University of Michigan Social Venture Fund
Winter 2015 Loveland Capacity Building Project

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I. Project Summary

The University of Michigan's Social Venture Fund (SVF) at the Stephen M. Ross School of Business has partnered with the State of Michigan Enterprise Information Management Program and Michigan-based Loveland Technologies to explore county-wide data management practices in regard to parcel-level land data and geographic information systems (GIS) data acquisition structures.

For this project, students from SVF and the University of Michigan's Taubman College of Architecture & Urban Planning surveyed all Michigan counties to understand the cost, availability, and maintenance responsibilities of parcel and assessment data.

The SVF team, with the support of the Enterprise Information Management Program, disseminated an initial online survey consisting of 51 questions to assess each county's parcel data format and processing, public availability of data, cost structures of available data, labor associated with maintenance of data, and perception of open data initiatives across the state of Michigan. SVF and/or the Enterprise Information Management Program contacted each county, requesting that the department responsible for parcel data in their county take the online survey. SVF then followed up with each county that did not complete the initial survey with a short survey including questions deemed most relevant for this analysis.

By surveying all of Michigan's counties, SVF and Loveland compiled a statewide picture of county land data management practices. This research provides insight for potential business models that may reduce costs to counties, increase data availability and accuracy, and identify market inconsistencies.

The analysis below summarizes the 132 responses to the Michigan Parcel Data Surveys. The figures below account for only those answers that were deemed complete. All other incomplete or blank responses have been removed for this analysis.

II. Report Data

Our report is accompanied by the following supplemental information:

Raw Data
Raw survey data for 101 long survey responses and 32 short survey responses may be available upon request to Loveland Technologies.

Google Sheet (Excel Sheet)
Survey responses have been exported into a Google Sheet shared with Loveland Technologies. Extra responses from secondary county representatives and non-county responses are separated into separate sheets within this documented. Responses from both the original and abbreviated survey responses are included in the main data sheet.

III. Key Takeaways

Enhanced Data Access to Public Records Act
The Enhanced Access to Public Records Act allows a public body to provide access to public records and charge a reasonable fee for providing and maintaining that access. The Act defines a reasonable fee as "a charge calculated to enable recovery time of those operating expenses directly related to the Public Body's provision of Enhanced Access," but leaves room for variability and judgment in the pricing criterion used to set rates. Counties use this act to justify the prices they charge for access to parcel and assessment data. They must adopt a policy that complies with the Act before providing enhanced access under the Act.

Some survey responses suggest that this Act (and the correlated county policy) actually limits GIS officials' ability to increase access to information. For example, when asked if the public can access Complete Parcel Data in his county, one respondent wrote that their viewer meets 99% of requests, but that he is technically "caught up in the Enhanced access to GIS data law." When asked if they had an open data policy, two counties responded that they had an Enhanced Access Policy, suggesting confusion differentiating between the initiatives. Finally, when asked if their county was working on an open data policy, one respondent writes, "No, first the enhanced access policy and laws need to be revoked and education of decision makers is required to change."

GIS Competitive Landscape (See mapped question 49)
The following companies and organizations operate within the Michigan GIS competitive landscape.

1. Beacon. https://beaconbeta.schneidercorp.com/
2. Delorme. http://www.delorme.com/default.aspx
3. Geographic Information Services Inc. http://gisinc.com/
4. IGRE, Eastern Michigan Geography Department. http://igre.emich.edu/igre/giseducation/gisatemu
5. LIAA- Michigan Based, non-profit community planning firm. http://www.liaa.org/
6. Latitude Geographics. http://www.latitudegeo.com/
7. M Power Innovations. http://mpowerinnovations.com/
8. MSU RS&GIS. http://www.rsgis.msu.edu/
9. Red Horse Geographics- Ypsilanti Base. http://www.redhorsegeographics.com/

Information on these companies and organizations' geographic operations is provided in mapped question 49.

Current sales and pricing information
There is a high degree of variance in sales and pricing for parcel and assessment data across the state in terms of price methods, total number of sales, and cost specifically incurred to maintain the information. In general, the counties perform few sales and generate minimal revenue from them.

Counties employ a variety of pricing methods to sell their data. The most common sales methods for parcel and assessment data are per parcel and on a county-wide basis. Some counties have a county-wide price that is cheaper on a per parcel basis than buying each individual parcels. A few counties offer parcel and assessment per municipality. One county earns revenue off of paper map sales.

Regardless of the pricing method used, counties perform few data sales. Discounting one outlier county (Jackson), the average sales per county reporting information last year was around $6,000. When pairing these sales with the costs incurred by employing FTEs in the sales and maintenance of parcel and assessment data, just 1-2 counties earn more money on data sales than the cost of a full-time equivalency. If counties justify the value of sales based upon the revenue the revenue they bring in, the survey data shows little evidence that counties earn profits to cover the cost of maintaining and selling data.

Open Data Initiative
Very few Michigan counties indicate that they have or are pursuing an open data initiative. Survey responses suggest that the counties who indicated having or pursuing an initiative vary in their interpretation of what open data entails. For example, when asked if the county is involved in conversations to participate in the statewide open data policy, one respondent writes, "Yes/No, we participate in Enhanced 911 and State Tax Commission field staff". Further research is required to understand how this concept is interpreted and practiced across counties throughout the State of Michigan.

For more information, please contact any of the following:

University of Michigan Social Venture Fund	**LOVELAND Technologies**	**Office of Technology Partnerships State of Michigan**
umsocialventure.com	makeloveland.com	Everett Root
Diana Callaghan	team@makeloveland.com	roote@michigan.gov
dianacal@umich.edu	313-649-LAND	517-373-7910
248.842.7195		

Overall County Response to Parcel Survey

Survey_Completeness

- Complete Response (40)
- Short Survey (11)
- Incomplete Response (14)
- Contact Info Only (6)
- No Response (12)

N

0   25   50   100 Miles

7. Who Maintains Parcel Shape Objects?
(Showing "County" only)

Who_maintains_PSOs

- ■ County (53)
- ■ <Null> (30)

N

0   25   50   100 Miles
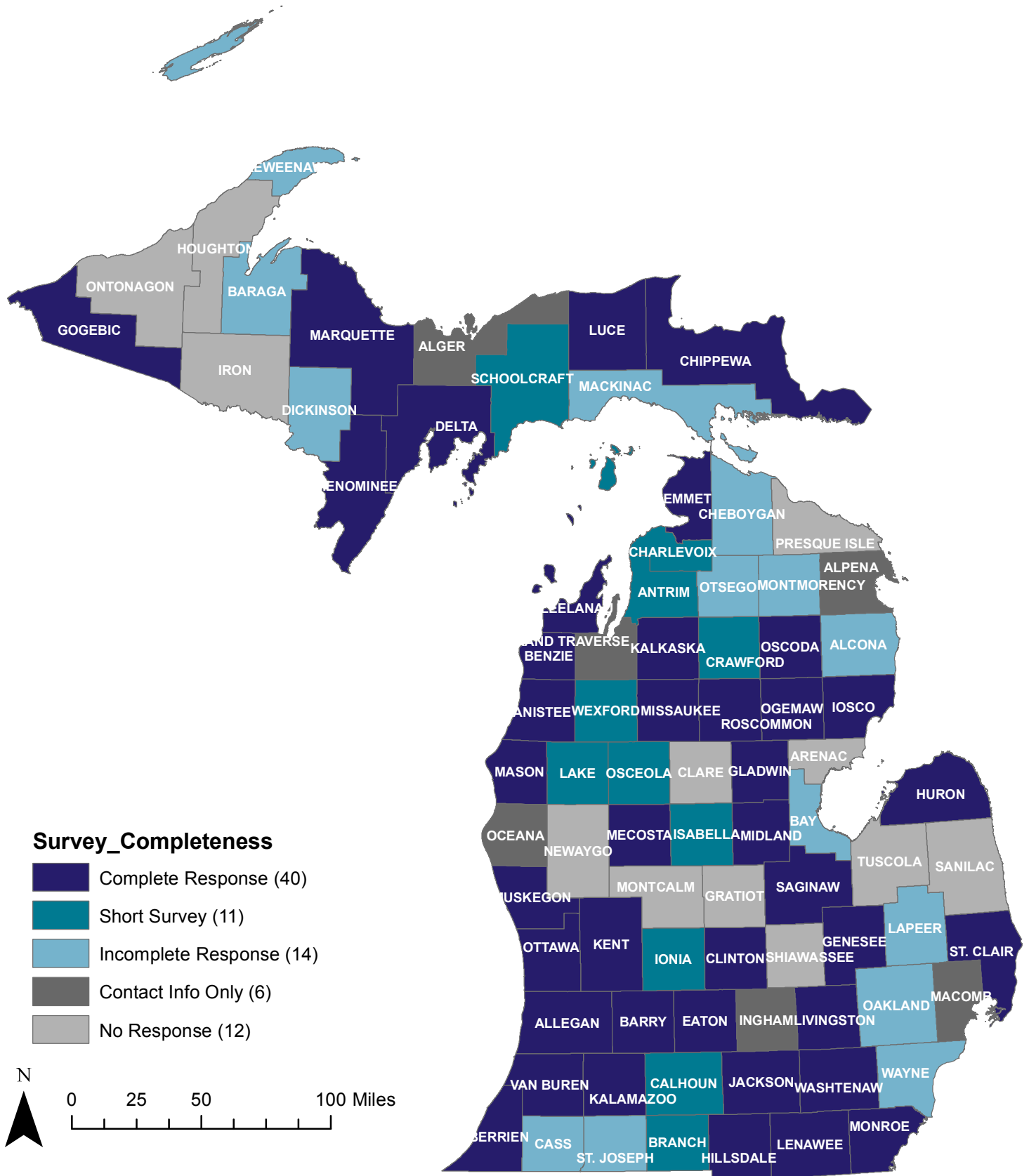
7. Who Maintains Parcel Shape Objects?

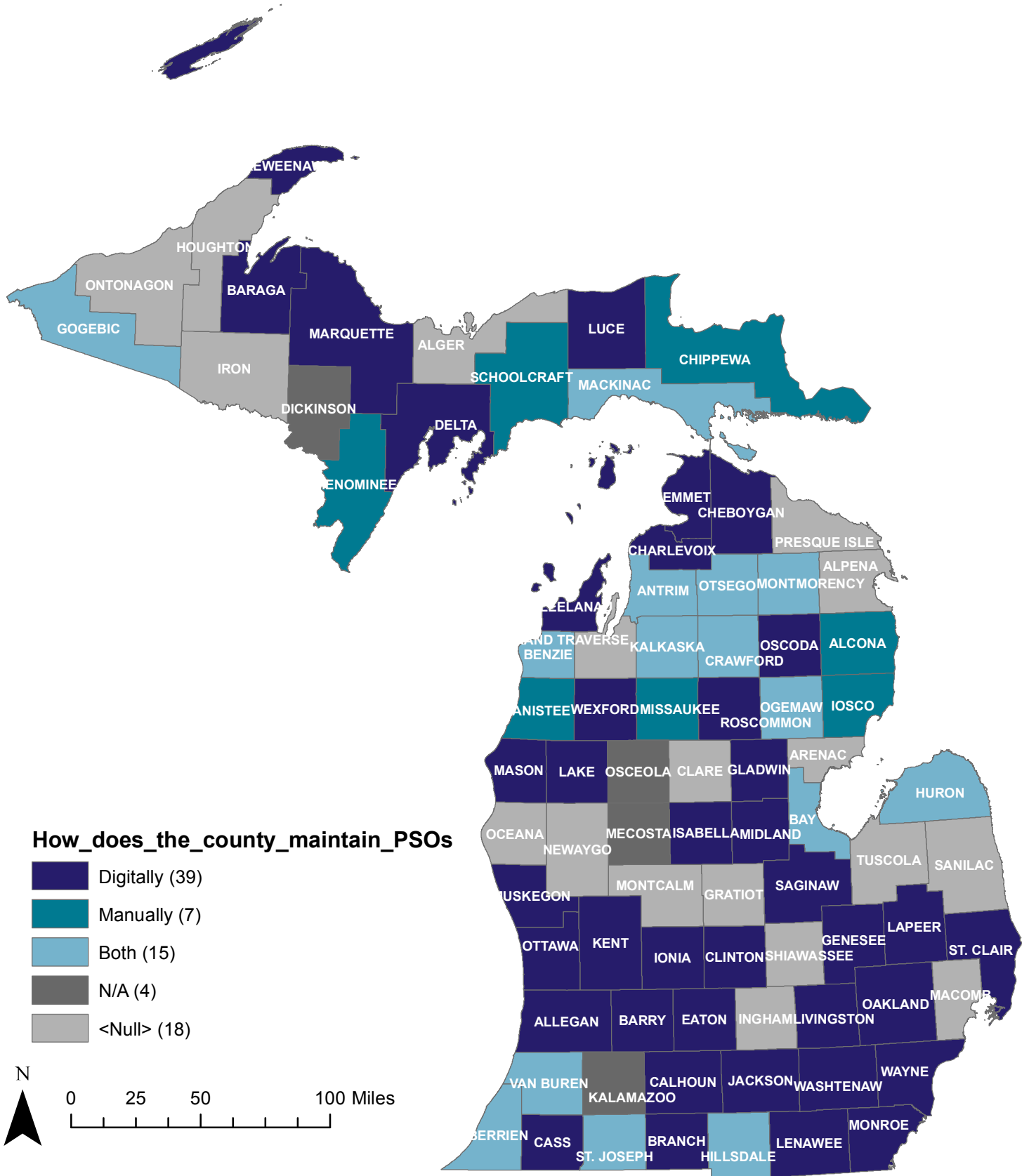| County	Other (Please Specify)
Allegan	City of Holland spans Allegan & Ottawa Counties and maintains their own parcel shape objects, but shares that data with us so that we can have a complete, countywide coverage.
Clinton	We try to incorporate Lansing and East Lansing parcels into our county parcel map.
Eaton	Delta Township maintains its own Parcel Data - Eaton County maintains records for the remainder of the County
Genesee	28 entities. Two townships, and largest city maintain parcel data. Redundancy in that county and those two twps maint parcel separately.
Lenawee	County (Except for the Cities of Adrian and Tecumseh)
Menominee	we have none
Missaukee	Our county does not have GIS. All of our maps are on paper. We have one township that has GIS and the assessor maintains it.
Monroe	One community hires an engineering firm to make annual edits.
Osceola	Have no GIS/AutoCAD, maps hand drawn
Saginaw	The Saginaw Area GIS Authority Maintains all except the City of Saginaw Maintains their own.
St. Joseph	There are two cities in our county that maintian their own parcels and share with the county
Van Buren	One city maintains their own but we do as well

Pie chart:
- Township 5%
- City 3%
- County, City and Township 10%
- Regional Authority 5%
- County and Township 2%
- County and Regional Authority 3%
- County and City 10%
- County 62%

8. Does The County Maintain Digital or Manual Parcels?

How_does_the_county_maintain_PSOs

- ■ Digitally (39)
- ■ Manually (7)
- ■ Both (15)
- ■ N/A (4)
- ■ <Null> (18)

N
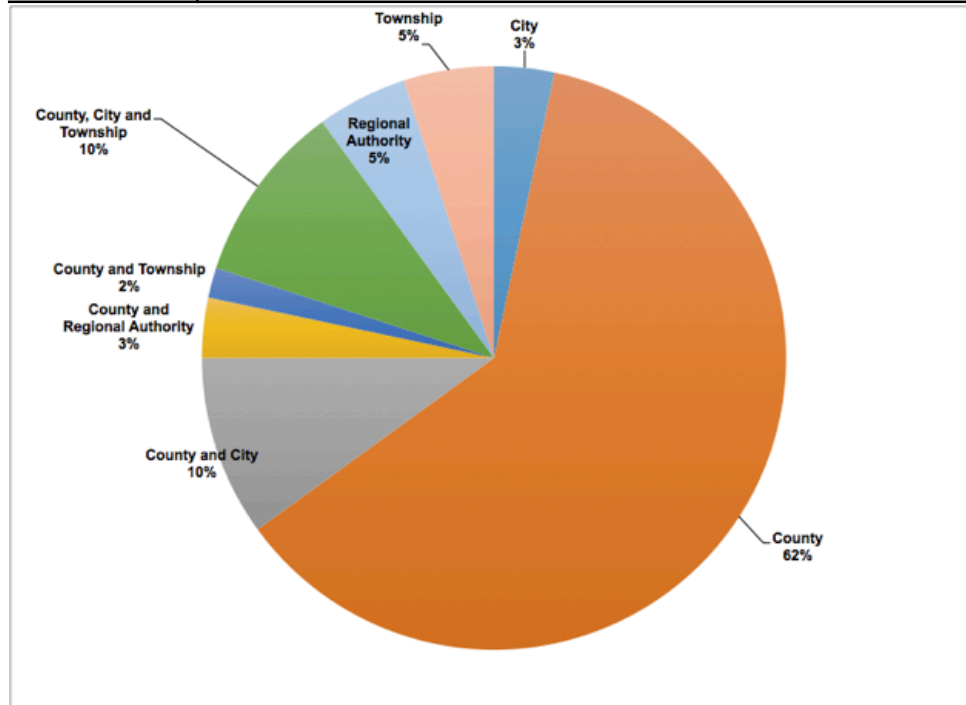
0   25   50   100 Miles

8. Does the County Maintain Digital or Manual Parcels?

County	If Both Please Explain
Bay	ArcGIS and paper maps maintained until GIS parcel layer has been rectified and annotated completely
Benzie	Not sure what the difference is.
Berrien	Splits/combos/subs/condos are hand drawn on maps then given to Coordinator for digital mapping
Iosco	Paper Section maps
Kalamazoo	Cities and townships maintain their GIS data or use vendor, mainly Prein&Newhof in Kalamazoo
Kalkaska	Paper Maps that are updated regularly and our GIS Layer, polygon's updated annually only,
Mecosta	Our GIS will be delivered to us mid February
Menominee	hand-drawn maps
Otsego	Some counties in our region are digital, some manual
Van Buren	Paper and digital

9. Which Department Maintains Parcel Shape Objects?

PSOs_maintained_by_county_which_Dept

- Equalization Only (23)
- GIS Only (10)
- IT Only (4)
- GIS and Equalization (5)
- GIS, Equalization, and IT (1)
- Assessing Only (1)
- Other Only (4)
- <Null> (35)

N

0   25   50   100 Miles

KEWEENAW

HOUGHTON

ONTONAGON

BARAGA

GOGEBIC

MARQUETTE

ALGER

LUCE

CHIPPEWA

IRON

SCHOOLCRAFT

MACKINAC

DICKINSON

DELTA

MENOMINEE

EMMET

CHEBOYGAN

PRESQUE ISLE

CHARLEVOIX

ALPENA

ANTRIM

OTSEGO

MONTMORENCY

LEELANAU

GRAND TRAVERSE

KALKASKA

OSCODA

ALCONA

BENZIE

CRAWFORD

MANISTEE

WEXFORD

MISSAUKEE

OGEMAW

IOSCO

ROSCOMMON

ARENAC

MASON

LAKE

OSCEOLA

CLARE

GLADWIN

HURON

BAY

OCEANA

MECOSTA

ISABELLA

MIDLAND

NEWAYGO

TUSCOLA

SANILAC

MONTCALM

GRATIOT

SAGINAW

MUSKEGON

KENT

LAPEER

ST. CLAIR

OTTAWA

IONIA

CLINTON

SHIAWASSEE

GENESEE

MACOMB

ALLEGAN

BARRY

EATON

INGHAM

LIVINGSTON

OAKLAND

VAN BUREN

CALHOUN

JACKSON

WASHTENAW

WAYNE

KALAMAZOO

BERRIEN

CASS

ST. JOSEPH

BRANCH

HILLSDALE

LENAWEE

MONROE

9. Which County Department Maintains PSOs?	
County	Other (Please Specify)
Clinton	Drain Commissioner
Eaton	Delta Township Engineering Division
Genesee	Significant assistance by GIS
Kalamazoo	not maintained by County
Manistee	Planning for road centerlines and address points
Mecosta	we will contract with Amalgam
Menominee	n/a
Monroe	Planning
Van Buren	Land services comprises land management, GIS,equalization, planning, economic development, website, and passports

10. How Often are Parcel Shape Objects Updated?

How_often_are_PSOs_updated

- Annually (16)
- Quarterly (5)
- Monthly (4)
- Weekly (5)
- Daily (17)
- Other (please specify) (13)
- <Null> (23)

N

0   25   50   100 Miles
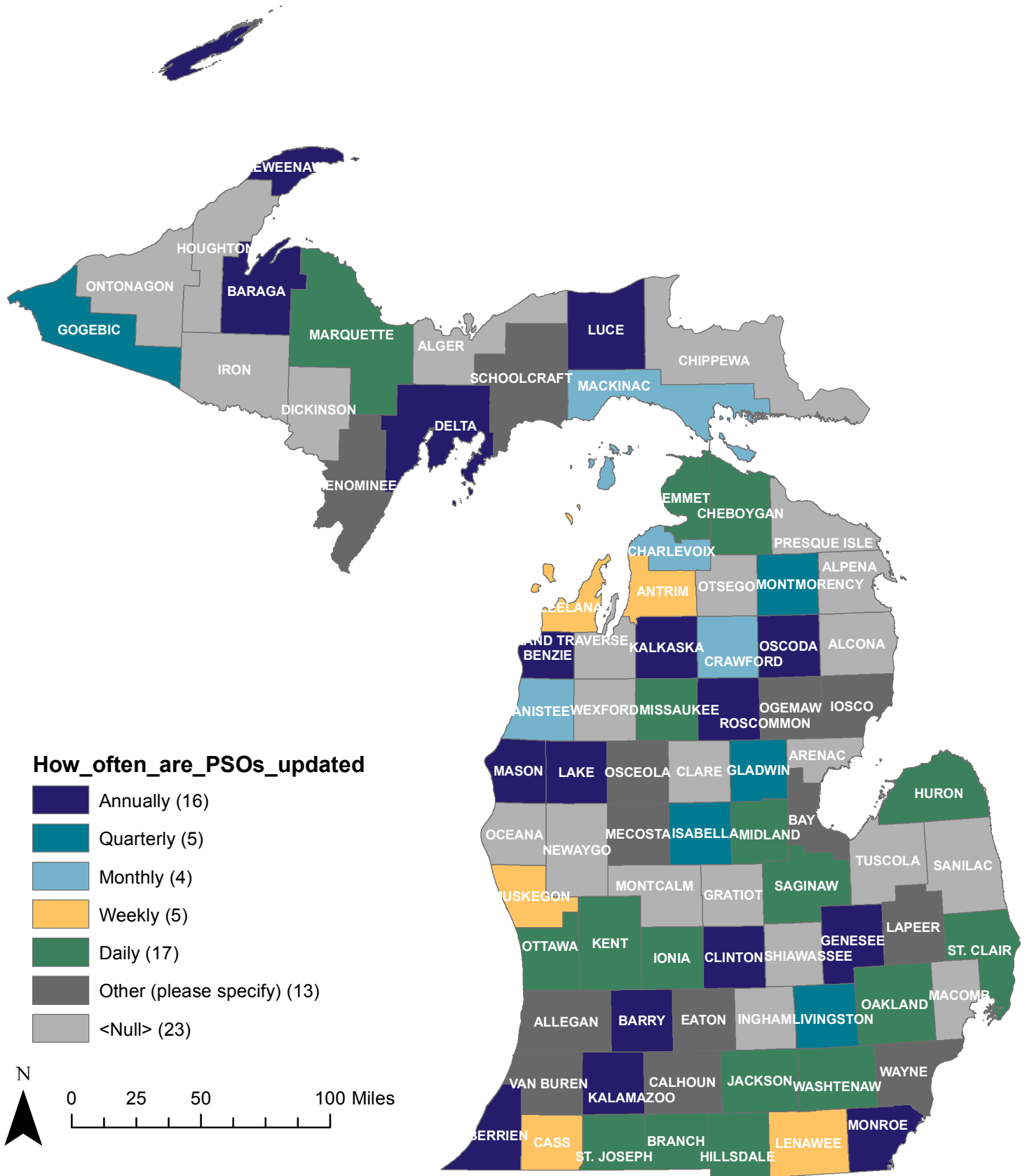
## 10. How Often Are parcel Shape Files Updated

County	Other (Please Specify)
Allegan	Internally, the parcel shape objects are updated daily as changes are received. Monthy updates are served to the local units of government. Annual updates are made available to the general public via tax maps and online data downloads.
Bay	Maintenance done weekly but published annually
Calhoun	Parcels are updated as splits/corrections come in to the county. However, not all municipalities keep me updated. The entire layer is updated annually.
Eaton	One "working" parcel map and one official annual Tax Map. In Delta Township's case we use a working object set and a annually updated shapefile (official)
Iosco	When splits are approved by the local unit and deeds recorded
Lapeer	Daily in St Clair, periodically in Lapeer
Mecosta	we don't know yet
Menominee	we don't have any
Ogemaw	Right now we are not updating due to money issues.
Osceola	by hand as time permits
St. Joseph	As the parcels are changed on the tax roll they are updated
Schoolcraft	when shape changes
Van Buren	As changes occur
Wayne	Yearly

11. In what data formats are your Parcel Shape Objects maintained in?

| Data Format	Count of Responses	% of Respondents
DWG-Closed Polylines	3	8%
DWG-Lines	2	5%
Shapefile-Polygons	22	55%
Shapefile-Lines	6	15%
Geodatabase-Polygons	26	65%
Geodatabase-Line	9	23%
Coverage-Lines	2	5%
Total Responses	70	
Total Respondents Answering	40	

12. What digital maintenance software is used for editing Parcel Shape Objects?

Of the 43 counties to respond, 96% used ArcGIS.
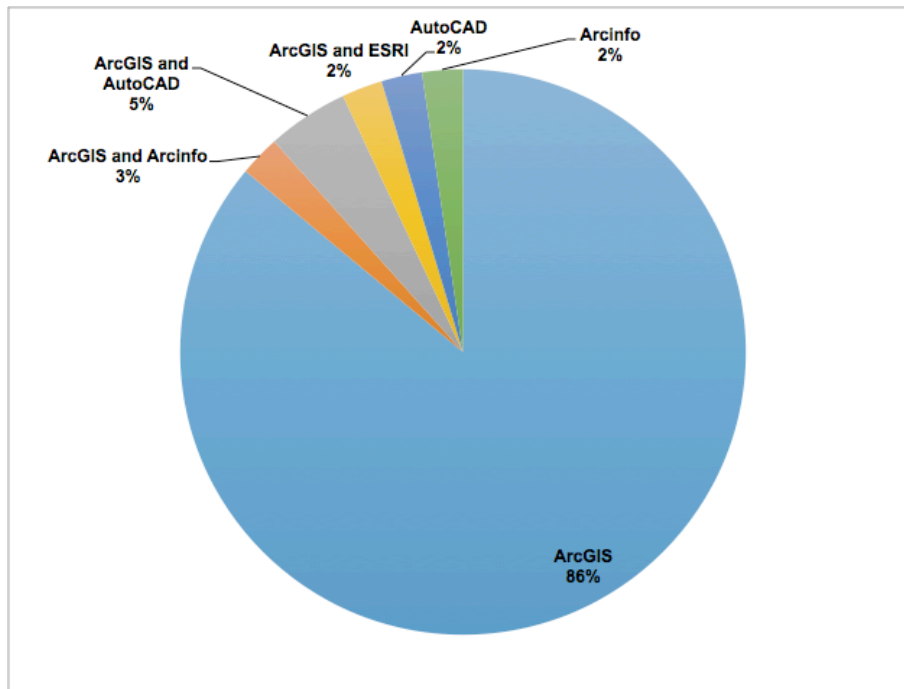
13: In what projection are Parcel Shape Objects maintained?

Of the 44 counties to respond, 41% maintain Parcel Shape Files in Lambert Conic Conformal and 30% maintain Parcel Shape Files in State Plane.
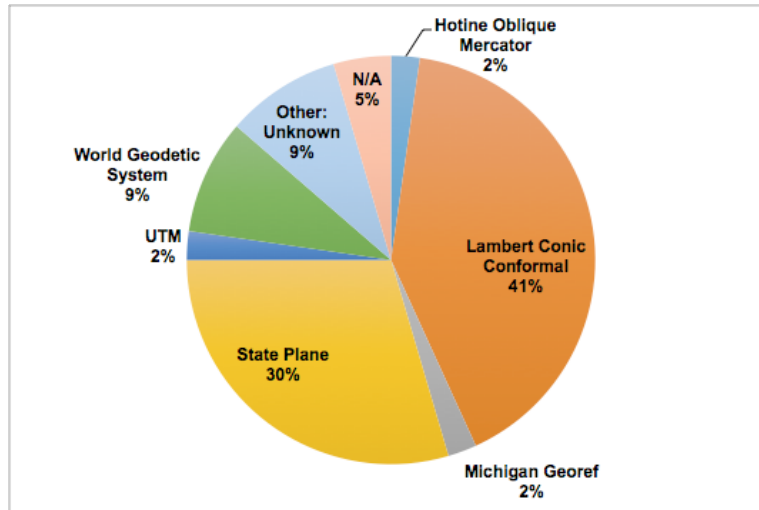
14. Is Assessment Data maintained by separate cities/townships or one county/regional authority? (Select all that apply)

Of the 49 counties to respond, 37% maintain Assessment Data in cities, townships and at the county level. 27% maintain Assessment Data in both cities and townships.
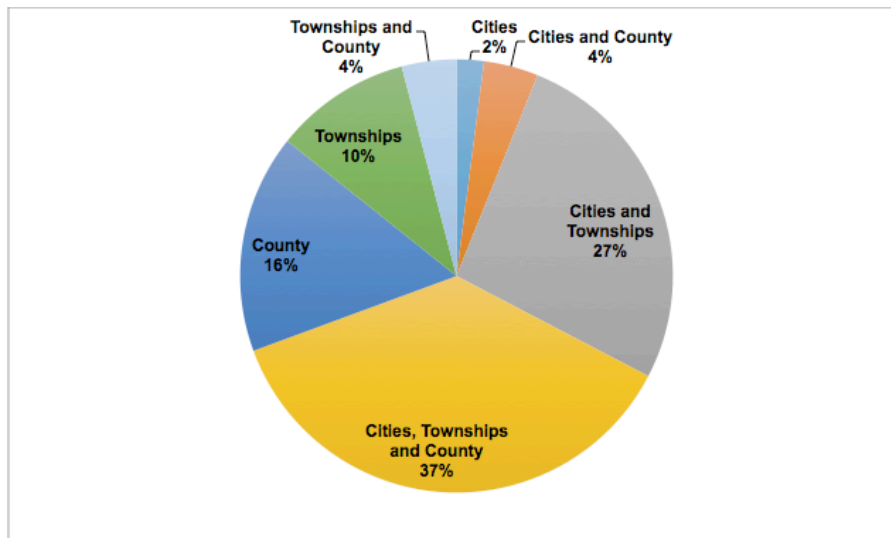
15: Please select all of the following that are included in the Assessment Data:

Of the 52 counties to respond, over 80% include ownership, assessment value, SEV, Tax Status, Parcel ID, and Last Sale Date information in their Assessment Data.

Data Format	Count of Responses	% of Respondents
Ownership	51	98%
Assessment Value	48	92%
SEV	47	90%
Tax Status	42	81%
Parcel ID	51	98%
Last Sale Date	45	87%
Lot Size	34	65%
Picture	22	42%
Total Responses	340	
Total Respondents Answering	52	

16. If County Maintains Assessment Data, How Often is Data Updated?

Assessment_Data_maintained_by_county

- Annually (5)
- Quarterly (3)
- Monthly (2)
- Weekly (4)
- Daily (20)
- Other (please specify) (7)
- <Null> (42)

N

0   25   50   100 Miles
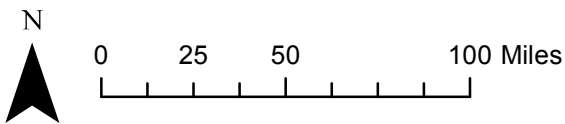
16. If County Maintains Assessment Data, How Often is Data Updated?

County	Other (Please Specify)
Eaton	I do not know how the county maintains data
Gladwin	SEV & TV is set annually, Name address is updated weekly
Kalamazoo	not maintained by county
Marquette	maintained by assessor
Missaukee	Depending on what assessment data it is updated daily. Missaukee County is not contracted with surrounding townships/cities as the assessor.
Saginaw	Depends on Local Asseser Schedule
Van Buren	Ownership is maintained by the county. Values at local level

17. If Cities and Townships Maintain Assessment Data, How Often Does County Recieve Updated Assessment Data?

Assessment_maintained_by_cities_twps

- Annually (18)
- Quarterly (4)
- Weekly (1)
- Daily (2)
- N/A (6)
- Other (please specify) (15)
- <Null> (37)

N

0   25   50   100 Miles
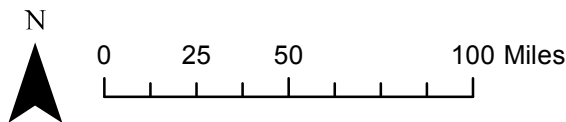
17. If Cities and Townships Maintain Assessment Data, How Often Dose County Receive Updated Assessment Data?

County	Other (Please Specify)
Allegan	At LEAST annually, but often much more regularly depending on the needs of the local unit of government and/or the County.
Berrien	bi-weekly
Chippewa	ASSESSMENT VALUATIONS PROVIDED ANNUALLY BY ALL UNITS; BUT OTHER ASSESSMENT DATA IS UPDATED DAILY
Clinton	Receipt of data varies depending on local assessor.
Genesee	Data recieved more often but only standardized/merged completely annually.
Iosco	or when necessary
Lapeer	sales data is posted by the county
Livingston	Not sure, Equalization collects that data.
Marquette	twice a year
Missaukee	Assessment changes are done annually, but most assessors make necessary changes daily when needed.
Muskegon	Quarterly most of the time but by statute only a yearly update is required by state law
Oakland	varies by CVT
St. Joseph	as the legal is changed on the tax roll the parcels are updated
Van Buren	Cloud
Washtenaw	Varies by CVT - some are more frequent than others

18. Can County Attach
Assesment Data to Parcel Shape Objects?

KEWEENAW

HOUGHTON

ONTONAGON

BARAGA

GOGEBIC

MARQUETTE

LUCE

CHIPPEWA

IRON

ALGER

DICKINSON

SCHOOLCRAFT

MACKINAC

DELTA

ENOMINEE

EMMET

CHEBOYGAN

PRESQUE ISLE

CHARLEVOIX

ALPENA

ANTRIM

OTSEGO

MONTMORENCY

EELANA

KALKASKA

OSCODA

ALCONA

AND TRAVERSE

CRAWFORD

BENZIE

MISSAUKEE

OGEMAW

IOSCO

ANISTEE

WEXFORD

ROSCOMMON

ARENAC

MASON

LAKE

OSCEOLA

CLARE

GLADWIN

HURON

OCEANA

MECOSTA

ISABELLA

MIDLAND

BAY

NEWAGO

TUSCOLA

SANILAC

USKEGON

MONTCALM

GRATIOT

SAGINAW

Can_you_attach_ Assessment_Data_to_PSOs

LAPEER

OTTAWA

KENT

GENESEE

ST. CLAIR

Yes (46)

IONIA

CLINTON

SHIAWASSEE

No (5)

MACOMB

OAKLAND

<Null> (32)

ALLEGAN

BARRY

EATON

INGHAM

LIVINGSTON

N

WAYNE

VAN BUREN

CALHOUN

JACKSON

WASHTENAW

0   25   50   100 Miles

KALAMAZOO

MONROE

ERRIEN

CASS

BRANCH

LENAWEE

ST. JOSEPH

HILLSDALE

19. Is There a County-Wide Complete Parcel Data File?

Is_there_a_countywide_CPData_file

- Yes (40)
- No (11)
- <Null> (32)

0   25   50   100 Miles

19. Is There a County_Wide Complete Parcel Data File?

County	Please Explain
Barry	Yes if you mean we have parcels in Equalizer.Net. No, if you mean elsewhere because linking 20000+ data fields is not practical.
Bay	Some assessment information is not available for certain townships, but basic land data is always available
Benzie	They are not sold as one we have two separate agreements for electronic data exchange.
Berrien	.shp made available on our interactive mapping site
Clinton	The county GIS department links the data and it is available on the county web site.
Genesee	Limited set of attributes are extracted from assessment and attached to parcel data due to lack of completeness or standardization in the files from locals.
Hillsdale	Parcel Shape Objects are joined to tabular data as needed.
Huron	We are in the process of completing that. It should be up and ready in early 2016.
Iosco	We do have the ARCGIS software but do not have a Digital Parcel data layer.
Lapeer	they can be linked together
Lenawee	We maintain a parcelfile for the county (except for Adrian and Tecumseh) which contains base level information (Owner, Address, SEV, etc) but in some jurisdictions higher level assessing data (square footage, year built, ECF, etc) information may be income
Mecosta	I believe there will be
Midland	We can join to the two data sets to create a complete data file.
Missaukee	We have assessment data county wide, but no parcel shape objects with it.
Muskegon	Within GIS I have scripted a nightly process that combines the parcel shape and the assessment data into a view in the GIS environment.
Otsego	For some counties
St. Clair	One city is merged into a dataset for our website
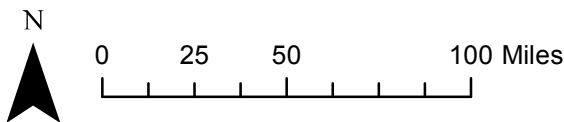
20. Does the County Maintain Parcel Metadata in Conjunction with Parcel Shape Objects?

Does_the_county_maintain_metadata

- Yes (16)
- No (41)
- <Null> (26)

N

0   25   50   100 Miles

20. Does the County Maintain Parcel Metadata in Conjuction with Parcel Shape Objects?

County	Other (Please Specify)
Baraga	??
Chippewa	NOT UNLESS YOU CONSIDER PAPER MAPS "METADATA"
Crawford	not sure what you mean by metadata
Eaton	N/A, Delta Township generates a new parcel shapefile each year and archives the old one.
Genesee	Not formally.
Gogebic	Unsure, we are in initial stages of GIS
Keweenaw	not sure
Lapeer	unknown
Mason	do not know what metadata means
Mecosta	I don't know
Missaukee	We don't have it.
Muskegon	Somewhat... it depends on what portion of metadata you are referring to.

21. How Often is Metadata Updated or Reviewed for Accuracy?

How_often_is_metadata_updated

- Annually (7)
- Quarterly (1)
- Daily (3)
- Other (please specify) (16)
- <Null> (56)

N

0   25   50   100 Miles

21. How Often is Metadata Updated or Reviewed for Accuracy?

County	Other (Please Specify)
Allegan	N/A
Baraga	??
Chippewa	WE UPDATE PARCEL MAPS FOR TWPS YEARLY
Eaton	N/A
Genesee	It's just not done.
Lapeer	unk
Lenawee	As needed
Luce	N/A
Mason	see above
Mecosta	I don't know
Menominee	n/a
Missaukee	N/A
Oakland	as needed
Saginaw	Not Maintained
St. Clair	See 20
Washtenaw	as needed

22. Can the Public Access Parcel Shape Objects?

Can_the_public_access_PSOs

- Yes (42)
- No (17)
- <Null> (24)
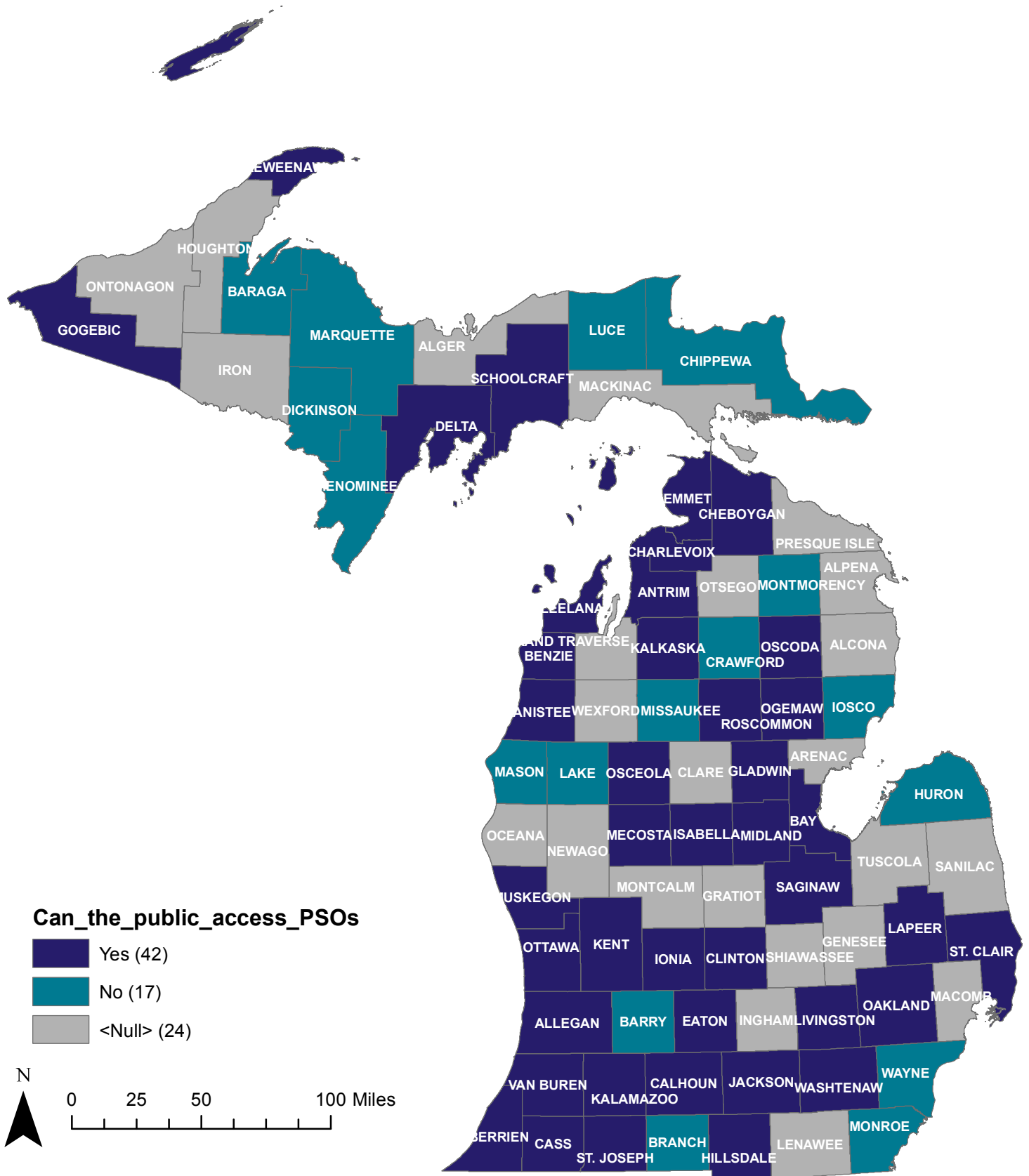
County	Other (Please Specify)
Branch	The public has web access to City parcel data, but not County parcel data as of yet. This is expected to change later this year.
Chippewa	DRAWINGS ARE AVAILABLE THROUGH OUR OFFICE FOR TWPS; CITY MAKES THEIR PARCEL MAPPING AVAILABLE
Eaton	The public can access all assessing data and parcel information but actual shapefiles would be provided per special request.
Genesee	Currently have an ArcGIS Online parcel viewer but must request.
Huron	But they will in 2016.
Kalkaska	On our web site
Lapeer	in st clair co only
Lenawee	It can be viewed with assistance by office personnel or purchased.
Livingston	Data must be requested through a paid access portal or requested through the office. A public kiosk is on-site for free access.
Luce	Not online yet
Mecosta	they will be able to when we get our GIS delivered within a month
Menominee	n/a
Missaukee	If we had it, I'm sure they could.
Muskegon	By purchasing them - if they just want to view them, we offer a web mapping application they can view
Oakland	viewable via Property Gateway map site
Osceola	maps available in office
Roscommon	Not available online - have to come into office and work with mapping coordinator
Van Buren	Website

Q23 How can the public access Parcel Shape Objects? (Select all that apply)

Answered: 57 Skipped: 44
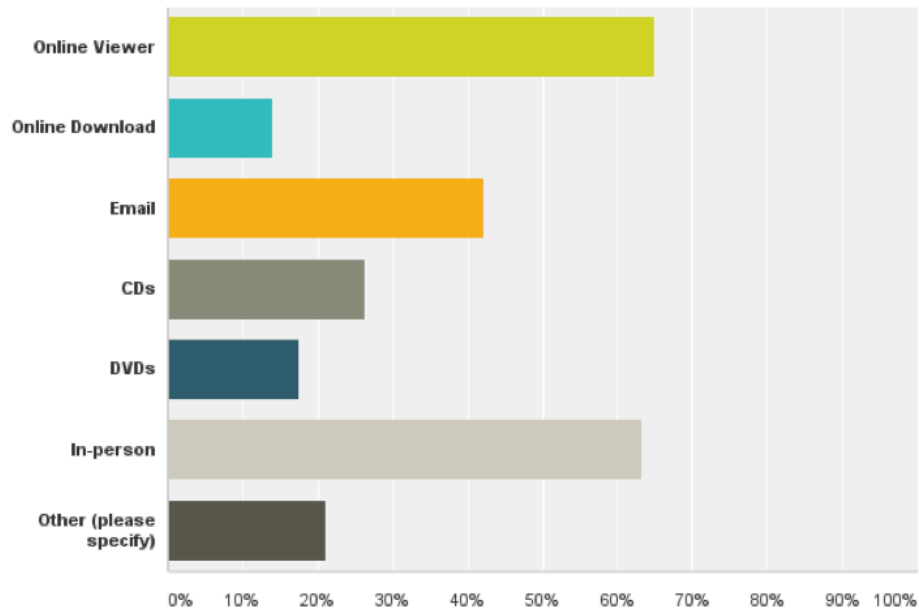
Q24 In what data formats are your Parcel Shape Objects available to the public? (Select all that apply)

Answered: 56 Skipped: 45
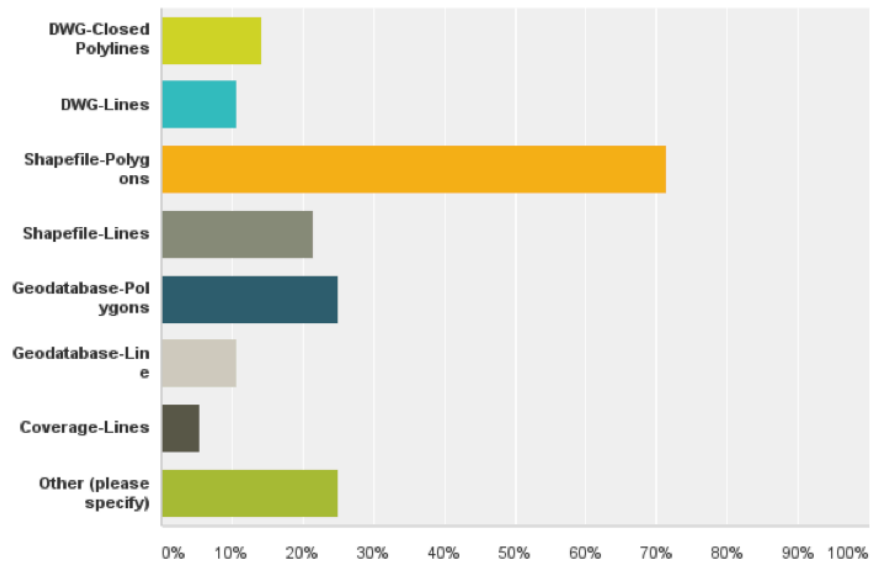
25. If the public can access Parcel Shape Objects online what is the URL?

32 counties provided URLs

26. Can the Public Access Assessment Data?

Can_the_public_access_Assessment_Data

- Yes (46)
- No (3)
- <Null> (34)

N

0   25   50   100 Miles
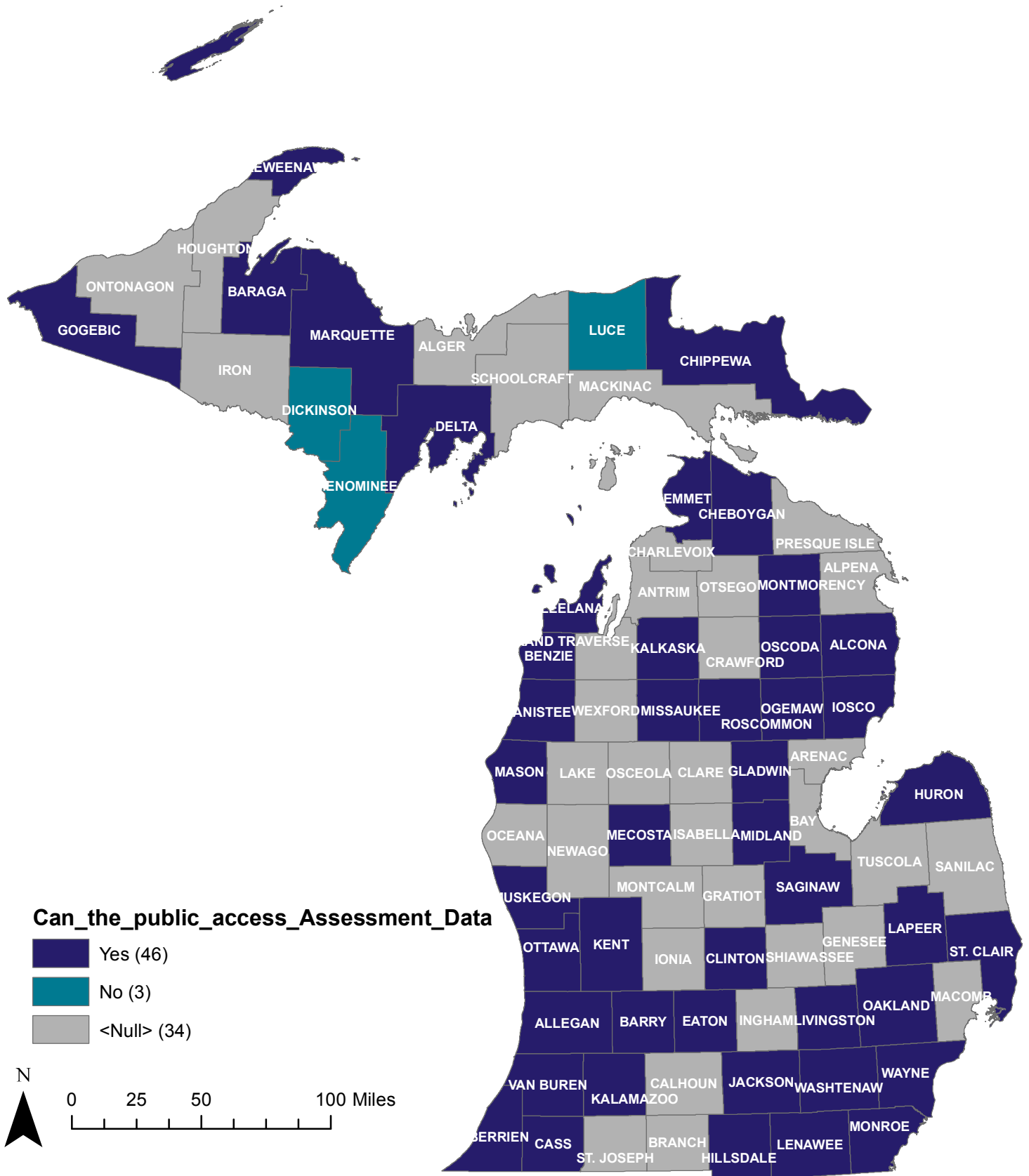
26. Can the Public Access Assessment Data?

County	Other (Please Specify)
Genesee	Yes, but my understanding is it is very mixed. County hosts copy for some locals, locals have different arrangements with BS&A to make avail.
Lapeer	partially, values only
Livingston	On-site Kiosk, not sure of online options
Luce	N/A
Manistee	www.liaa.org/manisteeparcels
St. Clair	http://www.stclaircounty.org/Offices/equalization/search.aspx
Van Buren	BSA link

Q27 If the public can access Assessment Data, what information is included? (Select all that apply and please provide additional accessible information)

Answered: 64   Skipped: 37
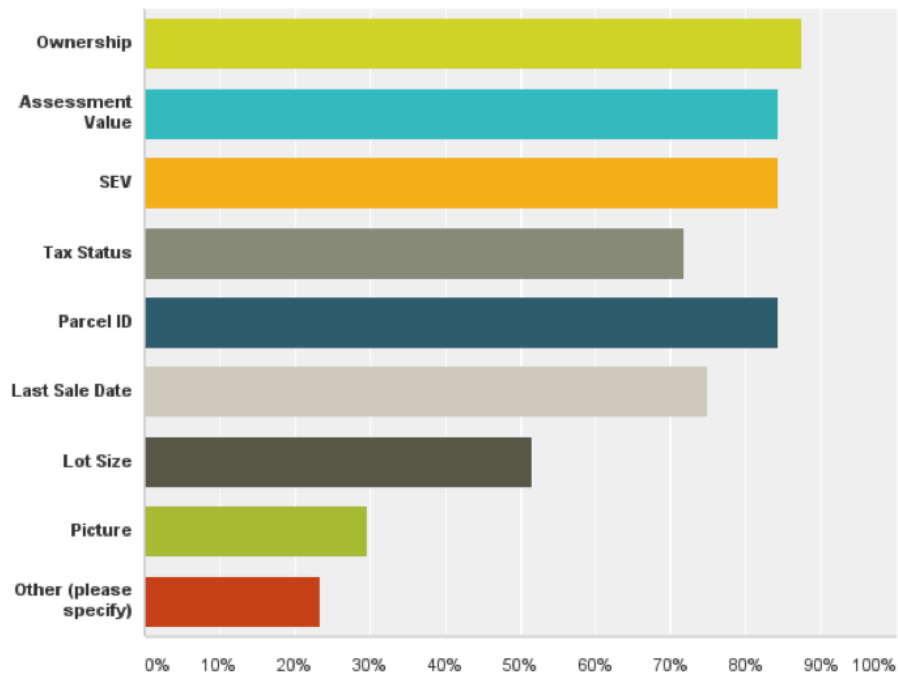
Q28 How can the public access Assessment Data? (Select all that apply)

Answered: 64   Skipped: 37
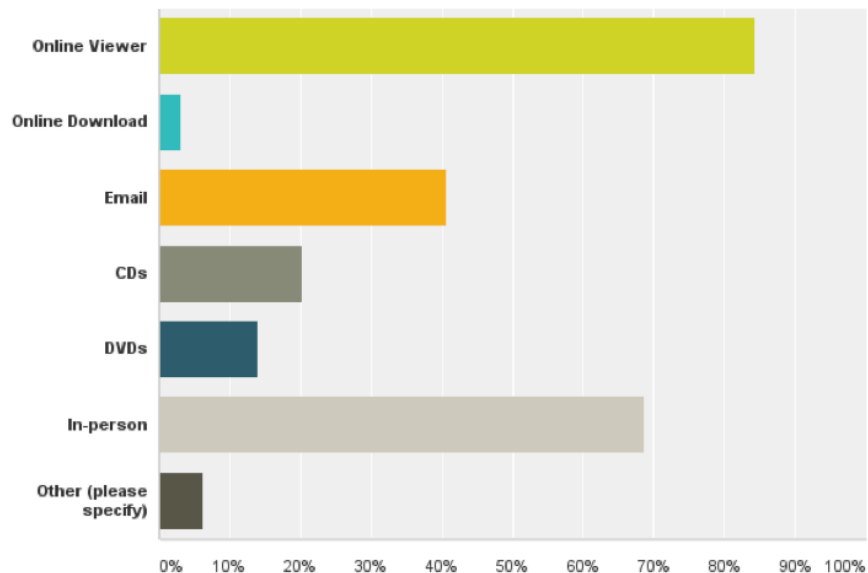
29. If the public can access Assessment Data online, what is the URL?

34 Counties provided URL

30. Can the Public Access Complete Parcel Data?

Can_public_access_Complete_Parcel_Data

▉	Yes (24)
▉	No (23)
▉	<Null> (36)

N

0   25   50   100 Miles
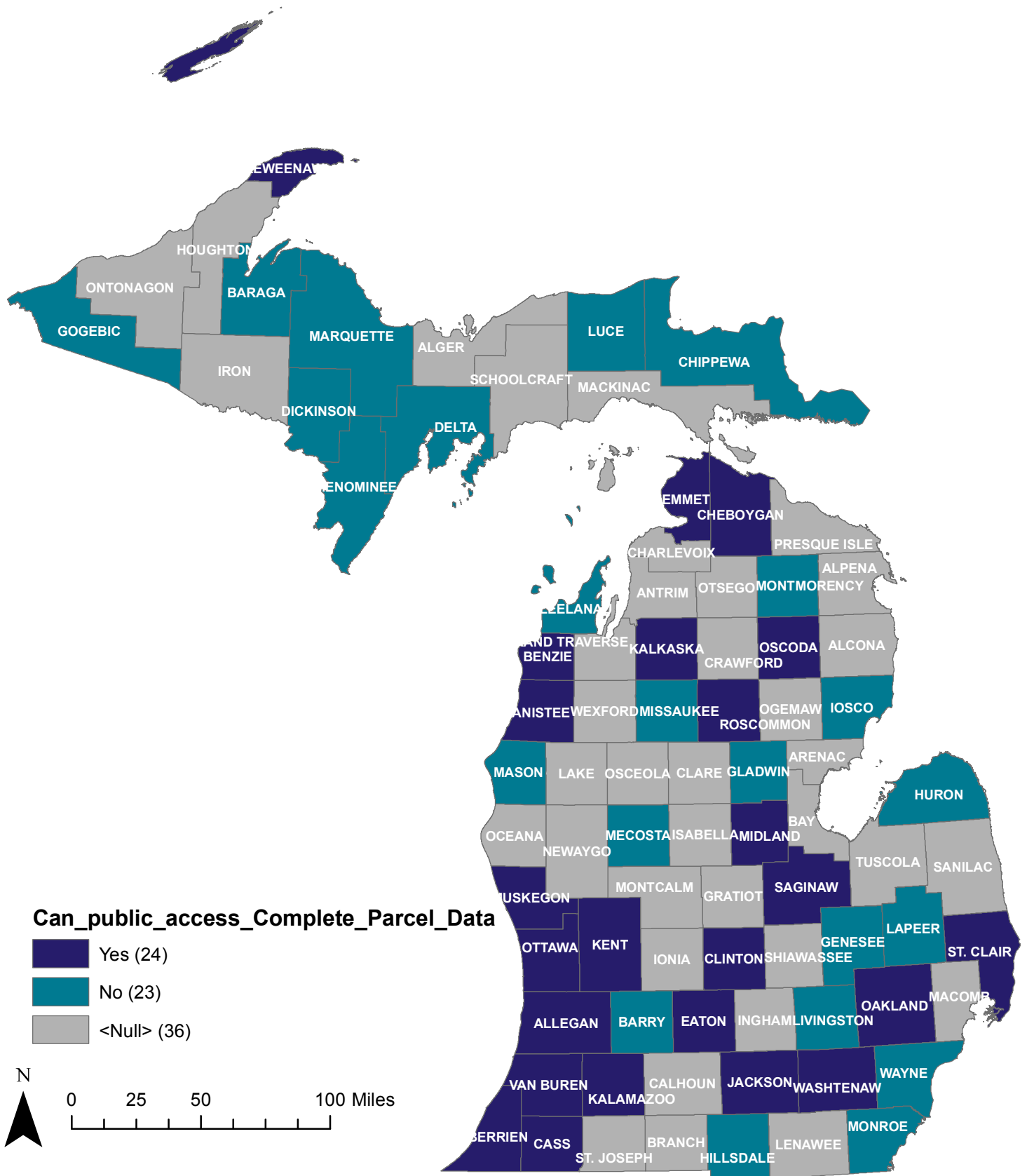
30. Can the Public Access Complete Parcel Data?

County	Other (Please Specify)
Chippewa	NOT ON LINE; JUST ASSESSMENT DATA IS AVAILABLE ON LINE
Genesee	Not complete, but what is on the viewer meets 99% of requests to me. Technically I am caught up int he Enhanced access to GIS data law.
Gogebic	Limited Public Access
Kalkaska	via our web site
Lenawee	Yes, excepting the Cities of Adrian and Tecumseh and with some limitations on some units.
Luce	N/A
Missaukee	Only assessment data
Muskegon	Through a viewer, not directly to ArcGIS or other software
Ogemaw	On some parcels there is a polygon available.

31. What is the Cost of County-Wide Parcel Shape Objects?

MACKINAC
0.25

10500 DELTA

2000 EMMET

LEELANAU
2730

4000 OSCODA

BENZIE
PER PARCEL

N/A
MISSAUKEE   0.02
ROSCOMMON

MANISTEE
750

MASON
1000

GLADWIN
1500

NOT APPROVED YET
MECOSTA

MIDLAND
5000

7500
SAGINAW

MUSKEGON
20000

0 KENT

CLINTON
$5,000 IN-COUNTY/$5,600 OUT-COUNTY

GENESEE
18000

13200
ST. CLAIR

6943.5
EATON

BARRY
7969.5 (0.25 PER RECORD)

Complete_Parcel_Data_Cost selection

Responses

<Null>

AGE AND KALAMAZOO
10000
VAN BUREN

6500
CALHOUN

$15,600 +-
JACKSON

7500
WASHTENAW

KALAMAZOO

N

0   25   50   100 Miles

ER PARCEL
BERRIEN

0.35
ST. JOSEPH

TBD
BRANCH

0.15
HILLSDALE

1000
LENAWEE

MONROE
0.25

32. Please Describe the Pricing Model for Parcel Shape Objects?

County	Please briefly describe the pricing model
Allegan	Parcel shape objects are available for free download from the County's website by Municipality.
Benzie	5 cents per parcel plus $10 for whole county or $20 per township or City. Anything smaller say intersections half mile either way; 5 cents per parcel and $50.
Berrien	.50 per parcel. Data can be viewed online for $15 per day or $50 per month (plus %3.50 service fee)
Delta	Per an Enhanced Access Policy
Eaton	Time and Material
Genesee	http://www.gc4me.com/departments/gis/data_and_pricing.php
Hillsdale	Commissioner approved price list
Kalamazoo	Annual updates of County-Wide at 50% ($7,000) excluding Cities of Portage and Kalamazoo
Kent	Parcel shape data is freely available to anyone via our GIS data library
Lapeer	contact GIS for pricing
Leelanau	Prices based on number of parcels per unit. Township Parcels (shapefile) Bingham $235 Centerville $150 Cleveland $170 Elmwood $375 Empire $230 Glen Arbor $300 Kasson $150 Leelanau $380 Leland $305 Solon $150 Suttons Bay $285 TOTAL $2,730
Lenawee	$0.04 per parcel with $10 minimum or $1,000 for entire dataset (excluding the Cities of Adrian and Tecumseh), contains basic parcel information.
Manistee	$100 per Township (14 Townships & 1 City) or $750 for the whole County
Mecosta	not approved yet
Midland	• $25.00 per section • $500 per City/Village/Township (CVT) (initial purchase) • Option for annual update of CVT parcel data set is $100/year after initial purchase • $5,000.00 countywide (initial purchase) • Option
Missaukee	Honestly don't know because we don't offer it. But the assessment information online is all free.
Muskegon	$0.50 per parcel for subset, $0.35 per parcel by the township / city, or flat fee of $20,000 for entire County
Oscoda	Comparison
Ottawa	http://miottawa.org/Departments/GIS/pdf/Digital_Pricing.pdf
Roscommon	No model - just .02 cents per parcel
Saginaw	$2 per parcel or $7,500 for the whole County. The City of Saginaw sells their own at $3,200 for all..
Washtenaw	Minimum area is one complete CVT
Wayne	City Wide cost

33. What is the Cost of County-Wide Complete Parcel Data?

MARQUETTE
7700

0.35
MACKINAC

10500 DELTA

MENOMINEE
N/A

2000
EMMET

2500
CHARLEVOIX

2000
MONTMORENCY ALPENA
?

ANTRIM
2500

LEELANAU
2773

3500
KALKASKA

2000
CRAWFORD

NONE
OSCODA

GRAND TRAVERSE
BENZIE 0.2 PER PARCEL
ARCEL

0.02
ROSCOMMON

.15
OGEMAW

N/A
IOSCO

750
MANISTEE

8300
WEXFORD

MASON
1000

GLADWIN
1500 OR 2500

.50
MECOSTA ISABELLA
NOT APPROVED
YET

MIDLAND
5000

24000
MUSKEGON

MONTCALM
5000

7500
SAGINAW

.10
LAPEER

19800
ST. CLAIR

OTTAWA
0.3

KENT
0 + $10,809

0.25
IONIA

5600
CLINTON

GENESEE
28000

7800
ALLEGAN

BARRY
7969.5

21756.3
EATON

INGHAM LIVINGSTON
96000 85870

VAN BUREN
10000

$14,000
KALAMAZOO

8250
CALHOUN

23400
JACKSON

WASHTENAW
12500

0.5
BERRIEN

.10
BRANCH

HILLSDALE
0.25

1000
LENAWEE

0.25
MONROE

Responses

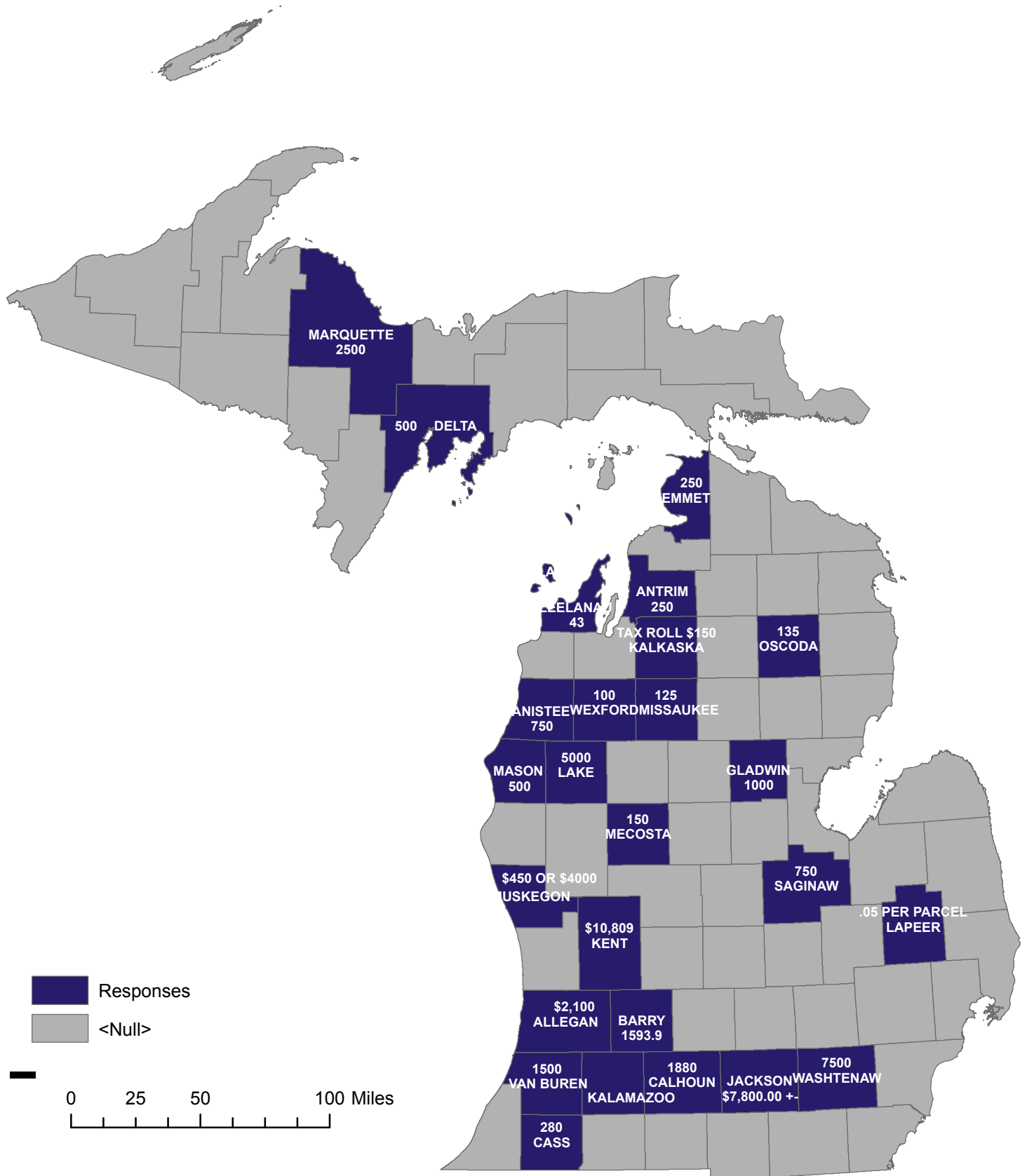\<Null\>

0   25   50   100 Miles

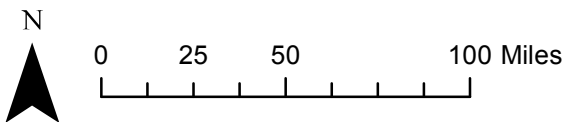## 34. Please Briefly Describe the Complete Parcel Data Pricing Model.

County	
Allegan	Parcels with COMPLETE Parcel Data are sold on a sliding scale and can cost as much as $1.00 per parcel (when purchasing 1-100) or as little as $0.12 (when purchasing more than 5,000). The entire County is based on the number of parcels at the moment, but it is approximately $7,800 for the general public with cost reductions or fee waivers for non-profits and educational instutions.
Benzie	add 1.5 cents per parcel plus $20
Berrien	.50 per parcel. Data can be viewed online for $15 per day or $50 per month (plus %3.50 service fee)
Branch	In the last month we have started work on data licensing agreement and pricing models, but that is not complete, and the agreements are still being processed by our legal department.
Clinton	Free online assessment data linked to parcel shape objects but only one parcel at a time.
Delta	Per an Enhanced Access Policy
Eaton	Time and Material
Genesee	http://www.gc4me.com/departments/gis/data_and_pricing.php
Gladwin	Off of website
Gogebic	We charge maintenance by the parcel. We split the total cost up between the municipalities.
Hillsdale	Commissioner approved price list
Jackson	Sliding scale based on # of parcels purchased. The more that are purchased the cheaper per parcel it is.
Kalamazoo	Annual updates of County-Wide at 50% ($7,000) excluding Cities of Portage and Kalamazoo
Kalkaska	Not sure what you are asking for
Kent	Partial assessment tabular assessment data comes with the parcels shape objects. Full Assessment Data is sold on a per parcel basis.
Lapeer	contact GIS for pricing
Livingston	$1 per parcel. Extra processing is $60/hour if needed
Missaukee	See answer in 32
Muskegon	$0.55 per parcel, $0.40 per parcel by the township/city, or flat fee of $24,000 for entire county
Oscoda	None
Ottawa	http://miottawa.org/Departments/GIS/pdf/Digital_Pricing.pdf
Washtenaw	Minimum area is one complete CVT
Wayne	City Wide cost

| Wexford | GIS Shapefiles are available for all parcels, either by county, township/city/village, or section. If someone wants to just acquire assessment data without the shapefile (just an excel spreadsheet); that can be purchase for $100 for the entire county or $25 per township. If a county-wide parcel shapefile is purchased in one year the buyer may get an annual update for $300 in the next consecutive years. If any years are skipped the buyer must then purchase at the full price again. |

35. What is the Cost of County-Wide Assessment Data?

MARQUETTE
2500

500   DELTA

250
EMMET

ANTRIM
250

LEELANAU
43

TAX ROLL $150
KALKASKA

135
OSCODA

100   125
MANISTEE WEXFORD MISSAUKEE
750

5000
LAKE

GLADWIN
1000

MASON
500

150
MECOSTA

$450 OR $4000
MUSKEGON

750
SAGINAW

.05 PER PARCEL
LAPEER

$10,809
KENT

$2,100
ALLEGAN   BARRY
               1593.9

1500
VAN BUREN

1880
CALHOUN

JACKSON
$7,800.00 +-

7500
WASHTENAW

KALAMAZOO

280
CASS

■ Responses

■ <Null>

0   25   50   100 Miles

36. Is There a Cost for an Annual, County-Wide Data Update?

Is_there_a_cost_for_an_annual_data_update

- Yes (18)
- No (17)
- <Null> (48)

N

0   25   50   100 Miles

36. Is There a Cost for an Annual, Countywide Data Update?

County	If Yes, Please Explain:
Allegan	Full cost - no discounts for "updates."
Benzie	Same as above
Berrien	.50 per parcel
Chippewa	WE DON'T PROVIDE THIS SERVICE
Delta	500
Eaton	Time and Material
Emmet	not a subscription, you pay each time
Genesee	Not sure what this means.. do we pay a vendor to update? We update in-house, and do not know the specific cost.
Ionia	2000
Kalamazoo	Responsibility of Clerk's office or Equalization dept
Kent	Every request is considered original, there is no difference in price for updates.
Lapeer	.05 per parcel for information the county has.
Luce	Not yet
Manistee	Same cost as purchasing the data.
Midland	$1000 annually if you purchase it the follow year, each you don't purchase the data set it increases $1000.
Missaukee	$125 will get you a CD with the counties information on it.
Monroe	Returning customers can receive the data at 1/3 the usual cost.
Muskegon	There would be a cost but we have not set a cost, except for assessment data only, which is $450
Ottawa	http://miottawa.org/Departments/GIS/pdf/Digital_Pricing.pdf
Saginaw	After one year, there is a $1,000 update fee.
St. Clair	Full Charge applies on an annual basis
Van Buren	Negotiable
Wexford	300
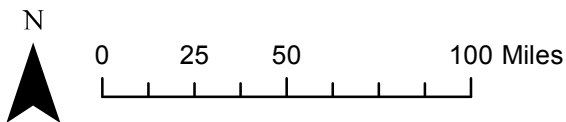
37. Is There a Cost for a Bi-Annual, County-Wide Data Update?

Is_there_a_cost_for_biannual_data_update

- Yes (6)
- No (26)
- <Null> (51)

N

0   25   50   100 Miles

37. Is There a Cost for a BI-Annual, Countywide Data Update?

County	If yes, Please Explain.
Allegan	Full cost - no discounts for "updates."
Benzie	When the data is requested a current export is created.
Berrien	.50 per parcel, however no bi-annual updates are being done currently
Chippewa	SERVICE NOT PROVIDED
Delta	Not Available
Eaton	Time and Material
Emmet	not a subscription, you pay each time
Genesee	only update annually
Gogebic	Included in annual maintenance fees.
Kalamazoo	Responsibility of Clerk's office or Equalization dept
Kent	Every order is considered original
Lapeer	.05 per parcel for information the county has.
Luce	Not yet
Midland	$1000 annually if you purchase it the follow year, each you don't purchase the data set it increases $1000.
St. Clair	Updates are allowed within a one year time span
Van Buren	Negotiable

38. On Average, How Many Sales are Made Per Year of Complete Parcel Data?

600
SCHOOLCRAFT

0   DELTA

2 TO 3
EMMET

4
CHARLEVOIX

0
LEELANAU

ANTRIM
GIS: 1

1
KALKASKA

1
OSCODA

BENZIE
2 TO 3

N/A
MISSAUKEE ROSCOMMON

2

MANISTEE
2 TO 4

LAKE   OSCEOLA
APPROX 2 TO 3 YEAR

1

0
ISABELLA MIDLAND

0

0
MUSKEGON

1.5
SAGINAW

1 UPDATE
IONIA

GENESEE
0

ST. CLAIR
3

1 ALLEGAN

0
BARRY

1 TO 2
VAN BUREN

0
KALAMAZOO

0-1
CALHOUN

INFREQUENT
WASHTENAW

BRANCH
0

HILLSDALE
2

Responses (29)

<Null>

N

0   25   50   100 Miles

39. On Average, How Many Sales are Made Per Year of Parcel Shape Objects.

0 DELTA

2 TO 3 EMMET

A
LEELANAU 0

BENZIE
2 TO 3

1
OSCODA

N/A
MISSAUKEE

2
ROSCOMMON

3
OGEMAW

MIDLAND
0

1 SAGINAW

0
MUSKEGON

GENESEE
0

ST. CLAIR
0

0 ALLEGAN

0
KALAMAZOO

INFREQUENT
WASHTENAW

HILLSDALE
1

Responses (17)

<Null>

N

0   25   50   100 Miles

40. On Average, How Many Sales are Made Per Year of Assessment Data Only?

200
DICKINSON

3 DELTA

ANTRIM
?

LEELANAU
12

2
KALKASKA

1
OSCODA

BENZIE
3-4 REALTORS

TWO OR THREE
MISSAUKEE

6
OGEMAW

10
MECOSTA

20
MUSKEGON

3
AT 10,809 = $32,427
KENT

LAPEER
2 OR 3

0 ALLEGAN

2BARRY

1-2
KALAMAZOO CALHOUN
**RESPONSIBILITY OF
CLERK'S OFFICE
OR EQUALIZATION DEPT**

3
WASHTENAW

2 CASS

HILLSDALE
0

Responses (20)

<Null>

0   25   50   100 Miles
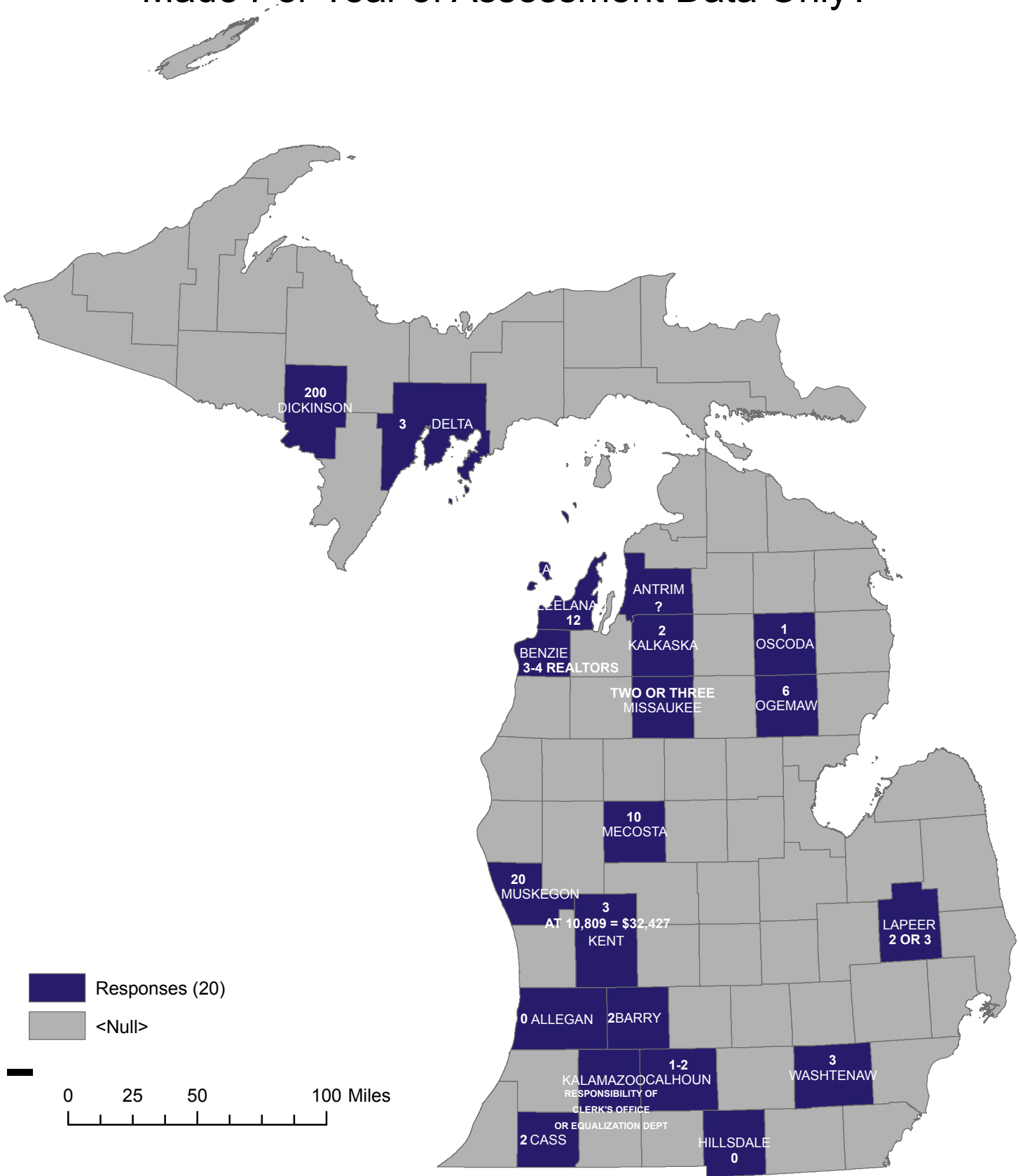
41. What was the Total Revenue from Data Sales in 2014?

NONE LAST YEAR
LUCE

900
SCHOOLCRAFT

2000 CHIPPEWA

1500 DELTA

10000
CHARLEVOIX

ANTRIM
?

LEELANAU
848

I DON'T KNOW
CRAWFORD **1000** OSCODA

BENZIE
DON'T KEEP TRACK.

UNKNOWN
MANISTEE WEXFORD MISSAUKEE **1400** **$2,000** **???**
OGEMAW IOSCO
1500 **UNKNOWN** ROSCOMMON

3500
LAKE **900** OSCEOLA

LESS THAN $1000 **2000**
ISABELLA MIDLAND

10000
SAGINAW

MUSKEGON
15000 **$0. REVENUE COMES FROM PRINTED MAPS.** **$10,000 +**
LAPEER

37302
2176 KENT **2750** **2500** **30000**
OTTAWA IONIA CLINTON GENESEE ST. CLAIR

4000 **N/A**
ALLEGAN BARRY EATON
4676.02

1000 **7304.47** **90000** **24000** **3600**
KALAMAZOO CALHOUN JACKSON WASHTENAW WAYNE

0
BERRIEN ST. JOSEPH BRANCH HILLSDALE
NEGLIGIBLE **10000**

Legend

- ■ Responses
- ■ <Null>

0   25   50   100 Miles

42. On Average, How Many Annual Data Updates Does the County Sell?

LUCE(NONE LAST YEAR)

CHIPPEWA(5)

DELTA(0)

OSCODA(0)

BENZIE(5)

MANISTEE(1)

MISSAUKEE(TWO TO THREE CD'S FOR $125)

OGEMAW(0)

MIDLAND(3)

SAGINAW(NONE)

MUSKEGON(20)

LAPEER(2 OR 3)

KENT(ONE)

GENESEE(0)

Responses

how_manydata_updates_does_county_sell

<Null>

ALLEGAN(0)   **BARRY(0)**   **EATON(N/A)**

N

KALAMAZOO(0)   **JACKSON(NA)**   **WASHTENAW(2 TO 3)**

0   25   50   100 Miles

HILLSDALE(2)
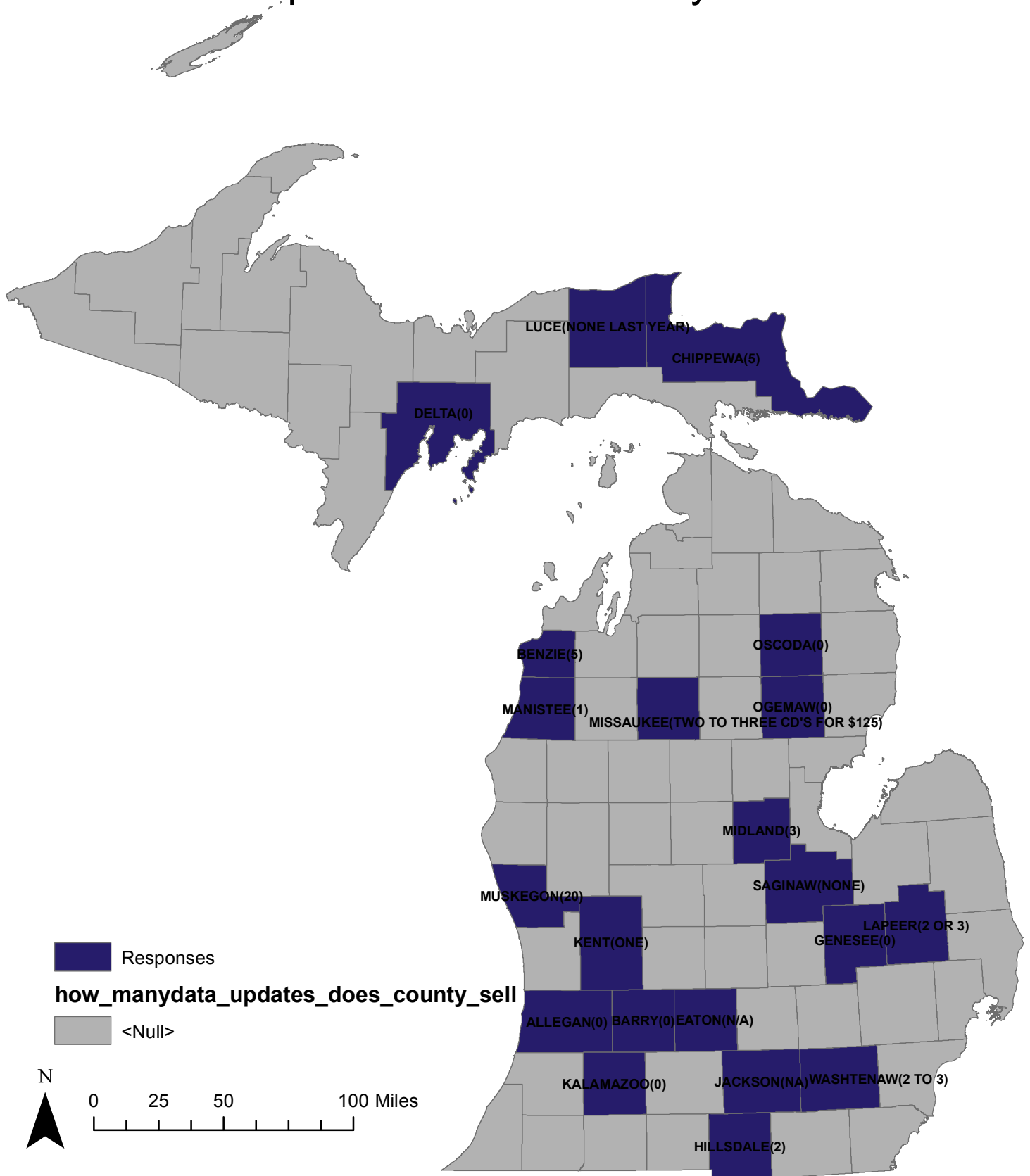
43. When Was the Current Data Pricing Model Enacted?

LUCE
NONE YET

CHIPPEWA
DEC. 31, 2014

2014 DELTA

PER PARCEL COST UNLESS PURCHASE ENTIRE COUNTY
BENZIE
2012

KALKASKA

2012
OSCODA

SEPT. 23, 2013
MANISTEE

LAST YEAR - 2014
MISSAUKEE

2008
OGEMAW

MIDLAND
2011

2003 APPROXIMATELY WHEN ENHANCED ACCESS POLICY ADOPTED
MUSKEGON

2006
SAGINAW

BEFORE MY TENURE 2001
LAPEER

2012
ST. CLAIR

GENESEE
AUGUST 4TH, 2010

KENT
2000

2014
ALLEGAN

2009
BARRY

N/A
EATON

2001?
LIVINGSTON

2012 DEC. 12, 2014
VAN BURENKALAMAZOO

2003
JACKSON

2011
WASHTENAW

AUG. 6, 2012
BERRIEN

ST. JOSEPH

HILLSDALE
2008

MONROE
2012

When_was_the_data_pricing_model_enacted

Responses

<Null>

N

0   25   50   100 Miles

44. How Often is the County's Data Pricing Reviewed?

How_often_county_data_pricing_reviewed

- Annually (9)
- Every 5 years (5)
- Every 10 years (1)
- Other (please specify) (16)
- <Null> (52)

N

0   25   50   100 Miles

44. How Often in the County's Pricing Data Reviewed?

County	Other (Please Specify)
Allegan	Periodically.
Benzie	as needed
Berrien	As needed
Eaton	N/A
Genesee	Irregulary
Gogebic	We just started selling data.
Jackson	As Needed
Lapeer	unk
Leelanau	Previous prices structure was created in 2006, we are currently reviewing a new fee structure for 2015.
Lenawee	As Needed
Livingston	Review is underway
Luce	In review now
Manistee	on a need basis
Ogemaw	not sure
Saginaw	Hasn't been updated since 2006
Washtenaw	No planned revision interval

45. Does the County Provide
Free Data Access to Certain Groups?

Free_Access_To_Cetain_Groups

- Yes (20)
- No (5)
- Other (9)
- <Null> (49)

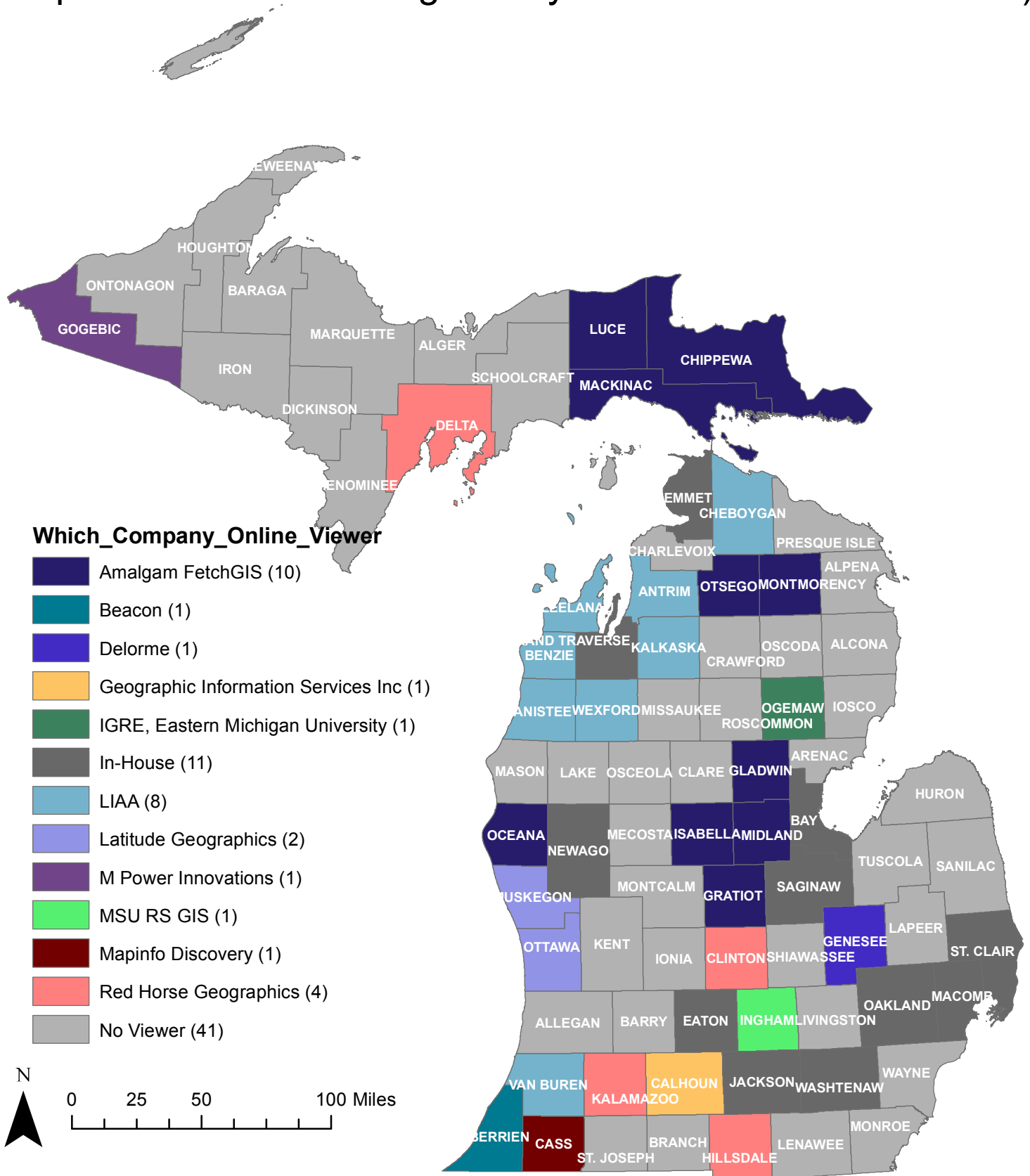## 45. Does the County Provide Free Data Access to Certain Groups?

County	Responses
Allegan	Yes. All parcel data free for all local units of government in the County. Complete fee waiver for educational institutions. Partial fee waiver for non-profits.
Barry	Free to all local governments, State and Federal, non-profit orgs, schools, sewer & water authorities and all For-profit vendors working for said organizations. This is where most of our data goes...out for free.
Benzie	yes, free
Chippewa	ONLINE PARCEL SEARCHING IS FREE TO ALL
Delta	Yes to nonprofits, local government and media
Genesee	Yes. Local governments get data free and free to their contractors for projects. Other government entities and education generally free if 1) it is a subset and not complete data set and/or 2) there is an identified benefit to the County/public.
Gladwin	YES, free access to gov't agencies
Gogebic	The units get their parcel data free of charge. There seems to be a conflict in maintenance data from independent company.
Hillsdale	Free to Government and Quasi Government Entities
Huron	Not at this time.
Jackson	Member Units of the County GIS
Kalamazoo	Yes, non-profits, educational purposes etc.
Kalkaska	yes, depending on the nature of the request and the purpose for the shape files
Kent	Yes, through data sharing agreements.
Lapeer	contact GIS
Leelanau	Yes. Access to GIS data, imagery, assessment information is exchanged with groups that have filled out data sharing agreements with the county. These include local municipalities and townships as well as several utility companies. In general, we will form
Lenawee	Governmental entities or contractors working under contract for governmental entities receive information fee of charge.
Livingston	Yes, many times data is usually provided to those organizations at no charge, but in most cases is reviewed on a case by case basis. Areas of Interest must be clearly specified.
Luce	Pricing model in review now
Manistee	We always recommend submitting a letter of request for lower or free data to the County Board of Commissioners.
Mecosta	no comment
Midland	We have the ability to waive fees depending on the request and who requested the data. Generally we waive fees for education, government, and local units of government.
Missaukee	Yes. Businesses that work with us receive information for free. Local government receive information for free. All of our assessors receive information for free.
Muskegon	Yes, when individually approved and mot of the time is is for a subset of data, not the entire dataset

Ogemaw	the online website is free to everyone
Oscoda	Yes. On a case-by-case basis.
Roscommon	Usually, Non-Profits and other governmental units get a 50% discount
St. Clair	Yes. per Enhanced Access Policy.
Van Buren	Ask
Washtenaw	Yes, free to nonprofits, educational institutions, and all local units and any contractors working for them (data dissemination agreement required in all cases)

47. Does a Vendor Collect and/or Maintain Parcel Shape Objects?

Does_vendor_collect_or_maintain_the_PSOs

■	Yes (5)
■	No (30)
■	<Null> (48)

N

0   25   50   100 Miles

48. Does a Vendor Collect and/or Maintain Assessment Data?

Vendor_collect_or_maintain_Assessment

- ■ Yes (1)
- ■ No (36)
- ■ <Null> (46)
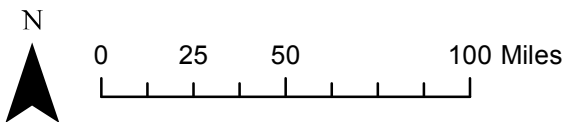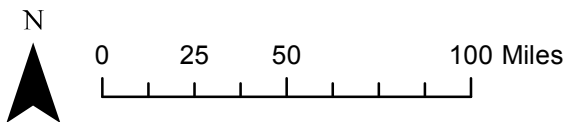
49. Which Company Provides Online Viewer?
(map built from combining survey results with web research)

Which_Company_Online_Viewer

- Amalgam FetchGIS (10)
- Beacon (1)
- Delorme (1)
- Geographic Information Services Inc (1)
- IGRE, Eastern Michigan University (1)
- In-House (11)
- LIAA (8)
- Latitude Geographics (2)
- M Power Innovations (1)
- MSU RS GIS (1)
- Mapinfo Discovery (1)
- Red Horse Geographics (4)
- No Viewer (41)

N

0   25   50   100 Miles

50: If maintained by outside vendors, how much does the vendor charge annually?

Of 10 respondents, 6 responded "N/A." Those with applicable responses provided the following information:
- Not known, each unit acts independently. Some do it in house, others have vendors.
- 4000 for FetchGIS $5/split
- GIS is not itemized from the Equalization Contract
- Unknown

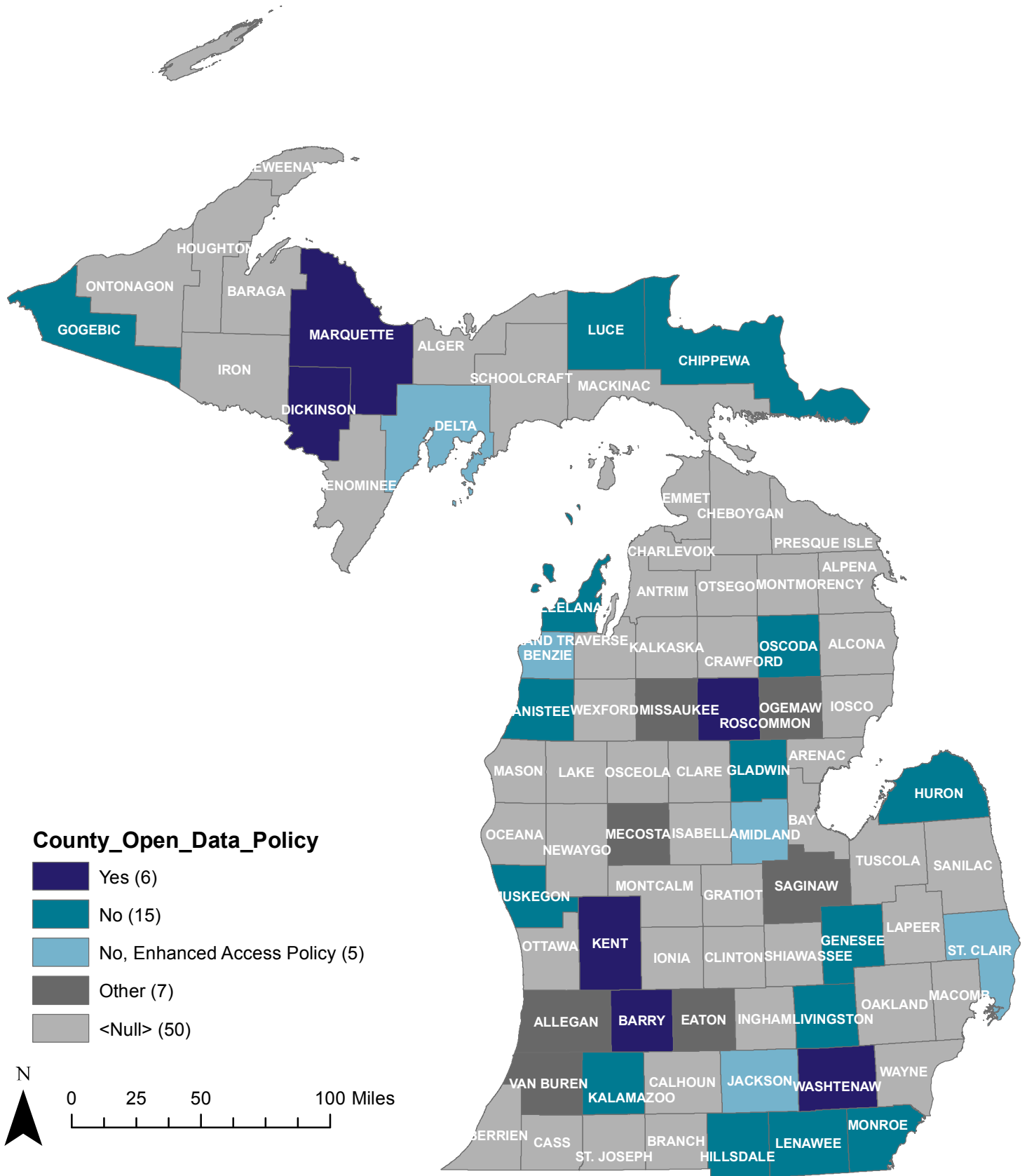## 51: If maintained by outside vendors, how long have outside vendors been used?

Of 10 respondents, 6 responded "N/A." Those with applicable responses provided the following information:
- Luce County: Since 1996
- Kalamazoo County: As long as anyone can remember, maybe 100 years
- Delta County: 3 years
- Gensee County: 1 yr+, unknown

52: If Parcel Shape Objects and/or Assessment Data is maintained by outside vendors, what information do they maintain?

Of 5 respondents, 4 have outside vendors maintain shapefile lines or polygons, 3 have outside vendors maintain ownership, 3 have outside vendors maintain assessment values, 3 have outside vendors maintain SEV, 3 have outside vendors maintain tax status, 3 have outside vendors maintain parcel IDs, 2 have outside vendors maintain lot sizes, 4 have outside vendors maintain online mapping interfaces, and 2 have outside vendors maintain pictures.
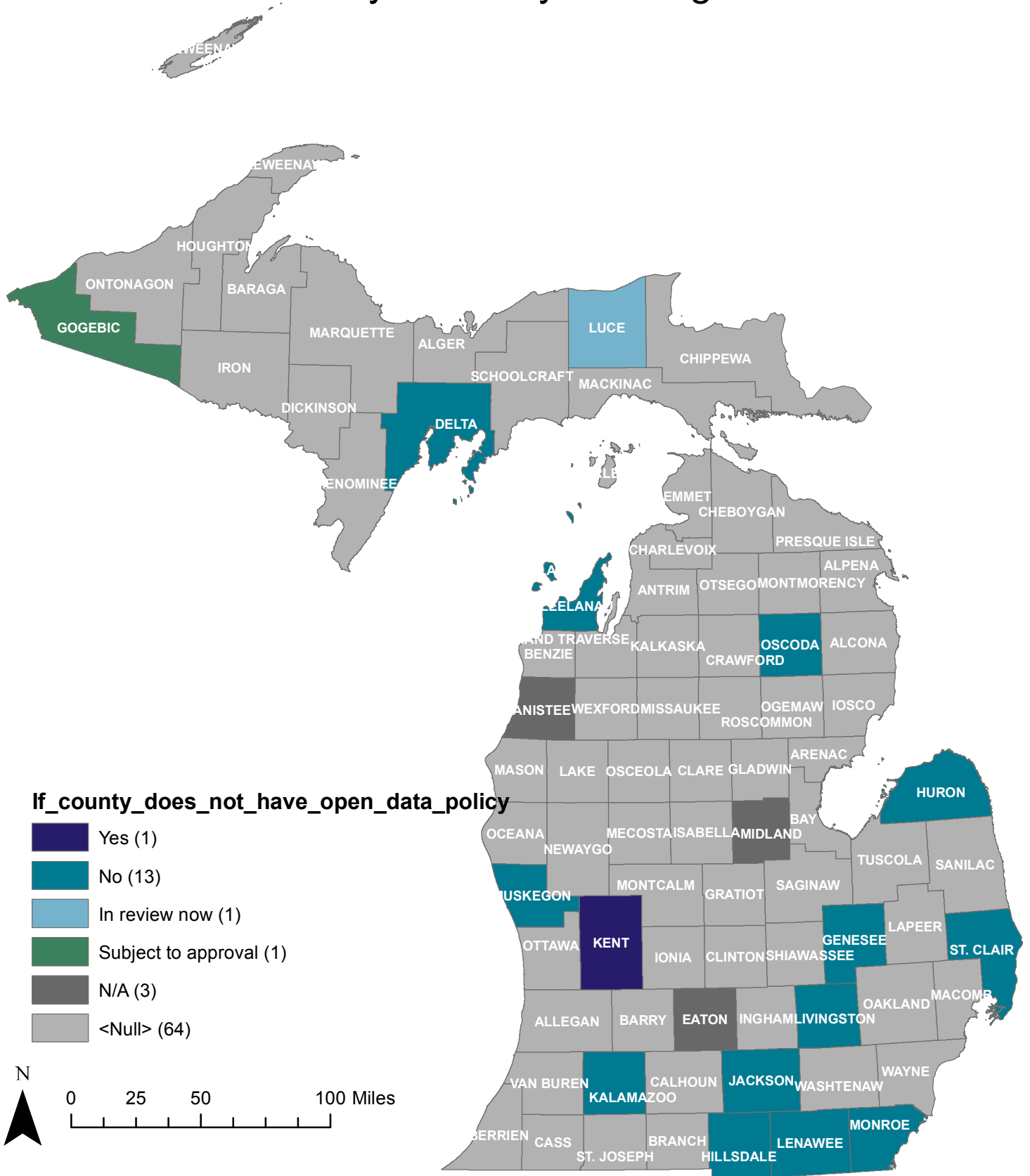
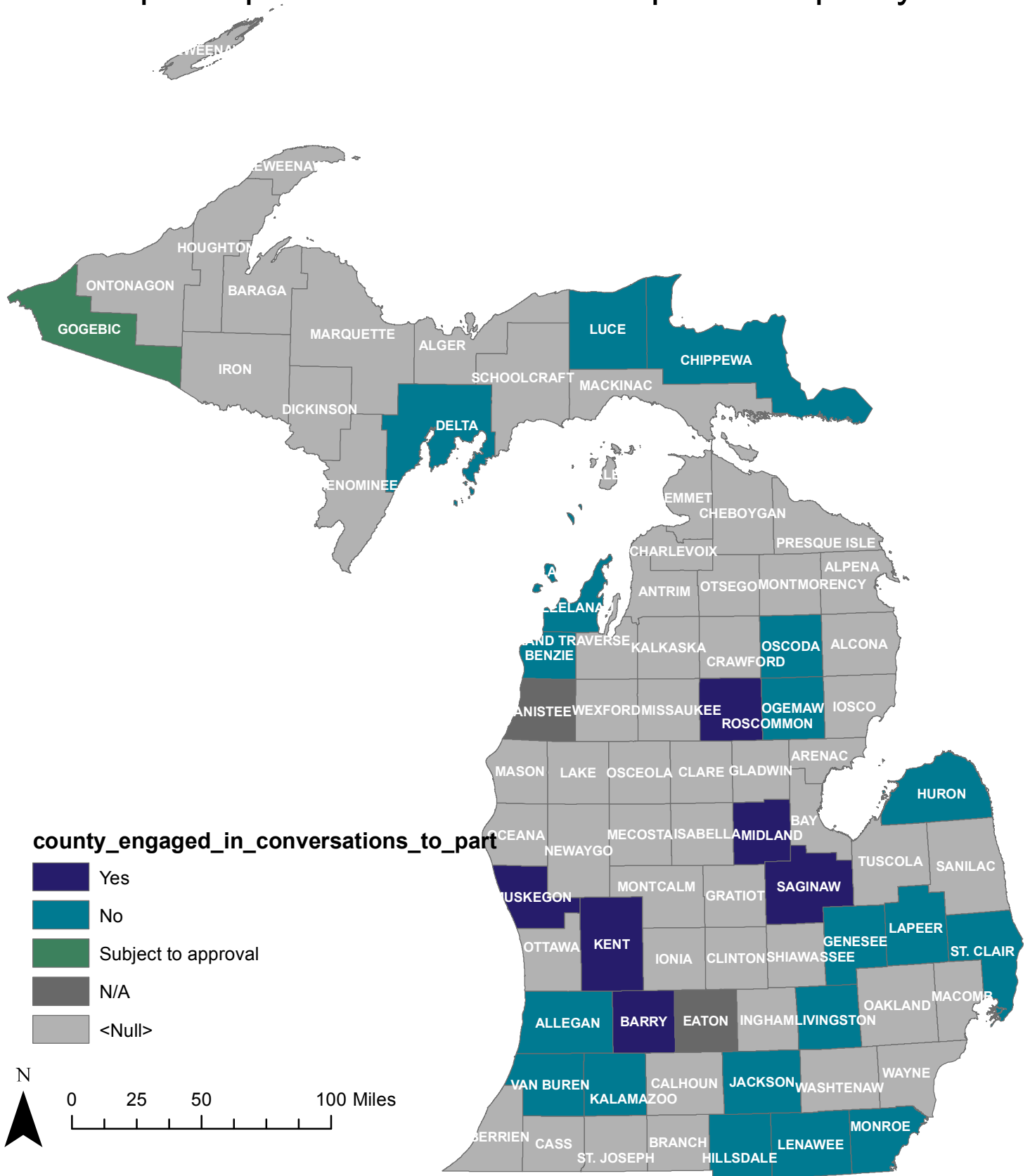# 54. Does the Have an Open Data Policy?

County_Open_Data_Policy

- Yes (6)
- No (15)
- No, Enhanced Access Policy (5)
- Other (7)
- <Null> (50)

N

0   25   50   100 Miles

54. Does the County Have an Open Data Policy?

| County	Does_the_county_have_an_open_data_policy
Allegan	Selected GIS data is available for free through the County's GIS Data Library online.
Benzie	We have an Enhanced Access Agreement
Delta	County as an Enhanced Access Police
Eaton	The Township Does
Genesee	Not that I know of
Gladwin	Selected GIS data is available for free through the County's GIS Data Library online.
Gogebic	Not yet
Huron	Not that I am aware of.
Jackson	No we have an Enhanced Access Policy that was pushed by State Government
Kalamazoo	No
Kent	https://www.accesskent.com/pdfs/GIS_DataDownloadLicense.pdf
Lenawee	Not to my knowledge
Luce	None yet
Manistee	N/A
Mecosta	in the process of approving an enhanced access policy
Midland	We have adopted an Enhanced Access Policy which allows us to charge for access to data that has been enhanced for example GIS data.
Missaukee	I'm not sure what open data policy is?
Ogemaw	not sure
Saginaw	We do except for Parcels and aerial phtography
St. Clair	No, Not an open data policy... an EAP
Van Buren	?

55. If the County Does Not Have an Open Data Policy, is the County Currently Working on One?

If_county_does_not_have_open_data_policy

- Yes (1)
- No (13)
- In review now (1)
- Subject to approval (1)
- N/A (3)
- <Null> (64)

N

0   25   50   100 Miles

56. To your knowledge, is the county engaged in conversations to participate in the state-wide open data policy?

county_engaged_in_conversations_to_part

- Yes
- No
- Subject to approval
- N/A
- <Null>

0 25 50 100 Miles

57. Are You Interested in a State-wide Parcel Layel?

Interested_in_a_statewide_parcel_layer

- Yes (18)
- No (11)
- <Null> (54)

N

0 25 50 100 Miles
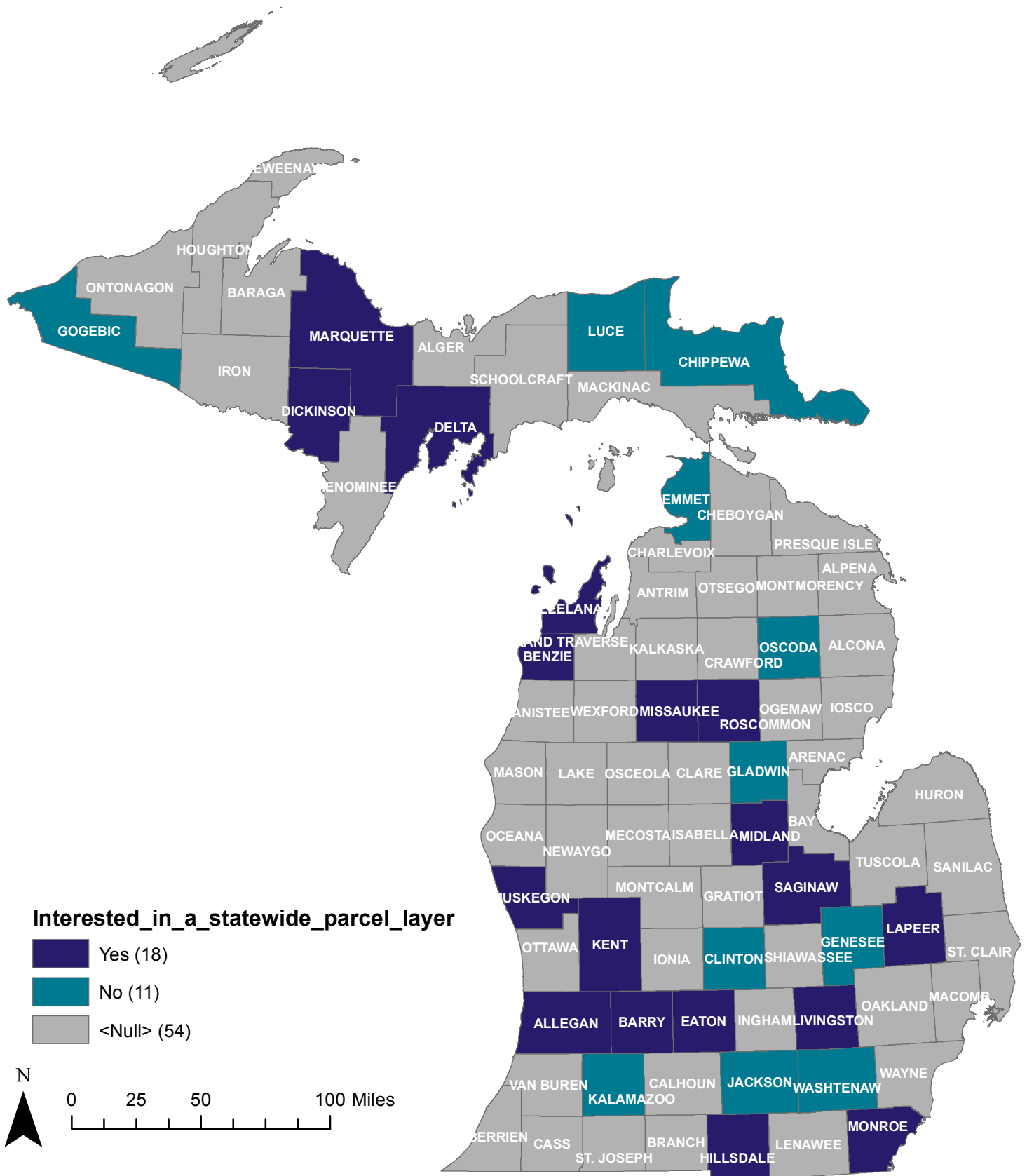
57. Are You Interested in a State-Wide Parcel Lay?

County	OpenDataComment7
Genesee	From my experience States needs are typically less detailed than ours. Only interested if the project helps us improve our data and process. No real need for data outside our jurisdiction.
Gogebic	Not ready for it at the moment but interested at a later date.
Huron	Possibly. I wouold need to know more about it.
Kalamazoo	No need for it in this office, regionally may be a good idea
Kent	This is long overdue.
Lenawee	County administrator should probably be contacted in regard to this
Livingston	Personally, Yes. Professionally, it could be helpful in the long term.
Manistee	N/A
Missaukee	Cost would an issue though.
Muskegon	Potentially, not at a County level, I have the data I need there, but at an organization level it would be beneficial. This is a great discussion starter that needs to go much further and I would be glad to discuss this with you and would appreciate see
Ogemaw	maybe
St. Clair	Only with funding or mandate
Van Buren	Undecided