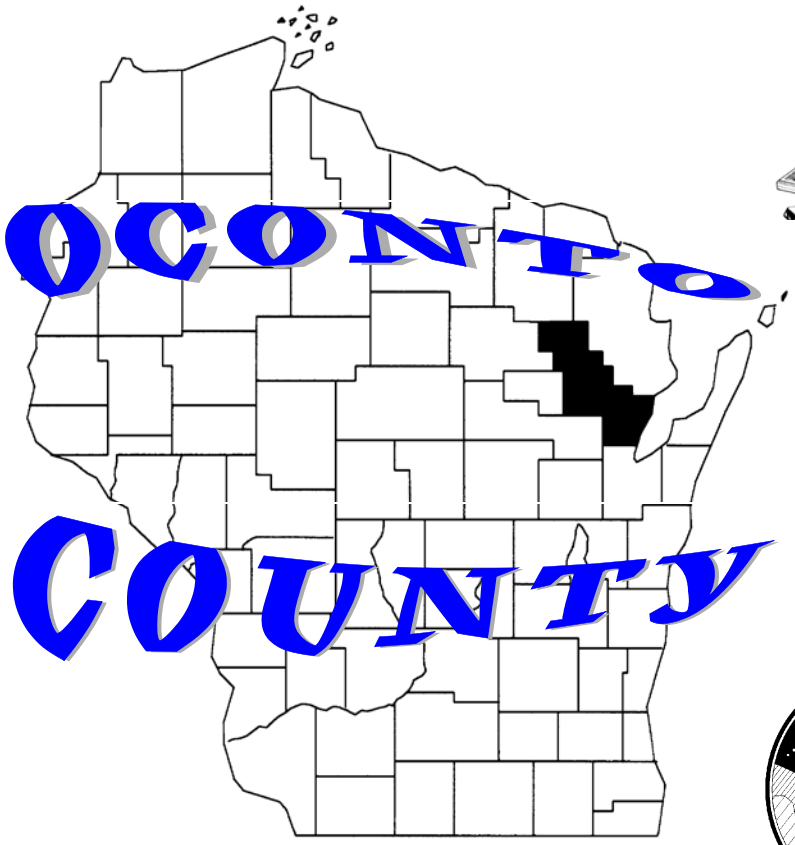
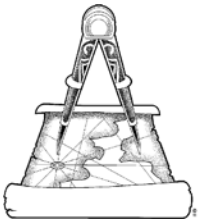
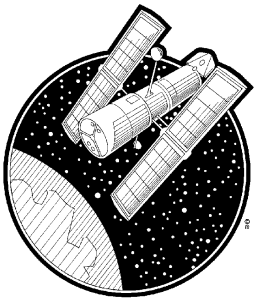
OCONTO COUNTY
WISCONSIN

LAND INFORMATION MODERNIZATION PLAN







Submitted
September 23, 2010

Revised
December 8, 2010

Table of Contents

I. EXECUTIVE SUMMARY 2

A. Identification and Contact Information 2

B. Participants in Planning Process 2

C. Summary of Plan 3

D. Land Information Website 3

II. LAND INFORMATION PLAN 4

A. Goals and Objectives 4

B. PROGRESSIVE REPORT ON ONGOING ACTIVITIES 5

C. NEW INITIATIVES 8

D. CUSTODIAL RESPONSIBILITIES 11

E. FRAMEWORK DATA, SYSTEM IMPLEMENTATION AND STATEWIDE STANDARDS 13

F. Public Access 25

G. Integration and Cooperation 26

H. Communication, Education, Training, and Facilitated Technical Assistance 27

I. Administrative Standards Not Associated with Foundational Elements 28

I. EXECUTIVE SUMMARY

A. Identification and Contact Information

Mark E. Teuteberg, PLS
Land Information Systems
Oconto County Courthouse
301 Washington Street
Oconto, WI 54153
Phone: 920.834.6827
Fax: 920.834.6821
Email: mark.teuteberg@co.oconto.wi.us

B. Participants in Planning Process

1. Oconto County Land Information Office

Consists of individuals from various departments (this office meets periodically to review, recommend and establish projects)

Mark Teuteberg –*Land Information System Administrator/County Surveyor/LIO*
301 Washington St, Oconto, WI 54153
mark.teuteberg@co.oconto.wi.us
Loralee Lasley – *Register of Deeds*
301 Washington St, Oconto, WI 54153
loralee.lasley@co.oconto.wi.us
Patrick Virtues – *Planning, Zoning, & Solid Waste Administrator*
301 Washington St, Oconto, WI 54153
pat.virtues@co.oconto.wi.us
Terry Hinds – *Finance Director*
301 Washington St, Oconto, WI 54153
terry.hinds@co.oconto.wi.us
Wayne Sleeter – *Technology Services Manager*
301 Washington St, Oconto, WI 54153
wayne.sleeter@co.oconto.wi.us

Other advisory members include:

Kevin Hamann – *Administrative Coordinator*
Kim Pytleski – *County Clerk*
Victoria Coopman – *County Treasurer*
Robert Skalitzky – *Forest, Parks, & Recreation Administrator*
Tom Milheiser – *Soil Conservationist*
Patrick Scanlan – *Highway Commissioner*
Tim Magnin – *Emergency Government Coordinator*

This office operates under the authority of the Forest, Parks, Recreation, and Land Information Systems Committee. This committee is a sub-committee of the Oconto County Board of Supervisors.

2. **Oconto County Land Information Council**
   Created on July 22, 2010, with Oconto County Board of Supervisors (resolution 50-2010) authorizing the creation of the Land Information Council in accordance with s. 59.72(3m) Wis. Stats.

   On August 19, 2010 the Oconto County Board of Supervisors authorized the following appointments to the Oconto County Land Information Council.

   Loralee Lasley - *Oconto County Register of Deeds*
   Victoria Coopman - *Oconto County Treasurer*
   Louis Winkler - *One member of the Oconto County Board of Supervisors*
   Patrick Virtues - *A representative of the Oconto County Land Information Office*
   Leland Rymer - *A realtor or a member of the realtors association employed within Oconto County*
   Tim Magnin - *A public safety or emergency communications representative employed within Oconto County*
   Mark Teuteberg - *The County Surveyor*
   Kevin Dolata - *Any other members of the board of supervisors or public that the board of supervisors designates*

C. Summary of Plan

Oconto County has taken the initiative to pursue a Land Records Modernization Program based on the Wisconsin Land Information Program (WLIP). As its first step, on May 17, 1990 Oconto County formed the Oconto County Land Information Office (OCLIO) (resolution 90-45) to coordinate the Land Records Modernization Program in accordance s. 59.88(3) Wis. Stats. On December 19, 1991 the Oconto County Board of Supervisors adopted the Oconto County Land Information Modernization Plan (resolution 91-118).

The purpose of this document is to update Oconto County's 'Plan' for land records modernization as required by and in order to participate in the Wisconsin Land Information Program (WLIP). The format and content of our Plan is based upon the "Uniform Instructions for Preparing County Land Information Plans, December 2009". The Plan is intended to provide County, Town, City and Village Officials, State Agencies, Private Entities and any other interested parties with basic knowledge of Oconto County's efforts in land records modernization and its potential applications.

D. Land Information Website

http://solo.co.oconto.wi.us/ocontoco/

II. LAND INFORMATION PLAN

A. Goals and Objectives

1. Goal and Objectives

To maintain, continually develop, and implement a modern geographic information system (GIS) that is horizontally and vertically integrated while providing useful quality data for Oconto County citizens, agencies, businesses and other users of land information in an equitable and efficient manner.

To continue to decentralize land records access, implement controls for dispersing land information, build a framework that supports parcel level activity, improve land records accuracy, maintain security and confidentiality where needed, minimize costs, reduce duplication, promote compatibility, increase efficiency and to make land information readily available to users. Throughout this plan, items are discussed that indicate our planned work toward achieving these objectives.

a. The needs of Oconto County are to continually update and refine the digital parcel maps, acquire control on public land survey (PLSS) corners, digital orthophotography, imaging certain land records, maintenance of the existing digital base map and related coverage's completed to date, the development and incorporation of digital elevations and development of new initiatives. The time line for implementation is dependent upon the continuation of the Wisconsin Land Information Program (WLIP), available grants, amount of retained fees collected, and funding from tax levy.

b. The County acquired from the WDNR the horizontal control it needed complete the county wide parcel mapping and is continually acquiring more accurate horizontal control on the PLSS corners. We also acquire/exchange control data with the WDOT, WDNR, Chequamegon-Nicolet National Forest and local land surveyors. We have acquired high altitude orthophotography and have acquired digital contour mapping providing a new and more accurate Digital Elevation Model (DEM) for future digital ortho production. Horizontal control based on the PLSS corners is needed the most and the problem with obtaining it is time and funding. We are hopeful that a cooperative consortium effort with local Regional Planning Commission (RPC) could be developed for this needed acquisition.

c. The County's GIS vendor, (ESRI) is a member of the Open GIS Consortium and proposes to support Open GIS data transfer and data share requirements. We recently upgraded our hardware and software to Windows 2003 environment and will continue upgrades as recommended by our Technology Services department, vendors and our GIS consultants.

The County will continue to use commonly accepted hardware/software to ensure translatability and retrieval of data. The County does not and cannot warrant that after the information is transferred, it will be useable in a system where the design is unknown or developed to meet a special purpose. We have public terminals access in several departments and are continually promoting and enhancing our GIS web site.

d. Oconto County's data is based on the Wisconsin Oconto County Coordinate System which is mathematically relatable to the North American Datum (NAD) 83(91), of which can be converted to Latitude and Longitude for other projects.

e. Oconto County has expended substantial funds and personal time into developing and implementing (GIS) in the digital format. It has been or policies that when developing any new applications that they will be able to integrate with the current data and information. We have several well trained staff that daily provide edits and updates to the (GIS) digital data sets and will continue to do so as needs require.

2. Operating System

The County's GIS operating system is based on a Windows 2003 server while the tabular land records data resides on an IBM AS/400. The GIS data base design incorporates key fields which are used to tie the two systems together thereby ensuring integration. Metadata is maintained for GIS system and for the tabular land records data.

B. PROGRESSIVE REPORT ON ONGOING ACTIVITIES

1. Remonumentation

This activity was already underway before the Land Information Program. Prior to the WLIP the remonumentation was basically an honor system. Surveyors would submit tie sheets when surveys required them. In 1996, Oconto County passed Ordinance Number 287 "Public Land Survey System (PLSS) Remonumentation". In addition, several changes to the "Land Division Ordinance" have accelerated this project. To date Oconto County has fully monumented 17 (seventeen) townships and obtained total horizontal control on 19 (nineteen) out of 32 (thirty-two). Oconto County continues to budget additional monies to finalize the remonumentation and also for continual maintenance.

2. Section Corner Coordinates

This activity was initiated with WLIP grants. The county has been densified to include 45 monuments based on the Wisconsin Department of Transportation High Accuracy Reference Network (WDOT HARN), and just recently has been provided with county wide Continuously Operating Reference System (CORS). All coordinates are projected in the Oconto County Coordinate System. The county survey staff continues to perform the task of networking all the section corners by

means of conventional and GPS methods of survey. These monuments are then mapped as "Section Summary" sheets along with coordinate values.

3. **Parcel Mapping**
   Hard copies of the entire county were completed in 1980 at a scale of 1"=200' each 30" x 36" sheet containing one section. Since the WLIP began, all these maps have been digitally mapped and rectified to the Oconto County Coordinate System. The projected sections are built upon the actual section dimensions where available or on the Wisconsin Department of Natural Resources Land-Net. As surveys of the townships are completed a new more accurate parcel map is produced. These maps are continually edited, updated and refined.

4. **Geographic Information Systems (GIS) Mapping**
   The digitized parcel maps are geographically referenced by use of ESRI Arc-Info, to the tax information that resides on the AS/400. The tax information is continually being updated along with entries of new splits. In 2000 Oconto County incorporated a Land Information Program System (LIPS) built in ArcView for internal use that links the graphic mapping to the tabular tax data, enabling staff to make inquiries and searches by geographic reference, also providing tools to build graphs, charts, queries, labels, etc. This feature continues to be a very highly requested program by not only county staff and personnel but also the private sector.
   In 2002 Oconto County developed and released an internet web site called SOLO (**S**earch **O**conto County **L**and Information **O**nline) built using ArcIMS. This application allows public internet access to all available county GIS digital and tabular tax data. This system will continue to be maintained and updated as new data sets and other pertinent information becomes available. In addition continually investigating and incorporating new GIS operating systems/ platforms.

5. **Data**
   Additional information is continually being investigated and will be added to the GIS mapping as it becomes available.

   a. Soil Mapping – Oconto County has obtained and is utilizing the NRCS digital soil survey data.

   b. Wetland Mapping - Oconto County has obtained and is utilizing the WDNR digital wetlands.

   c. Zoning Mapping – Oconto County has created a zoning dataset that is amended as parcels become rezoned.

   d. Orthophotography - Oconto County originally obtained 1998 (NHAP) National High Altitude Photography that was used until the 2004 acquisition of 12 inch pixel orthophotography. In 2010 Oconto County committed to be part of the Wisconsin Regional Orthophotography Consortium (WROC) and will receive 12" color orthophotography.

e. Floodplain Mapping - Oconto County has obtained the FEMA digital Flood Insurance Rate Maps (FIRM). This data will be utilized after adoption by Oconto County Board of Supervisors.

f. Shadow of the Dam – Oconto County has digital shadow of the dam boundaries based on dam failure studies previously completed. LiDAR data was used to create the digital boundaries based on the original study and elevations.

6. E-911 Mapping

In 2004 Oconto County invested in an automated digital dispatch system (Spillman) that is referenced to the Oconto County Coordinate System and is displayed in Latitude and Longitude. The centerline files were built using Oconto County centerline data files. Physical addresses ranges were built in coordination with the "Oconto County Uniform 911 & Physical Property Numbering System Ordinance". This data is continually being updated and enhanced and accommodates land lines and wireless E-911 calls.

7. Automated Tract Indexing

In 2000, the Register of Deeds office installed a computer software package from TriMin Systems. The TriMin Land Records Management System combines a numerical index, grantor/grantee, and tract index. It replaced the paper-based numerical and tract indexes, and a computerized grantor/grantee which did not allow on-line inquiry. With the TriMin system, land records index information is immediately available to all other county employees with access to the county's AS/400 mainframe. The application is available on public access terminals in the Register of Deeds and other county offices. In 2004, the Register of Deeds office installed TriMin's LandShark application, which allows remote access for title companies and other regular users via the internet. A credit card application now allows for internet access by the general public.

8. Imaging

In 2001, Oconto County installed an optical imaging system. The benefits of an imaging system include improved storage and retrieval of recorded documents. Currently, the Register of Deeds office has images of all recorded documents from 2000 to the present. As time allows, certified survey maps and plats are being back scanned. The Zoning Department has implemented this optical imaging system in conjunction with their permit tracking software. In the future it is anticipated that other departments such as survey, forestry, highway and others will investigated this procedure also for archiving records and data

9. Emergency Communications Network

The County purchased and implemented in 2009, CodeRED Emergency Notification System which is managed by the Emergency Management Office. A high volume - high speed communication service which employs Internet mapping capability for geographic targeting of calls, coupled with a high speed telephone calling system capable of delivering customized pre-recorded

emergency messages directly to homes and businesses. Subscribers control their emergency broadcasts from anywhere in the world via a secure Internet web site. Oconto County GIS department provides shape files and continues to develop and edit more specific call areas such as school districts, city and village boundaries, shadow of the dam and other sites.

10. Wetland Restoration Inventory

The County obtained this data through a Wisconsin Coastal Management Plan (WCMP) grant to develop a Geographic Information System (GIS) database to inventory wetland restoration sites in the County. A comprehensive GIS database was created using digital map layers and non-digitized attribute information that was primarily located in paper files. Through data visualization, query, analysis, and statistical modeling, the GIS is currently used as a tool to answer basic inventory questions, eliminate duplicate restoration reporting, communicate with landowners, produce informative maps, and provide the capability of systematic assessment and management.

C. NEW INITIATIVES

1. Proposed Projects

a. Floodplain Mapping

Oconto County is scheduled to have this mapping project completed with an effective date of October 6, 2010. Upon delivery and adoption by the Oconto County Board of Supervisors this information will be added to our existing data sets.

b. Contour Mapping Update

The county contracted to have a 2 ft. contour data set created for the entire county in March 2006. In 2010, Oconto and Brown Counties cooperatively applied for and received an American Recovery and Reinvestment Act Grant. A portion of these funds will assist in paying to have the newly created portions of USH 41 and USH 141 remapped. This contour data should be available in 2011.

c. Permit Tracking

The Zoning office now has the capabilities to track sanitary, land use, and physical address permits. Entries are associated with the parcel data and reducing staff time regarding filing, querying, and retrieving this data. This application is a very useful tool for the Planning and Zoning Department. This program is made accessible to the public through public terminals and in the future will be available by internet access. In addition, the Forestry Department would also have the capabilities to track permits (timber, boat launch, camping, etc.) along with associating the annual timber sales with logger's reports and volumes of stumpage allowing for reports and queries.

d. Survey Records Data Base

The county intends to incorporate all the survey records that are on file in the County Surveyors office into a centralized database that will allow retrieval using predetermined variables such as Town, Range, Section, ¼ - ¼, Government Lot, Surveyor, and more. It is anticipated to have this available on public terminals throughout the courthouse and online through internet access.

e. Highway Sign Inventory

The WDOT is currently developing a data base for traffic signs. Our County Highway Department is interested in designing a similar data base. The County will continue to monitor the progress of the WDOT and our timeline is dependent on their development. In addition Oconto County Highway Department is cooperating with local municipalities in order to comply with the National Standards Reflectivity for road signs which will be entered in to a database.

f. Changes to our GIS website

It is our goal to replace our current IMS platform with Arc GIS Server. Many of our applications in the current program will need to be redesigned and as new data sets become available these will also be evaluated and if determined to be applicable will be added to the online serve.

2. Assistance Requested

a. The County has actively sought outside assistance prior to implementing projects and will continue to do so for our new initiatives. The County will review the needs to utilize a consultant to assist us in the continual development of GIS applications and will provide for training of staff when courses become available. The County Land Records has Internet connectivity and utilizes the WLIA Internet Land Information Clearinghouse and Technical List Server Service as needed.

b. The County has to realize that a commitment to active funding of a GIS must be made. Until that decision is made, it is imperative that the WLIP continues so the retained fees and the grants are available for ongoing and new initiatives in Oconto County. It is important for the WLIP to ensure that the program continues to be focused on creation and maintenance of land information data sets to support all land information. Continued technical assistance in this area is very important.

c. The county website http://www.co.oconto.wi.us/ provides for a direct and easy link to the GIS site (SOLO) of which has shown to be a very useful tool for not only courthouse and municipal staff but the general public and professional services. Frequent request for large data sets are provide for over the county FTP site and many of the required permits and

applications for example zoning, physical address, GIS data has been customized for ease of completion and submittal via the internet.

d. The county has always taken the cooperative approach to data distribution. This not only provides others such as municipal, state and federal agencies with current information and valuable datasets, but also provides the county with the same resources for acquisition. The county has developed a Data Distribution Policy that is used with every request from outside sources.

e. The County will continue to follow county ordinances and state statutes for procurement of services/products related to this Plan. The county has in the past and will continue to participate in consortiums such as WROC and cooperative bidding, such as the 2010 American Recovery and Reinvestment Act LiDAR Grant prepared, submitted, and awarded to Brown and Oconto County.

3. Problems Encountered

The major anticipated problems in developing and continually maintaining GIS data will be: garnering the needed support and funding. The support should develop as the programs are enhanced to show the needs, uses and benefits of a GIS. We have successfully dealt with unanticipated problems as they've occurred in the past and will continue to deal with issues in the future. There would be a problem if the legislature adopts policies that would limit the use of WLIP funds for our planned activities. Staff training in the field of ever-changing technology is hard to stay on top of. More education & training is needed. Oconto County is already experiencing increased demand for GIS services and a decrease in available staff and resources.

Another example would be the implementation of placing our contour lines that were developed from the 2005 LiDAR acquisition, on the counties GIS website. The major concern is the completion of the county wide parcel mapping in portions of the county that are not completely tied to the PLSS. Overlaying the LiDAR dataset could create confusion for many individuals viewing that image when data sets do not align. Base mapping is the number one component that will continually be at the forefront of the counties GIS development.

D. CUSTODIAL RESPONSIBILITIES

The following is a list of various departments within Oconto County and their land records custodial responsibility.

1. Land Information Systems Department

a. County Surveyor
   - Maintains information on, and oversees the perpetuation of, PLSS corners, including tie sheets and section summary sheets (Wis. Statues Ch. 59.45 & 59.74) County Ordinance Ch. 287)
   - Maintains information on, and oversees the perpetuation of the County's geodetic control network (Wis. Statues 59.45 & 59.74)
   - Maintains files and an index of surveys performed within the County (Wis. Statues 59.45, Wis. Admin Code A-E7, County Ord. Ch. 287)

b. Real Property Listing
   - Prepares and maintains accurate ownership and description information for all parcels in the County (Wis. Statutes Ch. 70.09)
   - Maintains and continually updates parcel maps (County Policy)

c. Land Records
   - Creates, obtains, maintains, and/or coordinates the development of digital GIS map layers and other GIS activities for the county (Wis. Statutes Ch. 59.72).

d. Physical Address
   - Maintains physical address applications and mapping (Wis. Statutes 59.54, County Ordinance Ch. 265).
   - Responsibility of Master Street Address Guide (MSAG).(Wis. Statutes 146.70 and County Policy)
   - Maintains a county wide structure point file for principle structures.

2. Zoning Department

a. Maintain Zoning maps and zoning permits for the unincorporated area of the county (County Ordinance Ch. 14, Wis. Statutes Ch. 59.69).
b. Maintains and files private sanitary system site plans, permits, and soil test reports. (County Ordinance Ch. 12, Wis. Administrative Code, Department of Commerce, Plumbing 83.05).
c. Maintains and files land use permits and applications (County Ordinance Ch. 13, Wis. Statutes Ch. 59.97 & 144.26).

3. **Register of Deeds**
    a. Record deeds, mortgages, plat maps, certified survey maps, and other real property related documents (Wis. Statutes Ch. 59.43)
    b. Maintains a grantor/grantee and tract index of real property. (Wis. Statutes Ch. 59.43).

4. **Forestry Department**
    a. Maintain compartment maps of timber units (County Policy).
    b. Maintain recreational map of snowmobile, horseback, cross-country, ATV, etc. (County Policy).
    c. Maintain access permits and locations of private access over county lands (County Policy).

5. **Land Conservation**
    a. Files and maintains necessary natural resource maps and data.
    b. Maintains Animal Waste Management Ordinance permitted facilities
    c. Maintains hardcopy and digital Wetland Restoration Inventory

6. **Highway Department**
    a. File right-of-way plats and construction plans
    b. File bridge as-built and engineering documents
    c. Maintain a street sign inventory
    d. Maintain the PASER database

7. **Sheriff Department**
    a. Maintains and continually updates Computer Aided Dispatch (CAD). (Wis. Statutes Ch. 146.70)

8. **Treasurer**
    a. Maintains tax information for all tax parcels. (Wis. Statutes Ch. 59.25).

9. **Emergency Government**
    a. Maintains emergency service network data, maps, coverage's. (County Policy)
    b. Maintains and coordinates the emergency notification system CodeRED
    c. Maintains and coordinates the Multi-Hazards Mitigation Plan

Oconto County maintains copies of a variety of other land records for which it does not have custodial responsibility such as the following.

- Topographic Mapping (USGS)
- Soils Mapping (NRCS, Dept. of Agricultural)
- Wetland Inventory Maps (WDNR)
- Floodway/Firm Maps (FEMA)
- Town Mileage Maps (WDOT)

No additional custodial responsibilities are sought at this time.

Oconto County will consider any request for custodial responsibility and will evaluate each request based on available and required resources, ability for integration with other datasets, and conformance with the Oconto County Land Information Plan.

E. FRAMEWORK DATA, SYSTEM IMPLEMENTATION AND STATEWIDE STANDARDS

1. Geographic Positioning Reference Frameworks

a. Geodetic Control and Control Networks

In 1994, Oconto County completed geodetic densification from stations within the Wisconsin High Accuracy Reference Network (HARN). The network consists of 27 – 1, 2 and 4 PPM stations, which were established using the "Guidelines to Support Densification of the Wisconsin High Accuracy Reference Network (HARN) using Global Positioning System (GPS) Technology" standards specifications that were current at that time, the county continually adds 10ppm stations, from its existing network. We feel there will be adequate horizontal geodetic control strategically placed throughout the County to meet our and other users' needs. Coordinate values are available in Oconto County, State Plane and Latitude and Longitude. The County assumes the custodial responsibility for the densified control stations. We plan on using the existing NGS and USGS vertical network for vertical control. Any new stations set by the County would adhere to Third-order standards.

b. Public Land Survey System

The County has an active corner remonumentation program that complies with the requirements of Wis. Adm. Code AE 7.08 and/or state statute, and we plan to continue the program countywide. We are establishing coordinates on the PLSS corners using a combination of conventional survey techniques and GPS technology meeting or exceeding the FGDC Third-order, class I accuracy standard. Coordinates are maintained in the Wisconsin Oconto County Coordinate System, which is mathematically relatable to the North American Datum (NAD) 83(91). We plan to continue work in areas with heavy development to aid in the development of parcel maps, while other areas (i.e. industrial, forests, ag. etc.) will be controlled as needed and budget allows.

The county is willing to participate in efforts to automate records. The county will attempt to adhere to all industry standards where applicable. The County maintains the custodial responsibility for the Public Land Survey corners. This data will become a permanent dataset.

2. Orthoimagery and Georeferenced Image Base Data

a. Photogrammetric base maps

The county does not have any of this data.

b. Digital Orthophotography (DOP)

An orthophotography data set became available in 1998, with updates in 2004 and 2010.

c. Digital raster graphics

The county does not have any of this data.

d. Satellite Imagery

The county does not have any of this data.

e. Oblique aerial imagery

The county does not have any of this data.

f. Historical aerial imagery

The county obtained hardcopy aerial photography of county forest lands taken in 1938, 1955, 1973 and 1988. In addition the State Cartographers office maintains a catalog of aerial photography from various projects and years.

3. Elevation Data Products and Topographic Data

a. Digital Elevation Models (DEM)

The County obtained the necessary data (point clouds) to create DEM's from our 2005 LiDAR project. This data is and continued to be used by various county departments and the private section.

b. Digital terrain models

The county has the ability to develop terrain models from the 2005 county wide LiDAR point cloud information.

c. Triangulated irregular networks (TIN)

TINs were generated for the April 2004 flight by Ayres as part of the WROC project. As noted above the county has the ability to develop TIN's from the 2005 county wide LiDAR point cloud information.

d. Contours

The County obtained 2 foot county wide contours in shape file and DWG format in 2005. In addition the data obtained from the LiDAR project allows the users to produce other contour interval maps.

e. LiDAR data

The County obtained 2 foot LiDAR in 2006 and continues to obtain additional data through various sources.

f. IFSAR data

The county does not have any of this data.

4. Parcel Mapping

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 county has accurately mapped about one-third of the county to meet these requirements.

b. The preparation of property maps that do not refer boundaries to the public land survey system but are suitable for use by local governmental units for planning purposes. The remaining two-thirds of the county meet these requirements.

c. The County uses the County Coordinate System for the majority of its projects which is mathematically relatable to the North American Datum (NAD)83((1). Several projects have been projected in various other projections. The Oconto County Dispatch E-911 system is projected in Latitude and Longitude.

d. The parcel ID is the key that links tax parcel polygons to many other related datasets. At present County parcel identification number (PIN) does not fully conform to WLIP parcel numbering system standards. The parcel mapping data base will be addressed in the future so the PIN can be generated to comply with the WLIP requirements. It is important to note that this number has historic value and will take extensive cost and development to address any future changes.

The county will attempt to adhere to all industry standards where applicable. The County maintains the custodial responsibility for the dataset. This data will become a permanent dataset.

5. Parcel Administration and Assessment Information

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 County has a GIS website http://solo.co.oconto.wi.us/ocontoco/ SOLO that incorporates this data. The tax roll information is maintained in an IBM AS/400. Each night, a script automatically converts the AS/400 tables to the GIS server so that fresh data is always an available link to the GIS parcels.

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

- Parcel ID
  This is created for every tax parcel as a database attribute on the GIS, and links to the parcel ID on the tax record database. This is the primary key upon which many other databases are related to parcels. (see 4.d. above)

- Tax data
  The tax data is maintained in the AS/400 by property listing staff. This data is edited daily, which create standard tables that can be easily exported and linked to the GIS maps, with many of the most common fields needed for GIS activities.

- Site Address
  This information is shown as text (annotation) on the parcel information portion of the GIS – SOLO. The county has the functionality to populate this data on the GIS map.

- Owner Name & Address
  This information is shown as text (annotation) on the parcel information portion of the GIS – SOLO. The county has the functionality to populate this data on the GIS map.

- Description/current document pertaining to parcel
  The document number and volume/page is shown as text (annotation) along with a brief legal description on the parcel information portion of the GIS – SOLO.

- Document imaging
  On December 22nd 1999 the Register of Deeds began imaging documents relating to property transactions. As time and budget allows, documents from prior years will be imaged. The real estate images can be related to the land records and map via the document number.

  Land Information Systems also scans all survey instruments that are not imaged by ROD, but these are currently not housed or indexed in the enterprise imaging system.
  Planning and Zoning currently scans all permits and is in the process of back scanning as time and budget allows. These documents are linked by the PIN.

- Real estate transactions
  The Register of Deeds records these transactions and maintains a grantor/grantee and tract index so that searches can be made by grantor (seller), grantee (buyer), legal description, document number, and other methods. Property Listing maintains the tax database to reflect these real estate transactions.

- Easements and restrictions, including conservation easements
  The GIS mapping will reflect access easements when applicable. The Register of Deeds records conservation, driveway, utility, and ingress and egress easements on a voluntary basis and indexes them based on grantor, grantee and legal description when provided.

- Tax exempt status
  This is a code in the AS/400 tax program that is converted and linked to the text (annotation) of the parcel information portion of the GIS – SOLO.

- Zip codes (including +4)
  The tax system database includes mailing ZIP codes with the 5+4 format, and is used if provided.

- Assessment class
  These are carried as a code in the real property tax system in the AS/400 tax database and linked to the text (annotation) of the parcel information portion of the GIS – SOLO.

- Public lands
  At present our GIS system only tracks these lands under the tax exempt status, along with all other tax exempt parcels. As time and budget allows these will be coded.

- Liens
  The Register of Deeds records these transactions and maintains a grantor/grantee and tract index so that searches can be made by grantor, grantee, legal description or document number.

- Evidence of Title
  The Register of Deeds maintains all documents affecting title and maintains a grantor/grantee and tract index so that searches can be made by grantor, grantee, legal description or document number.

The county will attempt to adhere to all industry standards where applicable. The County maintains the custodial responsibility for the dataset. This data will become a permanent dataset.

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

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

County transportation network files have been developed. Both portions the PLSS rectified and the WDNR Land-net portion and are part of the GeoDatabase.

b. Rights of way

County wide right-of-way files have been developed. Both portions the PLSS rectified and the WDNR Land-net portion and part of the GeoDatabase.

c. Centerlines

County wide centerline files have been developed. Both portions the PLSS rectified and the WDNR Land-net portion and part of the GeoDatabase.

d. Address ranges

The county has developed a county wide centerline address range that is incorporated into the E-911 system.

e. Site address database

The address database is part of the property listing tax program and can be extracted and used for various applications.

f. Address point, structure and/or driveway

The county has acquired and continues to update a structure point database that incorporates the site address.

g. Road names

All road names (public, private and proposed) can be found in the Street Centerline attribute table (primary names as well as "aliases") have been incorporated into the E-911 system. They are also stored in the AS/400 on the property listing tax system.

h. Functional class

This has yet to be completed, as the county completes more of the higher accuracy parcel mapping the ranking of highways and streets will be addressed.

i. Places/Landmarks

The county has provided this application for the Multi-Hazard mitigation plan as well as the E-911 system and will continue to update that information upon request and availability of staff and funds.

j. Integration with the County's/ (MSAG)

The Land Information Systems Department maintains and assures integration of the County's street centerlines with the phone company's Master Street Address Guide (MSAG).

k. Ability to support emergency planning, routing, response/mapping

The Land Information Systems Department has been directly supporting E-911 emergency response since 2003 when a new Computer Aided Dispatch system (Spillman) went on-line. This new system imports GIS data and uses the street centerlines to locate every address in the County and provides a Fire/Police/EMS indicator based on geography / GIS overlay. Additionally, we have been working with and participating in drills with Emergency Management to ensure our GIS is capable of supporting all types of emergencies as needed. In addition Land Information Systems staff have been trained and certified in National Incident Management System (NIMS).

l. Ability to support Wireless 911

The GIS street centerlines are routinely uploaded into the Computer Aided Dispatch 911 (Spillman) system.

The county will attempt to adhere to all industry standards where applicable. The County maintains the custodial responsibility for the dataset.

7. Hydrography, Hydrology, and Wetland Mapping

a. Hydrography

The county has completed this process by using the highest accuracy aerial mapping available and will continue to update as we obtain more current data.

b. Watersheds

This data is still in hardcopy format and is scheduled to be incorporated when time, staff and funding become available.

c. Hydrogeology

The county does not yet have any of this data available.

d. Impacts on the environment (e.g. groundwater contamination, storm water) the county does not yet have any of this data available.

e. Wetlands mapping activities

The County uses the WDNR wetland inventory dataset. In addition we recently obtained digital files of the Wetland Restoration areas in the county and anticipate adding this to our GIS data.

The county will attempt to adhere to all industry standards where applicable. The County maintains the custodial responsibility for the dataset.

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

a. Soils mapping activities

The SSURGO Certified Soil Survey completed by NRCS in 2002 is displayed on our county GIS site and contained in our County GeoDatabase.

b. Land cover

The county is aware that low resolution (WISCLAND 20 meter GRID) is available but has not acquired that data.

c. Forests

The county completed this dataset in its Land Use Plan and is planning on implementing into our GIS mapping.

d. Geology

The county does not yet have any of this data available.

e. Hydrogeology

The county does not yet have any of this data available.

f. Non-metallic mining

The county maintains this data in hardcopy format and plans to incorporate it into our GIS system when time, staff and funds become available.

g. Endangered resources

The County does not yet have any of this data available but plans on incorporating the WDNR Endangered Resources layer when time, staff and funds become available.

h. Impacts on the environment (e.g. air emissions; soil contaminants; coastal stability)

The county does not yet have any of this data available.

9. Land Use Mapping

a. Mapping of Existing Land Use

The County has completed detailed land use mapping for the entire county.

b. Mapping of Planned Land Use

The county has no plans to incorporate Land Use into the GIS at this time, when time, staff and funds become available this issue will be addressed.

The county will attempt to adhere to all industry standards where applicable. The County maintains the custodial responsibility for the dataset.

10. Zoning Mapping

a. Zoning Districts

The County regulates county wide zoning, except in incorporated areas. This is a layer in our GIS mapping.

b. Shorelands

The County regulates county wide shoreland zoning, except in incorporated areas.

c. Floodplains and Floodways

FEMA has recently completed a new Floodplain Zone map. The County has incorporated the flood mapping into the GeoDatabase, where it is used frequently and made available online. The County complies with WDNR Floodplain Zoning NR 115.

d. Environmental Corridors

The county does not yet have any of this data available but will make this a consideration when time, staff and funds become available.

e. Burial Sites

The county does not yet have any of this data available but will make this a consideration when time, staff and funds become available.

f. Archeological Sites

The county does not yet have any of this data available but will make this a consideration when time, staff and funds become available.

g. Historical / Cultural Sites

The county does not yet have any of this data available but will make this a consideration when time, staff and funds become available.

The county will attempt to adhere to all industry standards where applicable. The County maintains the custodial responsibility for the dataset.

11. Election and Administrative Boundary System

a. Election (voting district boundaries, precincts, wards, supervisory, voting places etc.)

The County has completed and incorporated into our GeoDatabase. They are all mapped and maintained within the GIS.

b. Legislative Districts

The County has completed and incorporated into our GeoDatabase. They are all mapped and maintained within the GIS.

c. Utility Districts (e.g. water, sanitary, electric, etc.)

The County has acquired this data in a variety of formats. Time, staff and funding availability they will be mapped and maintained within the GIS.

d. School Districts

The County has completed and incorporated into our GeoDatabase. They are all mapped and maintained within the GIS.

e. Tax Incremental Financing Districts

The County does not yet have any of this data available but will make this a consideration when time, staff and funds become available.

f. Agency Administrative District and Zip Codes

The County uses the ZIP codes built within our parcel mapping attributes assigned by property listing and stored in the AS/400 tax listing program.

g. Census Geographies

The County does not yet have any of this data available but will make this a consideration when time, staff and funds become available.

h. Civil Division Boundaries (Towns, Cities, Villages)

The County has completed and incorporated into our GeoDatabase. They are all mapped and maintained within the GIS.

i. Public Administered Lands (i.e. parks, forests, etc.)

The County does not yet have any of this data available but will make this a consideration when time, staff and funds become available.

j. Native American Lands

The County does not yet have any of this data available but will make this a consideration when time, staff and funds become available.

k. County Boundary

The County has completed and incorporated into our GeoDatabase. They are all mapped and maintained within the GIS.

l. State Boundary

The County does not yet have any of this data available but will make this a consideration when time, staff and funds become available.

m. Lake Districts

The County has the ability to extract that data from the Property listing data in the AS/400 tax listing program but does not yet have any of this data available as a GIS layer but will make this a consideration when time, staff and funds become available.

The county will attempt to adhere to all industry standards where applicable. The County maintains the custodial responsibility for the dataset.

12. Critical Infrastructure and Facilities Management

a. Emergency Service Districts **
b. 911 Call Center Service Area and Center Locations **
c. Fire/Police Districts **
d. Fire/Police Stations **
e. Hospitals and Healthcare Facilities **
f. Government Facilities **
g. Utilities – not districts (e.g. gas, electric, sanitary, water, phone, etc.) **
h. Parks and Recreation Trails (ice age, bicycle, hiking, snowmobile, etc.)
   The County Recreation Trails have been completed and incorporated into our GeoDatabase. They are all mapped and maintained within the GIS.
i. Transit Systems **
j. Bridges, Culverts, Road Signs **
k. Airports and Airfields **
l. Harbors **
m. Boat Landings **
n. Hazardous Materials Sites; LUST (Leaking Underground Storage Tank) etc. **
o. Landfills **

**The County does not yet have any of this data available but will make this a consideration when time, staff and funds become available.

13. Database Design and System Implementation

a. Design Evaluation

The LIO staff meets to evaluate, design applications, and discuss strategies for enhancements or revisions. As needed, subcommittees/task forces are invoked for larger or more technical projects. Interdepartmental benefits are a primary concern to maximize data sharing and consistency and to reduce or eliminate duplication of effort/data.

b. Project Approach

The approach varies with each type of project. Typically a project is engaged and revisions are made as a result of various testing.

c. Timeline

Timeline is determined on a project-by-project basis.

d. Metadata Policies

The County plans to continue maintaining and requiring metadata.

e. Security/Privacy Policies

Windows and other computer security are used. One privacy policy we have in place is to prevent users from searching for land owner names on our free internet site.

f. Implementation and Maintenance Strategy

The implementation and maintenance strategy varies with projects but generally a department or staff member is identified and is directly involved with the implementation and maintenance strategies.

g. Data Quality Management

The County has used various techniques, including National Map Accuracy Standards as well as the newer NSSDA guidelines to test and report data quality.

h. Needs Assessment

Large projects should always involve a detailed needs assessment and workflow analysis.

i. Data Structure and Format (e.g. topology)

It is a goal of the County to continue updating data structure & format to take advantage of new technology such as Topology rules and relationship classes offered in the GeoDatabase model.

j. GIS Data Models (database and workflows)

The GIS data model is usually developed depending on needs and workflows; we do look at on-line data models as guides.

k. Data Dictionary

The County develops data dictionaries for collection with GPS receivers and other handheld data collectors.

l. Coding Schema

The County has yet to develop this system but will make the attempt when time, staff and funds become available.

m. Transaction Management

The County has yet to develop this system but will make the attempt when time, staff and funds become available.

n. Organizational Information Flows

Flow charts are often built and are used to graphically depict information workflow into functional requirements. Project-specific plans for large projects such as the parcel and land records maintenance plan should include flow charts in detail.

o. Data Conversion

Conversion between GIS and CAD systems as well as other formats is continually being used for data acquisition.

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

As GIS continues to evolve we need to find new and improved ways to link data. One key component is the parcel number.

The county will continue its practice to share data between all public agencies.

F. Public Access

A. Use of technology to facilitate efficient access (e.g. Internet, query systems, DVD/CD)

The County has used FTP sites for several years to transfer information. In addition CD and DVD have been used. The County uses several different export formats depending upon the request.

B. Use of 3rd party technology for access (e.g., GIO Repository, Google, offsite hosting)

The Register of Deeds uses Trimin Systems foe internet access to deeds and documents. The Counties internet GIS system was developed by private consultant, using third party applications.

C. Data sharing policies (copyright, licensing, fees etc)

The County has developed a data sharing policy that has been used for years. County GIS data is not copyright, and fees are minimal to cover reproduction and material costs.

D. Open access to data in existing format

The County distributes its GIS data upon completion of the Data Distribution form and attempt to distribute the data in the requested format.

E. Subscription-based or public-facing web services

The county provide both free and subscription access. The subscription access portal allows the user to search by names were as the public portal restricts that functionality.

F. Optional production of customized data on cost-recovery or other basis

Customized data requests are required to complete the Data Distribution form. County staff will then provide a quote for that service.

G. Internet accessibility (ADA compliance, security)

Oconto County is concerned about internet accessibility and compliance with ADA standards and continues to follow industry accepted standards regarding its website. The County strives to be ADA compliant to the extent possible.

H. System security

The GIS server and AS/400 have built-in security that is managed by the Technology Systems department.

I. Privacy policies

The County has a Resolution that restricts the public access portal from searching by names. That information can be obtained by use of public terminals within the courthouse or by making an open records request.

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

The County uses the fee to provide internet access to land records data. In addition to provide public PC's, development of the Counties GIS site SOLO and any other application that meets the requirement of this section.

The county will continue its practice to share data between all public agencies. The County will continue to comply with State Open Records Law and federal Freedom of Information Act

G. Integration and Cooperation

A. Formal data sharing agreements (memorandums of understanding, etc.)

The County is willing to share data upon written request, at this time we have no formal MOU's.

B. Formal or informal data maintenance agreements between departments / agencies.

The LIO has informal maintenance agreements with several County departments and provides data upon written request to other local, state and federal agencies.

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

These agreements are typically project by project; our data distribution policies have been used as a tool for this purpose.

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

The County has entered into several of these arrangements, recently with Brown County for LiDAR acquisition and WROC for orthophotography.

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.)

The county is willing and has participated in these arrangements. In 2004 high resolution Orthophotography was ordered by a local municipality in connection with the County wide project. The County was allowed free access to that data.

F. Statutory relationships among counties and state agencies

The County will continue to cooperate with state and federal agencies whether required by statute or not.

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

   The county will actively pursue any relationship that benefits the public and the Counties need for data. In particular utilities and consultants representing local municipalities.

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

   The County will always be open to any partnership that will promote land records. These partners may include WDNR, WDOT, WDOR, Bay Lake RPC, NRCS and others.

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

   The County would be non-restrictive in the type of data that could be share in hopes that the partners would reciprocate.

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

   The County has made a very strong effort to share the land records fees with all County land-related offices to implement land records modernization and will continue to do so. In the past, the County has applied for and has been awarded WLIP grants on behalf of many municipalities within the County.

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

   The County allows free access to any GIS or land records data that maybe pertinent to the local municipality.

H. Communication, Education, Training, and Facilitated Technical Assistance

A. Documentation of county data, models and processes

The County has created metadata and has contributed metadata to various clearinghouses' and others well as our own web site. However, more work needs to be done to edit and create new files.

B. **Resources available**
The County is continually seeking avenues of information from various groups, agencies and other land records organizations, in addition depending upon county staff for input and coordination.

C. **Identification of customer needs.**
Input from various sources has been the key to the development of the Counties GIS and website, incorporating the needs of the public and private sector to develop user friendly data recourses.

D. **Coordination of education/training with agencies, associations and educational institutions.**
The County emphasizes this as an investment when staff is allowed to participate in continuation of education. The County has participated in providing training to other such as the WLIA conference and promotes membership to WLIA and other user groups.

E. **Use of technology to facilitate education and training.**
The County has invested significantly in video conferencing, not only in equipment but also providing conference rooms, in addition staff has the ability to do webinars and teleconferencing from their own workstation.

F. **Use of, or plan to participate in, clearinghouse/repository and land information technical assistance list server.**
The County does participate in the Technical Assistance List Server, and has taken advantage of the WLIP data clearinghouse.

G. **Use of land information officer education and training funds.**
The LIO education and training funds are used to attend WLIA conferences or workshops.

I. Administrative Standards Not Associated with Foundational Elements

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

2. **The county agrees to permit the Wisconsin Department of Administration access to books, records and projects for inspection and audit.**

3. **The county agrees to complete the GIS Inventory Survey.**

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

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