

**MILWAUKEE COUNTY AUTOMATED MAPPING  
AND LAND INFORMATION SYSTEM**

One-Hundredth Steering Committee Meeting

**AGENDA**

Date: March 8<sup>th</sup> 2016  
Time: 9:00 a.m.  
Place: Milwaukee Metropolitan Sewerage District  
MMSD, Room 401  
260 W Seeboth St.  
Milwaukee, WI. 53204

- I. Roll Call
- II. Meeting Minutes  
Consideration of the minutes of the 100<sup>th</sup> Steering Committee meeting held December 8th, 2015
- III. Reports
  - A. **2015-2016 Work Plan Status**
    - 1. Interactive Map Viewer  
VWR.01 – Improve the MCLIO Interactive Mapping Service
  - B. **Maintain Core Foundational Elements**
    - 1. Report by MCAMLIS Staff regarding progress on 2015 Regional Orthophotography Project.
    - 2. Report by MCAMLIS Staff regarding progress on 2015 Regional Elevation Data Project.
  - C. **Promote the Integration of Parcel Based Land Information**
    - 1. Report by Milwaukee County Register of Deeds staff on MCAMLIS street address and cadastral map maintenance operations.
    - 2. Report by City of Milwaukee staff on MCAMLIS street address and cadastral map maintenance operations.
  - D. **Educational Outreach**
    - 1. Report by MCAMLIS Staff on the status of work performance on behalf of MCAMLIS in support of local community GIS efforts.
  - E. **Countywide Initiatives**
    - 1. Report by MCAMLIS Staff regarding Countywide Initiatives and program activity status.

**F. Financial**

Report by Milwaukee County DAS staff on MCAMLIS Fiscal status

**IV. Old Business**

- A. Consideration of the 2016 Land Modernization Plan.
- B. Consideration of the 2016 Strategic Grant Initiative.
- C. Creation of the Land Information Council update.

**V. New Business**

- A. WLIP Program Update 2016-2020
- B. Dr. Kurt Bauer Retirement

**VI. Correspondence**

- A. Wisconsin DOA request for V2 Statewide Parcel Data

**VII. Date, time, and place of next meeting**

**VIII. Adjournment**

MINUTES OF THE 100<sup>th</sup> MEETING  
MILWAUKEE COUNTY AUTOMATED MAPPING AND LAND INFORMATION SYSTEM  
STEERING COMMITTEE

Date: December 8<sup>th</sup> 2015  
Time: 9:00 a.m.  
Place: Milwaukee Metropolitan Sewerage District  
MMSD  
260 W Seeboth St.  
Milwaukee, WI. 53204

Members Present

Rob Merry	Deputy Milwaukee County Surveyor
Emily Champagne	GIS Supervisor, Milwaukee Metropolitan Sewerage District
Nancy Olson, Chair	Chief Information Officer, City of Milwaukee
John LaFave	Milwaukee County Register of Deeds
Greg High	Director, Architecture, Engineering and Environmental Services Division, representing Milwaukee County Department of Administrative Services Facilities Management
Dawn Neuy	Manager, EDAM Support, We Energies

Members Absent

Kurt W. Bauer	Milwaukee County Surveyor
Doug Seymour	Director of Community Development, City of Oak Creek representing the Intergovernmental Coordinating Council of Milwaukee County

Guest and Staff Present

Kevin Bruhn	MCAMLIS Project Manager, Milwaukee County DAS/ECD-MCAMLIS
Kathleen Bach	GIS Analyst, Milwaukee County Register of Deeds Office
Tammy Bronson	GIS Analyst, City of Milwaukee, ITMD
Hardy Meihnsner	Consultant, Spatial Data Systems
Pamela Booth	GIS Project leader, City of Milwaukee
Dana Kahle	GIS Supervisor, We Energies
Gina DeSota	Administrator of Fiscal Operations, Milwaukee County
LaCricia McSwain	Accountant, Milwaukee County - Central Business Office

## I. ROLL CALL

Chairman Olson called the 100<sup>th</sup> meeting of the Milwaukee County Automated Mapping and Land Information System (MCAMLIS) Steering Committee to order at 9:00 a.m. Roll Call was taken by circulating an attendance signature sheet and a quorum was declared present.

## II. MEETING MINUTES

### **CONSIDERATION OF THE MINUTES OF THE 99TH STEERING COMMITTEE MEETING HELD SEPTEMBER 15TH, 2015**

Chairman Olson had one correction of the meeting minutes. High stated that he accepted the role of Vice-Chair to be included in the minutes.

**High: moved approval of the minutes**

**Champagne: second, motion carried unanimous**

## III. REPORTS

### **A. 2015 – 2016 WORK PLAN STATUS**

#### **1. INTERACTIVE MAP VIEWER**

Bruhn: Directed the Committee to the report included with the meeting materials. Migration of current plug-in website environment is underway with the goal of completion by the end of the year. Bruhn: Will bring the project forward at the next Steering Committee if requested.

#### **1.1 SYSTEM ARCHITECTURE DESIGN**

Bruhn: Directed the Committee to the report included with the meeting materials. Bruhn stated that the plan included a full inventory of the IT infrastructure. Bruhn also stated that the Land Information Office is and will be prepared for future expansion due to a hardware purchase from County IMSD. The MCLIO needs to monitor the GIS infrastructure as project requests are taken on. Bruhn stated that there is still a single point of failure that needs to be addressed if a project is taken on with a higher level of availability. At this time there is no purchase request recommendation. Olson: Asked if the recommendation is to monitor not address any concerns? Bruhn: Yes, until a higher level of availability project is accepted. High: How has the City of Milwaukee addressed this issue? Olson: The city is in the same position that the County is in. We need to look at the return on investment and be aware of the annual cost.

### **B. MAINTAIN CORE FOUNDATIONAL ELEMENTS**

## **1. 2015 REGIONAL ORTHOPHOTOGRAPHY PROJECT**

Bruhn: Directed the Committee to the report included with the meeting materials.  
 Bruhn: introduced the deputy surveyor for Milwaukee County. SEWRPC has been working as a quality control agent which was not part of the contract of this flight. The flight was delivered in September. SEWRPC identified a few corrupt files that have been fixed, half township .sid files were created too. The data is available on the MCLIO website. Bruhn: Stated that there is an issue with snow and ice cover with the flight and the MCLIO is working with the vendor to create a discrete update area that will be flown in 2016. Bruhn: The other 5 county areas had some of the same issue  
 Merry: Yes, there was some issue with the other. Olson: Will this be a future report?  
 Bruhn: This will move from new business to old business for the next steering committee meeting.

## **2. 2015 REGIONAL ELEVATION DATA PROJECT**

Bruhn: Directed the Committee to the report included with the meeting materials.  
 Bruhn stated that SEWRPC has been instrumental in the quality control of the project which was not part of the contract. Merry: All data has been received and reviewed, vendor was presented with consistency and accuracy concerns, these issues are in process of being fixed. Bruhn: Presented examples of the data concerns. Champagne: Will there be a DEM and DSM available with this project? Bruhn: Stated that deliverables include a DTM and contours, the derived products that were included in the 2010 flight will not be included and may need to be acquired if need arises. The LIO is exploring the possibility of creating the requested derived products in-house.

## **C. PROMOTE THE INTEGRATION OF PARCEL BASED LAND INFORMATION**

### **1. REPORT BY MILWAUKEE COUNTY REGISTER OF DEEDS STAFF ON MCAMLIS STREET ADDRESS AND CADASTRAL MAP MAINTENANCE OPERATIONS**

Bach: Directed the Committee to the report included with the meeting materials, noting the continuing status of both the cadastral and address maintenance efforts conducted within the suburban communities. There has been an increase in the number of recordings.

### **2. REPORT BY CITY OF MILWAUKEE STAFF ON MCAMLIS STREET ADDRESS AND CADASTRAL MAP MAINTENANCE OPERATIONS**

Bronson: Directed the Committee to the report included with the meeting materials. Further reported that there has been 267 parcel updated through the year, up from 198 last year. She continued, reporting that address updates within the City in 2015 there were over 15,000.

## **D. EDUCATIONAL OUTREACH**

### **1. REPORT BY MCAMLIS STAFF ON THE STATUS OF WORK PERFORMANCE ON BEHALF OF MCAMLIS IN SUPPORT OF LOCAL COMMUNITY GIS EFFORTS**

Bruhn: Directed the Committee to the report included with the meeting materials, noting that staff had presented the yearly budget to the Milwaukee County Board of Supervisors in October, the Office had facilitated the 15<sup>th</sup> meeting of the Metro

Milwaukee GIS Users Group (MMGUG) held at Urban Ecology Center on 10/20/2015. Bruhn stated the MCLIO presented at GIS day at UWM. The MCLIO is anticipating web training in January 2016.

## **E. COUNTYWIDE INITIATIVES**

### **1. REPORT BY MCAMLIS STAFF REGARDING COUNTYWIDE INITIATIVES AND PROGRAM ACTIVITY STATUS**

Bruhn: Directed the Committee to the report included with the meeting materials regarding the consolidated City of Milwaukee and County Cadastral Data. The 3<sup>rd</sup> quarter updates have been completed. The 2014 GCS taxroll update process has been completed.

### **F. REPORT BY MILWAUKEE COUNTY DAS STAFF ON MCAMLIS FISCAL STATUS**

McSwain: Noted that an updated fiscal report is being distributed at the meeting. Olson: Please point out the differences. McSwain: Stated the operation costs were not included in the initial figures. Olson: Asked does the negative include the reserve. DeSota: It includes. Bruhn: Will there need to be a fund transfer for 2016? McSwain: Responded no, there is enough in the restricted balance. Olson: Please point out differences in the project report. DeSota: We reorganized the report to clarify. Olson: Please explain the City of Milwaukee annual contract number. DeSota: It is the 4 quarters of the year as well as the previous quarter that has been encumbered.

## **IV. OLD BUSINESS**

### **A. REPORT BY MCAMLIS STAFF REGARDING THE 2016 DRAFT LAND MODERNIZATION PLAN**

Bruhn: Directed the Committee to the report included with the meeting materials. The draft plan will be delivered to the state by Dec 31<sup>st</sup>. Bruhn: Stated that assistance was used from the City of Milwaukee as well as others in preparing this plan. Bruhn: The projects included are a make-up of the projects that are part of the 5 year plan as well as the initiatives underway and planned. The MCLIO has consulted with the County Surveyor to clarify the datum project as part of the plan. Olson: Included a few recommendations for change before submittal. Merry: The planning commission is submitting comments for consideration before the draft plan is submitted.

### **B. REPORT BY MCAMLIS STAFF REGARDING THE 2016 STRATEGIC INITIATIVE GRANT**

Bruhn: Directed the Committee to the report included with the meeting materials. The grant references the land modernization plan. The grant will be written to achieve benchmark 4 in the Land Plan. There are options with the methods in the project. The most expensive approach is referenced in the grant. This is expected to be a 3 year project. Olson: Who receives the grant award? Bruhn: Milwaukee County. Champagne: Is there a possibility of a lesser grant award? Bruhn: The grant dispersion is set on a biennial budget. After the state 2 year budget, it is not guaranteed.

## **V. NEW BUSINESS**

**A. CONSIDERATION OF A 2016 AGREEMENT FOR MILWAUKEE COUNTY SURVEYOR SERVICES BETWEEN MCAMLIS AND SEWRPC**

Bruhn: Directed the Committee to the report included with the meeting materials.

Bruhn: The cost has not changed from 2015 to 2016.

**LaFave: moved approval of the contract**

**Champagne: second, motion carried unanimous**

**B. CONSIDERATION OF A 2016 AGREEMENT FOR MILWAUKEE MAINTENANCE SERVICES BETWEEN MCAMLIS AND THE CITY OF MILWAUKEE**

Bruhn: Directed the Committee to the report included with the meeting materials.

Bruhn: The cost has not changed from 2015 to 2016.

**LaFave: moved approval of the contract**

**High: second, motion carried unanimous**

**C. MCAMLIS DATUM MODERNIZATION PROJECT, INCLUDING REPORT BY MCAMLIS STAFF ON THE SEWRPC ADDENDUM TO REPORT NO. 206**

Bruhn: Directed the Committee to the report included with the meeting materials.

Bruhn: The 7 counties of the SEWRPC region are considering a migration from NAD 27 to NAD 83. The project is being explored to migrate the NAD 27 datum. Bruhn: Stated that he included the most-costly method in the land plan and grant proposal. Merry:

Explained the difference of the methods including the method in addendum to

SEWRPC report 206 as well as cost estimates. Bruhn: Input is needed from the partners of MCAMLIS to gain direction and guidance of correct method of approach

Champagne: How much maintenance per year? Merry: 30-50. Bruhn: Cost associated

with that? Merry: That would have to be calculated. Bach: Does state use NAD83?

Merry: Yes, with WISCORS, also a new datum will come in 2022. Olson: Will staff

propose a project plan at the March meeting? Bruhn: Yes, input will be solicited and

coordination with the County surveyor will be utilized. High: Is there a consensus

between the LIO's that this is an initiative that needs to be undertaken by the

surveyors? Bruhn: Input is still needed from comments from surveying community.

The Federal data system is on a NAD 83 system. High: New data is created on the new

datum? Bruhn: Yes, the Milwaukee County 2015 photography and LiDAR data was

collected in NAD 83 and then converted to NAD 27. Olson: Does staff need a vote to

proceed with project? Bruhn: No, staff will generate a project proposal to bring

forward at a future meeting.

**VI. CORRESPONDENCE**

**A. Memorandum from SEWRPC - Revised Preliminary Draft Floodplain and Floodway Delineations along Portions of the Little Menomonee River in Milwaukee and Ozaukee Counties**

Bruhn: Directed the Committee to the correspondence included with the meeting materials.

**B. OPINION ON LAND INFORMATION COUNCIL COMPLAINT**

Discussion was held on the opinion that was requested from Milwaukee County Corporation Counsel on the topic of creating a land information council.

**VII. DATE, TIME, AND PLACE OF NEXT MEETING**

Olson: Set the next regular meeting for March 8<sup>th</sup> 2016 @ 9:00 am, MMSD

**VIII. ADJOURNMENT**

**LaFave: moved approval**

**High: second, motion carried**

**By consensus of the Committee**

Respectfully submitted,  
Kevin Bruhn



**DEPARTMENT OF ADMINISTRATIVE SERVICES  
DIVISION OF ECONOMIC DEVELOPMENT  
MILWAUKEE COUNTY LAND INFORMATION OFFICE**

633 West Wisconsin Avenue, Suite 903, Milwaukee, WI 53203 (414) 278-3927

**MEMORANDUM**

**TO:** MCAMLIS Steering Committee  
**FROM:** Kevin Bruhn, MCAMLIS Project Manager  
**DATE:** February 29, 2016  
**SUBJECT:** INTERACTIVE MAPPING

**BACKGROUND**

This work effort will deploy multiple improvements to the MCLIO Interactive Mapping and Data Extract services. The new viewer will offer improved responsiveness (timeliness of data rendering and tool functions), accessibility (map printing, Pictometry, CSM retrieval), usability (GUI), and availability of data.

**STATUS:**

The migration of the current viewer technology is in the final development stages. Two new viewers were completed to migrate off the current technology. The new viewer names are:

<http://Lio.MilwaukeeCounty.org/map> - The migrated Silverlight site.

[http://lio.milwaukeecounty.org/Html5Viewer\\_2\\_5\\_2/?viewer=Simplified](http://lio.milwaukeecounty.org/Html5Viewer_2_5_2/?viewer=Simplified) - The parcel viewer.

Or

<http://Lio.MilwaukeeCounty.org/mobile> - Same parcel viewer as above. May experience technical issues on very small devices.

**ACTIVITIES THIS PERIOD: 12/15 – 3/16**

- Completed development of HTML viewer to replace the current viewer.
- Completed a streamlined mobile parcel viewer.
- Beta testing the two new viewers.
- Upgraded current web viewer platform.

**NEXT**

- Complete full rollout of new viewer technology.
- Perform a new viewer feedback session.
- Conduct training sessions on the new viewers.

The screenshot shows the goMilwaukee website's interactive map interface. The browser address bar displays "lio.milwaukeecounty.org/map/". The page header includes the goMilwaukee logo and a "Sign in" link. Below the header, there are tabs for "Getting Around", "Locate", and "Tasks". A navigation toolbar contains icons for Pan, Previous Extent, Next Extent, Full Extent, Zoom In, Zoom Out, Bookmarks, Pictometry, and Google Map. A search bar with the placeholder text "I want to..." is positioned above the map. The map itself shows various municipalities in Milwaukee County, including Bayside, Brown Deer, River Hills, Fox Point, Glendale, Whitefish Bay, Shorewood, Milwaukee, Wauwatosa, West Allis, West Milwaukee, St. Francis, Greendale, Cudahy, South Milwaukee, Franklin, and Oak Creek. A scale bar at the bottom indicates 0, 2, and 4 miles. The footer text reads "Milwaukee County Land Information Office".

The screenshot shows the HTML5 viewer interface for the interactive map. The browser address bar displays "http://lio.milwaukeecounty.org/Html5Viewer\_2\_5\_2/?viewer=Simplified". The page title is "MCAMLIS". The interface includes a menu with "File", "Edit", "View", "Favorites", "Tools", and "Help". A search bar with the placeholder text "I want to..." is located at the top left. The map area shows a simplified view of the same municipalities as the previous screenshot. A scale bar at the bottom indicates 0, 2, and 4 miles. The footer text reads "Milwaukee County Land Information Office".



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**MEMORANDUM**

**TO:** MCAMLIS Steering Committee  
**FROM:** Kevin Bruhn, MCAMLIS Project Manager  
**DATE:** February 29, 2016  
**SUBJECT:** 2015 ORTHOPHOTOGRAPHY PROJECT STATUS

**BACKGROUND**

At its meeting held September 23, 2014, the MCAMLIS Steering Committee approved a staff recommendation to proceed with the acquisition of Pictometry International Inc AccuPLUS certified orthophotography.

Since the 2005 Regional Orthophotography Project, Milwaukee County has acquired digital orthophotography every two or three years. The most recent orthophotography covering Milwaukee County occurred in the spring of 2015. This digital orthophotography acquired for Milwaukee County was partially funded by SEWRPC in its support of regional planning efforts.

**STATUS:**

Pictometry Inc. delivered the mosaicked 2015 imagery to Milwaukee County. Upon review of the imagery it was noticed that there was the presence of limited amount of snow and ice. The MCLIO is currently reviewing this concern to rectify the situation.

**ACTIVITIES THIS PERIOD: 12/15 – 3/16**

- A second boundary file was created to represent the areas present of snow or ice.

**NEXT**

- The MCLIO is currently still in discussion with Pictometry to identify locations in the 2015 flight that have ice coverage that cover water shoreline or have snow that cover the ground.
- The MCLIO is in negotiations for a re-flight of those areas deemed 'out of specification' and prepare for a discrete 2016 flight.

**Attached:**

Updated Exhibit of 2015 AccuPlus Photography with specification in question

Exhibit of Pictometry Flight lines from 2015 Orthophoto capture

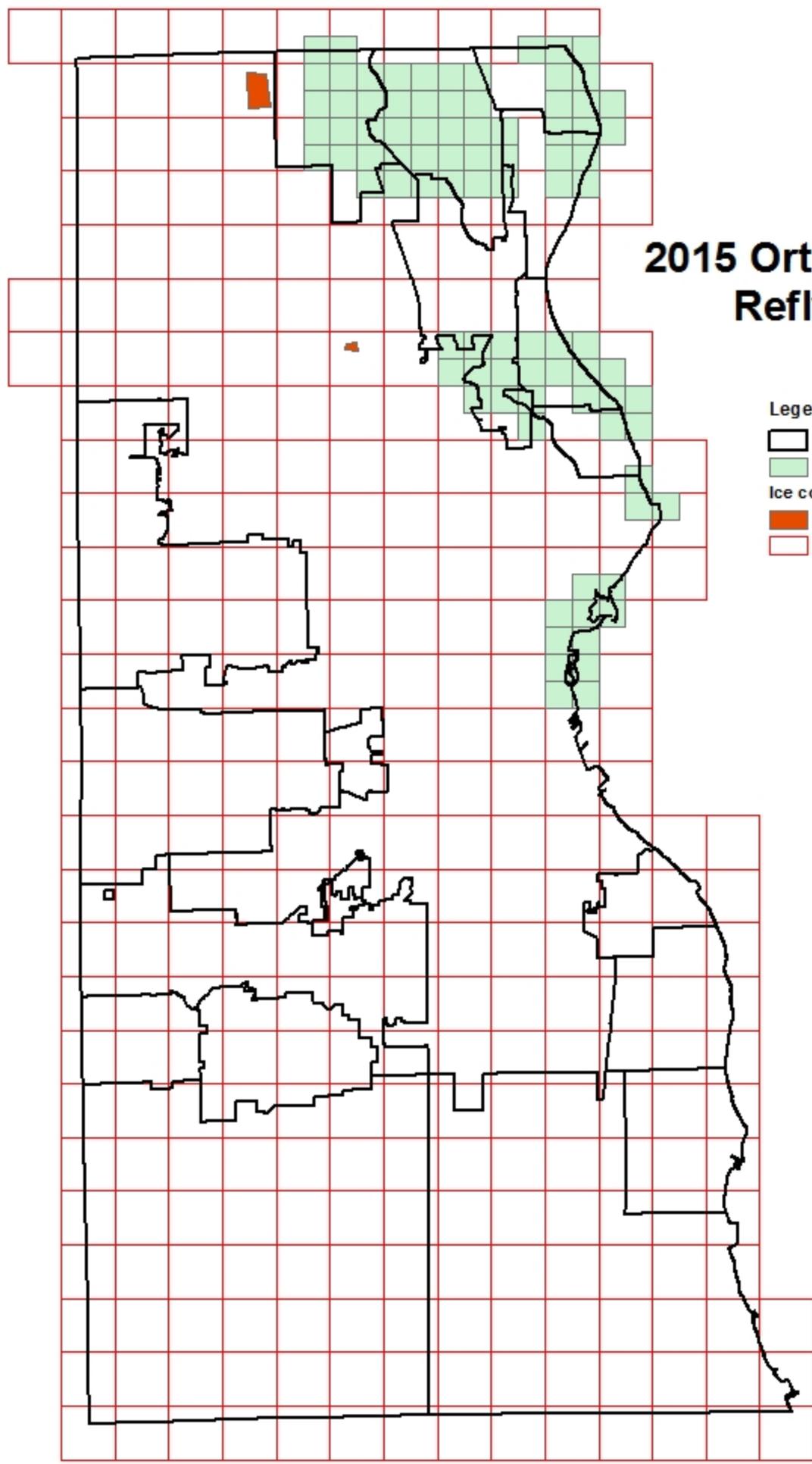
\* \* \* \* \*

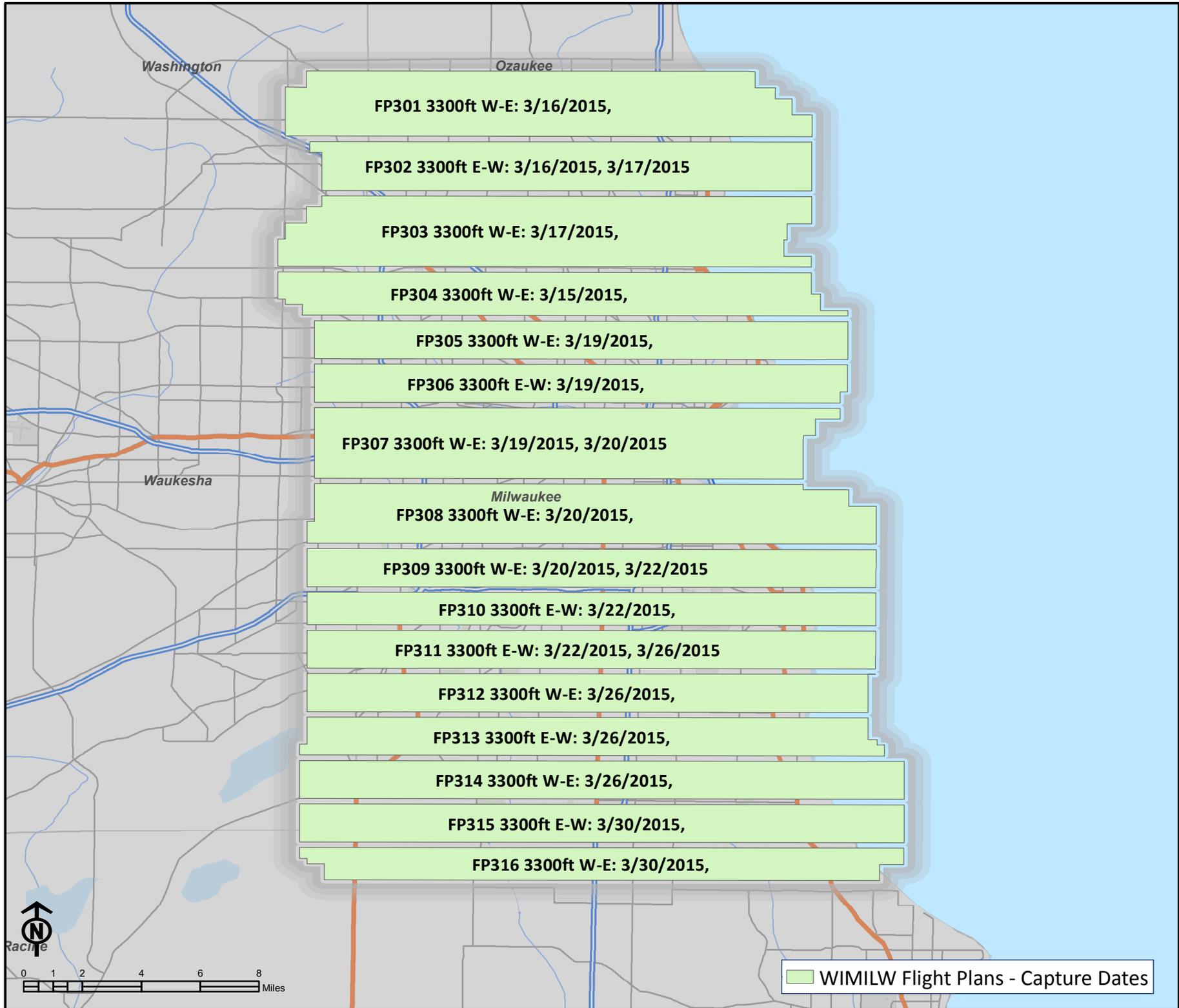


# 2015 Orthophotography Refly Locations

## Legend

-  Municipal Subdivisions
-  Quarter Section Refly Tiles (89)
- Ice coverage areas**
-  Additional areas (2)
-  Section Tiles







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**MEMORANDUM**

**TO:** MCAMLIS Steering Committee  
**FROM:** Kevin Bruhn, MCAMLIS Project Manager  
**DATE:** February 29, 2016  
**SUBJECT:** 2015 ELEVATION DATA PROJECT STATUS

**BACKGROUND**

At its meeting held September 23, 2014, the MCAMLIS Steering Committee approved a staff recommendation to proceed with a joint project with SEWRPC and five counties located in southeastern Wisconsin to acquire updated Elevation Data for Milwaukee County. The approval of the Elevation Data Project authorized an expenditure of no more than \$62,343 to collect LiDAR derived elevation data.

**STATUS:**

The LiDAR vendor is currently processing the data that was collected as part of the project.

**ACTIVITIES THIS PERIOD: 12/15 – 3/16**

- Delivery is expected no later than February 29th.

**NEXT**

- The MCLIO will make the point cloud, digital terrain model (DTM), and contours available on the website, data service, and download (Dropbox).
- The MCLIO will evaluate options for change detection from the 2010 and 2015 LiDAR flights. This is needed to produce the candidate areas for the 2015 Planimetric data update, the last phase of the vector data improvement project.

Attached:

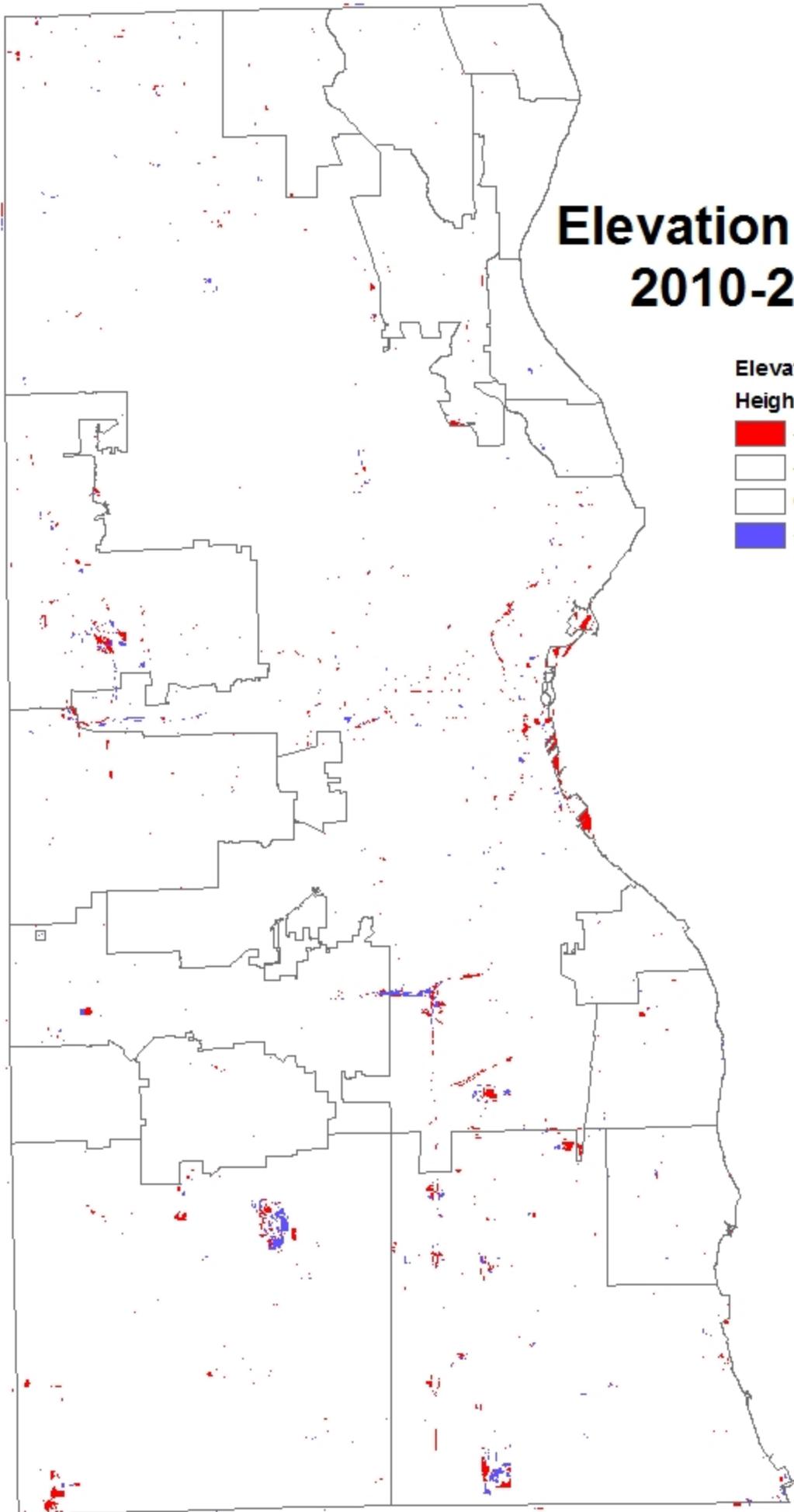
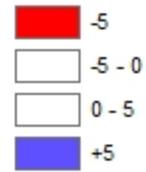
Example of a sample change detection subtraction process from the 2015 to 2010 LiDAR flights.

\* \* \* \* \*

# Elevation Change from 2010-2015 LiDAR

Elevation Difference

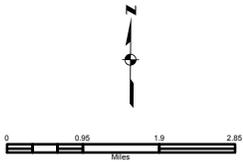
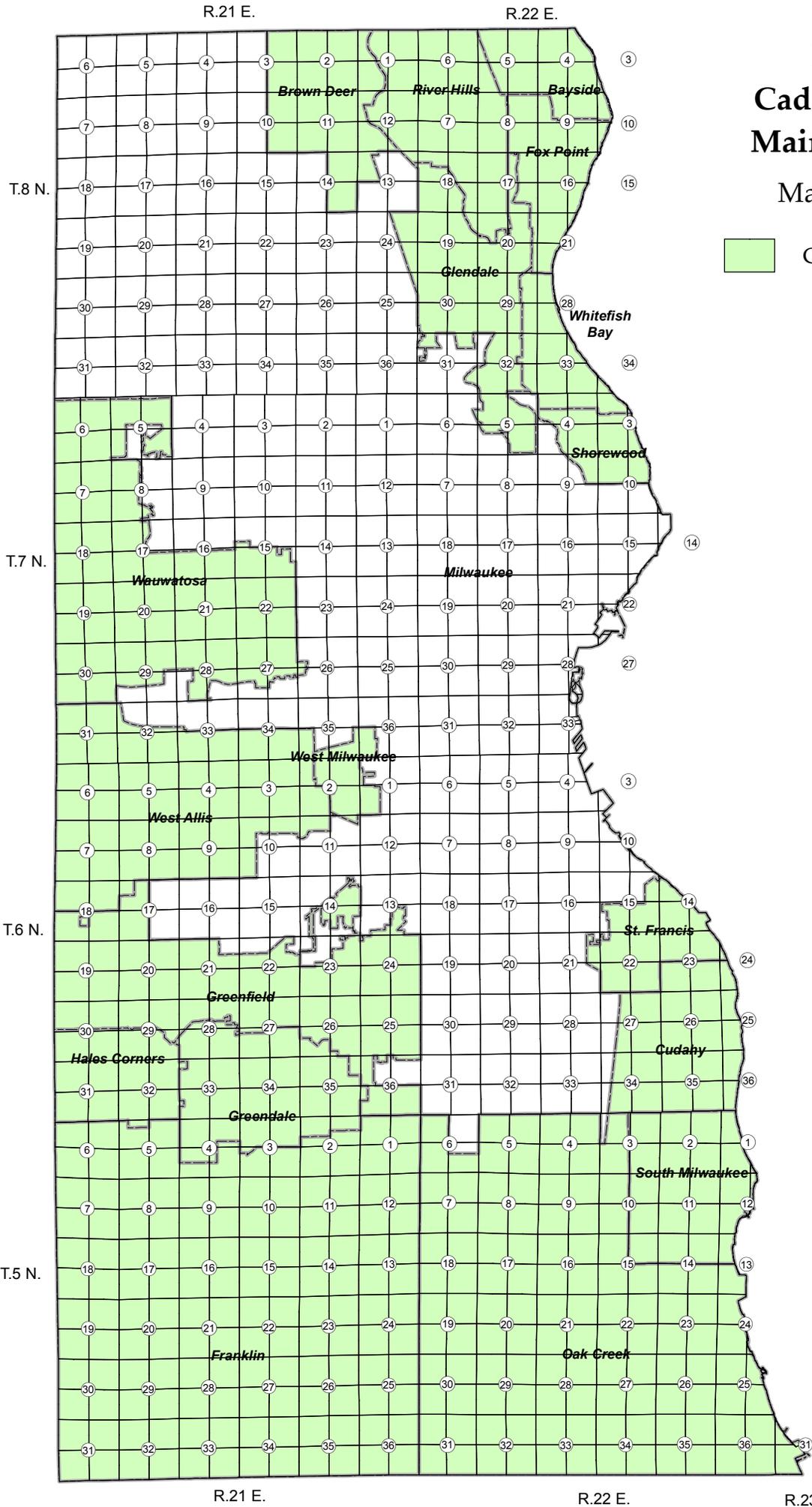
Height



# MCAMLIS Cadastral Database Maintenance Status

March 2016 Status

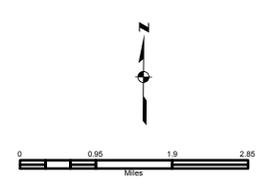
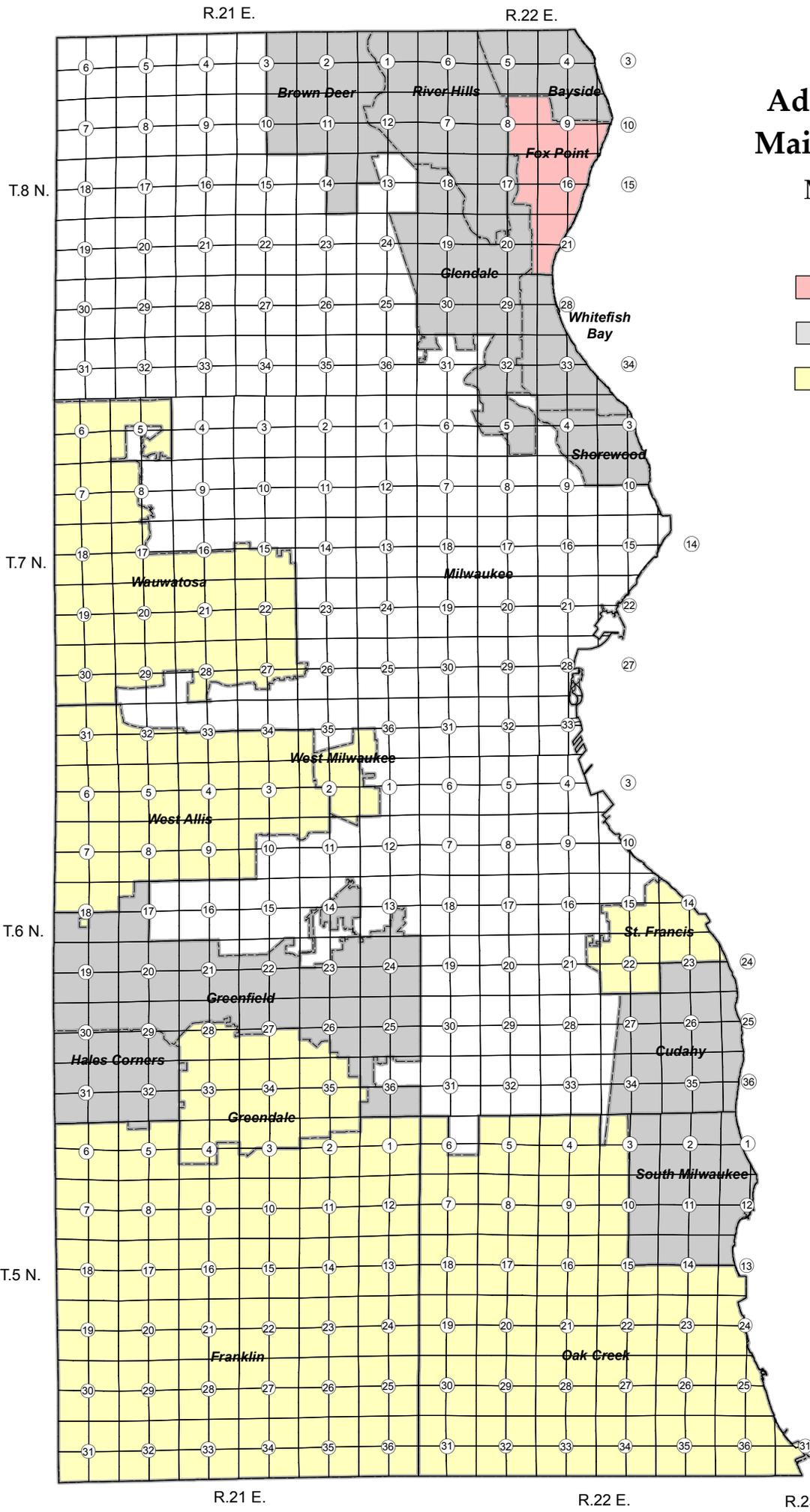
 Current as of February 1, 2016



Source: MCAMLIS Project Manager

# MCAMLIS Address Database Maintenance Status March 2016 Status

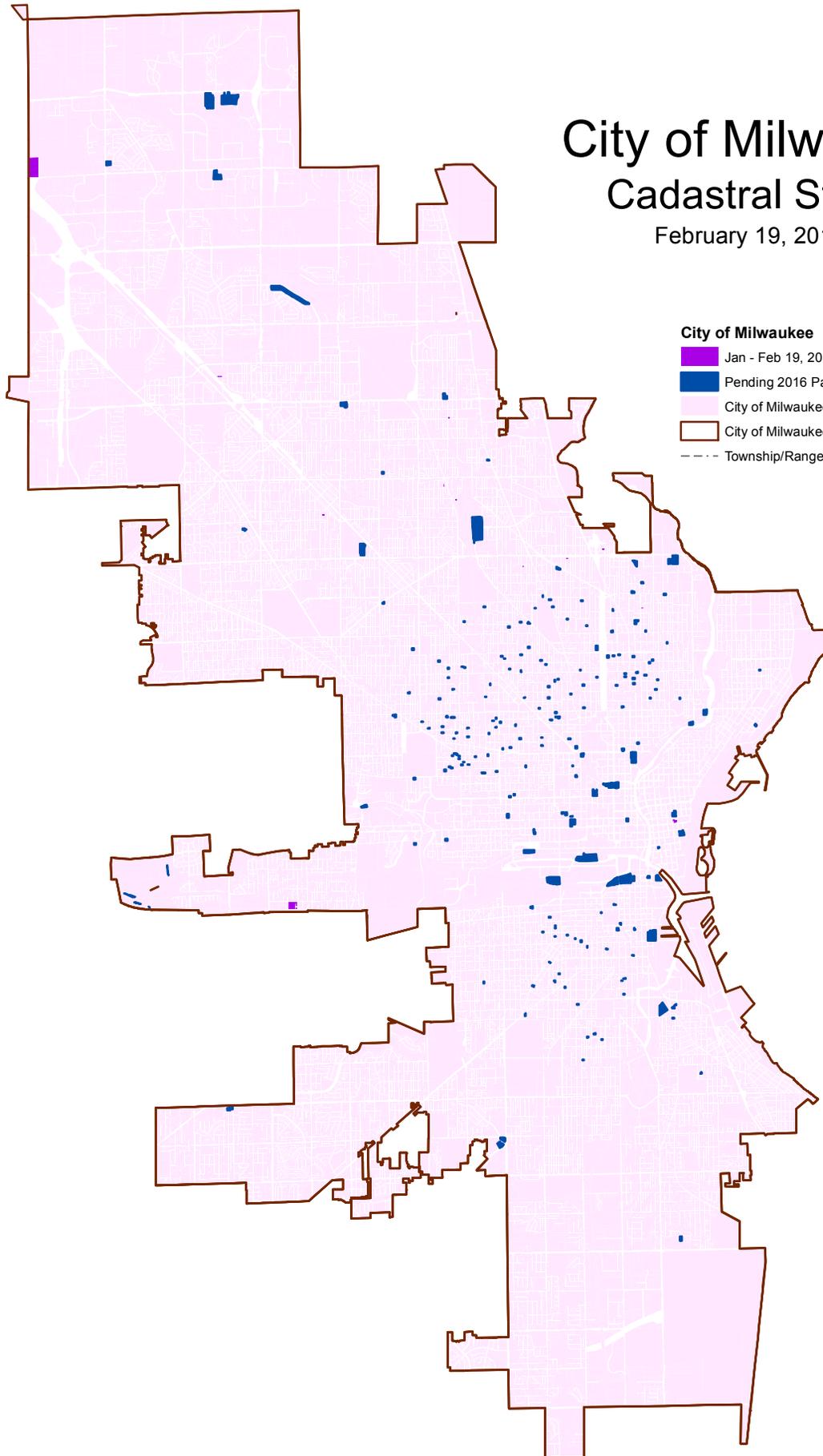
- January 1, 2015
- January 1, 2016
- March 1, 2016



Source: MCAMLIS Project Manager

# City of Milwaukee Cadastral Status

February 19, 2016



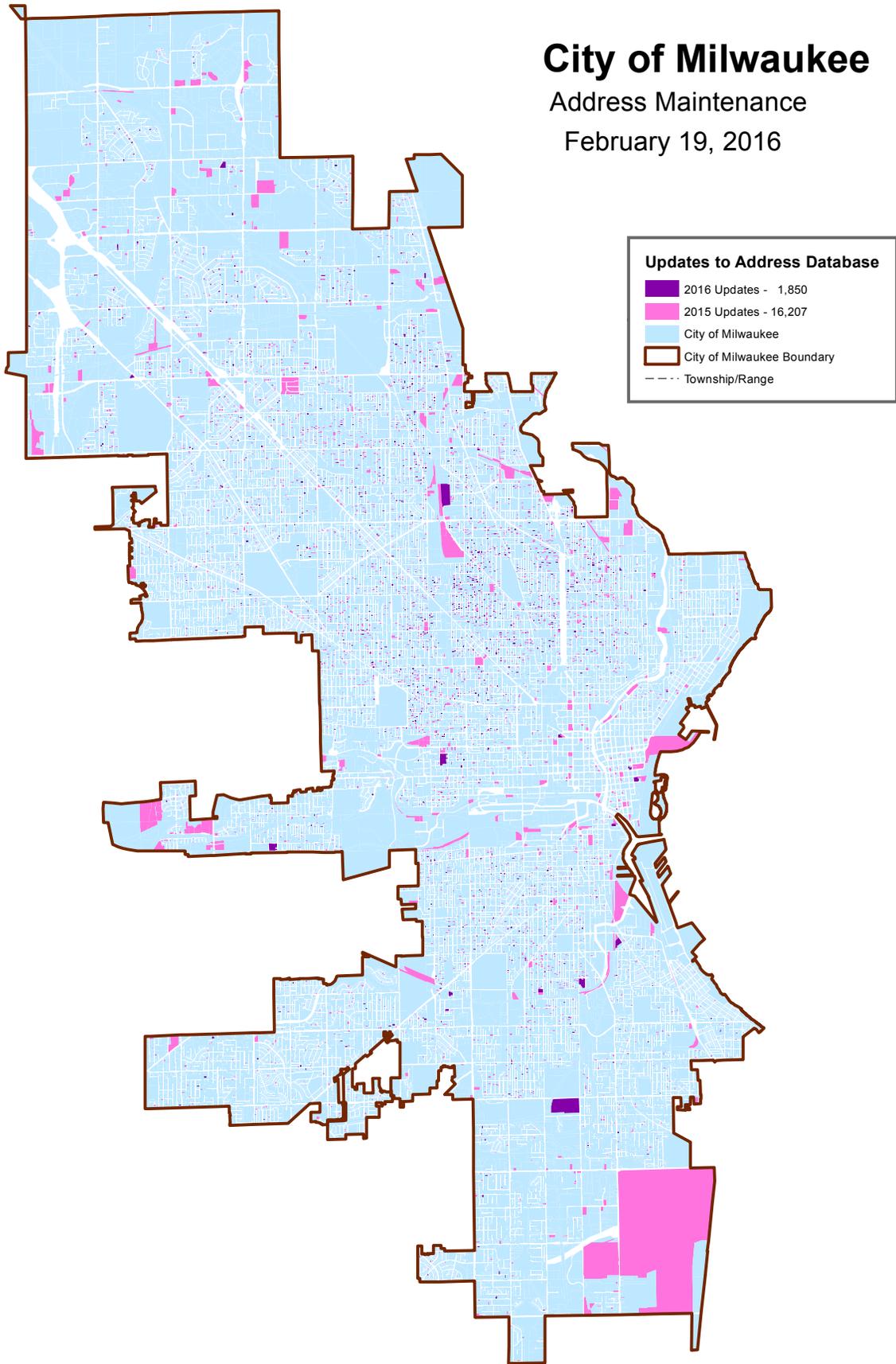
## City of Milwaukee

- Jan - Feb 19, 2016 - 18 (2015-18)
- Pending 2016 Parcels - 295 (2015-156)
- City of Milwaukee Parcels
- City of Milwaukee Boundary
- Township/Range

# City of Milwaukee

Address Maintenance

February 19, 2016





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**MEMORANDUM**

**TO:** MCAMLIS Steering Committee  
**FROM:** Kevin Bruhn, MCAMLIS Project Manager  
**DATE:** February 29, 2016  
**SUBJECT:** Educational Outreach Activity Status

**BACKGROUND**

The MCAMLIS Program Goals and Objectives included in the Land Information Strategic Assessment for 2013–2016 identified the need for MCAMLIS Staff to develop and promote MCAMLIS products and services to MCAMLIS partners and participants. The following describes MCAMLIS Staff activities under this objective for the preceding period:

**ACTIVITIES THIS PERIOD – 12/15 – 3/16**

1. Meetings and Presentations
  - Attended the Annual WLIA Conference February 10<sup>th</sup>-12<sup>th</sup>.
  - Presented '*Milwaukee County's Land Information Office*' at UWM - Applied Projects in Urban GIS 793 - 2/24/16

**NEXT**

- Continue MCLIO website training, data distribution and product enhancements
- Prepare for the 16<sup>th</sup> MMGUG Meeting, Spring 2016
- Continue to conduct monthly webinars on related GIS topics

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**MEMORANDUM**

**TO:** MCAMLIS Steering Committee  
**FROM:** Kevin Bruhn, MCAMLIS Project Manager  
**DATE:** February 29, 2016  
**SUBJECT:** COUNTYWIDE PROGRAM INITIATIVES

**BACKGROUND**

This Goal states that - Where appropriate, identify, initiate, and complete projects proposed by Milwaukee County or its constituent municipalities, agencies of the federal, state or regional government, public utilities and by private entities, including, importantly, interested citizens which would, by understanding of the MCAMLIS Steering Committee, prepare information and maps useful for meeting the needs of the County and *its* local units of government and contributing toward the implementation of the Wisconsin Land Information Program.

**CURRENT ACTIVITIES THIS PERIOD – 12/15 – 3/16**

**1. Address Database Maintenance**

- Deployed 4<sup>th</sup> quarter consolidated Milwaukee County and City of Milwaukee Cadastral Data;

**Next**

- Deploy 1<sup>st</sup> quarter consolidated Milwaukee County and City of Milwaukee Cadastral Data
- Performed quality control on the Enterprise Address System

**2. Plat of Survey Maintenance**

Plat of Survey Documents received from the Milwaukee County Surveyors Office are scanned and indexed to their respective parcel(s). The public is able to access these as they are posted to the MCLIO Interactive Mapping website. In total, there are 98,189 parcel documents currently available. Since January 2016, a total of 307 documents have been scanned and indexed into the Plat of Survey scanned document library.

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2015 YTD Fiscal Report - MCAMLIS - As of December 31, 2015

**2015 MCAMLIS YTD**

		YTD	YE Projected
<b>REVENUES - 2015 YTD</b>			
2015 Actual Revenue		\$840,661	\$840,661.00
2014 Encumbrances Carried Over		\$339,945	\$339,945
	<b>TOTAL</b>	<b><u>\$1,180,606</u></b>	<b><u>\$1,180,606</u></b>
<b>OPERATING EXPENSES - 2015 YTD</b>			
2015 Actual Expenditures		\$989,920	\$989,919.52
2015 Encumbrances		\$164,228	\$164,228
Crosscharge from Register of Deeds		\$40,000	\$40,000
	<b>TOTAL</b>	<b><u>\$1,194,148</u></b>	<b><u>\$1,194,148</u></b>
<b>2015 Est. Net Income (Loss)</b>		<b><u>(\$13,542)</u></b>	<b><u>(\$13,542)</u></b>

<b>Fund Balance:</b>		YTD	YE Projected
<b>2014 Year-End Fund Balance*</b>		<b>\$1,458,687</b>	<b>\$1,458,687</b>
2015 Operating Revenues (Shown Above)	+	\$1,180,606	\$1,180,606
2015 Exp + Enc for \$8 Fee Projects + XC from Register of Deeds	-	\$1,194,148	\$1,154,148
<b>2015 Est Fund Balance**</b>		<b>\$1,445,145</b>	<b>\$1,485,145</b>
2014 Reserve Revenue @ 10%		\$0	\$0
2015 Est Fund Balance YTD - Unrestricted		\$1,375,299	\$1,415,299
2015 Est Fund Balance YTD - Restricted		\$69,846	\$69,846

\*2014 YE Fund Balance represents the current amount in reserve as of 2014 YE close.

\*\*2015 Est YTD Fund Balance represents the 2014 YE reserve netted against the actual 2015 expenditures and revenues. This figure will change throughout the year as additional 2015 expenditures and revenues are realized.

**NOTE:** 2015 expenditures, revenues, and resulting fund balance are year-to-date ONLY. The figures represented in this report are not intended to project a year-end balance for the MCAMLIS budget. The purpose of the report is to provide committee members a "financial snapshot" of MCAMLIS activities within a specific point in time.

**2015 YTD Fiscal Report - MCAMLIS (\$8) - as of 12-31-2015**

Vendor Name	Description	Amount Authorized	Amount Paid - Prior Years	Amount Encumbered	Amount Paid 2015 YTD	Total Amount Paid (Encumbrances + Actual)	Remaining Unpaid Balance
SOUTHEASTERN WI REGIONAL	MCAMLIS Floodland Mapping Phase 2	\$ 436,000.00	\$ 161,300.00	\$ -	\$ 274,700.00	\$ 436,000.00	\$ -
SOUTHEASTERN WI REGIONAL	County Surveyor	82,916.00	-	-	82,916.00	82,916.00	-
CITY OF MILWAUKEE	Cadastral Address Maintenance	114,725.00	-	-	114,725.00	114,725.00	-
REGISTER OF DEEDS	Register of Deeds Scanning Projects	40,000.00	-	-	40,000.00	40,000.00	-
	<b><u>2015 Authorized Projects</u></b>						
LATITUDE GEOGRAPHICS GROUP	VWR: Improve MCLIO Mapping Service	50,000.00	-	19,819.25	11,600.75	31,420.00	18,580.00
LATITUDE GEOGRAPHICS GROUP	MBL: Mobile Property Viewer	50,000.00	-	-	-	-	50,000.00
ESRI	COL: System Architecture Consulting Support	20,000.00	-	-	22,942.00	22,942.00	(2,942.00)
GRW	DAT: Planimetric Polygon Processing Part 1	98,650.00	67,476.60	-	31,173.40	98,650.00	-
GRW	DAT: Planimetric Polygon Processing Part 2	6,800.00	-	-	6,800.00	6,800.00	-
SEWRPC	DAT: Regional Orthophotography	126,158.00	-	68,643.00	53,307.00	121,950.00	4,208.00
SEWRPC	DAT: Regional Elevation Data/Lidar	62,343.00	-	30,677.00	31,666.00	62,343.00	-
SIDWELL INC, RADGOV	DAT: Historical Aerials	3,500.00	3,500.00	-	-	3,500.00	-
	<b>TOTAL</b>	<b>\$ 1,091,092.00</b>	<b>\$ 232,276.60</b>	<b>\$ 119,139.25</b>	<b>\$ 669,830.15</b>	<b>\$ 1,021,246.00</b>	<b>\$ 69,846.00</b>

## **MILWAUKEE COUNTY LAND INFORMATION PLAN: 2015**

Kevin Bruhn  
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# EXECUTIVE SUMMARY

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The automated mapping and land information system for Milwaukee County has resulted in substantial improvements in both efficiency and effectiveness in the acquisition, conversion, storage, retrieval, and use of information about the land area which comprises Milwaukee County.

This update to the 2010 Land Information Plan is intended to provide County and local officials, State agencies, private entities, and other interested parties with basic knowledge of Milwaukee County's continued efforts to modernize its land records system. Since adoption of the original plan in 1990, Milwaukee County has diligently pursued the creation of a parcel-based, multi-purpose, multi-user automated mapping base as the foundation for land information systems. The initial focus was on the establishment of a geodetic framework, the preparation of large-scale planimetric and topographic base maps, and the preparation of companion large-scale maps. This mapping effort was completed in or converted to digital form and has been integrated into a computerized database now serving Milwaukee County. Now that the core land information have been completed and migrated into a standardized, maintained format, Milwaukee County is focused on how to effectively distribute and promote these datasets. This document describes how Milwaukee County will build on that database over the next three years while expanding our cooperation between County departments, local units of government, and with participating utility organizations operating in Milwaukee County in order to pursue important land records modernization initiatives.

## MCLIO Background

The Milwaukee County Land Information Office (MCLIO) was created in 2005 as a result of Milwaukee County Resolution 90-707(a) mandating the Milwaukee County Automated Mapping and Land Information System (MCAMLIS) Program in Milwaukee County. The MCLIO has become the de-facto county entity to manage countywide geospatial data and services, and to coordinate these activities with other organizations to provide efficient and effective means to access and administer the county's geospatial data and services.

MCLIO is organized within the County's Department of Administrative Services – Division of Economic Development. The MCLIO provides several key services to state, federal, county and municipal government, citizens, and the geospatial professional community. These services include:

- Administration of the MCAMLIS Program and support of the MCAMLIS Steering Committees' oversight of the County's Land Records Modernization Plan
- Maintenance of the MCLIO geospatial data portal, to make data easily accessible to the public
- Coordination of county efforts with the state, federal and local geospatial professional community
- Development and maintenance of geospatial architecture (databases, servers) to provide robust mapping capabilities to county departments, municipalities and public-facing web services
- Maintenance of basemap reference data including cadastral, topographic, planimetric and high-resolution imagery
- Development of the application of Location Based Data and Technologies (LBDT) for use within county and local municipal government
- Maintenance of the county's street centerline and street address database(s)

## Mission of the Land Information Office

The mission of the Milwaukee County Land Information Office is to provide baseline LBDT services, and to foster opportunities to advance the use of this technology in government and the public service sector within Milwaukee County.

## Land Information Office Projects

To realize this mission, in the next three years, the county land information office will focus on the following projects:

1. Make Milwaukee County Land information available on mobile tablets and phones.
2. Improve the taxroll currency for Milwaukee County parcels
3. Continue maintenance on Countywide polygonalized planimetric dataset
4. Develop services to be utilized with mobile GPS/GIS technology
5. Continue Raster product developments
6. Produce LiDAR derived products and analysis
7. Survey control modernization – transformation to North American Datum 1983\1988

The remainder of this document provides more details on Milwaukee County and the WLIP, summarizes current and future land information projects, and reviews the county's status in completion and maintenance of the WLIP map data layers known as Foundational Elements.

# 1 INTRODUCTION

---

On February 15, 1990, the Milwaukee County Board of Supervisors adopted the Southeastern Wisconsin Regional Planning Commission's (SEWRPC) Community Assistance Planning Report No. 177, Feasibility Study for a Milwaukee County Automated Mapping and Land Information System (hereinafter referred to as the "plan"). A 2010 plan update expanded and extended the original plan; this 2015 plan update builds upon the foundation which was put in place over 25 years ago.

The Milwaukee County plan, as originally adopted by the County Board, is believed to be unique within Wisconsin in that it created a public-private partnership that would jointly fund and develop the automated mapping system. Accordingly, a cooperative agreement was executed in November 1990, establishing the Milwaukee County Automated Mapping and Land Information System, known by the acronym MCAMLIS. Milwaukee County, the Milwaukee Metropolitan Sewerage District, Wisconsin Bell Telephone Company, the Wisconsin Electric Power Company, and the Wisconsin Gas Company all executed the agreement. The agreement provided for the creation of a Steering Committee with representatives from the County and City of Milwaukee, the suburban cities and villages within Milwaukee County, the Milwaukee Metropolitan Sewerage District, and the private utilities operating within the County.

This plan was prepared by the county LIO, the MCAMLIS Steering Committee, and others as listed below.

## MCAMLIS Steering Committee

Nancy Olson, Chair	Chief Information Officer, City of Milwaukee
Greg High	Director, Architecture & Engineering, Milwaukee County Department of Administrative Services Facilities Management
Kurt W. Bauer	Milwaukee County Surveyor
Emily Champagne	GIS Supervisor, Milwaukee Metropolitan Sewerage District
Doug Seymour	Director of Community Development, City of Oak Creek representing the Intergovernmental Coordinating Council of Milwaukee County
Teig Whaley Smith	Director, Milwaukee County DAS, Milwaukee County Department of Administrative Services
John LaFave	Milwaukee County Register of Deeds
Dawn Neuy	Manager, EDAM Support, We Energies
Kevin Bruhn, Project Manager	GIS Manager – Land Information Officer, Milwaukee County Department of Administrative Services, Economic Development
Kevin S. Anderson	Design Area Manager, Milwaukee Metro North AT&T

## 2 FOUNDATIONAL ELEMENTS

### PLSS

#### Public Land Survey System Monuments

##### Layer Status

For the PLSS Foundational Element, the table below documents Layer Status

PLSS Layer Status	
Name	Status/Comments
Total number of PLSS corners (section, ¼, meander) set in original government survey	1,065
Number and percent of PLSS corners that have been remonumented	1,065, 100%
Number and percent of remonumented PLSS corners with survey grade coordinates (see below for definition)	1,065, 100%
Number and percentage of survey grade PLSS corners integrated into county digital parcel layer	See above
Number and percentage of non-survey grade PLSS corners integrated into county digital parcel layer	None, 0%
Percentage of PLSS corners that have digital tie sheets (whether or not they have corresponding coordinate values)	100%
Digital tie sheets available online? Yes or No	Yes
Approximate number of PLSS corners believed to physically exist based on filed tie-sheets or surveys, but do not have coordinate values	None
Approximate number of PLSS corners believed to be lost or obliterated	None
Total number of PLSS corners along each bordering county	Racine – 26; Waukesha – 49; Ozaukee – 19
Number and percent of PLSS corners remonumented along each county boundary	Racine – 26, 100%; Waukesha – 49, 100%; Ozaukee – 19, 100%
Number and percent of remonumented PLSS corners along each county boundary with survey grade coordinates	Racine – 26, 100%; Waukesha – 49, 100%; Ozaukee – 19, 100%
Does your county collaborate with or plan to collaborate with neighboring counties for PLSS updates on shared county borders?	Yes

##### Custodian

Southeastern Wisconsin Regional Planning Commission (SEWRPC)

##### Maintenance

MCAMLIS will continue to work with the Commission and the County Surveyor, to perpetuate the U. S. Public Land Survey system within the County and maintain the attendant control survey network. The designation of areas to be remapped will be determined by the MCAMLIS Steering Committee.

##### Standards

The horizontal control surveys meet or exceed the specifications for Third-Order, Class I, accuracy standards as established by the National Geodetic Survey. Elevations were established for all of the monumented U. S. Public Land Survey system corners and for ancillary reference benchmarks. The vertical control survey network so created was based upon the National Geodetic Vertical Datum, 1929

adjustment. All level surveys conducted met or exceeded the specifications for Second-Order, Class II, accuracy standards as established by the National Geodetic Survey.

- Statutory Standards for PLSS Corner Remonumentation
  - s. 59.74, Wis. Stats. Perpetuation of section corners, landmarks.
  - s. 60.84, Wis. Stats. Monuments.
  - ch. A-E 7.08, Wis. Admin. Code, U.S. public land survey monument record.
  - ch. A-E 7.06, Wis. Admin. Code, Measurements.
  - s. 236.15, Wis. Stats. Surveying requirements.

## Other Geodetic Control and Control Networks

e.g., HARN, Height Mod., etc.

### Layer Status

N/A

## Parcel Mapping

### Parcel Geometries

#### Layer Status

- Milwaukee County has completed parcel mapping of all the municipalities and villages in Milwaukee County and continues to take high priority in maintaining all of the Cadastral Layers.
- The county's parcels are available in a downloadable Esri geodatabase and are viewable on our Interactive Map Site that is published quarterly.
- All Milwaukee County data is referenced to the Wisconsin South State Plane coordinate system, datum of 1927 (NAD27).
- We reference all parcels to the public land survey system (PLSS) and maintain Tax Parcel Maps. The tax parcels are derived from information obtained in the Tax Listing Section of the Milwaukee County Register of Deeds Office and the City of Milwaukee Assessor's Office. All parcels are developed using legal information including recorded deeds, Certified Survey Maps, and Subdivision Plats and non-recorded data such as right-of way plats. In some cases, recorded information is not always available and erroneous data may be recorded. For this reason, tax parcels are intended to accurately represent the land but it is not a substitute for a legal land survey or guarantee of title. Updates and Corrections are part of daily protocol and historical parcel information is maintained and archived.
- Milwaukee County is moving toward the Esri Parcel Fabric data model and will embark upon a pilot project in 2016.

### Custodian

Milwaukee County/MCAMLIS

### Maintenance

The cadastral are updated daily and are published on quarterly basis to the MCLIO website. Parcel changes are based on recorded documents and tax listing changes in the ROD office & City of Milwaukee Assessor's Office.

### Standards and Documentation

A data dictionary in human-readable form, with thorough definitions for each element/attribute name, and explanations of any county-specific notations, particularly for parcel attributes listed by s. 59.72(2)(a), is in progress.

The digital cadastral data sets were compiled to a digital framework meeting National Map Accuracy Standards (NMAS) for one-inch-equals-100-foot-scale mapping. The cadastral features (subject to possible errors and omissions) can be considered to be positionally accurate to within 3.3 feet of their true position on the ground for all features included as part of the cadastral basemap fabric.

## Assessment/Tax Roll Data

### Layer Status

Milwaukee County utilizes GCS Land Records software for the collection and organization of the taxroll and tax billing information. GCS Software is a company that provides land record management to our local municipalities they provide both real estate and personal property that serves as the basis to help calculate property information and provide property taxes and assessments data.

### Custodian

Regarding assessment information in Milwaukee County, each community is responsible for storage and retrieval of their tax roll information through their own Assessors Office; the procedure may vary per office.

### Maintenance

Each community in Milwaukee County is responsible for editing and maintaining their own tax assessment information through their own Assessors Office; the procedure may vary per office. In the suburbs, the Milwaukee County Register of Deeds Tax Listing section assists the Assessor's Offices in preparing tax roll descriptions and maintaining ownership records.

### Standards

Act 20 Attributes Required by s. 59.72(2)(a)	Field Name(s) in County Land Info System	Notes on Data or Exceptions to DOR Standard
Assessed value of land	LANDVALUE	
Assessed value of improvements	IMPVALUE	
Total assessed value	ASSESSEDVALUE	
Class of property, as specified in s. 70.32 (2)(a)	CLASS	
Estimated fair market value	FAIR_MKT_VAL	
Total property tax	GROSS_TAX	
Any zoning information maintained by the county		Milwaukee County does not maintain zoning info
Any property address information maintained by the county	OWNERADDR	
Any acreage information maintained by the county	ACRES	Incomplete – Milwaukee does not maintain acres

## Non-Assessment/Tax Information Tied to Parcels

e.g., permits, easements, non-metallic mining, brownfields, restrictive covenants

### Layer Status

N/A

## ROD Real Estate Document Indexing and Imaging

### Status

- Grantor/Grantee Index.** Milwaukee County Register of Deeds Office started a Grantor/Grantee index in 1839. The names were first written in a ledger that tracked the names of the parties transferring the property and recording information such as Volume & Page and date of the document. The manual process was maintained until February 1, 1988 when it was replaced by a Land Records Management computer system.
- Tract Index.** Milwaukee County Register of Deeds Office created a Tract Index system January 1, 1876. The tract index is based on the Public Land Survey system, which indexes documents by Quarter Section, Section, Town and Range. In addition, they maintain a tract index for Subdivisions. The Subdivision index includes the Subdivision name, blocks, and lots. Examples of documents that are being tracked include Warranty Deeds, Quit Claim Deeds, Mortgagees, Plats, Certified Survey Map, Government Liens, Easements, etc.

- **Imaging.** Milwaukee County Register of Deeds office started imaging recorded documents January 1, 2000 in their Land Records Management computer system. On March 1, 2010, Subdivision Plats, ¼ Section maps, Milwaukee Block maps, Indexes, were also scanned and entered into the computer system. The ROD continues to add historical document back to 1910.

### **Custodian**

County Register of Deeds

### **Maintenance**

The Milwaukee County Register of deeds continues to maintain the Grantor/Grantee Index and the Tract Index in a Land Records Management computer system and the currency of the indexes usually runs about 2 week behind the recording date. As well, the Register of Deeds Office continues to make great strides in improving the efficiency of the computer-based system by adding scanned historical documents which are back-indexed and verified.

### **Standards**

- s. 59.43, Wis. Stats. Register of deeds; duties, fees, deputies.
- ch. 706, Wis. Stats. Conveyances of real property; Recording; Titles.

## **LiDAR and Other Elevation Data**

### **LiDAR**

#### **Layer Status**

The 2015 LiDAR capture is in progress and expected to be complete by early 2016. 2010 LiDAR products are currently available.

#### **Custodian**

Milwaukee County/MCAMLIS

#### **Maintenance**

In general, the MCLIO plans to acquire updated LiDAR data every 5 years.

#### **Standards**

The LiDAR flight captured by Quantum Spatial in 2010 had a specification of a QL2 level or 2 points per meter.

### **LiDAR Derivatives**

e.g., terrain, contours, digital elevation models, etc.

#### **Layer Status**

The following 2010 LiDAR derivatives are available for download from the MCLIO website:

- Digital Elevation Model (DEM), Smoothed DEM, Hillshaded DEM
- Digital Surface Model, Hillshaded Digital Surface Model, Height Above Ground Digital Surface Model, Shaded LiDAR Digital Surface Model
- Slope Model in Percent Rise, Slope Model in Degrees
- LiDAR Return Intensity

#### **Custodian**

Milwaukee County/MCAMLIS

#### **Maintenance**

MCLIO is considering the production of LiDAR-derivatives in-house upon completion and delivery of the 2015 capture.

## Standards

The LiDAR flight captured by Quantum Spatial in 2010 had a specification of a QL2 level or 2 points per meter.

## Orthoimagery

### Orthoimagery

#### Layer Status

Pictometry International Inc. completed 3-inch resolution image captured between March 16-24, 2015, updating the most-recent 2013 flights. Individual tiles are available on Pictometry Online, aerial triangulation and orthorectification are complete, and the reviewed imagery was delivered at the end of September 2015. Both dynamic and cached map services are available for viewing from the MCAMLIS interactive mapping website, and can be consumed via REST protocol.

Milwaukee County did not participate in WROC 2015.

#### Custodian

Milwaukee County/MCAMLIS

#### Maintenance

In general, the MCAMLIS program has acquired new orthophotography every 5 years beginning in 1995, but has begun increasing the update frequency to every 2 years.

#### Standards

Standards are coordinated by SEWRPC and the LIO of adjoining counties. The MCAMLIS committee approves the aerials.

### Historic Orthoimagery

#### Layer Status

MCAMLIS staff had obtained variously dated un-rectified or poorly rectified digital datasets from UW Milwaukee AGS Library and UW Madison, Arthur Robinson Library. When necessary, these data were geo-rectified, mosaicked, and published as map and image services, with the final imagery completed in October 2015. Imagery from the following years is now available with full or partial-county coverage: 1928, 1937, 1951, 1956, 1958, 1961, 1963, 1966, 1967, 1970, 1975, 1976, 1980, 1985, 1995, 2000, 2004, 2005, 2007, 2008, 2009, 2010, 2013

#### Custodian

Milwaukee County/MCAMLIS

#### Maintenance

The MCLIO will rectify and mosaic historical imagery on an as-needed basis.

#### Standards

Standards vary with respect to the time the imagery was acquired and the technology available at that time.

## Address Points and Street Centerlines

### Address Point Data

#### Layer Status

The MCAMLIS Address Database program work effort is maintained as the MCAMLIS Enterprise Address System whereby street, parcel, building and unit addresses are fully integrated across the entire county. This project is currently in a maintenance cycle and published quarterly in concert with the cadaster update.

## **Custodian**

Milwaukee County/MCAMLIS

## **Maintenance**

All cadastral data is updated as changes occur, and released on a quarterly schedule. The address are updated based on information from the municipalities or recorded information in the Register of Deeds Office.

## **Standards**

The MCAMLIS Cadastral datasets were compiled to a digital framework meeting National Map Accuracy Standards (NMAS) for one-inch-equals-100-feet-scale mapping.

## **Building Footprints**

### **Layer Status**

Building footprint data is available as part of the MCAMLIS Planimetric datasets, as a stand-alone feature layer, or as part of the MCAMLIS Interactive Map.

## **Custodian**

Milwaukee County/MCAMLIS

## **Maintenance**

The exception to quarterly cadastral updates, building footprints are updated annually or when the planimetric datasets have been updated/replaced.

## **Standards**

The MCAMLIS Planimetric datasets were compiled to a digital framework meeting National Map Accuracy Standards (NMAS) for one-inch-equals-100-feet-scale mapping.

## **Street Centerlines**

### **Layer Status**

Street Centerlines are maintained as part of the MCAMLIS Topographic datasets. Special care is taken to update areas of recent construction and new development.

## **Custodian**

Milwaukee County/MCAMLIS

## **Maintenance**

The street centerlines are updated based on information from the municipalities or recorded information in the Register of Deeds Office.

## **Standards**

The MCAMLIS Topographic datasets were compiled to a digital framework meeting National Map Accuracy Standards (NMAS) for one-inch-equals-100-feet-scale mapping.

## **Rights of Way**

### **Layer Status**

Rights of Way are maintained as part of the MCAMLIS Cadastral dataset. Special care is taken to update areas of recent construction and new development.

## **Custodian**

Milwaukee County/MCAMLIS

## Maintenance

All Right of Way changes occur as a result of a deed being recorded in the Milwaukee County Register of Deeds Office.

## Standards

The MCAMLIS Cadastral datasets were compiled to a digital framework meeting National Map Accuracy Standards (NMAS) for one-inch-equals-100-feet-scale mapping.

## Trails

e.g., recreational trails

### Layer Status

N/A

## Land Use

### Current Land Use

#### Layer Status

MCAMLIS utilizes polygonal land use data as provided by the Southeastern Wisconsin Regional Planning Commission (SEWRPC). The polygons are digitized from aerial photography according to SEWRPC's land use classification system. The polygon features are current for the year 2010.

#### Custodian

Southeastern Wisconsin Regional Planning Commission, Land Use Division and GIS Division

#### Maintenance

The land use polygon features are digitized from aerial photography and are expected to be updated every 5 years.

#### Standards

SEWRPC, designated as the official area-wide regional planning agency, abides by s. 66.1001, Wis. Stats. Static Land Use Plan maps are available from SEWRPC's website.

### Future Land Use

#### Layer Status

Milwaukee County does not maintain in-house data or reports for future land-use; rather, SEWRPC has the responsibility of developing and maintaining land use plans. Currently, SEWRPC is working on production of the 2050 Regional Land Use and Transportation Plan, which will update the current 2035 plan.

#### Custodian

SEWRPC

#### Maintenance

SEWRPC uses decadal census data to prepare population and economic forecasts, which are used to update, reevaluate, and extend the current land use and transportation plan. The 2000 census data was used to prepare and adopt the 2035 plan in 2006. The 2010 census data is now being used to prepare the updated 2050 plan. Thus, maintenance to the plan is likely to occur every 10 years.

#### Standards

SEWRPC, designated as the official area-wide regional planning agency, abides by s. 66.1001, Wis. Stats. Static Land Use Plan maps are available from SEWRPC's website.

## Zoning

### County General Zoning

#### Layer Status

N/A - Milwaukee County does not maintain zoning data for its municipalities.

### County Special Purpose Zoning

e.g., shoreland, farmland preservation, floodplain, and airport protection

#### Layer Status

N/A

### Municipal Zoning Information Maintained by the County

e.g., town, city and village, shoreland, floodplain, airport protection, extra-territorial, temporary zoning for annexed territory, and/or zoning pursuant to a cooperative plan

#### Layer Status

N/A

## Administrative Boundaries

### Civil Division Boundaries

e.g., towns, city, villages, etc.

#### Layer Status

The MCAMLIS cadastral data captures county and minor civil division boundaries.

#### Custodian

Milwaukee County/MCAMLIS

#### Maintenance

Very few changes occur to Administrative Boundaries in Milwaukee County but they are all based on recorded documents in the Register of Deeds Office and/or filed in the Office of the Secretary of State.

#### Standards

The MCAMLIS Cadastral datasets were compiled to a digital framework meeting National Map Accuracy Standards (NMAS) for one-inch-equals-100-feet-scale mapping

### School Districts

#### Layer Status

Milwaukee County school districts are available as polygon boundaries. Via the Milwaukee County tax roll system, individual parcels can be linked to school district tax codes.

#### Custodian

Milwaukee County/MCAMLIS

#### Maintenance

School district boundaries are updated on an as-needed basis.

#### Standards

Stand-alone layers that are not part of the MCAMLIS Topographic, Planimetric, or Cadastral datasets strive to meet National Map Accuracy Standards (NMAS) for one-inch-equals-100-feet-scale mapping.

### Election Boundaries

e.g., voting districts, precincts, wards, voting places, etc.

#### Layer Status

Milwaukee County voting districts (VTD) are available as polygon boundaries with the ward/district name and ID.

### **Custodian**

Milwaukee County/MCAMLIS on behalf of Milwaukee County Clerk

### **Maintenance**

Individual municipalities must inform the County Clerk of ward boundary changes twice a year, and Milwaukee County/MCAMLIS supports the integration of this data. Changes to the Ward maps are based on information provided from the municipality, and in the future, the Clerk's Office.

### **Standards**

Stand-alone layers that are not part of the MCAMLIS Topographic, Planimetric, or Cadastral datasets strive to meet National Map Accuracy Standards (NMAS) for one-inch-equals-100-feet-scale mapping.

## **Utility Districts**

e.g., water, sanitary, electric, etc.

### **Layer Status**

N/A

## **Public Safety**

e.g., fire/police districts, emergency service districts, 911 call center service areas, healthcare facilities

### **Layer Status**

N/A

## **Lake Districts**

### **Layer Status**

N/A

## **Native American Lands**

### **Layer Status**

N/A

## **Other Layers**

### **Hydrography Maintained by County or Value-Added**

e.g., hydrography maintained separately from DNR or value-added, such as adjusted to orthos

### **Layer Status**

N/A

## **Cell Phone Towers**

### **Layer Status**

Communication towers are represented as points, lines, and polygons within the MCAMLIS Utilities Topographic dataset.

### **Custodian**

Milwaukee County/MCAMLIS

### **Maintenance**

Updates are done with the planimetric dataset changes and published at that time.

### **Standards**

The MCAMLIS Cadastral datasets were compiled to a digital framework meeting National Map Accuracy Standards (NMAS) for one-inch-equals-100-feet-scale mapping.

## **Bridges and Culverts**

### **Layer Status**

Bridges are represented as points, lines, and polygons (as well as text annotation) in the MCAMLIS Facilities Planimetric dataset. Culverts are available as lines representing the underground location or as points representing the ends within the MCAMLIS Hydrography Topographic dataset.

### **Custodian**

Milwaukee County/MCAMLIS

### **Maintenance**

Updates are done with the planimetric dataset changes and published at that time.

### **Standards**

The MCAMLIS Planimetric datasets were compiled to a digital framework meeting National Map Accuracy Standards (NMAS) for one-inch-equals-100-feet-scale mapping.

# 3 LAND INFORMATION SYSTEM

This chapter describes the design of the Milwaukee County land information system, with focus on how data related to land features and data describing land rights are integrated and made publicly available.

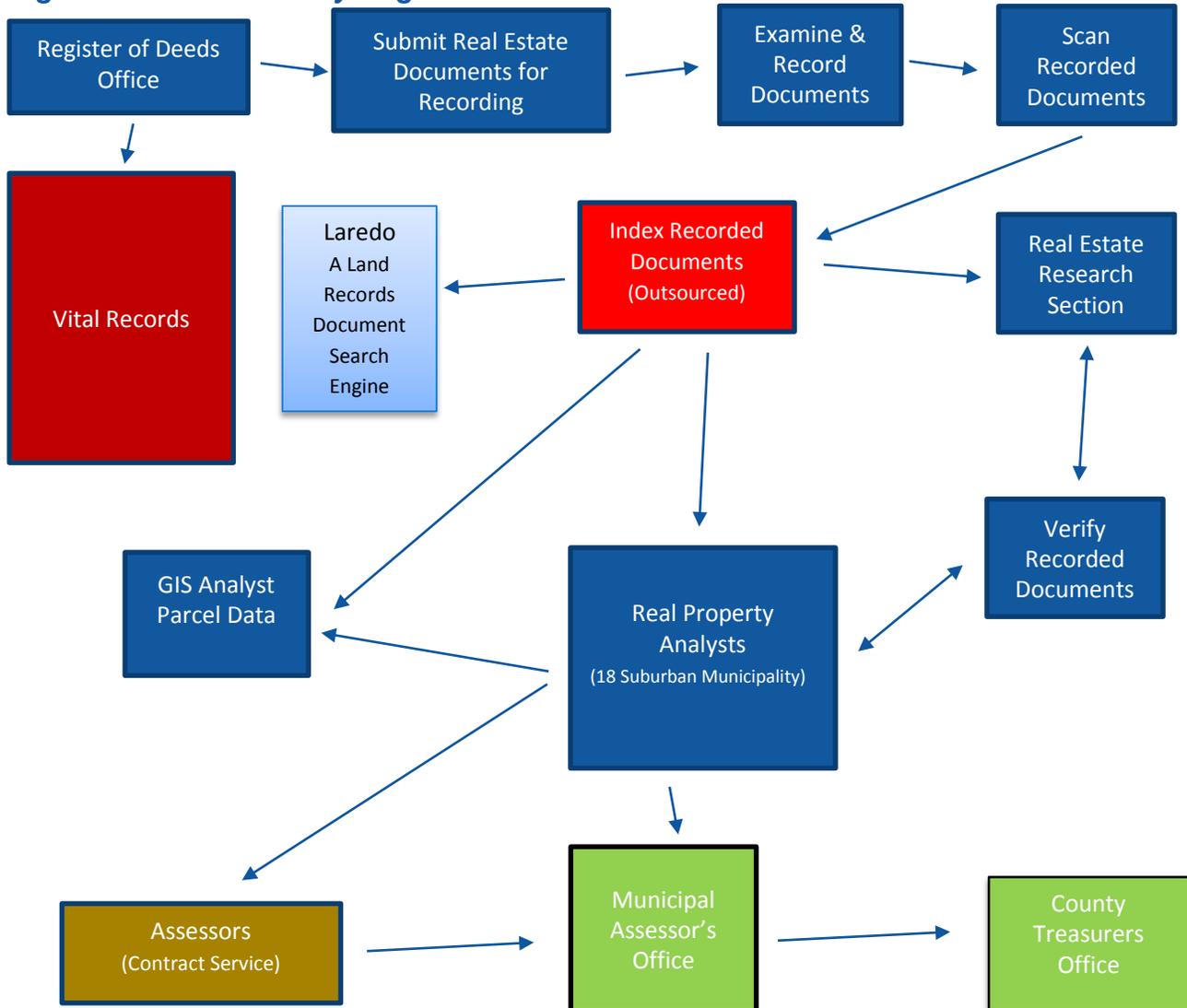
## Current Land Information System

### County Parcel Data Workflow Diagram

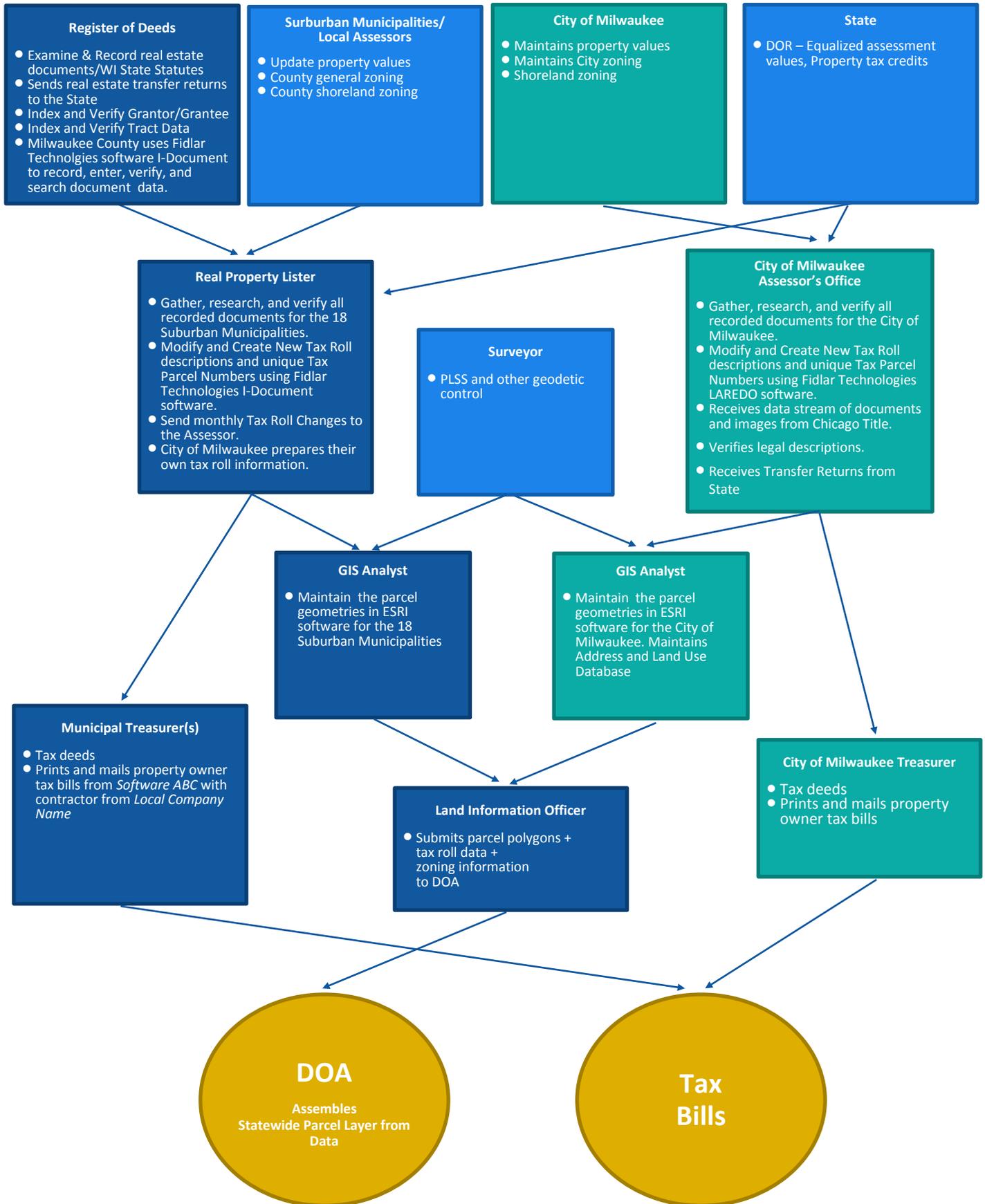
The Milwaukee County Register of Deeds uses the software from Fidlar Technologies called I-Document (I-Doc.) to process all recorded Real Estate Documents. I-Doc is a Land Records Management Software used to record, enter data, verify, and search information for all recorded documents.

Milwaukee County also use Laredo and Tapestry from Fidlar Technologies for Land Records search engines for the public use to search real estate documents.

**Fig 1. Milwaukee County Register of Deeds Real Estate Documents Process**



**Fig 2. Milwaukee County Parcel + Tax Roll + Zoning Workflow**



## Technology Architecture and Database Design

The Milwaukee County Land Information Office has a single instance of ArcGIS Server that serves the land information data to internal and external clients. Due to the increased traffic and load to the current configuration, Milwaukee County is moving to a second ArcGIS Server instance that can handle the growing needs.

## Metadata and Data Dictionary Practices

The Land Information Office generates metadata and data dictionaries to the core datasets that the office maintains. The Cadastral and Topographic datasets have current metadata and data dictionaries. The Land Information Office also acquires updated metadata when new raster products are published. This includes aerial photography as well as LiDAR datasets. A complete layer list is also available to catalog the long list of data that is published. This is available in a searchable format and static version.

## Municipal Data Integration Process

The Land Information Office Aggregates the tax roll data through GCS and aggregates the City of Milwaukee cadastral dataset with the suburban communities of Milwaukee County. The Register of Deeds maintains the cadastral information outside of the City of Milwaukee.

The MCAMLIS program seeks to achieve cooperation between the various levels, units and agencies of government and private utilities operating within Milwaukee County. Indeed, the MCAMLIS program is founded in a formal cooperative arrangement between the County, the Milwaukee Metropolitan Sewerage District, and two private utilities operating within the County. That arrangement is expanded through membership of the MCAMLIS Steering Committee to include the City of Milwaukee and the 18 suburban units of government within Milwaukee County. Milwaukee County staffs the MCAMLIS Steering Committee. This arrangement ensures the use of sound and mutually acceptable technical standards and procedures in the MCAMLIS program, the dissemination of MCAMLIS data to municipal and utility users, and the scheduling of work elements in accordance with the perceived needs of the County agencies, Milwaukee Metropolitan Sewerage District, City of Milwaukee, and the suburban cities and villages within the County.

The past and present institutional structure has worked well in the creation of the foundational elements for the Milwaukee County automated mapping and land information system, and in the initial use of MCAMLIS data over a period of more than two decades.

## Public Access and Website Information

Type of Website	Software or App	3 <sup>rd</sup> Party or Contractor	URL	Update Frequency/ Cycle
GIS web mapping site	<i>esri/ArcGIS Latitude Geographics/Geocortex</i>	LIO	<a href="http://lio.milwaukeecounty.org/mcamlis/">http://lio.milwaukeecounty.org/mcamlis/</a>	Quarterly
ROD land records search tools	<i>Fidlar/Tapestry</i>	<i>Fidlar</i>	<a href="https://tapestry.fidlar.com/Tapestry2/Search.aspx">https://tapestry.fidlar.com/Tapestry2/Search.aspx</a>	Daily
RPL or tax parcel site	<i>GCS/GCSWebPortal</i>	GCS	<a href="http://gcswebportal.milwaukeecounty.org/GCSWebPortal/Search.aspx">http://gcswebportal.milwaukeecounty.org/GCSWebPortal/Search.aspx</a>	As records are updated
Zoning information (PDF or WebApp format)	<i>Software/app name</i>	NA	Zoning Information is not maintained by Milwaukee County	
PLSS tie sheets	<i>HTML/website</i>	County Surveyor	<a href="http://www.sewrpc.org/SEWRPC/DataResources/RegionalLandInfo/SurveyDocuments.htm">http://www.sewrpc.org/SEWRPC/DataResources/RegionalLandInfo/SurveyDocuments.htm</a>	As records are updated

## Data Sharing

### Data Availability to Public

Milwaukee County currently shares all publishable data via multiple methods. Data can be consumed via REST service through an on premise ArcGIS Server. Cadastral and Planimetric data covering individual areas of interest (or AOIs, such as PLSS sections) are available through an automated download process utilizing ArcGIS Online. Most historical imagery, raw LiDAR data, and larger compiled datasets are also available for download via a Dropbox account.

## Data Sharing Restrictions

On March 22<sup>nd</sup>, 2011, the Milwaukee County Automated Mapping and Land Information System (MCAMLIS) Steering Committee approved staff recommendations to implement recommended changes to previously existing MCAMLIS Copyright and Data Distribution Policies including the adoption of:

- a revised Copyright License Agreement – executed on June 8, 2009 dissolving Utility copyright interests and granting Copyright Ownership of digital materials in digital form to the MCAMLIS Steering Committee,
- a revised MCAMLIS Requisition and Distribution Policy, and;
- a revised License Agreement Pertaining To The Non-Commercial Use Of Copyrighted Digital Base Mapping Materials.

In September 2015, MCAMLIS officially discontinued the enforcement of the copyright of the Cadastral and Topographic datasets of Milwaukee County.

## Government-to-Government Data Sharing

MCAMLIS data is available via service and download.

## Training and Education

The MCLIO performs monthly training sessions for the users via a web sharing service. A Metro Milwaukee GIS Users Group (MMGUG) was also formed to initiate collaboration between GIS users and like professionals, educators, private contractors, and the public. Participation for MMGUG is usually around 70+ attendees and is held on a quarterly basis.

# 4 CURRENT & FUTURE PROJECTS

In 2013, The Land Information Office authorized a needs assessment and produced a five-year plan. In March 2015, that plan was updated to include fiscal year 2019. The LIO is currently implementing fiscal year 2015 and 2016 projects.

## Current Projects

### #1: Improve the MCLIO Interactive Mapping Service

#### Project Description/Goal

This project will migrate and enhance the MCLIO Interactive Map Viewer. The current website viewing application(s) uses plug-in technology that is being deprecated and will soon be unsupported (e.g., Google has declared that all plug-ins will not load in the Chrome browser as of September 2015). ESRI has also declared that they have stopped development and will discontinue support as of June of 2016.

#### Objectives/Measure of Success

- Identifying new functionality and implementation
- Updating the GeoCortex user guide with MCLIO web viewer specifics. For example, how to access certain data (e.g., CSMs) and functions (e.g., Pictometry oblique imagery)
- Developing and executing training materials (online, self-paced, group, etc.)
- Marketing/support of the new viewer

#### Project Timeframes

Milestone	Duration	Date
Project #1 start	–	Nov 1, 2015
Deploy HTML5 Viewer	2 months	Jan 1, 2016
Refine viewer per comments	2 months	Mar 1, 2016
Deploy viewer	2 months	May 1, 2016
Project Complete	–	June 31, 2016

#### Responsible Parties

Sr. GIS Analyst (25%), GIS Analyst (25%)

### #2: Deploy Mobile Property Locator Application

#### Project Description/Goal

The mobile property mapping application will provide organizations with the ability to view property ownership information in the field via a mobile application for phone or tablet. Core capabilities include the ability to retrieve the property and owner information at or near the user's current location, or to retrieve property information based on a user-supplied address. In addition, this task will develop and deploy feature data services for parcels.

#### Objectives/Measure of Success

- To have the MCAMLIS website available on mobile phones and tablets
- To have a Parcel viewer to easily retrieve property information

#### Project Timeframes

Milestone	Duration	Date
Project #2 start	–	Nov 1, 2015

Deploy beta parcel viewer	2 months	Jan 1, 2016
Refine viewer per comments	2 months	Mar 1, 2016
Deploy viewer	2 months	May 1, 2016
Project Complete	–	June 30 2016

### Responsible Parties

Sr. GIS Analyst (25%), GIS Analyst (25%)

## Future Projects

### #3: Prototype Mobile Applications Using Services

#### Project Description/Goal

This task will provide MCAMLIS staff experience with mobile applications and application of MCAMLIS map and feature services deployed in such applications. In particular, MCAMLIS will prototype asset viewer, field data collector, and property locator mobile applications. This task will most likely incorporate feature and map data services from the preceding mobile tasks.

#### Objectives/Measure of Success

- Prototypes of simple mobile applications, with MCAMLIS map and feature services: asset viewer, field data collector, and preliminary work on the property viewer
- Documented lessons learned for MCAMLIS parcel feature data services, MCAMLIS property locator, and online general lessons learned for MCAMLIS Partners
- Confirmation of Partners who will apply, at the least, the parcel feature data services and the MCAMLIS property locator application

#### Project Timeframes

Milestone	Duration	Date
Project #3 start	–	May 1, 2016
Prototype mobile services	2 months	May 1, 2016
Refine mobile services	3 months	July 1, 2016
Document processes	1 months	Oct 1, 2016
Project Complete		Nov 1, 2016

### Responsible Parties

Sr. GIS Analyst (25%), GIS Analyst (25%), Contractor Services (2 months)

### #4: Implement the MCAMLIS Portal

#### Project Description/Goal

This task would implement the MCAMLIS Partner Portal solution. This Portal would be a single location where Partners would interface with MCAMLIS. It would provide Partners with access to and use of MCAMLIS data and services, as well as a location to publish their business data. In addition, the portal would offer a location for Partner collaboration.

#### Objectives/Measure of Success

- Implementation and roll-out of portal solution
- Documentation
- Initial primary support of portal solution

#### Project Timeframes

Milestone	Duration	Date
Project #4 start	–	June 1, 2016
Deploy Portal	2 months	June 1, 2016
Refine Portal per comments	2 months	Aug 1, 2016
Document Portal project	2 months	Oct 1, 2016
Project Complete	–	Nov 30, 2016

## Responsible Parties

GIS Analyst (25%)

## #5: Make MCAMLIS Vector Data Improvements

### Project Description/Goal

This task will update the current topographic dataset. The topographic dataset has been polygonalized as of 2010, with a major transportation update in 2013. This project will bring the currency of the dataset to 2015. The project will use the 2015 aerial photography as well as the 2015 LiDAR elevation dataset to process the change control from 2010. An update selection area will be produced based on differences observed from comparing the 2015 to the 2010 LiDAR elevation data. After the changes have been identified, the discrete area will be updated and incorporated into the current environment.

### Objectives/Measure of Success

- Update the 2015 Topographic Polygonalized Dataset
- Incorporate the updated data to the current datasets, services, and caches

### Project Timeframes

Milestone	Duration	Date
Project #5 start	–	Feb 1, 2016
Change Detection	2 months	Feb 1, 2016
RFP for defined area of update	2 months	Apr 1, 2016
Contract Selection period	1 month	May 1, 2016
Project updates	6 months	Nov 1, 2016
Project Complete	–	Dec 31, 2016

## Responsible Parties

Sr. GIS Analyst (25%), GIS Analyst (25%), Contractor Services (6 months)

## #6: Improve Property Record Currency

### Project Description/Goal

This task will improve the processes that collect, process, and publish property record data. The result will be access to more current property ownership records and associated parcel data. This includes working with GCS, which provides a property record service to all but three municipalities and villages in the county, and individually with the municipalities and villages that do not use GCS. The initiative would include communicating the details of the information by posting the currency of the property record information to the MCAMLIS website.

### Objectives/Measure of Success

Improved and enhanced automation of property and parcel data integration and publishing processes. Wisconsin State Statutes require that no later than June 30, 2017, the County board shall post on the Internet, in a searchable format determined by the department of administration, the following information related to individual land parcels:

1. Property tax assessment data as provided to the county by municipalities, including the assessed value of land, the assessed value of improvements, the total assessed value, the class of property, as specified in s. 70.32 (2) (a), the estimated fair market value, and the total property tax
2. Any zoning information maintained by the county
3. Any property address information maintained by the county
4. Any acreage information maintained by the county
  - An updated version of property and parcel data and/or data services
  - Improved and updated parcel and property metadata

## Project Timeframes

Milestone	Duration	Date
Project #6 start	–	Feb 1, 2016
Create project scope and contract	1 month	Feb 1, 2016
Develop infrastructure and procedure	2 months	Apr 1, 2016
Update Automation processes and reporting methods	1 months	May 1, 2016
Conduct training and preform educational workshops on project	2 months	June 1, 2016
Project Complete	–	Aug 1, 2016

## Responsible Parties

Sr. GIS Analyst (25%), Contractor Services (2 months)

## #7: Support New Datum Requirements

### Project Description/Goal

The current NAD 27 datum standard limits the interoperability of certain web services and use of MCAMLIS data in certain applications. This task will design and implement automated transformation tools so MCAMLIS Partners and other stakeholders can easily integrate MCAMLIS data with other data that is available in new datums. This task will leverage the work accomplished in the SEWPRC studies on the multiple datum issue.

### Objectives/Measure of Success

- NAD 27 datum > New Datum transformation tools
- A deployed version of key MCAMLIS data and map/data services in the new datum
- Documented transformation procedures to create new map/data services

## Project Timeframes

Milestone	Duration	Date
Project #7 start	–	Jan 1, 2019
Develop transformation methods and process	1 month	Jan 1, 2019
Perform data transformations	2 months	Feb 1, 2019
Document processes and procedure	1 month	Apr 1, 2019
Project Complete	–	May 1, 2019

## Responsible Parties

GIS Analyst (25%)

## #8: Make MCAMLIS Non-Vector Data Improvements

### Project Description/Goal

This task will improve data management practices technologies that get MCAMLIS **non-vector** reference data into the MCAMLIS data repository and prepare it for efficient access. MCAMLIS non-vector reference data refers to the following: georeferenced imagery (Imagery: Ortho, Oblique, LiDAR, Caches), documents and

photos, and potentially, video and audio. This does not include Partner-shared or Partner-hosted data, and does not include MCAMLIS vector reference data.

## Objectives/Measure of Success

- 2017-2018 Orthophotography Acquisition

## Project Timeframes

Milestone	Duration	Date
Project #8 start	–	Oct 1, 2017
Develop contract to acquire Orthophotography	3 months	Oct 1, 2017
Initiate contract for acquisition	10 months	Jan 1, 2018
Quality Control and	1 month	Oct 1, 2018
Project Complete	–	Nov 1, 2018

## Responsible Parties

GIS Analyst (25%), Contractor Services (10 months)

## #9: Implement Cloud-Based GIS for MCAMLIS

### Project Description/Goal

This task would provide a pathway toward MCAMLIS having a cloud-based GIS presence, potentially using ArcGIS Online (AGOL). However, the environment may change by the time this task is executed.

A cloud-based GIS presence will offer a collaborative content management system for maps, applications, and data. A cloud-based GIS capability will be an important technology that MCAMLIS can leverage to provide Partners and public users with access to data and services through mobile, web, and desktop applications in the future. This technology would be a means for accessing MCAMLIS-hosted data and services in addition to the MCLIO viewer.

This task includes an assessment of the proper implementation technology choices available, including AGOL, and includes a determination of initial and operating costs associated with a MCAMLIS cloud-based presence that Partners can access. A Go/No-Go determination will be made based on this assessment and then the solution will be acquired and implemented.

## Objectives/Measure of Success

- Partners will see benefit in researching a cloud-based GIS solution
- Increase usage of MCAMLIS data
- Allow non-programmers to deploy and share web maps containing their own GIS data
- Allow mapping applications to be shared with a group or the public through a web browser, smart phone applications, social media, or emails
- Embed maps into websites

## Project Timeframes

Milestone	Duration	Date
Project #9 start		Jan 1, 2018
Prototype cloud based GIS solutions	3 months	Jan 1, 2018
Refine cloud based GIS solutions	3 months	Apr 1, 2018
Document processes	1 months	July 1, 2018
Project Complete	–	Aug 1, 2018

## Responsible Parties

Sr. GIS Analyst (25%), GIS Analyst (25%)

## #10: Survey Control Modernization - Datum Update and Conversion

### Project Description/Goal

The objective to this project is to update and reestablish the current accepted datum in Milwaukee County. The current datum for the Public Land Survey System (PLSS) is North American Datum of 1927 horizontal and National Geodetic Vertical of 1929. This project will establish the datum North American Datum 1983/2011 horizontal and North American Datum of 1988(2012) vertical. This would meet the requirements of Benchmark 4 within the Strategic Grant Initiative from the State of Wisconsin.

### Objectives/Measure of Success

- NAD 27 datum > NAD 83 Horizontal Datum
- NGVD 29 datum > NAVD 88 Vertical Datum
- Updates Control Survey Summary Diagram (CSSD) sheets
- Revised Record of USPLSS Control Station Documents

### Project Timeframes

Milestone	Duration	Date
Project #10 start	–	June 1, 2016
Develop project scope and contract	6 months	June 1, 2016
Develop transformation methods and process	6 months	June 1, 2016
Perform monument occupation	2 years	January 1, 2017
Perform survey control data transformation	6 month	January 1, 2019
Document processes and procedure	6 month	June 1, 2019
Project Complete	–	Dec 31, 2019

Note: This project will be completed for the entire Southeastern Wisconsin Regional Planning Commission area. The estimated project timeline will be 3 years to complete. The estimated timeline above is an estimated time that it would take to complete Milwaukee County.

## Responsible Parties

GIS Analyst (25%), GIS Manager (25%), Contractor Services (3 years)

## #11: Plat of Survey Parcel Index Maintenance

### Project Description/Goal

Every survey completed by a registered surveyor must be submitted to the County Surveyor. The County Surveyor then collects these recorded plats. Milwaukee County acquires these hard copy submissions and has them scanned into digital format. After the scanning has been completed, the plats are geocoded and placed into an application that is published to the internet. Milwaukee County indexes the published plats to be retrieved from the Milwaukee County GIS interactive mapping site. A viewer is able to search for plats of survey that have been completed within Milwaukee County and retrieve a digital copy for display and printing.

### Objectives/Measure of Success

- Scan Plats of Survey acquired from the County Surveyor which in Milwaukee County is SEWRPC
- Index and geocode the Plats of Survey
- Update the Interactive Mapping Site for publication

### Project Timeframes

Milestone	Duration	Date
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Project #11 start		Jan 1, 2016
Scan Plats of Survey	2-3 weeks per year	Jan 1, 2018
Index and Geocode Plats	1 month per year	Apr 1, 2018
Update Mapping site	Neg.	July 1, 2018
Project Complete	–	December 31, 2018

## Responsible Parties

GIS Analyst (10%), Contractor Services

## #12: Enterprise Address System Maintenance

### Project Description/Goal

The enterprise address system program effort has continued to the present and is now maintained as the MCAMLIS Enterprise Address System whereby street, parcel, building and unit addresses are fully integrated across the entire county. Maintenance automation tools are utilized to manage the database as address component updates are required and maintenance is performed.

### Objectives/Measure of Success

- Maintain integrity between address components
- Alter automation tools and procedures to adapt to additional information
- Continue Quality Control on individual address records

## Project Timeframes

Milestone	Duration	Date
Project #12 start		Jan 1, 2016
Control integrity between components	2-3 weeks per year	Jan 1, 2018
Automation tool development	2-3 weeks per year	Apr 1, 2018
QC of Data	2 months per year	July 1, 2018
Project Complete	–	December 31, 2018

## Responsible Parties

GIS Analyst (10%), SR GIS Analyst (10%)

## #13: Street Centerline Maintenance

### Project Description/Goal

A maintenance cycle is on place for the enterprise street centerline dataset. The centerlines are maintained for routing purposes as well as mapping purposes. The data is consumed by the Milwaukee County Sherriff's Office as well other municipalities located within Milwaukee County. A quarterly update of the discrete address range and spatial representation is completed.

### Objectives/Measure of Success

- Update Street centerlines
- Update data views and data schema

## Project Timeframes

Milestone	Duration	Date
Project #13 start		Jan 1, 2016

Update street centerline	2-3 weeks per year	Jan 1, 2018
Update Centerline Schema	Neg.	July 1, 2018
Project Complete	–	December 31, 2018

## Responsible Parties

GIS Analyst (10%), SR GIS Analyst (10%)

## Estimated Budget Information

Project	Item	Unit Cost	Cost	Total Project Cost
1. HTML5 GIS Website	a. GIS staff	25% of \$248,000	62,000	–
	b. Contractor Services	\$35,000	35,000	97,000
2. Mobile parcel viewer	a. GIS staff	25% of \$248,000	62,000	–
	b. Contractor Services	\$13,000	13,000	75,000
3. Prototype Mobile Services	a. GIS staff	25% of \$248,000	62,000	–
	b. Contractor Services	\$20,000	20,000	82,000
4. Implement the MCAMLIS Portal	a. GIS staff	25% of \$112,000	28,000	28,000
5. Make MCAMLIS Vector Data Improvements	a. GIS staff	50% of \$248,000	122,000	–
	b. Contractor Services	\$100,000	100,000	222,000
6. Improve Property Record Currency	a. GIS staff	25% of \$136,000	34,000	–
	b. Contractor Services	\$50,000	50,000	84,000
7. Support New Datum Requirements	a. GIS staff	25% of \$112,000	28,000	28,000
8. Make MCAMLIS Non-Vector Data Improvements	a. GIS staff	25% of \$112,000	28,000	–
	b. Contractor Services	\$145,000	145,000	173,000
9. Implement Cloud Based GIS for MCAMLIS	a. GIS staff	25% of \$248,000	62,000	62,000
10. Survey Control Modernization	a. GIS staff	25% of \$264,000	66,000	–
	b. Contractor Services	\$182,719	182,719	248,719
11. Plat of Survey Indexing	a. GIS staff	10% of \$112,000	11,200	–
	b. Contractor Services	\$2,000	\$2,000	13,200
12. Enterprise Addressing System Maintenance	a. GIS staff	10% of \$248,000	24,800	24,800
13. Street Centerline Maintenance	a. GIS staff	10% of \$248,000	24,800	24,800
			<b>GRAND TOTAL</b>	<b>1,152,519</b>

Note. These estimates are provided for planning purposes only. Budget is subject to change.

## Project Plan to Achieve Searchable Format (Benchmarks 1 & 2)

### Project Description/Goal

#### How searchable format will be met

Milwaukee County will develop standardized and repeatable processes to convert and deliver data in a searchable format required by the statewide parcel initiative data model requirements outlined in Appendix A of the V1 Interim Report.

One notable exception is that some of the attributes outlined in Appendix F (Parcel Scheme) will not be included because Milwaukee County is fully incorporated and thus does not maintain any assessed, class, or tax information. Milwaukee County does incorporate these data fields when they are maintained at the Municipal level.

Milwaukee County is interested in pursuing a consolidated and consistent zoning dataset for the entire County area. Currently, Milwaukee County does not maintain zoning data but does host a few datasets from the municipalities within its borders. It is not a requirement for Milwaukee County maintain and submit a countywide zoning dataset but, it is in the best interest of the County to acquire the individual datasets, maintained at the municipal level, and aggregate that information into a seamless Countywide coverage.

### Objectives/Measure of Success

Milwaukee County is currently in compliance with Benchmark 1 and 2 of the Strategic Parcel Initiative.

## Project Plan for Parcel Completion (Benchmark 3)

### Objectives/Measure of Success

Milwaukee County is in compliance with Benchmark 3.

## Project Plan for PLSS (Benchmark 4)

### Project Description/Goal

#### Planned approach

Milwaukee County will undertake a project to convert all PLSS coordinates from NAD27/NGVD29 to NAD83/NAVD88. There are two methods available to perform the conversion of the horizontal datum. The first of these two methods is fully described in SEWRPC Memorandum Report No. 206; the second method is similarly described in Addendum SEWRPC to Memorandum Report No. 206. A single method is as a practical matter, available to perform the conversion of the vertical datum. This method is fully described in the Addendum to SEWRPC Memorandum No. 206.

The first method for conversion of the horizontal datum requires the establishment of base stations – approximately 12 such stations within Milwaukee County – for collecting static global positioning satellite data, the occupation with global positioning instrumentation linked to the base stations of all 1,065 PLSS corners within the County to obtain NAD83/2011 coordinate values, the subsequent adjustment of the resulting network, and the preparation of entirely new “Record of US Public Land Survey Control Station” dossier sheets for all 1,065 PLSS corners. The resulting adjusted control survey network would meet an accuracy standard of one part 50,000. The cost of implementing this method within the County is estimated at approximately \$155,000.

The second method for conversion of the horizontal datum would involve the occupation with global positioning system instrumentation of a limited number of corners – approximately 55 throughout the County – to obtain NAD83/2011 coordinate values, use of the recorded legacy control survey measurements to establish the coordinate positions of the remaining corners, and posting the new coordinate values on the “Record of US Public Land Survey Control Station” dossier sheet for each corner. This method would meet the accuracy standard of the legacy network namely, one part in 10,000. The costs of implementation of this method is estimated at approximately \$35,000.

The first method entails an implementation cost of approximately 5 times that of the second method with no offsetting benefit. The level of accuracy of the legacy control survey network of one part in 10,000 has served as a sound basis for the conduct of engineering surveys within the County for over 50 years. The legacy control survey network has provided the basis for the design, layout and construction of a large number of major public works projects over that time period. A higher level of accuracy is not required for the conduct of land surveys, State law requiring an accuracy of only one part in 3,000 for land surveys. Moreover, within the developed areas of Milwaukee County most land surveys utilize as points of beginning previously platted block corners without direct reference to the PLSS corners. Nor is a higher level of accuracy required to support the preparation of large scale topographic and cadastral maps and ortho photographs. Any increase in the accuracy of the control survey network attributable to use of the first method could not be readily

maintained over time since the remonumentation efforts required to maintain the system would require resurvey each time a new monument was set to replace an older one that had been damaged or destroyed. An important advantage of the second method is that it retains the relative position of the PLSS corners within the County, that is, it essentially maintains the lengths and bearings of the one-quarter section lines as determined in the legacy surveys. Thus continuity is important in the proper conduct of land surveys, and in maintaining the validity of the existing cadastral maps which comprise one of the foundational elements of the County land information system.

Implementation of the horizontal datum conversion would begin with the negotiation of an agreement between SEWRPC and MCAMLIS governing the conduct of the horizontal datum conversion work. The agreement would specify the use of the second method of conversion as set forth in the Addendum to SEWRPC Memorandum No. 206, project initiation and completion dates, the cost of the services to be provided, and the deliverables.

The conversion of the vertical datum is anticipated to be accomplished thru a collaborative effort involving all seven counties constituting the Southeastern Wisconsin Region as described in the Addendum to SEWRPC Memorandum Report 206. The estimated cost of the vertical datum conversion to Milwaukee County would approximate \$27,000. The vertical datum conversion as proposed would maintain the accuracy of the legacy bench mark elevations.

### Current status

100% of the 1,065 monuments in Milwaukee County have been remonumented.

- **100% - Survey-grade** – Coordinates collected under the direction of a professional land surveyor, in a coordinate system allowed by s. 236.18(2), and obtained by means, methods and equipment capable of repeatable 2 centimeter or better precision
- **0% - Sub-meter** – Accuracies of 1 meter or better
- **0% - Approximate** – Accuracies of within 5 meters or to coordinates derived from public records and other relevant information

### Goals

Survey grade quality coordinates in NAD83/NAVD88 for 100% of the monuments in Milwaukee County.

### Missing corner notes

- It is not known to Milwaukee County to have any missing corners.

### County boundary collaboration

- The update and migration to the NAD 83\88 platform is being conducted at a Regional Level.

## Objectives/Measure of Success

The objective is to meet Benchmark 4 (Completion and Integration of PLSS) by Dec 31, 2019

## Project Timeframes

Due to staff and funding restrictions, it is anticipated that this project will take a total of 3 years to complete. Milestones that will relate to a Survey Township-based project plan will be developed and monitored.

## Responsible Parties

Project oversight will be provided by the Land Information Officer. The staff at the Southeastern Wisconsin Regional Planning Commission, acting as County surveyor, will be responsible for completing the project.

- County Surveyor – Project Specifications, Quality Control, Project Coordination
- Land Information Officer – Project Coordination
- Southeastern Wisconsin Regional Planning Commission – Coordinate with other counties and publish new coordinate values.
- Southeastern Wisconsin Regional Planning Commission – Field surveying, office work, dossier and control survey summary diagram preparation

## Estimated Budget Information

It is estimated that the cost to convert to the NAD83-2011 horizontal datum is estimated to be between \$35,000 and \$155,470. Conversion to the Vertical NAVD88-2012 data will cost an additional \$27,249. There will be additional staff time that is not included in this cost that will need to be included once the project scope and approach has been completed.

At the time of this document, Milwaukee County has not committed to one of the proposed methods of modernizing the current accepted datum. In 2016, Milwaukee County will commit to one of the two proposed methods and start the process to the NAD83-2011 datum. Milwaukee County intends to use Strategic Initiative Grant awards (2016, 2017) with the balance (if needed) from locally retained Wisconsin Land Information Program Funds. *This is a very rough estimate.*



**2016 WLIP Grant Application**

County: Milwaukee		LIO: Kevin Bruhn	
Mailing Address: 633 W. Wisconsin Ave, Suite 903			
City: Milwaukee		State: WI	Zip: 53203
Telephone: 414-278-3927		E-mail Address: Kevin.Bruhn@Milwaukeecountywi.gov	

1. County will submit draft 2016 land information plan to DOA by Dec. 31, 2015	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2. Date of last county land information council meeting (mm/dd/yyyy)	12/08/2015
3. LIO subscribed to the Land Information Officer's listserv	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
4. County's <i>Retained Fee/Grant Report</i> for 2014 submitted	<input type="checkbox"/> Yes <input type="checkbox"/> No

**TRAINING & EDUCATION GRANT APPLICATION**

5. Training & Education Award Eligible	<b>\$1,000.00</b>
6. Training & Education Award Amount Requested	<b>\$ 1,000.00</b>

7. Brief description of intended expenditures for Training & Education grant

Attending WLIA Annual & Regional conferences

**8. Statement and Authorization of Land Information Officer**  
*As the Land Information Officer for the above county, I am authorized to submit this application, as an eligible applicant, on the authority of the county board. I understand that application authority shall be obtained by specific action of the county board, and that the WLIP may request evidence of such authority. Project work shall meet all standards and conditions as set forth by the relevant Wisconsin State Statutes, Wisconsin Administrative Code, and policy adopted by the Wisconsin Land Information Program or the Wisconsin Department of Administration. To the best of my knowledge, the information contained in this application is accurate and complete. I understand that Training & Education grant projects must be completed by December 31, 2017.*

LIO Name (typed) Kevin W Bruhn	Date 12/22/15
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**2016 WLIP Grant Application**

County	Name of Land Information Officer
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<b>STRATEGIC INITIATIVE GRANT APPLICATION</b>	
1. Strategic Initiative Award Eligible	<b>\$50,000.00</b>
2. Strategic Initiative Award Amount Requested	<b>\$ 50,000.00</b>
3. Summary of intended expenditures for 2016 Strategic Initiative grant (check all that apply)	
<input type="checkbox"/> Benchmark 1 <input type="checkbox"/> Benchmark 2 <input type="checkbox"/> Benchmark 3 <input checked="" type="checkbox"/> Benchmark 4 <input type="checkbox"/> Benchmark 4 waiver in favor of LiDAR project <input type="checkbox"/> Other county Strategic Initiative project(s)	

<b>BENCHMARK 1</b>
4. County anticipates meeting Benchmark 1 for the <b>V2</b> call for data by March 31, 2016 in which format: <input type="checkbox"/> Export format <input checked="" type="checkbox"/> Searchable format <input type="checkbox"/> In other format: County will not meet Benchmark 1 for V2
5. Will county use 2016 Strategic Initiative Funding to work toward selected <b>V2</b> format for Benchmark 1 in the first quarter of 2016? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
6. County anticipates meeting Benchmark 1 for the <b>V3</b> call for data by March 31, 2017 in which format: <input type="checkbox"/> Export format <input checked="" type="checkbox"/> Searchable format
7. Will county use 2016 Strategic Initiative Funding to work toward selected <b>V3</b> format for Benchmark 1? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
8. County anticipates meeting Benchmark 1 for the <b>V4</b> call for data by March 31, 2018 in which format: <input checked="" type="checkbox"/> Export format is <i>not</i> an option for V4 <input checked="" type="checkbox"/> Searchable format
9. Benchmark 1 Land Information Plan Citations for <i>Project Plan to Achieve Searchable Format for Benchmarks 1 &amp; 2</i> – Section and page numbers
Milwaukee County currently supports downloadable and searchable parcel and tax info data. All attribute fields included in benchmark one that are maintain by the County will be included with the data submission.

10. Benchmark 1 Project Activities and Itemized Costs ▼			
		11. Benchmark 1 Total Costs	<b>0.00</b>

**BENCHMARK 2**

12. County anticipates meeting Benchmark 2 for the **V2** call for data by March 31, 2016 in which format:

- Export format
- Searchable format
- In other format: County will not meet Benchmark 2 for V2

13. Will county use 2016 Strategic Initiative Funding to work toward selected **V2** format for Benchmark 2 in the first quarter of 2016?

- Yes
- No

14. County anticipates meeting Benchmark 2 for the **V3** call for data by March 31, 2017 in which format:

- Export format
- Searchable format

15. Will county use 2016 Strategic Initiative Funding to work toward selected **V3** format for Benchmark 2?

- Yes
- No

16. County anticipates meeting Benchmark 2 for the V4 call for data by March 31, 2018 in which format:

- Export format is *not* an option for V4
- Searchable format

17. Benchmark 2 Land Information Plan Citations for *Project Plan to Achieve Searchable Format for Benchmarks 1 & 2* – Section and page numbers

Milwaukee County currently supports downloadable and searchable parcel and tax info data. All attribute fields included in benchmark two that are maintain by the County will be included with the data submission.

18. Benchmark 2 Project Activities and Itemized Costs ▼

		19. Benchmark 2 Total Costs	<b>0.00</b>

**BENCHMARK 3**

20. Is your county's digital parcel fabric complete (including incorporated areas)?

- Yes, parcel fabric complete (skip to Benchmark 4 section below)  
 No, county needs to work toward Benchmark 3 ▶ Estimated year of completion ▶

21. Will county use 2016 Strategic Initiative funding to work toward Benchmark 3?

- Yes  
 No

22. Benchmark 3 Land Information Plan Citations for *Project Plan for Parcel Completion* – Section and page numbers

- Milwaukee County is fully mapped and is under a current maintenance cycle. The parcels are updated under a quarterly cycle for the entire County area.

23. Benchmark 3 Project Activities and Itemized Costs ▼

		24. Benchmark 3 Total Costs	<b>0.00</b>

**BENCHMARK 4**

25. Is your county's PLSS network complete and integrated into digital parcel layer?

- Yes PLSS network complete and integrated  
 No, county needs to work toward Benchmark 4 ▶ Estimated year of completion ▶

26. Will county use 2016 Strategic Initiative funding to work toward Benchmark 4?

- Yes  
 No

27. Benchmark 4 waiver request: Check the waiver box if you wish to request a waiver from Benchmark 4 in favor of LiDAR costs

- N/A  
 Yes, waiver requested in favor of LiDAR project

28. Benchmark 4 Land Information Plan Citations for *Project Plan for PLSS* – Section: Benchmark 4, Pages 28-30

29. Benchmark 4 Project Activities and Itemized Costs ▼

Horizontal Datum Transformation			155,470
Vertical Datum Transformation			27,249
		30. Benchmark 4 Total Costs	<b>\$182,719</b>

**OTHER COUNTY STRATEGIC INITIATIVE PROJECTS**

31. County anticipates meeting Benchmarks 1-4 (or 1-3 with LiDAR waiver) **and** foresees having some of the 50k Strategic Initiative funding “leftover”?

Yes

No

32. Estimated amount of 50k to be left after applying any costs to achieve Benchmarks 1-4 (or 1-3 for LiDAR waiver counties)

Zero

More than zero ▶ Specify amount ▶ \$

If “More than zero” is selected, use the 2016 WLIP Grant Application Addendum to describe the projects you will use the Strategic Initiative funding for.

33. TOTAL ALL STRATEGIC INITIATIVE PROJECTS

**\$182,719**

**34. Statement and Authorization of Land Information Officer**

*As the Land Information Officer for the above county, I am authorized to submit this application, as an eligible applicant, on the authority of the county board. I understand that application authority shall be obtained by specific action of the county board, and that the WLIP may request evidence of such authority. Project work shall meet all standards and conditions as set forth by the relevant Wisconsin State Statutes, Wisconsin Administrative Code, and policy adopted by the Wisconsin Land Information Program or the Wisconsin Department of Administration. To the best of my knowledge, the information contained in this application is accurate and complete. I understand that Strategic Initiative grant projects must be completed by March 31, 2017.*

LIO Name (typed) Kevin W Bruhn

Date 12/22/15



**2016 WLIP Grant Application**

County	Name of Land Information Officer
--------	----------------------------------

<b>BASE BUDGET GRANT APPLICATION</b>	
1. Base Budget Award Eligible (from grant eligibiliy table on page 9)	\$
2. Base Budget Award Amount Requested	\$

<b>3. Base Budget Grant Project Title 1</b>			
4. Land Information Spending Category			
5. Land Information Plan Citations – Section and page numbers			
6. Project Activities and Itemized Costs ▼			
7. Base Budget Project 1 Total			<b>0.00</b>

<b>8. Base Budget Grant Project Title 2</b>			
9. Land Information Spending Category			
10. Land Information Plan Citations – Section and page numbers			
11. Project Activities and Itemized Costs ▼			
12. Base Budget Project 2 Total			<b>0.00</b>

**BASE BUDGET GRANT APPLICATION CONTINUED**

**13. Base Budget Grant Project Title 3**

14. Land Information Spending Category

15. Land Information Plan Citations – Section and page numbers

16. Project Activities and Itemized Costs ▼

		17. Base Budget Project 3 Total	<b>0.00</b>

**18. Base Budget Grant Project Title 4**

19. Land Information Spending Category

20. Land Information Plan Citations – Section and page numbers

21. Project Activities and Itemized Costs ▼

		22. Base Budget Project 4 Total	<b>0.00</b>

**23. TOTAL ALL BASE BUDGET GRANT PROJECT COSTS**

**24. Statement and Authorization of Land Information Officer**

*As the Land Information Officer for the above county, I am authorized to submit this application, as an eligible applicant, on the authority of the county board. I understand that application authority shall be obtained by specific action of the county board, and that the WLIP may request evidence of such authority. Project work shall meet all standards and conditions as set forth by the relevant Wisconsin State Statutes, Wisconsin Administrative Code, and policy adopted by the Wisconsin Land Information Program or the Wisconsin Department of Administration. To the best of my knowledge, the information contained in this application is accurate and complete. I understand that Base Budget grant projects must be completed by December 31, 2017.*

LIO Name (typed)

Date

**2016 WLIP Grant Application Addendum**

County

Addendum Type  
 Base Budget Project(s)  
 Other county Strategic Initiative Project(s)/LiDAR project

1. **Project Title**

---

2. Land Information Spending Category

---

3. Land Information Plan Citations – Section and page numbers

---

4. Project Activities and Itemized Costs ▼

		5. Project Total	<b>0.00</b>

6. **Project Title**

---

7. Land Information Spending Category

---

8. Land Information Plan Citations – Section and page numbers

---

9. Project Activities and Itemized Costs ▼

		10. Project Total	<b>0.00</b>

TOTAL ALL PROJECTS – Please include total, including addendum project costs, on application itself

**2016 WISCONSIN LAND INFORMATION PROGRAM  
STRATEGIC INITIATIVE GRANT AGREEMENT  
BETWEEN  
THE STATE OF WISCONSIN  
DEPARTMENT OF ADMINISTRATION  
And  
MILWAUKEE COUNTY**

**THIS AGREEMENT** is made and entered into by and between the State of Wisconsin (“State”), Department of Administration (“Department”) and Milwaukee County (“Grantee”). This Agreement is complete and effective upon the signature of all parties.

**WHEREAS**, the Department administers the **Wisconsin Land Information Program** Grant (“Grant”) through the Division of Intergovernmental Relations (“Division”) to provide funds for eligible activities; and

**WHEREAS**, it is the intention of the parties to this Agreement that all activities described herein shall be for their mutual benefit; and

**WHEREAS**, the Grantee has submitted an Application for the Grant to the Department and the Department, relying upon the representations set forth in the Application, approved an award to the Grantee in the amount of \$50,000 and

**WHEREAS**, the terms and conditions herein shall survive the performance period and shall continue in full force and effect until the Grantee has completed and is in compliance with all the requirements of this Agreement; and

**WHEREAS**, this Agreement is a mutually exclusive with, and is distinguished from, all previous agreements between the Grantee and the Department, and contains the entire understanding between the parties;

**NOW, THEREFORE**, in consideration of the mutual promises and dependent documents, the parties hereto agree as set forth in Articles 1 through 17 which are annexed and made a part hereof.

**State of Wisconsin  
Department of Administration  
Division of Intergovernmental Relations**

**Milwaukee County**

**BY:** \_\_\_\_\_  
**Administrator  
Division of Intergovernmental Relations**

**BY:** \_\_\_\_\_  
**Name and Title**

**DATE:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

## **GENERAL TERMS AND CONDITIONS**

### **ARTICLE 1. APPLICABLE LAW**

This Agreement shall be governed under the laws of the State of Wisconsin. The monies shall not be used to supplant existing funding otherwise budgeted or planned for projects outside of this program whether under local, state or federal law, without the consent of the Department.

### **ARTICLE 2. LEGAL RELATIONS AND INDEMNIFICATION**

The Grantee shall at all times comply with and observe all federal and state laws and published circulars, local laws, ordinances, and regulations which are in effect during the performance period of this Agreement and that in any manner affect the work or its conduct.

The Grantee shall indemnify and hold harmless the Department and the State and all of its officers, agents and employees from all suits, actions or claims of any character brought for or on account of any injuries or damages received by any persons or property resulting from the operations of the Grantee, or of any of its contractor(s), in performing work under this Agreement; brought for or on account of any obligations arising out of contracts between Grantee and its contractor(s) to perform services or otherwise supply products or services; or as a result of this grant.

The Grantee shall also hold the Department and the State harmless for any audit disallowance related to the allocation of administrative costs under this Agreement, irrespective of whether the audit is ordered by federal or state agencies or by the courts. If federal law requires an audit and if the Grantee is also the recipient of state funds under the same or a separate grant program, then the state funded programs shall also be included in the scope of the federally required audit. The Grantee shall comply with any requirements related to funding sources.

### **ARTICLE 3. STANDARDS FOR PERFORMANCE**

These 2016 grant projects must be completed by March 31, 2017. The Grantee shall perform the projects and activities as set forth in the Grant Application and stipulated by the Department, and described herein in accordance with the standards set forth in Uniform Instructions for Preparing County Land Information Plans (available from the Wisconsin Land Information Program), incorporated herein by reference; and the standards from statute and administrative rule or adopted by the Department, State Geographic Information Officer, and any other applicable professional standards.

### **ARTICLE 4. PUBLICATIONS & DATA**

All works produced under this Agreement shall become the property of the Grantee. All works and data shall be subject to the Wisconsin Public Records Law, Wis. Stat. 19.21 *et seq.* The Department reserves a royalty-free, nonexclusive and irrevocable license to reproduce, publish, otherwise use, and to authorize others to use data, and to use works for government purposes. A notation indicating the participation of and partial funding by the Department shall be carried on all reports, materials, data and/or other information produced as a result of this Agreement.

### **ARTICLE 5. EXAMINATION OF RECORDS**

Upon notice the Department shall have access to, and the right to examine, audit, excerpt, transcribe and copy on the Grantee's premises, any directly pertinent records and computer files of the Grantee involving transactions relating to this Agreement. Similarly, the Department shall have access at any time to examine, audit, test and analyze any and all physical projects subject to this Agreement. If the material is held in an automated format, the Grantee shall provide copies of these materials in the automated format or such computer file as may be requested by the Department. Such material shall be retained for a minimum of three years by the Grantee following final payment under this Agreement. This provision shall also apply in the event of termination of this Agreement. The Grantee shall notify the Department in writing of any planned conversion or destruction of these materials at least 90 days prior to such action. Any charges for copies provided by the Grantee of books, documents, papers, records, computer files or computer printouts shall not exceed the actual cost thereof to the Grantee and may be reimbursed to the Grantee by the Department.

The minimum acceptable financial records for the project consist of: 1) Documentation of employee time; 2) Documentation of all equipment, materials, supplies and travel expenses; 3) Inventory records and supporting documentation for allowable equipment purchased to carry out the project scope; 4) Documentation and justification of methodology used in any in-kind contributions; 5) Rationale supporting allocation of space charges; 6) Rationale and documentation of any indirect costs; 7) Documentation of acquisition of contract

services and materials; and 8) Any other records which support charges to project funds. The Grantee shall maintain sufficient segregation of project accounting records from other projects and/or programs.

**ARTICLE 6. PERFORMANCE REPORTS**

The Grantee shall submit an annual performance report via the County Retained Fee/Grant Report as already required by s. 59.72(2)(b), Wis. Stats. The annual report for the previous calendar year is due June 30<sup>th</sup> of each year. The Grantee is to use the County Retained Fee/Grant Report form provided by the Department. In addition, upon project completion the county shall report on progress with the Grant award using the reporting template provided by the Department.

**ARTICLE 7. PROJECT COMPLETION**

As a special term and condition of the Grant award, Grantee shall complete the entire project as proposed in its grant application or modified by joint agreement, including submission of annual performance reports and a final grant project report required in Article 6 above.

**ARTICLE 8. EXTENSIONS**

The Grantee may request in writing an extension(s) of the Department if project will not be completed within the specified performance period. If the Grantee and the Department agree to the terms of the extension, the extension will be granted.

**ARTICLE 9. FAILURE TO PERFORM**

The Department reserves the right to receive a full refund of the grant award if required reports are not provided to the Department in a timely basis, if performance of contracted activities is not evidenced, or if the Grantee fails or refuses to provide data or materials in response to a request from the Department.

**ARTICLE 10. TERMINATION OF AGREEMENT**

The Department may terminate this Agreement at any time without cause upon thirty (30) days written notice to the Grantee. Upon termination, the Department's liability shall be limited to the actual costs incurred in carrying out the project as of the date of termination plus any termination expenses having prior written approval of the Department. The Grantee may terminate this Agreement, by delivering written notice to that effect to the Department not less than thirty (30) days prior to termination.

In the event this Agreement is terminated, for any reason whatsoever, the Grantee shall refund to the Department any payment made by the Department to the Grantee which exceeds actual costs incurred in carrying out the project as of the date of termination. This Agreement is subject to termination upon failure of the legislature to appropriate monies for it.

**ARTICLE 11. CANCELLATION FOR CAUSE**

The Department reserves the right to cancel any Agreement in whole or in part without penalty effective upon mailing of notice of cancellation for failure of the Grantee to comply with the any terms and conditions of this Agreement.

**ARTICLE 12. NON-APPROPRIATION OF FUNDS**

The appropriation from which payments are to be made is authorized under Sections 16.967 (7) and 20.505 (1) (ie) of the Wisconsin Statutes. This Agreement shall terminate without penalty if the Legislature fails to appropriate the funds necessary to carry out its terms.

**FISCAL TERMS AND CONDITIONS**

**ARTICLE 13. ELIGIBLE COSTS**

Eligible Costs are costs that are directly attributable to Grant activities and identified and approved in the Grant Application.

1. No Eligible Costs subject to this Grant may be incurred prior to January 1, 2016, unless previously approved in writing by the Department.
2. Costs only as identified in the Budget and described in the Project Description are allowed.

**ARTICLE 14. METHOD OF PAYMENT**

One half of the funds for the Strategic Initiative grant award shall be paid within 30 days of grant agreement execution and the remaining half will be made upon project completion.

**ARTICLE 15. AUDIT REQUIREMENT**

Grantee shall have a certified annual audit performed utilizing Generally Accepted Auditing Principles and Generally Accepted Auditing Standards. The following requirements apply:

Governmental entities that expend more than \$500,000 in Federal or \$100,000 in State awards in a single year shall comply with the Single Audit Act of 1984, OMB Circular A-133 and the State Single Audit Guidelines issued by the Department of Administration. Single audit reports are due to the Department within thirty (30) days from issuance of the report, but no later than 180 days after the end of the audit period.

If less than \$500,000 in Federal or \$100,000 in State awards are expended in a year, the organization shall confirm in writing that the above audit requirements are not applicable. This confirmation shall be submitted to the address listed below.

One copy (1) of the audit, along with the Management letter, if one was issued by the auditor, should be submitted to the address listed below. Responses and corrective action to be taken by management should be included for any findings or comments issued by the auditor. Send these copies to:

Single Audit Coordinator  
Wisconsin Department of Administration  
Division of Administrative Services  
101 East Wilson Street, PO Box 7869  
Madison, Wisconsin 53707-7869

The county, their agents and contractors shall participate in reasonable, random, unannounced, on-site audits of all program-related activities and expenditures on request.

\*See OMB Circ. A-128 (Audits of State and Local Governments) and A-133 (Audits of Institutions of Higher Education and Other Non-profit Institutions) for special rules regarding entities that receive between \$25,000 and \$100,000 in Federal awards.

**ASSURANCES**

**ARTICLE 16. NONDISCRIMINATION IN EMPLOYMENT**

Grantee shall not discriminate against any employee or applicant for employment because of age, race, religion, color, handicap, sex, physical condition, developmental disability as defined in s. 51.01 (5), sexual orientation or national origin.

This provision shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Except with respect to sexual orientation, the Grantee shall take affirmative action to ensure equal employment opportunities. The Grantee shall post in conspicuous places, available for employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of the nondiscrimination clause.

**ARTICLE 17. DISCLOSURE**

The Grantee shall not engage the service of any person or persons now employed by the State, including any department, commission or board thereof, to provide services relating to this Agreement without the written consent of the employer of such person or persons and of the Department.

## Bruhn, Kevin

---

**From:** Champagne, Emily <EChampagne@mmsd.com>  
**Sent:** Wednesday, January 13, 2016 2:12 PM  
**To:** Bruhn, Kevin  
**Subject:** FW: MCAMLIS/ SEWRPC Datum memo request

Kevin,

Please see opinion from the Milwaukee Metropolitan Sewerage District Survey Supervisor in regards to the MCAMLIS 100<sup>th</sup> Steering Committee Agenda item V. C. (MCAMLIS Datum Modernization Project, including Report by MCAMLIS staff on the SEWRPC Addendum to Report No. 206.

Thank you,  
Emily

### **Emily Champagne, GISP**

GIS Supervisor  
Milwaukee Metropolitan Sewerage District (MMSD)  
260 W. Seeboth St.  
Milwaukee, WI 53204  
414.225.2180 (w)  
414.225.2248 (f)  
[echampagne@mmsd.com](mailto:echampagne@mmsd.com)

---

**From:** Talarczyk, Dan  
**Sent:** Wednesday, January 13, 2016 1:55 PM  
**To:** Champagne, Emily  
**Cc:** Niederstadt, Rick  
**Subject:** RE: MCAMLIS/ SEWRPC Datum memo request

Emily,

After reviewing the attached document and considering that the main objective is to make the big leap from NAD27 to NAD83, my professional opinion is to recommend the Addendum 206 Method. A number of factors support this recommendation. First, the current (NAD27) state plane coordinates are published to a Third Order, Class I horizontal accuracy. The observation of 5% of corners using the VRS along with a least squares adjustment with the legacy data would ensure adherence to this level of accuracy, which is on the order of 1:10,000. The typical applications that utilize the PLSS system are suitably accommodated at this level. If a higher order is required for a particular task, there is a network (albeit less dense) of control that can be referenced, such as those that make up the Height Modernization Program.

Another reason that the Addendum 206 Method is prudent is that it preserves the legacy spatial measurements that exist in the published PLSS documents. This is a crucial factor in preserving an element of continuity with historical data and record documents.

I would not recommend the New Technology Method involving observation at all corners of the PLSS. The accuracy specifications would not justify the significantly increased level of effort. Furthermore, when future adjustments occur to the horizontal datum, the positional data obtained from the VRS is obsolete, necessitating reobservation of the corners.

Perhaps a case could be made for a hybrid of the Addendum 206 Method and the Memorandum 206 Method, in which case you would have vector data that could be reused following future adjustments. But the cost estimates suggest that it would be more economical to reapply the Addendum 206 Method when a future adjustment occurs.

This is a great idea in the works. And I think the Addendum 206 Method gets us to where we want to be.

**Daniel R. Talarczyk, PE, PLS**

Survey Services Supervisor

**Milwaukee Metropolitan Sewerage District**

414.225.2104 (O) | 414.617.1402 (C)

[dtalarczyk@mmsd.com](mailto:dtalarczyk@mmsd.com)



How can you help protect Lake Michigan?

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**From:** Champagne, Emily

**Sent:** Thursday, January 07, 2016 8:23 AM

**To:** Talarczyk, Dan

**Cc:** Niederstadt, Rick

**Subject:** MCAMLIS/ SEWRPC Datum memo request

Dan,

Please review the attached documents from the December meeting of MCAMLIS regarding the Datum Modernization Report and SEWRPC Addendums.

MCAMLIS is seeking opinions and/ or preferences from MCAMLIS Partners (including MMSD) on the Horizontal options outlined in the Report (see last pages 153-155)

Kevin Bruhn, Milwaukee County LIO, would like our input no later than next week (earlier the better).

Thank you,  
Emily

**Emily Champagne, GISP**

GIS Supervisor

Milwaukee Metropolitan Sewerage District (MMSD)

260 W. Seeboth St.

Milwaukee, WI 53204

414.225.2180 (w)

414.225.2248 (f)

[echampagne@mmsd.com](mailto:echampagne@mmsd.com)

**COUNTY OF MILWAUKEE**  
INTEROFFICE COMMUNICATION

DATE: January 14, 2016

TO: Supervisor Theodore Lipscomb, Chair, Board of Supervisors

FROM: James Tarantino, Economic Development Director, Department of Administrative Services

SUBJECT: Land Information Council Creation and Appointment of Members

**REQUEST**

That the Milwaukee County Board of Supervisors create an advisory Land Information Council and appoints its membership.

**BACKGROUND**

In 1988, the Southeastern Wisconsin Regional Planning Commission (SEWRPC) began a land records modernization study for Milwaukee County. At that time, the Milwaukee County Board of Supervisors requested that SEWRPC convene a task force to analysis the feasibility and cost effectiveness of the County developing an automated mapping and land information system. That resolution specifically requested the task force “to analyze the potential for 1) the County to utilize the City’s automated mapping (Intergraph) system, 2) the merging of the County and City’s needs into one system, and 3) the potential for creating a system that could also be shared and partially funded by utilities such as Wisconsin Energy Corporation, the Wisconsin Gas Company, Wisconsin Bell and other private businesses.” (File #88-379)

The SEWRPC study was a success in the sense that Milwaukee County has managed a land records modernization program that meets the needs of its constituents and is recognized throughout the State as a leading implementer of Geographic Information Systems (GIS). The GIS became known as the Milwaukee County Automated Mapping and Land Information System (MCAMLIS), and the Task Force that was formed to guide the initial study has continued operating in an advisory capacity and has taken the MCAMLIS name. The Land Information Office that currently operates under the Department of Administrative Services in the Economic Development Division has managed Milwaukee County’s GIS, which has become synonymous with the MCAMLIS task force.

Since the formation of MCAMLIS, awareness of the importance and potential application of GIS has grown in the public sector. In May 2010, the State of Wisconsin enacted SB-507 (2009 Wisconsin Act 314) which requires that counties with a land information office also establish a land information council. The Statute reads –

“59.72 (3m) LAND INFORMATION COUNCIL.

(a) If the board has established a land information office under sub. (3), the board shall have a land information council consisting of not less than 8 members. The council shall consist of the register of deeds, the treasurer, and, if one has been appointed, the real property lister or their designees and the following members appointed by the board for terms prescribed by the board:

1. A member of the board.
2. A representative of the land information office.
3. A realtor or a member of the Realtors Association employed within the county.
4. A public safety or emergency communications representative employed within the county.
- 4m. The county surveyor or a professional land surveyor employed within the county.
5. Any other members of the board or public that the board designates. (am) Notwithstanding par. (a), if no person is willing to serve under par. (a) 3., 4., or 4m., the board may create or maintain the council without the member designated under par. (a) 3., 4., or 4m.  
(b) The land information council shall review the priorities, needs, policies, and expenditures of a land information office established by the board under sub. (3) and advise the county on matters affecting the land information office.” [[Wis. Stat. § 59.72 \(3m\)](#)]

Milwaukee County’s Land Information Office is also required to submit a countywide plan for land records modernization to the State Department of Administration under Wis. Stat. § 16.967(3)(e). The intent of the Land Information Office is to submit this plan with a demonstration of compliance with the Land Information Council statutory requirement, and as such is requesting that the Milwaukee County Board of Supervisors create and appoint a Land Information Council (LIC). The statute was written to apply to all counties in the State and as such has allowed for some flexibility in the appointment of the LIC members. In that Milwaukee County does not have a real property currently under employment, and that the current MCAMLIS task force includes a robust selection of members additional to the statutory requirement, that member position is not included in this recommendation. The Land Information Office recommends the following members to serve on the initial LIC –

<b>MEMBER</b>	<b>APPOINTEE</b>
Milwaukee County Board of Supervisors	Sup. Jason Haas
Land Information Office	Kevin Bruhn
County Treasurer	David Cullen
Office of Emergency Management	Christine Westrich
County Surveyor	Robert Merry (existing MCAMLIS member)
Milwaukee County Register of Deeds	John LaFave (existing MCAMLIS member)
City of Milwaukee Chief Information Officer	Nancy Olson (existing MCAMLIS member)
Metropolitan Milwaukee Sewerage District GIS	Emily Champagne (existing MCAMLIS member)
Intergovernmental Coordinating Council	Doug Seymour (existing MCAMLIS member)
Department of Administrative Services	Greg High (existing MCAMLIS member)
We Energies	Dawn Neuy – Manager, EDAM Support, (existing MCAMLIS member)

Importantly, this list of appointees includes substantially similar membership to the current MCAMLIS task force which will ensure continuity of services and promoting positive intergovernmental relations. It is advised that the initial appointees of the LIC serve two year terms and are enabled to assign designees to attend LIC meetings and act on their behalf.

This Board action which would create the LIC and its membership would also effectively replace the current MCAMLIS task force. The Land Information Office will make every effort to simplify and manage this transition process.

## **RECOMMENDATION**

In order to achieve compliance with Wis. Stat. § 59.72 (3m), it is recommended that Milwaukee County create a Land Information Council and appoint its inaugural members as listed above.

---

James Tarantino  
Economic Development Director, Department of Administrative Services

cc: Chris Abele, County Executive  
Sup. Jason Haas, Chair, Intergovernmental Relations Committee  
Intergovernmental Relations Committee Members  
Teig Whaley-Smith, Director, Department of Administrative Services  
Raisa Koltun, Chief of Staff, Office of the County Executive  
Kelly Bablitch, Chief of Staff, County Board of Supervisors  
Steve Cady, Research & Policy Director  
Allyson Smith, Committee Coordinator  
Kevin Bruhn, GIS Manager  
David Cullen, County Treasurer  
Christine Westrich, Director, Office of Emergency Management  
John LaFave, Register of Deeds  
Greg High, Director, Architecture and Engineering

**Draft**

# WLIP Program Plan: 2016-2020

Updated February 8, 2016

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# 1 INTRODUCTION

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## 1.1 Purpose

Since it was created in 1989, the Wisconsin Land Information Program (WLIP), now administered by the Division of Intergovernmental Relations within the Wisconsin Department of Administration (DOA), has provided public funding to Wisconsin counties for the modernization of local land records. The purpose of this document is to give strategic direction for the Wisconsin Land Information Program for 2016-2020, in a manner similar to the county land information plans mandated by s. 59.72(3)(b). The plan includes recommendations for WLIP grant funding priorities, as well as initiatives to be led by the WLIP.<sup>1</sup>

This plan conservatively assumes the last two-year revenue trend will continue, which amounts to \$6.3 million in annual revenue for the Land Information Fund. As such, this plan lays out a proposal to continue to fund county Base Budget, Training & Education, and Strategic Initiative grants, amounting to 90% of revenue from the Land Information Fund being awarded to local governments. The remaining 10% is for statewide projects, such as further development of the statewide parcel layer, facilitation of access to data, administration of the Program, and other related activities.

The key proposals comprising this program plan could be implemented within the bounds of the current statutory and administrative authority of the program, determined by s. 16.967 and Administrative Rule Adm 47. In other words, this plan was designed such that the state legislature would not need to give additional authorization for DOA to implement this program plan.

## 1.2 Key Proposals

- *Every county is eligible for a \$50k Strategic Initiative grant in both 2016 and 2017, for the purposes of achieving benchmarks for parcel data formatting, completeness, and accuracy (\$3.6 million)*
- *Every county that retains less than \$100k in a year will continue to be eligible for an annual Base Budget grant to reach the \$100k threshold (~\$2.7 million)*
- *Every county will continue to be eligible for at least a \$1,000 Training & Education grant (\$72,000)*
- *Beginning in 2018, every county would be eligible for a Strategic Initiative grant every three years, in an amount covering the acquisition of a 6" resolution base aerial imagery product (~\$1.5 million)*
- *Beginning in 2018, counties without lidar or with lidar that is at least 10 years old would be eligible for a Strategic Initiative grant amounting to \$137.50 per square mile for lidar base products that include Quality Level II point cloud, digital elevation model, breaklines, and contour mapping (~\$0.8 million)*
- *Beginning in 2018, each county not receiving an aerial imagery or lidar grant would be eligible for a \$5-25k grant to work on parcel data development and PLSS (~\$260k-\$860k), or more if Land Information Fund revenue increases*
- *DOA will continue to carry out the duties of the department under s. 16.967(3), including administering WLIP grants and management of statewide projects (\$400k)*
- *DOA will continue to contract with an outside agency to further develop the statewide parcel map, including formulating additional benchmarks and creating a statewide PLSS layer (~\$125k)*
- *DOA will work toward greater access for parcels, zoning, lidar, aerial imagery, and other county GIS data (~\$105k)*

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<sup>1</sup> These are the rough outlines of one possible path the program could take in the next three years. This program plan document is being made available for the purposes of discussion and stakeholder feedback. No final decisions have been made on the allocation of WLIP funds beyond 2017. This document includes a budget scenario that may change.

### 1.3 Program Plan Timeline

The development of the WLIP program plan is expected to progress according to the following timeline:

Date	Milestone
2/10/2016	1 <sup>st</sup> draft plan reviewed and discussed by WLIC
4/13/2016	2 <sup>nd</sup> draft plan reviewed and discussed by WLIC
4/27/2016	3 <sup>rd</sup> draft plan distributed for public comment
6/08/2016	WLIC discusses public comments
6/22/2016	4 <sup>th</sup> draft plan voted on by WLIC
6/30/2016	Plan finalized

### 1.4 Program Background

The WLIP dates back to the Wisconsin Land Records Committee, created in 1985 and charged with making policy recommendations to improve land information in the state. Based on the work of that committee, the WLIP was created through 1989 Wisconsin Acts 31 and 339. That legislation also created the Wisconsin Land Information Board and gave it the authority to implement the Program. In addition, the original legislation contained a provision that required each county to establish a land information office in order to fully participate in the Program.

A key activity of the WLIP is planning for land records modernization. In 1991, the first instructions for completing plans for county-wide land records modernization were released, highlighting the Program's focus:

The objective of the Program is to facilitate the development of land information systems in the State of Wisconsin that are integrated vertically and horizontally. This is not to suggest the creation of a single, centralized land information system. Rather, the intent is the development of a decentralized confederation of systems where those with existing land records responsibilities would continue to collect, maintain and keep custody of land information . . . . The primary objective of the program is the organization and sharing of Land Information.<sup>2</sup>

The 1991 document went on to explain other components of the Program, including the retained recording fees funding mechanism that provides funding to both counties and the state, and the grant process.

In addition, the instructions listed the original eight Foundational Elements (Geographic frameworks, Parcels, Wetlands Mapping, Soils mapping, Zoning mapping, Institutional arrangements, Communications, Education and training, and Public access arrangements). The Foundational Elements incorporate nationally-recognized "Framework Data" elements, the major map data themes that serve as the backbone required by users to conduct most mapping and geospatial analysis. Since the Foundational Elements were originally defined, they have evolved over the years. They were most recently updated in the 2015 *Uniform Instructions for County Land Information Plans*.

#### FOUNDATIONAL ELEMENTS

PLSS  
Parcel Mapping  
LiDAR and Other Elevation Data  
Orthoimagery  
Address Points and Street Centerlines  
Land Use  
Zoning  
Administrative Boundaries  
Other Layers

### 1.5 Program Goals

Goals of the WLIP are informed by the duties of the Department of Administration listed by s. 16.967, the grant and retained fee priorities listed by s. 16.967, s. 59.72, and Administrative Rule Adm 47, and the program policy laid forth in the instructions for county land information plans. These goals include:

- Enable every county to develop, maintain, and operate at least a basic land information system
- Coordinate the modernization of land records and land information systems

<sup>2</sup> Wisconsin Land Information Board, *Recommendations and Requirements for County-Wide Plans for Land Records Modernization*, January 1991.

- Create a statewide digital parcel map by aggregating local parcel data
- Meet the searchable format standard for local parcel data
- Facilitate online access to GIS data stewarded by both local governments and state agencies
- Provide technical assistance and advice to state agencies and local governments with land information responsibilities
- Complete county Foundational Element layer coverage, foremost parcels

### 1.6 Act 20 and the Statewide Parcel Map Initiative

In a 2012 report on statewide deer herd management, Deer Trustee Dr. James Kroll wrote, "It is our opinion, Wisconsin once was viewed as an innovator for geospatial information services, but has fallen behind" (p. 17). Dr. Kroll identified Wisconsin's GIS deficiencies for deer herd management, as well as other purposes like economic development and forestry, leading to recommendations to adequately fund the development of geographic information systems (GIS) in Wisconsin.

In order to implement the Deer Trustee's recommendations, the Governor included an initiative to create a statewide digital parcel map, update the state's land cover map, and increase revenue for the Wisconsin Land Information Program in the 2013-15 biennial budget. As part of Omnibus Motion #249, the Joint Committee on Finance added details to this proposal that included the directive to target the new Land Information Fund revenue towards county land information systems, a guiding factor in the design of this program plan.

As enacted July 1, 2013, Act 20 had significant implications for the WLIP:

- It created the *Land Information Fund*, a segregated appropriation for state program revenue with statutory direction not to lapse funds from this appropriation
- Added a statutory directive to fund WLIP Base Budget grant eligibility up to the \$100k threshold
- Increased WLIP Training & Education grant eligibility from \$300 to \$1,000 per county
- Directed DOA to create a statewide digital parcel map in coordination with counties
- Directed counties to meet a searchable format standard for parcel information

The Statewide Parcel Map Initiative was born from Act 20, a land information initiative important for improving the quality of real estate information, economic development, emergency planning and response, and other necessary citizen services.

### 1.7 The WLIC

The Wisconsin Land Information Council (WLIC) was created by DOA through administrative action in June of 2015. The purpose of the council is to advise DOA on matters relating to the WLIP in the Division of Intergovernmental Relations, such as the allocation of grant funds, efficacy of grant projects, guidelines to coordinate land records modernization, legislative changes, and obtaining new sources of funding. The 12-member council is made up of private sector, local government, and state government stakeholder group representatives appointed by the DOA Secretary for three-year terms.

Organization/Trade Association	WLIC Member
Land Information Officers Network	Don Dittmar – Chair
Wisconsin Land Information Association	Adam Derringer – Vice Chair
Wisconsin Real Property Listers Association	Al Brokmeier
Wisconsin County Surveyors Association	Daniel Frick
Wisconsin Emergency Management Association	Maria Holl
Wisconsin Realtors Association	Cori Lamont
Wisconsin Department of Revenue	Mark Paulat
Wisconsin Land Title Association	Kris Pelot
Wisconsin Utility Association	Tim Statz
Wisconsin Society of Land Surveyors	Nathan Vaughn
State Cartographer's Office	Howard Veregin
Wisconsin Register of Deeds Association	Cindy Wisinski

# 2 PROGRAM FUNDING

WLIP funding for county land records modernization takes the form of register of deeds document recording fees retained at the county level and WLIP grants awarded. Counties may retain \$8 of the \$30 for land information and must submit \$7 of every \$30 register of deeds fee to the Land Information Fund, which funds WLIP grants. In order to be eligible to retain fees or receive grants, counties must meet program requirements, including utilizing funding consistent with a county land information plan approved by a county land information council and submitting annual reports on expenditures.

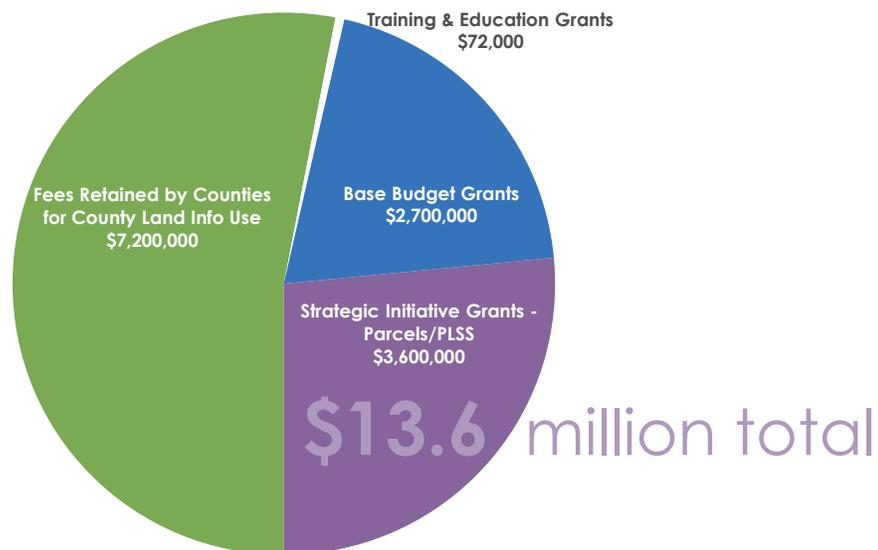
### ROD Document Recording Fee and the Land Information Fund

\$15	County Undesignated
\$8	County Retained for Land Information
\$7	State Land Information Fund
\$30	

DOA has awarded \$6.4 million in WLIP grants for 2016 and fees retained by counties for land information are projected to total \$7.2 million statewide, based on recent years' document recording levels.

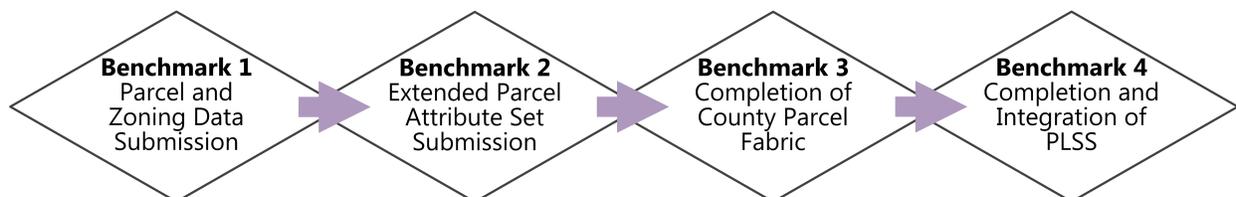
## 2.1 Current Distribution of Funding to Counties

Figure 1 shows the approximate amount of WLIP funding to counties statewide by funding category—retained fees, and three types of grants (Training & Education, Base Budget, and Strategic Initiative).



**Figure 1. 2016 County land information funding – Retained fees and grants**

Training & Education grants provide funding to enable county staff to stay current with rapid innovations in land records and GIS technology. Strategic Initiative grants are employed to meet statewide objectives for land information, specifically, the four benchmarks laid out in the 2016 WLIP grant application (Figure 2). Base Budget grants WLIP grants have mitigated large disparities in retained fee funding by ensuring that every county has at least \$151k in land information funding. Figure 3 on page 6 shows the current distribution of WLIP funding to counties.



**Figure 2. The four benchmarks for parcel dataset development from the 2016 WLIP grant application**

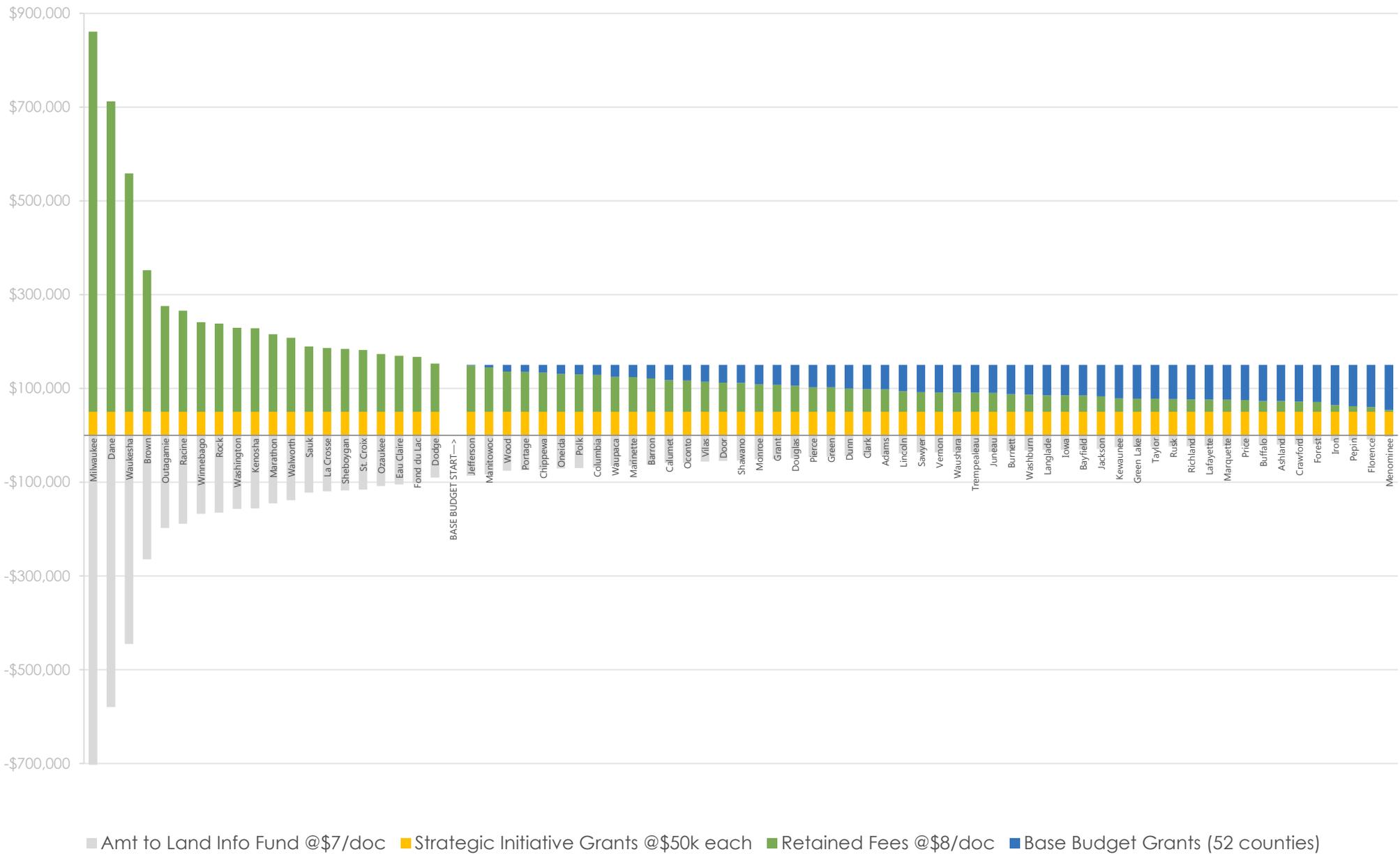
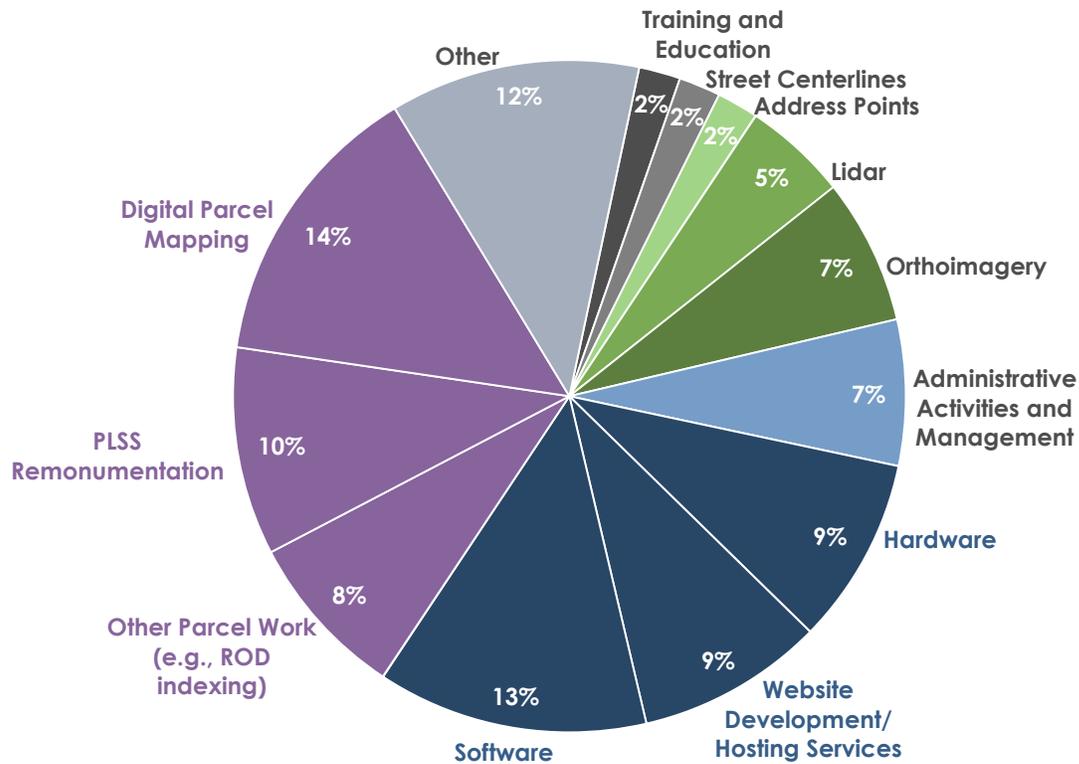


Figure 3. Distribution of all funding to counties for 2016

## 2.2 Expenditure of County Retained Fees and Grants

Counties submit annual expenditure reports on how WLIP retained fees and grants were utilized in the previous year and categorize their expenditures in a *Retained Fee/Grant Report*, in keeping with s. 59.72(2)(b). In 2014 (the most recent year for which there is reported expenditures), WLIP retained fees and grants—totaling \$8.0 million—were devoted to the areas depicted in Figure 4.



**Figure 4. County 2014 expenditures reported of \$8 million total**

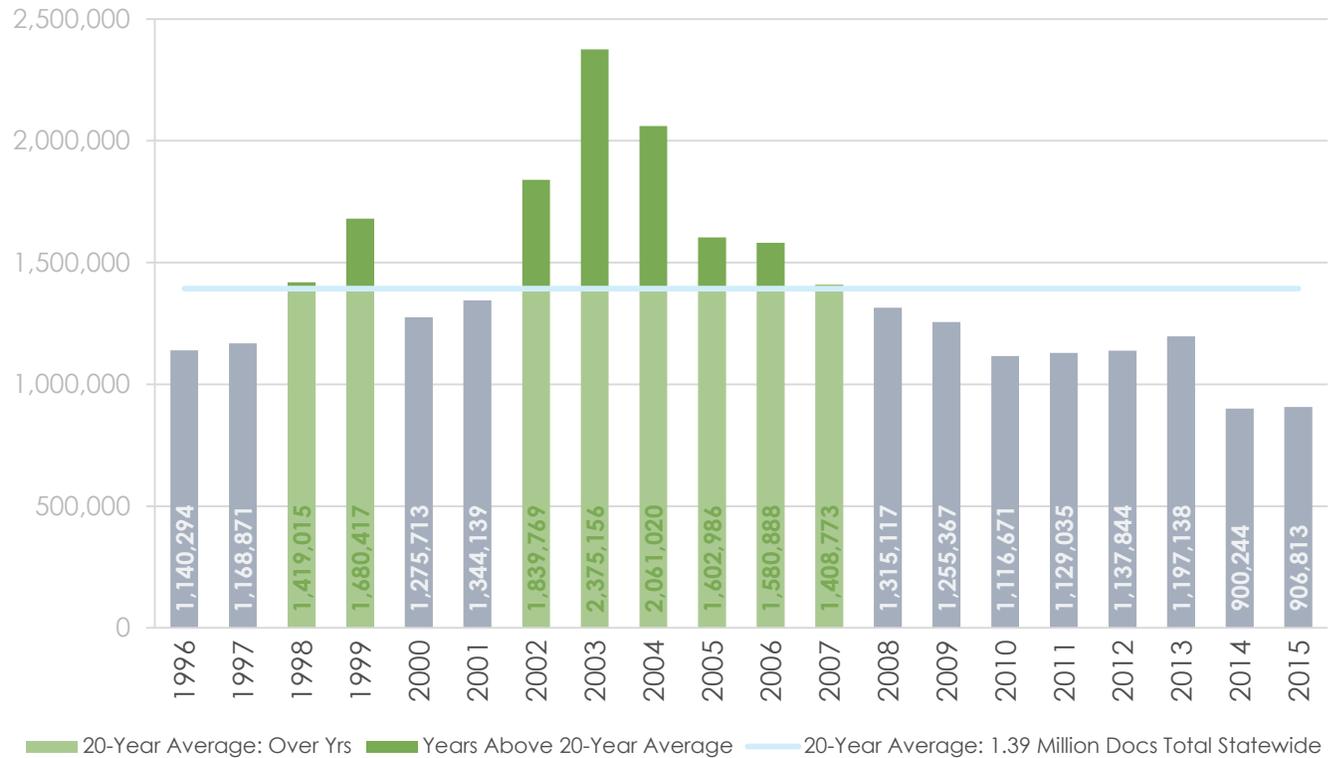
As is consistent with previous years, Figure 4 illustrates that about one-third of WLIP funding was used for the development and maintenance of county parcel datasets, including Public Land Survey System remonumentation and other parcel work. (PLSS expenditures for 2016 are summarized in Figure 5.) About another third of funding was used for computer hardware, software, and website development and hosting. These expenditures help to provide convenient access to land records through searchable databases, online interactive maps, and various types of mapping applications. The remaining third of WLIP funding supported a diverse range of activities, including the acquisition of LiDAR and aerial imagery, as well as the development of address points and street centerlines.



**Figure 5. Total PLSS Spending for 2016**

### 2.3 Revenue Trend

The number of documents recorded varies from year to year. For each of the last two years, the annual total has equaled about 900,000 documents. However, the last two-year average is well below historic averages, as represented in Figure 6.



**Figure 6. Number of register of deeds documents recorded statewide under s. 59,43(2)(ag)1 or e**

The last five-year average is 1,054,215 documents recorded, which would correspond to \$7.4 million in Land Information Fund revenue (at \$7 submitted per document recorded). Again, this program plan is built around the \$6.3 million revenue projection, based on the last two-year average of 900,000 documents recorded statewide.

# 3 CURRENT PROJECTS

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The Land Information Fund is divided so that the overwhelming majority of funds—more than 90%—go to local governments for county land information projects. Currently, less than 10% goes to program administration and statewide projects coordinated by DOA. This chapter describes the county projects funded by the WLIP, DOA program administration and services, and statewide parcel projects for 2016-2017.

## 3.1 County Projects

With regard to the WLIP, county land information projects can be funded by:

- Retained fees
- Base Budget grants
- Training & Education grants
- Strategic Initiative grants

Current county projects are detailed in individual county land information plans, available in draft form at [www.doa.state.wi.us/WLIP](http://www.doa.state.wi.us/WLIP). These plans were last updated in 2015, and are due for county land information council approval and finalization by March 31, 2016. The plans detail the status of county Foundational Element completion and maintenance, the process of integration of land records into a county land information system, and current and future county projects.

### 3.1.1 Retained Fees

The WLIP enables a portion document recording fees to be retained, totaling \$7.2 million for 2015. Counties may retain \$8 of the \$30 of the register of deeds document recording fee under s. 59.43(2)(ag)1 or (e). This funding must be spent to implement a county land information plan, according to s. 59.72(5).

### 3.1.2 Base Budget Grants

The WLIP will award Base Budget grants to a sum of \$2.7 million in 2016. Every county that retains less than \$100k in a year is eligible for a Base Budget grant to reach the \$100k threshold. Because counties with modest real estate market activity do not generate substantial land information office revenue, Base Budget grants are provided in order to enable eligible counties to develop, maintain, and operate a basic land information system and develop and maintain Foundational Elements.

Counties that retain less than \$100k in retained fees for land information are eligible for a Base Budget grant according to the following formula:

#### WLIP Base Budget Grant Eligibility Formula

##### \$100k – ROD document recording fees @ \$8 per document recorded

Example: County records 5,000 documents  
\$100k – (5,000 x \$8)  
\$100k – (\$40k)  
\$ 60k = Base Budget grant eligibility

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In the first two years in which the Base Budget grants were fully funded to the \$100k threshold (2015 and 2016), Base Budget grants totaled about \$2.7 million statewide. For program planning purposes, it is worth noting that if in the future the number of documents recorded returns to a historical average, the total amount of Base Budget funding awarded may decline, as county retained fee revenue increases.

### 3.1.3 Training & Education Grants

The WLIP funds \$1,000 Training & Education grants, totaling \$72k million per year. Training & Education grants may be used for the training and education of county employees for the design, development, and implementation of a land information system.

## 3.2 Current Strategic Initiative Grants: Parcels/PLSS

### 3.2.1 Strategic Initiative Grants 2016-2017



**Every county is eligible for a \$50k Strategic Initiative grant in both 2016 and 2017, for the purposes of achieving benchmarks for parcel data formatting, completeness, and accuracy (\$3.6 million)**

The WLIP funds Strategic Initiative grants amounting to \$3.6 million for 2016. Strategic Initiative grants awarded in 2016 and 2017 are for the purposes of funding county achievement of the four benchmarks laid out in the 2016 WLIP grant application, focused on goals of parcel quality and completeness. Counties must prioritize their Strategic Initiative grant activities toward achieving the benchmarks in numerical order, beginning with Benchmark 1, proceeding to Benchmark 2, and so forth.

Note that there is a waiver on Benchmark 4 to allow counties to use Strategic Initiative grant funding to acquire lidar. This exception to the benchmark requirement was created so that counties would not pass up federal funding opportunities requiring a county match, such as the United States Geological Survey (USGS) 3DEP Program. If a county meets all of the benchmarks, it may use the remaining balance of the Strategic Initiative grant to fund county-level strategic initiatives.

## 3.3 Statewide Projects and Program Administration

### 3.3.1 DOA Administration and Services

Services provided by the Program and administration costs total \$400k for 2016. WLIP staff currently carry out the duties of the department under s. 16.967(3) for administration of the WLIP by engaging in activities including but not limited to:

- Awarding and administering WLIP grants to counties, with development of the annual grant application and attendant benchmarks and standards
- Recording annual county retained fee and grant expenditures, and reporting summary statewide statistics in annual report
- Recording monthly county retained fee revenues and number of documents recorded
- Creating, administering, and reporting on the annual WLIP survey of counties
- Producing an annual program report, project reports, and other documentation of Program activities
- Reviewing and approving three-year county land information plans and amendments
- Preparing guidelines to coordinate the modernization of land records, currently by instituting benchmarks for county parcel datasets and updated instructions for three-year county land information plans
- Through the geographic information officer, providing technical assistance and advice to state agencies with land information responsibilities
- Maintaining statewide land information officer list and regularly communicating with land information officers on matters relating to the Program
- Maintaining and distributing an inventory of land information available for the state, through the provision of county and state land information plans online, which inventory land information resources and access points
- Making Program materials available to the public online
- Identifying additional sources of funding (e.g., coordinating county applications for lidar through the USGS 3 DEP Program)
- Coordinating and staffing the Wisconsin Land Information Council
- Meeting, communicating, and coordinating with county land information officers, register of deeds, surveyors, real property listers, treasurers, public safety officials, realtors, state agency GIS personnel, Department of Revenue, vendors of land records software, and other stakeholders
- Coordinating with the GIS units of Wisconsin's state agencies, primarily through the State Agency Geospatial Information Council
- Coordinating with SCO to maximize efficiencies between the statutory duties of SCO and DOA
- Engaging in program planning and budgeting, including the engagement of stakeholders in participatory planning process and other strategic planning and implementation tasks.
- Analysis of legislation affecting land information and drafting of fiscal impact statements
- Researching best practices, current technology, industry developments, and standards
- Managing the Statewide Parcel Map Initiative

- Devising submission documentation with SCO
- Data request
- Data acquisition oversight
- Data sharing logistics
- Tracking of benchmark achievement with SCO
- Arranging for technology for distribution and access to the statewide database
- Collection of user feedback for assessment purposes
- Outreach and community engagement

### **WLIP Staff Budget**

WLIP staff within the Division of Intergovernmental Relations in the Department of Administration includes:

- Program Manager (0.35 position)
- Geographic Information Officer
- Grant Administrator
- Project Coordinator and Communications Analyst

<b>2016 WLIP Staff Budget</b>	
Salaries	\$242,536
Benefits	\$ 92,746
Supplies and Overhead	\$ 55,000
Travel	\$ 10,000
<b>Total</b>	<b>\$400,282</b>

### **3.3.2 Parcel Project Contractor**

The WLIP currently funds the parcel project contractor for approximately \$115k per year, which includes the cost of software. In order to define a collaboration between the State Cartographer’ Office (SCO) and DOA on the Statewide Parcel Map Initiative, an MOU has been signed for each phase of the project through the end of 2018. The MOUs define the scope of work and SCO responsibilities in creating each iteration of the statewide parcel layer and can be found at [www.doa.state.wi.us/WLIP](http://www.doa.state.wi.us/WLIP).

<b>MOU</b>	<b>Duration</b>	<b>Years</b>	<b>Amount</b>	<b>Annual Cost</b>
V1	July 1, 2014–September 30, 2015	1.25	\$121,765	\$ 97,412
V2	October 1, 2015–December 31, 2016	1.25	\$136,951	\$109,561

The primary project objectives successfully achieved by the V1 Project were:

- Establishing a statewide parcel GIS map layer by integrating county-level datasets
- Recommending a searchable format for parcel attributes for V2 and beyond
- Making recommendations on WLIP Strategic Initiative grants for parcel mapping activities in the form of benchmarks for parcel dataset development

The SCO-DOA Project Team is currently working on the V2 Statewide Parcel Map Database Project (V2 Project). As with V1, SCO is going well beyond aggregating county parcel datasets. SCO activities include but are not limited to:

- Preparation and ingest of 72 county datasets
  - Data/metadata assessment
  - Parcel gap assessment
  - Staging data for processing
  - Attribute schema development
  - Field mapping documentation
- Local-level processing
  - Processing and joining auxiliary tables
  - Parsing, concatenating, and transposing

- Other processing as needed
- Aggregation
  - Configuring and mapping fields
  - Aggregating datasets
- State-level processing
  - Aggregating state-level data
  - QA/QC
  - Standardization
- Creating geoprocessing and other tools to assist counties in formatting data to meet parcel Benchmarks 1 and 2
- Developing and prototyping a process to update the statewide parcel layer to facilitate asynchronous updates on a county-by-county basis
- Developing a prototype solution to display zoning data
- Evaluation of county progress in in meeting parcel benchmarks
- Preparing a report to the legislature on progress in developing the statewide digital parcel map as required by s. 16.967(6)(b)

# 4 FUTURE PROJECTS: 2016-2020

This plan proposes future projects assuming that the last two-year revenue trend will continue, which equals \$6.3 million in Land Information Fund revenue per year. At least 90% of Land Information Funding would continue to be devoted to counties in the form of grants. Should document recording levels rise again, the additional funding could increase the size of some Strategic Initiative grants discussed in this chapter.

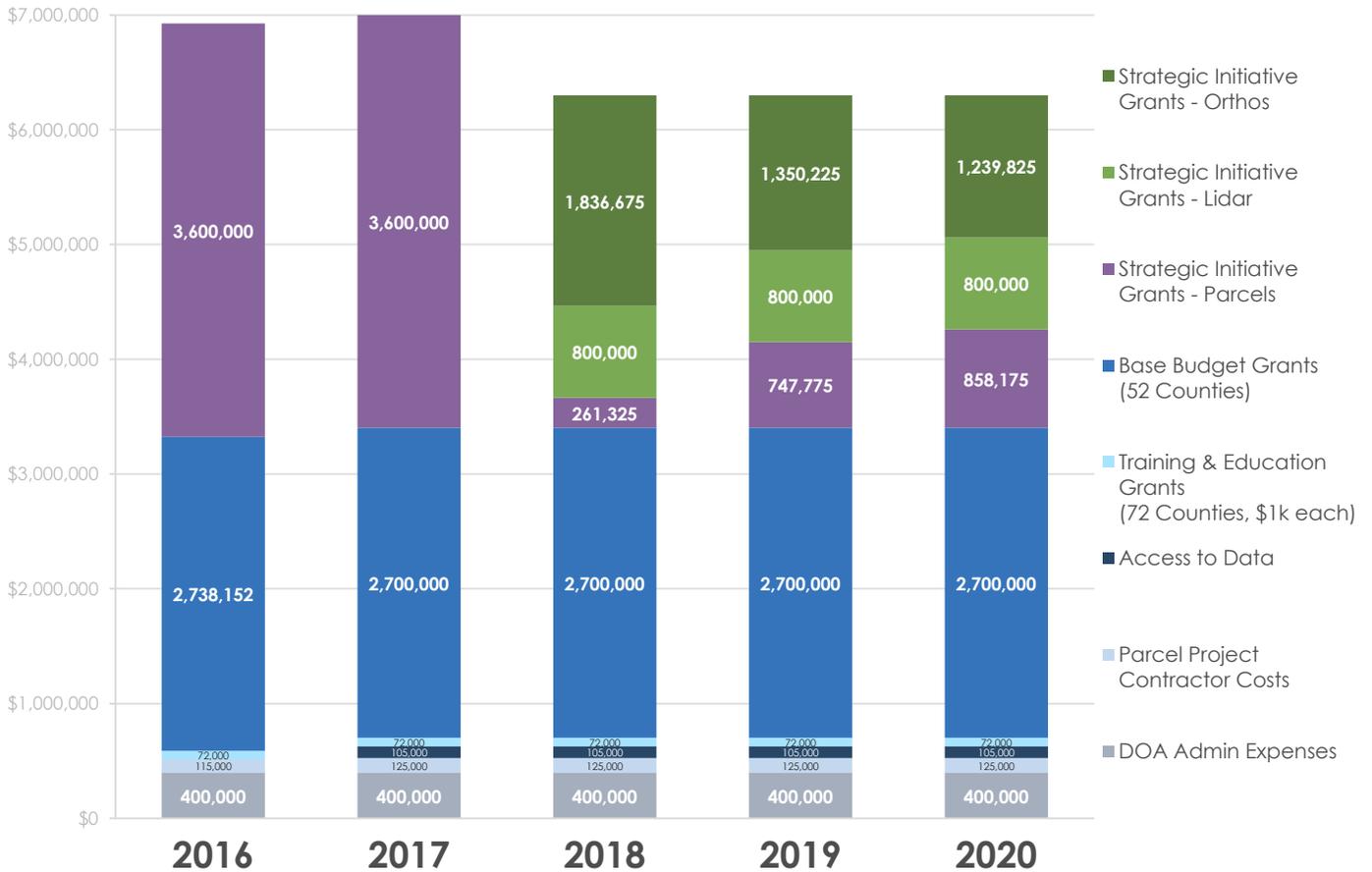
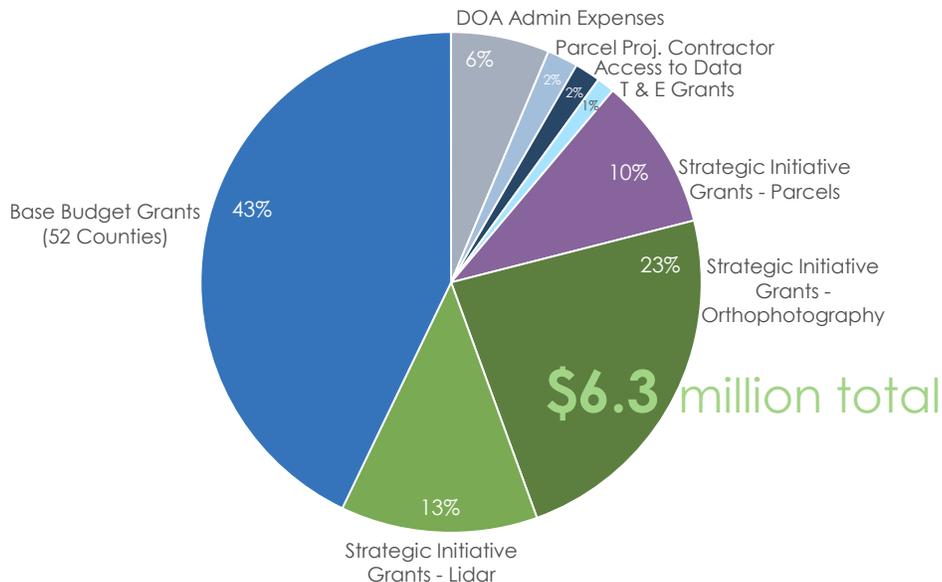


Figure 7. (Above) Projected Land Information Program budget with proposed projects through 2020 and (Below) Projected average annual Program budget with proposed projects for 2018-2020



Readers should note that these figures do not indicate a pre-commitment to spending. The Program is mindful that utilization of Land Information Fund revenue must be consistent with statutory spending authority, as described by s. 16.967, and should be for well-defined activities with statewide benefits.

This plan proposes to continue to fund county Base Budget, Training & Education, and Strategic Initiative grants with 90% of Land Information Fund revenue. As the Parcel Initiative matures and every county achieves the searchable format for their parcel and zoning dataset, this plan suggests the expansion of Strategic Initiative grant funding priorities.

Beginning in 2018, Strategic Initiative grant priorities will expand to encompass aerial imagery and the topographic mapping products of lidar.

#### 4.1 Future County Projects

##### 4.1.1 Future Retained Fees

For 2018 and beyond, counties may continue to retain \$8 of the \$30 of the register of deeds document recording fee under s. 59.43(2)(ag)1.or (e). This funding must be used to implement a county land information plan, according to s. 59.72(5).

##### 4.1.2 Future Base Budget Grants



**Every county that retains less than \$100k in a year will continue to be eligible for an annual Base Budget grant to reach the \$100k threshold (~\$2.7 million)**

Base Budget funding will continue with the same formula described in the previous chapter on Base Budget grants. However, beginning in 2018, if a county has yet to complete its digital parcel fabric, the county's Base Budget grant funding must be devoted to completing the fabric. Counties may continue using a "PLSS-first" methodology for parcel fabric completion.

##### 4.1.3 Future Training & Education Grants



**Every county will continue to be eligible for at least a \$1,000 Training & Education grant (\$72,000)**

#### 4.2 Future Strategic Initiative Grants: Aerial Imagery, Lidar, and Parcels

Beginning in 2018, Strategic Initiative grants will be prioritized to fund aerial imagery, lidar, and parcels. A basis for this is the self-reported priorities of counties from the annual WLIP survey. Aerial imagery and lidar were the most common selections listed as priorities for additional funding beyond parcels in the 2014 WLIP survey (Figure 8), as well as by state agencies and private companies. Please note that the prioritization of PLSS may be understated because it was addressed in another 2014 WLIP survey question.

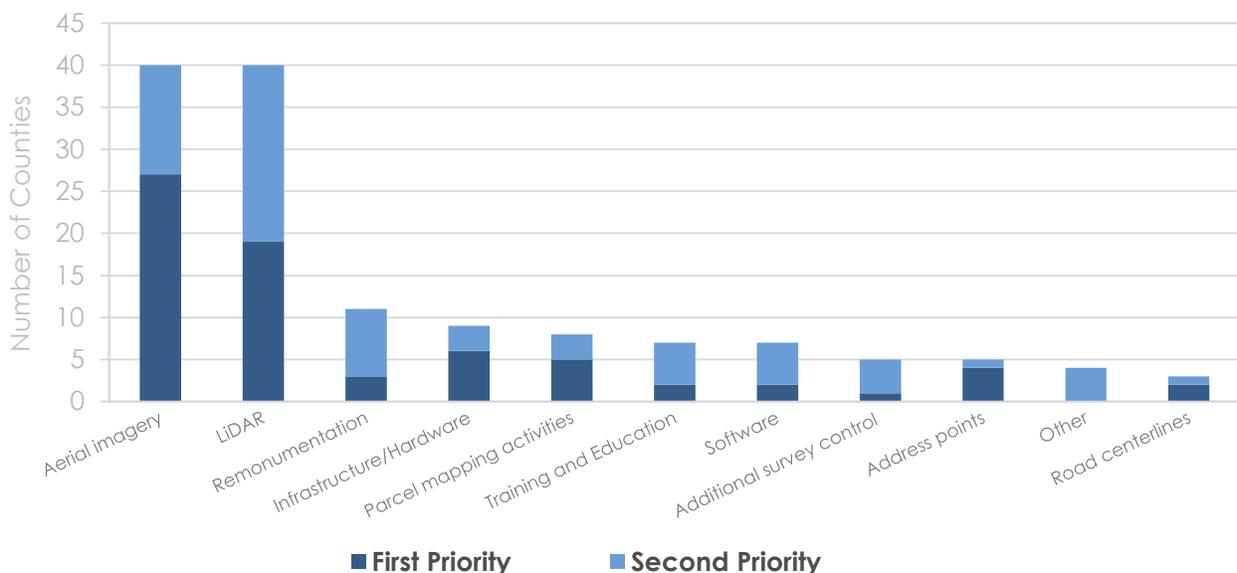


Figure 8. County priorities for additional funding beyond parcels from 2014 annual survey

With Strategic Initiative resources, it is important to continue to develop local parcel datasets to meet the parcel benchmarks laid out in the 2016 grant application and the V2 call for data submission documentation (available at [www.sco.wisc.edu](http://www.sco.wisc.edu)), as well as achieve *additional* benchmarks to be defined by 2018.

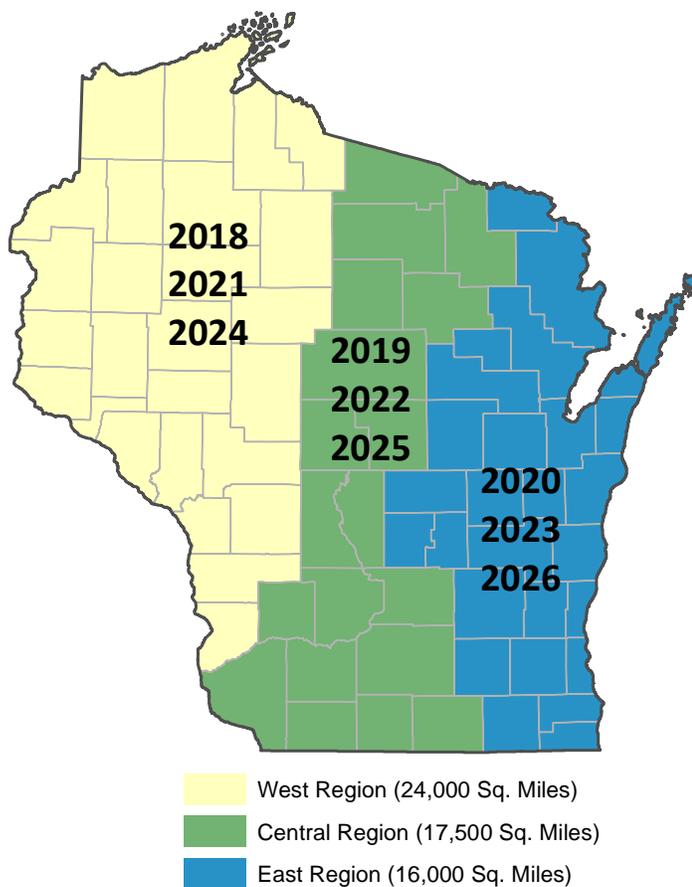
#### 4.2.1 Aerial Imagery



**Beginning in 2018, every county would be eligible for a Strategic Initiative grant every three years, in an amount covering the acquisition of a 6" resolution base aerial imagery product (~\$1.5 million)**

Grants for aerial imagery would be a part of a program that builds on the past success of the Wisconsin Regional Orthophotography Consortium (WROC) and generally follows the implementation recommendations of a publication produced by the State Cartographer's Office in 2014 called *Wisconsin Aerial Imagery: A Blueprint for Moving the State Forward*.

1. All counties receive full funding every three years to acquire base product via Strategic Initiative grants.
2. Establish a standardized three-year collection schedule, and collection regions that divide the state into three north-south zones which follow Regional Planning Commission boundaries (Figure 9).
3. Establish a minimum base product standard—spring “leaf-off” collection, 6” spatial resolution, four spectral bands, ASPRS Class II accuracy or better.
4. Develop a master imagery contract to be renewed every three years or simply specify standards to be met in grant agreements with counties. This issue should be examined with a recommendation to be made by the end of 2016.
5. Allow for local government “buy-ups” (upgrades) to higher resolution imagery, and additional products, such as lidar and planimetrics.
6. Aerial imagery will be made available in the public domain in Wisconsin Transverse Mercator, as well as to counties in another desired coordinate system.



**Figure 9. Proposed aerial imagery collection regions**

#### 4.2.2 Lidar



**Beginning in 2018, counties without lidar or with lidar that is at least 10 years old would be eligible for a Strategic Initiative grant amounting to \$137.50 per square mile for lidar base products that include Quality Level II point cloud, digital elevation model, breaklines, and contour mapping (~\$0.8 million)**

- This amount would provide the 50% local match minimum necessary for a USGS 3DEP lidar project
- The WLIP Strategic Initiative grant would not be dependent on a successful USGS 3 DEP grant application
- One Strategic Initiative lidar grant would span two years of Strategic Initiative grant eligibility

DOA will continue to coordinate the applications for federal funding through the USGS 3DEP program that may cover up to 50% of lidar acquisition and processing costs. It will also work toward providing publically funded lidar datasets, products in the public domain, and possibly additional lidar training.

#### 4.2.3 Parcels



**Beginning in 2018, each county not receiving an aerial imagery or lidar grant would be eligible for a \$5-25k grant to work on parcel data development and PLSS (~\$260k-\$860k), or more if Land Information Fund revenue increases**

Strategic Initiative Grants for parcel dataset development could range from \$5k to \$25k, depending on the amount of funding consumed by aerial imagery and lidar grants that year. If there are fewer lidar grant applications than anticipated or document recording levels return to the previous five-year (2011-2015) average, grants could total as much as \$50k per county.

As the Parcel Initiative evolves, there will likely continue to be a need for Strategic Initiative grant funding to address additional priorities for parcel completion and standardization. Standards are essential because they enable the sharing and efficient transfer of spatial data between producers and users. As the key to interoperability, standards allow organizations to effectively share and use geospatial data and technology, and thus will continue to be a central part of Strategic Initiative grant priorities.

Additional benchmarks for parcel data development would be defined as part of the V2-V4 Parcel Projects and could grow to include categories like:

- Public lands classification for parcels
- Right of ways tied to parcels
- Land use mapping for parcels
- Municipal zoning and other key land use regulations related to parcels
- Additional housing and real estate information for parcels
- Others parcel benchmarks TBD

All counties are scheduled to be complete with parcel Benchmarks 1 and 2 by March 31, 2018. A few counties will still be working on the original parcel Benchmarks 3 (Parcel Fabric Completion) and several counties will be working toward Benchmark 4 (Completion and Integration of PLSS). In order to hasten progress towards achievement of these two benchmarks, additional requirements will apply beginning in 2018:

- If a county has not met Benchmark 3 (Parcel Fabric Completion) by March 31, 2018, then it must devote both its Base Budget and any Strategic Initiative grant funds for parcel data development to this activity. Counties may continue with a "PLSS first" methodology for parcel fabric completion.
- Beginning in 2018, to be eligible for a Strategic Initiative grant funds to work on parcel Benchmark 4 (Completion and Integration of PLSS), the county must fund at least 50% of the proposed PLSS project with any sort of funding other than Strategic Initiative grant dollars.

### 4.3 Future Statewide Projects and Program Administration

#### 4.3.1 Future DOA Administration and Services



**DOA will continue to carry out the duties of the department under s. 16.967(3), including administering WLIP grants and management of statewide projects (\$400k)**

WLIP staff will seek to accomplish the tasks listed in the previous chapter, as well as further tasks:

- Defining additional benchmarks for parcel mapping
- Creating a PLSS layer as a metadata enhancement to the statewide parcel map
- Further developing standards for land records modernization
- Aerial imagery planning and coordination
- Providing access to lidar and aerial imagery in the public domain
- Providing access to other county data created with WLIP funding
- Examining providing access to other data created by state agencies
- Addressing other needs as identified

#### 4.3.2 Future WLIP Staff Budget

WLIP staff within the Division of Intergovernmental Relations in the Department of Administration includes:

- Program Manager (0.35 position)
- Geographic Information Officer
- Grant Administrator
- Project Coordinator and Communications Analyst

Future WLIP Staff Budget	
Salaries	\$242,536
Benefits	\$ 92,746
Supplies and Overhead	\$ 55,000
Travel	\$ 10,000
Total	\$400,282

#### 4.3.3 Future Parcel Project Contractor



**DOA will continue to contract with an outside agency to further develop the statewide parcel map, including formulating additional benchmarks and creating a statewide PLSS layer (~\$125k)**

V3 and V4 will be created in 2017 and 2018. In order to achieve the goals of the development of authoritative, automated, asynchronous aggregation of parcel data into the statewide parcel database, an additional MOU with SCO for the V3 and V4 parcel projects has been executed. This gives a framework for the development of the Parcel Initiative through 2018, minus some foreseeable small additional costs for project software and hardware.

MOU	Duration	Years	Amount	Annual Cost
V3-V4	January 1, 2016–December 31, 2018	2	\$234,244	\$117,122

After V4 is completed in 2018, there exists the possibility of a request for proposals (RFP) or other means of selecting a contractor for the statewide parcel layer. SCO’s role may or may not continue as is. It is expected that the costs for actual aggregation of common parcel attributes listed in the schema for parcel Benchmarks 1 and 2 would decline because the process of creating a statewide parcel map would be more automated. However, there will still be costs associated with creation, maintenance, and updates to the statewide parcel map, including the need for oversight, troubleshooting the parcel map aggregator, and providing technical assistance to counties.

While the V2-V4 projects will set a course for the Parcel Initiative to address other aspects of parcel data completion and standardization, it will take additional coordination work to implement and achieve these additional benchmarks statewide. Such work could enable statewide derivative layers from these parcel attributes or descriptors.

- Public lands classification for parcels
- Right of ways tied to parcels
- Land use mapping for parcels
- Municipal zoning and other key land use regulations related to parcels
- Additional housing and real estate information for parcels
- Others parcel benchmarks TBD

#### **Future Parcel Sub-Project – Statewide PLSS Layer**

Because the Public Land Survey System is the geodetic basis for parcels, an aggregated statewide PLSS layer could serve as a metadata layer to the parcel layer. It would benefit the statewide parcel map by displaying parcel fabric areas in need of improvements to positional line accuracy. This is of particular importance along county and state boundaries and for the development of a seamless statewide parcel map.

The creation of a statewide PLSS layer would especially benefit state agencies as a new and improved version of DNR’s “Landnet,” which is a statewide PLSS layer developed in the mid-1990s and still in use today. DNR relies on statewide PLSS data to manage over 48,000 parcels scattered throughout Wisconsin.

Since the 1990s, millions of WLIP dollars have gone into updating county PLSS. In order to track progress and judge the efficacy of this major category of WLIP expenditure activity, it is important to have a statewide PLSS layer.

#### 4.3.4 Future Access to GIS Data



#### **DOA will work toward greater access for parcels, zoning, lidar, aerial imagery, and other county GIS data (~\$105k)**

The land information community continues to move in the direction of greater access to data. As every iteration of the instructions for county land information plan has stated, a primary objective of the Program is the *sharing* of land information. Open data, or sharing without fees and license agreements, has many benefits:

- By openly sharing geospatial data, organizations reduce staff costs in responding to data requests and creating data sharing agreements.
- Open data reduces the cost, time, and hassle for people to actually use data, which leads to data being more widely used, meaning public funding for data has greater public benefit. This can create more demand for investments in land information, such as WLIP grants to counties.
- Convenient access to current, authoritative data results in fewer errors and inaccuracies, because users are using the best-sourced data.
- Public data quality increases as use of the data increases, because data users provide feedback and report errors.

For both the LinkWISCONSIN Address Point and Parcel Mapping Project and the V1 Project, 100% of counties and cities participated, resulting in address point and parcel layers with all known local data collected and aggregated. The Program seeks to encourage and facilitate this trend, not only for county data but also state agency data and municipal data.

Because the WLIP funds the creation and maintenance of county datasets, this is the natural starting point for the Program to enhance access to GIS data. As such, the Program will build on its success with parcels, by first working to make other county datasets available in the public domain. At the same time, DOA will also examine issues of access to state agency and municipal data.

#### **Future Requests for County Data**

A major future WLIP project will be collecting county GIS data beyond parcels. The 2016 data request ([www.sco.wisc.edu](http://www.sco.wisc.edu)) is for the purposes of creating the V2 statewide parcel map and zoning layers, with some additional layers requested for parcel data analysis.

In 2017, DOA seeks to expand the call for data to other common county datasets for the purposes of sharing these county datasets in the public domain. If the most current county datasets are not made available via a state hosting platform, links to county contacts and websites would be provided to ensure that users have access to the most current data.

County GIS Data Layers to Be Requested		
2016	2017	2018, 2019, and 2010
Parcels	Parcels	Parcels
County Zoning	County Zoning	County Zoning
Hydrography	Hydrography	Hydrography
Right-of-Ways	Right-of-Ways	Right-of-Ways
Street Centerlines	Street Centerlines	Street Centerlines
	+ Lidar	Lidar
	+ Road Centerlines	Road Centerlines
	+ Land Use	Land Use
	+ Building Footprints	Building Footprints
	+ Other Layers TBD	+ Aerial Imagery
		+ Address Points
		+ Other Layers TBD

### ***Facilitation of Access to County Data***

#### ***Access to County Parcels and Zoning Data***

For public access to parcels in V1, DOA is utilizing ArcGIS Online, with hosting by the Legislative Technology Services Bureau. Subsequent versions have the potential to be migrated to another platform. By 2018, there will need to be a system for the “Four As”—authoritative, automated, asynchronous aggregation—which would allow counties to continually update their parcels in the statewide layer.

Part of DOA’s role in the V1/V2 project is to collect, translate, standardize, and aggregate data from local contributors—what is considered an “aggregator” role. The aggregator role is relatively expensive and time consuming when compared to its alternative, the “steward” role. The Parcel Initiative was designed to phase out the aggregator role over successive cycles of development, with DOA moving to the role of a steward, which will be less costly and time consuming. The key to achieving this transition lies in the successful implementation of benchmarks and standards for V2, V3, and V4.

Continuing to provide support solutions, such as tools to aid counties, will be beneficial in assisting counties to meet the standards and formats required for successful submission under the contributor model. In addition, as technology changes, new solutions should be considered and developed as appropriate. The contributor model offers benefits of sustainability, efficiency, and longevity, but it depends on the willingness and ability of counties to standardize and make data available.

#### ***Access to County Lidar and Aerial Imagery***

In 2017, the Program will seek to provide convenient access to lidar and aerial imagery datasets in the public domain. The Program may first facilitate access to aerial imagery and lidar products simply as files for download, while considering possible cloud services which would enable use without download. It will be examined what state agency needs can be met in this way and how the Program can assist. While DOA may have a strong role to play in meeting state agency needs for aerial imagery, the leadership of other state agencies on this issue will likely be needed.

WisconsinView currently hosts aerial imagery and lidar datasets and expanding this role should be considered. There are lidar data and derived datasets available for 24 counties in the WisconsinView data repository. The WisconsinView remote sensing repository also makes available most of the public ortho-imagery collections of the state.

#### ***Access to Other GIS Data***

During 2016, DOA will evaluate the best place to host other common county datasets in 2017, such as by building on current successful efforts. Some potential agencies or platforms for hosting include:

- Legislative Technical Services Bureau
- UW-Madison Robinson Map Library
- ArcGIS Online and ArcGIS Open Data

Hosting and display of datasets would require establishing some governance and metadata practices. The Program would seek to apply lessons learned from other states, the Legislative Technical Services Bureau’s WISE-Decade platform, and from the Robinson Map Library’s metadata protocols for its collection of county data for use by the UW-System. The Program would coordinate with any potential hosting agency to examine whether state agency and municipal datasets could also be accommodated.

#### ***Community Coordination and Lean Government***

As part of the effort to increase access to GIS data, in the future DOA will also coordinate in order to identify Wisconsin’s geographic information needs and priorities, and provide leadership and coordination amongst the geospatial community to meet those needs. This includes engaging in statewide strategic GIS coordination, planning, and related budgeting responsibilities, while meeting the objectives of the Governor’s “Lean Government” initiative. The Program will strive to make state government operate more efficiently by engaging in coordination, not only among state agencies, but also between state agencies and local governments.

## **4.4 Out of Scope**

This plan is intended to give strategic direction for only the WLIP, with the implication that more detailed planning is to follow, and some uncertainty is inevitable. This plan intentionally excludes some tasks and is limited in scope, as the Program seeks to follow a realistic strategy for what is achievable by 2020. As objectives of the plan are accomplished, the plan could be updated with an expanded scope of work. To keep a realistic and manageable scope, the current plan document does not address several points.

### **4.4.1 Geospatial Strategic Plan for Everything GIS in Wisconsin**

The Wisconsin Land Information Program is a big player in Wisconsin's efforts to modernize land records and develop GIS, but there are many other public and private agencies hard at work on similar efforts. It is beyond the scope of this document to plan for anything beyond what can be funded with the Land Information Fund. This 2016-2020 plan is not meant to be a plan for everything GIS in Wisconsin.

### **4.4.2 Expanding Spending Authority**

According to s. 20.505(1)(ub), DOA is enabled to spend Land Information Fund revenue on the WLIP as governed by s. 16.967 up to a limit of \$7,673,300. Legislative changes could expand or limit duties of the department for the WLIP described by s. 16.967. For example, a new statutory directive could hypothetically authorize the Program to expanding purchasing power on a statewide level, on behalf of counties. This program plan intentionally avoids the need for legislative changes, in order to focus WLIC attention, staff efforts, and land information community engagement on goals and objectives that could be accomplished within the existing structure put in place by statute and administrative rule.

### **4.4.3 Use of Land Information Fund Revenue for Other Activities**

According to s. 20.505(1)(ub) and (ud), Land Information Fund revenue could be used to fund comprehensive planning grants or DOA review of municipal incorporations and annexations. However, comprehensive planning grants have not been funded since 2010 and are not likely to occur in the future. Also, Land Information Revenue has not been used to fund municipal incorporations and annexations in recent years. Both comprehensive planning grants and review of municipal incorporations and annexations are considered outside the scope of this plan and WLIP budget.

### **4.4.4 Budgeting for Other Possible Funding Sources**

While DOA seeks to capture or leverage additional sources of funding to achieve land information goals, whether it be from federal agencies, other state agencies, local governments, or the private sector, this plan does not budget for funding other than the recording fees collected through the Land Information Fund. Political strategizing to capture additional funding is not within the scope of this plan and is left to other entities, such as organizations representing sector interests. An example of another source of potential county land information funding is the cell phone fee for police and fire, which amounts to about \$20 million in annual revenue. This revenue was in part previously used for E911 address point and other sorts of mapping, but is beyond the scope of this plan to address.



**WISCONSIN DEPARTMENT OF  
ADMINISTRATION**

**SCOTT WALKER**  
GOVERNOR

**SCOTT A. NEITZEL**  
SECRETARY

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Madison, WI 53708-8944  
Voice (608) 267-3369  
[www.doa.state.wi.us/WLIP](http://www.doa.state.wi.us/WLIP)

January 26, 2016

Dear Kevin,

On behalf of the Department of Administration, I am writing to request a subset of your GIS data. The data acquired through this request will be used to develop a statewide parcel layer for the next version of the Statewide Parcel Map Database Project, Version 2.

This is an important and new data request, as we are asking that counties standardize parcel and tax roll data to the statewide schema. Your data submittal is necessary in order to execute your county's 2016 Strategic Initiative grant agreement and receive the first payment.

As a reminder, on your grant application, you indicated that you would be submitting parcel data for V2 to meet the following standard:

**SEARCHABLE FORMAT**

**Checklist and V2 Webpage**

The V2 checklist (enclosed) summarizes the data we are asking you to submit and the format. The digital PDF checklist contains hyperlinks to attribute definitions, the schema (which has been updated with some minor technical corrections and clarifications since the V1 Interim Report), and several tools to help you format your data.

In addition, the V2 webpage contains all the necessary submission information, including the required "submission form" (<http://www.sco.wisc.edu/images/stories/publications/V2/submission>).

**Submit Data Through WISE-Decade**

Your parcel data will be collected through the WISE-Decade platform, where you should log in with the user information you received on December 29<sup>th</sup> from the Legislative Technology Services Bureau. Please submit your data by **March 31, 2016**.

**Feedback and Help**

We expect that you may have questions about making your data align with the statewide schema. Your peer counties are a great resource, as is the FAQs section on the V2 webpage.

For technical questions, you can contact Codie See at 608-890-3793 or [csee@wisc.edu](mailto:csee@wisc.edu). Feel free to contact me with general questions as well.

We know that it could take a considerable amount of work to get your data into the statewide schema. Strategic Initiative grants were designed to aid in this task. We sincerely appreciate your effort.

Thank you,

Peter Herreid  
Grant Administrator  
Wisconsin Land Information Program  
608-267-3369

## ✓ PREP

- Crucial! Review the schema documentation and [V2 webpage](#)
- Choose: **SEARCHABLE** or **EXPORT FORMAT**  
**SEARCHABLE FORMAT** – County data submittal is ready for immediate aggregation into the statewide layer, as it matches the statewide schema exactly. All attribute data exists in the GIS table. Some domains standardized.  
**EXPORT FORMAT** – Flexible format which will be converted to the searchable format on behalf of counties, accommodating several options, including GIS data, text files, and/or tax roll data in the Dept of Revenue's XML format.
- **EXPORT FORMAT ONLY: Select 1 of 4 models of join type from Appendix B**
- Be aware of tools that may be useful:  
[Data Standardize Tool](#) – Standardize file geodatabase feature class data via the creation of a lookup table  
[Address Parsing Tool](#) – Parse site addresses into sub-address elements  
[DOR XML Parse Tool](#) – Translate valid Wisconsin Department of Revenue tax roll XML into a GIS table  
[Condo Stack Tool](#) – Model condos by stacking condo parcel geometries by owner  
[Class of Property Dissolve Tool](#) – Format class of property data to V2 schema definitions  
[GIS Templates](#) – Feature class templates for either parcels or zoning in the V2 schema

## ✓ ATTRIBUTE TABLE

- All attribute data in **ONE** table (.gdb, .dbf, or DOR XML format)
- Include county-wide digital parcel data with attributes according to schema in [Appendix F](#) (annotated list ►)
- **EXPORT FORMAT ONLY: Choose condo model scenario from Figure A-1.** If condos are not modeled geometrically (Figure A-1) so that each record attaches to one and only one parcel geometry, then submit using Condo Type #5–EXPORT-RELATIONAL
- **EXPORT FORMAT ONLY: If the model requires a join between the attribute data and parcel geometries, specify join PINs in submission form and, if applicable, include XREF TABLE (for RELATIONAL MODEL)**

## ✓ PARCEL FEATURE CLASS

- **SEARCHABLE FORMAT ONLY: Follow instructions in Appendix A to format, standardize domains, and model condos**
- **EXPORT FORMAT ONLY: Follow instructions in Appendix B to format**

## ✓ CO. ZONING DATA

- Submit a separate feature class for each of 5 types of zoning data the county administers<sup>1</sup> with DESCRIPTION or LINK info
- Follow instructions in [Appendix C](#) and schema in [Appendix G](#)

## ✓ OTHER LAYERS

- Submit rights-of-way
- Submit street centerlines
- Submit hydrography

## ✓ SUBMISSION FORM

- Complete the mandatory submission form crosswalk and certify that your submission is complete

## ✓ ZIP & SUBMIT

- Submit data to [legis.wisconsin.gov/ltsb/gis/wise-decade](http://legis.wisconsin.gov/ltsb/gis/wise-decade)

# V2 Data Submission Checklist

Statewide Field Name – ▼ Clickable!	Definition – From Schema in Appendix F	For Benchmark 2	Standardize Domains for SEARCHABLE FORMAT – Digital Appendix
<input type="checkbox"/> STATEID	An ID generated by concatenating <PARCELFIPS>with<PARCELID>		
<input type="checkbox"/> PARCELID	Parcel ID		
<input type="checkbox"/> TAXPARCELID	Tax Parcel ID		
<input type="checkbox"/> PARCELDATE	Parcel Date		
<input type="checkbox"/> TAXROLLYEAR	Tax Roll Year		
<input type="checkbox"/> OWNERNAME1 <sup>3</sup>	Primary Owner Name		
<input type="checkbox"/> OWNERNAME2	Secondary Owner Name		
<input type="checkbox"/> PSTLADDRESS	Full Mailing Address		
<input type="checkbox"/> SITEADDRESS	Full Physical Street Address	Concatenate	
<input type="checkbox"/> ADDNUMPREFIX	Address Number Prefix	Parse	
<input type="checkbox"/> ADDNUM	Address Number	Parse	
<input type="checkbox"/> ADDNUMSUFFIX	Address Number Suffix	Parse	
<input type="checkbox"/> PREFIX	Prefix	Parse	Yes
<input type="checkbox"/> STREETNAME	Street Name	Parse	
<input type="checkbox"/> STREETTYPE	Street Type	Parse	Yes
<input type="checkbox"/> SUFFIX	Suffix	Parse	Yes
<input type="checkbox"/> LANDMARKNAME	Landmark Name	Parse	
<input type="checkbox"/> UNITTYPE	Unit Type	Parse	
<input type="checkbox"/> UNITID	Unit ID	Parse	
<input type="checkbox"/> PLACENAME	Place Name		
<input type="checkbox"/> ZIPCODE	Zip Code		
<input type="checkbox"/> ZIP4	Zip + 4		
<input type="checkbox"/> STATE	State		
<input type="checkbox"/> SCHOOLDIST	School District		Yes
<input type="checkbox"/> SCHOOLDISTNO	School District Number		Yes
<input type="checkbox"/> IMPROVED	Improved Structure		Yes
<input type="checkbox"/> CNTASSDVALUE	Total Assessed Value <sup>4</sup>		
<input type="checkbox"/> LNDVALUE	Assessed Value of Land		
<input type="checkbox"/> IMPVALUE	Assessed Value of Improvements		
<input type="checkbox"/> FORESTVALUE	Assessed Forested Value		
<input type="checkbox"/> ESTFMKVALUE	Estimated Fair Market Value		
<input type="checkbox"/> NETPRPTA	Net Property Tax (or Gross)		
<input type="checkbox"/> GRSPRPTA	Gross Property Tax (or Net)		
<input type="checkbox"/> PROPCLASS	Class of Property – defined in Appendix F		Yes
<input type="checkbox"/> AUXCLASS	Auxiliary Class of Property		Yes/No
<input type="checkbox"/> ASSDACRES	Assessed Acres		
<input type="checkbox"/> DEEDACRES	Deeded Acres		
<input type="checkbox"/> GISACRES	GIS Acres		
<input type="checkbox"/> CONAME	County Name		Yes
<input type="checkbox"/> PARCELFIPS	Parcel Source FIPS		Yes
<input type="checkbox"/> PARCELSRC	Parcel Source Name		Yes

### Notes

1. **County-administered zoning** is limited to county general, farmland preservation, shoreland, floodplain, and airport protection zoning. Do not submit zoning ordinance data administered by cities, villages, and towns.
2. **Completeness relative to "Element Occurrence Standard."** This means that if an element (such as a property address, total assessed value, total property tax value, etc.) actually occurs for a given parcel, then this element should be included in the submitted dataset. This also means that there may be justifiable omissions from the submitted dataset. Examples might be missing tax data for tax exempt properties, no address when no structure is present on a property, etc. Data elements must be included only if they actually occur in the county land information system.
3. **Redaction policy.** Owner names are necessary for data submittal to be usable by state agencies. Any redaction of owner names, as required by an existing county or municipal policy, should be handled explicitly in the data before it is submitted. If any or all owner names are not included, the county must include the written policy for excluding them as adopted by the county or municipality.
4. **Total Assessed Value** must be calculated before submitting. Often this is Assessed Value of Land + Assessed Value of Improvements. See schema for more.

# Wisconsin Land Information Program Plan Alternative

## Respectively presented to DOA by Waukesha County

### Document Purpose

- The Wisconsin Land Information Program was created by Wisconsin Act 339 in 1989.
- The original 1991 County-Wide Land Information Plan instructions contained the following statement:

*“It is the intent of the Board to afford each County the widest possible latitude in its interpretation of land records modernization and the development and implementation of the County-Wide Plan. However, this intent must be balanced by the need for the effective use of public funds for programs which are consistent, efficient and which will ultimately be able to contribute to the fully confederated network of land information systems.”*
- Over the years, locally retained fees, and State program funds in the form of grants to Counties, have been used to build County level land information systems.
- While this model as originally conceived has created a tremendous amount of data, it has not matured into the uniform, statewide datasets desired by many.
- This Alternative does not attempt to change the current program paradigm, but rather strives to enhance that paradigm by adding components to facilitate the creation of the statewide system.

### Current Initiatives

- Act 20, enacted in 2013, increased the amount of revenue available to the Department of Administration (DOA) for the administration of the WLIP.
- In response, the DOA, working with the State Cartographers Office (SCO) developed the Version 1 Statewide Parcel Map Database Project that set forth benchmarks leading to the completion of the PLSS and parcel maps in the state
- The Version 1 document also provided a format to be used in submitting parcel geographic and assessment data to the state which will result in a uniform statewide coverage.
- Based on the Version 1 document, DOA has allocated strategic initiative grants in the amount of \$50,000 to be provided to each County for 3 consecutive years to meet the requirements of submitting uniform parcel data to the State. This process will allow each County the flexibility to address local parcel data deficiencies while ultimately creating the desired statewide dataset.

### Draft WLIP Program Plan: 2016-2020

- In February 2016, DOA presented the Draft WLIP Program Plan: 2016 – 2020 (“draft plan”) to the Land Information Community for review and comment.
- The draft plan proposes to use program revenues to fund costs associated with DOA Administrative Expenses, Parcel Project Contractor, Access to Data, Training & Education Grants, and Base Budget grants.
- The draft plan includes the parcel program as set forth in the Version 1 document which uses \$50,000 strategic initiative grants to each County through 2017 to complete parcel mapping and transmit those digital parcel files to the state.

- The draft plan then initiates a program going forward from 2018 designed to continue some support for local parcel mapping, provide Orthoimagery for the State on a 3 year cycle and provide LIDAR funding, in the form of USGS program matching funds, on a 10 year basis.
- Key Proposals of the Draft Plan
  1. *Every county is eligible for the \$50K Strategic Initiative grant in both 2016 and 2017, for the purposes of achieving benchmarks for parcel data formatting, completeness, and accuracy*
  2. *Every county that retains less than \$100K in a year will continue to be eligible for an annual Base Budget grant to reach the \$100K threshold*
  3. *Every county will continue to be eligible for at least a \$1,000 Training & Education grant*
  4. *Beginning in 2018, every county would be eligible for a Strategic Initiative grant every three years, in an amount covering the acquisition of a 6" resolution base aerial imagery product*
  5. *Beginning in 2018, counties without LIDAR or with LIDAR that is at least 10 years old would be eligible for a Strategic Initiative grant amounting to \$137.50 per square mile for LIDAR base products that include Quality Level II point cloud, digital elevation model, breaklines, and contour mapping.*
  6. *Beginning in 2018, each county not receiving an aerial imagery or LIDAR grant would be eligible for a \$5-\$25K grant to work on parcel data development and PLSS, or more if Land Information Fund revenue increases*
  7. *DOA will continue to carry out the duties of the department under s. 16.967(3), including administering WLIP grants and management of statewide projects.*
  8. *DOA will continue to contract with an outside agency to further develop the statewide parcel map, including formulating additional benchmarks and creating a statewide PLSS layer.*
  9. *DOA will work toward greater access for parcels, zoning, LIDAR, aerial imagery, and other county GIS data*

## **Proposed Alternative to Draft Plan Key Proposals**

As stated previously, the WLIP has resulted in the creation of a large body of data by Counties throughout the State. The issue has been that the data was not always created to a standard specification and with an openness that allowed for a compilation into a statewide dataset. Rather than removing the local flexibility that has been the hallmark of the WLIP since its inception, I am proposing that the WLIP be adjusted to address the issues related to creating the statewide dataset. I am proposing that the adjustments incorporate lessons learned to date and be patterned after the process being implemented to complete the PLSS and Parcel data layers as set forth in the Version 1 document and the draft program plan.

I am hereby proposing the following changes to the Draft Plan Key proposals and plan.

- I accept as valid key proposals 1, 2, 3, 7, 8 and 9.
- I propose to revise key proposals 4, 5, and 6 as follows
  4. At some time during 2018, 2019, or 2020, every county will be required to provide to the State repository base aerial imagery created with a maximum 6" resolution that is, at a minimum, current to within 5 years of the upload date. Following the initial upload of

imagery, each county will be responsible for providing updated aerial imagery with similar specifications, whenever it is completed, but at a minimum, the aerial imagery in the state repository must be maintained to within 5 years of current.

5. At some time during the time period 2018-2026, every county will be required to provide to the State repository LIDAR base products that include Quality Level II point cloud, digital elevation model, breaklines, and contour mapping. Following the initial upload of the LiDAR data, each county will be responsible for providing updated LIDAR data so the data in the State repository is maintained to within 8 years of current.
  6. The initial priorities of the WLIP will be to develop statewide inventories of 1) Parcels 2) PLSS 3) Orthoimagery and 4) LIDAR. Beyond these 4 priorities, the DOA will coordinate with Land Information stakeholders to determine which additional data framework elements would be appropriate for aggregation as a future statewide datasets. The stakeholder groups would then be requested to assist in the development submittal standards that Counties can use as a guide for development using either locally retained funds or strategic initiative grant funds.
- I propose to add the following 2 proposals
    10. Beginning in 2018, every county will be provided a strategic initiative grant of \$40,250 to meet the program goals of completing and submitting the DOA priority datasets and additional Framework Data layers described above. This amount will be allowed to change to match retained fees received by the State. It is to be absolutely understood that any data, partially or completely created with funds from these annual strategic initiative grants will be provided openly in the public domain.
    11. Every year, each County must provide metrics regarding progress toward completion and estimated completion requirements (time and funds) for each prioritized program element as well as each Framework Data Layer

## Conclusions

In conclusion, I would make the following observations

- The basic tenants of Land Information Program are sound
- The major deficiency of the State Land Information Program has been the lack of submission standards, priorities and a repository that would have created a statewide system of available data
- The [Version 1 Statewide Parcel Map Database Project](#) document addressed the deficiency by providing the submittal standard and repository for parcels, and then provided strategic initiative grants to Counties to complete the work and provide the data.
- This alternative proposes to extend the Version 1 document process to all other Framework Data layers in order to retain local flexibility while moving to statewide data model.

## Appendix A

### Alternative Program Funding Distribution

	2016	2017	2018	2019	2020
Strategic Initiative Grants-Program (72 Counties, \$40,250 each)			\$2,898,000	\$2,898,000	\$2,898,000
Strategic Initiative Grants-Parcels	\$3,600,000	\$3,600,000			
Base Budget Grants	\$2,738,152	\$2,700,000	\$2,700,000	\$2,700,000	\$2,700,000
Training and Education Grants (72 Counties, \$1K each)	\$72,000	\$72,000	\$72,000	\$72,000	\$72,000
Access to Data		\$105,000	\$105,000	\$105,000	\$105,000
Parcel Project Contractor Costs	\$115,000	\$125,000	\$125,000	\$125,000	\$125,000
DOA Admin Expenses	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000
<b>Total</b>	<b>\$6,925,152</b>	<b>\$7,002,000</b>	<b>\$6,300,000</b>	<b>\$6,300,000</b>	<b>\$6,300,000</b>