Information Office has used ArcGIS online to offer parcel - land records access (see link ***New*** ***Tax Parcel Map & Land Records*** *for Smart Phones* on http://map.co.door.wi.us/) to mobile devices. Other ArcGIS online mapping has been offered in a limited function, primarily to provide access to a theme of one or two layers for a specific audience and/or purpose.

Metadata and Data Dictionary Practices

Door County has metadata on its more critical GIS layers, including tax parcels, road centerline, address points, and for other data sets received from outside sources, such as contours, Lidar DTM, and wetlands. Door County has not identified metadata software tools or a policy for maintaining a minimum metadata requirement.

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

Door County's main portal to Land Information Records and web mapping site is its portal page - http://map.co.door.wi.us/. This site has hyperlinks to Land Records Search, the Door County Web Map, the GIS-LIO Home Page, municipal road atlas and indexes in pdf format, surveyor tie sheets, PLSS control reference sheets, imagery view options provided by Pictometry, and a Tax Parcel map service through ESRI ArcGIS online with a parcel hyperlink to county land records system (designed for access from smart phones and other mobile devices).

Data Sharing

Data Availability to Public

Door County's data sharing policy was recently updated and adopted early this year, 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. Access to many types of records are available to the public 24-7-365 from the portal page - http://map.co.door.wi.us/.

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 any 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 County GIS data is requested, the government agency is charged just like any other request, whether from local municipality, or a State or Federal agency. 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. Online training classes and various webinars can be accommodating for departmental staff and may become more common in the future.

4 CURRENT & FUTURE PROJECTS

Parcel Maintenance Process

- Description: Door County Real Property Listing Office is planning to convert to the ESRI Parcel Fabric maintenance model and potentially the Local Government Information Model (LGIM) in an attempt to implement a process(es) that will accurately and timely maintain parcel changes and other feature layers that often have a coincidental boundary. Training of staff in use of new software and processes would be part of this project as well. Best practices for sharing parcel information through online cloud services and/or other technologies will be explored.
- Purpose: The purpose of the parcel maintenance conversion is to allow Real Property to maintain various PLSS and cadastral features (sections, easements, road right-of-ways, plats, condos, shoreline, lakes, and etc.) with parcels in a GIS format and on a countywide basis.
- Objectives: These cadastral features will be maintained regularly by one department that receives the source documentation and allow for dissemination of aligned features to the Web Map, ArcGIS online, or other avenues in a timely manner.
- Timeframe: Door County plans to begin the Parcel Fabric project as early as fall 2015 and complete within the first-half of 2016.
- Entities: Door County will seek professional assistance from a GIS consulting / services firm. The project will be coordinated through the Land Information Office for implementation with Real Property Listing Office. It is anticipated that the Programmer and a Network Specialist from the Information Systems Department may assist with tasks as well.
- Budget Estimate: $40,000.

GPS Coordinates on Public Land Survey System (PLSS) monuments

- Description: Door County will acquire GPS coordinates on select PLSS monuments through an agreement with a Wisconsin registered land surveyor.
- Purpose: New GPS control will help support positional accuracy of parcel mapping.
- Objectives: Parcel mapping accuracies can be verified or corrected in areas where survey control is lacking or where deed descriptions or surveys are conflicting.
- Timeframe: Door County may acquire additional GPS coordinates on survey control at least once over the next three years, based on need and scope.
- Entities: Door County will seek professional assistance from a licensed land surveyor firm. The project will be coordinated through the Land Information and Real Property Listing Offices.
- Budget Estimate: $105,000.

Elevation Benchmark on Strategically Placed Survey Monuments

- Description: Door County will establish strategically placed survey monuments with an elevation benchmark determined to support floodplain delineations in high-profile areas.
- Purpose: New bench marks would help support floodplain determinations.
- Objectives: Bench marks would reduce surveying costs in areas where elevation delineations are critical for determining floodplain boundaries.
- Timeframe: Door County may contract for establishing benchmark locations at least once over the next three years, based on need, scope, and funding.
- Entities: Door County will seek professional assistance from a licensed land surveyor firm. The project will be coordinated through the Land Information Office and records kept with the Real Property Listing Office.
- Budget Estimate: $55,000.

Elevation Study Areas to support FEMA approved Floodplain Delineations

- Description: Door County would coordinate study areas around three inland lakes (Clark, Kangaroo, and Europe Lakes) to support FEMA approved floodplain delineations in these high-profile areas.
- Purpose: New, more-accurate studies would allow for property owners to purchase flood insurance at a reduced rate, may remove some areas from floodplain altogether, and reduce the need for property owners to purchase individual engineered studies prior to any proposed construction or fill.
- Objectives: Engineered studies would reduce costs for flood insurance and would allow for one comprehensive determination of floodplain boundaries.
- Timeframe: Door County may contract for conducting elevation studies at least once over the next three years, based on need, scope, and funding.
- Entities: Door County would seek professional services under the direction of a licensed land surveyor to conduct the studies. The project will be coordinated through the Land Information Office and records kept with the Real Property Listing Office and/or Planning Department.
- Budget Estimate: $60,000.

Aerial Imagery

- Description: Door County will acquire new aerial imagery.
- Purpose: Updated imagery provides a visual lay of the land and is a snapshot in time that can be useful across multiple disciplines.
- Objectives: New detailed imagery would be made available on the County Web Map for anyone to access.
- Timeframe: Door County may contract for acquiring aerial imagery one or more times over the next three years, based on need, scope, and funding.
- Entities: The project(s) would be coordinated through the Land Information Office with a professional contractor to provide services/products.
- Budget Estimate: $55,000.

Lidar technology to acquire Elevation Terrain Model

- Description: Door County will acquire new elevation data through Lidar technology for a significant portion of the County.
- Purpose: Updated elevation information would be used to support terrain models.
- Objectives: Accurate elevation data would be a critical factor in determining appropriate development and conservation practices.
- Timeframe: Door County may contract for acquiring elevation information through Lidar technology at least once over the next three years, based on need, scope, and funding.
- Entities: Door County will seek professional assistance from a licensed land surveyor firm. The project will be coordinated through the Land Information Office and Real Property Listing Office.
- Budget Estimate: $85,000.

Land Records Management System

- Description: Door County would evaluate existing Land Records management system and potentially acquire new software and/or services for processing and retrieving records.
- Purpose: New Land Records system would allow for departments to more efficiently manage records and public to retrieve.
- Objectives: New system would save staff time and provide more functionality.
- Timeframe: Door County may contract for software and/or services sometime over the next 3 years for an improved Land Records Management system, depending on need, scope, and funding.
- Entities: Door County may seek a new Land Records Management system from a vendor specialized in the land records management business with County and local government. The project would be coordinated through the Information Systems Department and Land Information Office with input from several of the land departments that regularly manage land records.
- Budget Estimate: $157,000 with annual maintenance fees of $12,000.

Other Project Sections

Projects Related to Strategic Initiative Grants

Door County has the objective to apply for a Strategic Initiative Grant each year through the WLIP for the full eligible funding amount of $50,000 annually. Door County may include more than one project in a given year to expend the full grant amount. The County may also separate project scope/goals and invoicing to individual calendar years to take advantage of Strategic Initiative grant funding over more than one year for ongoing and/or large-funded efforts.

Ongoing Costs Not Associated with a Specific Project

Software maintenance and online hosting services have become a significant expense, approximately $25,000 annually, for maintaining a Door County GIS that users have

become accustomed to. Annual expenses include maintenance on software (ESRI ArcGIS, Spillman public safety mapping modules, Autodesk AutoCAD, and Aquaveo watershed modeling), and hosting services through (Pictometry Online, ESRI Online, and IBM PHP Server). For approximately the last eight years, Door Count y has also had ongoing annual costs for aerial imagery; this is due to acquiring imagery every other year and entering into two-year agreements for schedule of payments.

Completed Projects

Project accomplishments completed in the last five years include:

- Aerial Imagery Acquisition in spring of years 2011, 2013, and 2015;
- Aerial Imagery (both oblique & ortho views for all odd years 2007 - 15) accessed through Pictometry cloud service;
- Web Map enhanced with direct access service to imagery server for integration and easy-access;
- Used ArcGIS Online to allow Tax Parcels with Land Records hyperlink and other specialized information to be accessible from mobile devices.
- Added new Door County Web Map layers: snowmobile trails, invasive plant inventories & treatments, historic orthophoto years, Lat-Long & US National grids, county boundary in waters of Lake Michigan & Green Bay, 5-meter bathymetry, address points, easements, road right-of-way, certified survey map, plat of survey, private sanitary systems, and broadband telecommunication providers;
- In-house Web Map layers and service maintained regularly to meet user needs;
- Imaged over 200,000 additional Register of Deeds documents;
- In 2014, Register of Deeds tract index books were scanned and digitally indexed, and then made available through an external online service (http://door.colortract.com/), allowing free searches from the convenience of an internet connection.
- Planning Department started imaging LOMA's (FEMA Floodplain Letter of Map Amendment) and provided access to those electronic documents through the Public Land Records website on the Parcel Information web page;
- Indexed Door County's PLSS survey control to Wisconsin State Cartographer's office website service "PLSSFinder";
- Imaged survey control reference and monument tie sheets and made accessible online.

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

- Project Description/Goal: Door County plans to make significant progress and possibly meet the searchable format for both Benchmark 1 and 2 by next year. Door County plans to submit data in the new format next year; however, address records are not currently parsed out to the number of fields required by the State. Therefore, the time to populate all address records to new format may extend beyond next year, but implemented by March 31, 2018 would appear very obtainable.
- Business Drivers: Information Systems Programmer, Real Property Lister, and Land Information Officer have met to coordinate joining new parcel record attributes that align with State format. A number of fields will need to be created, reformatted and/or renamed; for example, the "Siteaddress" will need to be created from concatenating several parsed out address fields that are currently not being tracked.
- Objectives/Measure of Success: The objective is to meet the searchable format for Benchmarks 1 & 2 (Parcel and Zoning Data Submission, Extended Parcel Attribute Set Submission) by 2017 or sooner.
- Project Timeframes: Benchmarks 1 & 2 are anticipated to be met sometime over the next six-months to one-and-a-half-years.
- Responsible Parties: Information Systems Programmer, Real Property Lister, and Land Information Officer will coordinate converting data to new State format.
- Estimated Budget Information: This work involves these three County staff devoting time to the project.

Project Plan for Parcel Completion (Benchmarks 3)

- Project Description/Goal: Door County has all parcels mapped (currently over 41,000) and maintains on a monthly basis. As new section and survey control is recorded, parcel adjustments are made. Door County plans to adopt ESRI's Parcel Fabric system process/software for tracking parcel changes and related cadastral layers in 2016.
- Business Drivers: Real Property Lister will continue to map parcel changes and updates and Land Information Officer will assist by providing technical support and coordinating professional services. The majority of GIS system users rely on current parcel mapping.
- Objectives/Measure of Success: All tax parcels are mapped (completing benchmark 3) and Door County plans to keep tax parcel mapping and other related layers current in a timely, efficient manner.
- Project Timeframes: Digital parcel mapping has been completed countywide for over 15 years; and therefore, Benchmark 3 has been met.
- Responsible Parties: Real Property Lister continues to provide ongoing mapping maintenance, and GIS/LIO Coordinator performs monthly quality control checks and posts to the County Web Map.
- Estimated Budget Information: Parcel mapping is complete and the County Real Property Lister and GIS/LIO Coordinator perform ongoing maintenance.

Project Plan for PLSS (Benchmark 4)

- Project Description/Goal:
  - Door County's planned approach is to re-inventory section corners for physical monuments, and for assigned survey-grade coordinates. Door County will integrate corners with GPS coordinates into the parcel fabric. Due to cost, accessibility, or land ownership, not all PLSS section corners will be assigned a survey grade coordinate and integrated into the parcel fabric. Non-survey grade section corners will be documented.
  - Current status of PLSS data in the county including a tally of the total number of corners, their remonumentation status, and their coordinate status (accuracy class) if known is listed under Foundational Elements on page 5. Existing accuracy – survey-grade, sub-meter, and approximate will be assigned. All survey-grade coordinates were collected under the direction of a professional land surveyor, Baudhuin Incorporated. Approximate – have an estimated accuracy of within 5 meters and derived from public records and other relevant information.
  - Goals for the project over the three-year planning period are to include new corners to be remonumented and/or rediscovered, to have new coordinates established, document the accuracy class for these new coordinates, and integrate these new points into the parcel fabric.
  - Documentation for any missing corner data, such as interior of State Parks or State owned preserves, or unknown meander corners will also be inventoried.
  - Door County will continue to collaborate and share section corner information with Kewaunee County (the only common land boundary County) and any other interested entitiy.
- Business Drivers: Real Property Lister, Land Information Officer, and contracted County Surveyor have met to assess section corners and begin to define extents of future work to acquire GPS control on various corners.
- Objectives/Measure of Success: The objective is to meet Benchmark 4 (PLSS) by the end of 2017 or sooner, which would include integrating additional sectional corner points with GPS coordinates into the parcel fabric.
- Project Timeframes: Benchmark 4 is anticipated to be met in about two years.
- Responsible Parties: Real Property Lister and Land Information Officer will coordinate inventorying PLSS data, contracting work, and incorporating survey control into parcel fabric.
- Estimated Budget Information: This work involves staff time for these two County positions (Real Property Lister and Land Information Officer) and contracted work from acting County Surveyor (Baudhuin Incorporated) to provide coordinates.