Fall River County
AG Presentation

Presented by: Susie Simkins, CAA
Director of Equalization
Fall River & Oglala Lakota Counties
November 2015

Compiled for:
Agricultural Land Assessment Implementation
And Oversight Advisory Task Force

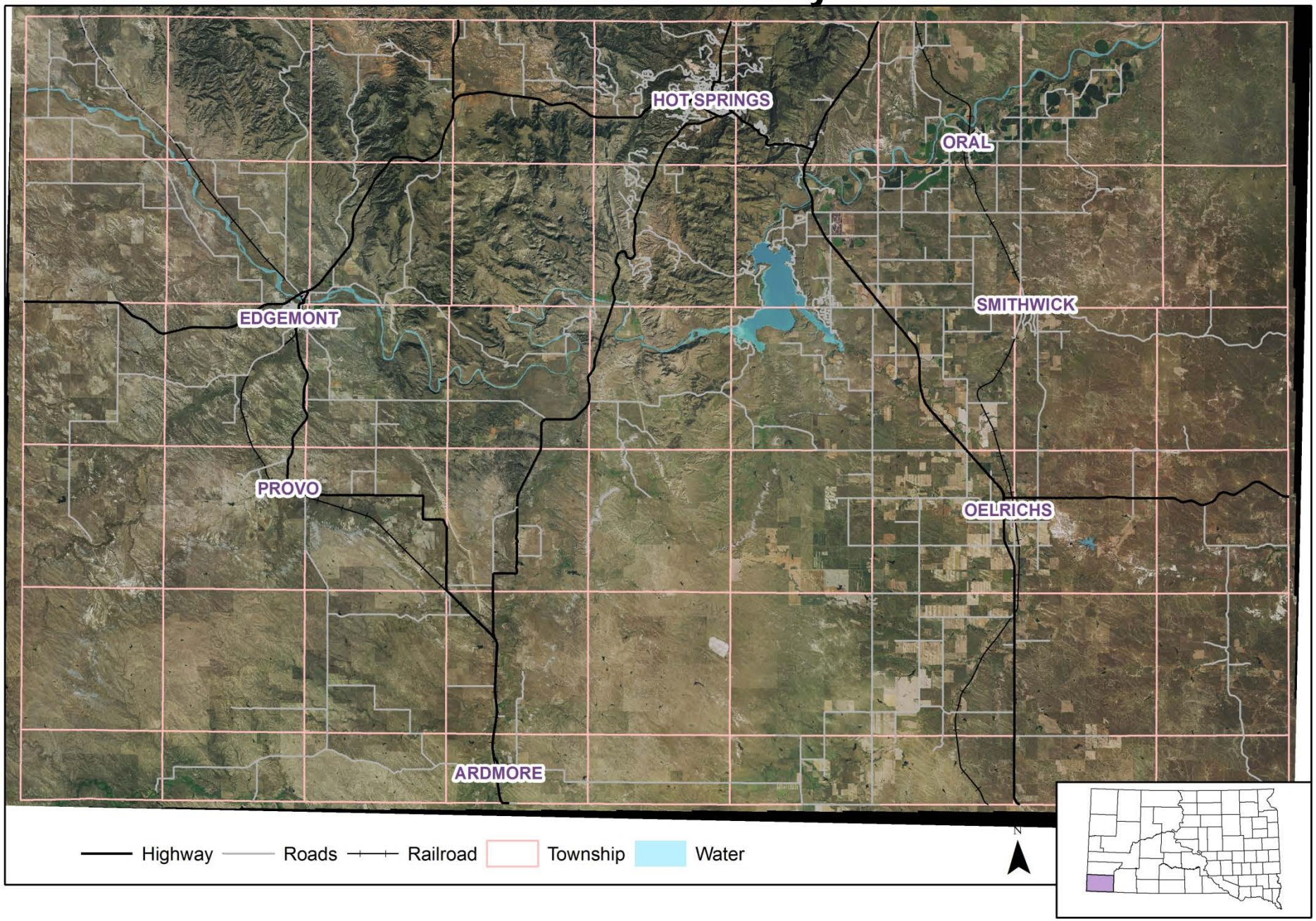
Can you defend this?

Our responsibility is to have fair and equitable assessments.

Fall River County Statistics

- Population - 7,094
- Total Sq Miles - 1,743
- Total Acres - 1,115,584

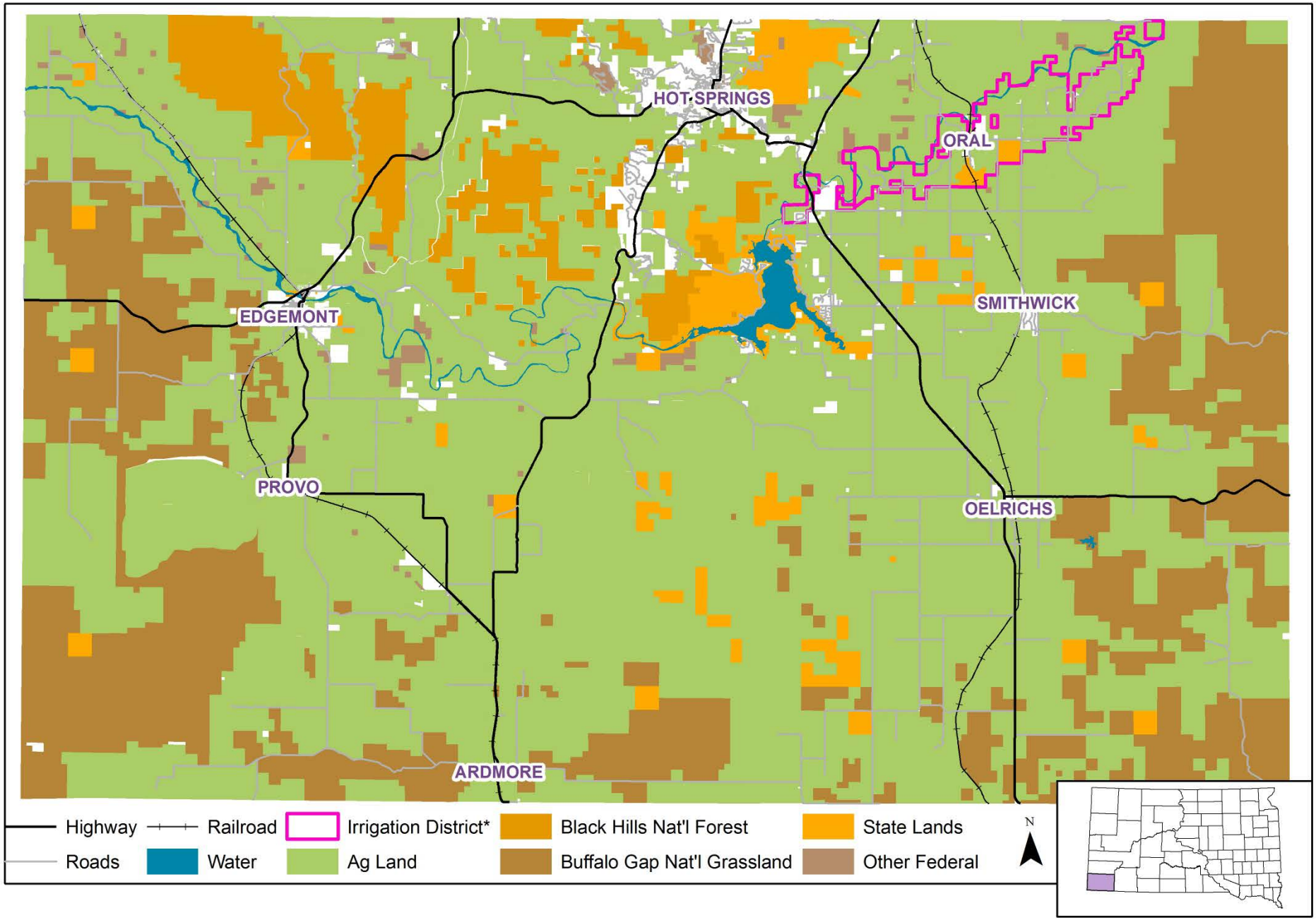
Fall River County



Fall River County Statistics

• Assessed AG Land -	783,422 Acres	70.2%
• NA Land -	30,894 Acres	2.8%
• Exempt Govt Lands -	296,949 Acres	26.6%
• Unassessed -	4,319 Acres	0.4%

Fall River County



Today's Examples

- Data used was from 2014
  - Top Dollars (Crop & Grass)
  - Taxes (Mill Levy & State Factor)
  - Cash Rent (8 year Olympic Average)
- These are not hypothetical parcels
  - Mr. White's property will be used for the main presentation
  - Mr. Frahm's property is included for reference

White - Old Soil Ratings

Year	2014	Top Dollar		Mill Levy	13.093
Cash Rent**	7.88	Grass	302.11	State Factor	0.85
Acres per Animal Unit (Year)***	30	Crop	535.22		

All Range Soils

37000-01009-291-00
N1/2, Sec 29, Twp 10, Rg 9

SOIL	ACRES	REGULAR RATE	REGULAR DOLLAR	REGULAR ASSESSMENT
BUB	54	0.482	302.11	$ 7,863.32
HE	49	0.169	302.11	$ 2,501.77
KED	90	0.487	302.11	$ 13,241.48
ORE	54	0.149	302.11	$ 2,430.78
PEB	46	0.482	302.11	$ 6,698.38
PSE	4	0.399	302.11	$ 482.17
WPC	23	0.399	302.11	$ 2,772.46
ACRES:	320		TOTAL ASSESSMENT:	$ 35,990.36
			TOTAL TAX:	$ 400.54

	Income	
Taxes as percentage of Cash Rent Income	2521.6	16%

	# Pairs	
Taxes Per Cow/calf Pair	10.7	$ 37.55

Range & Crop Soils

37000-01009-293-00
S1/2, Sec 29, Twp 10, Rg 9

SOIL	ACRES	REGULAR RATE	REGULAR DOLLAR	REGULAR ASSESSMENT	ADJUSTED RATE	ADJUSTED DOLLAR	ADJUSTED ASSESSMENT	RANGE RATE	RANGE DOLLAR	RANGE ASSESSMENT
BA	8	0.1	302.11	$ 241.69	0.1	302.11	$ 241.69	0.1	302.11	$ 241.69
BUB	37	0.482	302.11	$ 5,387.83	0.482	302.11	$ 5,387.83	0.482	302.11	$ 5,387.83
HE	20	0.169	302.11	$ 1,021.13	0.169	302.11	$ 1,021.13	0.169	302.11	$ 1,021.13
KED	78	0.487	302.11	$ 11,475.95	0.487	302.11	$ 11,475.95	0.487	302.11	$ 11,475.95
KYA	3	0.538	302.11	$ 487.61	0.538	302.11	$ 487.61	0.538	302.11	$ 487.61
NOB*	142	0.864	535.22	$ 65,665.07	*0.511*	535.22	$ 38,836.63	*0.511*	*302.11*	$ 21,921.71
PEB	14	0.482	302.11	$ 2,038.64	0.482	302.11	$ 2,038.64	0.482	302.11	$ 2,038.64
WPC	18	0.399	302.11	$ 2,169.75	0.399	302.11	$ 2,169.75	0.399	302.11	$ 2,169.75
ACRES:	320		TOTAL ASSESSMENT:	$ 88,487.67		TOTAL ASSESSMENT:	$ 61,659.23		TOTAL ASSESSMENT:	$ 44,744.30
			TOTAL TAX:	$ 984.78		TOTAL TAX:	$ 686.21		TOTAL TAX:	$ 497.96

	Income			
Taxes as percentage of Cash Rent Income	$ 2,521.60	39%	27%	20%

	# Pairs			
Taxes Per Cow/calf Pair	10.67	$ 92.32	$ 64.33	$ 46.68

*Crop Soils, South Dakota Department of Revenue, Fall River County Table 1A

**South Dakota Department of Revenue, 8 year olympic average for 2014

***South Dakota Rangeland and Pasture Grazing Records, Figure 1. Carrying Capacity of Ranges and Pastures in South Dakota

Defining Adjustments

- What we are **NOT** talking about:
  - A portion of a crop field that has an issue causing it to grow poorly
  - Land that has been cropped sporadically over the last twenty years

- What we **ARE** talking about:
  - Land that cannot, for physical reasons, be used to produce crops

Terms

- We will be using some term interchangeably during this presentation:
  - Range or Grass
    - Range Rating or Grass Rating
    - Range Dollar or Grass Dollar
    - Range Soils or Grass Soils
  - Stocking Rate or Carrying Capacity
  - Soil Type or Map Unit

Percentage of Difference Formula

- Take the difference of two numbers and divide by the average

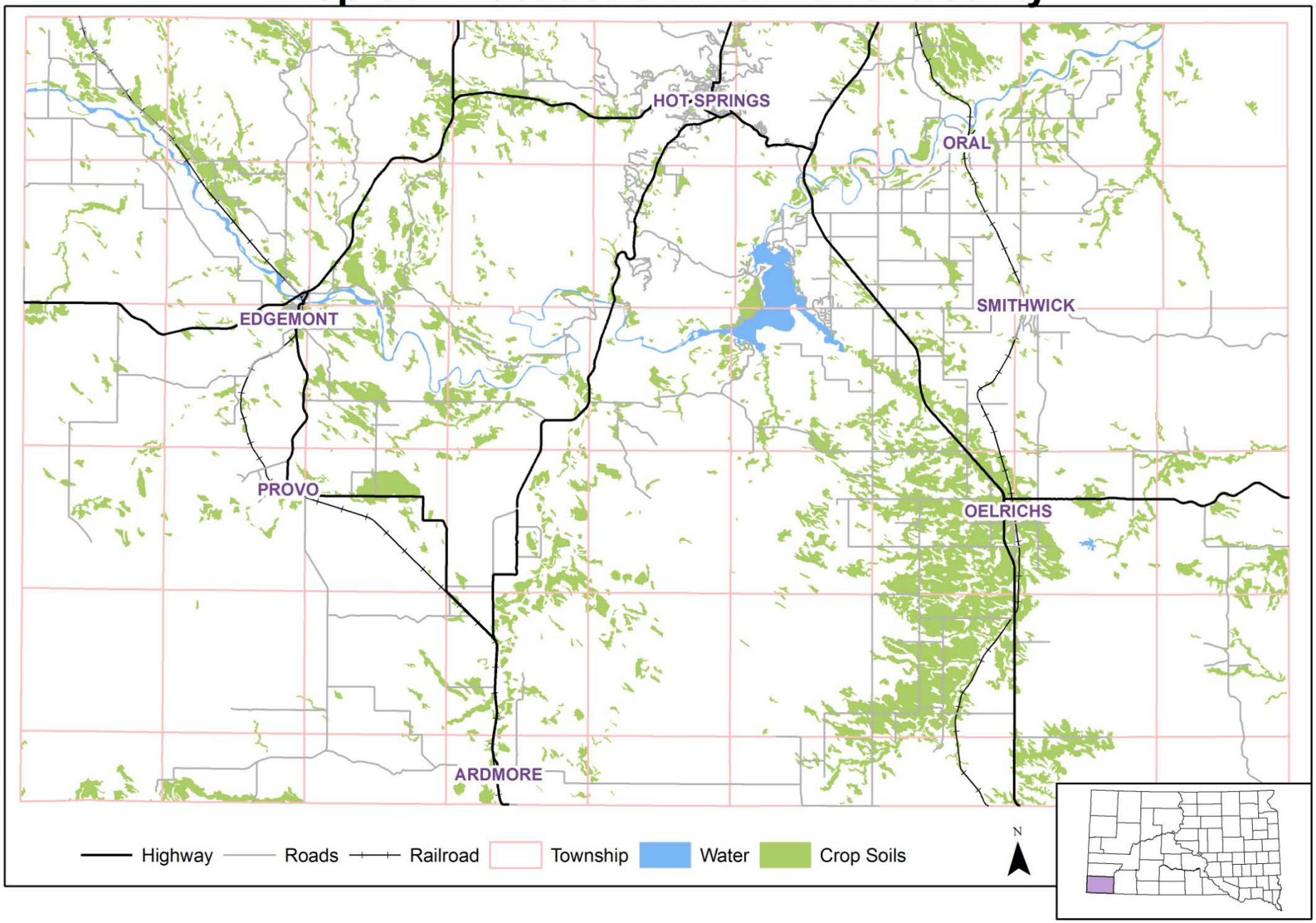
- Example: 686.21 and 400.54
  - Difference = 285.67
  - Average = 543.37

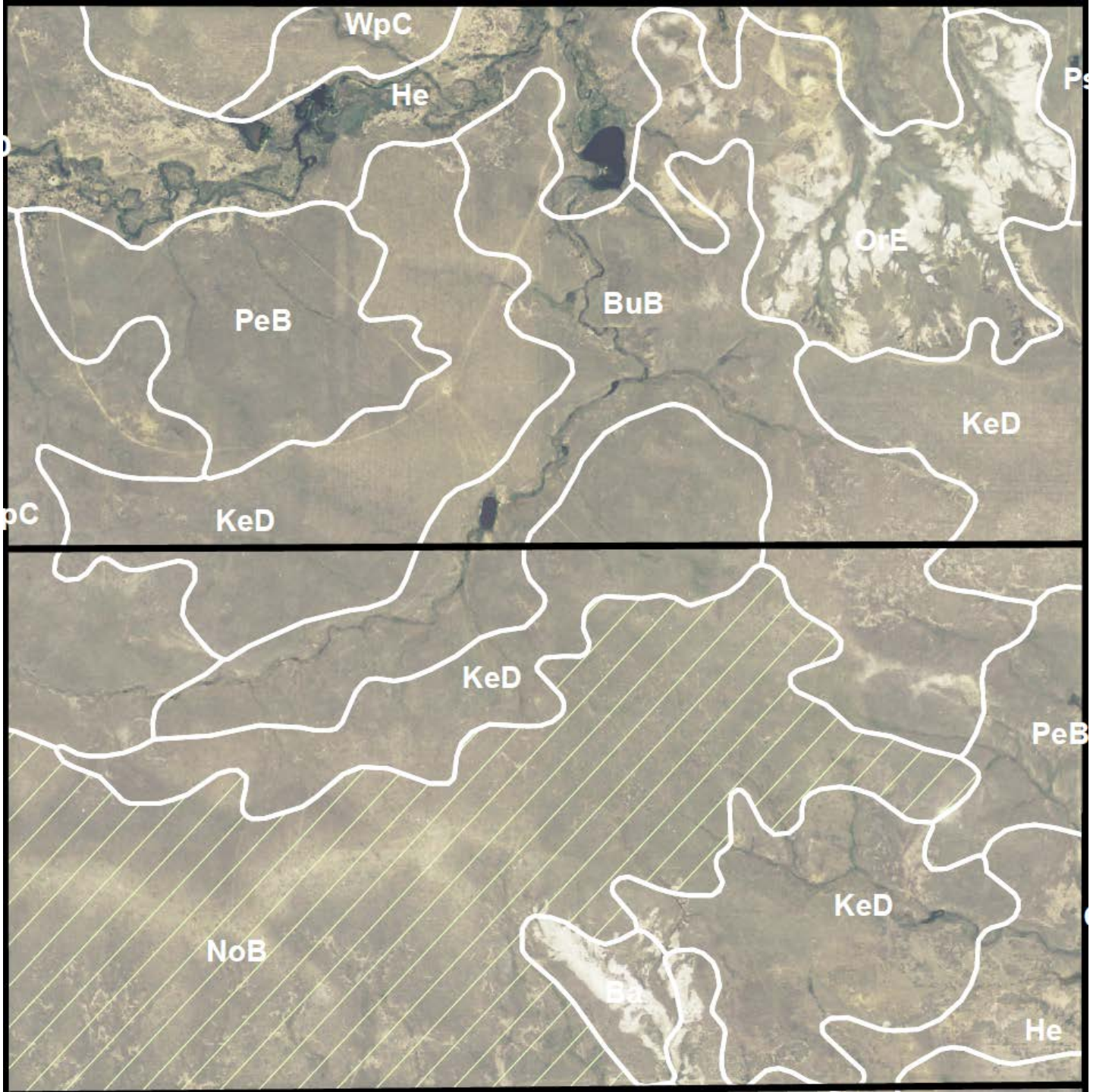
$$\frac{285.67}{543.37} = 0.5257 \ \ or \ 53\%$$

We must be Fair and Equitable

- #1 Cash Rent (Income) vs. Taxes
- #2 Carrying capacity
- #3 Soil Survey Dry Weight Productivity
- #4 Reverse Math Logic

Crop Soil Locations in Fall River County





WHITE PROPERTY

Parcel
Soils
Crop Land

N

0 500 1,000 2,000 Feet

$$\#\ of\ Acres \times Soil\ Rating\ \times Top\ Dollar\ = Assessed\ Value$$

Where do these numbers come from?

- Soil survey is issued by the USDA NRCS.
- Soil Table 1A that is compiled by the Dept of Revenue for each county.
- The Top Dollar comes from the AG productivity income data gathered each year.

$$\# \; of \; Acres \times Soil \; Rating \; \times Top \; Dollar \; = Assessed \; Value$$

37000-01009-291-00
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All Range Soils

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Taxes as percentage of Cash Rent Income	Income 2521.6	16%
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HOW TO ADJUST

ADJUSTING SINGLE SOIL

EXAMPLE: You have a crop rated soil that needs to be adjusted due to excessive stoniness. You want to adjust the non-crop rating (will start with the crop dollar value and the crop rating)

Dept. of Revenue	Simplified Formula
Crop rating = .875 non –crop rating=.462 $\frac{0.462}{0.875} = 0.528$ 1 - .528 = 0.472 Apply downward adjustment of 47.2% for that soil. Crop top dollar of $900 Crop rating of .875 900 x .875 = $787.50 (initial per acre value) Less 47.2%: (787.50 x 47.2% = 371.70) $787.50 – 371.70 = $415.80 (dollar value applied to the acres for this soil)	You arrive at the same result, by taking the Crop Dollar x grass rating = adjusted soil value $900 x 0.462 = $415.80 (Mathematical proof that the DOR formula equates to the simplified formula is demonstrated in Appendix A9.)

ADJUSTED			
RATE	DOLLAR	ASSESSMENT	
0.1	302.11	$	241.69
0.482	302.11	$	5,387.83
0.169	302.11	$	1,021.13
0.487	302.11	$	11,475.95
0.538	302.11	$	487.61
0.511	535.22	$	38,836.63
0.482	302.11	$	2,038.64
0.399	302.11	$	2,169.75
	TOTAL ASSESSMENT:	$	**61,659.23**
	TOTAL TAX:	$	**686.21**

How would Mr. White's S1/2 look if it was valued <u>strictly</u> as rangeland?

We would use the following formula:

Grass rating x Grass dollar = Assessed Value

RANGE			
RATE	DOLLAR	ASSESSMENT	
0.1	302.11	$	241.69
0.482	302.11	$	5,387.83
0.169	302.11	$	1,021.13
0.487	302.11	$	11,475.95
0.538	302.11	$	487.61
0.511	*302.11*	$	21,921.71
0.482	302.11	$	2,038.64
0.399	302.11	$	2,169.75
	TOTAL ASSESSMENT:	$	**44,744.30**
	TOTAL TAX:	$	**497.96**

As Rangeland

- Using:
  - olympic average cash rent
  - Regional carrying capacity

- Comparison of **tax burden** to **productivity income.**

Calculating Cash Rent Income

All Range Soils

37000-01009-291-00
N1/2, Sec 29, Twp 10, Rg 9

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Cash Rent x Acres =
Gross Income

Cash Rent Data for 2014

NON-CROP OLYMPIC AVERAGES
2016 ASSESSMENT YEAR PRODUCTIVITY INFORMATION

COUNTY	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Olympic Average 2003-2010	Olympic Average 2004-2011	Olympic Average 2005-2012	Olympic Average 2006-2013	Olympic Average 2007-2014		
AURORA	28.00	29.90	30.70	30.20	34.70	34.50	36.00	38.50	38.00	38.50	41.50	39.00	32.67	34.02	35.40	36.70	37.45		
BEADLE	26.80	30.20	29.50	32.50	35.80	35.00	35.50	31.00	34.50	35.00	34.00	42.50	32.28	33.12	33.92	34.42	34.97		
BENNETT	10.20	10.40	12.50	12.90	13.80	7.40	7.40	6.80	7.00	9.10	11.00	11.00	10.13	9.60	9.38	9.13	8.82	-2.66%	-3.47%
BON HOMME	32.10	33.70	33.60	34.40	40.40	39.50	37.50	36.50	36.50	36.50	45.00	49.50	35.87	36.35	36.82	37.82	39.23	2.72%	3.75%
BROOKINGS	33.70	37.80	36.60	42.70	47.30	40.00	44.00	41.00	42.00	41.50	51.00	49.50	40.35	41.25	41.87	43.08	44.22	2.91%	2.63%
BROWN	25.20	24.30	29.60	30.10	36.00	29.00	29.50	31.00	32.00	32.00	37.50	43.00	29.07	30.20	30.70	31.77	33.00	3.47%	3.88%
BRULE	22.60	23.90	25.30	24.70	26.90	26.00	26.00	22.00	22.50	22.50	30.00	36.00	24.75	24.73	24.50	24.77	25.65	1.09%	3.57%
BUFFALO	17.30	17.30	17.80	18.30	22.50	27.00	16.50	18.50	22.00	22.00	23.50	21.00	18.62	19.40	20.18	21.13	21.58	4.71%	2.13%
BUTTE	8.60	7.50	8.10	8.10	9.50	6.90	5.90	7.50	8.80	8.70	9.90	9.60	7.78	7.82	8.02	8.25	8.50	2.91%	3.03%
CAMPBELL	14.20	14.40	17.00	16.20	18.90	21.50	17.50	18.00	19.00	22.50	27.50	30.00	17.00	17.77	18.65	19.57	21.23	4.92%	8.52%
CHARLES MIX	26.00	27.30	30.80	31.20	34.30	31.00	30.50	32.00	32.50	32.50	31.00	42.50	30.47	31.33	31.67	31.70	32.22	0.11%	1.63%
CLARK	26.00	26.80	29.20	29.80	33.50	30.00	29.50	25.50	26.50	28.00	35.50	39.00	28.55	28.63	28.83	29.55	30.50	2.49%	3.21%
CLAY	35.10	37.40	39.70	43.10	50.80	39.00	46.00	41.00	40.50	41.50	44.50	42.50	41.03	41.55	41.97	42.77	42.67	1.91%	-0.23%
CODINGTON	30.00	32.20	34.10	34.60	40.70	30.00	32.00	35.00	35.50	36.50	43.50	42.00	32.98	33.90	34.62	35.72	36.95	3.18%	3.45%
CORSON	8.40	8.20	9.30	9.10	10.20	7.80	8.50	7.70	9.30	10.00	9.90	11.50	8.55	8.70	9.00	9.10	9.28	1.11%	2.01%
CUSTER	8.00	8.70	8.70	8.30	10.10	9.00	7.80	8.00	7.40	9.50	9.40	8.00	8.45	8.42	8.55	8.67	8.62	1.36%	-0.58%
DAVISON	31.70	34.70	35.80	37.30	42.60	36.50	37.50	31.50	35.00	37.50	45.00	50.00	35.58	36.13	36.60	37.73	39.02	3.10%	3.40%
DAY	22.90	24.80	26.30	30.10	31.80	34.00	34.50	30.00	31.00	32.50	37.00	36.00	29.50	30.53	31.57	32.32	33.30	2.38%	3.04%
DEUEL	29.20	29.60	32.60	35.10	42.20	40.00	40.50	35.50	35.50	37.00	45.00	45.00	35.55	36.53	37.27	38.45	40.03	3.18%	4.12%
DEWEY	7.60	8.20	8.20	8.40	10.30	8.00	9.40	7.50	7.50	7.50	7.50	6.50	8.30	8.28	8.17	8.05	7.90	-1.43%	-1.86%
DOUGLAS	29.90	32.40	34.80	36.70	38.20	31.00	38.50	32.50	34.00	35.00	39.50	49.50	34.27	34.77	35.20	35.82	36.28	1.75%	1.30%
EDMUNDS	21.40	22.00	25.00	27.10	28.80	26.50	30.00	27.50	28.50	29.50	36.50	36.50	26.15	27.23	[illegible]	28.57	30.13	2.08%	5.48%
FALL RIVER	5.90	6.80	6.90	7.30	7.60	9.00	5.90	8.10	8.40	9.50	9.40	5.90	7.10	7.5[illegible]	7.88	[illegible]	8.07	5.29%	-2.81%
FAULK	19.60	20.50	24.00	25.90	30.30	26.50	29.00	26.50	27.00	28.00	35.00	32.50	25.40	26.48	[illegible]	27.88	[illegible]		
GRANT	26.30	28.30	30.80	31.10	35.80	37.00	38.00	33.50	34.50	35.50	40.50	45.00	32.75	33.78	34.57	35.72	36.8[illegible]		
GREGORY	19.10	18.90	21.80	20.30	23.70	25.00	25.00	21.00	21.00	21.00	21.00	20.50	21.82	22.13	22.25	22.12	22.12		
HAAKON	9.40	9.20	11.10	10.40	12.30	9.80	9.30	8.70	8.80	9.60	11.00	11.00	9.87	9.77	9.83	9.82	9.92		
HAMLIN	30.10	32.70	35.80	36.60	42.90	41.50	42.50	39.00	38.50	38.50	46.50	55.00	38.02	38.98	39.43	40.48	41.82	2.66%	3.29%
HAND	22.70	23.40	25.60	27.00	28.40	27.50	28.50	27.50	29.50	30.00	39.00	42.00	26.57	27.42	28.07	28.57	30.48	1.78%	6.71%
HANSON	34.20	34.40	37.50	39.60	44.70	40.00	43.00	38.00	39.00	43.00	47.00	54.00	38.75	39.52	40.43	41.55	42.78	2.76%	2.97%
HARDING	6.80	6.10	7.30	7.80	9.90	4.90	5.60	4.80	6.90	6.80	9.90	9.10	6.42	6.43	6.55	6.98	7.20	6.62%	3.10%
HUGHES	16.10	18.50	18.30	19.80	22.20	27.00	24.00	19.00	22.50	22.50	22.50	29.50	20.30	21.00	21.67	22.25	23.45	2.69%	5.39%
HUTCHINSON	34.50	39.50	36.80	42.10	43.10	38.00	42.50	35.50	36.50	37.00	48.00	51.00	39.07	39.23	38.82	39.87	40.85	2.71%	2.47%
HYDE	17.90	19.20	19.50	20.70	23.80	23.50	21.50	22.50	23.50	23.50	23.00	29.00	21.15	21.87	22.53	22.92	23.30	1.70%	1.67%

Olympic Average

2005-2012

7.88

Calculating Cash Rent Income

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Cash Rent x Acres = Gross Income

$7.88 x 320 = $2,521.60

All Range Soils			REGULAR			
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			TOTAL TAX:	$	400.54	
Taxes as percentage of Cash Rent Income	Income	2521.6			16%	

Range & Crop Soils			REGULAR			ADJUSTED			RANGE		
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What is an acceptable tax amount to income ratio?

Calculating Cow-calf Pairs

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Acres / Stocking Rate = Cow-calf Pairs

Figure 1. Carrying Capacity of Ranges and Pastures in South Dakota.

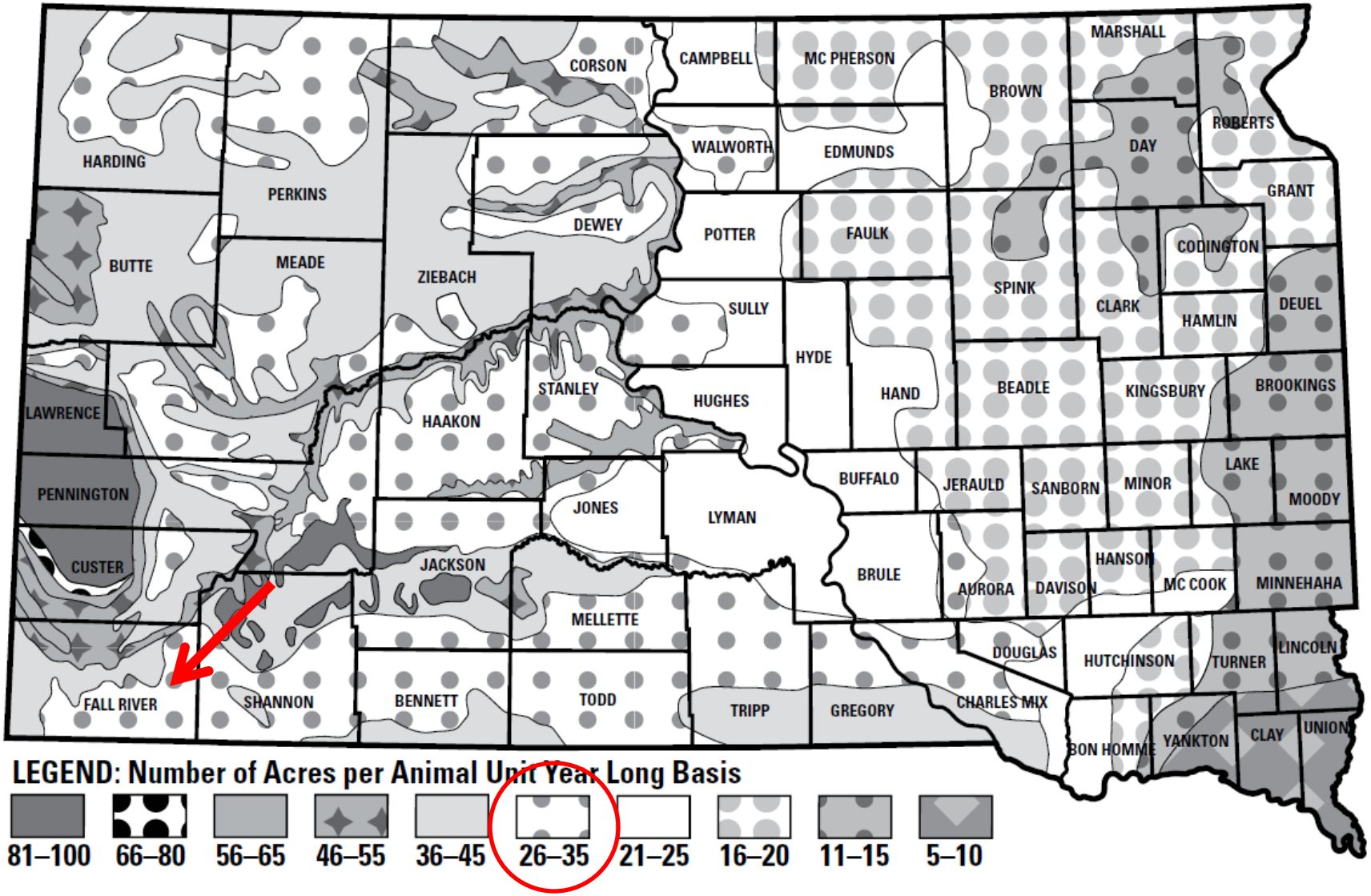

Figure 1 taken from the South Dakota Rangeland and Pasture Grazing Records produced by SDSU (EC923)

Calculating Cow-calf Pairs

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Acres / Stocking Rate = Cow-calf Pairs

320 acres / 30 acres per pair = 10.7 cow-calf pairs

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Taxes Per Cow/calf Pair	# Pairs 10.67			$	92.32		$	64.33		$	46.68

What is an acceptable tax per cow/calf pair amount?

Actual Production

We have just looked at the North 1/2 and South 1/2 using the <u>same</u> regional cash rent and stocking rates but…

these two parcels <u>are</u> different.

So now, let's look at what the <u>actual</u> grass production of these parcels would be based on their soil types.

Actual Production

Soil	Classification	Dry Weight Production (Normal)
Bc	Range	3,200
TaA	Crop	2,500
Ha	Crop	2,500
Ga	Range	2,500
SdB	Crop	2,200
MbA	Crop	2,000
KyA	Range	1,900
Eac	Range	1,400

The NRCS soil survey gives a **dry weight production amount** for each soil type.

Actual Production

Soil	Classification	Dry Weight Production (Normal)
Bc	Range	3,200
TaA	Crop	2,500
Ha	Crop	2,500
Ga	Range	2,500
SdB	Crop	2,200
MbA	Crop	2,000
KyA	Range	1,900
Eac	Range	1,400

Crop soils are **NOT** super soils.

In fact they produce similarly to many of the range soils.

Comparing Difference in Production to Rating

Soil	Classification	Dry Weight Production (Normal)	Rating (Grass)
Ha	Crop	2,500	0.602

Soil	Classification	Dry Weight Production (Normal)	Rating (Grass)
EaC	Range	1,400	0.318

1400 lbs to 2500 lbs – difference of 56% Difference in Rangeland Production

0.318 to 0.602 – difference of 62% Difference in Grass Rating

Comparison

0.318 to 0.602 – difference of 62%

Difference Grass Rating EaC to HA

Rating	Dollar	Acres	Assessment
0.318	302.11	1	$ 96.07
0.602	302.11	1	$ 181.87

$96.07 to $181.87 – difference of 62%

Difference in Assessments

Comparison

0.318 to 0.602 – difference of 62% Difference Grass Rating EaC to HA

Rating	Dollar	Acres	Assessment
0.318	302.11	1	$ 96.07
0.602	535.22	1	$ 322.20

$96.07 to $322.20 – difference of 108% Difference in Assessments

Adjusted

Rating	Dollar	Acres	Assessment
0.318	302.11	1	$ 96.07
0.602	535.22	1	$ 322.20

$96.07 to $322.20 – difference of 108% Difference in Assessments

Rangeland

Rating	Dollar	Acres	Assessment
0.318	302.11	1	$ 96.07
0.602	302.11	1	$ 181.87

$96.07 to $181.87 – difference of 62% Difference in Assessments

1400 lbs to 2500 lbs – difference of 56% Difference in Rangeland Production

Actual Production

Soil	Classification	Dry Weight Production (Normal)
Bc	Range	3,200
TaA	Crop	2,500
Ha	Crop	2,500
Ga	Range	2,500
SdB	Crop	2,200
MbA	Crop	2,000
KyA	Range	1,900
Eac	Range	1,400

The NRCS soil survey gives a **dry weight production amount** for each soil type.

Actual Productivity

- Mr. White's North 1/2 Parcel:
  - Calculated Dry Weight Production for entire parcel:
    - 583,100 lbs
- Mr. White's South 1/2 Parcel:
  - Calculated Dry Weight Production for entire parcel:
    - 661,300 lbs

This is a difference of 13%

All Range Soils			REGULAR		
3700 0-0100 9-291	ACRES:	320	TOTAL ASSESSMENT:	$	35,990.36
			TOTAL TAX:	$	400.54

Range & Crop Soils			REGULAR			ADJUSTED		
3700 0-0100 9-293	ACRES:	320	TOTAL ASSESSMENT:	$	88,487.67	TOTAL ASSESSMENT:	$	61,659.23
			TOTAL TAX:	$	984.78	TOTAL TAX:	$	[illegible].21

This is a difference of 53%

If the production difference is 13% why do we have an assessment difference of 53%?

Taxed by Productivity

- If we are taxing people based on their productivity:
  - What do the taxes we have implemented on Mr. White's south parcel say about the carrying capacity rate he should have?

Taxing by Productivity

- If assessed value directly correlates to productivity
- Then, when the assessment doubles it indicates that the productivity must have doubled

Field A	Field B
$10,000	$20,000
100 bushels/acre	200 bushels/acre

Reversing the Math

- If Mr. White's North Parcel can produce:
  - 10.7 cow-calf pairs
- According to current adjustment the South Parcel should be producing:
  - 18.3 cow-calf pairs
- Dry Weights Production determines South Parcel would actually produce:
  - 12.1 cow-calf pairs

Reversing the Math

- If Mr. White's North Parcel needs:
  - 30 acres per cow-calf pair
- According to current adjustment the South Parcel should only need:
  - 17 acres per cow-calf pair
- Dry Weights Production determines South Parcel would actually need:
  - 26.5 acres per cow-calf pair

Figure 1. Carrying Capacity of Ranges and Pastures in South Dakota.

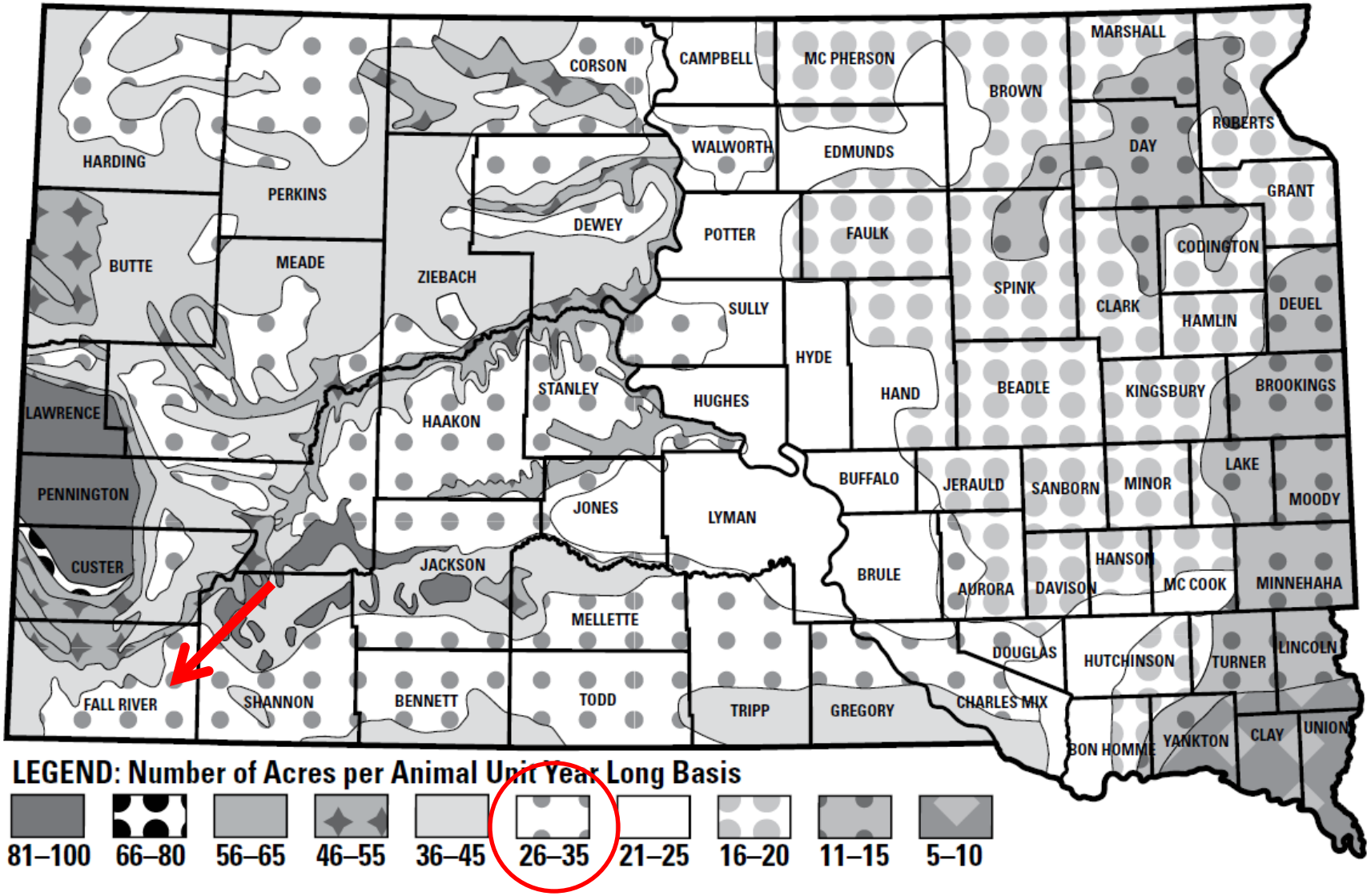

Figure 1 taken from the South Dakota Rangeland and Pasture Grazing Records produced by SDSU (EC923)

Which adjustment Method is the most fair and equitable?

• Current Guideline Adjustment Formula 53% difference	• Proposed Rangeland Adjustment Formula 22% difference

Actual Difference in Productivity

13% difference

In Conclusion

- We have proven that the rangeland adjustment formula more closely corresponds with actual production.

Rangeland Adjustment Formula:

Grass rating x Grass dollar = Assessed Value

DOUBLE ADJUSTMENT – not an allowable adjustment

The "double adjustment" is when an adjustment is made to a crop rated soil using the non-crop rating AND the non-crop dollar value.

If the purpose for the adjustment was to value the land at its true income potential, which was determined to be range land, why would we apply the crop productivity dollar amount to an adjusted soil that we are trying to get to a grass productivity value?

Fall River County Top Dollar Difference

	2010	2011	2012	2013	2014	2015	2016
Grass	255.99	258.04	272.09	288.06	302.11	318.07	309.13
Crop	291.62	311.4	342.54	428.18	535.22	642.27	770.72
Difference	13%	19%	23%	39%	56%	68%	85%

Fix the Guidelines

- If the adjustment formula is not fixed … new legislation <u>will not</u> help.

- If the adjustment formula is not fixed… new soil tables <u>will not</u> help

- New soil tables and new legislation may be needed, but without fixing the guidelines they will not achieve the desired results

Adjustment Formula

- The adjustment formula does not exist in legislation, administrative rules, or policy.
- This formula exists only in the Department of Revenue Guideline.
- This change to the guidelines could easily be made.

Are We Being Fair & Equal?

- It is important to have an adjustment formula that makes sense. So that…
  - DOE directors can defend their values
  - All counties are using the same method for their adjustments and achieving fair and equal assessments.