# The 2020 Local Redistricting Project WISE-LR Software & Pilot





#### **Legislative Technology Services Bureau**

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GIS Manager Senior GIS Analyst GIS Analyst GIS Analyst/Developer

### Logging into WISE-LR

- Username for every user is your county name
  - e.g. "Dane", "Iowa", "Eau\_Claire"
- Normal WISE-Decade Password
  - Allows access to entire WISE-Decade platform
  - Sent to County Clerk, LIO, & their designees twice a year for BAS/Ward, Parcel, Foundational layer collections.

#### • WISE-LR Only Password

- Only allows access to the WISE-LR system
- Send to Municipal users, or any County user outside of the County Clerk and LIO. This is to ensure that only designated county officials may change or submit to unrelated programs.

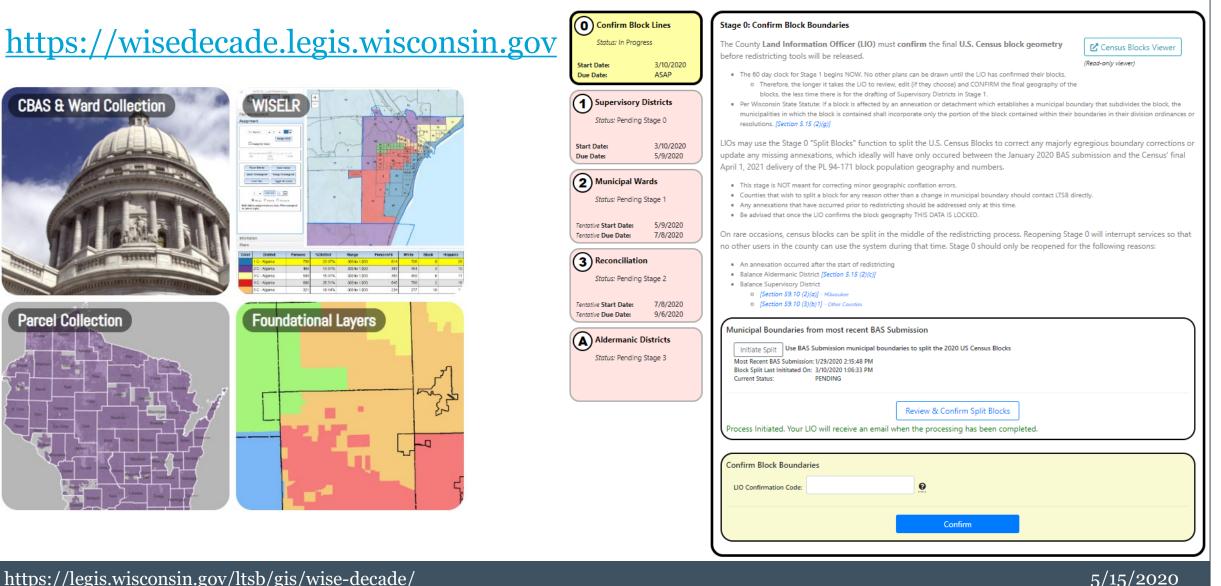
#### WISE-Decade 2.0 Login Page

The WISE-Decade platform is a suite of mapping tools developed to assist counties and municipalities with legislative and legal requirements mandated by Wisconsin state law.





### WISE-Decade and WISE-LR URL

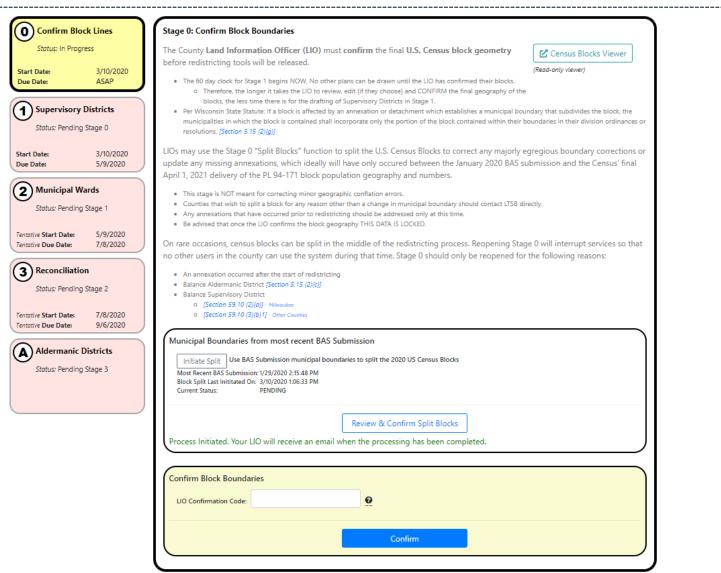


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O Confirm Block Lines Status: In Progress	WISE-LR A	dminist	rator
Start Date:       3/10/2020         Due Date:       ASAP         Image: Start Date:       ASAP         Image: Start Date:       Start Date:         Start Date:       3/10/2020         Due Date:       3/10/2020         Start Date:       3/10/2020         Due Date:       5/9/2020         Image: Start Date:       5/9/2020         Image: Date:       7/8/2020         Image: Date:       9/6/2020         Image: Date:	Admin console that lists the five potential stages of local redistricting. Includes status of stage and specific deadline for each stage.	<ol> <li>Confirm Block Lines. <i>Status</i>: In Progress</li> <li>Start Date: 3/10/2020 Due Date: ASAP</li> <li>Supervisory Districts <i>Status</i>: Pending Stage 0</li> <li>Start Date: 3/10/2020 Due Date: 5/9/2020</li> <li>Municipal Wards <i>Status</i>: Pending Stage 1</li> <li>Tentorive Start Date: 5/9/2020</li> <li>Reconciliation <i>Status</i>: Pending Stage 2</li> <li>Tentorive Start Date: 7/8/2020</li> <li>Reconciliation <i>Status</i>: Pending Stage 2</li> <li>Mentorive Due Date: 9/6/2020</li> <li>Aldermanic Districts <i>Status</i>: Pending Stage 3</li> </ol>	

https://legis.wisconsin.gov/ltsb/gis/wise-decade/

### Stage 0: Confirm Block Boundaries

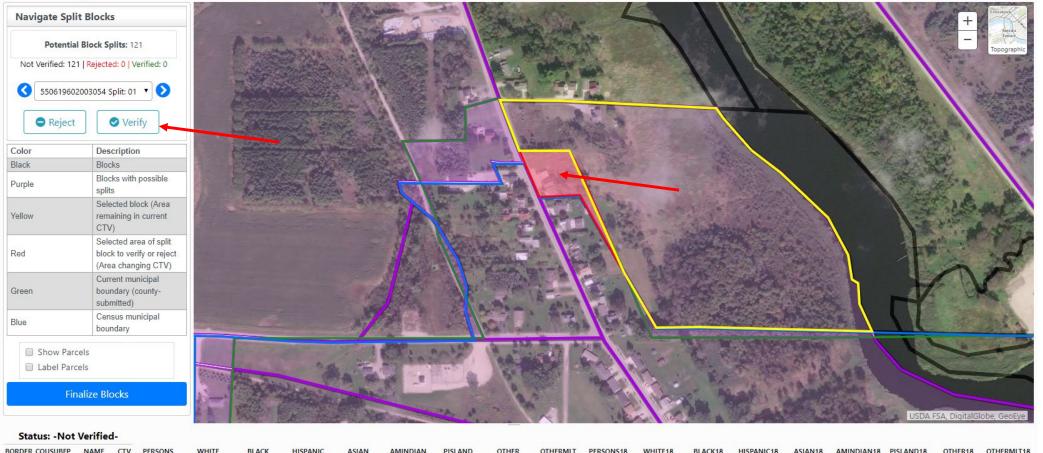




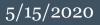


### Stage O: Confirm Block Boundaries

#### WISE-LR Stage 0: Split US Census Blocks - Kewaunee County



BORDE	R COUSUBFP	NAME	СТУ	PERSONS	WHITE	BLACK	HISPANIC	ASIAN	AMINDIAN	PISLAND	OTHER	OTHERMLT	PERSONS18	WHITE18	BLACK18	HISPANIC18	ASIAN18	AMINDIAN18	PISLAND18	OTHER18	OTHERMLT18
	00600	Ahnapee	Т	7	6	0	0	0	1	0	0	0	7	6	0	0	0	1	0	0	0
	01000	A <mark>l</mark> goma	С	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Totals:		7	6	0	0	0	1	0	0	0	7	6	0	0	0	1	0	0	0



## Stage 1: Tentative Supervisory District Plan



5/15/2020

During Stage 1, counties have a maximum of 60 days to create a tentative Supervisory District plan.

A Supervisory District plan is created by grouping US Census blocks together.

Status: Complete	e	During stage 1, counties have a maximum of 60 days to create a tentative Supervisory District plan.
art Date:	3/10/2020	A Supervisory District plan is created by grouping US Census blocks together [Section 59.10(8)(b)]
mpleted Date:	3/10/2020	Municipalities must create wards entirely within a single Supervisory District.     Supervisory Districts must be contiguous and "substantially equal in population" [Section 59.10(2)(a)]
		<ul> <li>Supervisory statuce induces configuous and substantiality equal in protocol (second second)</li> <li>Multiple plans may be created, but only one final plan can be submitted.</li> </ul>
Supervisory	Districts	
		The county board is required to submit a tentative county supervisory district plan to each municipal governing body in the county.
Status: In Progr	ess	The county board is required to hold a public hearing on the tentative plan. If a municipality needs to be divided and placed in
		more than one supervisory district, the board is to indicate the approximate location of the territory from which a ward is sought
art Date: Je Date:	3/10/2020 5/9/2020	and the approximate population of the ward.
Je Date.	5/5/2020	Total County Population: 16,157
		Maximum Number of Supervisors: 21
Municipal Wa	ards	[Section 59.10(3)(a)]
Status: Pending	Stage 1	
_		Create New or Load Existing Plan
tative Start Date:	5/9/2020	
tative Due Date:	7/8/2020	New Plan
Reconciliation	n	Create New Plan New Plans Remaining: 200
		Plan Name:
Status: Pending	Stage 2	
		New Plan Name Here
tative Start Date: tative Due Date:	7/8/2020 9/6/2020	District Count:
tative Due Date:	9/6/2020	
	Nindari edu	21
Aldermanic D	istricts	(This number may be changed later)
Status: Pending	Stage 3	Email Address:
		myemail@work.com
		No Devend
		Plan Password:
		Confirm Plan Password:
		Start with:
		Currently Enacted Plan

### Stage 2: Municipal Ward Plans



O Confirm Block Lines	Stage 2: Municipal Ward Plans	
Status: Complete	During Stage 2, municipalities with over 1,000 people have a maximum of 60 days following the receipt of the proposed county supervisory district to create their ward boundaries.	Kewaunee County: 7 of 14 municipalities have an approved plan, or a population less than 1,000 persons.
Start Date: 2/17/2020 Completed Date: 2/17/2020 Supervisory Districts Status: Complete Start Date: 2/17/2020	<ul> <li>Wards must be entirely within a single supervisory district.</li> <li>Although municipalities are encouraged to try to fit their wards within the supervisory districts given to them (from Stage 1), municipalities can disagree and submit their own plan(s).</li> <li>Wisconsin State statutes dictates that the range of the allowable population within each ward is based on the total population of the municipality. This is built into the drawing tool. [Section 5.15(2)(b)]</li> <li>Wards must reflect changes in population: [Section 5.15(1)(a)3], changes in minority population: [Section 5.15(1)(a)2], changes in municipal boundaries: [Section 5.15(1)(b)].</li> <li>In 'Stage 3: Reconciliation', municipalities and counties will have the opportunity to reconcile any conflicting boundaries that would cause a ward to be</li> </ul>	Municipality Status: View Required Only View Incomplete Only AHNAPEE, Town of Approved On: Approved By: Ordinance/Legal ID:
Completed Date: 2/17/2020 Municipal Wards Status: In Progress	divided into multiple supervisory districts. [Section 59.10(3)(b)2]           Select Municipality:           ALBION, Town of	ALGOMA, City of         Approved On:       Tuesday, February 18, 2020         Approved By:       Mrs. Peacock (email@organization.gov)         Ordinance/Legal ID:       ABC-123
Start Date:         2/17/2020           Due Date:         4/17/2020	Create New or Load Existing PlanNew Plan	CARLTON, Town of         Approved On:       Tuesday, February 18, 2020         Approved By:       Professor Plum (name@organization.gov)         Ordinance/Legal ID:       ABC-123
3 Reconciliation Status: Pending Stage 2	Create New Plan New Plans Remaining: 68 Plan Name:	CASCO, Town of Approved On: Approved By: Ordinance/Legal ID:
Tentative Start Date: 4/17/2020 Tentative Due Date: 6/16/2020	District Count:	CASCO, Village of Approved On: Approved By: Ordinance/Legal ID:
Status: Pending Stage 3	(This number may be changed later) Email:	Stage 2 will end automatically when the last required municipality has confirmed their ward plan. Aldermanic Districts may be drawn at any time once a municipal ward plan has been approved. However, it is recommended that Aldermanic Districts are created after <i>Stage 3: Reconciliation</i> .
	Plan Password:	

### Stage 3: Reconciliation



Confirm Block Lines	Stage 3: Reconciliation of the Supervisory Districts and Municipal Wards
Status: Complete	The third 60-day stage requires counties to adopt final supervisory district plans and cities to establish aldermanic district plans.
Start Date: 2/18/2020 Completed Date: 2/18/2020 Supervisory Districts Status: In Reconciliation Start Date: 2/18/2020	<ul> <li>If an approved municipal ward plan contains any ward that is not entirely within a single supervisory district of the plan approved in stage 2, then that municipality will be shown as "invalid" below. Municipal wards must nest within County Supervisory Districts.</li> <li>To correct conflicts between the supervisory districts and municipal wards, either return to 'Stage 1: Supervisory Districts' to confirm a new Supervisory District Plan or 'Stage 2: Municipal Wards' to confirm a new ward plan. When all confirmed municipal wards nest properly within the approved county supervisory district plan, the County Clerk may submit the final version of the wards to the State Legislature by entering their confirmation code.</li> <li>Aldermanic Districts may be drawn at any time once a municipal ward plan has been approved. However, it is recommended that Aldermanic Districts are created after Stage 3: Reconciliation.</li> </ul>
completed Date: 2/18/2020	Kewaunee County: 13 of 14 municipal ward plans are valid with approved supervisory plan           KEY:         Invalid         Valid
2 Municipal Wards Status: In Reconciliation Start Date: 2/18/2020 Scompleted Date: 2/18/2020	LUXEMBURG, Town of Approved On: Tuesday, February 18, 2020 Approved By: Mrs. White (white@organization.gov) Ordinance/Legal ID: 123-XYZ
Reconciliation     Status: In Progress	LUXEMBURG, Village of Approved On: Tuesday, February 18, 2020 Approved By: Colonel Mustard (mustard@organization.gov) Ordinance/Legal ID: ABC-123
Start Date: 2/18/2020 Due Date: 4/18/2020	MONTPELIER, Town of Approved On: Tuesday, February 18, 2020 Approved By: Rose Nylund (rose@organization.gov) Ordinance/Legal ID: XYZ-456
Aldermanic Districts Status: Pending Stage 3	PIERCE, Town of Approved On: Approved By: Ordinance/Legal ID:
	RED RIVER, Town of         Approved On:       Tuesday, February 18, 2020         Approved By:       Blanche Devereaux (blanche@org.gov)         Ordinance/Legal ID:       XYZ-789
	Confirm Final Boundaries
	County Clerk Confirmation Code:
	Confirm Final Plans

### Stage A: Aldermanic Districts



O Confirm Block Lines	Stage A: Aldermanic Plans
Status: Complete	Aldermanic Districts are created by grouping confirmed municipal wards (from Stage 2).
Start Date:         2/18/2020           Completed Date:         2/18/2020	<ul> <li>Aldermanic Districts may be drawn at any time once a municipal ward plan has been approved.</li> <li>However, it is recommended that Aldermanic Districts are created after Stage 3: Reconciliation.</li> <li>If a new version of municipal wards are confirmed, any aldermanic plans based on the prior wards may be invalid as well.</li> <li>Alteration of aldermanic districts (Section 62.08)</li> </ul>
Supervisory Districts	Alteration of algements (Jaction 62.00)
Status: Complete	Select Municipality:
Start Date:         2/18/2020           Completed Date:         2/18/2020	PIERCE, Town of
Municipal Wards	Create New or Load Existing Plan
2 Municipal Wards Status: Complete	New Plan
Start Date:         2/18/2020           Completed Date:         2/18/2020	Create New Plan New Plans Remaining: 87 Plan Name:
3 Reconciliation	District Count:
Status: Complete	10
Start Date:         2/18/2020           Completed Date:         2/18/2020	(This number may be changed later)
	Email:
Aldermanic Districts	
Status: In Progress	Plan Password:
	Confirm Plan Password:
	Start with:
	Blank Plan
	Create



Confirmation Credentials – Confirming a Plan

- Provided by LTSB to LIO, County Clerk, and Municipal Clerks and is unique to that single individual.
- Used to officially confirm Supervisory, Municipal and Aldermanic Plans once adopted, and to verify US Census Block Geography
  - Plan's Ordinance or Legal ID required to confirm
  - Only the LIO's code will work to confirm block lines in Stage o

Select Rinal Plan	
	•
Enter Ordinance/Legal ID:	
onfirm Supervisory Plan	
County Clerk Confirmation Code:	

Confirm Final Boundaries		
County Clerk Confirmation Code:	Q	
	Confirm Final Plans	

HNAPEE, Town of Select Final Aldermanic P		τ.
Enter Ordinance/Legal ID:		
pproved By: Name:		
Name:		
Email:		
email		
onfirm Aldermanic Plan		
Municipal Clerk Confirmation Code:	9	

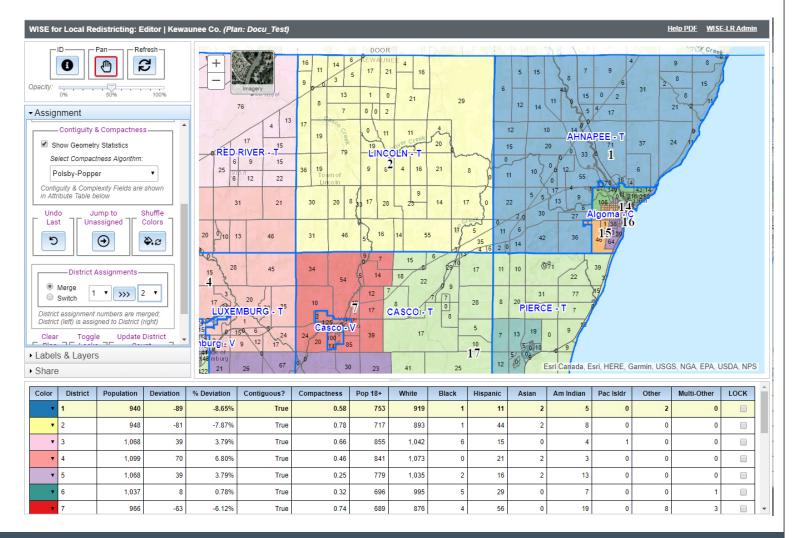


#### WISE-LR Editor



#### WISE-LR Editor – Mapping application where all plans are drawn.







## Understanding the Attribute Table

#### • Population (& Demographics)

• Aggregate count of block population(s) assigned to a district.

#### • Valid Range (Ward Plans)

• Statutorily described range that the ward population must fall within.

#### Deviation from Ideal (Supervisory Plans)

• The ideal population of a Supervisory District is the total population of the county divided by the number of districts. This field will show the count deviation from that ideal population.

#### • % Deviation

• Indicates how far from the ideal division of the population by the number of districts or wards.

Color	District	Population	Deviation	% Deviation	Contiguous?	Compactness	Pop 18+	White	Black	Hispanic	Asian	Am Indian	Pac Isldr	Other	Multi-Other	LOCK
•	1	940	-89	-8.65%	True	0.58	753	919	1	11	2	5	0	2	0	
•	2	948	-81	-7.87%	True	0.78	717	893	1	44	2	8	0	0	0	
•	3	1,068	39	3.79%	True	0.66	855	1,042	6	15	0	4	1	0	0	

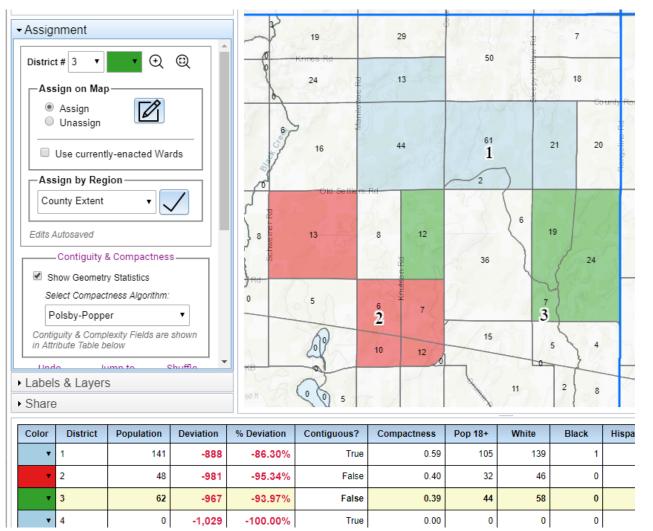
Color	District	Population	Valid Range	% Deviation
•	1	1,673	300 to 1,000	164.30 %
•	2	650	300 to 1,000	2.69 %
•	3	0	300 to 1,000	-100.00 %
•	4	141	300 to 1,000	-77.73 %
•	5	623	300 to 1,000	-1.58 %



### Geometric Attributes

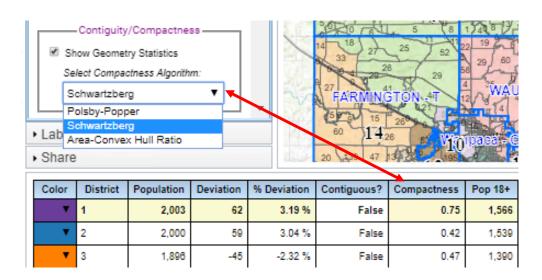
#### Contiguity

- True or False All blocks within a district (or ward) share a boundary with (or touch) one another. In other words, the district is a single polygon area when 'True' or the district has blocks disconnected from the main district when 'False'
- While legally allowed, municipal islands (or actual islands) assigned to a district within the main municipality may show up as non-contiguous.





- Compactness Measurements
  - A score between 0 and 1
    - × 1 is most compact
  - Three algorithms to select from:
    - × Polsby-Popper
    - × Schwartzberg
    - × Area-Convex Hull Ratio



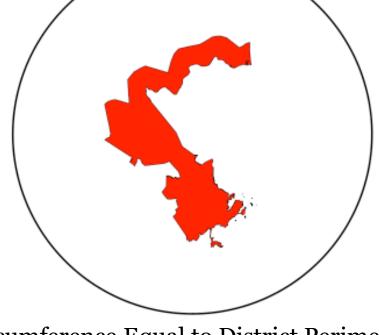


### **Compactness Measurements**

• **Polsby-Popper:** measures is the ratio of the area (A) of the district to the area of a circle whose circumference is equal to the perimeter (P) of the district.

$$=4\pi * \frac{A}{P^2}$$

Graphic Credit: https://fisherzachary.github.io/public/r-output.html



Circumference Equal to District Perimeter





**Compactness Measurements** 

• Schwartzberg: ratio of the perimeter (P) of the district to the circumference of a circle whose area is equal to the area of the district (A).

$$= \frac{1}{\frac{P}{2\pi\sqrt{(A/\pi)}}}$$



Circle with Area Equivalent to the District

Graphic Credit: https://fisherzachary.github.io/public/r-output.html

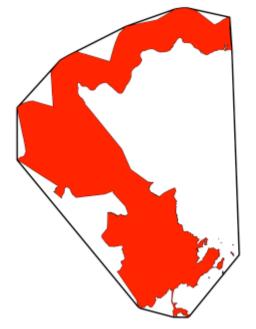




### **Compactness Measurements**

• Area/Convex Hull: compares the area of the district (A) to the area of the smallest bounding convex polygon (C). The score penalizes for boundary contortions, but grants flexibility a any non-concave polygon is seen as ideal.

 $=\frac{A}{C}$ 



Convex Hull

Graphic Credit: https://fisherzachary.github.io/public/r-output.html

### **Sharing Plans**



<ul> <li>Assignment</li> </ul>
Labels & Layers
- Share
Export/Import Plans
<ul> <li>Export</li> <li>Import</li> </ul>
Select: Block List (.CSV)
Email Data
Share Plan
Import Shared Plan
Select:Currently Enacted Plan 🔻
Import
Viewer URLs
Public Share:
http://wisedecade-dev.legis.wisconsin.gov/
(Only visible if plan is SHARED.)
Private Share:
http://wisedecade-dev.legis.wisconsin.gov/
(Distributes UNSHARED plans; always visible)

#### WISE-LR Editor • Public Share URL

• Only visible within WISE-LR to other county users if plan is SHARED

#### • Private Share URL

- ➤ Distributes UNSHARED plans; always visible.
- Anyone with access to this url will be able to see your plan. Be careful with how this is distributed.

WISE-LR Viewer – What people see if they open a shared url.

• Share pane: can send an email to someone with the plan's data

✓ Share
Export Plan
Export As:
Block List (.CSV)
Recipient Email:
test@email.com
Send

### Pilot Program



- Inter-government dress rehearsal of Local Redistricting
   Use the opportunity to plan your redistricting for 2021
- Reduced time table to allow for busy clerk schedules
  - Three 14-day stages instead of three 60-day stages
- Stage 1: June 1<sup>st</sup>, 2020
- Stage 2: June 15<sup>th</sup>, 2020
- Stage 3: June 29<sup>th</sup>, 2020

#### **Questions?**



Legislative Technology Services Bureau

General LTSB GIS Line 608-283-1830 <u>GIS@legis.Wisconsin.gov</u>

Ryan Squires 608-283-1814 <u>Ryan.Squires@legis.Wisconsin.gov</u>

