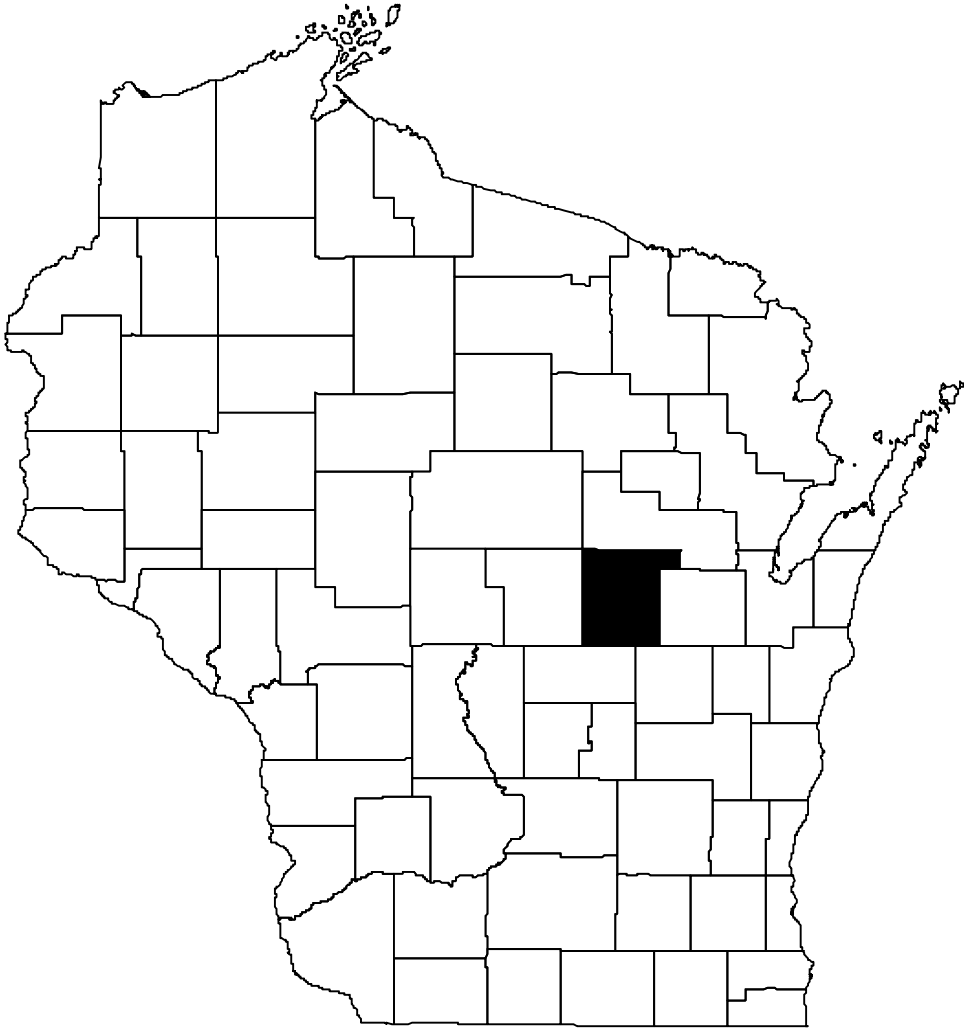


**Waupaca County's Five Year Plan for  
Land Records Modernization**



**Prepared for the Wisconsin Land Information Board**

---

**WAUPACA COUNTY  
LAND RECORDS MODERNIZATION PLAN**

**I. EXECUTIVE SUMMARY**

**A. Identification and Contact Information**

Clyde Tellock  
Waupaca County Real Property Lister/LIO  
611 Harding Street  
Waupaca, WI 54981

**B. Participants in the Planning Process**

Ian Grasshoff, GIS Specialist  
Clyde Tellock, County Treasurer  
George Jorgensen, Register of Deeds  
Dave Rosenfeldt, Zoning Administrator  
Bruce Bushweiler, Land & Water Conservation  
Joseph Glodowski, County Surveyor  
Roger Holman, Parks/Solid Waste

**C. Summary of the Plan**

This plan describes Waupaca County's land records modernization goals and objectives for the next five years. The plan will be used to provide all interested parties with basic information on Waupaca County's efforts in land records modernization.

Waupaca County has benefited in many areas of modernization from the Wisconsin Land Information Program. This plan lays out a strategy for the county to continue the progress initiated by the Wisconsin Land Records Modernization Program.

Over the next five years, the emphasis for land records will be to refine our existing countywide parcel mapping and begin to develop applications and additional layers to complement the parcel layer. This plan builds on our earlier efforts. The format and content of this plan is based upon the Wisconsin Land Information Board's guidelines dated September 1, 1997.

**D. County Website**

<http://www.co.waupaca.wi.us>

---

## **II. LAND INFORMATION MODERNIZATION AND INTEGRATION PLAN**

### **A. Goals and Objectives**

#### **1. State goals and objectives...**

##### **Goal 1: Enhancement and expansion of layers in the land records system.**

- Update and keep current our existing parcel mapping layer.
- Acquire or develop additional map layers such as 2-acre wetlands, FEMA flood zones, utilities data, park boundaries, recreational trails, canoe routes, snowmobile trails, voting wards, landfills, hazardous facilities, dam locations, traffic accidents, crime events, and school district boundaries.
- Develop geo-coded road network coverage for address matching and E911.
- Refine the PLSS coordinate control through densification by GPS control.
- Creating metadata for our land records system in cooperation with other agencies.
- Refine our hydrology layer by geo-coding wetland codes classification.
- Refine our road centerlines by geo-coding road segments based on their type.
- Work with the Highway Department to facilitate the creation of a road sign inventory.
- Enhance and recheck our structure points and driveway lines.

##### **Goal 2: Increase Utilization of the land records system and public access.**

- Continue to expand both internal and external access to our land records system.
- Continue to provide training for both internal and external users of our land records system.
- Continue to integrate our land records system into the daily activities of both internal and external users.
- Work with the private sector to improve our current Internet map portal.

##### **Goal 3: Continued integration of imaging with our land records system.**

- Continue to incorporate all survey documents into the imaging and tracting systems.
- Continue to integrate zoning department records to the imaging system.

##### **Goal 4: Incorporation of external databases to the county land records system.**

- Link highway department records to our road coverage.

- 
- Continue to link computerized assessment records maintained by local assessors to the land records system.
  - Continue to provide land records system coverages for use as base maps to municipalities and utilities for facilities management and incorporate access to the data for use in our land records system.
  - Explore the integration of TIGER Census data to our land records system.

**Goal 5: Developing new GIS products.**

- Continue to develop E-commerce capabilities for distributing land records information online such as online permitting for the Zoning Department.
- Explore the development of an internally produced plat book.
- Continue distribution of land records digital data on CD-ROM.
- Explore the development of an emergency responders plat book

**Goal 6: Take advantage of planned aerial photography to selectively acquire new digital products.**

- Acquire new digital orthophoto products in selected areas, such as major highway corridors and areas of significant change since 1994.
- Acquire 2010 digital orthophotography.

**Goal 7: Develop a centralized Land Records Geodatabase.**

- With the acquisition of Oracle and ArcSDE we can now focus on developing an enterprise Geodatabase for access by internal users.

**Goal 8: Develop additional uses for LIDAR data.**

- Explore potential uses of LIDAR data.

**Goal 9: Expand role of GIS**

- Collaborate with other departments to assess GIS needs

**Goal 10: Setup data exchange agreements**

- Contact local utility companies and try to arrange for a data exchange

**(d) What is the planning horizon the county is using to ensure meeting the criteria shown below?**

**Criteria**

- (1) Waupaca County will ensure that the information is readily translatable for use by any state or local county/agency or public utility. The county's designated land records system software vendor Environmental Systems Research Institute (ESRI). ESRI is a member of the Open GIS Consortium and proposes to support all open GIS data transfer and data share requirements.

- (2) The county will ensure the information is easily retrievable by any state or local county/agency or public utility. As stated above, the county's GIS software vendor will conform to Open GIS requirements.
- (3) The county will ensure that the information is geographically referenced for use by any state, local or public utility. The county uses the state recognized Waupaca County Coordinate System based on NAD 83/91.

**2. Describe how the county's operating system environment and database design (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.**

Waupaca County is currently evaluating our network configuration to coordinate a planned distribution of GIS data, imaging and all of our land records systems, so that the data is readily and quickly accessible to both inside and outside users. Windows 2000 Workstations are the designated standard desktop operating systems. Microsoft Office 2000 is the standard office software that is implemented. An IBM RS/6000 using AIX running Oracle and ArcSDE is the county's geographic information system / server. A Windows 2000 web server is the GIS map server running ArcIMS, which works together with the AS/400 to serve maps both internally and externally. We have recently installed Oracle and ArcSDE on the RS/6000. Together these two programs will allow for the development of an enterprise Geodatabase accessible to internal users.

Waupaca County currently has a Novell network in place that serves all the users that require access to the land information system. This network also provides access to the AS/400 where all of the county application programs reside as well as the document imaging system. This network also provides the users access to the Internet and e-mail through Novell GroupWise.

To assist in the development of metadata information about each coverage, Waupaca County participated in the FGDC "Don't Duck Metadata" grant program. We plan to continually update and improve upon our metadata.

**B. Progress Report on Ongoing Activities**

The majority of the county's goals and objectives from its previous plan have been achieved. Those goals and objectives that were ongoing in the first plan continue to be ongoing in this plan. The only significant changes relate to the WLIB's changing foundational elements to allow for addressing and other decision support elements and technology advances related access and distribution of data. In brief, the progress made since the first plan include:

- Completion of leaf off, snow off, photography for the county in spring 2005 (1.5-ft pixel).
- Obtained digital orthophotography in 1994(2-foot pixel) and spring 2005 (1-foot pixel).
- Ongoing scanning of documents into an imaging that currently serves the register of deeds, property listing, and zoning departments.
- Continued enhancement of countywide planimetric data layers is well under way.
- Continued production of all hardcopy parcel and zoning maps.
- Continued updating of our parcel coverage.
- Developed CD-ROM based products for distribution.
- Completion of web portal that allows for parcel inquiry based on name, address, or PIN number. This application is available on the County's Intranet or to the general public through the Internet.
- Tri-Min systems has completed Land Shark, which provides Internet access to all scanned Register of Deeds and County Surveyor documents.

- A parcel level comprehensive zoning layer has been created.
- Obtained 2005 land use from East Central Regional Planning Commission. Through the comprehensive planning process communities have identified areas of the land use data that needed to be updated.
- Started to migrate our data into an enterprise Geodatabase.
- We have a student that is currently refining our structure points and driveway lines.
- Participated in the Wisconsin proposal for the FGDC “Don’t Duck Metadata” grant.

## **C. New Initiatives**

### **1. Proposed Projects**

We plan to develop a central web portal that would allow users to access GIS data, document imaging, tax data, and survey documents all from one interface. Subsequent applications will be built; these may include site selector, permit browser, and zoning notification applications that will be adapted to fit the needs of our county. We hope to make this portal more user-friendly than the current version.

The County has completed all the back scanning of survey documents. The survey documents located in the county surveyor’s office have also been incorporated into our imaging system. We will continue to scan any new documents into our system.

We plan to create a central, enterprise Geodatabase for internal users. The Geodatabase will allow for simultaneous data access and editing. It will also eliminate the need to house data in multiple locations. The GIS specialist will no longer need to constantly copy updated data to the RS/6000, thus increasing productivity.

When it is complete, we would like to incorporate our Geodatabase functionality into our web mapping and parcel map production.

We will continue to refine the PLSS by using GPS and conventional survey methods to establish Waupaca County coordinates on government corners and center of section corners.

The County plans to utilize the updated aerial photography flown in spring 2005. The new photography will mainly assist in the revision of our road centerlines, structure points, and community planning.

We plan to explore additional uses of 2-ft contour LIDAR data. We may end up working with The University of Wisconsin at Stevens Point on this project. We hope to create new mapping products from the LIDAR data.

We plan to develop political boundary layers such as voting wards, supervisor districts, and school districts.

The Land Information office would like to develop an in house plat book to help eliminate error and cut down on cost. In addition, we plan to develop an emergency responders plat book that would assist emergency personnel with navigation.

We would like to work with the Highway Department to create a digital road sign inventory. They have expressed interest in this.

We plan to continue to revise and expand our current metadata. This will eventually be integrated into our Geodatabase.

We would like to assist the parks department in the refinement of the trail system layer. This would include adding snowmobile routes, canoe routes, and boat launch sites. These layers would lead to the development of better County recreational maps.

We intend to develop a sanitation data layer. This layer will show the locations of landfills and sewage treatment plants, both current and past. It is important for community members and real estate developers to know where these features are located.

We will continue to assist in the comprehensive planning process. This may include data distribution, data updates and map production.

We plan to work with the Sheriff’s department on the creation of a data layer that will contain the location of traffic accidents. They would also like a data layer that would contain the locations of crime events. We may need to find a way to integrate their Spillman mapping system with our own.

**2. Assistance Requested**

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?

The county is connected to the WLIP List Server and will obtain technical assistance as needed from the private sector.

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

The county has always budgeted for the land information program related activities within county department budgets. The county has formed several strategic partnerships to keep costs down and is continually alert to grant opportunities.

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 follow county required procurement processes.

**3. Problems Encountered.**

The key to successful completion of the activities outlined in this plan is funding and staffing. It is crucial that the retained fee revenues remain free of limitations on their use.

The current grant process has also helped to provide an additional funding source without having to go through the competitive grant process, however there aren’t any more grants available. In the future this may make it difficult for the Land Records Department to undertake new projects.

**D. Custodial Responsibilities.**

Waupaca County’s land information records are grouped by the departments where they are located with the source of custodial authority as listed below.

The County will consider any request for custodial responsibility and will evaluate each request based on available and required resources. Waupaca County is interested in taking responsibility for the digital shoreland zoning information, digital zoning information, a geo-coded road network coverage and possible in house plat book.

Register of Deeds

Record deeds, mortgages, plat maps, certified survey maps, and other related documents (59.43)

Scan above-mentioned documents into County imaging system as received and filed (59.43)

Maintain tract index of real property (59.43)

Property Listing/Survey/Land Information Office

Maintain description and ownership information of all real property parcels (70.09)  
Assign parcel numbers according to county geo coding system compatible with state prescribed numbering system.  
Maintain information on school and other special district codes (70.09)  
Maintain information on PLSS section corners including tie and section summary sheets (59.45)  
Maintain information on Waupaca County HARN densification (59.45)  
Maintain files of private survey maps (59.45)  
Maintain files on field notes and other survey source documents (59.45)  
Maintain the Waupaca County index parcel maps, consisting of parcel boundaries, forest program lands, road network, residual map information, PLSS index, and planimetric base layers for the entire county. (70.09, internal policy)  
Maintain digital orthophotos taken in 1994, 2000, and 2005.

County Treasurer

Maintain tax financial information for all tax parcels (59.25)  
Maintain tax rates and special assessments information (70.09)

Zoning

Maintain zoning maps for unincorporated areas (59.69)  
Maintain private sanitary system site plans (59.69)  
Maintain permit database (internal policy)  
File wetlands and FEMA maps (internal policy)

Land Conservation

File soils maps and tables.  
Create and maintain Agricultural plans (internal policy)

Highway Department

File right-of-way plats and construction plans (internal policy)

Sheriff/Emergency Government

Maintain E911 related coverages (internal policy)  
Maintain master street address guide (internal policy)  
Maintain emergency service network data, maps and coverages (internal policy)

**E. Foundational Elements and Statewide Standards**

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

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

Waupaca County is connected to the technical assistance list server and plans to participate in the WLIP Clearinghouse and Technical Assistance List Server.

Currently the Land Information Office will provide technical assistance to all departments developing and maintaining land information. The Land Information Office will inform departments needing additional training and education of meetings and training opportunities as appropriate.

The Land Information Office also intends to establish an in-house ArcView, ArcReader, and ArcIMS Module training for County staff and local municipalities that are using, or will be using, the programs.

**2. Geographic Reference Frameworks**

### **Geodetic control networks**

Waupaca County has participated in the densification of the High Accuracy Reference Network through the WLIB grant awarded to ECWRPC. We have nine main stations in the County, 2 first order and 7 second order stations. All the stations have azimuth stations. The stations are setup in approximately an eight-mile grid throughout the county.

### **Public Land Survey System**

The county has completed the monumentation of all government section corners, we are actively maintaining these corners. We have established coordinates on the PLSS corners using a combination of conventional survey techniques and GPS technology. All GPS coordinates meet or exceed FGDC Third order, class I accuracy standard. Coordinates are maintained in the Waupaca County Coordinate system, which is mathematically relatable to the NAD 83(91). We plan to continue work on establishing center of section corners as budget allows. The county maintains the custodial responsibility for the PLSS.

### **Digital Orthophoto**

Waupaca County has obtained digital orthophotos taken in 1994 and 2000 from flights funded by the County Land Information Office. These photos were used to create planimetric coverages for the county as well as a reference tool in the parcel conversion process. The county will soon receive new orthophotos taken in the year 2005. Waupaca County plans to acquire new digital orthophotos every five years.

### **Digital terrain models**

Waupaca County has an orthophotography quality terrain model. We have used the model to create a TIN in ARC/INFO and also generated contours from the TIN for our land conservation office to use for planning purposes. When we receive our 2-ft contour LIDAR data, we will replace our current terrain model.

### **Confirm your adherence to standards**

- a. Standards for Geodetic Reference Systems (FGDC standards and specifications, Wisc. Stats. Chapter 236.18; **WLIB Specifications and Guidelines to Support Densification of the Wisc. High Accuracy Reference Network (HARN) Using Global Positioning System (GPS) Technology - June, 1995**).

Waupaca County's Geodetic Reference Network is Blue Booked. b. Standards for Public Land Survey System Corners

#### **1. Corner Remonumentation (Sec. 59.63(1); Sec. 60.84 (3)(c) Wisc. Stats).**

Waupaca County adheres to the statutes.

#### **2. Remon. Records (Wisc. Stats. (Sec. 59.635(2)(b) and Wis. Admin. Code AE 7.08(2).**

Waupaca County adheres to the Administrative Code.

#### **3. Coordinate Values (FGDC Third Order Class 1). Yes on all GPS coordinates.**

4. Minimum Standards for the Establishment of Coordinates on Public Land Survey Corners as published by the Wisconsin County Surveyors Association.

#### **c. Standards for Geographic Control Data (FGDC Third Order Class III for**

**Horizontal Coordinate Values and Third Order for Elevation Values).** We make every attempt to obtain quality information in our vertical work.

### 3. Parcel Mapping

Parcel mapping is the top priority in our land records activities. We currently have converted our existing paper maps to digital form. The digital maps are index parcel maps. All parcel maps are referenced to the lines of the PLSS and are suitable for planning purposes. In many situations these maps are suitable to assist with land title boundary or survey line determination. Our parcel maps are not intended to be a substitute for a certified land survey or ensuring title to property. Included in the metadata is information that directs users to the source documents. As these parcel maps are maintained we strive to use cogo techniques so that more accurate survey details are available in the database.

**Geodetic reference:** All parcel mapping is in the Waupaca County Coordinate System (which is relatable to NAD 83/91) Topology: we are adding topology to previously parcel mapped sections and newly mapped sections.

**Parcel ID:** The present county parcel identification number does not fully conform to the WLIB parcel numbering system. The parcel mapping database is designed so the PIN can be generated to comply with the WLIB requirement and will be populated automatically based on the current county number.

#### Confirm your adherence to standards

- a. FGDC's Cadastral Standards for the National Spatial Data Infrastructure.
- b. The WLIB's Parcel Identification Numbering System.** This number will be added to the Waupaca County assessment database.
- c. Local Government standards compliance. We have developed our own standard, which is currently under revision.
- d. For more information on Standards for Cadastral or Legal Evidence, Standards for Parcel Boundaries, Standards for Parcel Administration (Sec. 59.55 Wisc. Stats.).

### 4. Parcel Administration

**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.**

Waupaca County's database supports integration of digital parcel maps with property and ownership information by linking data through key fields.

**Tax data:** The tax history database is designed to be accessed by PIN, owner name, or site address and can be linked to the GIS parcel coverage.

**Parcel ID:** The PIN is an attribute in our GIS parcel coverage. A major revision to the AS/400 based applications used by the treasurer's office, register of deeds, and zoning office has created links to the parcel identification number. Through the use of these links the GIS system will be better able to access the AS/400 data.

**Confirm your adherence to standards where applicable.**

---

**The WLIB's Parcel Identification Numbering System:** The County intends to generate the prescribed parcel number in the database as described above.

## 5. Public Access

*Use of technology to facilitate efficient access (e.g. Internet, query systems, CD-ROM):* The County currently has public access computer terminals available to the public for searching tabular data, document imaging, and GIS query capabilities. We plan to continue to add additional terminals in the coming year and upgrade existing terminals. Waupaca County is currently developing a revised GIS web site using ESRI Internet Map Server software. We hope to have this revised web site on line sometime in the next year. We currently publish CD-ROM's of our mapping and applicable databases every year for use by surveyors, assessors, and the general public. Assessment database information and imaging files are routinely available to realtors, title companies, and others on disk. Waupaca county also has available a dial up service to give access to the AS/400 database. In the coming year we hope to upgrade the dial up service to include access to imaging and eventually access to GIS.

**Open access to data in existing format:** Hard copy of data is available to everyone. If there is a request for information in digital form, every attempt is made to provide it in a useable format.

*Optional production of customized data on cost-recovery or other basis:* products are generated in requested format. Charges are based on a cost analysis of the specific products.

**System security:** The GIS RS/6000 server and AS/400 computers have built in security and are managed by a system administrator. Waupaca county's data processing department maintains a backup security plan for our AS/400 and imaging system. The Land Information office is responsible for the backup of the GIS system.

**Right to privacy:** Waupaca County adheres to the Wisconsin Open Records Law and complies with Stat statutes for access to restricted records. We will be monitoring the industry and public concerns related to privacy and distribution of data.

### **Local government compliant w/security and individual right to privacy:**

Waupaca County follows internal policies regarding security and is sensitive to privacy issues.

## 6. Zoning Mapping

**Zoning:** Based on existing hardcopy zoning maps, we have created a digital zoning layer for unincorporated areas in which we have jurisdiction. Once we receive wetland data from the DNR we plan to geo-code our hydro layer to reflect this.

**Shorelands:** Waupaca County has developed and adopted a new shoreland zoning ordinance (May 20, 1997). We have created a GIS zoning coverage that includes the coding necessary to administer new ordinances (1000' buffers from lakes, 300' from rivers and streams) in unincorporated areas of the County. We maintain this information through the use of digital orthophotos and our cadastral parcel maps.

**Floodplains and floodways:** Inadequate floodplain mapping continues to be a problem for Waupaca County. Upgrades are badly needed. Waupaca County currently uses hardcopy FEMA floodplain maps for floodplain and floodway determinations. We hope to obtain new digital floodplain layers from FEMA in the next year or two. They will be using LIDAR data to accurately map floodplains.

### **Confirm your adherence to standards**

a. **Zoning Mapping Standards (Local Gov't. Compliant):** We have recently increased staff to enforce zoning regulations and are presently rewriting our ordinances to better deal with manufactured homes, junkyards, non-metallic mining, and communication towers.

b. DNR Floodplain Zoning NR 115/117: Waupaca County has adopted a floodplain Ordinance.

### **7. Soils Mapping**

*Soils mapping activities:* Waupaca County currently has digital soil data from the NRCS.

### **8. Wetlands Mapping**

*Wetlands mapping activities:* The County is currently using the 1994 Wisconsin Wetland Inventory DNR wetland hardcopy maps. We are waiting to obtain digital DNR Wisconsin wetland inventory maps that are currently being developed and will incorporate them into our system when available.

#### **Confirm your adherence to standards**

a. **Wisc. DNR Wetlands Map (Wisc. Stat. 23.32 Wisc. Stats.):** we have the DNR wetland maps at 2-acre delineation.

### **9. Institutional Arrangements and Integration**

*Formal data sharing agreements:* The County has data sharing arrangements with other County departments, municipalities, and consultants working for towns or the county. We will continue these arrangements and pursue others as opportunities arise. The County encourages others to use our digital data by setting a nominal cost or no cost. We encourage cost-free exchanges of information that will enhance our system.

*Cooperative arrangements:* The County has participated in a number of cooperative projects and plans on pursuing others as opportunities arise.

*Statutory relationships among counties and state agencies:* Waupaca County complies with statutory requirements.

### **10. Reconciled Election and Administrative Boundary System**

*State outline. County boundaries. Minor Civil division boundaries:* The civil boundaries within Waupaca County were constructed using our parcel data and PLSS data.

*Utility districts. Tax incremental financing districts. School districts. Lake districts. Public lands.* The tax database includes a code designating which parcels are included in the various districts.

*Legislative districts. Reconciled election system boundaries. Census geographies. Native American lands. Agency administrative districts and Zip codes:* Waupaca County is interested in integrating the year 2000 census and tiger data into our GIS system.

#### **Confirm your adherence to standards**

Local government compliant: yes.

### **11. Reconciled Street Address and Street Network System**

*Streets, Roads, Highways, Bridges:* We have mapped public and private streets and highways to varying levels of accuracy. We plan to maintain the existing planimetric road coverage that was created in our parcel conversion. This coverage includes centerlines of all named public and private roads in the county segmented by intersections. In the future we hope to attach other databases to this road coverage by segment ID's.

*Rights of way. Centerlines:* In our parcel conversion we buffered a right of way based on available documents such as highway right of way plats, CMS's etc. We plan to refine this right of way information as new survey work is done.

*Address ranges:* we maintain address mapping and an associated database. These property addresses are entered into the assessment database and serve as a link between the map and the database.

*Reconciliation of street address and street network systems:* The sheriff's E911 computer aided dispatch system has been working with local municipalities in reconciling conflicting addresses, road names and location of roads.

**Confirm your adherence to standards**

**Local government compliant:** yes.

## 12. Land Use Mapping

**Mapping of land use:** Waupaca County will continue to provide the digital data we have available and ortho photos to the towns and/or their consultants for development of land use plans in exchange for a copy of their final plan. Most towns have been using East Central Wisconsin Regional Planning Commission's modified Standard Industrial Code classification system. We anticipate land use planning will become a high priority for many of our municipalities and look forward to working with them to accomplish it.

**Confirm your adherence to standards**

**Dept. of Revenue Land Use Classification System:** we are compliant.

**Local government compliant:** yes.

## 13. Natural Resources

*Land cover. Geology. Forests. Endangered resources. Impacts on the environment. Watersheds. Hydrogeology. Hydrography:* The County plans on acquiring these GIS coverages from the DNR, as they become available and as needed.

## 14. Data Base Design (see Item II.A.2. above for description)

*Needs assessment:* The original Waupaca County Land Records Modernization Plan included a detailed assessment of used needs and priorities. The original assessment is still valid with the exception of issues related to rapidly changing technology advances and cost of implementation.

**Timeline:** The timeline for development and implementation is dictated by funding and staff level.

*Structure:* Topology is created for all GIS coverages and all of our databases are relationally structured.

*Transaction management:* A date field is contained in most of our data bases to track changes.

**Metadata: Metadata quality:** Waupaca County has minimal metadata for our databases. We have submitted a proposal for financial assistance in the creation of metadata for current data sets as part of a Consolidated Proposal. Funding has been awarded through a "Metadata Training and Data Documentation Project" sponsored by the FGDC. Waupaca County intends to develop metadata according to existing standards prepared by the FGDC for both new and existing databases.

**Design evaluation:** Design of existing and new databases is closely reviewed by the County staff and/or County GIS database development consultants. Pilot projects are undertaken to determine functionality and refine the final design.

*Integrateability:* The County identifies key fields or data attributes needed to support sharing of data sets and incorporates them in our data bases whenever practical to promote integration.

*Coding scheme:* The County uses existing standardized coding schemes whenever possible.

*Organizational information flows:* Work is on going in assessing and improving workflow within and between departments.

*Design budget:* Waupaca County makes every effort to provide sufficient funding in the design stage of database development. The County realizes that it is crucial to provide adequate planning in order to most efficiently and effectively develop our GIS system.

## **15. Infrastructure and Facility Management**

Railroads Transit systems

Harbors Airports

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

Utilities

Government facilities

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

## **F. Integration and Cooperation**

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

The county has a goal to further their relationship with all our municipalities. We would also like to continue and expand cooperative projects with DNR and DOT in areas such as surveying and adding vertical control. Waupaca County would like to develop integrative/cooperative relationships with public and private entities interested in obtaining information we currently possess in exchange for other data or funding.

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

Waupaca County will seek to develop joint efforts with our municipalities neighboring counties, state, regional and feral agencies, utilities and the private and public sectors.

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

Any digital data created or obtained by the County would be made available for sharing and exchange with any of the potential partners listed above. The horizontal ground network PLSS coordinate data, base map information, or any data set which would enhance registration of data layers, and tax listing database would be made available as part of any cooperative efforts referenced above.

## **G. Technical Standards Not Directly Associated With Foundational Elements**

If applicable, please discuss any plans, problems, issues, or concerns relative to the following additional standards, which have been adopted by the Board.

1. State Agency GIS Data Interchange Standard, which includes the possible future adoption of the FGDC Content Standards for Digital Geospatial Metadata. We will participate in the FGDC metadata development project starting in 1999 when the consolidated state proposal is approved.
2. WLIB's recommended Minimum and Alternative Procedures for Competitive Procurement Processes to Ensure Best Value for Citizens and Governments. Waupaca County has procurement policies that address these activities.
2. Transfer of Public Records to Optical Imaging, Wisconsin Admin. Code Chapter Adm. 12. Waupaca County intends to comply with these rules.
4. Wisconsin Department of Administration Imaging Standards and Guidelines.
5. Wisconsin Department of Administration Information Technology Infrastructure Standards. Waupaca County will review and follow the standards and guidelines if applicable.

## **H. 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. The Board and Waupaca County Land Information Office consent as follows below.

1. The county agrees to observe and follow the statutes relating to the Wisconsin Land Information Program and other relevant statutes, as described in written materials provided by the WLIB.
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.
3. The county agrees to provide an Annual Status Report of Plan progress requested herein and to keep the Plan up to date. The report will be administered electronically.
4. The Board agrees to facilitate technical assistance to the county including an on-line Technical Assistance Service.
5. 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.
6. Development and implementation of an acceptable Land Records Modernization Plan confers certain benefits on local government within a county, including continued eligibility for Program funding. A self-approving peer review process will be used to assess Plan acceptability by the land information community.
7. The Board agrees to review funding requests and to provide guidance to local government with respect to the development of such requests.
8. The Board agrees to make available electronically on an annual basis, an Annual Report regarding the status of the Wisconsin Land Information Program and the activities of the Board.