Land Records Modernization Plan
2016-2019

above expectations

BAYFIELD COUNTY
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EXECUTIVE SUMMARY

This document, the 2015 *Uniform Instructions for Preparing County Land Information Plans*, sets forth the directions and minimum plan elements for county land information plans. The format of these instructions is designed to assist counties in organizing their plan layout. Background information is provided for each section, which the county may choose to retain in their own plan. Examples are included but are only intended as guides. Where the instructions ask counties to address certain required topics, this is noted.

Executive Summary Directions

Bayfield County is pleased to submit a Land Records Modernization Plan for the upcoming three year planning horizon. The plan that follows is intended to build on the significant progress that resulted from the implementation of Bayfield County’s initial, and subsequent, Land Records Modernization Plans filed in 1992, 1999, 2005 and 2015. In order to further the goals of modernizing land records and availing those records to those who need them, Bayfield County intends to continue to develop, maintain, and grow a Geographic Information System (GIS) that will provide ready access to a wide array of spatially referenced digital data sets. This plan was prepared by the Bayfield County Land Records Department overseen by the Executive Committee and Land Records Council of the Bayfield County Board of Supervisors.

About this Document. This document is a land information plan for Bayfield County prepared by the land information officer (LIO) and the land information council. By Wisconsin statute, “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 2015, Bayfield County received $64,368.00 in WLIP grants and retained a total of $31,992.00 in local register of deeds document recording fees for land information. Beginning in 2016, WLIP Strategic Initiative grants are projected to increase the county land information budget by $50k per year.

Land Information in Bayfield County. Many land and non-land related departments rely on GIS on a daily basis. It is imperative that we have the most up to date information available for the public, private and government agencies. Many decisions made in reference to new land sales and broader planning purposes. Bayfield County has become dependent on having GIS at the fingertips. We do not know why many of our users access our data but when it is not available the office is inundated by phone calls from the public when our interactive mapping site is down for maintenance.

Three-Year Mission Statement. It is the mission and goal of the County to stay informed as the industry creates hardware, software and technology in the next three years. Part of making Bayfield County Land Records a leader in the next three years is to continue to integrate land records in relational databases along with audio and visual aspects. The spatial data is topologically structured to assure integration between all levels. Some of our main aspects that we want to focus on is the Public Land Survey System, road centerlines, incorporate survey grade GPS in the parcel mapping, additional update interactive mapping, recreation layers increase mobile technology, increase use in technology and update and enhance base layers

1. Continued work to streamline countywide integration of tax/assessment data with parcel polygons

2. Move forward with a plan to create 100% PLSS remonumentation with survey grade GPS coordinates over the next 25 years

3. Meet all four benchmarks as set forth by the DOA, and described in 2016 WLIP grant application.
• Benchmark 1 – Parcel and Zoning Data Submission - completed
• Benchmark 2 – Extended Parcel Attribute Set Submission - completed
• Benchmark 3 – Completion of County Parcel Fabric – completed
• Benchmark 4 – Completion and Integration of PLSS - ongoing

4. Expansion of the use of mobile GPS/GIS technology

5. Document imaging improvements

6. Website development and hosting for improved access to land records

7. Next Generation 911. The county will need to plan and implement next generation 911 in the future. Communication and planning between departments will be essential before and during this project to ensure all GIS data requirements are met

8. Collect county-wide 6-inch resolution leaf-off orthophotography and oblique that will be flown in the spring of 2018.
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
- Meet a June 30, 2017 deadline to post certain types of parcel information online

Any grants received and fees retained for land information through the WLIP must be spent consistent with the county land information plan. The Uniform Instructions for Preparing County Land Information Plans are designed as a template, but leave flexibility as to how counties may choose to address the minimum plan components. The county is able to include as much detail as necessary to make the planning process useful at the local level.

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 proposed that funding be made available to counties in the form of Strategic Initiative grants to be prioritized for the purposes of parcel dataset improvement. For Strategic Initiative grant eligibility, counties will be 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—are determined through a participatory planning process and will be detailed in future WLIP grant applications.

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. Thus, the minimum planning horizon for these documents is three years. The plan may incorporate a planning horizon that is longer if the needs and priorities of the participants warrant.

The first post-Act 20 required update deadline for draft county land information plans is December 29, 2015. Final plans are due March 31, 2016.
County Land Information Plan Timeline

January – April 2015
DOA leads workgroup to update plan instructions

May 2015
Public review and comment of draft plan instructions

June 2015
Instructions finalized

June – December 2015
Counties create draft land info plans

December 29, 2015
Draft county plans complete

January – March 2016
Plan review and approval process

March 31, 2016
Final county land info plans due

County Land Information System History and Context
In order to further the goals of modernizing land records and availing those records to those who need them, Bayfield County intends to continue to develop, maintain, and grow a Geographic Information System (GIS) that will provide ready access to a wide array of spatially referenced digital data sets. This plan was prepared by the Bayfield County Land Records Department overseen by the Executive Committee and Land Records Council of the Bayfield County Board of Supervisors.

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. A record documenting county land information council approval should be included in the final submission of the plan to DOA. County board approval of plans is encouraged but not required.

A county may amend a plan with updates or revisions as appropriate. If amended, a digital copy of the amended plan and record of land information council approval should be sent to the WLIP.
This plan was prepared by the county LIO, the Land Information Council, and others as listed below.

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Affiliation</th>
<th>Email</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Scott M. Galetka</td>
<td>Land Records Administrator,</td>
<td>Bayfield County Land</td>
<td><a href="mailto:SGaletka@BayfieldCounty.org">SGaletka@BayfieldCounty.org</a></td>
<td>715-373-6156</td>
</tr>
<tr>
<td></td>
<td>Land Information Officer</td>
<td>Information Office</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Dan Anderson</td>
<td>County Treasurer</td>
<td>Bayfield County Treasurer</td>
<td><a href="mailto:DAnderson@BayfieldCounty.org">DAnderson@BayfieldCounty.org</a></td>
<td>715-373-6131</td>
</tr>
<tr>
<td>*Lynn Divine</td>
<td>Real Property Lister</td>
<td>Land Records</td>
<td><a href="mailto:LDivine@BayfieldCounty.org">LDivine@BayfieldCounty.org</a></td>
<td>715-373-6132</td>
</tr>
<tr>
<td>*Bret Rondeau</td>
<td>County Board Member</td>
<td>Supervisory District 13</td>
<td><a href="mailto:brondeau@bayfieldcounty.org">brondeau@bayfieldcounty.org</a></td>
<td>715-798-3846</td>
</tr>
<tr>
<td>*Patricia Olson</td>
<td>Register of Deeds</td>
<td>Register of Deeds</td>
<td><a href="mailto:POlson@BayfieldCounty.org">POlson@BayfieldCounty.org</a></td>
<td>715-373-6119</td>
</tr>
<tr>
<td>*Jon Wheeler</td>
<td>Realtor</td>
<td>Blue Water Realty</td>
<td><a href="mailto:Jon@BlueWaterRealty.org">Jon@BlueWaterRealty.org</a></td>
<td>715-413-0452</td>
</tr>
<tr>
<td>*Paul Susienka</td>
<td>Sheriff</td>
<td>Bayfield County Sheriff’s</td>
<td><a href="mailto:PSusienka@BayfieldCounty.org">PSusienka@BayfieldCounty.org</a></td>
<td>715-373-6300</td>
</tr>
<tr>
<td>*Robert Mick</td>
<td>County Surveyor</td>
<td>Land Records</td>
<td><a href="mailto:sdsconsultingco@gmail.com">sdsconsultingco@gmail.com</a></td>
<td>715-373-5022</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><a href="mailto:CountySurveyor@BayfieldCounty.org">CountySurveyor@BayfieldCounty.org</a></td>
<td></td>
</tr>
</tbody>
</table>

* Land Information Council Members designated by asterisk
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 by users to conduct most mapping and geospatial analysis.

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

The list of WLIP's Foundational Elements has evolved with each update of the county land information plan instructions. They are a guideline of what counties need to address in their plans *at a minimum*. As the list of layers in this document is not exhaustive, counties are welcome to insert additional layers for geospatial data categories stewarded by the county or municipalities that are of importance to local business needs.

<table>
<thead>
<tr>
<th>FOUNDATIONAL ELEMENTS</th>
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<tbody>
<tr>
<td>PLSS</td>
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</tr>
<tr>
<td>Administrative Boundaries</td>
</tr>
<tr>
<td>Other Layers</td>
</tr>
</tbody>
</table>
Public Land Survey System Monuments

Layer Status

For the PLSS Foundational Element, the table below documents Layer Status

<table>
<thead>
<tr>
<th>PLSS Layer Status</th>
<th>Status/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of PLSS corners (section, ¼, meander) set in original government survey</td>
<td>5082</td>
</tr>
<tr>
<td>Number and percent of PLSS corners that have been remonumented</td>
<td>3530 69%</td>
</tr>
<tr>
<td>Number and percent of remonumented PLSS corners with survey grade coordinates (see below for definition)</td>
<td>1425 28%</td>
</tr>
<tr>
<td>Number and percentage of survey grade PLSS corners integrated into county digital parcel layer</td>
<td>0 0%</td>
</tr>
<tr>
<td>Number and percentage of non-survey grade PLSS corners integrated into county digital parcel layer</td>
<td>0 0%</td>
</tr>
<tr>
<td>Percentage of PLSS corners that have digital tie sheets (whether or not they have corresponding coordinate values)</td>
<td>3530 69%</td>
</tr>
<tr>
<td>Digital tie sheets available online? Yes or No</td>
<td>Yes</td>
</tr>
<tr>
<td>Approximate number of PLSS corners believed to physically exist based on filed tie-sheets or surveys, but do not have coordinate values</td>
<td>2369</td>
</tr>
<tr>
<td>Approximate number of PLSS corners believed to be lost or obliterated</td>
<td>1552</td>
</tr>
<tr>
<td>Total number of PLSS corners along each bordering county</td>
<td>217 Lake Side 167 Total 384</td>
</tr>
<tr>
<td>Number and percent of PLSS corners remonumented along each county boundary</td>
<td>139 64% Lake Side 68 40% Total 207 53%</td>
</tr>
<tr>
<td>Number and percent of remonumented PLSS corners along each county boundary with survey grade coordinates</td>
<td>44 20% Lake Side 14 8% Total 58 15%</td>
</tr>
<tr>
<td>Does your county collaborate with or plan to collaborate with neighboring counties for PLSS updates on shared county borders?</td>
<td>Yes, We have about 100 miles of lakeshore that does not border a County and borders the water and will have to do this on our own</td>
</tr>
</tbody>
</table>

Custodian

- Land Records Department
- County Surveyor

Maintenance

Bayfield County has a survey program that complies with the requirements of Wisconsin Administrative Code A-E 7.08 and Wisconsin Statute 59.74; and we plan to continue the program countywide. Coordinates are maintained in the Bayfield County Coordinate System which is mathematically relatable to the North American Datum (NAD) 83(91). In 2005 the County started to collect GPS coordinates on existing Section and ¼ corners. Currently the County is trying to hire a field technician to collect survey grade coordinates on section corners in hopes to direct one fulltime staff with the County surveyor supervision. Bayfield County has designated 50k for 2015-16 year with a private contractor to complete the Town of Iron River so we can begin improving the accuracy in our parcel maps. We hope to be completely remonumented by 2031 with existing funding, using a contractor and full time staff. Existing coordinates were obtained on PLSS corners with either a Leica 1200+ RTK GNSS or a Leica Viva GS14 RTK GNSS or a Leica 1205+ Robotic Total Station through the our contracts with Nelson Surveying out of Ashland WI.
Bayfield County has collected some coordinates with an R8 Trimble since 2009 using the HARN stations and in 2014 we started using Virtual Reference System (VRS).

**Standards**

- **Statutory Standards for PLSS Corner Remonumentation**
  s. 59.74, Wis. Stats. Perpetuation of section corners, landmarks.
  s. 60.84, Wis. Stats. Monuments.
  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.

**Other Geodetic Control and Control Networks**

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

**Layer Status**

- The Geodetic Control Network was completed in 1994, it consists of 123 stations and 2 HARN stations at about 3 mile intervals (connected to 6 HARN stations in total). The relative horizontal positional accuracy between all adjoining stations of the network, evaluated at the 95% level, does not exceed 0.046 feet. Most station pairings have relative horizontal accuracies of 0.02 feet. The network has been Blue Booked. Coordinates are maintained in the Bayfield County Coordinate System which is mathematically relatable to the North American Datum (NAD) 83(91).

- The Wisconsin Department of Transportation (WisDOT) has developed a state wide Global Positioning System (GPS) reference station network. This network, called Wisconsin Continuously Operating Reference Stations (WISCORS) Network, consists of permanent GPS sites which provide real-time corrections to mobile users. Ashland County Airport is one of these stations, and two more in Bayfield County have been placed in Herbster and Cable.

- WisDOT has completed all the leveling and GPS observations for the Wisconsin Height Modernization Program (WI-HMP) in Bayfield County and all of the data has been Blue Booked. As part of this project, Bayfield County constructed approximately 4 benchmarks near City of Washburn which were included in the Height Modernization project. These benchmarks were built to the same specifications as the monuments for the Height Modernization Program and they have been Blue Booked.

- National Geodetic Survey (NGS) has historic control throughout the county. Information for these can be found on the Wisconsin State Cartographer’s Control Finder website. As time allows we would like to locate these control monuments.

- This layer is available on our county GIS website.

**Custodian**

- Land Records Department
- County Surveyor

**Maintenance**

- Bayfield County works with WisDOT to protect and preserve the Geodetic, CORS and Height Modernization networks. We keep an eye on these to make sure the signs are intact and visible. When we are notified of pending road work we try to work with all parties to preserve these monuments.

**Standards**

- Not in statute
Parcel Mapping

Parcel Geometries

Layer Status
- Bayfield County has had completed parcel mapping for quite some time and has converted the parcel mapping from AutoCad to shape file format in 2007. Originally the aerial imagery was not used as a base layer so we did not have the background check to see if the aerials and roads match, this may be the reason why some of our parcels are 75-200 feet off from on the ground coordinates. At that time we brought the maintenance in-house so we can update the parcels as changes come in. Currently we have the GIS Technician I update the parcels but in the future we would like to move this to the tax lister and assistant lister. Depending on staffing and retirements this will have to be further evaluated. Since then in 2009 we imported the parcel in geodatabase format in SDE. We did not put it in a parcel fabric because it was not developed yet. Although our parcels are complete they lack in accuracy, this is one of our biggest cautions when using the data. In 2016 we plan on re-parcel map the town of Iron River using ESRI’s parcel fabric to use some of the tools available to us in the maintenance and parcel publication. We also update our Metedata as often as we can.
- This layer is available on our county GIS website and we offer the parcels on our ftp site free of charge.
- We maintain a parcel tax number and perform joins against the Land Information database at any time.
- Bayfield County does plan to use ESRI’s data model when we incorporate the GPS coordinates and new grid from the PLSS work.

Custodian
- Land Information Department

Maintenance
- This layer is in a constant state of maintenance. Parcel splits are mapped as they receive a parcel number from the tax lister.

Standards and Documentation
- Data Dictionary – A data dictionary for the parcel layer is currently available with definitions for each element/attribute name, however more work could be done to include explanations of county specific attribute construction.

Assessment/Tax Roll Data

Layer Status
- Our tax system was developed in partnership with three other counties (Sawyer, Burnett & Price). The name of the program is called Novus. Currently a total of 5 counties in Wisconsin use the program; Bayfield, Burnett, Price, Sawyer & Washburn. Support is provided by Allshore Virtual Staffing, Ken Hebbe, and our internal IT Departments. We prepare and print the assessment rolls, tax rolls and tax bills. This is done by the Real Property Lister.
- Ownership/Assessment/Tax information can also be found on our county GIS website.

Custodian
- Land Information and the County Treasurer Office

Maintenance
- This data is in a constant state of maintenance. Property sales, splits, mailing address changes and assessment data imports.

Standards
- s. 73.03(2a), Wis. Stats. Department of Revenue (DOR) – Powers and duties defined.
- Department of Revenue Property Assessment Manual – Chapter 5 and DOR format standard requested by DOR for assessment/tax roll data
- s. 59.72(2)(a), Wis. Stats. Presence of all nine “Act 20” attributes
Crosswalk of attributes

### Act 20 Attributes Required by s. 59.72(2)(a)

<table>
<thead>
<tr>
<th>Field Name(s) in County Land Info System</th>
<th>Notes on Data or Exceptions to DOR Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessed value of land</td>
<td>TASASSESSMENT.AVLV</td>
</tr>
<tr>
<td>Assessed value of improvements</td>
<td>TASASSESSMENT.AVIV</td>
</tr>
<tr>
<td>Total assessed value</td>
<td>TASASSESSMENT.AVLV + TASASSESSMENT.AVIV</td>
</tr>
<tr>
<td>Class of property, as specified in s. 70.32 (2)(a)</td>
<td>TASASSESSMENT.AVCID</td>
</tr>
<tr>
<td>Estimated fair market value</td>
<td>TAXMASTER.EFMUL + TAXMASTER.EFMVI</td>
</tr>
<tr>
<td>Total property tax</td>
<td>TAXMASTER.REDVE</td>
</tr>
<tr>
<td>Any zoning information maintained by the county</td>
<td>TASZONING.ZNID + LU.ZONING.ZNCODE</td>
</tr>
<tr>
<td>Any property address information maintained by the county</td>
<td>TASADDRESS.STNUM + LU.STREETNAME.FULLNAME</td>
</tr>
<tr>
<td>Any acreage information maintained by the county</td>
<td>TASMASTER.ACRES</td>
</tr>
</tbody>
</table>

### Non-Assessment/Tax Information Tied to Parcels Land Use Permits

**Layer Status**
- Land Use Permits have been scanned in back to April 2008. Digital files are indexed by Town and Date online in a pdf format. [http://www.bayfieldcounty.org/226/Issued-Permits](http://www.bayfieldcounty.org/226/Issued-Permits) Paper copies are in flies and hope to be scanned in and published online.

**Custodian**
- Zoning/Land Use Department

**Maintenance**
- This data is in a constant state of maintenance. As new permits come in they are imaged and indexed.

**Standards**
- Not in statute

### Non-Assessment/Tax Information Tied to Parcels Septic Records

**Layer Status**
- Septic data is online [http://septicsearch.com/Pump/Default.aspx](http://septicsearch.com/Pump/Default.aspx) for Bayfield County and tied to the Parcel Number, Name, Address, Lot, Block, Sanitary Permit Number, State permit, Subdivision, and year issued.

**Custodian**
- Zoning/Land Use Department

**Maintenance**
- This data is in a constant state of maintenance. As new permits come in they are imaged and indexed on line.

**Standards**
-
Non-Assessment/Tax Information Tied to Parcels - Easements

Layer Status
• We don’t map easements at this time, parcels are the first priority. There are many vague easements which will be difficult to map. Most power line easements are blanket easements. Many access easements say, "over the existing road as traveled", these are difficult to map with our extensive tree cover. Mapping all easements would be a large project and would take thousands of hours to complete.

Custodian
• N/A

Maintenance
• N/A

Standards
• N/A

Non-Assessment/Tax Information Tied to Parcels – Non-Metallic Mining

Layer Status
• This layer exists for all permitted non-metallic mining sites within the county; however it is not directly integrated into the parcel polygons as attributes.
• This layer is available on our county GIS website.

Custodian
• Zoning/Land Use Department

Maintenance
• The goal is to capture the pits once each year the site is measured with a Trimble mapping grade GPS to determine the pit size, so the layer is current as a snapshot once per year. We are holding off until we receive the 2015 aerial mapping to digitize the new areas.

Standards
• NR 135, Wis. Admin. Code, Non-Metallic Mining Reclamation.

Non-Assessment/Tax Information Tied to Parcels – Restrictive Covenants

Layer Status
• We don’t map restrictive covenants at this time, parcels are the first priority. We would like to create a layer which shows all the parcels in which the county retained the mineral rights.

Custodian
• N/A

Maintenance
• N/A

Standards
• N/A

Non-Assessment/Tax Information Tied to Parcels - Brownfields

Layer Status
• We don’t map brownfields at this time.

Custodian
• N/A

Maintenance
• N/A

Standards
• N/A

Non-Assessment/Tax Information Tied to Parcels – Restrictive Covenants

Layer Status
• We don’t map restrictive covenants at this time, parcels are the first priority. We would like to create a layer which shows all the parcels in which the county retained the mineral rights.

Custodian
• N/A

Maintenance
• N/A
ROD Real Estate Document Indexing and Imaging

Status
- **Grantor/Grantee Index.** As of November 2015 the grantor/grantee index computer database is populated back to 2000. The grantor/grantee books have data from the original land patents to present. Since 2000 all documents are only entered into the computer database.
- **Tract Index.** The tract index is PLSS based. The tract index includes all deeds, mortgages and easements and any other miscellaneous documents pertaining to real estate. As of November 2015 the tract index computer database is populated back to 2000.
- The tract index books have data from the original land patents to the present. We still tract in both books and on computer.
- **Imaging.** Imaging of documents relating to property transactions in the Register of Deeds began in 2000. All historic vital records and all historic Deeds are not imaged. Mortgages are imaged back to 2000. Lis Pendens are imaged back to 2000. Federal Tax Liens are imaged back to 2004. Since 2000 all documents are imaged upon recording.

Custodian
- Register of Deeds Office

Maintenance
- Bayfield County images and indexes all documents when they are recorded. Software vendor (Fidlar) updates the programs with technology changes. Data is backed up offsite through the software vendor. Data users help with quality control of the data.

Standards
- 59.43, Wis. Stats. Register of deeds; duties, fees, deputies.
- 706, Wis. Stats. Conveyances of real property; Recording; Titles.
- 236, Wis. Stats. Platting Lands and Recording and Vacating Plats.
- 703, Wis. Stats. Condominiums.
- 84.095, Wis. Stats. Transportation Project Plats.

LiDAR and Other Elevation Data

LiDAR

Layer Status
- Bayfield County had LiDAR flown in May 2009. This was part of a Wisconsin Coastal Grant from NOAA that encompassed 1 mile inland that included buffers around the cities.
- Bayfield County had LiDAR flown in the Fall of 2015 for the Lake Superior Watershed about 70% of the county. The data is currently being processed so the County does not have the final data at this time. This as a partnership Grant with the Department of Administration and Wisconsin Coastal Management Program by Ayres Associates/Quantum Spatial. The data will meet the USGS latest specifications.
- The County has no immediate plans to reacquire LiDAR; however this may change if a need arises. The County would like to reacquire countywide LiDAR around 2030 or possibly earlier if FEMA plans on updating the county floodplain maps.
- Bayfield County has budgeted to collect the remainder of the county not covered in the Lake Superior flood plain

Custodian
- Land Records Department

Maintenance
- No maintenance required as this is a static (snap shot in time) data set.

Standards
- The Data will adhere to the USGS Lidar Base Specifications v1.2. In addition to the requirements outlined in the USGS Base Lidar Specification v1.2, lidar data and derived products must meet the current definition of Quality Level 2 (QL2). Upgrades to QL1 are allowed but the cost of the upgrades is the responsibility of the applicant.
LiDAR Derivatives
Layer Status
- As part of the USGS LiDAR Base Specifications, the deliverables are defined to meet the specifications.
- Metadata
- Raw Point Cloud
- Classified Point Cloud
- Bare-Earth Surface (Raster Digital Elevation Model)
- Breaklines

Custodian
- Bayfield County Land Records Department

Maintenance
- This is a static dataset. Portions of the dataset can be updated. We are looking on training on what the best way to maintain the dataset.

Standards
- None in statute

Orthoimagery
Layer Status
- Countywide color 6 inch resolution. Acquired April 2015 leaf-off. The data is currently being processed so the County does not have the final data at this time. This was done as part of the 2015 Wisconsin Regional Orthophotography Consortium (WROC) project. Contractor was Ayres Associates/Quantum Spatial.
- The County would like to get on a five year rotation alternating between standard orthoimagery and oblique imagery. In 2020 the county would like to acquire countywide color four way obliques (somewhere from 4 inch to 9 inch resolution on the obliques) along with color 6 inch orthoimagery. Then in 2025 acquire countywide color 6 inch or 3 inch orthoimagery.

Custodian
- Bayfield County Land Information Office

Maintenance
- No maintenance required as this is a static (snap shot in time) data set. The County may utilize a UAV to update certain areas of the photo in high development areas.

Standards
- None in statute

2009 Orthoimagery
Layer Status
- Countywide color 12 inch resolution and approximately 60% county coverage 6 inch resolution. Acquired spring 2009 leaf-off. This is a by-product of the oblique project so the positional accuracy is not certified by the contractor (Pictometry International). This project was 100% funded with a federal grant.

Custodian
- Bayfield County Land Records Department

Maintenance
- No maintenance required as this is a static (snap shot in time) data set.

Standards
- None in statute

2005 Orthoimagery
Layer Status
- Countywide color 12 inch resolution. Acquired spring 2005 leaf-off

Custodian
- Bayfield County Land Records Department
Maintenance
• No maintenance required as this is a static (snap shot in time) data set.

Standards
• None in statute

2009 Oblique Imagery
Layer Status
• Countywide color 12 inch resolution two angle obliques (North & South views) and approximately 60% county coverage color 4 inch resolution four angle obliques (North, South, East and West). Acquired spring 2009 leaf-off. Contractor was Pictometry International. This imagery is available on our county GIS website through a link to Bing Maps.
• This imagery is used in our 911 dispatch center.
• The County would like to get on a five year rotation alternating between standard orthoimagery and oblique imagery. In 2018 the county would like to acquire countywide color four way obliques (somewhere from 4 inch to 9 inch resolution on the obliques) along with color 6 inch orthoimagery. Then in 2021 acquire countywide color 6 inch or 3 inch orthoimagery.

Custodian
• Bayfield County Land Records Department

Maintenance
• No maintenance required as this is a static (snap shot in time) data set.

Standards
• None in statute.

Historical Imagery
Layer Status
• The county would like to obtain other historical imagery and create a seamless layer by year of imagery. Ideally we would like to begin with the first known imagery from 1938 and then work on other available years. Historical imagery will be useful to see landuse pattern change over time. These layers can also be helpful for land surveying purposes and for PLSS remonumentation.

Custodian
• Bayfield County Land Information

Address Points and Street Centerlines
Address Point Data
Layer Status
• This layer covers 100% of the address points in Bayfield County. This layer is vital for emergency response and damage assessment purposes.
• This layer is available on our county GIS website.
• This layer is used in our 911 dispatch software.

Custodian
• Bayfield County Land Records Department

Maintenance
• This layer is in a constant state of maintenance. As new addresses are assigned this layer is updated. We place the address point on the principal structure. We also maintain a driveway coordinate in this layer which is the location that the driveway intersects the public/private road. We also maintain a driveway layer that represents the access from the public road to the structure. Driveways lines are place when a driveway is over ¼ mile long but we have been adding more as time permits. As time permits, we are adjusting the driveway coordinate to match the 2009 aerial photography.
Standards
- None in statute.
- Bayfield County Addressing Ordinance
- US Postal Standard
- ANI/ALI data format

Building Footprints
Layer Status
- None available. As part of the 2015 LiDAR project the contractor will be classifying building points, however since it will be an automated process there is no accuracy standard for these points. This layer may be useful for change detection of structures for zoning violations and emergency response or damage assessment.

Custodian
- Bayfield County Land Records Department

Maintenance
- N/A

Standards
- None in statute.

Street Centerlines
Layer Status
- This layer covers 100% of the roads in Bayfield County. State roads, County roads, Town roads, Village roads, Tribal roads, and private roads. We would like to add a pronunciation aspect to our data in the future to help people pronounce some our roads.
- This layer is available on our county GIS website.
- This layer is used in our 911 dispatch software.

Custodian
- Bayfield County Land Records Department

Maintenance
- This layer is updated when new public or private roads are constructed. This layer was originally digitized from 1990’s aerial photography, so it needs updating. As time permits we are adjusting this layer to match our 2009 aerial photography. Once we receive our 2015 aerial photography we will use it to adjust this layer. We also plan to compare/adjust this layer to the match the WisDOT Town Plat Record for each municipality. The WisDOT Town Plat Record shows all roads that are receiving transportation aid payments. We have had some issues with the roads in the Federal forest so we have been driving the roads with GPS to verify the routes, many times the roads are berm and we would like to map these in the future also.
- We work with local municipalities, USPS (United States Postal Service), and local phone carriers to resolve any conflicting road names.

Standards
- None in statute.
- Bayfield County Addressing Ordinance

Rights of Way
Layer Status
- This layer partially exists in Bayfield County as part of our parcel mapping.

Custodian
- Bayfield County Land Records Department

Maintenance
- This will be developed as part of the parcel mapping process, however many of the roads in Bayfield County lack written descriptions or surveys so the potential accuracy needs improvement. These will be researched and/or updated as time permits and as new information is obtained from various sources.
Standards
- None in statute

**Trails – ATV/UTV & Snowmobile**

**Layer Status**
- This layer covers 100% of the state funded ATV/UTV and snowmobile trails within the county. We have done some testing to show some video of the trails and would like to expand on this. Along with this we would like to be able to show live grooming of the trails.
- This layer is not available on our county GIS website.
- This layer is used in our 911 dispatch software.

**Custodian**
- Bayfield County Land Records Department and Forestry & Parks Department

**Maintenance**
- This layer is updated when the location of a trail is moved or if additional trails are added. This layer needs some adjusting in a few areas to match the actual physical location of the trail.

**Standards**
- None in statute.

**Trails – Cross Country Skiing**

**Layer Status**
- This layer covers 100% of the cross country skiing trails located on county land only. There are other cross country skiing trails located within the county (villages, state land, etc) which are not included in this layer.
- This layer is not available on our county GIS website.
- This layer is not used in our 911 dispatch software.

**Custodian**
- Bayfield County Land Records Department and Forestry & Parks Department

**Maintenance**
- This layer is updated when the location of a trail is moved or if additional trails are added.

**Standards**
- N/A

**Trails – Hiking/Biking**

**Layer Status**
- This layer covers 100% of the hiking/biking trails located on county land only. There are other hiking/biking trails located within the county (villages, state land, etc) which are not included in this layer. There are private groups that maintain the trails and maps, we would like to work with them to get the additional layer information.
- This layer is not available on our county GIS website.
- This layer is not used in our 911 dispatch software.

**Custodian**
- Bayfield County Land Records Department and Forestry & Parks Department

**Maintenance**
- This layer is updated when the location of a trail is moved or if additional trails are added.

**Standards**
- N/A

**Boat Landings**

**Layer Status**
- This layer covers many of the boat landings within the county; however it may not cover 100% of them since many different jurisdictions own/maintain boat landings.
- This layer is available on our county GIS website.
- This layer is used in our 911 dispatch software.

**Custodian**
- Bayfield County Land Records Department
Maintenance

- This layer is updated when the location of a boat landing is removed or if additional boat landings are added.

Standards

- N/A

## Land Use

### Current Land Use

#### Layer Status

The identification and mapping of existing land uses was completed by each local municipality through their comprehensive land use plan. Each municipality hired a mapping firm to prepare the data. In Bayfield County, the existing land use map was prepared by SEH Professional Services. The data was then combined in the Bayfield County Comprehensive Plan. The maps were developed in common framework elements that would be easily imported into the Bayfield County land information system.

#### Custodian

- Bayfield County Land Records Department

#### Maintenance

- This layer is not maintained.

#### Standards

- N/A

### Future Land Use

#### Layer Status

- The identification and mapping of future land uses was completed by each local municipality through their comprehensive land use plan. Each municipality hired a mapping firm to prepare the data. In Bayfield County, the future land use map was prepared by SEH Professional Services. The data was then combined in the Bayfield County Comprehensive Plan. The maps were developed in common framework elements that would be easily imported into the Bayfield County land information system.

#### Custodian

- Bayfield County Land Records and Zoning Department

#### Maintenance

- As changes happen the Bayfield County Land Records Department updates the changes

#### Standards

66.1001, Wis. Stats. Comprehensive planning. Future land use maps are typically created through a community’s comprehensive planning process. Future land use mapping for a county may be a patchwork of maps from comprehensive plans adopted by municipalities and the county merged into one map

## Zoning

### County General Zoning

#### Layer Status

- The hard copy zone district maps exist per Township. The Zoning Administration is the custodian of and revises these maps based on ratified rezone applications and other factors. The Town maps were created from the parcel polygons. A county-wide zone district map has been created and a digital copy resides as a layer on the GIS. The Planning and Zoning Department operates under the authority of the Bayfield County Zoning and Subdivision Control Ordinance.

#### Custodian

- Zoning Department

#### Maintenance

- Bayfield County Land Records Department
Standards
- Bayfield County Zoning and Subdivision Control Ordinance

**County Special Purpose Zoning**

**Layer Status**
- The 300’ and 1000’ shoreland buffer zones exist as a layer on the GIS. It was developed by a GIS buffer function of the hydrology layer.

**Custodian**
- Bayfield County Zoning, Planning and Land Records Department

**Maintenance**
- Bayfield County Land Records Department

**Standards**
- 59.69, Wis. Stats. Bayfield County Zoning and Subdivision Control Ordinance

**Municipal Zoning Information Floodplain**

**Layer Status**
- The DNR regulates Floodplain Zoning in NR 115/117 as a statewide program on behalf of FEMA, the Federal Emergency Management Agency. The Zoning Administration is the repository for the hard copy FEMA Flood Insurance Rate Maps (FIRMS). The Zoning Administration regulates the program in the County in accordance with DNR regulations and is the repository for flood plain zoning Regional Flood Elevation (RFE) documents. Bayfield County has a digital copy of the new preliminary 2010 FEMA FIRMS and DNR Regional Flood Elevations maps from the custodial agency

**Custodian**
- Zoning Department

**Maintenance**
- Unknown since this layer is created/maintained by FEMA

**Standards**
- 87.30, Wis. Stats. Floodplain Zoning. Bayfield County Zoning and Subdivision Control Ordinance

**County Special Purpose Zoning - Shore land**

**Layer Status**
- This layer covers the areas in the one (1) un-zoned towns which are: Town of Pilsen. This layer is available on our county GIS website.

**Custodian**
- Bayfield County Land Information and Zoning/Planning Department

**Maintenance**
- This layer is updated if a rezone request is approved within this area.

**Standards**
- 59.692, Wis. Stats. Zoning of shorelands on navigable waters

**County Special Purpose Zoning - Farmland Preservation**

**Layer Status**
- This layer does not exist at this time

**Custodian**
- N/A

**Maintenance**
- N/A

**Standards**
County Special Purpose Zoning – Airport Protection

Layer Status
• This map only exists in paper form and GIS format at this time and it only covers the area around the Cable Airport.

Custodian
• Bayfield County Land Information and Zoning/Planning Department

Maintenance
• This layer is be static. The only time it would need updating is if the map is revised by the BOA (Bureau of Aeronautics).

Standards
• 114.136, Wis. Stats. Airport and spaceport approach protection.

Administrative Boundaries

Civil Division Boundaries

Layer Status
• Bayfield County has the boundaries of County Towns, Villages, and Cities mapped with each polygon having its associated GIS attributes.

Custodian
• Bayfield County Land Records Office

Maintenance
• As needed

School Districts

Layer Status
• Bayfield County contains six school districts. They are mapped, and each parcel in the real estate management system contains a field for its respective school district. The maps were provided to the School Superintendents who verified their locations. This layer is available in the 2008 Plat Book. School district boundaries are determined by and under the jurisdiction of the Wisconsin Department of Public Instruction. Notification from the Wisconsin DPI of changes to the school districts is made to the Real Property Lister and then relayed to the Geographic Information Specialist for changes to the map.

Custodian
• Bayfield County Land Records Office

Maintenance
• As needed

Standards
• None in State Statute

Election Boundaries Municipal Wards, Voting Districts and Voting Places

Layer Status
• Bayfield County has County Board Supervisor districts and voting wards mapped. As directed by the County Clerk, custodian of the data, the Geographic Information Specialist maintains any revision or changes to the map.

Custodian
• Bayfield County Land Records Office County and County Clerk is the custodian of all non-GIS related election items.

Maintenance
• As needed

Standards
• None State Statute
Utility Districts
Layer Status
- There are no layers for utility (water, sanitary or electric) districts that the county maintains. The county does not own/maintain any public water, sanitary or electric systems.
- There may be layers that show utility districts that are maintained by the villages.

Custodian
- N/A

Maintenance
- N/A

Standards
- N/A

Public Safety Fire/Police Districts, Emergency Service Districts, 911 Call Center Service Areas
Layer Status
- The 911 Emergency Service Network (ESN) map was developed by the Bayfield County Sheriff's Department. Fire Department response areas and law enforcement response areas are located in the ESN map. There are fifteen separate fire departments in Bayfield County. There are three separate police stations and one Sheriff Department. The area of jurisdiction is represented on the ESN map. The boundaries of fire departments, ambulance service areas and law enforcement response areas were then digitally mapped over the County base map creating the 911 ESN layer.

Custodian
- The Sheriff's Department is the custodian of the ESN data and Land Records Department is responsible for the updates to the GIS layer.

Maintenance
- The existing information and map are constantly corrected when verified, increasing accuracy. The ESN map is downloaded into the dispatch mapping software, Positron, when it is revised.

Standards
- None in Statute

Lake Districts
Layer Status
- There are two Lake Districts in Bayfield County at this time and are not mapped

Custodian
- Bayfield County Land Records Department

Maintenance
- N/A

Standards
- N/A

Native American Lands
Layer Status
- Bayfield County contains the Red Cliff Band of Lake Superior Chippewa Indian reservation. The exterior boundary of the reservation was digitized from a 1993 reservation map prepared by the Bureau of Indian Affairs. Tribal, trust land, and USA held in trust lands are listed in the real estate management system by ownership and land class codes. Bayfield County maintains this information through deed transfers. Any changes to the boundaries of the reservation would be made under the direction of the Bureau of Indian Affairs.

Custodian
- Bayfield County Land Records Department

Maintenance
- As needed
Standards
- N/A

**Other Administrative Districts – County Forest Land**

### Layer Status
- This layer exists for the entire county.
- This layer is available on our county GIS website.

### Custodian
- Bayfield County Land Records Department is the custodian for the GIS layer. Forestry & Parks Department is the custodian of the County Forest Land.

### Maintenance
- This layer was initially created prior to parcel mapping, so in many areas the county forest land boundaries don’t line up with the parcel lines. As time goes on we would like to adjust the county forest land boundaries to match the parcel lines.

### Standards
- None in statute.

**Other Administrative Districts – County Parks**

### Layer Status
- Municipal parks are point plotted on the Places/Landmark GIS layer. Bayfield County contains a wealth of cross country ski trails, snowshoe trails, hiking trails, ATV trails, snowmobile trails, and biking trails. Recreational trails within State and National Forests have trail maps developed by the authority of jurisdiction. Sport clubs, associations, and area Chamber of Commerce’s publish their own trail maps. These trail maps are not in a translatable, retrievable or geographical referenced digital format for use by the County. The location of these trails, especially where they intersect public roads and accesses would be valuable for the emergency response teams of Bayfield County. This layer is available on our county GIS website.

### Custodian
- Bayfield County Land Records Department and Forestry & Parks Department

### Maintenance
- This layer is a point file and maintained as needed

### Standards
- None in statute.

**Other Layers**

### Hydrography Maintained by County or Value-Added

### Layer Status
- Bayfield County has the Lake Superior Watershed hydro layer 12K from the soils analysis.
- This layer is available on our county GIS website.

### Custodian
- Bayfield County Land Records Department Bayfield County Land Records Department

### Maintenance
- We have not adjusted any hydro lines.

### Standards
- None in statute.

**Cell Phone Towers**

### Layer Status
- We believe we have all of the cell towers that are located within the county included in our address point layer.
- This layer is used in our 911 dispatch software.

### Custodian
- Bayfield County Land Records Department
Maintenance
- As new towers are constructed we add them to our address point layer.

Standards
- None in statute.

**Bridges and Culverts**

Layer Status
- The County Highway Department, municipal Road Supervisors, and the Wisconsin Department of Transportation have bridge, culvert and traffic road sign data. Those jurisdictions are responsible for custodianship and maintenance of these datasets. Bayfield County has collected culvert information on the County roads and most of the culverts in Fish Creek watershed as part of a grant in the Conservation Department.

Custodian
- Highway Department

Maintenance
- Highway Department updates a table of information

Standards
- None in Statute

**Other - Railroads**

Layer Status
- No railroads exist within Bayfield County so there is no layer for this feature.

Custodian
- N/A

Maintenance
- N/A

Standards
- N/A

**Other - Pipelines**

Layer Status
- There is three large natural gas distribution lines running through Bayfield County along with some smaller natural gas service lines. A GIS layer showing this location is available on the National Pipeline Mapping System (NPMS) website, at https://www.npms.phmsa.dot.gov/. Bayfield County did not create this layer and does not maintain this layer. We assume this layer was created by the pipeline companies and is maintained by them.

Custodian
- N/A

Maintenance
- The Bayfield County Highway Department will maintain data as needed.

Standards
- None in statute.

**Other – Non-Metallic Mining**

Layer Status
- This layer exists for all permitted non-metallic mining sites within the county. This layer is available on our county GIS website.

Custodian
- Bayfield County Land Records Department and Zoning Department.

Maintenance
- Once each year the mining site is measured with a Trimble mapping grade GPS or recent orthophotos to determine the pit size. The layer is current as a snapshot once per year.
Standards
• NR 135, Wis. Admin. Code, Non-Metallic Mining Reclamation.

Other – Manure Storage Facilities
Layer Status
• This layer does not exist at this time.
Custodian
• Land Conservation Department
Maintenance
• N/A
Standards
• N/A

Other - Dams
Layer Status
• There is no layer for this feature.
Custodian
• N/A
Maintenance
• N/A
Standards
• N/A
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**
County Parcel Data Workflow Diagram

The following diagram depicts parcel data creation and workflow:

- Major components of parcel data, especially those referenced by s. 59.72(2)(a), including:
  1) parcel polygons, 2) tax roll data, and 3) zoning information
- Integration of parcel polygons with other data/attributes, if applicable

Departments/offices/staff involved with the creation and maintenance of parcel data:

- **Register of Deeds**
  - Record Real Estate Documents
  - Send Real Estate Transfer to State
  - Code Doc. Types into LandLink (Imaging System)
  - Create Grantor/Grantee Index
  - Send Real Estate Docs to Tax Lister

- **County Surveyor**
  - Provides GIS Technician with section breakdown for mapping framework

- **GIS Technician/Land Information Officer**
  - Receives parcel changes from tax lister and modifies parcel data accordingly. Data is maintained in Esri File Geodatabase format (v 10.1)
  - Receives zoning changes from Zoning Department

- **Zoning Department**
  - Receives new parcel information and updates Zoning class in Manatron Novus

- **Local Assessors** who are contracted by the towns are responsible to update property values.

- **DOR - Equalized assessment values, property tax credits**
- **DNR - Managed Forest Land values.**

- **Real Property Lister**
  - Creates new tax parcels in Manatron Novus Software
  - Assign/Change/Maintain ownership information
  - Assign/Maintain PIN numbers
  - Finalize Tax Roll

- **Dept of Revenue** receives
  - Work Rolls
  - Assessment Rolls
  - Tax Rolls
  - From Real Property Lister

- **Treasurer Office**
  - Prints tax bills from Novus
  - Delivers tax bills to Municipalities

- **Municipalities**
  - Mail Tax Bills to property owners

- **Department of Administration**
  - Receives parcel polygons, tax roll attributes and zoning layers to be used in the Statewide Parcel Layer

- **County GIS site gets updated with parcel, tax roll and zoning changes**
Technology Architecture and Database Design

The County’s GIS/LIS environment is comprised of networks of computers and servers used for data creation and maintenance. The technology environment is based on the Microsoft Windows Server operating system and Microsoft SQL database servers. The servers are virtualized within VMware and reside on Dell hardware.

There is a variety of software used for creating, storing and maintaining data that exist and they are as follows:

**AVID** – Land Records Management software used by the Register of Deeds office for recording and indexing documents.

**Tapestry** – Internet based inquiry software to access Register of Deeds information 24/7/365. This is a pay per search application used by occasional users.

**Laredo** – Internet based inquiry software to access Register of Deeds information 24/7/365. This is a subscription application used by daily users.

**Carmody** – Imaging software used to store Zoning/Land Use permits and other zoning/land use related documents.

**NOVUS** – Software used for creating and maintaining parcel and tax data. Also has web browser functionality for inquiry into this data by external internet users.

**FlexViewer** – Bayfield County contracts to build the application and maintains the site in-house to make changes for external internet users.

**MS Access** – Historic zoning/land use permit information exists in this database, no newer information is entered into this database

**AutoCAD** – This is used by the conservation staff to create, manage and store all the county survey data.

**ESRI Suite** – This is used for all GIS data creation, management and storage.

**Trimble GPS Pathfinder Office** – This software is used to apply corrections to the handheld GPS unit which is used for addressing purposes.

Metadata and Data Dictionary Practices

Bayfield County continues to develop FGDC compliant metadata for all County datasets. The development will be determined by staffing and budgetary constraints. The software used to create and maintain metadata is ArcGIS 10.x which generates FGDC compliant metadata. At this time Bayfield County does not have a policy in place for minimum metadata requirements.

Public Access and Website Information

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As far as we know no local (Village or Town) municipal websites serving land information data exist within Bayfield County.
Data Sharing

Data Availability to Public

Bayfield County remains willing to share our data. We adhere to Wisconsin Open Record Laws and we comply with State statutes for access to all land records. For GIS data we do NOT require a signed data disclaimer prior to delivery of the data. The County has adopted a fee schedule for our GIS data sets. These minimal fees only cover the costs of extracting, packaging and delivering the data to the requestor. Contact the Land Records Department for specific information about acquiring GIS data. The tax assessment database is available from our GIS website; there is no fee for this download. The county continues to monitor the industry and public concerns related to privacy and distribution of data. At this time, searches can be performed by name, address, and parcel identification numbers.

Data Sharing Restrictions

Bayfield County adheres to Wisconsin Open Records Law and we comply with State statutes for access to all land records. We have no restriction on data distribution/sharing.

Government-to-Government Data Sharing

At this time Bayfield County does not have any formal data sharing agreements. We do have verbal data sharing arrangements with other County Departments, municipalities, consultants working for the County, State agencies and Federal agencies. The County will continue these arrangements. We encourage others to use or digital data.

Training and Education

Where budgets allow, Bayfield County will continue to fund staff training. This could include participation in workshops, conferences, and courses aimed at the development and implementation of the Land Information System. Land Information staff will also continue to work with our GIS consultants for technical assistance when needed.

Training such as hands-on, classroom, and internet is being held on various software programs as related to land records modernization. Technical assistance is received from software venders, MN LIS/GIS WLIA, WLIP, State Agencies, and the State Cartographers Office.

All Bayfield County departments have access to the Internet which allows for use of the technical assistance list server. We are participating and will continue to monitor the development of the clearinghouse and standards adopted.
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.

For each project, identify:
- Project Description/Goal
- Business Drivers
- Objectives/Measure of Success
- Project Timeframes
- Responsible Parties
- Estimated Budget Information

If your county foresees or has major technology projects planned, list them in this chapter as a project. Note that projects may focus on one single Foundational Element, or they may touch upon several Foundational Elements. Remember plans can be amended in the future should other significant projects arise.

### Project

#### PLSS Remonumentation/GPS with Survey Grade Coordinates and Parcel Accuracy Enhancement

**Project Description/Goal**
Complete countywide PLSS remonumentation and obtain survey grade coordinates on 100% of the PLSS corners. The goal is to follow the PLSS remonumentation and GPSing with incorporating the coordinates into the parcel mapping to make it more accurate. Impacts Foundational Elements: PLSS, Parcel Mapping

**Business Drivers**
- Cost of surveying is less for all land owners when the PLSS is remonumented.
- Parcel mapping is more accurate when using remonumented PLSS corners.
- Timber cutting lines should match deed lines when using remonumented PLSS corners.
- Assessed acres should be closer to actual acres when using parcel mapping based on remonumented PLSS corners.
- All other land related layers (Zoning Districts, Federal Land, State Land, County Land, PLSS sections, Emergency Service Zones, Fire Districts, School Districts, County Supervisor Districts, Municipal Wards and Civil Boundaries) should be more accurate when based on parcel mapping which is based on remonumented PLSS corners.

**Objectives/Measure of Success**
100% of the PLSS corners remonumented and 100% of the PLSS corners having survey grade coordinates.

**Project Timeframes**
As of December 2015 we have 69% of the PLSS corners remonumented and 28% of the PLSS corners have survey grade coordinates. At our current pace by the end of 2041 the county should be 100% remonumented and have survey grade coordinates on 100% of the PLSS corners along with accurate parcels that will be 2-4ft from the true location rather than the disclaimer of 75-200ft we use now.

**Responsible Parties**
County Surveyor and staff.
Estimated Budget Information
Funding source is county levy, retained fees and WLIP grants. Approximately $70,000 per year until complete, a total of $1,750,000, and $45,000 per year for parcel enhancement. This approximate cost is made up of salary, fringe, equipment (truck, GPS, total station, ATV), field supplies, office supplies, software, etc.

LiDAR
Project Description/Goal
The main goal of the project is to have a seamless county-wide LiDAR for high accuracy topographic mapping. The proposed project will generate a bare earth point cloud which can be used to create 2-foot contours for the entire county and to be able to work with the data to create 1ft contours in select areas. The data will meet Q2 standards through the 3DEP program.

Business Drivers
- Provide the highway department a cost saving tool for civil engineering and Road Design.
- Help with county forest planning and management.
- Make LiDAR data available to all levels of government and private enterprise.
- Provide accurate elevation data for flood plain mapping.

Objectives/Measure of Success
- To provide 2 foot contours countywide that will meet Q2 standards through the 3DEP program
- To make available a Countywide LiDAR dataset to all levels of government and private enterprise.

Project Timeframes
Data acquisition will be completed in the spring of 2016 with data processing completed in 2017.

Responsible Parties
The Land Records Staff will be responsible for coordinating and managing the project. They will work closely with the contractor to ensure specification and deliverables are met.

Estimated Budget Information
County-wide 2’ contour LiDAR
$300,000-400,000

Orthophotography and Oblique
Project Description/Goal
Collection of countywide color orthophotography at 6-inch resolution across 1560 square miles, plus a 1320-foot buffer around the project boundary. Color and IR orthophotography will be developed from aerial photography acquired using a calibrated, digital photogrammetric camera. The flight will take place in the spring 2018 during leaf-off conditions.

Business Drivers
- County lacks updated 6” leaf-off oblique photography, which is utilized by all levels of government and private enterprise.
- Help with county forest planning and management
- Current imagery is a vital tool for Law enforcement and dispatch.

Objectives/Measure of Success
- To make available to all levels of government, private enterprise, and public, updated countywide six inch color orthophotography.

Project Timeframes
Data acquisition will be completed in the spring of 2018 with data processing completed in Summer 2018.
**Responsible Parties**
Land Information Staff and the County Surveyor will be responsible for coordinating and Managing the project. They will work closely with the contractor to ensure specification are adhered to.

**Estimated Budget Information**
Countywide Orthophotography and Oblique 6-inch resolution, natural color
Approximately $ 140,000
Projects Related to Strategic Initiative Grants
Bayfield County is planning on using 2016 Strategic Grants to help offset the cost of PLSS
## Estimated Budget Information

<table>
<thead>
<tr>
<th>Project</th>
<th>Item</th>
<th>Unit Cost per year</th>
<th>Cost</th>
<th>Total Project Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Countywide LiDAR acquisition</td>
<td>a. Contracted Services</td>
<td>400,000</td>
<td>400,000</td>
<td>400,000.00</td>
</tr>
<tr>
<td>2. Countywide Orthophotography and Oblique acquisition</td>
<td>a. Contracted Services</td>
<td>145,000</td>
<td>145,000</td>
<td>145,000.00</td>
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<tr>
<td>4. Complete PLSS remonumentation for remainder of the county</td>
<td>a. County Surveyor</td>
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<tr>
<td></td>
<td>b. Deputy Surveyor</td>
<td>46,000</td>
<td>46,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. Private</td>
<td>20,000</td>
<td>20,000</td>
<td>71,000</td>
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<tr>
<td>5. Complete Incorporating PLSS in Parcel data</td>
<td>a. GIS Technichan</td>
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<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>661,000.00</td>
</tr>
</tbody>
</table>

Note. These estimates are provided for planning purposes only. Budget is subject to change.
Project Plan to Achieve Searchable Format (Benchmarks 1 & 2)

Project Description/Goal
Status of searchable format
- Completed. Bayfield County plans to meet the searchable format for both Benchmark 1 and 2.

Project Plan for Parcel Completion (Benchmark 3)

Project Description/Goal
Current status of parcel data
- Completed. Bayfield County has a completed parcel dataset for the entire county. Our first location where we will incorporate PLSS is in the Town of Iron River. We are currently in the process of completing this Township will all recovered PLSS monuments and will be complete May 2016. We have also been moving Parcel boundaries in the Cities of Washburn and Bayfield to match the aerial photos after we completed some in Iron River Township with some success.

Project Plan for PLSS (Benchmark 4)

Project Description/Goal
Planned approach
- Bayfield County has elected to accomplish the remonumentation program with in-house and contract staff. Over the past eight years, county staff has visited 1,425 corners. The completion of our Remonumentation program is anticipated to occur in the spring of 2041. Our approach to updating the parcel information will be competing one Township at a time and then creating a grid of the PLSS to the “40” level and remapping that area. We will focus on private ownership and the County land boundaries in Townships with a lot of Federal Forest.

Current status
- Current status may be found in the Foundational Element Section on Page 10 of this document.
- Goals
- To insure that the P.L.S.S. never falls into another state of disrepair in the future, a maintenance program is planned to commence immediately after the completion of the Remonumentation program. The Town of Iron River will be our first priority due to the age and character of the existing data. This data is known to be a combination of conventional survey methods with G.P.S. technologies, and we may see some minor coordinate refinement in this area. Ultimately, the goal of this Maintenance program will be to target one civil township annually in addition to the ongoing road construction corner re-locations.

Missing corner notes
- We have a large number of tie sheets that are missing throughout the county. Many times there will be evidence of a corner on site but there will not be a record of it so we have to calculate the math to see if it fits with the original survey. Many times landowners have placed iron in the ground but may not know where the true location of the corner is located.

County boundary collaboration
- Bayfield County continues to engage in data sharing with adjoining counties. While we do not coordinate individual projects, we do send our data to the adjacent county where work has been done. Likewise, corner data is routinely received from each of the four neighboring counties (Ashland, Sawyer and Douglas).

Business Drivers
- The Project Plan for PLSS is a requirement for Strategic Initiative grant eligibility.
- Increase accuracy of other foundational elements. Many of the foundational elements are built from PLSS data.
- Cost of private surveys will decrease where PLSS work has been completed.

Objectives/Measure of Success
The Bayfield County Remonumentation program originally began by contracting with the private sector. In 2016, the county will add a full time in-house contractor staff to take on remonumentation duties. This will provided the county the ability to maintain a high level of quality control, while also creating a more uniform data stream. Our goal is to established, visit and recover or maintain 100-300 corners per year with contract in-house contract staff and using external contractors.
**Project Timeframes**
By meeting our goal of 100-300 corners per year, we have determined that our Remonumentation program will be completed in early 2041. This date will also mark the launch of a Maintenance program that is intended to insure the stability of this network for generations to come.

**Responsible Parties**
Land Records Department  
County Surveyor  
Deputy County Surveyor

**Estimated Budget Information**
The annual cost of the Bayfield County Remonumenation program is estimated at $100,000. This is based on the assumption that the County Surveyor focuses on this program with 10% of his time, the Deputy County Surveyor’s involvement in Remonumetation is 100% of his time, $20,000 will go to external contracting and the majority of our expenditures on fuel and equipment are utilized for this purpose.