

**COLUMBIA COUNTY  
LAND RECORDS MODERNIZATION PLAN  
(2005 – 2010)**

**Prepared by the Columbia County Land Information Department**

Final Version

*Approved by the Land Information & Records Committee April 11, 2005*

*Submitted to the State of Wisconsin Land Information Board  
for approval April 19, 2005*

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## I. EXECUTIVE SUMMARY

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Jim Grothman County Surveyor	625 East Slifer Street Portage, WI 53901	608-742-7788 <a href="mailto:jgrothman@grothman.com">jgrothman@grothman.com</a>

Land Information & Records Committee:  
 Sarah Lloyd (Chair), James Pugh Vice Chair), Robert Andler (Secretary), Robert Stoltenberg, Neil Ford

### C. Summary of the Plan

The Columbia County Board of Supervisors, with the establishment of the Land Information Office and the Land Information and Records Committee, has recognized the importance of land records modernization in Columbia County to promote and facilitate timely access to accurate land records data. The county Land Information and Records Committee meets regularly to determine the priorities for goals and objectives as outlined by the Land Information Officer, resource requirements to achieve objectives, and to establish task lists to accomplish objectives. The implementation timeline is dependent upon the continuation of the Wisconsin Land Information Board (WLIB) grant program, the amount of grant dollars available to Columbia County, the amount of retained fees collected, and any additional grant or tax levy funding available to for land records modernization activities.

Several elements are critical components of this plan. Among them, is Columbia County's commitment to the continued remonumentation of the Public Land Survey System and collection of GPS coordinates for facilitating on-going efforts to complete accurate parcel mapping countywide. Another central theme of this plan is to enhance the integrated Land Records System application by designing and implementing additional business area functions into the enterprise application. The goal is to use information technology to facilitate the integration, maintenance and distribution of land information both horizontally and vertically. We are focusing not only on internal access but promoting communication with other governmental entities and the public. Increased participation by all county departments, including those not traditionally considered as land records consumers, will be encouraged in an effort to achieve a countywide solution, helping Columbia County advance its land records modernization goals. As the investigation and incorporation of new technologies will be necessary to achieve these goals, the plan anticipates that the acquisition and use of updated hardware, new software and on-going training will be essential.

Columbia County has benefited greatly from the Wisconsin Land Information Program (WLIP); this plan lays out a strategy for the county to continue to maintain and enhance the projects implemented as a result of land records modernization activities. Over the next five years the emphasis for land records will be on cooperation, outreach, and partnering. As land records usage changes from data collection and design tasks into decision support application models, more county departments and citizens will be involved with land records in Columbia County.

### D. Land Information Website

Land Information Department: <http://lrs.co.columbia.wi.us/default.asp?id=11&mnu=11>  
Land Records Home Page: <http://lrs.co.columbia.wi.us/>  
Interactive Mapping: <http://lrs.co.columbia.wi.us/website/ColumbiaCo/ColumbiaCo.asp>  
e-Store: <http://lrs.co.columbia.wi.us/default.asp?id=58&mnu=58>

## II. LAND INFORMATION PLAN

### A. Goals and Objectives

1. **State the goals and objectives of the county relating to the horizontal and vertical integration of land information and systems among users of land information in Wisconsin. Include a brief assessment of the internal and external customers' needs and priorities for land information and technology. Identify the time line for meeting goals and objectives and (where appropriate) your measurement methodology for achieving them by addressing the following questions:**

- a. **What data or information does the county need that it currently uses or can acquire from other state or local sources?**

Columbia County has acquired data from other state or local sources when necessary and appropriate. Examples of data acquired are airport locations from the Public Service Commission, Wisconsin Wetlands Inventory and WISCLAND land use data from the Wisconsin Department of Natural Resources (WiDNR), SURRGO certified soils data and tables from the US Department of Agriculture Natural Resources Conservation Service (NRCS), property card assessment codes and values from local assessors. Many data elements from other sources have been acquired as part of a collaborative agreement with Columbia County. The county will continue to evaluate acquiring data from other state and local sources as necessary. All geographic data has been projected to the Columbia County Coordinate System for ease of use by county staff.

- b. **What data or information does the county need that it does not have and what problems are encountered acquiring it?**

Columbia County would like to acquire additional data as related to the Natural Resources Foundational Element. In particular data related to Geology, Hydrogeology, Endangered resources, and Impacts on the environment (e.g. air emissions; groundwater contamination, storm water) would be valuable. The Land Information Department did extensive research in 2000, with further inquiries in 2004, which suggested that no data for these data elements was available in a geographic database. Map files were located however, the scale of the information was often inappropriate for local use. In addition, staff time and resources are not available for converting paper copy maps into a geographic information system (GIS) format.

- c. **How is or will the county ensure that the land information it has is, or can be made available in a standard industry format for use by others?**

Columbia County's Information Technology (IT) makeup is conducive to meeting the goals and objectives as identified with this plan. The county's operating system is Microsoft NT. The county also makes use of the TCP/IP protocol for data transport, uses the Open Data Base Connectivity (ODBC) standard for ensuring cross-platform database connectivity, and uses industry standard application software.

The database design for land records information conforms to state and national standards as known and applicable. All integrated land records are managed in relational databases. Columbia County has implemented ESRI's Geographic Information System to serve as the enterprise GIS solution for data and application development and exchange. ESRI is a member of the Open GIS Consortium and proposes to support all Open GIS data transfer and data sharing requirements. The county expects to have information available in these formats as the vendor provides them. All spatial data are topologically structured. All GIS data sets are documented with Federal Geographic Data Committee (FGDC)-compliant metadata.

**d. How is or will the county ensure that the land information it has is geographically referenced for use by others?**

The county uses the Columbia County Coordinate System (as described in Wisconsin Coordinate Systems, Wisconsin State Cartographer's Office, Madison WI, 1995), which is mathematically referenced to NAD 83(91). All data maintained and used by Columbia County is referenced to the Columbia County Coordinate System. All data provided to other by Columbia County is accompanied by documentation of the county's Coordinate Systems to make transformation to other systems possible.

The purpose of this section is to provide an outline of goals that Columbia County would like to pursue if appropriate and if dollars are available to do so. The goals and objectives listed below are in no way intended to set policy for Columbia County.

- Goal 1: Maintain Continued Education for all staff
- Goal 2: Continued education of public, private sector about modernized Columbia County land information systems and GIS data availability
- Goal 3: Enhance the county's ability to distribute information to citizens and partners.
- Goal 4: Update and Maintain the Countywide Control Network and Reference System
- Goal 5: Implement Operation and Maintenance Plans for all Land Records Data
- Goal 6: Develop an Organizational Structure for Land Information & Records Policies
- Goal 7: Project planning using the Land Information Modernization and Integration Plan
- Goal 8: Discuss the establishment of a Land Information Advisory Committee and Work Group
- Goal 9: Continued development of an Enterprise Land Records System integrated for business function and workflow rather than county organization structure
- Goal 10: Continue Data Automation and Enhancement of Core Foundational Elements
- Goal 11: Develop strategy, maintenance plan, and workflow for support of Wireless 911 GIS and land records datasets

**2. Describe how the county's technology environment and database design standards and practices (including metadata and other elements listed below in the "Database Design" Foundational Element) supports the county's goals and objectives relating to land information and supports the county's information technology vision, mission, goals, strategies and Plan.**

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**B. Progress Report on Ongoing Activities**

**Please provide a description of the county’s progress towards achieving the goals and objectives listed in the previous section (“Goals and Objectives”). Include a description of any significant changes in goals and objectives from those described in the county’s previous Plan.**

Columbia County's goals and objectives from its previous plan are ongoing and continue to be goals into the future. Specific activities that have moved the county towards realizing these goals are noted below. Ongoing activities have been completed however repeated occurrences, continuous improvements, upgrades, and enhancements of the stated goals continue to be moving targets thus making the project deadlines a moving target.

The purpose of this section is to provide an outline of goals that Columbia County would like to pursue if appropriate and if dollars are available to do so. The goals and objectives listed below are in no way intended to set policy for Columbia County.

<b><u>Goal 1: Maintain Continued Education for all staff</u></b>	
• Take advantage of all educational opportunities, as they present themselves, for land records-related employees to obtain training and education at seminars, vendor sessions, university classes, and professional association sessions.	Completed, Ongoing
• Encourage department heads to budget for continued education and technical training for themselves and their staff.	Completed, Ongoing
• Encourage department heads and land records staff to join and participate in their related professional associations	Completed, Ongoing
• Create and utilize tutorials using Columbia County data and applications.	Completed, Ongoing
• Provide technical support for internal and external data users.	Completed, Ongoing
• Encourage establishment of user group forums to discuss problems and exchange information and personal experiences regarding the use of software both internally and externally.	Completed, Ongoing Property Lister’s (2003) & Clerk (2005) workgroups have been established
• Continue to be an active participant of the Wisconsin Land Information Board’s Technical Assistance List Server.	Completed, Ongoing
• Encourage departments to participate in the GIS development process.	Completed, Ongoing

**Goal 2: Continued education of public, private sector about modernized Columbia County land information systems and GIS data availability**

• Outreach to Columbia County local government agencies (meetings and brochures)	Completed, Ongoing
• Encourage communication with all Columbia County municipalities	Completed, Ongoing
• Presentations and participation in local or other educational sessions	Completed, Ongoing
• Share expertise with municipalities to encourage technology acquisition and to foster data sharing	Completed, Ongoing
• Training to local community staff in GIS software and use of county data sets.	Completed, Ongoing
• Distribute this Columbia County Land Records Modernization Plan and data dictionary to all Cities, Villages, and Towns within the county to ensure they are aware of the direction Columbia County is moving and what information is available.	2005 Schedule, using internet technologies

**Goal 3: Enhance the county's ability to distribute information to citizens and partners.**

• Continue to enhance the county's ability to publish and distributing land records and GIS data on the Internet thereby incorporating the use of GIS software on desktops throughout the county without the purchase of additional software	Completed, Ongoing
• Continue to enhance the ability of an individual to make payments on-line using credit cards or electronic checks.	Completed, Ongoing Payments for data and reports are available on-line using PayPal and Official Payments Corporation for tax bill payments.
• Continue work towards developing a centralized point of access for public access using the Internet.	Completed, Ongoing
• Expand the use of GIS and Land Records System applications to departments not traditionally considered land information user departments by showcasing successful projects using GIS or land records technologies	2005 and future Schedule

**Goal 4: Update and Maintain the Countywide Control Network and Reference System**

• Section corner remonumentation of the original Public Land Survey will be on going until such time that full remonumentation is complete. Columbia County will continue to update and improve the countywide geodetic control network and define accurate locations of survey monuments through the use of GPS (Global Positioning System) technology. These Public Land Survey corners will serve as the foundation upon which land descriptions will be based into the future.	Completed, Ongoing
• Survey crews are continuing to perform three (3) important functions: <ul style="list-style-type: none"> <li>○ Complete the physical remonumentation of all PLS corners</li> <li>○ Maintain existing monumentation as appropriate</li> <li>○ Determine GPS coordinates for these corners</li> </ul>	Completed, Ongoing
• Yearly maintenance of section corners as required once remonumentation complete.	Completed, Ongoing
• Maintain Columbia County High Accuracy Reference Network	Completed, Ongoing

**Goal 5: Implement Operation and Maintenance Plans for all Land Records Data**

Operation and Maintenance Plans development for each of the component datasets incorporated into the Columbia County GIS and Land Records System databases. These plans will describe the methodology and procedures developed for creating and updating all modernized land records data. The documentation and metadata contained within these plans will ensure that data will be developed and maintained according to the standards developed by the county and recommended by the Wisconsin Land Information Board and other overseeing bodies.

<ul style="list-style-type: none"> <li>• Develop and standardize methodology for maintenance of existing datasets and creation/maintenance of additional data layers.</li> </ul>	<p>Ongoing 2005 and future Schedule to formalize these plans</p>
<ul style="list-style-type: none"> <li>• Document data maintenance procedures.</li> </ul>	<p>Ongoing 2005 and future Schedule to formalize these plans</p>
<ul style="list-style-type: none"> <li>• Identify staff workload and data maintenance workflow.</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• Develop data interchange standards among county systems                             <ul style="list-style-type: none"> <li>○ Formalize the use of exchange standards for text data related to the tax roll.</li> <li>○ Develop product formats and standard product forms and formats.</li> <li>○ Establish data exchange formats for spatial data</li> <li>○ Establish image distribution standards.</li> </ul> </li> </ul>	<p>Completed, Ongoing</p>

**Goal 6: Develop an Organizational Structure for Land Information & Records Policies**

Development of an organizational structure to implement land records policies and procedures is essential to the success of continued land records modernization in Columbia County. These policies will help internal and external customers communicate with the county.

<ul style="list-style-type: none"> <li>• Create an organizational structure to support land records</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• Develop career paths for information technology staff that will create mobility in positions.</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• Add the use and understanding of geospatial data to position descriptions that use land records data.</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• Work to put appropriate technology in the hands of system area experts.</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• Provide support staff for information technology services to support system area experts.</li> </ul>	<p>Completed, Ongoing</p>

**Goal 7: Project planning using the Land Records Modernization and Integration Plan**

<ul style="list-style-type: none"> <li>Update the Columbia County Land Records Modernization and Integration Plan yearly or as required. Consider it to be a living document that will change as priorities and technology change.</li> </ul>	Completed, Ongoing Plan will be updated once per year or as appropriate
<ul style="list-style-type: none"> <li>Organize meetings of land records user departments and encourage input towards plan revisions and updates. Make progress reports available. As the system matures, expand the focus of the plan to include other departments not traditionally thought of as land records users.</li> </ul>	Completed, Ongoing 2205 and future Schedule to develop user groups and expand focus
<ul style="list-style-type: none"> <li>Attend all Land Information Officer (LIO) workshops and seminars made available by the WLIB and the Wisconsin Land Information Association (WLIA).</li> </ul>	Completed, Ongoing

**Goal 8: Discuss the establishment of a Land Information Advisory Committee and Work Group**

The work group would facilitate communication between Columbia County Land Departments and data users. Recommended actions, projects, changes in work flow, or priorities will be voted on by the "Active Member Departments". Recommendations, although advisory only, can be used as a show of support for departments in developing or enhancing Land Records modernization activities. It would be beneficial for governing committees to be aware of and make use of the recommendations and votes of support put forward by the Land Information Work Group for departments they have jurisdiction over.

The Columbia County Land Information Department serves as the coordinating body for land information systems and land records activities in Columbia County. The LIO, as per Wisconsin State Statute 59.72, oversees the maintenance and implementation of the Columbia County Land Records Modernization Plan and coordinates the development and deployment of a countywide land information system. The LIO works with county departments and communities to ensure the quality and sound management of land records and land information systems.

<ul style="list-style-type: none"> <li>It is the goal of the Land Information Advisory Committee and Work Group to create a working environment in the Columbia County Land Information community that encourages communication between Departments with the goal of maximizing the development, maintenance, and use of shared geographic and land information system resources throughout Columbia County in the most efficient manner possible.</li> </ul>	2005 Schedule
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**Goal 9: Continued development of an Enterprise Land Records System integrated for business function and workflow rather than county organization structure**

By supporting the development of an integrated, technologically sound countywide Land Records System (LRS) Columbia County continues to support modernization activities that represent horizontal integration of land information and systems within Columbia County and also vertical integration of land information and systems by town, city and village officials, state agencies, and other private entities.

<ul style="list-style-type: none"> <li>• Integrate disparate database systems</li> </ul>	<p>Completed, Ongoing 2005 Schedule for completing the Land Information Department &amp; Register of Deeds 2006 Schedule for integrating Planning &amp; Zoning and Land &amp; Water Conservation Future Schedule for other departments</p>
<ul style="list-style-type: none"> <li>• Efficient data model and work flow</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• Eliminate redundant data entry</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• Eliminate multiple copies of data</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• Eliminate manual processing in favor of automated processing</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• Improve Accuracy of data</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• Automated error checking improving data quality</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• Produce new reports improving work efficiency and decision-making</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• Easy to create and customize reports</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• Facilitates data exchange between local governments and county</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• Links to historical data –tax parcels, payments, and legal documents</li> </ul>	<p>Completed, Ongoing 2006 and future Schedule to include back scanning and indexing in the Register of Deeds &amp; Land Information</p>
<ul style="list-style-type: none"> <li>• Data is easily available for other county needs</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• Data available industry standard formats for easy exchange between users and in standard reporting formats</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• Integration with the county’s enterprise GIS system sharing common data tables and improved implicit spatial references (such as addresses) to locate features.</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• New technologies developed with project that are now available countywide</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• System designed on business workflow, rather than the traditional departmentalized view of business functions</li> </ul>	<p>Completed, Ongoing</p>
<ul style="list-style-type: none"> <li>• Flexible data model to allow for future expansion into other department work area</li> </ul>	<p>Completed, Ongoing</p>

**Goal 10: Continue Data Automation and Enhancement of Core Foundational Elements**

<ul style="list-style-type: none"> <li>Complete digital tax parcel mapping in the 4 remaining townships and all city areas. Tax parcel maps are compliant with standards established by Columbia County.</li> </ul>	<p>Completed in 10 Villages, 17 Towns. Ongoing maintenance in completed areas. 2005 Schedule for remaining Township areas 2006/2007 Schedule for City areas</p>
<ul style="list-style-type: none"> <li>Development of an address point, structure and/or driveway collection and maintenance plan for Columbia County. This task will include the ongoing project work of attaching site address and parcel number by linking thru key fields to each point.</li> </ul>	<p>Ongoing, At present about 5% of all points are completed. 2006 and future Schedule for further enhancement of data</p>
<ul style="list-style-type: none"> <li>Develop enhanced road centerline maintenance plan to account for issues such as constructed versus platted roads in Columbia County. Road centerline geocoding of address ranges will help to support wireless 911 activities in the Sheriff's Department and Emergency Management. This dataset will also be extremely valuable to other department's activities.</li> </ul>	<p>Completed, Ongoing maintenance of road centerline file 2006 and future Schedule for development of enhancements to data</p>
<ul style="list-style-type: none"> <li>Develop new data sets and enhance existing data sets in support of Wireless 911 activities</li> </ul>	<p>2006 and future Schedule</p>

**Goal 11: Develop strategy, maintenance plan, and workflow for support of Wireless 911 GIS and land records datasets**

<ul style="list-style-type: none"> <li>Work with the Columbia County Sheriff and Emergency Management Departments to develop a strategy for work related to supporting the Wireless 911 activities in Columbia County.</li> </ul>	<p>Ongoing</p>
<ul style="list-style-type: none"> <li>Identify key data elements necessary in the short-term to be used in locating a wireless call.</li> </ul>	<p>Ongoing</p>
<ul style="list-style-type: none"> <li>Identify long-term goals and data elements that would be beneficial to supporting future Wireless 911 GIS activities or other emergency management tasks.</li> </ul>	<p>Ongoing 2006 and future Schedule</p>

## C. New Initiatives

*This section contains critical information. It is the basis upon which local units of government can proactively establish prospective arrangements for cooperation, collaboration and confederation of efforts to save money, time, and effort, and avoid duplication of land information. It also defines the obstacles to such efforts so that they can be identified and removed.*

### 1. Proposed Projects

**Highlight specific activities that the county proposes to initiate to enable land information to be readily translatable, retrievable, and geographically referenced for use by any level of governmental unit and the public. Identify specific budget information, timeframes, staffing and other pertinent data associated with these initiatives.**

The purpose of this section is to provide an outline of proposed projects that Columbia County would like to pursue if appropriate and if dollars are available to do so. The projects listed below are in no way intended to set policy for Columbia County.

- Proposed Project 1: Complete countywide parcel mapping conversion
- Proposed Project 2: Development of address related data and standards
- Proposed Project 3: Continue countywide land records modernization and GIS data integration as Phase II of the Land Records System project
- Proposed Project 4: Deploy GIS and land records data and technology to a broadening community of users
- Proposed Project 5: Deploy additional GPS technologies that can be used in conjunction with GIS to accurately map man made and natural features or incidents required for county projects and programs
- Proposed Project 6: Continue active corner remonumentation
- Proposed Project 7: Incorporate GPS Remonumentation Points into digital tax parcel mapping creating a more accurate parcel map
- Proposed Project 8: Make GPS Remonumentation Points and tie sheet available on-line
- Proposed Project 9: Continue maintenance of existing data sets
- Proposed Project 10: Large Format Document Scanning

### 2. Assistance Requested

**Describe any initiatives the county would like the Land Information Board to assist with (such as adoption of policies, standards, coordination, integration efforts, user needs assessments, technical assistance, education, funding). The following questions must be addressed:**

- a. **What is your county's plan to secure the technical assistance needed to carry out your Land Records Modernization/Integration Plan, including your plan to connect to the WLIP Internet Land Information Clearinghouse and Technical Assistance List Server Service?**

Columbia County has actively sought input from other counties, agencies and vendors prior to implementing projects and will continue to do so for our new initiatives. The county has Internet

connectivity and utilizes the technical assistance List Server. Columbia County is also a member of the Land Information Officers Network. It is our goal to enhance in-house technical expertise, and we will obtain technical assistance as needed from the private sector. In addition, technical assistance is obtained in several other ways that include affiliation with numerous professional associations, State, Federal and University contacts and private consultants.

**b. What is your county's plan to finance the costs to continue previous investments in land records modernization/integration made in whole or in part with Land Information Program funding?**

The WLIP document recording fees retained by the Columbia County and WLIP grants will continue to be a significant source of funding for land records modernization projects. The county has provided personnel and added tax levy funds when the revenue stream from the WLIP was not enough to move projects forward a timely manner. The county will use some WLIP funds for GIS and imaging system software and hardware maintenance expenses. The county personnel costs related to the land records system and data maintenance will continue to be funded by tax levy funds. Other funding partnerships or mechanisms will be investigated, as they become available

**c. How does the county plan to maximize resources by utilizing competitive procurement processes (bid, RFP and justified sole-source) consistent with State of Wisconsin and local procurement rules?**

The county will continue to follow State statutes and county ordinances for the procurement of services and products related to this Plan. These rules are consistent with WLIP's Competitive Procurement Task Force recommendations.

**3. Problems Encountered**

**Describe any projects or activities your county would like to undertake that has not been stated above. Please describe obstacles that have prevented your county from proceeding, such as staff, funding, coordination problems etc. Please be specific.**

We have successfully dealt with unanticipated problems as they have occurred, especially in the area of hardware and shared files. If the WLIP adopts policies that would limit the use of WLIP funds for our planned activities, Columbia County would experience significant negative impacts. Limitations on the use of WLIP funds for maintenance, forcing County Boards to match grant dollars, or not allowing the use of retained fee dollars as matching funds would be detrimental to the county's land records modernization efforts. At this time, the only foreseeable problems would come for a lack of staff and funds to move ahead with all aspects of this plan. The Land Information Department has become increasingly aware of this problem in the last year as there are increased expectations of the Land Information Department and a decrease in available resources.

**D. Custodial Responsibilities**

**1. Identify the land information and data for which your county has custodial responsibility.**

Columbia County has the same custodial responsibilities for data as other counties in Wisconsin. These responsibilities have been established by Wisconsin statute and by county ordinance; Columbia County does not differ from other counties in this.

A listing of individual departmental responsibilities is presented below along with appropriate custodial authority in parentheses.

Register of Deeds

- Record deeds, mortgages, plat maps, certified survey maps, and other related documents (59.43)
- Scan aforementioned documents into county imaging system as received and files (59.43)
- Maintain tract index of real property (59.43)

County Treasurer

- Maintain tax financial information for all tax parcels (59.25)
- Drainage district payment records (88.18)

Land Information Department

- Maintain information on PLSS section corners including tie and section summary sheets (59.45)
- Maintain information on Columbia County Wisconsin HARN densification (59.45)
- Maintain files of private survey maps (59.45)
- Maintain files on field notes and other survey source documents (59.45)
- Create and maintain digital survey-accurate tax parcel maps (70.09 and Columbia County Internal Policy)
- Maintain description and ownership information of all real property parcels (70.09)
- Assign parcel numbers to track parcel activity (70.09)
- Maintain information on school and other special district codes (70.09)
- Maintain tax rates and special assessments (70.09)
- Enterprise GIS data (including: tax parcels, orthophotography, contours, terrain models, emergency medical services zones, road centerlines, hydrology, school districts, NRCS soils data, Wisconsin Wetlands data, FEMA flood boundaries, etc...) (Columbia County Internal Policy)

Land Conservation

- Create and maintain Farmland Preservation (a.k.a. Conservation Plans) plans (Columbia County Internal Policy)
- Monitor soil erosion control plans and water quality
- Farm preservation conservation plans (91)
- Land and water management plans (27)
- Notice of discharge plans and engineering NR243 (92)
- Transect survey data (Columbia County Internal Policy)
- Soils and water conservation data (92)
- Non-metallic mines (295.13)

Planning and Zoning

- Maintain zoning maps for unincorporated areas or areas under county jurisdiction (59.69)
- Maintain private sanitary sewer site plans (59.69)
- Non-metallic mines (295.13)
- Maintain permit database (Columbia County Internal Policy)
- File wetlands and FEMA maps (Columbia County Internal Policy)
- Maintain rural address maps (Columbia County Internal Policy)

Highway & Transportation

- File right-of-way plats and construction plans (Columbia County Internal Policy)
- Right of way plats and construction plans, pavement maintenance records, signage, traffic code, driveway permits, utility easements, tile casing permits (83)

Emergency Management:

- Offsite hazardous materials emergency response plans, special facilities database and map (166.12)
- Flood mitigation acquisition records (44cfr 78.5)

Sheriff's Department:

- Master address street guide (MSAG), dispatch records, accident records, crime records, complaint records, traffic citations (59.27)

**2. Identify the source of your custodial authority: i.e. Wisconsin Statutes, Administrative Rule, Land Information Board Policy, Inter-governmental Agreement, internal policy, etc.**

Wisconsin statute and county ordinance are the source of custodial authority. Sources of custodial authority are listed as part of previous section.

**3. Identify the land information, and data for which your county would like to assume custodial responsibility.**

No additional responsibilities are sought at this time.

**4. Identify the land information and data for which your county will assume custodial responsibility if requested.**

The county will consider any request for custodial responsibility and will evaluate each request based on available and required resources, ability for integration with other data sets, and conformance with the Columbia County Land Records Modernization Plan.

**E. Foundational Elements and State-Wide Standards**

The WLIB has developed a specific and critical subset of land information called Foundational Elements and a corresponding set of state-wide standards relating to a specific subset of land information. *All foundational elements are fundamentally important, interrelated and must be addressed for a successful land information plan. The Elements are listed below.*

- For each Foundational Element please discuss key features of Foundational Elements (see below).
- For each Foundational Element, please confirm your adherence to related standards or discuss your plan to maintain or achieve compliance with the standards corresponding to each element (see below).
- For each Foundational Element, please discuss your plan to assume or maintain custodial responsibility (as applicable).
- For each Foundational Element, please discuss your plan to maintain the dataset.

Columbia County has made every effort to conform to all standards provided by the WLIB. The county has followed all state statutes and county ordinances.

Columbia County will make every effort to achieve, through the successful implementation of various processes, the goals and objectives of this modernization plan. These processes may include such tasks as completing the study of an issue, developing and instituting countywide standards, developing procedures and funding methods for ongoing maintenance, and forging new partnerships with public and private data developers and users.

Each required process will be presented in this section as a key feature of Foundational Elements, which are specific subsets of land information activities, which have been defined by the WLIB as vital to the development of a land information system. Unless otherwise noted, it is assumed that each key feature will be completed within the 5 year planning horizon of this Plan Update. It is envisioned that the activities of the listed key features will be funded by supplemental recording fees collected by the Register of Deeds Office as authorized under Wisconsin Statute 59.43(2) and by funds received through the Wisconsin Land Information Board grant-in-aid program, and that these revenues will be used to fund direct procurement, county staff and contractors as required to complete the plan activities. In some cases, additional revenues from user fees, local contributions, and direct county tax levy support may be

required. These sources will be only used when authorized by the Columbia County Board through the normal cost-justification procedures within the budgeting process. Columbia County may choose to financially participate in projects proposed by local units of Government if the Columbia County Land Information & Records Committee and/or the Columbia County Board deem them to be in the best interest of the county.

## **1. Communication, Education, Training and Facilitated Technical Assistance**

**Confirm your adherence to standards where applicable. Unless noted as required in bold, all standards are advisory:**

- **No standards have been adopted, however county Internet connection to the WLIP Clearinghouse and Technical Assistance Service is required in order to participate in the WLIP.**

a) Documentation of county data

Columbia County has developed FGDC compliant metadata for all GIS data sets and will continue to update metadata as appropriate. Metadata will be posted to the Wisconsin Land Information Clearinghouse.

b) Resources available

Columbia County is in close proximity to the University of Wisconsin-Madison Land Information & Computer Graphic Facility and will continue to use this facility for available education and training opportunities.

Columbia County receives training and education at the University of Wisconsin-Madison Land Information & Computer Graphic Facility, Wisconsin Land Information Board sponsored programs, Wisconsin Land Information Association and other state and national professional associations, and from various vendors. County personnel attend land information seminars and workshops on a regular basis. Several of the county staff are members of the Wisconsin Land Information Association and other professional associations.

Columbia County supports the use of and has provided for funding of outside technical expertise as the need arises. Columbia County will continue to follow all approved procurement methodologies as prescribed by county ordinances.

c) Identification of customer needs

Columbia County's Land Records Committee, which is made up of elected and appointed officials, discusses and prioritizes needs. The Land Information Officer remains in contact with land records customers on a daily basis to establish or refine user needs. Land records customers include all departments in Columbia County that deal with land records and some that are not traditionally thought of as land records related, state and local government, and the public.

d) Coordination of education/training with agencies, associations and educational institutions

Columbia County has demonstrated a strong commitment to acquiring, providing and assisting with necessary training and education as appropriate and when within budget. This commitment will continue in conjunction with efforts to keep hardware and software upgraded to the highest technical levels possible and practical.

e) Use of technology to facilitate education and training

Columbia County will continue to use technology as a tool to ensure its staff and customers are adequately prepared to successfully make use of land information data and land information technology. The county has access to the Internet, VCR, and the UW Extension ETN system.

f) **Use of Clearinghouse and Technical Assistance List Server**

Columbia County has Internet access, which allows for use of the clearinghouse and technical assistance list server.

g) **Use of Land Information Officer education and training funds**

Columbia County will continue to use the Land Information Officer training and education grants as provided in s. Adm 47.03 (5), for the training for the design, development and implementation of land information systems and systems modifications. The availability of these funds are necessary in helping to financially support the Land Information Officer's ability to attend Wisconsin Land Information Association seminars and workshops on a regular basis

## 2. Geographic Reference Frameworks

**Confirm your adherence to standards where applicable. Unless noted as required in bold, all standards are advisory:**

- Standards for Geodetic Reference Systems FGCC standards and specifications; **WLIB Specifications and Guidelines to Support Densification of the Wisc. High Accuracy Reference Network (HARN) Using Global Positioning System (GPS) Technology - June, 1995.**
- Geodetic Control Clearinghouse Report 1994
- **Standards for Public Land Survey System Corners Corner Remonumentation. See Sec. 59.74 & 60.84 Wisc. Stats. and Wis. Admin. Code AE 7.08.**
- **Coordinate Values (FGCC Third Order Class I).**
- PLSS Database Definitions
- **Standards for Geographic Control Data (FGCC Third Order Class II for Horizontal Coordinate Values and Third Order for Elevation Values).**

a) **Geodetic Control Networks**

In 1995, Columbia County completed geodetic densification from stations within the Wisconsin HARN. The network consists of 65 stations: 3 1 ppm, 13 2 ppm, 46 4 ppm, and 3 10 ppm - which were established using the WLIB Specifications and Guidelines to Support Densification of the Wisconsin HARN using GPS technology - June 1995. There is adequate horizontal geodetic control strategically placed throughout the county to meet county and other user needs. Coordinate values are available in Columbia County, State Plane and Latitude and Longitude. The county assumes the custodial responsibility for the densified control stations.

Columbia County will use the existing National Geodetic Survey (NGS) and US Geologic Survey (USGS) vertical network for vertical control. Any new stations set by the county would adhere to Third order standards.

In the collection and maintenance of this data, Columbia County has adhered to the following standards:

Standards for Geodetic Reference Systems

- FGDC standards and specifications [Chapter 236.18 Wisc. Stats]
- **WLIB Specifications and Guidelines to Support Densification of the Wisconsin HARN using GPS technology- June 1995.**

Standards for Public Land Survey System Corners

- Corner Remonumentation [Sec. 59.63(1); Sec. 60.84 (3)(c) Wisc. Stats]
- Remonumentation Records [Sec. 59.63 (1) Wisc. Stats and Wisc. Admin. Code AE 7.08 (2)]
- Coordinate Values [FGDC Third Order Class I]

Standards for Geographic Control Data [FGDC Third Order II for Horizontal Coordinate Values and Third Order for elevation Values]

**b) Public Land Survey System**

Columbia County has an active corner remonumentation program that complies with the requirements of Wisc. Admin. Code AE 7.08 and/or state statute and we plan to continue the program countywide. The coordinates on the PLS corners use a combination of conventional survey and GPS technology meeting or exceeding the FGDC Third order, class I accuracy standard. Coordinates are maintained in the Columbia County Coordinate System, which is mathematically relatable to the North American Datum (NAD) 83(91). The county maintains custodial responsibility for the PLSS.

Standards for Public Land Survey System Corners

- Corner Remonumentation [Sec. 59.63(1); Sec. 60.84 (3)(c) Wisc. Stats]
- Remonumentation Records [Sec. 59.63 (1) Wisc. Stats and Wisc. Admin. Code AE 7.08 (2)]
- Coordinate Values [FGDC Third Order Class I]

c) Photogrammetric base maps

Columbia County has developed several countywide photogrammetric base maps derived from the 1995 and the 2002 orthophotography projects. Data features include: road centerlines, railroad centerlines, hydrology arcs and polygons, 4-ft contours, and driveway points. In addition several communities in Columbia County have developed planimetric base maps using the digital orthophotography as a base. All photogrammetric base maps developed by Columbia County meet either the National Map Accuracy Standards for 1" = 400' or 1" = 200' scale mapping.

d) Digital elevation models (DEM)

A Digital Elevation Model (DEM) was prepared for the entire Columbia County area using photogrammetric stereo compilation procedures and methodology from the 2002 digital orthophotography. The DEM will support digital orthophotography production to National Map Accuracy Standards for 1" = 200' scale mapping.

e) Digital orthophoto (DOP)

Columbia County acquired digital orthophotography in 1995 with 23.60-inch pixel resolution as part of the SW Wisconsin Consortium. Countywide digital orthophotography was again acquired in 2002 with 12-inch pixel resolution. Budget restraints will likely prevent Columbia County from updating orthophotography again until 2009.

f) Digital terrain models

A Digital Terrain Model (DTM) was prepared for the entire Columbia County area using photogrammetric stereo compilation procedures and methodology from the 2002 digital orthophotography. The DTM will support digital orthophotography production to National Map Accuracy Standards for 1" = 200' scale mapping.

g) Digital raster graphic

Columbia County has acquired scanned quadrangle images of USGS 24K topographic quadrangles from the Wisconsin Department of Natural Resources. All image files are .tiff format and referenced to the Columbia County Coordinate System.

h) Triangulated irregular networks (TIN)

Columbia County used the 2002 DTM to produce a Triangulated Irregular Network (TIN) for the entire county area.

i) Contours

Columbia County created 4-foot contour interval topographic data set generated from the break lines and mass vertical points using the TIN surface model created as part of the 2002 orthophotography project.

j) Satellite imagery

Columbia County currently has no satellite imagery. If future applications require satellite imagery, the Land Information Office will take the necessary steps to acquire such data as is necessary.

k) Ability to support Wireless 911

The Land Information Office, with the support of other county departments, has the both the knowledge and technical ability to support wireless 911 in Columbia County. The county's ability to support wireless 911, however, will be dependant upon several factors including but not limited to the secure funding for spatial data creation as well as data maintenance from the *Grant from the Wireless 911 Fund*. Without long-term adequate funding for data maintenance activities the ability to support wireless 911 will be dependant on dollars being available from Columbia County resources.

### 3. Parcel Mapping

**Confirm your adherence to standards where applicable. Unless noted as required in bold, all standards are advisory:**

- FGDC's Cadastral Standards for the National Spatial Data Infrastructure.
- **The WLIB's Parcel Identification Numbering System.**
- Local Government standards compliance.
- **The WLIB's Digital Parcel Mapping Standard.**

a) **The preparation of parcel property maps that refer boundaries to the public land survey system and are suitable for use by local governmental units for accurate land title boundary line or land survey line information.**

The digital parcel maps are referenced to the Public Land Survey and are suitable for assisting with land title boundary or survey line determination. However, the parcel maps are not a substitute for a legal land survey or a guarantee of title. The digital parcel maps were developed using coordinate geometry methodologies to input surveys and subdivisions plats to construct the parcel boundaries. The digital parcel maps are completed and in maintenance for the 10 incorporated Villages and 17 of 21 townships. Of the 4 remaining townships 2 are currently in quality control and 2 are in queue for quality control. It is expected that by the end of 2005 all 21 townships will be completed and in maintenance mode. City areas are currently under contract with a local vendor for initial conversion work as described above. Data is scheduled to be delivered to the Land Information Department in 2005. Quality control work will begin in Cities after township work is completed. The Land Information Department has targeted 2007 as the year 100% of tax parcels (about 40,000 total) will be in maintenance mode. Tax parcels that are maintained using GIS technologies are updated daily by GIS Staff, with support from the Real Property Lister, in the Land Information Office. Tax parcel maps are compliant with standards established by Columbia County.

b) **The preparation of property maps that do not refer boundaries to the public land survey system that are suitable for use by local governmental units for planning purposes.**

Columbia County's parcel maps are tied to the Public Land Survey and are suitable to support property taxes and for use by local governmental units for planning purposes and decision-making. The parcel maps are not a substitute for a legal land survey or a guarantee of title. Included in the tax parcel database will be information that directs users to the original source document or recorded instrument. Tax parcel maps are compliant with standards established by Columbia County.

c) **Coordinate system used**

Parcel maps in Columbia County are geodetically referenced the Columbia County Coordinate System which is mathematically relatable to the North American Datum (NAD) 83(91).

d) **Parcel ID**

The Columbia County parcel identification number was developed prior to the WLIB standard and does not fully conform to the WLIB Parcel Identification Numbering System. The parcel-mapping database is designed so that the identification number can be generated to comply with the WLIB requirement and will be populated as the parcel mapping and database development proceeds.

#### 4. Parcel Administration

**Confirm your adherence to standards where applicable. Unless noted as required in bold, all standards are advisory:**

- FGDC's Cadastral Standards for the National Spatial Data Infrastructure.
- **The WLIB's Parcel Identification Numbering System.**
- Local Government standards compliance.

a) **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.**

The Columbia County integrated LRS for tax collection, real property listing, document registering and imaging system, and survey maintenance fully supports the integration of digital parcel maps with property and ownership information by linking data through key fields. By supporting the development of an integrated, technologically sound countywide LRS Columbia County continues to support modernization activities that represent horizontal integration of land information and systems within Columbia County and also vertical integration of land information and systems by town, city and village officials, state agencies, and other private entities.

The on-going development of a modernized land information system in Columbia County (Phase I in the Land Information, Register of Deeds, and County Treasurer departments is scheduled to be completed in 2005) will provide the employees and residents of Columbia County and other interested users access to accurate, efficient, comprehensive, and usable databases containing land records information that is easily linked to the spatial tax parcel database. As the LRS database was developed in Microsoft SQL to easily integrate with spatial datasets, including tax parcels, address points, and road centerlines, data that was redundantly maintained in both traditional and spatial databases in Columbia County is now maintained using only one source of data that is shared between the LRS and the GIS system working together as one integrated Land Information System.

As a result of the development of the LRS Columbia County will begin maintaining a Tract Index in the Register of Deeds for the first time. Tract Index data as with all other Land Records System data will be available for use in GIS by linking through key fields. The Columbia County grantor/grantee and Tract Index and Tax Files will be able to be integrated with the digital parcel maps. This integration will allow the retrieval of all land record documents and tax information based on digital map display and query.

**b) Activities associated with modernizing the use of parcel level information once created from and in support of parcel maps, for example:**

**Parcel ID**

The Columbia County parcel identification number was developed prior to the WLIB standard and does not fully conform to the WLIB Parcel Identification Numbering System. The parcel-mapping database is designed so that the identification number can be generated to comply with the WLIB requirement and will be populated as the parcel mapping and database development proceeds.

**Tax data**

The tax database is designed so information can be accessed by community, parcel identification number, owner name, legal or tax parcel description, site address, or other data contained in the Land Records System. All tax data, current and historical, can be linked to spatial data sets using key fields.

**Site Address**

The Land Information Department has over the last 5 years been working to gather site addresses and attach to parcel site addresses countywide for the first time. We believe that at present about 85% of all county site addresses are accounted for and are being maintained in the Land Records System and linked to the spatial tax parcel through key fields.

In addition to linking by tax parcel number, a spatial driveway point database was derived from the 2002 orthophotography to allow address locations to be located at driveway intersections with road centerlines. An integrate work flow between the Planning & Zoning and the Land Information Department was developed in late 2004 to integrate the address maintenance process for the first time in Columbia County. Although much refinement to this process is planned as a future Land Records Modernization task, addresses in Columbia County are being managed more efficiently than ever before. This work will form the backbone of the traditional "Rural Address/Fire Number Maps" as maintained by the Planning & Zoning Department (responsible for issuing address permits), as well as being used in the wireless 911 applications in Emergency Management, crime-monitoring activities in the Sheriff's Department and the District Attorney, Environmental Health monitoring, and other applications.

**Owner Name & Address**

Owner name and address is managed as a shared resource in the integrated LRS and can be linked to spatial data using key fields.

Work on owner name and address is scheduled for 2005. Planned work will allow Columbia County to manage two different types of owner address: Tax bill mailing address (currently maintained by the Land Information Department) and owner mailing address. Owner name will be a shared resource with the Register of Deeds grantor/grantee index. As a single tax parcel may have several owners, often more than are than space allows for on a tax bill mailing label, an abbreviated owner list will also be available for report generation, mailing labels, tax billing, etc....

Description/current document pertaining to parcel

At present only tax parcel description is managed by the Land Information Department. It can be linked to spatial tax parcel databases using key fields.

At completed of the LRS, tax parcel and legal description is will be available for linking to spatial tax parcels as well as current and historical document numbers. The description information will be used in supporting the tax parcel maintenance process and in developing a tax parcel history.

Document imaging

At present Columbia County has document imaging, but images reside on the AS/400 and are not accessible to the GIS system.

The LRS project will not only enhance document tracking but also includes migrating document images from the AS400 to an enterprise imaging system where documents will be available for linking via key fields to GIS databases. Images will be available from 2002 thru present.

Real estate transactions

At present searches of real estate transactions can be made using the Register of Deeds grantor/grantee index. The LRS currently under development will allow for real estate transactions to be searched by tract index, tax parcel history, legal or tax parcel description, or document history in addition to the grantor/grantee index.

Easements and restrictions, including conservation easements

Presently searches can be made using the Register of Deeds grantor/grantee or searching by document number. The LRS will allow for searches to be made by tax parcel number (current or historical), document type, document date, tract index, legal or tax parcel description. As a result of the development of the LRS Columbia County will begin maintaining Tract Index in the Register of Deeds for the first time. Easements and restrictions, including conservation easements data can be tied to spatial databases using key fields.

Future land records modernization tasks will include mapping of easements and restrictions, including conservation easements. At present these data are only included when available as searching for documents of this type are limited.

Tax-exempt status

Tax-exempt status is a field that is managed by the LRS. The fields are carried as a code in the tax and assessment database and can easily be linked to the GIS parcel coverage using key fields.

Zip codes (including +4)

Zip codes are managed as part of the owner mailing address field, it is a shared resource in the integrated LRS and can be linked to spatial data using key fields.

Assessment class

Assessment class is a field that is managed by the LRS. The fields are carried as a code in the tax and assessment database and can easily be linked to the GIS parcel coverage using key fields.

Columbia County Land Information has dramatically improved the management of the assessment process with the development of the LRS. The LRS management current assessments and maintains historical data attached to current parcels using a relational data model. Both current and historical assessments can be linked to spatial data using key fields. Further enhancements to the assessment process include the requirement of digital assessment submission, as the county no longer accepting the

responsibility of assessment data entry. Assessment data and is imported/exported to local governments using email or the county's FTP site. The assessment process in Columbia County is currently completed (importing/exporting, error checking, report building, and historical archiving) in a matter of minutes rather than several weeks.

Additionally Columbia County is requiring assessment codes to be submitted, as they are field collected on Property Cards. This method is beneficial to the local assessor in that the export of data at the start of each assessment year can be imported directly into commercially available assessment software and matches what is maintained on the Property Card. In addition local government or county departments can use the data for detailed analysis, land use planning, or for future land use mapping. The Land Information Department, as determined with the Assessor's Work Group, will only provide the collapsed State of Wisconsin Department of Revenue Assessment codes for public distribution.

#### Public lands

Public land descriptions are currently maintained only as a GIS database developed using the tax parcel data as a basis for information. The AS400 tax parcel maintenance system currently used by the Land Information Department does not allow for noting Public Lands in any other way than listing the property owner. The LRS that is currently under development and scheduled to be completed in 2005 will allow for additional information to be managed for public lands such as name. This information will be used to create a public lands GIS dataset that is managed as part of the tax parcel maintenance system rather than separate from it.

#### Liens

Presently searches can be made using the Register of Deeds grantor/grantee or searching by document number. The LRS will allow for searches to be made by tax parcel number (current or historical), document type, document date, tract index, and legal or tax parcel description. As a result of the development of the LRS Columbia County will begin maintaining Tract Index in the Register of Deeds for the first time. If necessary liens could be linked to GIS data layers using key fields.

#### Evidence of Title

Presently searches can be made using the Register of Deeds grantor/grantee or searching by document number. The LRS will allow for searches to be made by tax parcel number (current or historical), document type, document date, tract index, and legal or tax parcel description. As a result of the development of the LRS Columbia County will begin maintaining Tract Index in the Register of Deeds for the first time.

### **5. Public Access**

**Confirm your adherence to standards where applicable. Unless noted as required in bold, all standards are advisory:**

- **Local government compliant w/security and individual right to privacy.**
- Data exchange Between Agencies ([www.wlia.org/standards.html](http://www.wlia.org/standards.html))

#### **a) Use of technology to facilitate efficient access (e.g. Internet, query systems, CD)**

The county has several on-site public access terminals available to the public for searching property information and viewing other GIS data in the Land Information, Treasurer and Register of Deeds Departments. In addition, the county maintains an Internet site for remote searching of property records by owner, parcel identification number or address. GIS data can also be accessed remotely using the county's Interactive Mapping Application.

Access to land records and GIS data for other department staff is provided as is required. If required all appropriate software will be installed on user machines. County staff can also access information thru the county's Intranet or Internet site, using raw data files, or using the LRS or AS400 based applications.

Columbia County also offers digital spatial and tabular data or hardcopy maps and reports in industry-accepted formats for a fee as published in Columbia County Ordinances.

In the next few years, the county anticipates adding additional mapping and query functionality to the internal and public web site. In addition Register of Deeds documents will be available on-line as result of the LRS project that is scheduled to be completed in 2005.

**b) Data sharing policies (copyright, licensing, fees etc)**

Columbia County has developed an informal data sharing agreement with all communities in Columbia County whereby the Land Information Department will provide digital data, both GIS and tabular, at no cost. In addition, some printed copy maps are provided at no cost. Examples include the annual updates of the tax parcel map. We encourage others to use our digital data by providing it at no cost and encourage cost-free exchanges of information that will enhance our system.

A fee structure for Land Information Department data was established in 2003 and is outlined in Columbia County Ordinance No. 6903 Title 9 (Fee Schedule – Land Information). Further detail on products and pricing is available at the Land Information Department e-Store on the county's website.

The Land Information Department has established standard license agreement. Any order for licensed data sets must be accompanied by an original, signed license agreement. The Columbia County Land Information Department will not process digital data orders until receipt of the signed license agreement.

**c) Open access to data in existing format**

Columbia County adheres to the Wisconsin Open Records Law for access to land records. As defined by the Wisconsin Open Records Law, the public has the right to view and obtain copies of property and tax data, mapping products, and existing digital orthophotography in hardcopy or, as available, in digital format. Data is made available in its existing format unless negotiated under a separate agreement to adequately compensate county staff for these customized orders.

**d) Optional production of customized data on cost-recovery or other basis**

Columbia County offers customized digital spatial and tabular data or hardcopy maps and reports on a per hour fee basis in industry accepted formats.

**e) Internet accessibility (ADA compliance, security)**

Columbia County will be re-designing the county's web site starting in 2005. Internet accessibility and compliance with ADA standards will likely be addressed at that time.

**f) System security**

The Columbia County Management Information Systems Department maintains the security and back-up systems for all GIS and Land Records servers including the production GIS server, LRS server, AS400 and Imaging system security. Outside access to the county computer network is shielded from outside intrusion by a firewall.

**g) Privacy policies**

Columbia County adheres to the Wisconsin Open Records Law and complies with State statutes for access to restricted records. The county continues to monitor the industry and public concerns related to privacy and distribution of data.

**h) Use of \$1 fee designated for land information and housing data Sec. 59.72 (5)(b)3**

Columbia County is using these funds to support the development of the LRS project in Columbia County Register of Deeds Office. Activities include:

- Purchase of a Register of Deeds Document Management System (software application, hardware and professional services) including migration of documents to an updated imaging system.
- Development of LRS software to generate and maintain tax parcel, centerline, structure and other mapping data elements related to parcels to be made available on the county's Internet web site. Data elements will include limited housing data as available in tax and assessment roll databases as well as fair market value.
- Acquiring systems that will allow Register of Deeds documents to be searchable and viewable on-line. Columbia County expects have this data available in 2005 with the completion of the LRS application in the Land Information, Register of Deeds, and Treasurer's Departments.

In an attempt to make additional housing data available, Columbia County is currently exploring partnerships with local governments that will allow for web access to more detailed assessor property card data related to housing. It is hopefully that progress in this area will lead to future partnerships in other communities.

**6. Zoning Mapping**

**Confirm your adherence to standards where applicable. Unless noted as required in bold, all standards are advisory:**

- **Zoning Mapping Standards (Local Gov't. Compliant)**
- DNR Floodplain Zoning NR 115/117

a) Zoning Districts

Digital zoning maps have been developed by the Planning & Zoning Department using the digital parcel maps as a base for the 19 Towns in Columbia County under county zoning. Zoning maps are maintained independently of digital tax parcels by Planning & Zoning Department staff. Zoning amendments made by the Columbia County Board are incorporated into the digital zoning maps on a regular basis. The Columbia County Zoning Map meets all zoning classifications identified in the County Zoning Ordinance used for towns.

b) Shorelands

A digital shorelands zoning data set does currently exist, but can be generated by creating a 1000 ft. buffer from lakes and 300 ft. from lakes.

c) Floodplains and floodways

Columbia County is using hardcopy Federal Emergency Management Agency (FEMA) floodplain maps for floodplain and floodway determinations. Digital FEMA mapping has been incorporated into the GIS system in both image and polygon formats. As higher accuracy floodplain maps become available, the county will attempt to acquire them for incorporation into the enterprise GIS database.

d) Environmental corridors

This data set does currently exist in Columbia County. There are no other plans at this time to create an Environmental Corridor data layer.

e) Burial sites

Some sites have been incorporated into the enterprise GIS using local historians as a source; data is not available for public distribution. There are no other plans at this time to integrate this data into the county GIS. Further evaluation of security and preservation issues is required.

f) Archeological sites

Some sites have been incorporated into the enterprise GIS using local historians as a source; data is not available for public distribution. There are no other plans at this time to integrate this data into the county GIS. Further evaluation of security and preservation issues is required.

g) Historic/cultural sites

Some sites have been incorporated into the enterprise GIS using local historians and the State of Wisconsin Historical Society as a source; data is not available for public distribution. There are no other plans at this time to integrate this data into the county GIS. Further evaluation of security and preservation issues is required.

## 7. Soils Mapping

**Confirm your adherence to standards where applicable. Unless noted as required in bold, all standards are advisory:**

- **Soils Mapping Standards (Natural Resources Conservation Service Compliant)**

a) Soils mapping activities

Columbia County partnered with the NRCS to convert the hardcopy soils survey maps to a digital format in 2001. Attribute information has been maintained in cooperation with NRCS. The digital soils map has been certified by NRCS to be compliant to their national standard.

Soils databases are available on the GIS file server to internal users and can be provided to outside users that require it. A limited subset of soils data is available to the public on the county's internet Interactive Mapping Site, also available are data layers derived from soils database tables.

In addition the NRCS Soils data viewer and the "GIS Tables" are available for technical users in Columbia County. The Wisconsin NRCS office provided the "GIS Tables". They were created using soil tabular data, and has been processed to facilitate use in GIS software:

## 8. Wetlands Mapping

**Confirm your adherence to standards where applicable. Unless noted as required in bold, all standards are advisory:**

- **Wisc. DNR Wetlands Map (Wisc. Stat. 23.32 Wisc. Stats.)**

a) Wetlands mapping activities

Columbia County utilizes the Wisconsin Wetland Inventory (finalized 1983). The county obtained digitized wetland areas based on hardcopy maps from by the WiDNR, Bureau of Water Regulation and Zoning. They have been projected to Columbia County Coordinates.

## 9. Institutional Arrangements and Integration

**Confirm your adherence to standards where applicable. Unless noted as required in bold, all standards are advisory:**

- No standards have been adopted.
  - a) Formal data sharing agreements (Memorandums of Understanding etc.)

Columbia County currently has no formal data sharing agreements, however, the county will evaluate opportunities as a formal data-sharing partner as they arise.

- b) Formal or informal data maintenance agreements between departments/agencies.

Columbia County has data sharing arrangements with other county departments, towns & cities, consultants working for towns or the county, and State agencies. The county will continue these arrangements and pursue others as opportunities arise. We encourage others to use our digital data by providing it at no cost and encourage cost-free exchanges of information that will enhance our system. These arrangements are informal data sharing arrangements; the county will continue these and seek more formal arrangements as needs require.

- c) Cooperative arrangements (e.g. agencies; libraries; schools; RPCs; utilities; privates).

The county has participated in a number of cooperative projects and plans on pursuing others as opportunities arise. The county has entered into formal agreements with the NRCS and WiDNR to provide datasets relevant to Columbia County.

- d) Consortia (e.g. inter-county, regional).

Columbia County is a participant in an informal five county consortia established for the discussion of common issues (Inter-county Coordinating Committee). Columbia County currently has no formal ties to established regional planning commissions. The county will evaluate opportunities to participate in consortia as they arise.

- e) Collaborative arrangements (e.g. sharing of: local/state staff and budgets; technical assistance; peer review; collegial plan preparation; common help desk; bartering and mentoring etc.)

Informal collaborative agreements exist between the Land Records user departments in Columbia County to share technical assistance and professional support as necessary. The county actively participates in collaborative arrangements for data creation particularly with other county departments. We plan to continue our participation in the WLIA, WLIP Technical Assistance List Server and others as opportunities arise.

- f) Statutory relationships among county's and state agencies.

The county will continue to comply with statutory requirements.

## 10. Election and Administrative Boundary System

**Confirm your adherence to standards where applicable. Unless noted as required in bold, all standards are advisory:**

• **Local government compliant.**

a) State outline

Columbia County has incorporated this data into our GIS system from other sources. Data will be updated as the need arise.

b) County boundaries

The county has developed these data in our GIS system and will update them as the need arises. Data was derived from outside sources as well as from county sources such as tax parcel maps and GPS based public land survey data.

c) Civil division boundaries (Towns, City, Villages etc)

The civil and municipal boundaries within Columbia County have been constructed using GPS based or other public land survey data and information made available from individual municipalities. This information will be updated as more accurate data is developed from the county's parcel mapping efforts.

d) Utility districts (.e.g. water, sanitary, electric, etc.)

As information, funding, hardware/software, and staff becomes available, these boundary files will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set for development of these datasets.

The fields are carried as a code in the tax and assessment database and can easily be linked to the GIS parcel coverage using key fields.

e) Emergency Service Areas

A GIS based layer containing Fire and EMS service areas has been developed. A collaborative agreement exists between the Land Information Department and Emergency Government for data maintenance efforts.

f) Legislative districts

Columbia County has not incorporated or developed this data set into our GIS systems or other county databases. Work in this area will begin in 2006 using local election boundaries as a basis for information. The Land Information Department will be building data layers related to Congressional districts, State Assembly Districts, and State Senate Districts.

g) Election (voting district) boundaries, wards, supervisory, assembly, senate etc)

Columbia County has developed voting ward, aldermanic and supervisory district boundary GIS layers as part of the 2000 Census redistricting process. Areas from the 1990 and 2000 census were delineated as GIS data sets. District boundaries are continually being updated as annexations or other requirements dictate. A collaborative agreement exists between the Land Information Department, the County Clerk's Office and local government for data maintenance efforts.

h) Tax incremental financing districts

As information, funding, hardware/software, and staff becomes available, these boundary files will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set for development of these datasets.

The fields are carried as a code in the tax and assessment database and can easily be linked to the GIS parcel coverage using key fields.

i) School districts

The tax and assessment database has maintained tax parcel school district codes that can easily be linked to the GIS parcel coverage using key fields. A GIS based school district boundary layer has also been developed using digital tax parcel maps as a basis where available. District boundaries are continually being updated as new data becomes available with parcel mapping efforts.

j) Lake districts

As information, funding, hardware/software, and staff becomes available, these boundary files will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. As need arises for a lake districts GIS data layer, it will be developed by the Land Information Department. Some work has already been completed as required. A collaborative agreement exists between the Land Information Department, the local government or Lake District management for data maintenance efforts. No specific target dates have been set for development of the remaining district areas.

The fields are carried as a code in the tax and assessment database and can easily be linked to the GIS parcel coverage using key fields.

k) Census geographies:

*(1) Blocks*

The 1990 and 2000 census blocks have been incorporated into the county's enterprise GIS. Population and other statistical tables are also available for use.

*(2) Block groups*

The 1990 and 2000 census block groups have been incorporated into the county's enterprise GIS. Population and other statistical tables are also available for use.

*(3) Tracts*

The 1990 and 2000 census tracts have been incorporated into the county's enterprise GIS. Population and other statistical tables are also available for use.

*(4) Designated places*

The designated places data sets have not been incorporated into the county's enterprise GIS. No specific target dates have been set for incorporation of these datasets. As need arises these data sets will be acquired from the US Census Bureau.

*(5) Urban areas*

The urban areas data sets have not been incorporated into the county's enterprise GIS. No specific target dates have been set for incorporation of these datasets. As need arises these data sets will be acquired from the US Census Bureau.

*(6) Traffic analysis zones*

The traffic analysis zones data sets have not been incorporated into the county's enterprise GIS. No specific target dates have been set for incorporation of these datasets. As need arises these data sets will be acquired from the US Census Bureau.

l) Native American lands

As information, funding, hardware/software, and staff becomes available, these boundary files will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

m) Agency administrative districts and Zip Codes

As information, funding, hardware/software, and staff becomes available, these boundary files will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

Zip Codes boundary files have been acquired from the US Census Bureau; data should be verified with local US Postal officials. No specific target dates have been set to complete this work.

n) Public Administered Lands, ie parks, forests etc

Public lands are currently maintained only as a GIS database developed using the tax parcel data as a basis for information. Information on name, managing agency, size, and recreational activity is stored as part of the data set. All Federal, State, and county publicly administered lands are included. Data is maintained using tax parcel information or other sources of data such as the WiDNR as appropriate.

As information, funding, hardware/software, and staff become available, these locally managed public lands will be integrated into the GIS data layer when and where appropriate. At this time, no specific target dates have been established for including locally managed public lands.

## 11. Street/Road Centerline and Addresses

**Confirm your adherence to standards where applicable. Unless noted as required in bold, all standards are advisory:**

- **Local government compliant.**
- US Postal Addressing Standards Publication 28

a) Transportation network (streets, roads highways, railroads)

The transportation network dataset was created to represent highways, roads, bridges, and other features associated with transportation in Columbia County. The transportation features were derived from the April 1995 flight with a flight height of 10,000 feet, the April 2002 flight with a flight height was 10,000', a vehicle mounted 1-5 meter GPS unit, and other legal documents (Certified Surveys, Plats of Survey, etc.). County staff maintains data as required; updates are often made daily. Data maintained includes road location, functional class, name (primary as well as others), and sources of last update document.

This file is used for a variety of purposes by many county departments for applications such as address location, pavement rating, emergency government, sign inventory, dispatch, accident location, planning activities, highway design, routing and database queries.

A collaborative agreement exists between the Land Information Department and local governments for management of data maintenance efforts. In particular official road name and length as reported to the WiDOT as part of the "Gas Tax Maps".

b) Rights of way

Highway right-of-ways are being developed as a layer within the GIS system and the Land Records System using the data maintained or gathered as part of parcel mapping maintenance process for current right-of-ways documents. Development of this layer is dependent on progress of parcel mapping and availability of right-of-way documents. All new right-of-way are being managed as a part of the parcel-mapping project; historical documents are entered as when and where they are used for parcel mapping efforts.

Integration of other historical right-of-way information will be completed as information, funding, hardware/software, and staff become available into the GIS data layer when and where appropriate. At this time, no specific target dates have been established.

**c) Centerlines**

The road/street centerline dataset was created to represent all road and street centerlines in Columbia County. The features were derived from the April 1995 flight with a flight height of 10,000 feet, the April 2002 flight with a flight height was 10,000', a vehicle mounted 1-5 meter GPS unit, and other legal documents (Certified Surveys, Plats of Survey, etc.). County staff maintains data as required; updates are often made daily. Data maintained includes road location, category, name (primary as well as others), and sources of last update document.

This file is used for a variety of purposes by many county departments for applications such as address location, pavement rating, emergency government, sign inventory, dispatch, accident location, planning activities, highway design, routing and database queries.

A collaborative agreement exists between the Land Information Department and local governments for management of data maintenance efforts. In particular official road name and length as reported to the WiDOT as part of the "Gas Tax Maps".

**d) Address ranges**

Address ranges on centerlines will be developed in 2006 in an effort to support wireless 911 activities in the Sheriff's Department and Emergency Management using the centerline files as base.

Development of address ranges in Columbia County will begin in 2006, however, the completion of this project will be dependant upon several factors including but not limited to securing funding for spatial data creation as well as data maintenance from the *Grant from the Wireless 911 Fund*. Without long-term adequate funding for data maintenance activities will be dependant on dollars being available from Columbia County resources.

**e) Site address data base**

The Land Information Department has over the last 5 years been working to gather site addresses and attach to parcel site addresses countywide for the first time. We believe that at present about 85% of all county site addresses are accounted for and are being maintained in the LRS and linked to the spatial tax parcel through key fields.

This project will likely include the development of a Master Address File to simplify addressing complications resulting from the use of differing prefixes, suffixes, and abbreviations within user departments. The county will need to develop a workflow as well as establish cooperative arrangements and formal data sharing agreements with not only county departments but also local governments, the Wisconsin Department of Transportation (WiDOT), and US Postal Service to reconcile conflicting address and road names. This will require a significant amount of cooperation between departments and other agencies.

Further development of the site address database in Columbia County will begin in 2006, however, the completion of this project will be dependant upon several factors including but not limited to securing funding for spatial data creation as well as data maintenance from the *Grant from the Wireless 911 Fund*.

Without long-term adequate funding for data maintenance activities will be dependant on dollars being available from Columbia County resources.

f) Address point, structure and/or driveway

The locations of driveways throughout Columbia County were collected using photogrammetric stereo compilation procedures as part of the 2002 Orthophotography project. This data files consists of a point where the driveway intersects the road centerline. All points meet the National Map Accuracy Standards for 1"= 200' scale mapping.

Ongoing project work includes attaching site address and parcel number by linking thru key fields to each point. At present about 5% of all points are completed. Work is ongoing, although is completed as staff time allows. As additional funding and staff become available these point files will be completed in a more aggressive manor. At this time no specific target dates have been set for completion although the county would like to have work completed by 2008, including field verification of points not able to be collected from the orthophotography.

A maintenance plan for the driveway point file required that an integrated workflow between the Planning & Zoning and the Land Information Department was developed in late 2004 to integrate the address maintenance process for the first time in Columbia County. Although much refinement to this process is planned as a future Land Records Modernization task, addresses in Columbia County are being managed more efficiently than ever before. This work will form the backbone of the traditional "Rural Address/Fire Number Maps" as maintained by the Planning & Zoning Department (responsible for issuing address permits), as well as being used in the wireless 911 applications in Emergency Management, crime-monitoring activities in the Sheriff's Department and the District Attorney, Environmental Health monitoring, and other applications.

Further development of the driveway point file in Columbia County will begin in 2006, however, the completion of this project will be dependant upon several factors including but not limited to securing funding for spatial data creation as well as data maintenance from the *Grant from the Wireless 911 Fund*. Without long-term adequate funding for data maintenance activities will be dependant on dollars being available from Columbia County resources. Additional funding sources related to the Highway & Transportation Departments driveway inventory and access control work will also be explored.

g) Road names

Road names are managed from a variety of sources of public record including the WiDOT "Gas Tax Maps", and other sources, including plats, parcels, and information from the local municipalities. In addition to primary road names, secondary, tertiary, and quaternary road names are also maintained if applicable. A collaborative agreement exists between the Land Information Department and local governments for management of data maintenance efforts. In particular official road name and length as reported to the WiDOT as part of the "Gas Tax Maps".

Road name maintenance is presently managed as part of the enterprise GIS. Future work will likely include the development of a single road name file that is managed as part of the LRS application. Not only will this file be shared by GIS, but will be used in the future Master Address File. The county will need to develop a workflow as well as establish cooperative arrangements and formal data sharing agreements with not only county departments but also local governments, and the WiDOT. This will require a significant amount of cooperation between departments and other agencies.

h) Functional class

Functional classification codes are based on the WiDOT "Gas Tax Maps". Functional classes distinguish between rural and transportation and defined urban transportation areas. Therefore, proper assignment of this attribute requires that road arcs be split at the rural/urban boundaries.

All efforts are being made to maintain correct any Functional Class Codes in the road centerline GIS data layer. Information from the WiDOT "Gas Tax Maps" or other sources, including plats, parcels, and

information from the local municipalities are being incorporated into this dataset and being thoroughly checked.

i) Places/Landmarks

As information, funding, hardware/software, and staff becomes available, these boundary files will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

j) Integration with the County's/City Master Street Address Guide (MSAG)

Columbia County's ability to support integrated County/City Master Street Address Guide will be dependant upon several factors including but not limited to the secure funding for spatial data creation as well as data maintenance from the *Grant from the Wireless 911 Fund*. Without long-term adequate funding for data maintenance activities the ability to support wireless 911 will be dependant on dollars being available from Columbia County resources.

As information, funding, hardware/software, and staff becomes available, these files will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

k) Ability to support emergency planning, response and mapping

The Land Information Office is currently supporting limited emergency planning, response and mapping efforts requiring transportation related data sets. Work has been primarily limited to producing countywide road, Fire and EMS district maps as well as producing district based hard copy maps for use by local emergency services providers.

In 2004 the Emergency Management in a collaborative effort with the Land Information Department received a grant for purchasing mapping related software for the Sheriff's Department's mobile response units. Work will begin in 2005 to provide interactive mapping on laptop computers in the Columbia County mobile response vehicles. The Sheriff's Department will likely use this software for other "off-site" work. In addition, Columbia County will begin exploring establishing collaborative or other formal arrangements with local emergency services providers to provide mobile mapping functions on the local level as well as at the county.

The county's ability to support wireless 911, however, will be dependant upon several factors including but not limited to the secure funding for spatial data creation as well as data maintenance from the *Grant from the Wireless 911 Fund*. Without long-term adequate funding for data maintenance activities the ability to support wireless 911 will be dependant on dollars being available from Columbia County resources.

As information, funding, hardware/software, and staff becomes available, these boundary files will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

l) Ability to support Wireless 911

The Land Information Office, with the support of other county departments, has the both the knowledge and technical ability to support wireless 911 in Columbia County. The county's ability to support wireless 911, however, will be dependant upon several factors including but not limited to the secure funding for spatial data creation as well as data maintenance from the *Grant from the Wireless 911 Fund*. Without long-term adequate funding for data maintenance activities the ability to support wireless 911 will be dependant on dollars being available from Columbia County resources.

As information, funding, hardware/software, and staff becomes available, transportation related files will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

## 12. Land Use Mapping

**Confirm your adherence to standards where applicable. Unless noted as required in bold, all standards are advisory:**

- **Dept. of Revenue Land Use Classification System**
- **Local government compliant.**

### a) Mapping of existing land use.

Columbia County has developed a land use inventory of existing land use for all of townships using the 1995 orthophotography as a base for all work. Other sources of base information included the digital parcel maps (where available), hydrology, and public lands GIS data layers. In addition, county staff and local government officials completed field verification. Columbia County staff developed the land use classification system used: it is based on universally accepted codes for land use classification that are widely accepted in the professional planning field. This data layer although meeting local government requirements is does not use the Dept. of Revenue Land Use Classification System. At present, no plan for data maintenance or use of the Dept. of Revenue Land Use Classification System has been established.

As information, funding, hardware/software, and staff becomes available, further mapping of existing land use will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. Land use mapping efforts in the future will evaluate the use of the Dept. of Revenue Land Use Classification System. As a first step towards using the Dept. of Revenue Land Use Classification System, the Land Information Department beginning in 2004 and continuing in 2005 is requiring assessment codes to be submitted as they are field collected on Property Cards. The Land Information Department, as determined with the Assessor's Work Group, will only provide the collapsed State of Wisconsin Department of Revenue Assessment codes for public distribution. This collaborative arrangement with local government and assessors provides the base data for the mapping of existing land use using the Dept. of Revenue Land Use Classification System

### b) Mapping of planned land use

As information, funding, hardware/software, and staff becomes available, mapping of planned land use will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

## 13. Natural Resources

**Confirm your adherence to standards where applicable. Unless noted as required in bold, all standards are advisory:**

- **DNR Classification of Land Cover from satellite imagery.**

### a) Land cover

Columbia County has obtained and integrated the "WISCLAND" is the Wisconsin Initiative for Statewide Cooperation on Landscape Analysis and Data (WiDNR Classification of Land Cover from satellite imagery) into its GIS although it is generally not applicable for local government work. In addition, Columbia County has also obtained and integrated the 1:100,000-scale 2001 and Cropland Data Layer into its GIS from the USDA –National Agriculture Statistics Service. The Cropland Data Layer is categorized land cover data layer produced using satellite imagery from the Thematic Mapper (TM)

instrument on Landsat 5 and the Enhanced Thematic Mapper (ETM+) on Landsat 7. Although the data layer provides crop specific information, it is generally not applicable for local government work.

b) Watersheds

Columbia County has obtained and integrated watersheds into its enterprise GIS. This data set represents watersheds as delineated by the WiDNR. The data are compiled from 1:24,000-scale topographic maps. WiDNR watershed delineations generally indicate areas that drain into a common river system or lake, but may also be based on WiDNR basin management criteria. The custodian of this data set is the WiDNR Bureau of Watershed Management (WT).

As part of the 2002 orthophotography project, Columbia County created 4-foot contour interval topographic mapping, a TIN surface model, and a DEM. These data sets will be used to generate a more accurate watershed and sub watershed data layer in Columbia County. Work will likely begin in 2006 and be completed for primary watershed basins in 2006/2007 and on sub watershed basins as is required.

c) Geology

WiDNR digital data holdings include bedrock type, bedrock depth and water table depth developed in the late 1980s for a Groundwater Contamination Susceptibility Model (GCSM), but they are derived from small-scale sources (1:250,000 or 1:500,000) with very limited attribution, and would be inappropriate for site specific analysis and the county or local level. This data set can be acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

d) Hydrogeology

Extensive research done in 2000, with further inquiries in 2004, suggests that no hydrogeology data layer is available for Columbia County from the WiDNR or Wisconsin Geological and Natural History Survey (WGNHS) or other source. If data becomes available in the future it can be acquired and integrated into the Columbia County GIS system when and where appropriate.

e) Forests

Columbia County has obtained and integrated the WiDNR Original Vegetation Cover data set into its GIS although it is generally not applicable for local government work. This data set was derived from 1:500,000-scale sources showing the original, pre-settlement vegetation cover in Wisconsin. The original vegetation cover data was digitized from a 1976 map created from land survey notes written in the mid-1800s when Wisconsin was first surveyed. Lakes and other hydrographic areas from the 1:250,000-scale Land Use and Land Cover (LULC) data layer and the 1:100,000-scale state boundaries were subsequently merged with the original vegetation cover data set to more closely match the source map.

Data layers for Managed Forest Law and Forest Crop Law are recently available from the WiDNR Bureau of Forestry. The Land Information Department will acquire and integrate this data set into the Columbia County GIS system when and where appropriate. Managed Forest Law and Forest Crop Law are maintained in the Land Records System. The fields are carried as a code in the tax and assessment database and can easily be linked to the GIS parcel coverage using key fields as required. Managed Forest Law and Forest Crop Law data layers, using tax parcels as a basis for work, were created for 2003 and 2004 assessment years. No specific target dates have been set to complete additional work.

f) Hydrography

Columbia County has developed a GIS data layer of surface water features layer that include rivers, lakes, streams and drainage ditches and other hydrographic phenomena. This data was derived from the 1995 and 2002 orthophotography project. Future work will include the development of feature name as part of the hydrography database. No specific target dates have been set to complete this work.

g) Non-metallic mining

Extensive research done in 2000 with further inquiries in 2004 suggests that no non-metallic data layer is available for Columbia County from the WiDNR or Wisconsin Geological and Natural History Survey (WGNHS) or other source. If data becomes available in the future it can be acquired and integrated into the Columbia County GIS system when and where appropriate.

h) Endangered resources

The data can be acquired from WiDNR Bureau of Endangered Resources (ER), however location information may be generalized to provide more protection of rare species. This data set can be acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

i) Impacts on the environment (e.g. air emissions; groundwater contamination, storm water)

WiDNR digital data holdings include data developed in the late 1980s for a Groundwater Contamination Susceptibility Model (GCSM), but they are derived from small-scale sources (1:250,000 or 1:500,000) with very limited attribution, and would be inappropriate for site-specific analysis and the county or local level. This data set can be acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

Extensive research done in 2000 with further inquiries in 2004 suggests other data relevant data sets available from WiDNR are from various scattered programs with regulatory authority regarding environmental impacts or pollution management. These programs are responsible for managing data on toxic chemical releases, water quality, fish consumption advisories, etc. They provide access to their data by a variety of means. This data set can be acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

## 14. Data Base Design

**Confirm your adherence to standards where applicable. Unless noted as required in bold, all standards are advisory:**

- Data Interchange Standards
- Data Exchange Between Public Agencies, WLIB, 1996
- Describe the data interchange standards used by your county. Data Interchange arrangements may be formal or informal. The Wisconsin Land Information Board has adopted standards for the exchange of GIS and geodetic control data (Refer to II.E. 2 and II.E.5).

a) Design Evaluation

Columbia County follows industry-accepted standards for database design and system engineering. The standards are evaluated on an ongoing basis. County staff and/or GIS or other database development consultants closely review designs of existing and new databases. Pilot projects are often undertaken to determine functionality and refine the final design.

b) Project Approach

Columbia County defines a project as a unique set of coordinated activities, with definite starting and finishing points, undertaken by an individual or team to meet specific objectives within defined time, cost and performance parameters. It should have the following characteristics: a finite and defined lifespan, defined and measurable business products (that is, deliverables and/or outcomes to meet specific business objectives), a corresponding set of activities to achieve the business products, a defined amount of resources, an organization structure, with defined responsibilities, to manage the project.

Columbia County uses basic Project Management standards in its approach project development and maintenance. Issues such as the type of solution: design from scratch (internally resourced, contracted out), operational environment - standards to apply to final outcome, resource requirements (internal/external), and the reasons for the approach (organizational standards, availability of skills and equipment) are addressed with the project life cycle.

**c) Timeline**

The timeline for development and implementation is based on priorities and issues related to funding and staff levels. As major funding for these projects rely on retained fees and County Board approval, much is driven by the current economic situation.

**d) Metadata**

Columbia County has developed FGDC compliant metadata for all GIS data sets and will continue to update metadata as appropriate. Metadata will be posted to the Wisconsin Land Information Clearinghouse.

**e) Security/Privacy**

The Columbia County Management Information Systems Department maintains the security and back-up systems for all GIS and Land Records servers including the production GIS server, LRS server, AS400 and Imaging system security. Outside access to the county computer network is shielded from outside intrusion by a firewall.

Columbia County adheres to the Wisconsin Open Records Law and complies with State statutes for access to restricted records. The county continues to monitor the industry and public concerns related to privacy and distribution of data.

**f) Implementation and Maintenance Strategy**

Columbia County develops an implementation and maintenance strategy for each application or database individually. The user department often performs testing once the application has been implemented as staffing, financial, and technical restraints often require. As the user performs testing implementation is often a done in a multi-phased approach; as a logical section of an application is completed by programmers it is installed immediately for user testing prior to the final application being complete. Using this approach, data objects, models, work flow, business needs, and user interface can be adjusted prior to having other factors attached to them that require a stable data model. County staff in the user department, Management Information Systems Department, or contracted services outside of county staff performs application and database maintenance.

**g) Data quality management**

The Land Records System currently under development in Columbia County has built in automated error checking where appropriate. In addition, standardized domain tables have been developed to limit user input to acceptable values where appropriate. These tables are shared with GIS data sets in an effort to develop standardized GIS and LRS databases. By using standard tables not only are values consistent across all database applications but also changes can be globally in one area rather than in many separate data tables. Where automated error checking is not possible, manual error checking and redundant data entry is used. In addition the Land Records System has developed new reports that aid county staff or local officials in finding errors.

In an effort to maintain GIS data of the highest quality the Land Information Department has established informal data sharing arrangements with other county departments, towns & cities, consultants working for towns or the county, and State agencies. In exchange for receiving GIS data free of charge, errors found in the data are reported to the Land Information Department to be verified and/or corrected.

h) Needs assessment

Columbia County's Land Records Committee, which is made up of elected and appointed officials, discusses and prioritizes needs. The Land Information Officer remains in contact with land records customers on a daily basis to establish or refine user needs. Land records customers include all departments in Columbia County that deal with land records and some that are not traditionally thought of as land records related, state and local government, and the public.

In addition to meeting with internal customers the Land Information Officer remains in contact with land records customers within local municipalities and other agencies regularly. The Land Information Department has established topical work groups, such as the Assessors Work Group established in 2004, in an effort to ensure local land records needs are met and accounted for.

Discussion of user needs more often than not involves many departments in an effort to develop an integrated system in Columbia County. Documentation of user needs will often leads to the development of a project management plan that outlines not only user needs but opportunities and methodology for data integration, outlining project scope, defining goals, and identifying funding sources.

i) Data structure and format (e.g. topology)

All GIS data sets either produced by Columbia County or integrated into the enterprise GIS are topologically structured for arcs, areas, or points as are required by the data theme. Topology is used to ensure data quality and to allow you're the GIS database to more realistically represent geographic features which enables you to more accurately model the world and maintain referential integrity between objects in the database.

j) GIS Data Model

The data format used for GIS maintenance tasks in Columbia County is ESRI's coverage. ESRI's shapefile data format is used for most other mapping or analysis task including data sharing between county department and other users in local government or other agencies.

The Land Information Department will be developing a strategy for migration to ESRI's geodatabase model in 2006. Migration is necessary as the support for coverages and shapefiles diminishes and to take full advantages of new technologies and data management and analysis tools available now in current software releases.

k) Data Dictionary

Columbia County produces data dictionaries as a method of describing objects or items in a database or data model for the benefit of programmers and others who need reference. After each data object or item is given a descriptive name, its relationship is described (or it becomes part of some structure that implicitly describes relationship), the type of data (such as text or image or binary value) is described, possible predefined values are listed, and a brief textual description is provided. For all traditional databases and data models, data dictionaries are completed and maintained as changes to data objects or relationships require.

Columbia County produces FGDC compliant metadata for all GIS data sets and will continue to update metadata as appropriate. Data dictionaries are produced as an alternative to FGDC metadata for GIS data set until time allows for FGDC to be produced.

l) Coding schema

The use of standardized coding schemes is utilized whenever practical and applicable. The coding schema's that are used by Columbia County allow for effective searches in hierarchical structures, at one level or recursively, and do not impose a significant complication to existing storage and retrieval systems (databases, directories...)

m) Transaction management

Tax parcel transactions are managed through the use of a data fields in the LRS tax and assessment databases. The LRS data model is designed to manage a parent/child relationship between tax parcels as they are created, retired, and re-shaped. All transactions impacting tax parcels will be managed and available for use and analysis in the LRS. As part the LRS project work a tract index will be developed and maintained by the Register of Deeds Office for the first time in Columbia County. The tract index will also allow for transaction management of documents related to tax parcel history.

n) Organizational information flows

The Columbia County LRS application was developed to modernize all Land Records related data, systems and workflow in the Register of Deeds, the Land Information Department and the County Treasurer's Office and to incorporate business goals of additional departments in the future. The LRS project provides an opportunity to improve the quality of our data and records. In addition to migrating to a modern LRS system that is better able to manage the complexity of the data, the LRS gave the departments an opportunity to examine and improve workflow internally and between departments. Work on the first phase of the LRS is scheduled to be completed in the 4th quarter of 2005 completing the integration of the Land Information Department, County Treasurer's Office, and the Register of Deeds. Phase II work to integrate the Planning & Zoning Department and the Land & Water Conservation Department will begin in the 4th quarter of 2005 and is likely to continue thru 2007.

GIS data, images, and related attribute tables are shared to all county departments using a secure shared network data drive managed by the Columbia County Management Information Systems Department. Work is on-going in assessing and improving workflows between departments.

o) Data Conversion

Columbia County follows industry-accepted standards for database development and is able to offer digital tabular data to customers using industry accepted formats that is easily translatable to many systems within and outside county government.

Columbia County has established ESRI data formats as its GIS standard in order to easily conform to data received and shared with other county departments and with the State of Wisconsin who use ESRI as a standard GIS format making horizontal integration possible with almost no effort. County data sets can easily be imported or exported to other software vendors used on the local level to facilitate vertical integration GIS information by town, city and village officials, state agencies, and other private entities.

p) Ability to integrate with other databases and information systems (vertical and horizontal)

Columbia County follows industry-accepted standards for database design and system engineering. The standards are evaluated on an ongoing basis. County staff and/or GIS or other database development consultants closely review designs of existing and new databases to verify that integration needs are met. New databases will be designed for ease of incorporation into the existing system and to facilitate data sharing among county departments. The use of standardized coding schemes is utilized whenever practical and applicable. Key fields or data elements necessary for the sharing and exchange of data sets are identified and incorporated into our databases whenever practical.

By supporting the development of an integrated, technologically sound countywide LRS Columbia County continues to support modernization activities that represent horizontal integration of land information and systems within Columbia County and also vertical integration of land information and systems by town, city and village officials, state agencies, and other private entities.

Columbia County has established ESRI data formats as its GIS standard in order to easily conform to data received and shared with other county departments and with the State of Wisconsin who use ESRI as a standard GIS format making horizontal integration possible with almost no effort. County data sets

can easily be imported or exported to other software vendors used on the local level to facilitate vertical integration GIS information by town, city and village officials, state agencies, and other private entities.

## 15. Infrastructure and Facility Management

**Confirm your adherence to standards where applicable. Unless noted as required in bold, all standards are advisory:**

- *No standards have been adopted.*
- Governmental Accounting Standards Board (GASB)

### a) Parks

Park lands are currently maintained only as a GIS database developed using the tax parcel data as a basis for information. Information on name, managing agency, size, and recreational activity is stored as part of the data set. All Federal, State, and county publicly administered lands are included. Data is maintained using tax parcel information or other sources of data such as the WiDNR as appropriate.

As information, funding, hardware/software, and staff become available, these parks lands will be integrated into the GIS data layer when and where appropriate. At this time, no specific target dates have been established for including locally managed parks.

### b) Transit systems

At present the only transit system in Columbia County is AMTRAK. A GIS database of AMTRAK stations has been developed. Railroad centerlines are maintained as part of the county's transportation network. As information, funding, hardware/software, and staff becomes available, data will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

### c) Harbors

As information, funding, hardware/software, and staff becomes available, data will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

### d) Airports

Columbia County has acquired a point based GIS data file from the Wisconsin Public Service Commission (PSC) locating all airports of any size in Columbia County. This data has been projected into Columbia County Coordinates and is integrated into the GIS system. Data will be maintained by acquiring new data from the Wisconsin PSC or other sources as appropriate.

### e) Recreational Trails (Ice Age/ bicycle/ hiking/ snowmobile/ horseback routing)

Columbia County recreational trails are currently maintained only as a GIS database developed using orthophotography as a base for data collection. Some data collection was done using a hand held GPS unit. Recreation trails maintained include the Ice Age trail, biking roads, and snowmobile trails (county and club). Information on name and managing agency as appropriate is stored as part of the data set. As Columbia County has no Parks and Recreation Department, the Land Information Department must rely on other departments or outside agencies support in maintaining recreational trails data. Collaborative agreements with the Association of Columbia County Snowmobile Clubs have been established to help support data maintenance of snowmobile trails.

f) Utilities - not districts (e.g. gas, electric, sanitary, water, phone, telecommunications etc.)

As information, funding, hardware/software, and staff becomes available, data will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

g) Government facilities

As information, funding, hardware/software, and staff becomes available, data will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

Some initial work in locating government facilities has been started. The Land Information Department has developed a schedule for surveying of all county properties.

h) Hazardous materials sites; LUST (Leaking Underground Storage Tank) etc.

As information, funding, hardware/software, and staff becomes available, data will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

i) Landfills

As information, funding, hardware/software, and staff becomes available, data will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

j) Bridges, culverts, traffic road signs

Locations of bridges have been identified as part of the 1995 and 2002 orthophotography project although no attributes have been attached to the spatial database. As information, funding, hardware/software, and staff becomes available, data will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

k) Boat landings

The location of boat launches has been determined for all state and county and some local launch areas. Sources of data include WiDNR, the County Highway & Transportation Department, and local government publications. Some locations were located using a hand held GPS device; others were located from the 1995 orthophotography. Where available attribute data managed includes the name of the launch, water body name, launch type, parking or other facilities available and managing agency. As information, funding, hardware/software, and staff becomes available, data will be developed and/or acquired and integrated into the Columbia County GIS system when and where appropriate. No specific target dates have been set.

## **F. Integration and Cooperation**

**Wisconsin Administrative Code, Chapter Adm. 47 defines integration as the coordination of land records modernization to ensure that land information can be shared, distributed and used within and between government at all levels, the private sector and citizens. Cooperation is defined as the explicit relationships within and between public agencies, and between public entities and private entities to share land information or collaboratively pursue land records modernization. These cooperative relationships may be formal or informal, a single instance of exchange or an ongoing association.**

**1. What integrative/cooperative relationships would your county like to develop?**

Columbia County has actively encouraged and supported integration and cooperation activities related to land records modernization as cited elsewhere in this plan and as indicated in past WLIP grant applications. The county plans to continue these relationships as appropriate. The county has a particular goal to further the relationship with the cities, villages and towns within the county, as well as with stakeholders in other public agencies, utilities, private firms, and educational institutions. The development of more widely distributed metadata is a component of the data sharing strategies.

**2. What potential partners and mutual projects does your county plan to pursue?**

Cities, villages and towns within the county and any neighboring county's that undertake similar activities, as well as other public agencies, utilities, private firms, and educational institutions that have comparable data needs.

**3. What data would be shared and used in both of the above?**

Columbia County has data sharing policy that is in accordance to the Wisconsin Open Records Law. The county would like to develop data sharing partnerships that would be mutually beneficial to facilitate data access, exchange and distribution. Any digital data created or acquired by the county would be made available for sharing and exchange with any group listed above, express or implied. The horizontal ground network, Public Lands Survey coordinate data, base map information, any data set that would enhance registration of data layers, and tax listing database would be made available as part of the cooperative relationship.

**4. How does your county allow for participation and coordinate funding allocations so that all departments benefit from the land information program?**

Columbia County's Land Records Committee, which is made up of elected and appointed officials, discusses and prioritizes needs. The LIO remains in contact with land records customers on a daily basis to establish or refine user needs. Land records customers include all departments in Columbia County that deal with land records and some that are not traditionally thought of as land records related, state and local government, and the public. Once project scope is defined, all potential financing sources are determined including those from the general tax levee, grants, and from the Land Information Program retained fees. If a potential project meets the goals and objectives as stated in the Land Records Modernization Plan, as many dollars as appropriate or available will be used from the WLIP retained fees.

In addition to making dollars available for all land records modernization needs, Columbia County has demonstrated a strong commitment to acquiring, providing and assisting with necessary training and education as appropriate and when within budget.

**5. How does your county allow for participation so that municipalities and other agencies in the region benefit from the land information program?**

The LIO remains in contact with land records customers within local municipalities and other agencies regularly to establish or refine user needs and acquiring, providing and assisting with necessary training and education as appropriate and when within budget. In addition to involving local governments and other agencies in the Land Records Modernization planning and review process, the Land Information Department has established topical work groups, such as the Assessors Work Group established in 2004, in an effort to ensure local land records needs are met and accounted for in the Columbia County Land Records Modernization Plan. In addition, the Land Information Officer will coordinate or participate in writing grants to secure dollars that support the development of a modern land records system or GIS data development and sharing.

**G. Administrative Standards Not Associated With Foundational Elements**

Plans represent an agreement between the county and the Wisconsin Land Information Board. This agreement is intended to effectuate the objectives of the Program as embodied in the enabling legislation. In order for a Plan to be acceptable to the Board, the Board and the county agree and consent as follows below. If applicable, discuss any plans, problems, issues, or concerns relative to these agreements.

- 1. The county agrees to observe and follow the statutes relating to the Wisconsin Land Information Program and other relevant statutes.**

Columbia County agrees with the standard as stated.

- 2. The county agrees to permit the Wisconsin Land Information Board access to books, records and projects for inspection and audit including unannounced audits by the Board.**

Columbia County agrees with the standard as stated.

- 3. The county agrees to complete the Annual WLIP Survey**

Columbia County agrees with the standard as stated.

- 4. The county agrees to update the plan every 5 years and in the interim if the plan should change.**

Columbia County agrees with the standard as stated.

- 5. The Board agrees to facilitate technical assistance to the county including an on-line Technical Assistance Service.**

Columbia County agrees with the standard as stated.

- 6. The Board agrees to maintain and distribute an inventory of land information and land information systems for the state. This will be provided through an electronic Clearinghouse.**

Columbia County agrees with the standard as stated.

- 7. Development and implementation of an acceptable Plan confers certain benefits on local government within a county, including continued eligibility for Program funding. A voluntary peer review process will be used to assess Plan acceptability by the land information community.**

Columbia County agrees with the standard as stated.

<b>Peer Reviewer</b>	<b>Mailing Address</b>	<b>Phone Number (Email)</b>
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Ralph Sheffer, Forest Ranger Wisconsin Department of Natural Resources -Poynette Office	N3344 Stebbins Road Poynette, WI 53955	608-635-8121 <a href="mailto:Ralph.Sheffer@dnr.state.wi.us">Ralph.Sheffer@dnr.state.wi.us</a>

<b>Peer Reviewer</b>	<b>Mailing Address</b>	<b>Phone Number (Email)</b>
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Jodi Helgeson, Register of Deeds/Land Information Officer Adams County	402 Main Street PO Box 219 Friendship WI 53934	608-339-4206 <a href="mailto:jhelgeson@co.adams.wi.us">jhelgeson@co.adams.wi.us</a>
Roxann Brue, Administrator/Clerk/Treasurer Village of Arlington	P.O. Box 207, 200 Commercial Street Arlington, WI 53911	608-635-2474

*\* Individuals have been contacted and asked to participate in the Peer Review process but have not yet responded.*

**8. The Board agrees to review funding requests and to provide guidance to local government with respect to the development of such requests.**

Columbia County agrees with the standard as stated.

**9. The Board agrees make available electronically an Annual Report regarding the status of the Wisconsin Land Information Program and the activities of the Board.**

Columbia County agrees with the standard as stated.

### III. APPENDIX

#### A. Abbreviations

<b>Abbreviation</b>	<b>Definition</b>
DEM	Digital Elevation Model
DTM	Digital Terrain Model
FEMA	Federal Emergency Management Agency
FGDC	Federal Geographic Data Committee
GIS	Geographic Information System
GPS	Global Positioning System
HARN	High Accuracy Reference Network
IT	Information Technology
LIO	Land Information Officer
LRS	Land Records System
NAD	North American Datum
NGS	National Geodetic Survey
NRCS	Natural Resource Conservation Service
ODBC	Open Data Base Connection
PSC	Public Service Commission
TIN	Triangulated Irregular Network
USGS	US Geologic Survey
WIDNR	Wisconsin Department of Natural Resources
WIDOT	Wisconsin Department of Transportation
WLIA	Wisconsin Land Information Association
WLIB	Wisconsin Land Information Board
WLIP	Wisconsin Land Information Program

**B. Columbia County Communities**

