

LINCOLN COUNTY LAND RECORDS PLAN 2010-2015



July, 2010

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

I. EXECUTIVE SUMMARY

A. Contact Information

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B. Participants in the Planning Process

Lincoln County Land Services Group Members:

Tim Meehean, Interim Administrative Coordinator
Marge Johnson, Real Property Lister
Tony Dallman, County Surveyor
Audrey Jensen, GIS Specialist
Tim Tarras, GIS Specialist
Dan Miller, Zoning Administrator
Dan Bowers, Zoning Specialist
Kevin Kleinschmidt, Forestry, Land and Parks Administrator
Sarah Koss, Register of Deeds
Randy Scholz, Highway Commissioner
Bob Reichelt, Solid Waste Manager
Art Lersch, UWEX Community Development Agent
Tom Cadwallader, UWEX Agricultural Development Agent
Jeff Jaeger, Sheriff
Mark Handlin, Communications Supervisor (Sheriffs Dept.)
Bob Kunkel, County Clerk
Brian Sladek, Emergency Management Director
Jack Sroka, Lincoln County Economic Development Corporation
Frank Saal, Jr., Lincoln County Board Member
Ron Mittelsteadt, Lincoln County Board Member
Dennis Lawrence and Andy Faust, North Central Regional Planning Commission
Tony Chladek, City of Merrill Administrator

Land Information, Conservation and University Extension Committee:

James Alber – Chair
David Fox
Frank Saal, Jr.
Ray Bloomer
Ramona Pampuch

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

C. Plan Summary

In 1990, Lincoln County approved a resolution authorizing participation in the Wisconsin Land Information Program. Through this resolution, Lincoln County was required to appoint a Land Information Officer and develop and implement a Land Records Modernization Plan. The original Land Information Plan was adopted in February 1992, with updates occurring in 1999, 2003 and 2005.

Lincoln County has been involved in numerous land records activities since the inception of the program in 1990. Through the use of geographical information systems (GIS), land related data has been created and/or acquired including: digital orthophotos, natural resources data, parcel maps, road and address data, etc. This GIS data has provided better access to land related data to county departments/staff, state and federal agencies, private entities and the general public. Although the development of the County's GIS has progressed, there is still work to be done. Lincoln County continues to work actively on remonumentation of the public land survey system, parcel mapping and many other land record projects.

Each modernization project undertaken affects numerous county departments, state and federal agencies, property owners and the general public. Therefore, each project requires interdepartmental and/or intergovernmental cooperation to ensure that the needs and concerns of all are considered. To aid in cooperative discussions regarding land information, Lincoln County formed a Land Services Group. This group provides guidance, recommendations, and support for land records modernization activities. Members of this group (See Section I B.) assisted in the development of this plan.

This plan provides a framework for continuation and development of Lincoln County land record activities for the next 5 years. The plan focuses on the priorities and needs of the users of land information data. A goal of this plan is to continue to provide better access to land information. Lincoln County has provided land information via the county website (www.co.lincoln.wi.us). This website provides "Quick Links" to the tax assessment/description Land Records System as well as the geographic information system mapping.

This plan is intended to be a working document that guides land information activities in Lincoln County from 2010-2015. This plan meets or exceeds the requirements of Wisconsin State Statute 59.72 and the Wisconsin Department of Administration – Uniform Instructions for Preparing County Land Information Plans for continued participation in the Wisconsin Land Information Program. It is Lincoln County's intent to continue to participate and benefit from the Wisconsin Land Information Program.

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

II. LAND INFORMATION PLAN

A. Goals and Objectives

Through this planning effort, Lincoln County established three primary goals. The goals are:

- Goal #1: Create and maintain digital land information data and integrate that data into user friendly online systems.
- Goal #2: Develop an integrated geographic information system (GIS) for all land related databases in Lincoln County.
- Goal #3: Improve data sharing and accessibility of land information

Ultimately, the objectives of Lincoln County are to implement projects and practices that accomplish these goals. Specific objectives and proposed projects are outlined in Section II – C (Pages 7-16) of this plan. The objectives and projects also address the needs of Lincoln County's internal and external customers. Through the development of this Land Records Plan, Lincoln County developed a customer needs survey that was distributed to users of county land records data (surveyors, assessors, abstractors, realtors, town officials, etc.) to gather this information and the survey identified key areas of need. This survey provided us with insight on the data most frequently used by our customers, as well as areas where improvements are needed. These key areas of need are:

- Support continuation of current land record projects (remonumentation, parcel mapping, digital orthophoto acquisition, land record system maintenance, rural addressing, scanning of historic records, etc.) and the development of new projects to improve land information data sharing and accessibility.
- Improving and maintaining online land records data including but not limited to parcel mapping and parcel information (tax assessment, property description, owners, address/location data, etc.); zoning data (permits, etc.); survey data (public land survey data, certified survey maps, subdivision, plats of survey, etc.) and Register of Deeds tract index and documents.

In order to meet these goals, objectives and needs, Lincoln County has developed a technology platform/operating environment, and database design standards to support this plan. The County's GIS operating system is based on Windows servers, while the tabular land records data resides on an IBM AS/400 system housed at the City County Information Technology Commission in Wausau (City of Wausau & Marathon County). The GIS database design incorporates key fields, which are used to tie the two systems together, thereby ensuring data sharing flexibility. Metadata is maintained for each layer in the GIS and for tabular land records data. It is the County's intent to maintain the GIS and database design standards to meet future needs.

In addition to the technology needed to provide land information, adequate well trained staff is needed to continue to meet the public, private and governmental demand for accurate, technology based land information. Without adequate staffing levels, the goals and objectives identified within this plan will be difficult or cannot be accomplished.

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

B. Progress of Ongoing Activities

1. Remonumentation. Lincoln County began an accelerated remonumentation program in 1999 through the hiring of a County Surveyor. Approximately 70% of Lincoln County has been remonumented and global positioning system (GPS) coordinates have been acquired on these monuments. This remonumentation was completed through the work of the county surveying staff as well as contracting with private surveying firms. Unfortunately, due to budget constraints the contracting for private surveying firm assistance with remonumentation was eliminated in the 2010 Lincoln County budget. The county surveying staff will continue to remonument the remaining corners in Lincoln County.

2. Parcel Mapping. Lincoln County began digital parcel mapping in December 1998 and since that time, approximately 80% of the parcels have been mapped. The parcel mapping occurs upon completion of remonumentation and the acquisition of coordinates on the section corners to ensure accurate and sufficient geodetic control. The majority of the initial parcel mapping was accomplished through the use of outside contractors. Due to budget reductions, funding for contracted services has been eliminated. Currently, all parcel mapping activities are handled by Lincoln County staff. This includes digital creation and maintenance of the parcel data. The parcel mapping provides approximate property location information for many applications and uses including use by Lincoln County departments, realtors, abstract companies, assessors, surveyors and the general public.

3. Land Records System. For the past 16 years, Lincoln County has contracted with the City County Information Technology Commission in Wausau (City of Wausau & Marathon County) for an automated Land Records System to list property for assessment and taxation. This system also includes modules for zoning and tax collection purposes. This system is also compatible with the Chip Mauel Tax Collection software which all rural Lincoln County municipalities utilize. The City of Merrill, the City of Tomahawk and the County Treasurer have access to the Land Records System where they use the tax collection module. The zoning module is updated by the Zoning Department. County Departments have access to the Land Records System and all data within the system via the Lincoln County website. The general public has access to the Land Records System and all data except for ownership through the Lincoln County website.

4. Address and Road Naming Ordinance. On January 1, 1998, a Lincoln County ordinance took effect shifting the responsibility for addressing and road naming from the Towns to the County. This ordinance applied to all unincorporated areas of the County and divided the work among multiple people in different departments. In 2004, the County began an effort to improve the addressing and road naming, as well as take advantage of new legislation for wireless 9-1-1 location. In 2005 and 2006, GPS data collection of all the addresses, site access points, driveways and roads began; and in July of 2006, a new rural addressing and road naming ordinance was approved. This new ordinance provided a better organized and well-defined method for addressing and road naming with a single contact person. Since 2005, there have been a number of other improvements made to the addressing process in Lincoln County. These improvements include: developing application forms and documentation procedures for all new addresses and road names; approving a new style address sign for easier viewing; renaming roads as necessary to alleviate duplicate intersections and addresses; producing a Road and Address Atlas for use by emergency response agencies serving Lincoln County residents; working with mobile home parks to recognize private road names and assign individual addresses to each lot; and assisting local municipalities with information needed to order new, compliant address signs. Additionally, work with addressing and road naming is expected to continue especially as more issues become known and new development takes place.

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

5. Register of Deeds Modernization Activities. The Register of Deeds office has upgraded the Fidlarc and Chambers software to iDocument XF Level P (1/2008). This upgrade provided the office with greater efficiency and integration opportunities to support innovative trends in the industry. Some of the new enhancements include:

- Integrated Cashiering – incorporated cash receipting that will auto calculate fees and break out moneys to distribute to the appropriate State and County funds.
- Social Security Number Redaction – Social Security Numbers (SSN) were routinely included in many documents throughout the years. iDocument redacts SSN's from recorded documents. The numbers are blacked out to anyone using public access terminals, while still visible to the Register of Deeds staff only. The original document remains intact and unaltered.
- Indexing Efficiencies – The indexing process was improved by adding the power to recall party names, index from the image and the ability to copy all of the data from any document or the last filed document into the existing document. Automatic verification was also added into the indexing and recording process. This enhancement will cross reference the scanned image to automatically verify and inform the user if the information matches the image or is incorrect. The image will highlight the correct information in green, and incorrect information will be represented in the index by turning red, which assists the indexer to make a quick correction. Additionally, during the indexing process, indexers can highlight information on the image and the software will transfer the information to the index field.
- Improved Scanning – In the process of scanning the images, the software will communicate with the receipting equipment which applies a bar code to the document during the receipting process. This bar code will contain information about the document such as the document number and number of pages. This eliminates the need to keep the documents in numerical order to scan. When the document is scanned, the software will notify the staff if an incorrect number of pages were scanned and tell where the error was made, making revisions and rescans significantly easier.

6. Acquisition of Data

- LIDAR and associated data – In the Fall of 2007, Lincoln County contracted with Laser Mapping Specialists, Inc. to acquire LIDAR and associated data such as bald earth digital terrain model, digital elevation model and two foot interval contour mapping. This data has been useful for the floodplain mapping update that is currently in progress.
- Aerial Imagery - Lincoln County participated in the 2005 Wisconsin Regional Orthophoto Consortium (WROC) for the acquisition of 12 inch pixel resolution color digital orthophotography for the entire county and 6 inch pixel resolution color digital orthophotography for 70 square miles of the heavily populated areas of the County. In addition, Lincoln County acquired the 2008 National Aerial Imagery Program photography from the United States Department of Agriculture – Farm Service Agency.

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

- Public Access Point Survey Updates – From 2003-2008, summer interns acquired GPS locations, photographs and other data on public access points to lakes and rivers in Lincoln County. Data acquired included site number, site name, date of inspection, source of access, status, access type, ownership type, ownership, location, parking, site characteristics, degree of encroachment and other notes. Previous public access data was from 1988 and updated information was being requested for the publishing of a Lincoln County recreation map.
- County Highway Sign Inventory - Lincoln County has collected and continues to collect and update information about highway signs that are the County's responsibility to maintain. This information includes GPS location, type of sign, type of post, sign size and material, and other notes about the signs and maintenance of the signs. This information is used to plan regular maintenance, provide information about the replacement of signs, and to streamline gathering information about the signs within the County. The information is maintained within formats that make it compatible with data the County maintains for other projects.
- Wildlife Openings – In 2007-2008, summer interns were hired by the Lincoln County Forestry Department to collect GPS locations of wildlife openings on county forest land. This project was in cooperation with the Wisconsin Department of Natural Resource (DNR) wildlife management staff. Data on the size and quality of the openings was also collected.
- ATV Trails, Snowmobile Trails and Parking Areas – The Lincoln County Forestry Department staff, ATV club members and snowmobile club members collected GPS locations of ATV and snowmobile trails within Lincoln County. This data has been utilized to develop more accurate recreational maps.
- Updated Wetlands Data – In 2009, the Wisconsin DNR provided Lincoln County with updated digital wetland information. This information contained digital wetland inventory polygon shape files and digital wetland inventory point shape files.
- Recreational Trails (Mountain Bike, Horse, Cross Country Ski) – Lincoln County utilized summer interns as well as members of a local user groups to collect GPS locations of recreational trails within county forests. This information has been utilized to develop more accurate trail maps.
- Platbook – Biennially, multiple departments within Lincoln County help to support the creation of the 4-H Leader's Association plat book. Data used for the project includes parcels, roads, Land Record System ownership, recreational trails and orthophotography. In 2007, orthophotos were incorporated into the platbook. The data is regularly maintained as part of the normal functions of the departments and this data is provided to the 4-H Leaders Association, who creates the plat book. As a courtesy, Lincoln County staff has helped in reviewing the draft pages and working in an advisory capacity as the process of creating the plat book has become more GIS based. This cooperation is expected to continue as future versions of the plat book are created.
- Updated Water Features – In 2010, Lincoln County received the 24K hydro geodatabase feature class plus metadata from the Wisconsin DNR. The DNR 24K Hydrography database was developed statewide using several 1:24,000-scale sources. This layer includes information about surface water features represented on the USGS 1:24,000-scale topographic map series such as perennial and intermittent streams, lakes, etc.

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

C. New Initiatives

1. Proposed Projects

In order to meet the goals and objectives identified previously, Lincoln County proposes to continue many ongoing projects as well as begin some new initiatives. The following tables outline these projects as well as identify responsible departments, timelines and measurement methodologies. It is the intention of Lincoln County to continue and pursue these projects based on available staff and funding.

| <u>GOAL #1: Create and maintain digital land information data and integrate that data into user friendly online systems</u> | | | |
|---|---|------------------------|--|
| <u>OBJECTIVES:</u> | <u>RESPONSIBLE DEPARTMENT(S)</u> | <u>TIMELINE</u> | <u>MEASUREMENT METHODOLOGY</u> |
| ➤ <u>Continue to develop and maintain accurate parcel information.</u> This is an ongoing project that needs to continue. This information is heavily used by abstractors, appraisers, realtors, and others as well as numerous county departments. In addition, this data is used in the creation of the Lincoln County Platbook. | Land Information and Conservation Department (LICD) | Ongoing | # of parcels mapped # of parcels updated Percentage of County updated and available for use by customers |
| ➤ <u>Continue remonumentation project.</u> The LICD is well into a remonumentation project with approximately 70% of the work complete. Originally, the plan was to complete the project by 2012, with ongoing maintenance to continue after that time. Because of budget constraints, the completion timeline has been pushed back. Since this information is in high demand, along with the fact that the project is underway, remonumentation and the maintenance of that data are top priorities. Also, parcel mapping cannot progress without remonumentation. | LICD | Ongoing | # of corners remonumented # of corners maintained Percentage of County completed and available for use by local surveyors |
| ➤ <u>Continue addressing/road naming project.</u> Accurate/up to date addressing information serves many purposes and is used by county stakeholders for a variety of reasons (e.g. emergency services, those utilizing the land record system, etc.). An initial gathering and recording of accurate addressing information is complete but maintenance is ongoing and needs to continue to ensure compliance with the Lincoln County Addressing and Road Naming Ordinance and to provide the most current information to the 9-1-1 dispatch and other emergency service providers. | LICD | Ongoing | # of addresses issued # of addresses corrected # of roads named Frequency of updates to the 9-1-1 dispatch software Accuracy of data Efficiency of response times |

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

| <u>GOAL #1: Create and maintain digital land information data and integrate that data into user friendly online systems (Cont.)</u> | | | |
|--|--|---|--|
| <u>OBJECTIVES:</u> | <u>RESPONSIBLE DEPARTMENT(S)</u> | <u>TIMELINE</u> | <u>MEASUREMENT METHODOLOGY</u> |
| <p>➤ <u>Continue to update and maintain Lincoln County Land Records System.</u> To ensure accurate assessment and taxation; correct legal descriptions, ownership information, recording data, sale price, physical and mailing addresses, assessment and district classifications, current assessed values for real estate and personal property, lottery credit claims, parcel history and zoning/sanitary information are maintained daily. This system serves as the “hub” for parcel mapping and is available on-line for public viewing.</p> | LICD Zoning Department County Treasurer | Ongoing | Accurate tax bills completed and dispersed each year Improved legal description/clarification On-line hit count |
| <p>➤ <u>Purchase orthophotos on a dependable, five year rotation and continue to participate in the WROC.</u> High quality digital orthophotos are utilized by numerous county departments, private entities and the general public. Updates to these photos are necessary for accuracy in planning for emergency response, highway projects, zoning, etc. In addition, continued participation in the WROC helps to reduce the cost for the orthophotos for Lincoln County as well as allows us to potentially purchase a better product.</p> | LICD in cooperation with the Land Services Group | 2015 and ongoing | Completed or not completed Increase usage within county Resolution acquired Area acquired at better resolution |
| <p>➤ <u>Develop and maintain road infrastructure data.</u></p> <ul style="list-style-type: none"> • <u>Complete invasive species inventory for highway right of ways.</u> NR40 requires the Highway Department to maintain up to date information about where invasives are located along right of ways. The department must attempt to manage/control the spread of invasives in rights of way or pay to have them eradicated. In addition, the mapping of the invasives location will create public awareness and potentially prevent the spread of these invasives. • <u>Create Highway Department plow routes map.</u> The primary objective is to create the most efficient plowing routes possible to potentially provide cost savings in the form of less fuel and/or overtime hours. • <u>Continue to maintain road sign inventory.</u> Collect and update data including GPS location, type of sign, type of post, sign size and material, and additional notes about the sign and maintenance of it. Collecting and updating this data creates one resource for information about road signs that are the County’s responsibility; allowing planning of sign maintenance and road projects using current information. • <u>Acquire and maintain road infrastructure data.</u> Collection and maintenance of data such as culvert locations, bridges, and other infrastructure can help the local highway and street departments prioritize road maintenance projects • <u>Update, clarify and maintain highway right of way information.</u> Right of way | Highway Department in cooperation with LICD and Lincoln County Towns | Ongoing 2011 Ongoing Ongoing | Completed or not completed Awareness and knowledge of location of invasive species Efficiencies and cost savings Documentation of highway assets, improved maintenance tracking |

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

information is maintained within the GIS data associated with parcel mapping.

GOAL #1: Create and maintain digital land information data and integrate that data into user friendly online systems (Cont.)

| <u>OBJECTIVES:</u> | <u>RESPONSIBLE DEPARTMENT(S)</u> | <u>TIMELINE</u> | <u>MEASUREMENT METHODOLOGY</u> |
|--|---|--|--|
| <p>➤ <u>Develop and maintain Planning and Zoning related data.</u></p> <ul style="list-style-type: none"> • <u>Continue to update and maintain existing land use layer information.</u> • <u>More accurately identify land cover/exact use of land by utilizing existing LIDAR data.</u> A more accurate rendering of current land uses will help promote more logical land development in the future. • <u>Create document storage/retrieval system for zoning permits linked to GIS.</u> This would potentially create efficiencies in the permitting processes and zoning violation investigations. | <p>Zoning Department in cooperation with LICD</p> | <p>Ongoing 2014 2012</p> | <p>Accuracy of data More informed decisions Efficiencies in organization and accessibility to data</p> |
| <p>➤ <u>Develop and maintain County Forest resource data.</u></p> <ul style="list-style-type: none"> • <u>Develop and maintain GIS recreational trail maps.</u> Lincoln County has an abundance of recreational resources within the County Forest boundaries that are mapped on a regular basis. The data is then used to develop recreational trail maps for distribution to the general public. Collection of single track mountain bike and snowshoe trail data is planned. • <u>Maintain forest boundary and forest compartment maps.</u> This effort is conducted in cooperation with the Wisconsin DNR Forestry staff • <u>Develop and maintain invasive species mapping.</u> Currently, invasive species have been identified within the County owned forest boundaries. Mapping of these locations will assist in prevention of further spread of these invasives. This data would also allow the county to inform and educate the users of the county forest on the impacts of invasive species. | <p>Forestry Department in cooperation with LICD and DNR</p> | <p>Ongoing Ongoing Ongoing</p> | <p>Accuracy of data Better maps for use by general public Improved forest management</p> |
| <p>➤ <u>Develop, create and maintain natural and cultural resource data.</u></p> <ul style="list-style-type: none"> • <u>Develop a cultural and historical resources and sites inventory.</u> Knowledge about where these resources and sites are located will allow residents to take action to better preserve them or to prevent damaging or destroying them during land development activities. • <u>Develop and maintain an accurate hydrology layer.</u> Current hydrology data has some inaccuracies. In cooperation with DNR, Lincoln County would like to update and improve the accuracy of the hydrology data. | <p>LICD in cooperation with the DNR and other entities</p> | <p>2013-2015 2013</p> | <p>Awareness of locations for preservation Accuracy of data</p> |

LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010

| GOAL #1: Create and maintain digital land information data and integrate that data into user friendly online systems (Cont.) | | | |
|---|--|-----------------------------------|--|
| <u>OBJECTIVES:</u> | <u>RESPONSIBLE DEPARTMENT(S)</u> | <u>TIMELINE</u> | <u>MEASUREMENT METHODOLOGY</u> |
| ➤ <u>Develop, create and maintain conservation project data.</u> Continue to expand conservation project data including locations of manure storage structures, conservation projects installed, nutrient management planning sites, performance standards implemented, etc. | LICD | Ongoing | Completed or not completed |
| ➤ <u>Incident Mapping.</u> The Land Information and Conservation Department should continue to work with other County departments (Sheriff's Dept, Health Dept, Emergency Management Dept, Highway Dept, etc) to locate, map, and update information related to crashes, crimes, hazardous sites, environmental issues, disease outbreaks, and other situations as requests are made. | Sheriff's Dept., Health Dept., Highway Dept., Emergency Mgmt. in cooperation with LICD | Ongoing | Awareness of locations Improved planning and response |
| ➤ <u>Digital Conversion of Documents.</u> <ul style="list-style-type: none"> • <u>Digitize and geo-reference historic aerial photography in the county.</u> This will be used in tracking trends in land use, population growth, lake levels, and for other research purposes. It is also necessary for the creation of a historical archive. • <u>Digitize microfilms of Register of Deeds documents.</u> Necessary for the creation of a historical archive. • <u>Continue historical scanning of Register of Deeds documents.</u> Necessary for the creation of a historical archive. | LICD and Register of Deeds | 2012 2011 2010-2011 | Creates historical archive # of documents added to historical archive |
| ➤ <u>Inventory survey data such as United States Geological Survey (USGS) Benchmarks.</u> Currently, Lincoln County has a list of USGS survey benchmarks. These benchmarks will need to be verified, checked and maintained. | LICD in cooperation with USGS | 2015 | # of benchmarks found and/or maintained |
| ➤ <u>Map countywide broadband access.</u> This information could help the county better promote business development in the areas that have the most broadband access and potential capabilities. It can also help identify geographic areas in the county that should have more of this technology but do not. Grant funds may be available for a project such as this. | LICD in cooperation with other public and private entities | 2011-2012 | Mapping completed Expansion of capabilities |
| ➤ <u>Renewable energy mapping.</u> To encourage the use of renewable energy within Lincoln County, the mapping of potential wind sites, biomass locations, etc. may be beneficial. | LICD in cooperation with other public and private entities | 2012-2015 | Mapping completed Expansion of renewable energy use |

LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010

| GOAL #2: Develop an integrated geographic information system (GIS) for all land related databases in Lincoln County. | | | |
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| OBJECTIVES: | <u>RESPONSIBLE DEPARTMENT(S)</u> | <u>TIMELINE</u> | <u>MEASUREMENT METHODOLOGY</u> |
| <p>➤ <u>Support other County department's accessibility to GIS.</u> The LICD should continue to make available relevant, up-to-date GIS software (e.g. ArcGIS and other ESRI products, etc.) to other departments.</p> <ul style="list-style-type: none"> • <u>Create a GIS Help Desk function.</u> With limited GIS resources, a help desk system would aid in tracking GIS questions, concerns and problems. • <u>Cross Train Staff.</u> Risk occurs when there is limited staff to assist with certain projects. Cross training of GIS staff will reduce this risk and create backup support when needed. • <u>Provide training and GIS knowledge growth opportunities.</u> GIS staff effectiveness and competency is dependent on providing training and professional growth opportunities. | LICD | <p>Ongoing</p> <p>2011</p> <p>Ongoing</p> <p>Ongoing</p> | <p># of GIS users</p> <p># of issues resolved/assistance provided</p> <p>Skill set developed to ensure support</p> <p>Training attended</p> <p>Knowledge transfer</p> |
| <p>➤ <u>Continue strong partnership with land service departments through the Land Services Group.</u> The mission of this group is to enhance the accessibility and use of land resource information. It is vital that all land service departments continue to work together to provide an integrated land information system for Lincoln County.</p> | Land Service Group | Ongoing | <p># of cooperative projects</p> <p># of meetings/discussions</p> |
| <p>➤ <u>Integrate register of deeds programs with GIS software and land information.</u> This will create a seamless transfer of information throughout the systems</p> | Register of Deeds in cooperation with LICD | 2011-2015 | Ease of moving between software |
| <p>➤ <u>Upgrade and maintain GPS equipment.</u> As GPS equipment becomes unreliable or out of date, purchase upgrades to ensure data integrity.</p> | LICD and departments that will be utilizing the GPS | Ongoing | Upgraded or not upgraded |

LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010

| GOAL #2: Develop an integrated geographic information system (GIS) for all land related databases in Lincoln County. (cont.) | | | |
|--|--|---------------------------------|---|
| OBJECTIVES: | <u>RESPONSIBLE DEPARTMENT(S)</u> | <u>TIMELINE</u> | <u>MEASUREMENT METHODOLOGY</u> |
| <p>➤ <u>Develop, create, update and maintain policies, procedures and standards.</u></p> <ul style="list-style-type: none"> • <u>Metadata standards.</u> It is Lincoln County's intent to follow FGDC standards. • <u>Operating and data maintenance procedures.</u> (Parcel mapping procedures, addressing procedures, GPS equipment, etc) – Documentation of procedures is important as a guide for training of new staff as well as reference for current staff. • <u>GIS mapping requirements/standards.</u> These requirements would be developed on a project by project basis and would provide a defined process for GIS mapping involved with the project. • <u>Data backup plan/disaster recovery plan.</u> This plan is needed to ensure protection of the GIS system as well as all GIS data. | LICD | Ongoing | # of policies written, approved and/or updated |
| <p>➤ <u>Develop a system to integrate private sector data into the County GIS.</u></p> <ul style="list-style-type: none"> • <u>Map utility lines (two phase power, three phase power, natural gas lines, etc).</u> Private sector data could be helpful with planning and encouraging economic development and emergency response. • <u>Work with dam owners to develop GIS mapping data for inundation maps that identify projected flood areas, etc.</u> This kind of information is particularly useful to county and other entities developing emergency/disaster plans. | LICD in cooperation with quasi-governmental and private entities. | Ongoing 2013 2011 | # of providers cooperating Area covered by utility data |
| <p>➤ <u>Develop a system to integrate state and federal government data into the County GIS.</u> Acquiring data collected by state and federal governmental entities that is beneficial to Lincoln County.</p> | LICD in cooperation with state and federal agencies | Ongoing | # of agencies cooperating Amount of data integrated into county system |
| <p>➤ <u>Pursue the development of mutual aid agreements with surrounding counties.</u> For projects such as disaster recovery, etc., mutual aid agreements with surrounding counties would provide backup assistance for Lincoln County, if needed.</p> | LICD in cooperation with Marathon, Langlade, Oneida, Price and Taylor Counties | 2011 | # of agreements developed Backup assistance provided as needed |

LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010

| GOAL #3: Improve data sharing and accessibility of land information | | | |
|---|--|------------------------|---|
| <u>OBJECTIVES:</u> | <u>RESPONSIBLE DEPARTMENT(S)</u> | <u>TIMELINE</u> | <u>MEASUREMENT METHODOLOGY</u> |
| ➤ Continue to improve and maintain a GIS Website. A website that allows users to view and print land information easily. The website should be user friendly and contain data that is highly used and requested. | LICD | Ongoing | # of hits on website Decreasing the # of questions received by department |
| ➤ Continue to support the online Land Records System. The general public has access to the Land Records System and all data except ownership. Information can be accessed by PIN, parcel number, legal description, and site address. | LICD in cooperation with the City County Information Technology Commission | Ongoing | # of hits on website |
| ➤ Provide online access to recorded documents. Using the Fidlar products (Laredo and Tapestry), the Register of Deeds can provide online access to data. Laredo is designed for the individuals and businesses that have been coming into the Register of Deeds office to perform searches and would like to access and execute searches of land records from their office. Tapestry is designed for the general public by providing access to recorded documents over the internet. | Register of Deeds in cooperation with LICD | 2010-2011 | # of hits on website |
| ➤ Encourage and maintain compatible software formats. Collection of new data should be in a format that is compatible with existing data and software systems when possible. If data is not collected in compatible formats, attempts to accurately convert to compatible data formats should be made. | LICD in cooperation with others | Ongoing | Compatibility of software Amount of new data that is compatible with land records and GIS software |
| ➤ Provide online access to survey data. Providing online access to tie sheets, plat of survey maps, section summaries and any other survey related data as deemed necessary; this will provide improved accessibility for surveyors, developers, and others that utilize survey related data. | LICD | 2012 | Amount of survey data available online |
| ➤ Develop a secure method to provide GIS data online. This is especially important since the demand for GIS data retrieved via computer is increasing along with the need for some of the information to remain confidential. | LICD in cooperation with Information Technology | Ongoing | Secured access available |

LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010

| GOAL #3: Improve data sharing and accessibility of land information (cont.) | | | |
|--|--|------------------------|---|
| <u>OBJECTIVES:</u> | <u>RESPONSIBLE DEPARTMENT(S)</u> | <u>TIMELINE</u> | <u>MEASUREMENT METHODOLOGY</u> |
| <p>➤ <u>Support an emergency operations center and associated functions.</u> Land records and GIS data can assist during emergency situations in providing maps, property owner information, and analysis of geographic locations. This support needs to take place during all phases of an emergency situation including planning, preparedness, response, and recovery. The support and data is needed for day-to-day operations such as the 9-1-1 dispatch center as well as irregular events such as a tornado or flooding.</p> <ul style="list-style-type: none"> • <u>Develop, acquire, and maintain data to support emergency situations.</u> Work to provide any potential data that could be needed or useful during a variety of emergency situations will aid in planning and responding to the situation. This will assist in ensuring that the County is prepared for these situations. • <u>Acquisition and accessibility to necessary equipment, including hardware and software.</u> Emergency situations require equipment to produce maps and information to handle the emergency. This equipment needs to be acquired or designated in advance of an emergency so that it can be made accessible for use. • <u>Involvement in planning and training for a variety of emergency situations.</u> Planning and training for emergency situations ensures that the necessary resources are accessible and in place in case of an actual emergency, and can help identify areas that are lacking. This includes information or data that may not exist, problems with accessing data or information, and an inability to create/provide data or information in a timely manner. | <p>Sheriff's Department, Emergency Management, Lincoln County emergency response agencies, LICD, and other County departments depending on the type of situation</p> | <p>Ongoing</p> | <p>Improved planning for emergency situations Improved response to emergency situations Improved recovery from emergency situations Accessibility and availability of requested data/maps/information</p> |
| <p>➤ <u>Support creation of Lincoln County Platbook.</u> Continue to provide assistance in the development of a county plat book.</p> | <p>University of Wisconsin Extension staff, 4-H Leaders Association, LICD, Forestry Department</p> | <p>2012, 2014</p> | <p>Improved efficiency in plat book development Accuracy of data provided Number of plat books distributed Amount of staff time needed for review</p> |

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

2. Assistance Requested

a. Lincoln County has actively sought outside assistance as needed prior to implementing projects and will continue to do so for any new initiatives. The outside assistance includes the utilization of contractors for specific projects such as parcel mapping, GIS redesign, website development, acquisition of digital orthophotos and LIDAR data. In addition to seeking outside expertise on land information projects, Lincoln County staff continues to attend training as needed to expand their skills and seek assistance and input from counterparts through email listserves.

b. Lincoln County currently funds land information projects and activities through a variety of funding sources. These sources include county tax levy, county capital improvement funds, state and federal grants, and funds from project partners. It is Lincoln County's intention to continue to pursue grant funds for land information projects and activities in addition to the county government funding. Lincoln County is committed to maintaining current land information projects that were developed utilizing Wisconsin Land Information Program funding.

c. Lincoln County is committed to the maintenance of a county website that provides governmental information as well as land information. Lincoln County staff will ensure that the web mapping application and land records website are maintained and updated as necessary. In addition, the County will strive to improve access to land information data as it is acquired or updated.

d. Lincoln County will discuss participation in a statewide repository when one is made available. If the requirements are unrealistic or burdensome, the County will proactively participate in revising the requirements.

e. Lincoln County will continue to comply with County ordinances and state statutes in regard to procurement of services/products related to this Plan. This will ensure that the County can maximize financial resources to fund land information projects.

3. Problems Encountered

To date, we have successfully dealt with unanticipated problems as they have occurred. Some of the issues that have been dealt with in the past include staff changes, office consolidation and restructuring, elimination of positions, and funding reductions. At this time, Lincoln County does not foresee any obstacles to the implementation of this plan; however, the current economic climate and State/County budget situation may have an impact on how Lincoln County proceeds with plan implementation. In addition to the technology needed to provide land information, adequate well trained staff is needed to continue to meet the public, private and governmental demand for accurate, technology based land information. Without adequate staffing levels, the goals and objectives identified within this plan will be difficult or cannot be accomplished. In addition, if the Wisconsin Department of Administration – Wisconsin Land Information Program (WLIP) or state legislature adopts policies that would limit the use of WLIP funds, implementation of this Plan may be impacted.

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

D. Custodial Responsibilities

The following list identifies Lincoln County Departments and their land information custodial responsibilities.

| DEPARTMENT | CUSTODIAL DATA | SOURCE OF CUSTODIAL RESPONSIBILITY |
|-----------------------------|---|--|
| <i>COUNTY TREASURER</i> | Maintain tax information for all parcels in Lincoln County | WI Statute 59.25 |
| <i>EMERGENCY MANAGEMENT</i> | Maintain Emergency 9-1-1 service district maps, in cooperation with LICD staff | |
| | Maintain Master Street Address Guide (MSAG) | |
| <i>HIGHWAY DEPARTMENT</i> | Maintain Lincoln County right-of-way plats and highway construction plans | |
| | Create and maintain a database of information for all public roads | |
| | Create an index of all of the culverts, maintenance schedule and their location in cooperation with LICD staff | |
| | Create an index of all of the bridges, maintenance schedule and their location in cooperation with LICD staff | |
| <i>REGISTER OF DEEDS</i> | Record/File/Index deeds, mortgages, plat maps, certified survey maps and other related documents | WI Statute 59.43 |
| | Maintain a tract index of real property | WI Statute 59.43 |
| | Scan records into imaging system as received and filed | WI Statute 59.43 |
| <i>ZONING DEPARTMENT</i> | Maintain records of zoning studies, resolutions, transactions, findings and determinations | WI Statute 59.69 |
| | Prepare and maintain County Comprehensive Plan | WI Statute 59.69 and 66.1001 |
| | Prepare and maintain zoning district maps/zoning ordinances/zoning permits for unincorporated areas | WI Statute 59.69 County Ordinance – Chapter 17 |
| | Prepare and maintain floodplain zoning ordinance and enforcement procedures for unincorporated areas mapped as floodplain | WI Statute 59.69, 59.692, 87.30, WI Admin Code NR116 and County Ordinance Chapter 20 |
| | Prepare and maintain procedures for the enforcement of county zoning ordinances | WI Statute 59.69 and County Ordinance Chapters 17, 20, 21 & 25 |
| | Prepare and maintain shoreland zoning ordinance that applies to all defined shoreland areas and mapped shoreland wetlands | WI Statute 59.692, 281.31, WI Admin Code NR115 and County Ordinance Chapter 21 |
| | Prepare and maintain construction site erosion control and stormwater management zoning | WI Statute 59.693 |

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

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| <i>LAND INFORMATION AND CONSERVATION DEPARTMENT</i> | Maintain data and information on PLSS corners including tie sheets, section summary sheets and original field notes | WI Statute 59.45 |
| | Maintain data and information on the Wisconsin High Accuracy Network (HARN) within Lincoln County and Lincoln County User Densification Network (UDN) | Cooperative arrangement with Wisconsin Department of Transportation |
| | Maintain private survey maps that are provided to office | WI Statute 59.45 |
| | Maintain and perpetuate section corners and survey landmarks/benchmarks | WI Statute 59.74 |
| | Prepare and maintain accurate ownership and description information for all parcels of real property in the county | WI Statute 70.09 |
| | Maintain school district and special purpose district codes | WI Statute 70.09 |
| | Coordinate, develop and maintain land information projects within the County and develop, implement and maintain a countywide plan for land records modernization | WI Statute 59.72 |
| | Prepare and maintain a rural address and road naming ordinance, address and road naming applications/permits and addressing standards/road naming | WI Statute 59.54 County Ordinance Chapter 6.30 |
| | Prepare and maintain parcel maps | County Policy |
| | Prepare and maintain a land and water resource management plan | WI Statute 92.10 |
| | Prepare and maintain an Animal Waste Management Ordinance/Livestock Siting regulations | WI Statute 92.11 |
| | Maintain historical aerial photographs | County Policy |
| | <i>FORESTRY, LAND AND PARKS DEPARTMENT</i> | Maintain forest compartment |
| Maintain recreational trail maps | | County Policy |
| Maintain historical aerial photographs | | County Policy |
| Maintain tax deed parcel file | | WI Statute 75 |

E. Framework Data, System Implementation and Statewide Standards

1. Geographic Positioning Reference Framework

In 1997, Lincoln County completed geodetic densification from stations within the Wisconsin High Accuracy Reference Network (HARN). The network consists of eighteen 1- and 2-PPM stations which was established using the "Guidelines to Support Densification of the Wisconsin High Accuracy Reference Network" (HARN) using Global Position System (GPS) technology standards and specifications which were current at that time. In addition, the County established twelve 10-PPM stations in 1997. The horizontal geodetic control is strategically placed throughout the County and has met our needs, however there are some locations that have become obstructed and there may be a need to set new ones in the future. Lincoln County is monitoring the efforts of the Wisconsin DOT to implement a virtual GPS network, and the Wisconsin Height Modernization Program (WI – HMP), and will assess our needs and participate as deemed appropriate. Coordinate values are available in Lincoln County, State Plane and Latitude/Longitude. The County assumes the custodial responsibility for the densified control stations.

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

Lincoln County plans on using the existing National Geodetic Survey and USGS vertical network for vertical control. Any new stations set by the County would adhere to third order standard. Lincoln County is also monitoring the effort of the Wisconsin DOT in implementing the vertical network and will participate as deemed appropriate.

Lincoln County has an active corner remonumentation program that complies with the requirement of Wisconsin Administrative Code AE 7.08 and/or state statute. This remonumentation program will be completed countywide. Coordinates are being established on the public land survey corner using a combination of conventional survey techniques and GPS technology, and meeting or exceeding the FGDC Third order, Class I accuracy standard. Coordinates are maintained in the Lincoln County, Wisconsin Coordinate System, which is mathematically relatable to the North American Datum (NAD) 83(91). The remonumentation program will aid in the development of and updating of parcel maps. Other areas will be controlled as needed and budgets allows. The County maintains the custodial responsibility for the public land survey system. Historical tie sheets have been scanned in and any new tie sheet is scanned in immediately upon completion of review. Tie sheet data will be available on the Lincoln County GIS website.

2. Orthoimagery and Georeference Image Base Data

The County has a number of photogrammetric base maps available including historical aerial imagery. Many of the older years of aerial imagery are geo-referenced to the County's GIS data. The geo-referenced aerial imagery that is currently available in digital form is from the years 1990 and 1992. The 1990 imagery is from the National Agriculture Imagery Program (NAIP) and the 1992 imagery from the DNR. Older aerial imagery is available in hard copy form and has not yet been digitized or geo-referenced. The County also has a copy of the 2008 NAIP imagery kept in digital form available as reference information.

In 2001, the County had an orthophotography flight completed, which resulted in 18-inch black and white imagery; and in 2003 the County acquired black and white infrared orthophotography. Imagery sets are maintained in digital form as historical data. In 2005, the County completed orthophotography flight as part of the Wisconsin Regional Orthophotography Consortium (WROC) project. This flight resulted in county-wide 12-inch true color imagery, as well as 6-inch true color imagery in selected areas of the County. In 2010, the County has contracted for updated orthophotography as part of the WROC project which will provide county-wide 12-inch true color imagery and 6-inch true color imagery in selected areas of the County. For both 2005 and 2010, the selected areas include the Cities of Merrill and Tomahawk and water front areas that are in more heavily developed areas.

Lincoln County has the USGS 1:24,000 digital raster graphics (DRGs) in digital form available for reference. Currently, the County does not have any satellite imagery or oblique aerial imagery. The County has historical imagery available, primarily in hard-copy original photos, from a number of years including: 1938, 1955, 1961, 1962, 1970, 1974, 1975, and 1979. These sets of aerial imagery are in addition to those mentioned previously.

3. Elevation Data Products and Topographic Base Data

In 2008, Lincoln County acquired digital elevation data using Light Detection and Ranging (LIDAR). Products that were obtained from this flight included a digital elevation model (4 foot spacing), digital terrain model (4 foot spacing), triangular irregular network (4 foot spacing) and two foot contours. This digital elevation data meets Federal Emergency Management Administration floodplain mapping standards.

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

4. Parcel Mapping

All parcel maps will be referenced to the lines of the public land survey system and will minimally be suitable for planning purposes and in many cases suitable for assisting with land title boundary or survey line determination. Our parcel maps are not intended to be a substitute for a certified land survey, or used to guarantee title to property. Included in the metadata or attribute data will be information that directs users to the original source document or recorded instrument. We intend to follow the WLIA Digital Parcel Mapping Standard for cadastral mapping where practical. Metadata will follow FGDC's Cadastral Standards. The parcel maps will be geodetically referenced to the Lincoln County, Wisconsin, Coordinate System, which is mathematically relatable to the North American Datum (NAD) 83(91). Currently, all parcel mapping is completed and maintained by Land Information and Conservation Department staff.

Although, Lincoln County's Parcel Identification number does not fully conform to the WLIA standard, the WLIA Parcel Identification Numbering System can be obtained from the Lincoln County Land Information System through database manipulation and programming.

5. Parcel Administration and Assessment Information

Lincoln County's database supports integration of digital parcel maps with property and ownership information by linking data through key fields. Tabular databases relating to various land records are housed and maintained on an IBM AS400, known as the Lincoln County Land Records System. The County will adhere to applicable standards as deemed necessary. Following is the specific data that the County intends on maintaining.

- Parcel ID. The Real Property Lister (RPL) manually assigns a Parcel Number to each parcel, while the Land Records system software assigns the corresponding PIN (Parcel Identification Number).
- Tax data. The Land Records System Assessment and Tax database is housed on an IBM AS400 and is designed so information can be accessed by PIN, Parcel Number, legal description, site address and owner name and can be linked to the GIS parcel map geodatabase by PIN.
- Site Address. Individual site address information can be accessed through the Land Records System or GIS data and is maintained in both locations.
- Owner Name & Address. The land record ownership information is updated daily on the Land Records System by the RPL according to recorded documents.
- Description/current document pertaining to parcel. A legal description is included for each parcel from the recorded documents and maintained by the RPL on the Land Records System. Most metes and bounds descriptions are abbreviated in some fashion due to their length. Current recording data is also maintained which includes the document number, the recording date, the document type, and the transfer fee.
- Document Imaging. Imaging of documents relating to property transactions in the Register of Deeds began in 1998. As time and budget allows, we plan on inputting documents from prior years. Imaging has also been expanded to include other land records such as survey maps, plats of surveys, section summaries, and tie sheets.

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

- Real estate transactions. The Register of Deeds records these transactions and maintains a tract index and searches can be made by grantor, grantee, legal description or document number. The RPL maintains the Land Records System to reflect these real estate transactions.
- Easements and restrictions, including conservation easements. The Register of Deeds records these transactions and maintains a tract index and searches can be made by grantor, grantee, legal description or document number. Ingress\egress easements that can be spatially represented without the aid of aerial photography are being added to the GIS data.
- Tax exempt lands. The RPL includes a class code specific to the type of exempt property on the assessment module in the Land Records System. These codes can be linked to the GIS parcel data.
- Zip Code. The Land Records System includes the owners mailing zip code, which is entered automatically with one key stroke, using the city and state for reference. The zip code is also included in the site address but is not automated.
- Assessment class. Class codes are included on the Assessment module of the Land Records System and maintained by the RPL at the direction of the municipal assessor according to the Wisconsin Department of Revenue's standards. These codes can be linked to the GIS parcel data to illustrate specific land area.
- Public Lands. These parcels are covered under the tax-exempt land class codes.
- Liens. The Register of Deeds records these transactions, maintains a tract index and searches can be made by grantor, grantee, legal description or document number.
- Evidence of Title. The Register of Deeds maintains the current and historic documents affecting title; and maintains a tract index so searches can be made by grantor, grantee, legal description or document number.

6. Street/Road Centerlines, Address Ranges and Address Points

In 2005 and 2006, the County created GIS data containing all named public and private roads. This data updated and improved on the previous version of similar data that was found to contain errors and omissions. The County currently maintains this data with changes on an as needed basis. Any vacated public or private roads are moved to separate GIS data and have information relating to the vacation or removal of the road. All road names follow County ordinance and policy, which closely follows United State Postal Service (USPS) Publication 28 and allows for variations that have historic representations across the County. The County also works with local municipalities, the Real Property Lister, the Sheriff's Department, Emergency Management, local United States Post Offices, the Wisconsin DOT, and other entities to reconcile conflicts in road names and maintain consistency in all databases with similar information. Active railroads within the County are maintained in separate GIS data and maintained as needed.

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

The County maintains road classification data within the attributes of the GIS data for the transportation/centerline network. The County works with local municipalities, the Wisconsin DOT's Wisconsin Local Roads Inventory, and other entities to assist in collection, maintenance, and consistency of the road classification data. The County currently maintains this data with changes on an as needed basis.

Descriptive right-of-way information is maintained within GIS data associated with parcel mapping. The County currently maintains this data with changes on an as needed basis, and works to add to the amount of right-of-way data as more information becomes available. Right-of-way information may be available for federal, state, county, and local roads depending on available information. Currently prescriptive right-of-way data is mapped in the boundary lines but is not in the right of way feature class.

The County maintains address ranges within the attributes of the GIS data for the transportation/centerline network. The address ranges were created in 2005-2006 to support emergency response activities. The address ranges associated with each segment of road are based on the addresses that could be assigned and existing actual addresses. The standards used are those necessary to meet the software and activity requirements that necessitate the maintenance of this data. The County currently maintains this data with changes on an as needed basis.

In 2005 and 2006, the County created GIS data containing all known existing site addresses and structures that appeared to require a site address according Lincoln County Code of Ordinances Chapter 6.30. This data updated and improved on the previous version of similar data that was found to contain errors and omissions. The County currently maintains this data with changes on an as needed basis. Site addresses are typically maintained as a pair of points – one marking the structure location and one marking the site access point at the named road used in assigning the address. The site address information is also maintained within the County's Land Records System that is changed as needed. All site addresses (structure and site access point locations) that are retired are maintained within the GIS data as reference information, but marked as being retired or old site address information. Driveway location information is maintained as separate GIS data, also maintained on an as needed basis. The County administers the Addressing and Road Naming Ordinance according to the ordinance and County policy.

The Site Address GIS data contains some information with place and landmark names within the attribute table. This information is collected from a variety of sources and it continues to be updated as needed. Some examples of place and landmark names currently maintained within the data are schools, hospitals, community/publicly owned facilities, parks, and cemeteries. This portion of the site address data is not complete and additional place and landmark names and locations continue to be collected and added.

The GIS Specialist, with primary responsibilities for addressing, works with the Sheriff's Department and Emergency Management to create, update, and maintain records in the County's Master Street Address Guide (MSAG). This work also includes providing information to the Real Property Lister and other entities to maintain consistency in all databases containing similar information. The standards for data entry and maintenance are those required by the MSAG provider and necessary for the software used in the 9-1-1 dispatch center. The County currently maintains this data with changes on an as needed basis.

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

County departments involved in emergency planning, routing, response, and mapping work together to share information and data as needed for emergency response. This also includes sharing information with responding agencies such as fire departments and first responder organizations that serve the County. Currently the support provided includes updating information, printing and providing maps, fieldwork cooperation, creating data, as well as other requests as they are made. The County expects to continue supporting emergency response agencies and to add to and improve the information that is being made available to those agencies.

In 2005 and 2006, cellular tower GIS data was created to accommodate the need to respond to wireless 9-1-1 calls. This data, and all GIS data used in response to 9-1-1 calls, is updated as needed. New data continues to be created and added to the mapping software as requested by dispatchers and to make response faster and easier. As the software chosen by the Sheriff's Department, and specifically the dispatch center, has changed the data, data structure, maintenance, information available has been modified to accommodate the software requirements. The County expects to continue supporting emergency response agencies and to add to and improve the information that is made available to those agencies.

7. Hydrography, Hydrology and Wetlands Mapping

Lincoln County has acquired and is utilizing all available hydrography, watershed, and wetlands mapping from the DNR. Lincoln County received updated digital wetland maps from the DNR in 2009 and has incorporated them into the GIS data. It is the intent of Lincoln County, in cooperation with the DNR to update the hydrography layer with the use of the recently acquired LIDAR data .

8. Soils Mapping, Land Cover and Other Natural Resource Data

Lincoln County, in cooperation with the Natural Resource Conservation Service (NRCS), completed and digitized the Lincoln County Soil Survey (1996 & 1998). This project was consistent with and met all applicable NRCS standards and specifications. Any future map updates will be coordinated with NRCS. Digital soils data is available on the Lincoln County GIS website and the NRCS Web Soil Survey.

In addition to the soils data, Lincoln County acquires other GIS data such as land cover, watersheds, hydrogeology, endangered resources and other environmental impact data from the DNR or other appropriate custodians of the data, on an as needed basis. Currently, the County has GIS data of geology and Pleistocene geology available. This data was obtained from other organizations and is not updated locally.

Lincoln County created and maintains a data layer identifying the boundary of the County owned forest land as well as compartment and stand maps. This data is shared with the DNR Forestry staff through the RAVEN program. Additional forest data could be obtained by querying the Lincoln County Land Records System using the assessment classes related to forests.

The County collects, updates, and maintains data relating to non-metallic mining. This GIS data follows the active boundaries of the mining operation and is updated annually or as needed. This data is maintained in cooperation between the LICD and the Zoning Department and some historical data is available in some areas of the County.

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

9. Land Use Mapping

Existing land use mapping was created for Lincoln County during the development of the 2000 Lincoln County Comprehensive Plan. Lincoln County intends on updating the existing land use maps to reflect the changes over the past ten years. Planned land use maps were updated in 2010 as part of the Lincoln County Community Plan process. This update occurred in conjunction with the update of the county zoning district data layer.

In addition to the above mentioned land use mapping, Lincoln County's Land Records System contains the Department of Revenue Land Use Classification assessment codes. A graphic representation of the Land Use Classification assessment codes could be generated in the parcel mapped areas of the county.

10. Zoning Mapping

Lincoln County created and maintains a zoning districts data layer for all zoned townships in the county. This data layer is updated as amendments occur. Zoning districts are mapped in accordance with the Lincoln County Zoning Ordinance. In addition, Lincoln County maintains a shoreland zoning layer (1000 foot buffer from lakes and 300 foot buffer from streams). The shoreland zoning layer covers both zoned and unzoned Towns within Lincoln County.

In regard to floodplain and floodway mapping, Lincoln County currently uses the hardcopy Flood Insurance Rate Maps. These maps have been converted into a digital format but are not certified. Lincoln County has received preliminary updated digital maps from the DNR. Once these maps are certified by the Federal Emergency Management Administration, the digital data will be incorporated into our GIS data.

The County has GIS data relating to the known locations of cemeteries and burial sites. This information is currently being maintained in multiple source locations, and is being consolidated into a single source. While this information is not complete, additional sites are verified and added as they become known. Currently, Lincoln County has no plans to obtain other zoning related databases, such as environmental corridors, archeological sites, and historic/cultural sites. These databases would require further evaluation due to security and preservation issues.

11. Election and Administrative Boundary System

Lincoln County maintains GIS data for supervisory districts, wards, and voting places. This data is updated as needed or following a decennial census and meeting redistricting requirements. Census block information is available as GIS data, which is from the 2000 Census and maintained as historical reference data. Some other additional census geography is available as GIS data. Most census data is not updated locally and maintained specifically for County projects, as the data is also available from the U.S. Census Bureau (the primary data custodian). The County participated in programs to update the data used by the U.S. Census Bureau in preparation for the 2010 Decennial Census and anticipates participating in such future programs, including redistricting efforts following a decennial census.

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

Two sanitary districts are located in Lincoln County. The County maintains data related to the location of these two districts in the Land Records System, which is updated as needed. The County is willing to discuss data sharing with utility providers to acquire additional utility information.

School district information, tax incremental financing districts, and lake districts are maintained within the Land Records System. This data is updated as needed. Zip codes are maintained within GIS data and within the Land Records System. The data is updated as needed in coordination with the local United States Post Offices. Emergency Service Zones are also maintained within GIS data and updated as needed in coordination with Emergency Management, the Sheriff's Department, and the local emergency response agencies.

The County maintains GIS data containing the civil divisions within the County. This data is updated as needed and adjusted as additional areas of the County are parcel mapped, providing better base data for boundary location. In regard to state and federal legislative districts, the entire county is included within these districts so there is no pressing need for mapping this boundary.

Public administered lands are maintained within the Land Records System, which is updated as needed. Some of these lands can be mapped by linking the Land Records System with the parcel data or by the attributes within the Site Address Database. Native American Lands can be located by ownership using the Land Records System.

The County has GIS data showing the boundaries and locations of all counties in the State of Wisconsin; through available symbol choices this data also serves as a state outline. This data is not maintained locally as it was originally received from the State. It is maintained as reference data for County projects.

12. Critical Infrastructure and Facilities Management

The County maintains GIS data for Emergency Service Zones, which includes 9-1-1 call center service areas and fire and police districts. Call center locations and fire/police station locations are maintained within the Site Address Database. Hospitals, healthcare facility locations, government facility locations are maintained within the Site Access Database, and are updated as needed. This data is maintained in cooperation with the LICD, Sheriff's Department, Emergency Management, and the local emergency response agencies.

In 2005 and 2006, the County collected fire hydrant locations and cellular tower locations. This is currently the only utility data that the County maintains, and it is updated as needed. The County is actively seeking and willing to discuss data sharing with utility providers to acquire additional utility information specifically related to coverage areas..

The County maintains park locations within the Site Address Database, with some additional information found in the Land Records System. This data is updated as needed. Recreational trails within the County are available as GIS data that is updated as needed. This data is maintained to meet the requirements of County programs that use it. Some recreational trail data is not maintained locally as it is updated by outside organizations; and this data is collected from those organizations.

Lincoln County has collected and maintains, as needed GIS data relating to the roads the County is responsible for maintaining. This data is maintained in cooperation between the LICD and Highway Department. The data includes bridges, culverts, and signage. In some cases, the data also includes GIS data for Town and City roads. The data is updated to support the municipal programs that maintain and use it.

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

Airports and airfields are maintained within the Site Address Database, and are updated as needed. This data may not include all small, privately-owned airfields. Boat landing locations, as well as other water access locations, are maintained within Public Access Locations GIS data. This data is updated as needed and contains a variety of attributes including the type of access available, parking, ownership, and name of water accessed. The County has landfill location GIS data that was originally acquired from the State of Wisconsin. This data is maintained for County projects, but is not updated locally.

In regard to hazardous materials sites, Lincoln County has a listing of the location (address) of facilities that use/store/manufacture hazardous material over the Environmental Protection Agency planning and/or reporting threshold. This list includes 36 reporting facilities and 6 planning facilities. This information can be easily mapped for inclusion with GIS. In regard to contaminated sites, Lincoln County has not created or maintained such data.

13. Database Design and System Implementation

Each proposed project or data collection activity is evaluated individually. Some of the items discussed during the evaluation include timeframe for completion, type of information requested, complexity of data, reduction of duplicate data, funding and resource availability, complete and accurate collection/compilation, and description of final product requested. After completing the evaluation of the project, a model or sample is created and revisions are made. If the project is considered to be large enough to require it, a pilot area may be completed. Once the design or model is completed, production is begun; followed by review and finishing of the project. If data is collected or produced as part of the project, the data is added to the GIS and included in existing maintenance procedures. All maps that are produced using any GIS data include the following disclaimer:

The information depicted on this map is a compilation of public record information including aerial photography and other base maps. No warranty is made, express or implied, as to the accuracy of this information used. The data layers are a representation of current data to the best of our knowledge and may contain errors. It is not a legally recorded map and cannot be substituted for field-verified information. Map may be reproduced with permission of the Lincoln County Land Information and Conservation Department. Errors should be reported to the Land Information and Conservation Department, 801 North Sales Street, Merrill, WI 54452. Phone (715) 539-1049

Metadata is required as part of the data development process for any outside contracting services. The metadata is required to meet current Federal Geographic Data Committee (FGDC) standards and be delivered upon completion of the project. Internally developed data has metadata in many cases. While the County does not have metadata created for all internally developed data, this is something that is being improved upon over time.

Security of GIS data is maintained primarily through user login access and database connection access. This allows control of access to GIS data for editing; limiting the editing to only those that need to be editing specified GIS data while still allowing the data to be viewed. The Information Technology Department maintains a backup/security plan for all data. The security of the Land Records System is the responsibility of the City County Information Technology Commission.

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

Maintenance and implementation of the GIS data, system design, and software is done by GIS staff in cooperation with Information Technology staff. Maintenance of existing GIS data takes place in house. The data is maintained by staff with GIS capabilities that are located within a number of departments. This allows for the data to be modified, as needed, with the most current data available to all GIS users.

Managing data quality is a cooperative effort between GIS staff and the specific department's staff maintaining the GIS data. Refining and updating data editing techniques, the addition of fields for tracking who and when data was edited, using domains to standardize data entry, and limiting editing access to specific data have also worked to increase the quality and reliability of data maintained by the County.

A needs assessment was completed for the original Land Records Modernization Plan, an updated GIS data and website review was completed in 2007 and a customer needs survey was distributed for the development of this plan. When requests for additional data creation or modification are received, the specifics of the data requested are evaluated so as not to create duplicate data and to ensure complete and accurate data collection. Following the evaluation, a plan is developed to acquire the data. Upon completion or acquisition of the data, it is added to the GIS data for reference and/or maintenance.

Initial data collection and scrubbing typically takes place in shapefiles and personal geodatabases to allow for as needed alterations. Once data is complete and ready to enter "maintenance mode", it is housed with most of the County's other GIS data within ESRI's ArcSDE software. Topology rules are created as needed for related data, such as for parcel data. Some examples of topology rules commonly used are: must not have gaps, must not overlap, and must not have dangles.

The County is currently in the process of updating the ArcSDE database to the latest version of the software. Along with this update of the software, the data model and workflows for maintaining the data are being updated to incorporate ESRI geodatabase model standards. This includes adding fields to contain information about whom, when, and how each feature was acquired, created, and updated, which helps manage transactions that take place within the GIS data. Populating of repetitive fields is now done automatically with the use of new software tools from ESRI. The data re-design is also removing duplicate data and streamlining the workflows for maintaining the available data. In addition, for data collection with the GPS, a data dictionary is typically developed.

Lincoln County uses coding schemes in all GIS data that are standardized within the County's data. These coding schemes are used for attributes such as road classification, whether a parcel is part of road right-of-way, and zoning code, as examples.

Data affecting more than one department is shared between those departments through a variety of means including phone, email, meetings, and inter-departmental mail. Some examples of information and data being shared are newly recorded documents for parcel mapping, new address assignments for 9-1-1 response, zoning modifications for building permits, and recreational trail changes for access maps and questions. In many cases, the work being done on the County's GIS makes transferring this information to those that need to know more quickly, more easily accomplished, and more precise. The maps and information derived from the County's GIS can show specific locations of the previous data and the new changes to the data.

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

Lincoln County maintains GIS data primarily within ESRI's ArcSDE software. When GIS data is requested from an outside entity, the format options that are presented for transferring the data are shapefile and personal geodatabase in Lincoln County Coordinate System. These options are given because of the occasional difficulty converting ESRI format data to other software formats and coordinate systems. If the County requests data from an outside entity and it is provided in another software format, the County makes every effort to reliably convert that data to fit within our technology structure as needed.

The GIS data maintained has the ability to integrate with other GIS data through the use of spatial analysis tools most commonly provided through ESRI's ArcGIS software. Also using this software package provides the ability to integrate much of the GIS data with other databases the County maintains, such as the Land Records System. Discussion takes place regularly regarding other ways to integrate data currently maintained by the County in disparate databases.

F. Public Access

In regard to public access to data and privacy policies, Lincoln County adheres to the Wisconsin Open Records Law, state statutes and the Lincoln County Accessibility and Dissemination of Land Records Information Final Report dated November 10, 2008 for access to land records. The general public has access to the Land Records System and all data except for ownership through the Lincoln County website. Ownership data can be acquired by contacting the LICD. In addition, there are public terminals located within the LICD(2 terminals) and Register of Deeds office (4 terminals) that allow for public viewing of land records data such as real estate records, property information, tax/assessment data, etc. Lincoln County also has a GIS mapping website that provides the public with access to land records data. Lincoln County is in the process of implementing an on-line system that will enable access to real estate records for a fee.

Copies of recorded maps and certified survey maps are available for a fee set by the Register of Deeds. Hard copy maps such as PLSS monument sheets, survey maps, parcel information, resource and infrastructure maps, and others are available for a small copy fee. Lincoln County offers both tabular and graphic data for purchase in industry accepted interchange formats for a minimal charge. All GIS and Land Record System digital data requests are handled by the LICD staff.

Lincoln County is willing to share land records data as requested. The County has developed a data use agreement that must be signed prior to delivery of the data and has adopted a fee schedule that is reviewed annually. Lincoln County offers both tabular and graphic GIS and Land Record System data for purchase and all data requests are handled by the LICD staff.

Currently, Lincoln County has a subscription based service for recorded documents as well as the Land Records System. The Register of Deeds copies recorded documents to a compact disk for distribution to customers that purchase a monthly subscription under a County adopted contract. The County has also adopted fees for this service. The subscription service for the Land Records System is handled through the City County Information Technology Commission.

The Information Technology Department administers both physical and system security for land records and GIS data and works in cooperation with the City County Information Technology Commission for the security of the Land Records System. Physical access to the data and servers is prevented unless you have secure card access authorization to Lincoln County's Data Center. There are a number of solutions in place to protect the data which include a firewall for Internet security and tape and disk backups (local and remote) and anti-virus software for data integrity. There are also a number of password and access policies in place to help secure access to the data. Lincoln County strives to be ADA compliant to the extent possible.

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

The County continues to use the electronic access fee to create, develop, update and/or maintain land records data that will be accessible on the Internet or to purchase, upgrade or maintain hardware, software and security necessary to make this information available on the Internet.

G. Integration and Cooperation

Lincoln County has actively encouraged and supported integration and cooperation activities related to land records modernization. The County plans to continue these relationships and comply with all statutory requirements related to land records as deemed necessary. Lincoln County has a formal data sharing/maintenance agreement with the City County Information Technology Commission for the Land Records System and with Fidlar for the Register of Deeds software.

Informal data sharing/data maintenance agreements with Lincoln County towns, the City of Merrill, City of Tomahawk, consultants working for local municipalities, state agencies, and others are currently in place. It is Lincoln County's intent to continue these agreements as deemed beneficial to the county and potentially make the agreements more formal.

In regard to consortiums and cooperative/collaborative arrangements, Lincoln County has participated in the Wisconsin Regional Orthophoto Consortium since 2005, for the acquisition of orthophotography. This consortium helps to reduce the cost for the orthophotos for Lincoln County as well as allows us to potentially purchase a better product. Cooperative and collaborative arrangements have been formed in the past for projects that benefit Lincoln County. All mutually beneficial arrangements will continue and the County intends on pursuing other cooperative and collaborative arrangements and consortiums as opportunities arise.

Lincoln County is receptive to discussing potential partnerships for the development, update or maintenance of any land records data. The County would be interested in cooperative partnerships related to orthophotography production, parcel mapping, sharing of data, etc. Possible partners include: North Central Regional Planning Commission, the City of Merrill, the City of Tomahawk, Lincoln County Towns, state and federal agencies. The sharing of data would occur through these partnerships.

Since 1997, a group of interested county departments, county board members, regional planning commission and city administrative staff, known as the Land Services Group, have been meeting to enhance the accessibility and use of land resource information. This group meets monthly to discuss cooperative projects, funding, legislative issues, among other land related issues, with the primary purpose of coordinating land records programs and funding. With the passing of 2009 Wisconsin Act 314, this requires each county to create a Land Information Council. Lincoln County intends to pursue approval of designating the Land Services Group as the Lincoln County Land Information Council. Membership of the Land Services Group will be modified to meet the requirements of Wisconsin Act 314

H. Communication, Education, Training and Facilitated Technical Assistance

Lincoln County has made tremendous strides in documenting county GIS data, GIS data models, GIS and land record modernization policies and procedures. In 2008, a private consultant was hired to review and streamline the Lincoln County GIS data structure. Through this endeavor, a detailed data design was created, implemented and documented. Lincoln County continues to build upon this data redesign by developing policies and procedures for all aspects of our GIS and land records system. All policies, procedures and standards comply with any applicable state standards, statutes or administrative codes.

**LINCOLN COUNTY
LAND INFORMATION PLAN
JULY, 2010**

Currently, Lincoln County has two GIS Specialists on staff that provides all GIS support to county departments, cooperating agencies and the general public. As needed and as funding is available, the County may contract with private entities for project development and support. Lincoln County staff continues to attend training and educational events to improve their skills. Specifically, staff attend ESRI approved training to maintain and improve their knowledge of the GIS software. In addition, staff continues to attend conferences and educational events sponsored by the Wisconsin Land Information Association, National Emergency Numbering Association, ESRI Wisconsin User Group, the Wisconsin Geographic Information Coordinating Council, etc. In addition to attendance at trainings, webinars, online training and conference calls are utilized by Lincoln County staff. Wisconsin Land Information Program education and training funds are currently utilized to offset costs associated with attendance at the Wisconsin Land Information Association Annual Conference.

Through the development of this plan, a customer needs survey was developed and distributed to land information users. This survey provided us with insight on the data most frequently used by our customers, as well as areas where improvements are needed. Fortunately, the County staff has developed a good working relationship with many customers, who are very willing to express their specific needs to staff. In addition to the survey and customer contact, the county staff meets monthly with the Land Services Group to gather input and discuss land information needs.

Lincoln County will discuss participation in a statewide repository when one is made available. If the requirements are unrealistic or burdensome, the County will proactively participate in revising the requirements. Currently, the Land Information Officer is a member of the Land Information Officer listserve and the GIS staff and Department Head are members of the Wisconsin Land Information Association and Wisconsin Land Information Program listserve.

I. Administrative Standards Not Associated with Foundational Elements

This plan represents an agreement between Lincoln County and the Wisconsin Department of Administration (DOA). This agreement is intended to effectuate the objectives of the Wisconsin Land Information Program as embodied in the enabling legislation. The DOA and Lincoln County agree and consent to the following:

1. Observe and follow the statutes relating to the Wisconsin Land Information Program and other relevant statutes.
2. Permit the Wisconsin Department of Administration access to books, records and projects, funded by the Wisconsin Land Information Program, for inspection and audit upon reasonable notice by the DOA. Other land information records will be available in compliance with the Wisconsin Open Records Law.
3. Complete the GIS Inventory Survey that is annually required by the Wisconsin Land Information Program.
4. Update the Land Records Plan every 5 years, and in the interim if the plan should change.
5. Develop and implement an acceptable Land Records Plan which confers certain benefits to Lincoln County, including continued eligibility for program funding.
6. Allow a peer review process to assess plan acceptability by the land information community.