

An Analysis of Benefits from Use of
Geographic Information Systems by
Ozaukee County, Wisconsin

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Purpose

The purpose of this document is to analyze the benefits of the Ozaukee County Land Information Program by a detailed account of the County's demographic information, the GIS program, available datasets, goals and objective as well as the cost benefits of GIS to the County. This document shall also be used as a historical reference as the County continue to improve the Geographic Information System, update the Land Modernization Plan, apply strategic planning, develop and maintain departmental datasets, continue cost sharing and data sharing with local Municipalities and State agencies and participate in Statewide GIS initiatives.

Ozaukee County Land Information Office

Mission Statement

The Ozaukee County Land Information Office is committed to provide high quality data and services to the general public as well as other county departments in the areas of planning, land information and modernization of land records. We will develop and maintain the county-wide GIS system, a public access portal and support all other county departments using GIS. We will develop and encourage data, cost and knowledge sharing with all levels of local, county, state and federal governments.

Key Objectives:

1. Administrative Services

Maintain a working relationship with local municipalities, State and Federal Agencies for data sharing and cost sharing possibilities. Act as a liaison for the County/Municipal Consortium by offering assistance, knowledge, data development and website design as needed. Assist the public in researching public records; develop custom maps, website navigation and other land information. Assist in financial budgeting and reporting.

2. Land Information Services

Maintain Geographic Information System (GIS) datasets such as parcel mapping, Computer Aided Dispatch 9-1-1 Address data, Public Land Survey System data, subdivision, certified survey maps, and condominium plats. Develop and maintain additional land information datasets for other departments within the County. Provide tabular datasets such as mortgage reports and transfer reports as requested. Distribute digital datasets upon request. Oversee the acquisition of orthophotography and LIDAR datasets. Assist local municipalities in the development of their Geographic Information System datasets to ensure compatibility with the County GIS data and the County GIS website.

3. Public Access

Monitor and enhance the County GIS Website for public access of the County land information. Ensure functionality and efficiency of the site for the convenience of the public. Determine data layers to add to the website and the classification of each dataset, i.e. public access or government/subscriber access. Update datasets in a reasonable timeframe, dependent upon the frequency of data changes.

Demographics

Ozaukee County, Wisconsin covers an area of 1,116 square miles, of which 233 sq miles is land and 883 sq miles is water. Ozaukee County is 18th highest in the State for population as of 2013 but is the second smallest County in area in the State of Wisconsin. Ozaukee County has a population of 86,395 as of 2010 Census. There are 3 Cities, 7 Villages and 6 Towns in Ozaukee County.

Census Data

2013 Population Estimate	87,054
Population Change 2010-2013	.8%
Housing Units 2013	36,435
Homeownership rate	77.8%
Median Value of owner occupied Housing Units	\$250,200

Municipalities

Villages

Village of Belgium
Village of Fredonia
Village of Grafton
Village of Saukville
Village of Thiensville
Village of Bayside
Village of Newburg

Towns

Town of Belgium
Town of Cedarburg
Town of Fredonia
Town of Grafton
Town of Port Washington
Town of Saukville

Cities

City of Cedarburg
City of Port Washington
City of Mequon

Recognitions

- Forbes Magazine ranked Ozaukee County #2 in the country to raise a family (2008)
- Money Magazine ranked Ozaukee County 19th of the top 25 counties in the country as Best Place for a Long Life (2008)
- Wisconsin Counties Association named Ozaukee County the #1 healthiest ranking in Wisconsin (2008)
- According to The Wonders of Wisconsin 'People's Choice Awards;' (2008)
 - The Best Wisconsin Town on a Lake - #1 Port Washington
 - Most Exciting Architecture - #1 Cedarburg
 - Best Shopping - #1 Cedarburg
 - Most Beautiful Town - #2 Cedarburg
 - Best Festival Weekend - #4 Port Fish Day
 - Best Ethnic Getaway - #5 Belgium
 - Best Fishing Getaway - #5 Port Washington



Points of Interest

Cedar Creek	Cedar Creek Settlement
Cedar Creek Winery	Cedarburg Bog
Cedarburg Cultural Center	Cedarburg General Store Museum
County Fairgrounds	Covered Bridge County Park
Edgewater Golf Club	Egghart House
Electric Interurban Railway Depot	Fireman's Park
Fire Ridge Golf Course	Freistadt
Harrington Beach State Park	Hawthorn Hills Golf Course
Historic Cedarburg	Historic Port Washington
Historic Hamilton	Interurban Trail
Kuhefuss House	Lighthouse Museum
Lime Kiln Park	Lion's Den Gorge Nature Preserve
Luxembourg Amer. Cultural Ctr	Marie Kraus Park
Mee-Kon Park Golf Course	National Flag Day Foundation
Octagon Barns	Orchards, Produce and Roadside Stands
Ozaukee Art Center	Ozaukee County Breweries
Ozaukee County Historical Soc.	Paramount Historical Marker
Pebble House	Tendick Nature County Park
The Bog Golf Course	Waubedonia County Park

Uses of GIS

Parcel data and Geographic Information Systems layers are often an essential piece of many different projects and processes. With the help of parcel data many characteristics of real estate can be analyzed over an area of interest. The parcel datasets of all Geographic Information systems either contain or are linked to attributes such as ownership, building market value, land market value, acreage, service areas, zoning and much more. Through spatial analysis, parcel datasets may be used to increase the value of other reference layers with methods such as intersection, proximity, buffer and overlay functions. Many industries require the use of parcel data on a daily basis and many are beginning to discover the benefits this added insight provides.

Businesses that rely on parcel datasets on a daily basis

Government

- Tax Appraisal
- Public Health & Safety
- Law Enforcement
- Homeland Security
- Planning
- Development
- Environmental protection
- Voting Districts

Real Estate, Demographic Studies,

Commercial

- Property Valuations
- Legal Descriptions
- Demographics Information
- Property Information
- Service Boundaries
- School Districts
- Aerial Imagery

Telecommunications

- Right of Way
- Diggers Hotline
- Asset Management
- Meter Reading Service

Financial Institutions, Title Companies

- Return on Investment Research
- Tax Liability Calculations
- Loan Processing
- Collateral Value Calculations
- Easements

Insurance

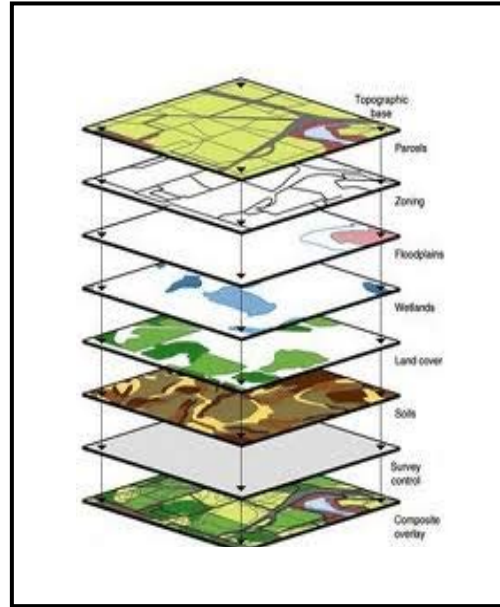
- Flood Certifications
- Risk Assessment
- Disaster Damage History
- Underwriting Management
- Property Values

Tourism

- Points of Interest
- Trails
- Events
- Promotion

GIS Datasets Available in the Ozaukee County Geographic Information System

Parcel Lines and Polygons
 Tax Assessment Roll
 Civil Divisions
 Platted Lands – Certified Survey Maps
 Platted Lands – Subdivision Plats
 Platted Lands – Condominium Plats
 Plats of Survey
 Emergency Response Zones
 Emergency Responders
 Address Points
 Intersection Points
 Road Centerlines
 Supervisory Districts
 Ward Districts
 Shoreland Zoning
 School Districts
 Floodplain Data
 Benchmarks
 Hydro Layer
 Lake Michigan Shoreline
 Nonmetallic Mining
 Wet Restore
 Soils (SSURGO)
 Watersheds
 Parks and Open Spaces
 Public Land Survey System
 Alcohol Retailers
 Elderly Facilities
 Historical Aerial Photography/Orthophoto Lomas



Snow Plow Routes
 Land Use 2035
 Topography (Contours)
 Wetlands
 Building footprints ***
 Trails
 Tie Sheets and Dossier Sheets ***
 Daycare Centers and Pre-schools
 School Districts***
 NR151 – Farmland compliance Tracking
 Orthophotography
 Environmental Corridors***
 Navigatable Waters
 Smoke Free Apartments
 *** *Denotes update needed*

Future Data Layers

LIDAR	1' Contours	Digital Elevation Model	Cemetery Mapping
Road Right of Way	Emergency Management	Sign Inventory	3D Mapping
Tree Inventory	Natural Areas	Outdoor Recreation	Points of Interest
Scenic Overlooks	Managed Forest Lands	Farmland Preservation	Economic Development
Extraterritorial Zoning	Private wells	Cell Tower Locations	Road Pavement Rating
Pipelines	Public Safety	Lead Based Paint	Incidents (Crime/Traffic)

Municipal Data Layers Added to County GIS Website

Cedarburg

- Sign Inventory
- Storm Sewer
- Sanitary Sewer
- Cemeteries
- Aldermanic Wards

Fredonia

- Forestry
- Storm Sewer
- Water Facilities
- Sanitary Sewer

Mequon

- Tree Inventory
- Sign Inventory
- Water Facilities
- Sanitary Sewer

Saukville

- Survey Points
- Sign Inventory
- Forestry
- Storm Sewer
- Sanitary Sewer
- Cemetery
- Voting Wards

Grafton

- Sign Inventory
- Tree Inventory
- Storm Sewer
- Water Facilities
- Sanitary Sewer
- Voting Wards
- Zoning

Thiensville

- Voting Wards
- Map Grid
- RFID Tags
- Sign Inventory
- Tree Inventory
- Plow Routes
- Utilities with Asbuilts
- Storm Sewer
- Sanitary Sewer
- MMSD Historic Streams
- Basement Backup
- Clear Water Compliance
- Garbage Collection

Cost of GIS

Land Information and GIS Offices are primarily a service type office; therefore the expenditures are not offset by revenue the office can receive from products and services. In Wisconsin, the Wisconsin Land Information Program helps fund the County Land Information Office by delineating \$8 of every document recorded at the Register of Deeds Office will be retained by the County to help fund the Land Information Office. In Ozaukee County, that amounts to over \$100,000 per year. Expenditures associated with the Land Information office are primarily wages and benefits for the Office, Consulting fees for the hosting and design of the Ozaukee/Municipal Shared GIS website. In 2015 the Land Information Office will be purchasing LIDAR, which results in an approximate \$65,000 expenditure which is above and beyond normal operating costs. With the housing recession over the past few years, Ozaukee County has had to use reserve funds, set aside from good recording years in the past, to help balance the budget.

Cost Benefits of GIS

While there is minimal revenue, aside from the retained fees, to assist with the Land Information Office and County Geographic Information System, there are many indirect cost savings to the County, local Municipalities, State Agencies as well as the taxpayers that justify the investment into the County land information system. The benefits can be classified into four categories: efficiency, operational, strategic, and external.

Benefits due to increased efficiency

- The staff has accurate and up-to-date information available
- Tasks can be performed accelerated by sharing and processing of geographic information, both spatial and tabular. Tedious search for information the most accurate and/or current information in different departments and locations can be avoided.
- Interdepartmental cooperation for optimum planning, implementation and operation of County services becomes feasible.
- Interdepartmental cooperation for optimum planning, implementation and operation of Municipal services becomes feasible.
- Intergovernmental cooperation for sharing data, integrating data becomes feasible
- Overhead for production, updating of maps and reproduction of maps is reduced
- Automatic transfer of data to the GIS website allows for easy updating of data available to the public which provides transparency.
- Manually drawn maps deteriorate due to use and age and must be redrawn. GIS makes it possible to redraw or print maps quickly.
- Mobile technology has made updating geographical information much easier and eliminates staff from documenting information from the field and re-entering the data into the GIS in the office.

Operational Benefits

- Different department access and use the same database.
- High level of public service
- User friendliness – The ability of staff to generate different thematic maps, have a flexible selection of area and scale; compile technical reports more quickly, statistical and logical evaluation based on data selection and combination of descriptive data, tabular data and spatial data.
- Integration of technical calculations for project engineering and operation; net simulation and tracing, net inventory: Evaluation of age and damages supports scheduling maintenance and repairs for technical infrastructure as road and sewerage network. Maintenance requirements can be prioritized, predictive methodologies can be applied for multi-year repair or investment plans. The availability of an engineering information base will allow engineers to conduct strategic planning studies by identifying the under-utilized parts of a network

Strategic Benefits

- Realization of technological changes (e.g. decentralization of electronic data processing)
- Establishing a corporate technical information processing by building up a corporate database
- Optimization of business processes (lean decision structures, support of technical maintenance)
- Better motivation of employees by providing an identification object and better job satisfaction
- Gain of competitive advantages
- Increased orientation to the customer's needs and improved public image through modern information management of public relations.
- Compliance with laws, regulations, and standards (protection of the environment, support of ecological applications).
- Enhancements to decision-making processes through reduction of uncertainty. Decisions can be made with more confidence and conviction based on more and better information.

External Benefits

- **for municipalities** which do not have the ability to develop internal GIS datasets due to lack of staff or budget, Assist in Planning and Development
- **for citizens**, accruing benefits from new, enhanced or more quickly produced services (accelerated provision of building permits, enhanced environmental protection, improved safety management, improved decision making in policy, accelerated trouble call analysis).
- **for private organizations**, as civil engineering companies, planners, architects, which obtain more and better information,
- **for other public organizations** (communities, counties, government) by easier access to information and faster data distribution.