

**2010  
ANNUAL EDUCATIONAL  
CONFERENCE**

**MAPPING  
SESSIONS**

# **AG LAND USE MAPPING**

Untitled - ArcMap - ArcView

File Edit View Bookmarks Insert Selection Tools Window Help

1:9,769

Editor Task: Create New Feature Target:

**Mapping Session**

**Advanced ArcGIS**  
**(Ag Land Use Mapping)**

**Presented by Troy Frazier, OTC**

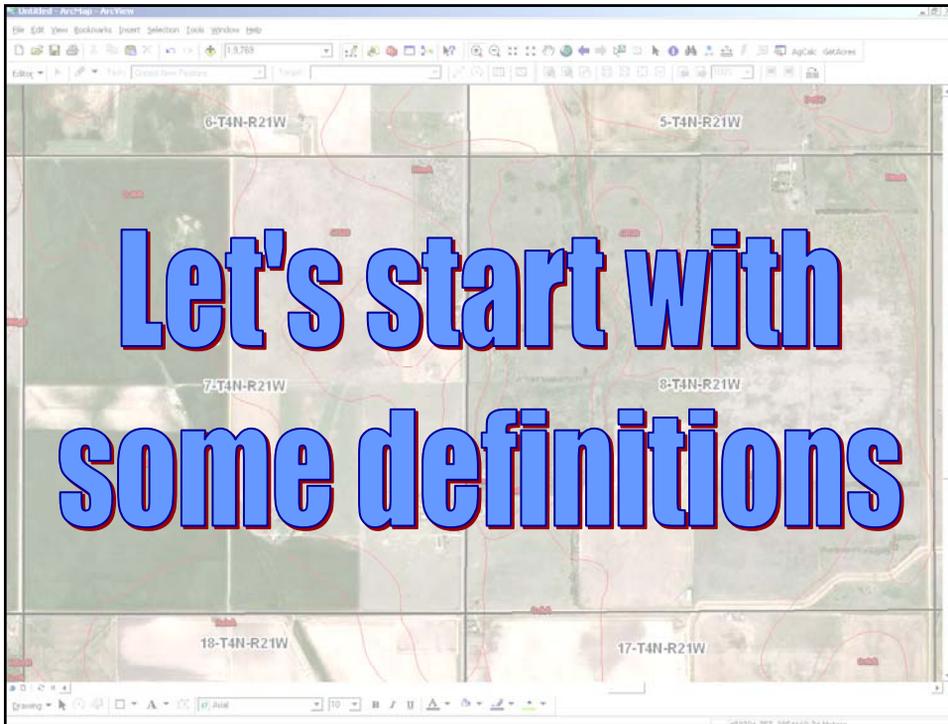
6-T4N-R21W 5-T4N-R21W

7-T4N-R21W 8-T4N-R21W

18-T4N-R21W 17-T4N-R21W

Drawing Arial 10 B I U A

459704.757 3954160.74 Meters



*(These two slides are taken from the  
CLGT Assessor Training Accreditation Program - Unit VII)*

#### **DEFINITION OF AGRICULTURAL LAND USE CATEGORIES**

Four agricultural use categories have been defined by the State Equalization Board and the Ad Valorem division, Oklahoma Tax Commission (OTC). The four subclassifications of agricultural real property are identified as Cropland, Improved Pasture, Native Pasture and Timber. Each is defined as follows:

**Cropland:** Land actually cultivated or was cultivated during the immediately preceding calendar year for the production of agricultural commodities, to include fruit and nut orchards, commonly referred to as farming, according to its actual use. Cultivated land which is idled and placed in a conservation reserve program and upon which an annual payment is received will continue to be classed as cropland. (Wheat, corn, peanuts, cotton, alfalfa, etc.)

**Improved Pasture:** Land currently used and maintained for the production of improved grasses. (Bermuda, Fescue, Plains Bluestem, etc.)

**Native Pasture:** Land currently used for the production of non-improved grasses. (the Old World (native) Bluestems, Buffalo, Indian, Switch, etc.)

**Timber (Unimproved Land):** All other lands in this state which are not classified as cropland, improved pasture, and native pasture.

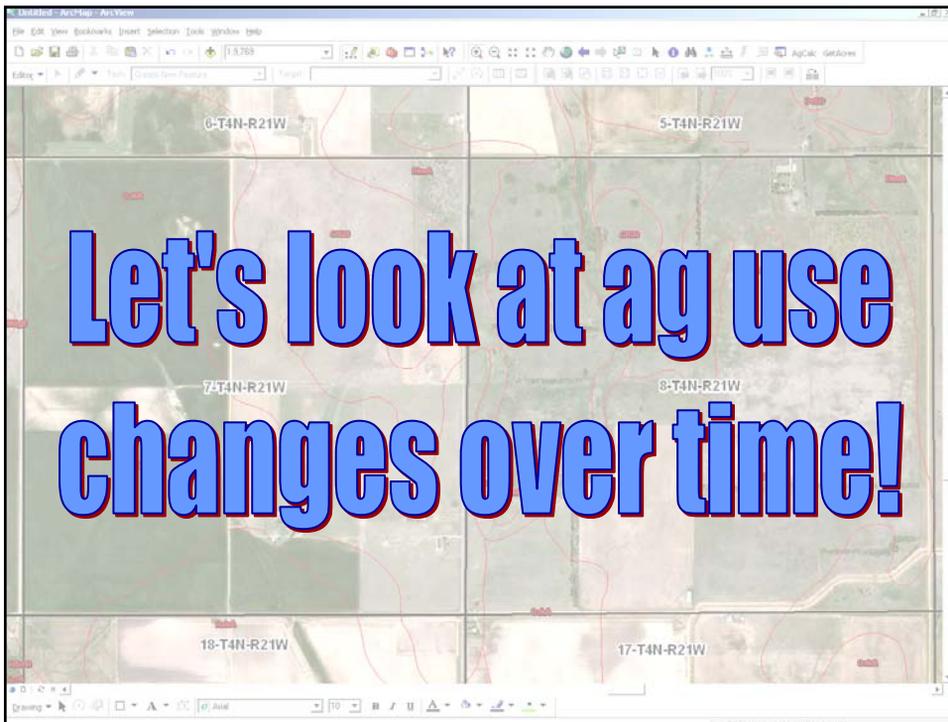
## IDENTIFICATION OF AGRICULTURAL LAND USE

Determination of whether a parcel is in cropland, improved pasture, native pasture or timberland can be done by:

On site inspection, Questionnaire to owner, or Questionnaire to renter

It can be difficult to determine the exact amount of land in cropland, improved pasture, native pasture or timber-wasteland by on-site inspection. The County Assessor would have to question the renter or owner. An alternative to questioning the renter or owner is inspecting maps and aerial photographs. Maps and aerial photographs on agricultural land use are maintained by the Agricultural **Farm Services Administration (FSA)** USDA. Such maps are available in most county **FSA** offices. The aerial photographs the Ad Valorem **Division** is providing for each county can also be used to identify land use. Land that is tilled stands out from native pasture. Timber-wasteland stands out as dark clusters. **FSA** does not normally measure the area unless the owner is participating in one of their programs. An on-site inspection is necessary to confirm information taken from the photos. A comparison of the aerial photograph with the soil map of the section will more easily identify the use by soil type.

Aerial photographs give a good indication of (a) the agricultural use(s) and (b) the amount of acreage in each agricultural use. It is good practice to first inspect the aerial photographs and then follow up with a visit to the property. The aerial photograph is also an important tool in locating and identifying improvements or structures situated on the land.



**1995 USGS/State of Oklahoma "Leaf off" Aerial Photo  
(approximately the same set as the 1991-1993 mylars)**



**2003 NRCS/FSA/County Assessor "Leaf on" Aerial Photo**



2004 FSA "Leaf on" Aerial Photo



2005 FSA "Leaf on" Aerial Photo



2006 FSA "Leaf on" Aerial Photo



2008 FSA "Leaf on" Aerial Photo

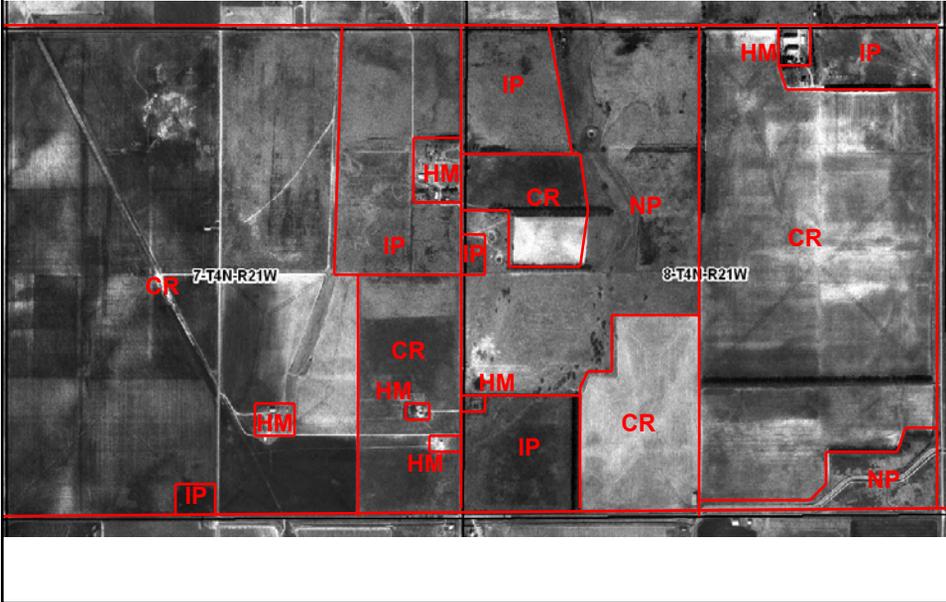


2010 FSA "Leaf on" Aerial Photo

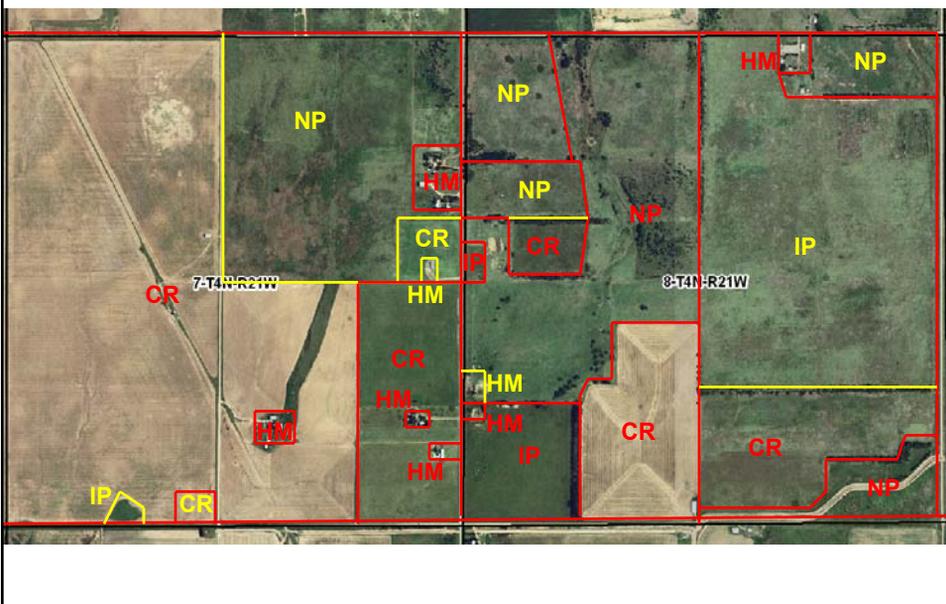


A screenshot of a GIS software interface. The map shows the same two parcels as the previous image, but with red lines overlaid, likely representing a different data layer or boundary. The text 'Let's actually track ag use changes over time!' is overlaid in large, blue, bold, outlined font across the center of the map. The software interface includes a menu bar at the top, a toolbar, and a status bar at the bottom.

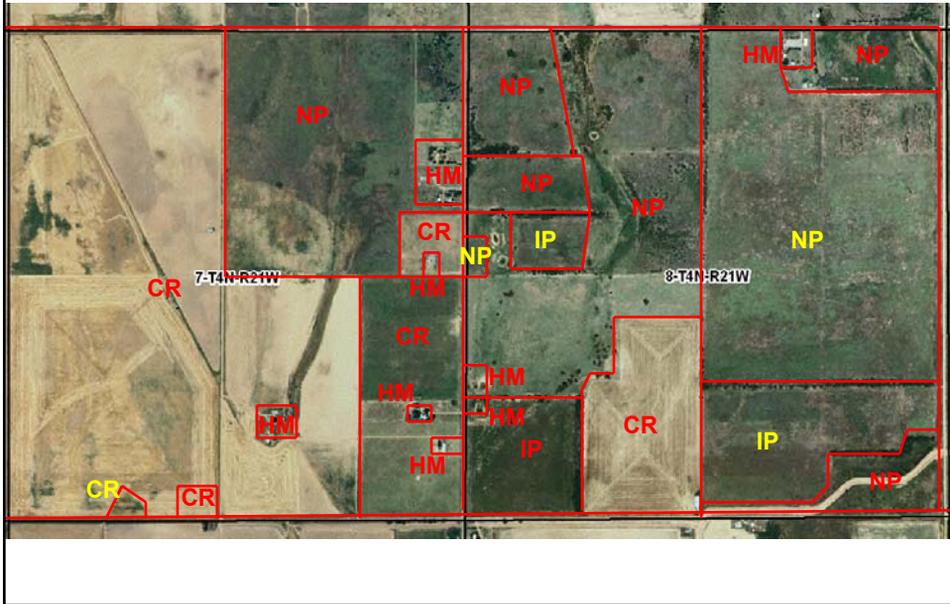
1995 USGS/State of Oklahoma "Leaf off" Aerial Photo  
(approximately the same set as the 1991-1993 mylars)



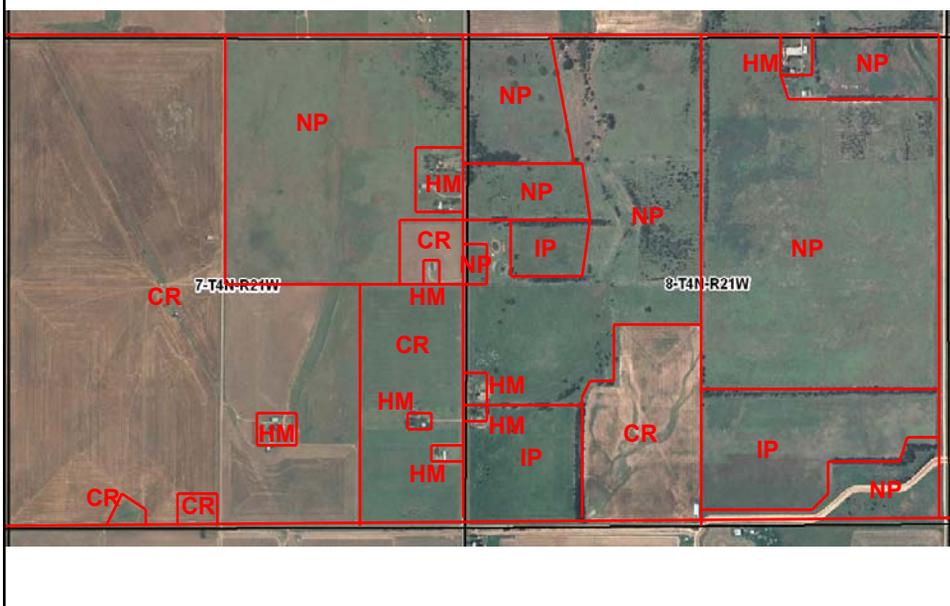
2003 NRCS/FSA/County Assessor "Leaf on" Aerial Photo



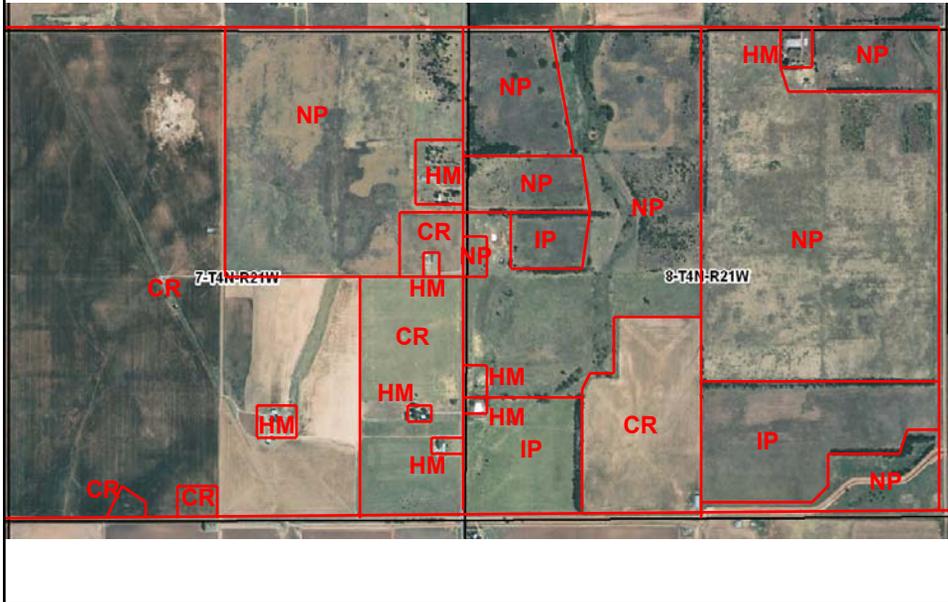
2004 FSA "Leaf on" Aerial Photo



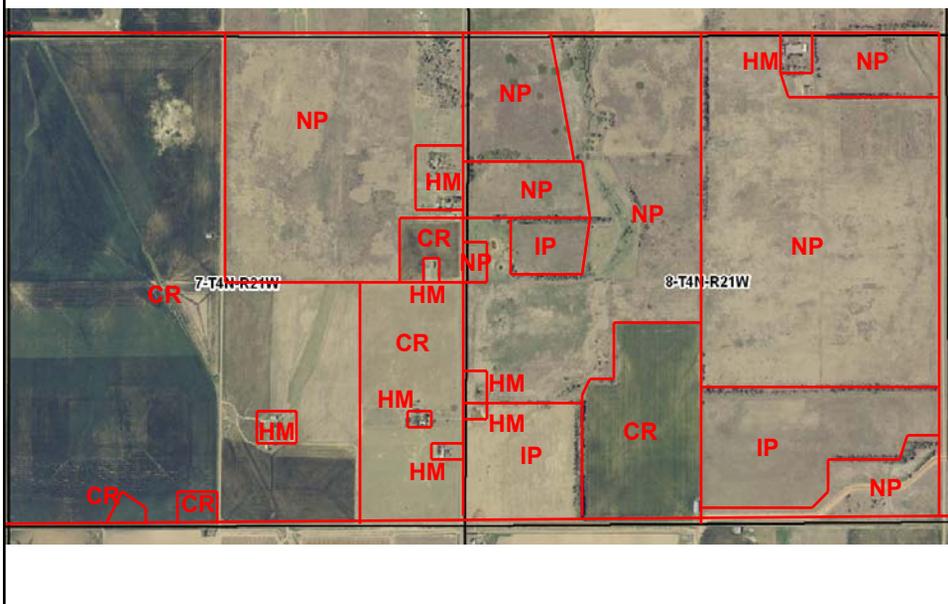
2005 FSA "Leaf on" Aerial Photo



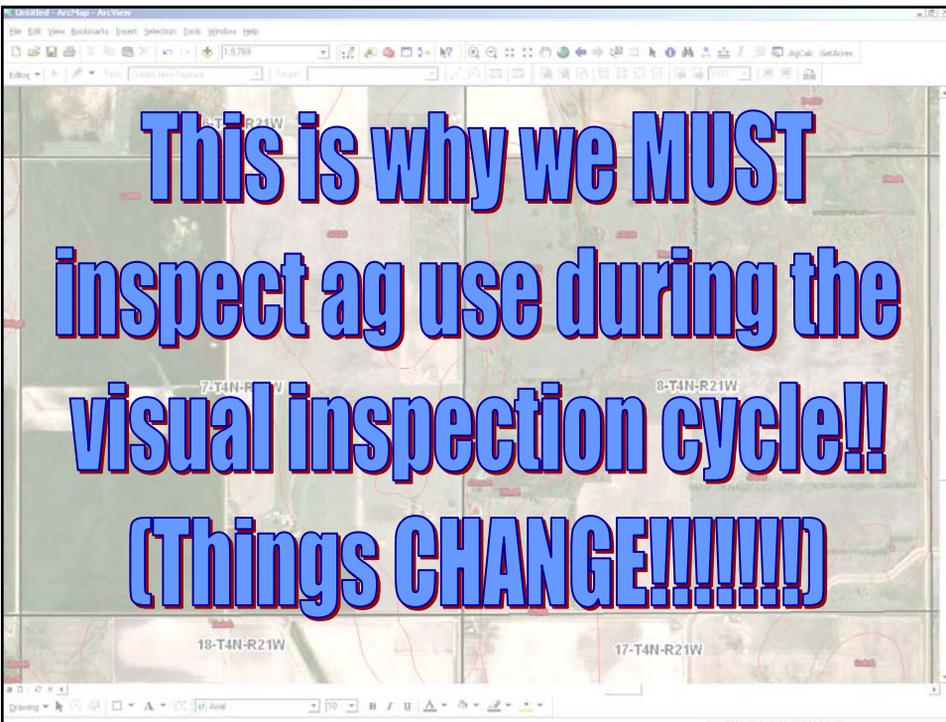
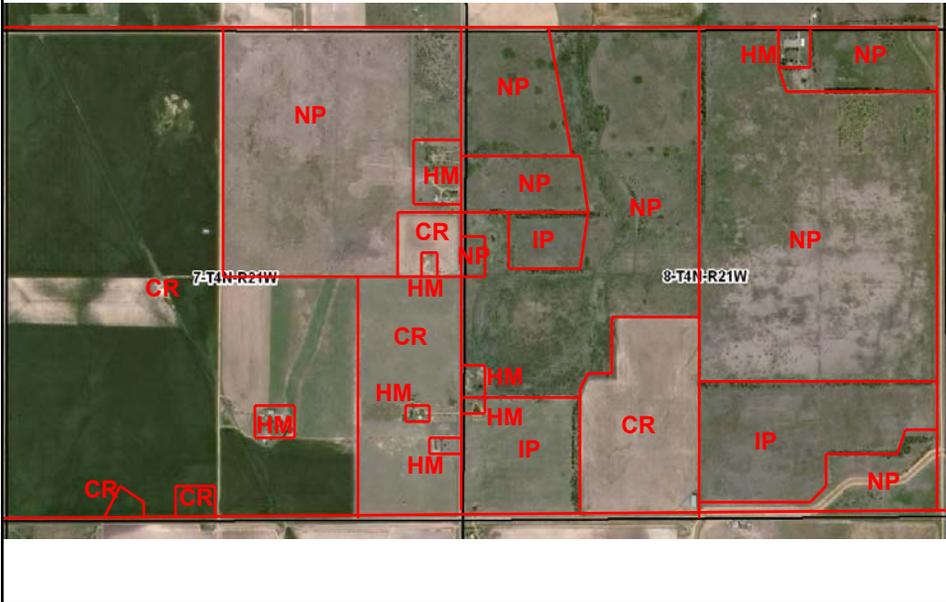
2006 FSA "Leaf on" Aerial Photo



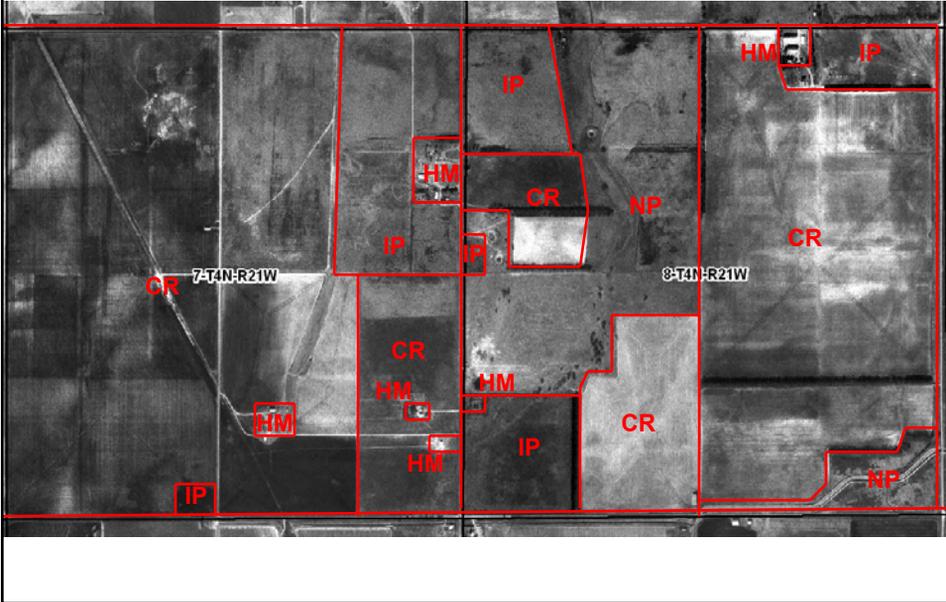
2008 FSA "Leaf on" Aerial Photo



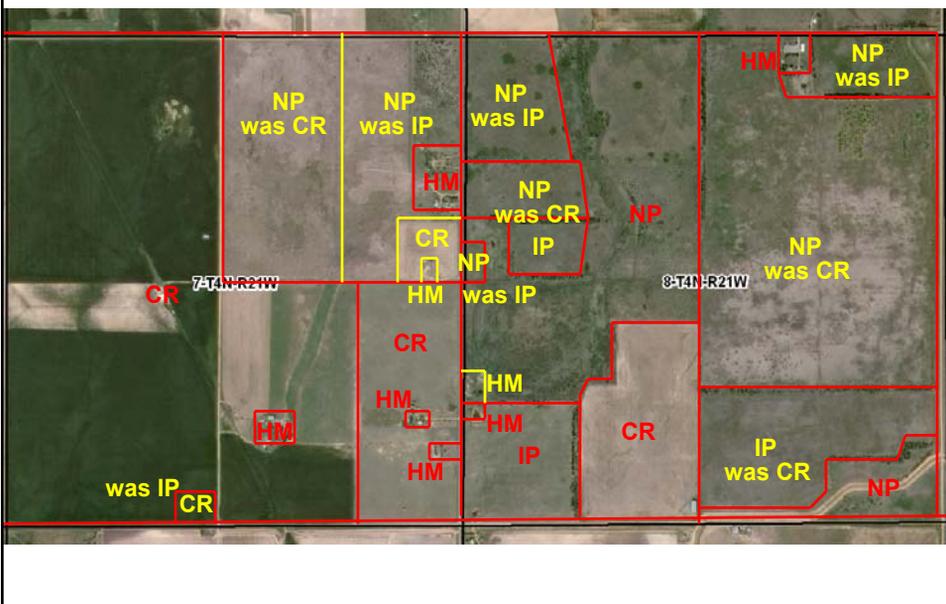
2010 FSA "Leaf on" Aerial Photo

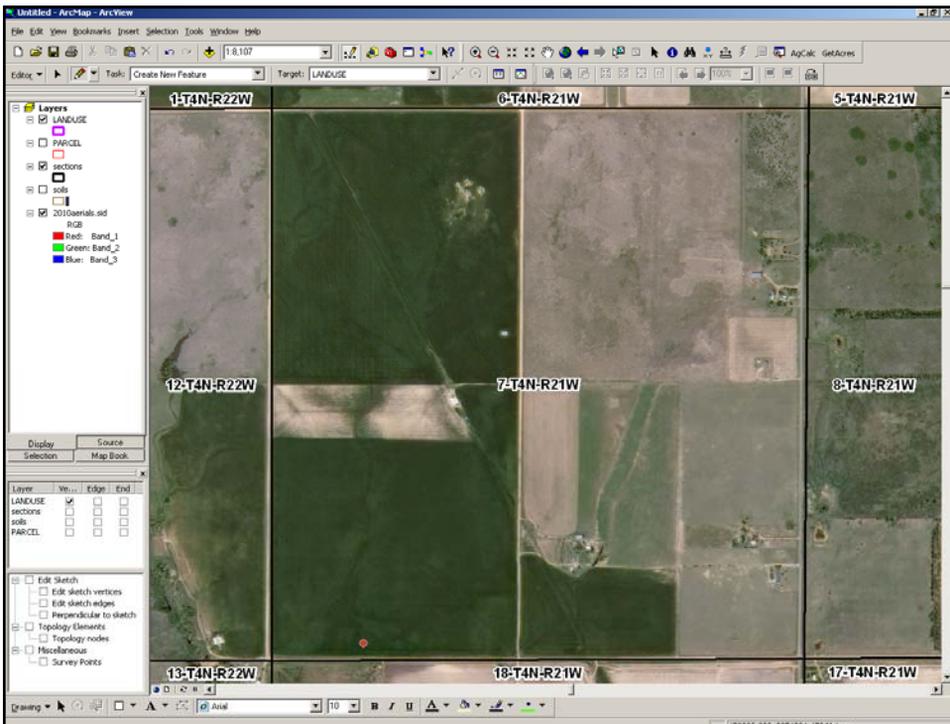
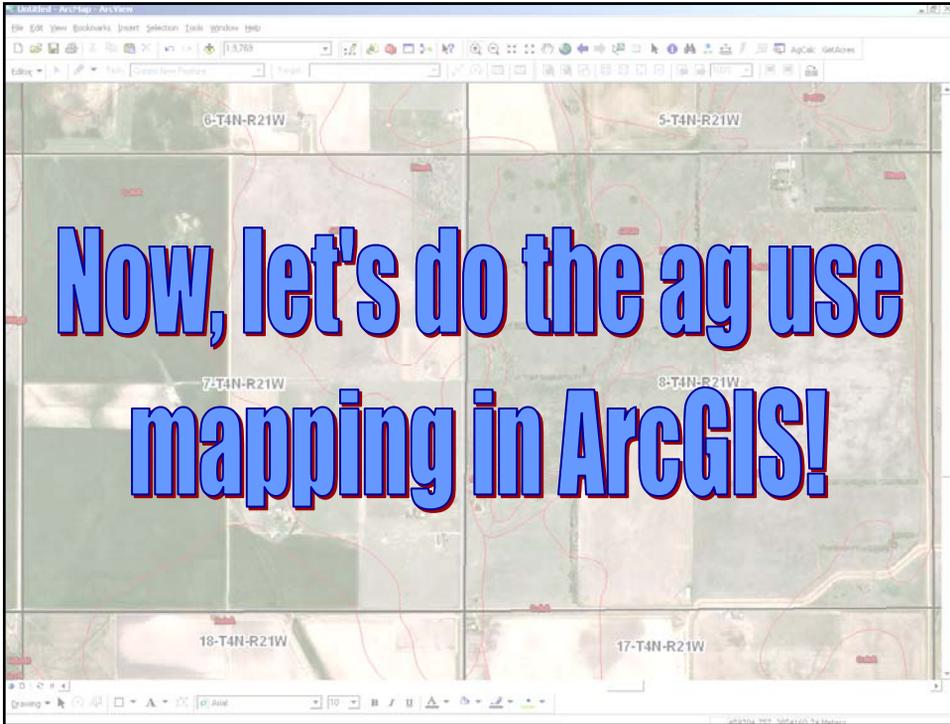


1995 USGS/State of Oklahoma "Leaf off" Aerial Photo  
(approximately the same set as the 1991-1993 mylars)

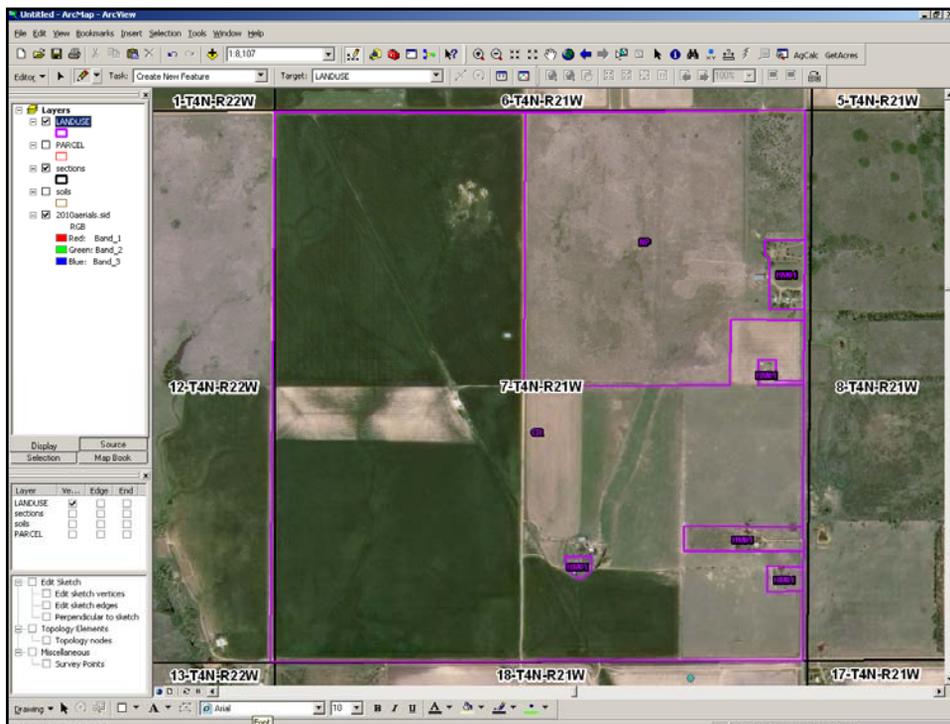


2010 FSA "Leaf on" Aerial Photo  
(with changes from 1995)

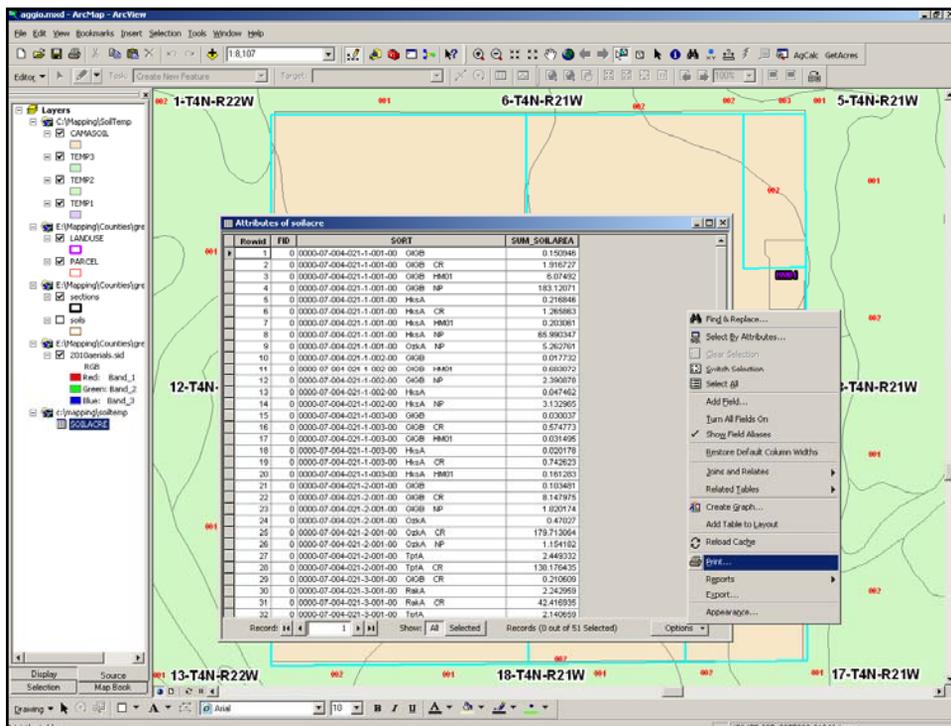




1. First, we need to open a mapping project with the **LANDUSE**, **PARCEL**, **SECTION**, and **SOILS** layers loaded.
2. Then, we need to zoom into the area of interest (usually a whole section).
3. Next, we can turn off everything but the **LANDUSE** layer and the latest aerial photo at our disposal (in this case, the 2010 aerials). **DO NOT WORRY ABOUT PARCEL BOUNDARIES. THEY WILL TAKE CARE OF THEMSELVES!**
4. Then, we can start editing. Make sure that the “Target” is set to **LANDUSE** and the snapping is set to only **LANDUSE** vertex’s (corners).
5. Now, grab your pencil (sketch tool) and start tracing around the different land uses. Remember, snap to every **LANDUSE** corner possible and label the USE as either:
  - CR** (crop),
  - IP** (improved pasture),
  - NP** (native pasture),
  - TM** (timber/waste), or
  - HM01** (homesite code for State CAMA system).
6. Remember, once you are done mapping land uses, **SAVE** your edits!

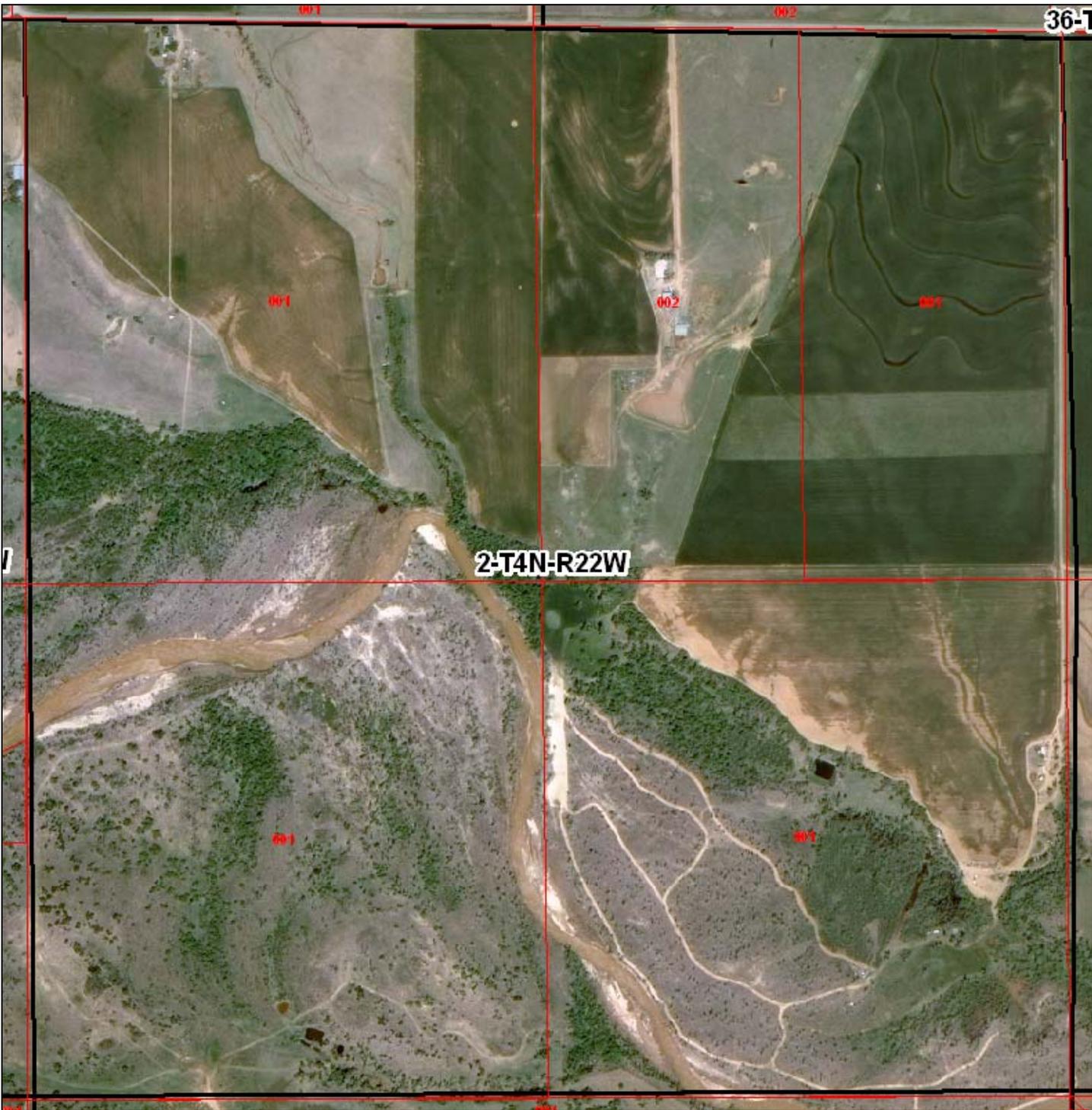


1. When we are ready to have the ArcGIS calculate the ag use / soil type breakouts for use in CAMA for a set of parcels, we need to open a mapping project with the **LANDUSE, PARCEL, SECTION, and SOILS** layers loaded.
2. Then, we need to zoom into the area of interest.
3. Next, click on the **Selection** tab at the bottom of the legend (Table of Contents) and set only the parcel layer as selectable. Then select the parcels you want calculated.
4. Then, hit the AgCalc button and wait.
5. When the ArcGIS is finished calculating, click on the **Source** tab at the bottom of the legend (Table of Contents) and find the **SOILACRE** table.
6. Right-click on it and then click on the **Open** option.
7. When you click on **Options** in the bottom-right corner of the table, you can save or print it out. (This table can be uploaded into CAMA. Please call the OTC for help!)
8. When you are finished, close this mapping project **WITHOUT SAVING IT!** It just makes it easier to run again.









36-T

2-T4N-R22W

001

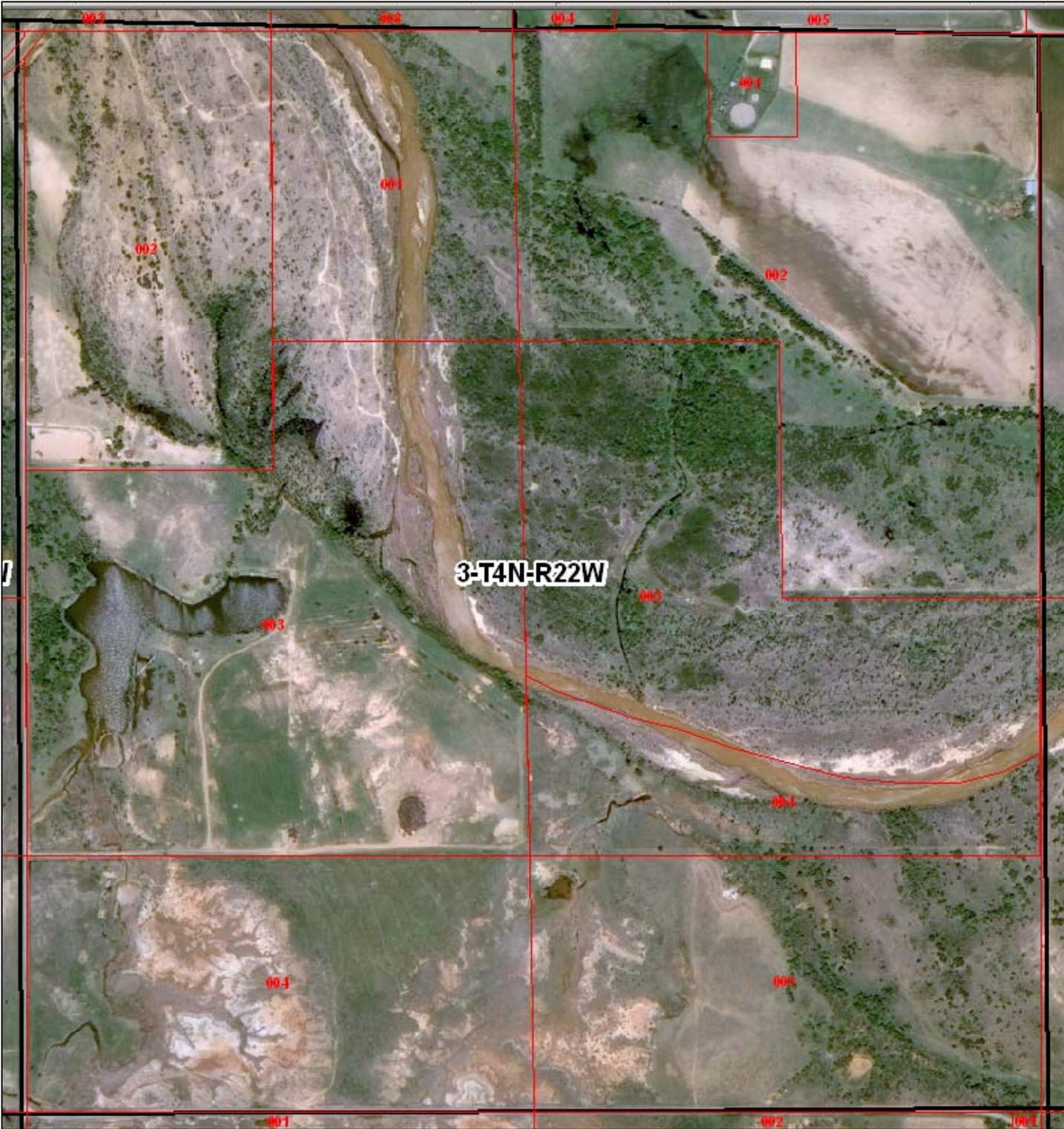
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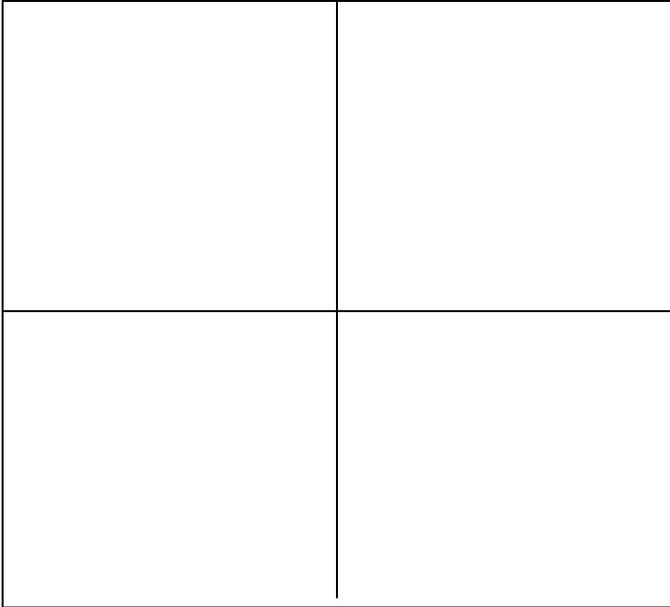
1



# **MAPPING BASICS**

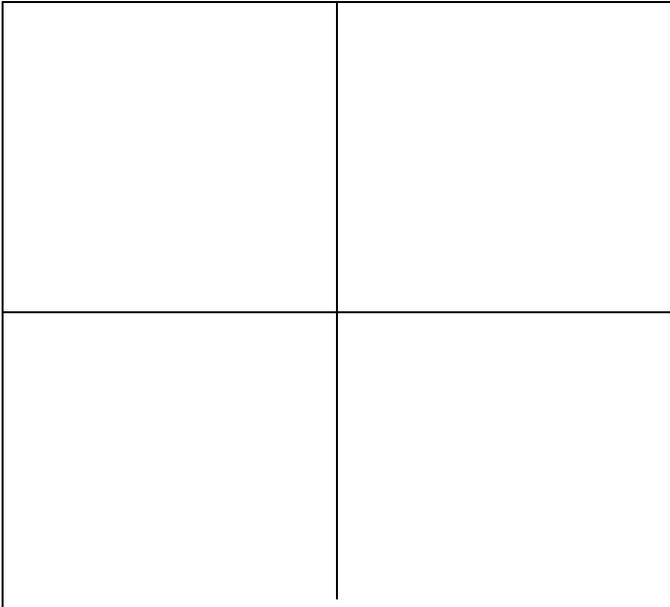
1. The Northeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M.

Section 5-T8N-R2E



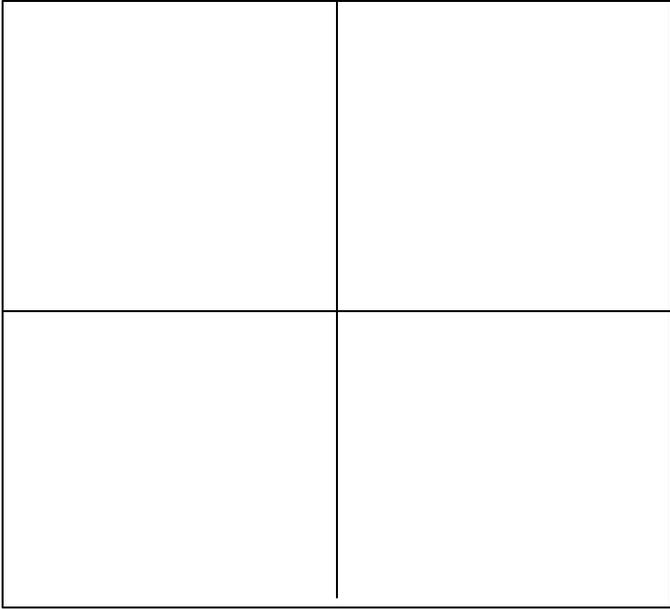
2. Lots 1 and 2 and the South half of the Northeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M.

Section 5-T8N-R2E



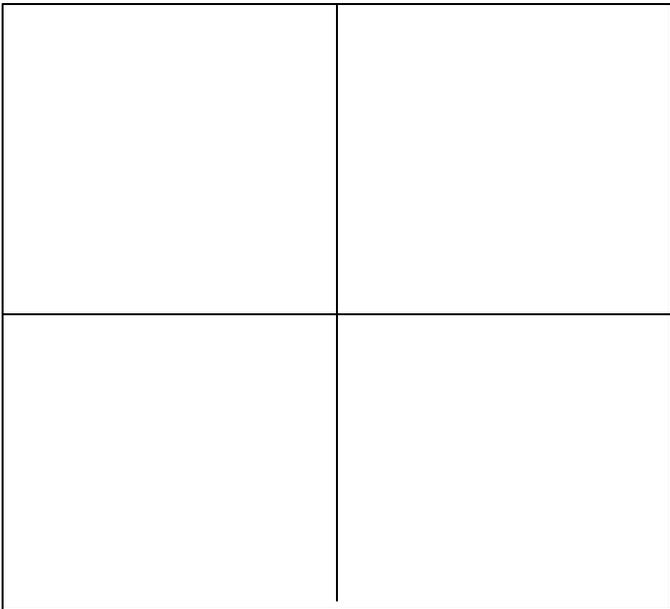
3. The Northeast Quarter of the Northeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M.

Section 5-T8N-R2E



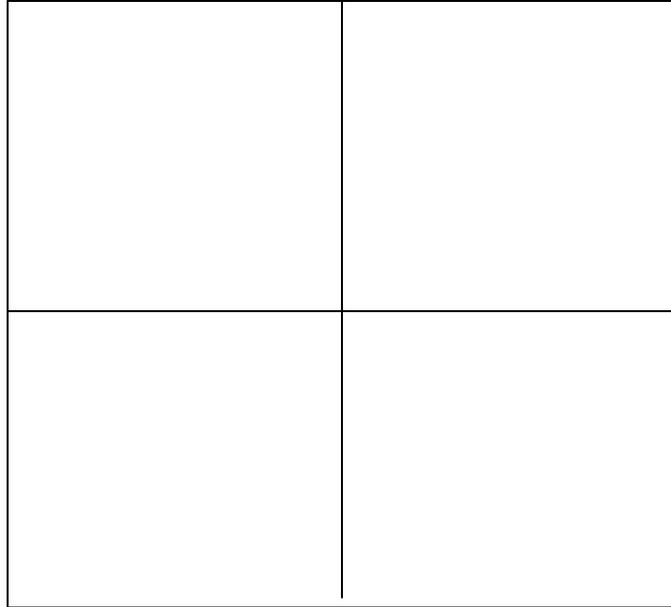
4. Lot 1 of the Northeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M.

Section 5-T8N-R2E



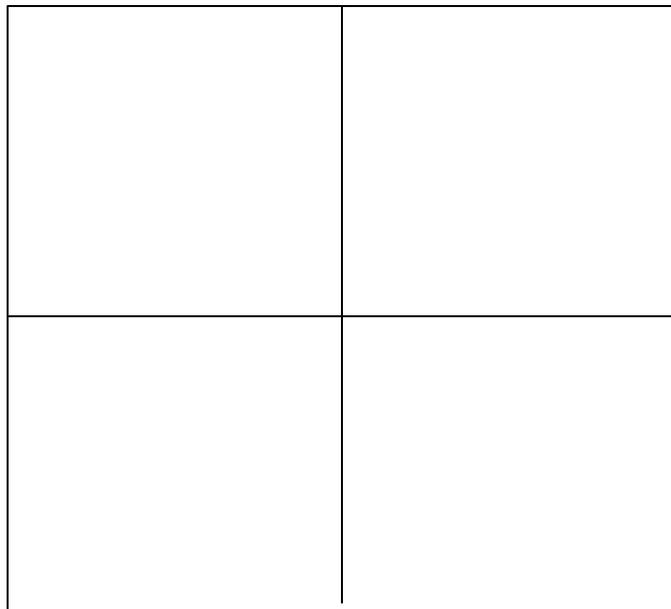
5. The Northeast Quarter of the Northeast Quarter of the Northeast Quarter of the Northeast Quarter of the Section 5, Township 9 North, Range 2 East of the I.M.

Section 5-T8N-R2E



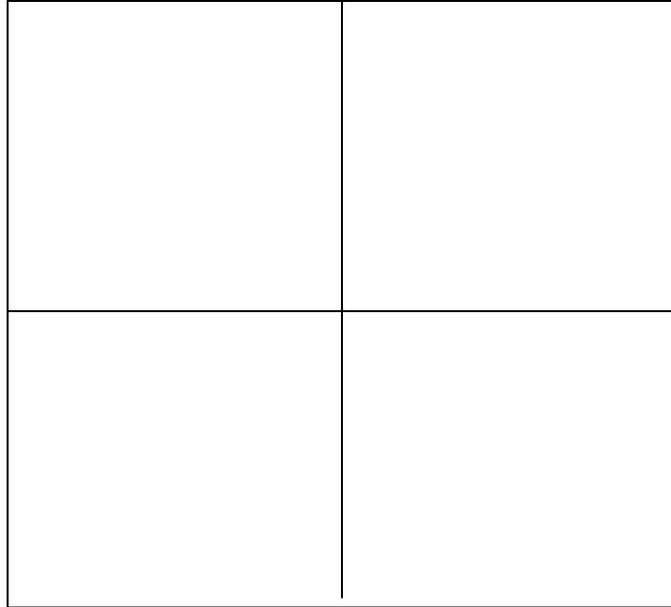
6. The North 52 acres of the Northeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M.

Section 5-T8N-R2E



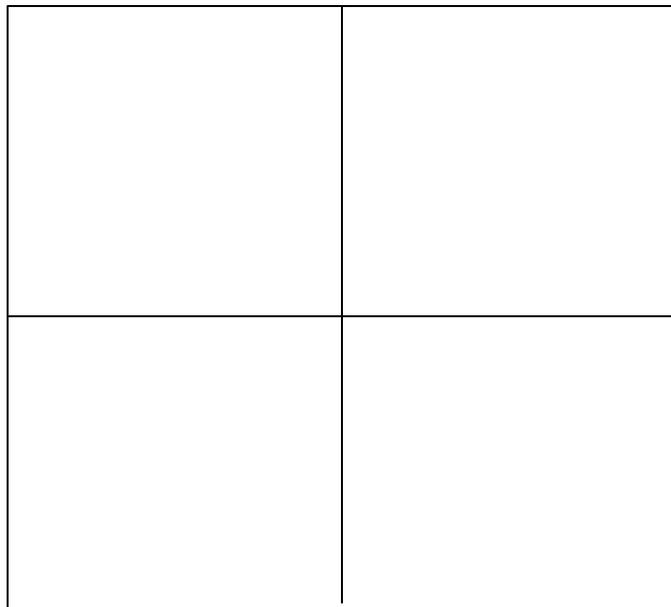
7. The North 10 acres of the South half of Northeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M.

Section 5-T8N-R2E



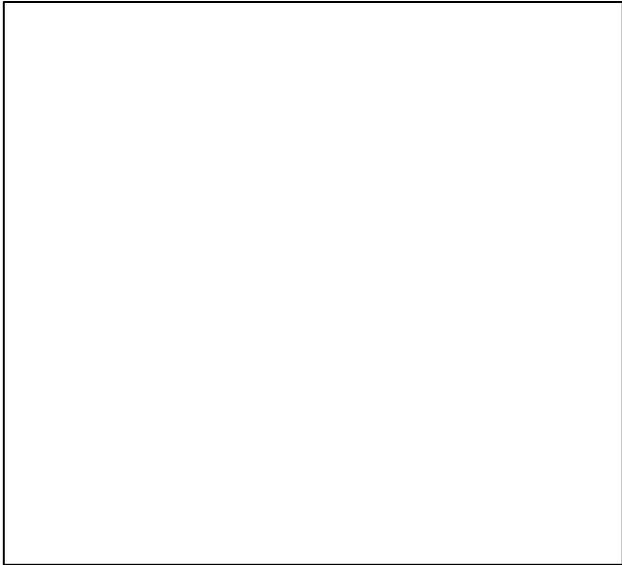
8. The North 10 acres of the South 40 acres of the South half of the Northeast Quarter of Section 5, Township 9 North, Range 2 East of the I.M.

Section 5-T8N-R2E



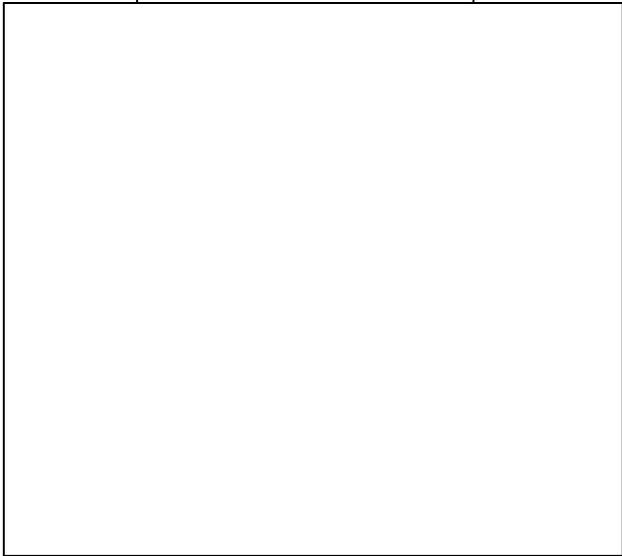
9. The North 208.71 Feet of the East 208.71 Feet of the Southeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M.

SF/4 of 5-T8N-R2E



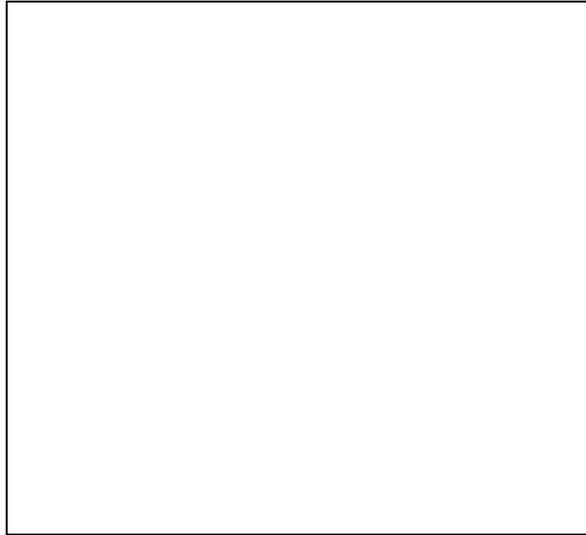
10. A tract of land in the Southeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M. described as: beginning at the Northeast corner, thence South 208.71 Feet, thence West 208.71 Feet, thence North 208.71 Feet, thence back East to the point of beginning.

SE/4 of 5-T8N-R2E



11. A tract of land in the Southeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M. described as: beginning at the Northeast corner, thence Southwesterly to a point, thence North 208.71 Feet, thence back East along the quarter-section line to the point of beginning.

SE/4 of 5-T8N-R2E

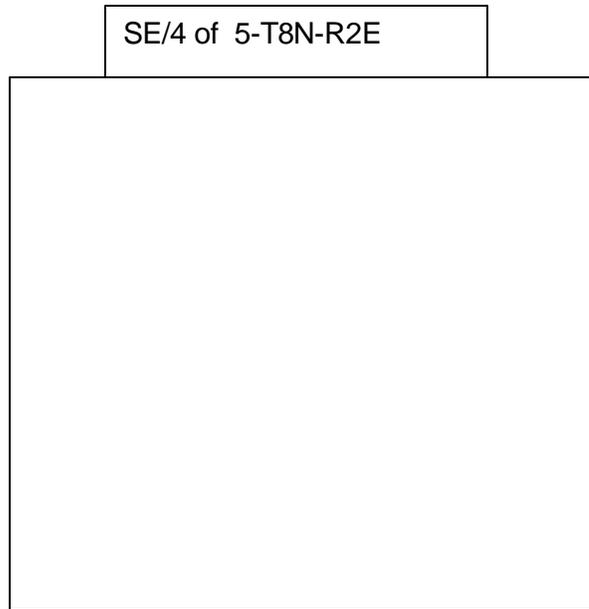


12. A tract of land in the Southeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M. described as: beginning at the Northeast corner, thence South 900 Feet to the true point of beginning, thence West 208.71 Feet, thence North 208.71 Feet, thence back East to the point of beginning.

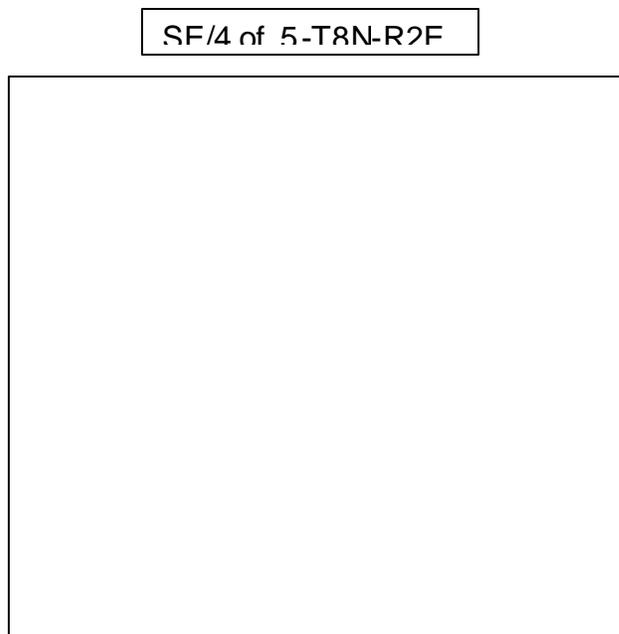
SE/4 of 5-T8N-R2E



13. A tract of land in the Southeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M. described as: beginning at the Northeast corner, thence South 900 Feet to the true point of beginning, thence South 208.71 Feet, thence West 208.71 Feet, thence North 208.71 Feet, thence back East to the point of beginning.

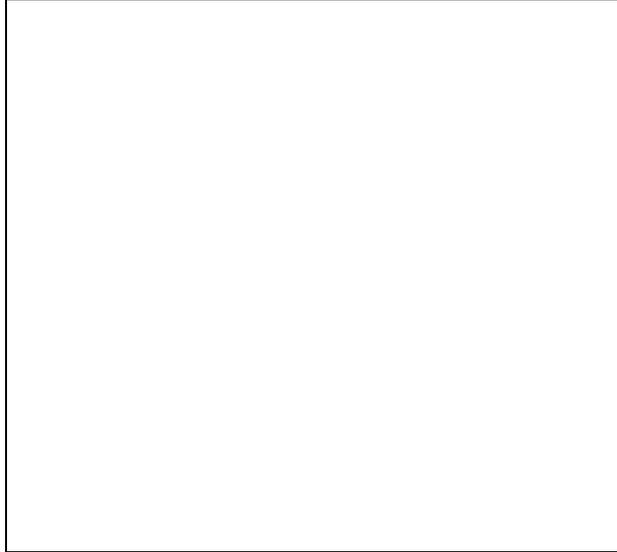


14. A tract of land in the Southeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M. described as: beginning at the Northeast corner, thence South 900 Feet to the true point of beginning, thence South 45 degrees West 295.16 Feet, thence North 208.71 Feet, thence back East to the point of beginning.



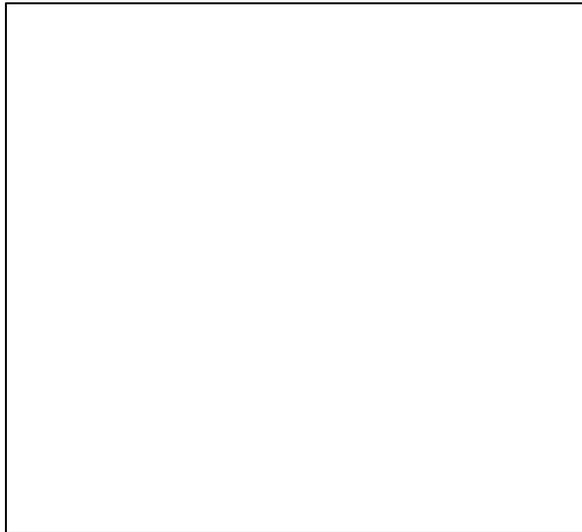
15. A tract of land in the Southeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M. described as: beginning at the Northeast corner, thence South 208.71 Feet, thence West 208.71 Feet, thence on a curve to the right 327.84 Feet with a radius of 208.71 Feet, thence 536.55 Feet East to the point of beginning.

SE/4 of 5-T8N-R2E

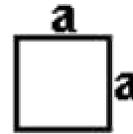


16. A tract of land in the Southeast Quarter of Section Five (5), Township Nine (9) North, Range Two (2) East of the I.M. described as: beginning at the Northeast corner, thence South 208.71 Feet, thence West 208.71 Feet, thence on a non-tangent curve to the right with a radius of 500 Feet and a chord length of 295.16 Feet and a chord Bearing of North 45 degrees West, thence 417.42 Feet East to the point of beginning.

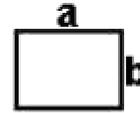
SE/4 of 5-T8N-R2E



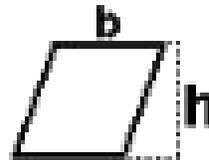
Area of a square: since each side is the same length, just multiple a side by itself



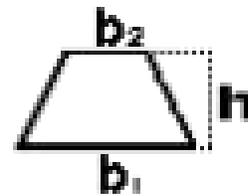
Area of a rectangle: just multiple two adjoining side together



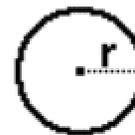
Area of an "unsquare" rectangle the opposing sides are same length: multiple the base length times the height (NOT the side length)



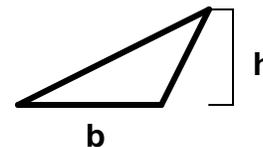
Area of an really "unsquare" rectangle the opposing sides are NOT same length: multiple the average of the two base lengths times the height (NOT the side length)



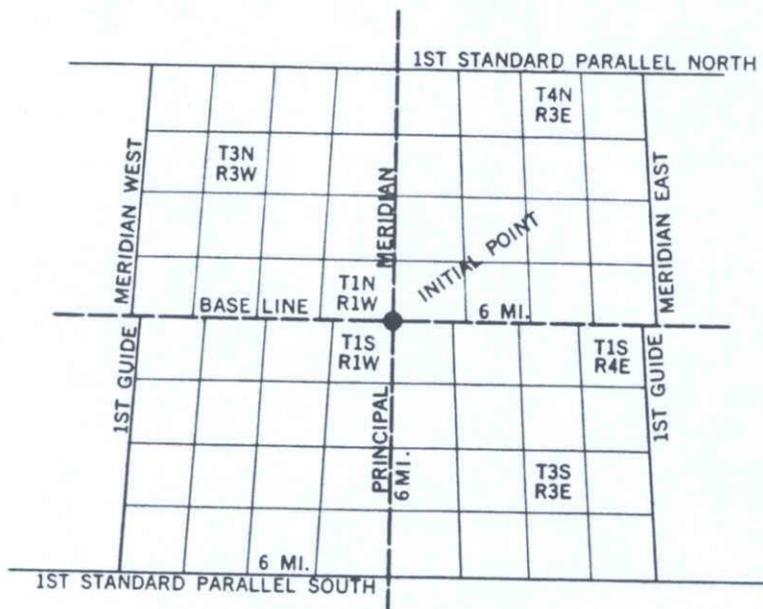
Area of a circle: multiple  $\pi$  (3.1416 etc) times the radius length times the radius length ( $\pi \times r \times r$ )



Area of a triangle: multiple the half the base length times the height



# SECOND DIVISION OF LAND (TOWNSHIPS)



The second division of land divides each quadrangle into sixteen 6-mile square townships as shown in the above diagram.

Each east-and-west row of townships is called a tier and is numbered north or south of the base line as: T3N, or T3S. Each north-and-south row of townships is called a range and is east or west of the principal meridian as: R3W, or R3E. A township is identified by reference to its tier number, range number, and principal meridian, as T1S, R4E, Indian Principal Meridian. The letter T in this designation actually stands for tier, but it has become the custom to refer to it as township instead of tier.

# THIRD DIVISION OF LAND (SECTIONS)

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6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

The third division of land further divides the townships by parallel north-and-south lines and parallel east-and-west lines at one-mile intervals. This is intended to create 36 squares measuring one mile on each side and containing one square mile of 640 acres each. These squares are called sections. They are always numbered in the same pattern, starting in the northeast corner of the township as shown in the above diagram.

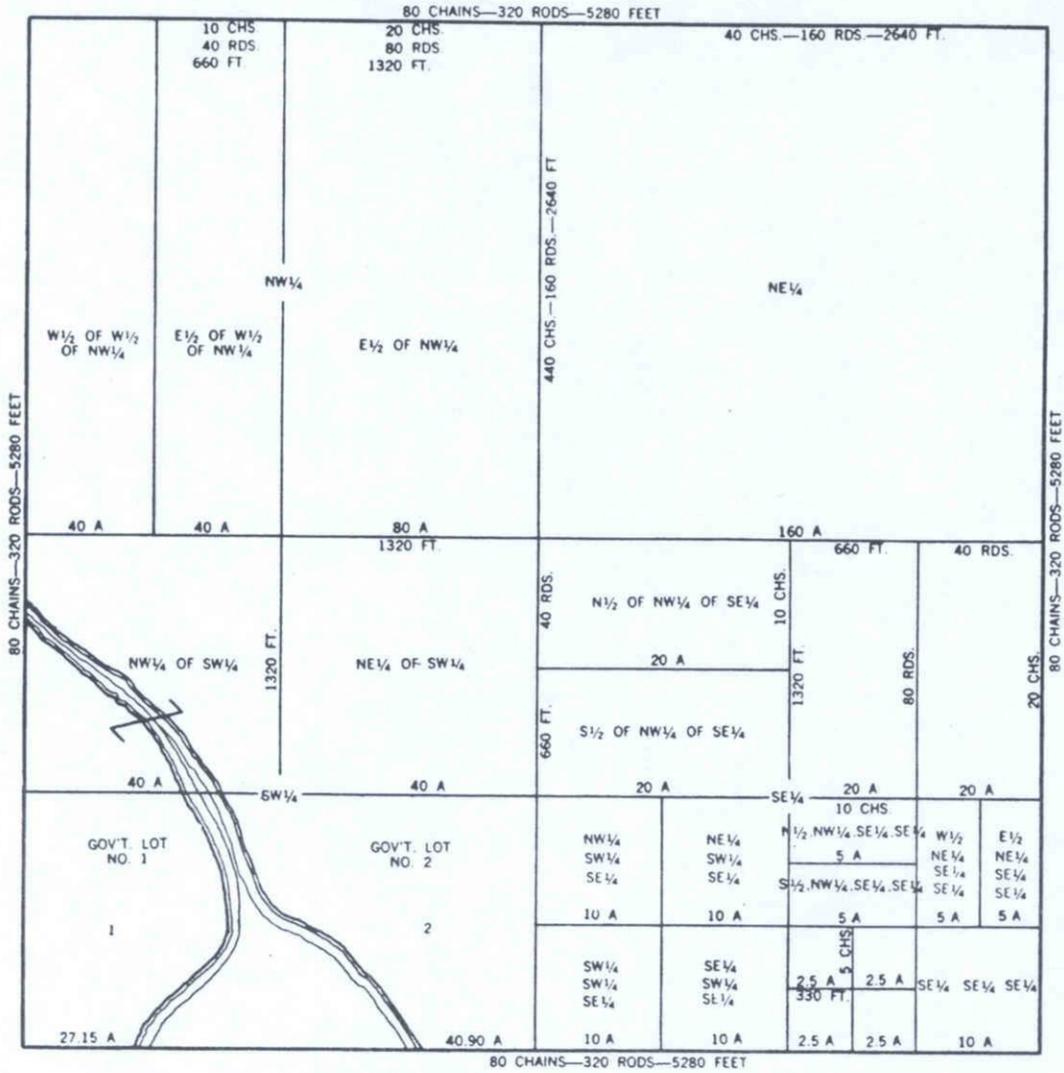
Each section is further divided into half sections, or quarter sections or half-quarter sections and so on as desired. These subdivisions are described by their geographic position within a section as shown in the diagram on the next page.

A typical description of a 20-acre site might read as follows:  $W\frac{1}{2}$ - $NE\frac{1}{4}$ - $SE\frac{1}{4}$ , Section 6, T2N, R3E, Indian Principal Meridian. The best way to read a land description based on this system is to start at the end with the meridian and to work back through, locating in order the township, section, quarter, quarter-quarter, etc.

Parcels of land along the shore of a lake or river not large enough to be considered sections were called government lots and usually identified by number.

An adjustment was necessary because the earth's meridians (north-and-south imaginary lines) are not parallel but converge at the north and south poles. All discrepancy was put into the quarter-quarter sections along the north and west boundaries of a township and these irregular parcels are commonly identified as fractional sections or government lots. A typical description would be Government Lot 3, Section 12, T7N, R9E, Indian Principal Meridian.

# ONE SECTION—1 MILE SQUARE—640 ACRES



The above figure illustrates a section of land 640 acres divided first into quarters of 160 acres each, shown as NE 1/4, SW 1/4, SE 1/4, and then into various other divisions.

# MEASUREMENTS

## LINEAL MEASURE

1 mile	= 5,280	feet
	= 1,760	yards
	= 320	rods
	= 80	chains
1 chain	= 66	feet
	= 100	links
	= 4	rods
1 rod	= 25	links
	= 16.5	feet
	= 1	perch
	= 1	pole
1 link	= 7.92	inches
Millimeter	= 0.001	Meter
Centimeter	= 0.01	Meter
Decimeter	= .01	Meter
Meter	= 39.3685	Inches
Kilometer	= 1000	Meters

## ARPENT

The Arpent is a unit of measure common to parts of Canada, mainly Quebec, where land was originally granted under seigniorial tenure. Surveys currently made in these areas now use the English units, but the Arpent may be encountered.

This unit is also in use in parts of the State of Louisiana. The basis of the Arpent is the "Old French Foot" having the following equivalents.

French Foot	= 12.789	English Inches
	= 1.06575	English Feet
English Foot	= 12	English (U.S.) Inches
	= 0.938306	French Feet
Square		
French Foot	= 1.135823	Square English Feet
Lineal Arpent	= 180	French Feet
	= 191.835	English Feet
	= 10	Old French Perches
Square Arpent	= 36800.667	Square English Feet
	= 4088.89	Square English Yards
	= 32,400	Square French Feet
	= 0.845	U.S. Acre

The Old French Perch is equivalent to 18 French Feet or 19.1835 English Feet.

## AREA MEASURE

1 township	= 36	sections
1 full section	= 640	acres
1 sq. mile	= 640	acres
	= 1	full section
1 acre	= 43,560	sq. feet
	= 4,840	sq. yards
	= 160	sq. rods
	= 10	sq. chains
1 sq. chain	= 10,000	sq. links
1 sq. rod	= 30.25	sq. yards
1 sq. yard	= 9	sq. feet
1 sq. foot	= 144	sq. inches
Square Centimeter	= 0.0001	Square Meter
Square Decimeter	= 0.01	Square Meter
Area	= 100	Square Meters
Hectare	= 10,000	Square Meters
	= 2.471	Acres
Square Kilometer	= 247.1	Acres
	= 0.386	Square Mile

## VARA

The Vara is a unit of measurement originally used by the Spanish and is still in common use throughout Central and South America.

The exact length of the Vara range varies from 32.9931 to 34.1208 inches with each country using a variation within this range.

Within the United States, two areas still make use of this measurement unit.

### California

Vara is equal to 33 inches.

Many lots in San Francisco and other areas were laid out on the basis of multiples of 50 Varas (137'6").

### Texas

Vara is equal to 33.33333 inches.

Early deeds used "Leagues" and "Labors" having the following values:

League	= 4428.4	Acres
	= 5000	Varas Square
	= 25,000,000	Square Varas
Labor	= 177.1	Acres
	= 1000	Varas Squares
	= 1,000,000	Square Varas

Conversion of these two variations of the Vara in standard United States units can be found in the conversion tables.

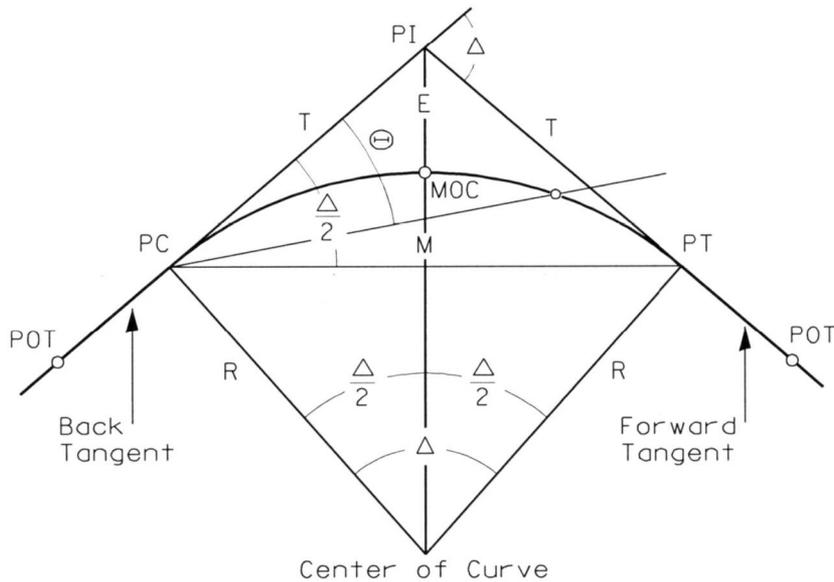
# LINEAL CONVERSION FACTORS

	Inch	Link	Foot	Vara (Calif.)	Vara (Texas)	Yard	Meter	Rod, Pole or Perch	Chain	Furlong	Kilo- meter	Mile (Statute)
Inch	1	0.12626	0.08333	0.03030	0.03	0.02778	0.02540	0.00505	0.00126			
Link	7.92	1	0.66	0.24	0.2376	0.22	0.20117	0.04	0.01	0.001		
Foot	12	1.51515	1	0.36364	0.36	0.33333	0.30480	0.06061	0.01515	0.00152		
Vara (Calif.)	33	4.16667	2.75	1	0.99	0.91667	0.8382	0.16667	0.04167	0.00417		
Vara (Texas)	33.333	4.20875	2.7778	1.01010	1	0.92583	0.84667	0.16835	0.04209	0.0042		
Yard	36	4.54545	3	1.09091	1.08	1	0.9144	0.18182	0.04545	0.00455		
Meter	39.37	4.97096	3.28083	1.19303	1.1811	1.09361	1	0.19884	0.04971	0.00497	0.001	
Rod, Pole, or Perch	198	25	16.5	6	5.94	5.5	5.02921		0.25	0.025	0.00503	0.00313
Chain	792	100	66	24	23.76	22	20.11684	4	1	0.1	0.02012	0.0125
Furlong	7920	1000	660	240	237.6	220	201.168	40	10	1	0.20117	0.125
Kilometer	39370	4970.96	3280.83	1193.03	1181.1	1093.61	1000	198.838	49.7096	4.97096	1	0.62137
Mile (Statute)	63360	8000	5280	1920	1900.8	1760	1609.35	320	80	8	1.60935	1

# AREA CONVERSION FACTORS

	Square Inch	Square Link	Square Foot	Square Vara (Calif.)	Square Vara (Texas)	Square Yard	Square Meter	Sq. Rod., Pole, or Perch	Square Chain	Rood	Acre	Square Kilometer	Square Mile (Statute)
Square Inch	1	0.01594	0.00694										
Square Link	62.7264	1	0.4356	0.0576	0.05645	0.0484	0.04047	0.0016					
Square Foot	144	2.29568	1	0.13223	0.1296	0.11111	0.0929	0.00367					
Square Vara (Calif.)	1089	17.3611	7.5625	1	0.9801	0.84028	0.70258	0.02778	0.00174				
Square Vara (Texas)	1111.11	17.7136	7.71605	1.0203	1	0.85734	0.71685	0.02834	0.00177				
Square Yard	1296	20.6612	9	1.19008	1.1664	1	0.83613	0.03306	0.00207				
Square Meter	1549.80	24.7104	10.7639	1.42332	1.395	1.19599	1	0.03954	0.00247				
Sq. Rod, Pole, Perch		625	272.25	36	35.2836	30.25	25.2930	1	0.0625	0.025	0.00625		
Square Chain		10000	4356	576	564.538	484	404.687	16	1	0.4	0.1		
Rood		25000	10890	1440	1411.34	1210	1011.72	40	2.5	1	0.25	0.00101	
Acre		100000	43560	5760	5645.38	4840	4046.87	160	10	4	1	0.00405	0.00156
Square Kilometer							1000000	39536.7	2471.044	988.418	247.104	1	0.3861
Square Mile (Statute)								102400	6400	2560	640	2.59	1

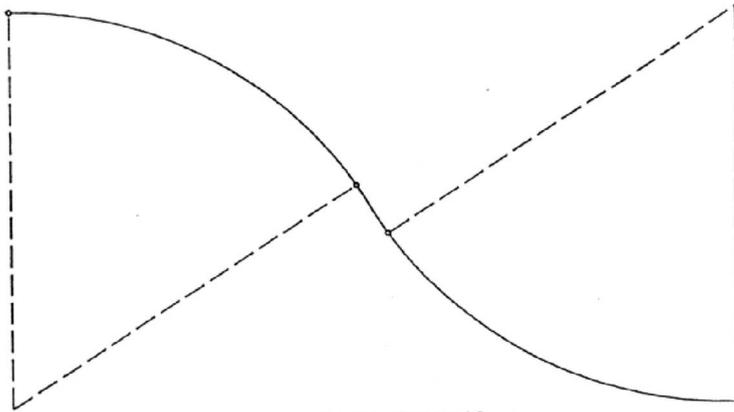
## FORMULAS & EXAMPLES - SIMPLE CIRCULAR CURVE



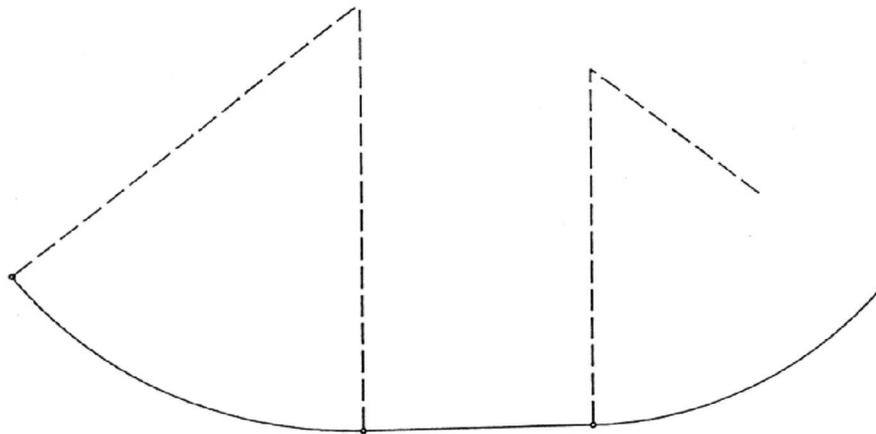
**DEFINITIONS** Be sure the instrument and carrying case are kept dry. If they become wet, allow them to air dry before closing the carrying case. Extend level rod and let air dry overnight.

Back Tangent	=	Tangent from which the curve starts
Forward Tangent	=	Tangent on which the curve ends
POT	=	"Point on Tangent" - Any point on the tangent portion where the curve starts or ends
PC	=	"Point of Curvature" - Station on centerline where the curve starts
T	=	"Tangent" - The distance on a straight line from the PC to the PI or the PT to the PI
MOC	=	"Mid-Point of Curve"
PT	=	"Point of Tangency" - Station on centerline where the curve ends
L	=	"Length of Curve" - The distance <u>along the curved centerline</u> from the PC to the PT
PI	=	"Point of Intersection" - The point where the back tangent and the forward tangent intersect
R	=	"Radius of the Curve"
E	=	"External Distance" - Distance from the MOC to the PI
M	=	"Middle Ordinate" - Distance from the MOC to the mid-point of the straight line between the PC and the PT (the LC)
LC	=	"Long Chord" - Straight line distance from the PC to the PT
Δ	=	The Central Angle of the Curve - The angle between a radial line from the center of the curve to the PC and a radial line from the center of the curve to the PT; also equals the angle of intersection of the forward tangent with the back tangent

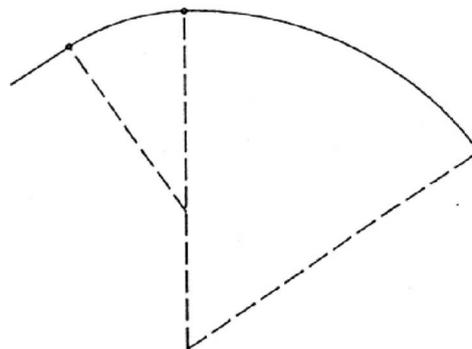
TYPES OF CURVES



REVERSE CURVES



BROKEN-BACK CURVES



COMPOUND CURVES





F

e

E

Ya. 11° 30' E

Ya. 11° 27' E



2  
9.50  
1  
A. 39.30

19.60

Ya. 10° 40' E

A. 39.32

A. 39.55

A. 39.78

A. 40.01

A. 40.01

A. 39.50

79.92

Ya. 10° 12' E

79.72  
Sec. 5.

A. 638.56

Ya. 10° 12' E

79.88

Ya. 10° 12' E

79.68

Ya. 10° 30' E

20.06

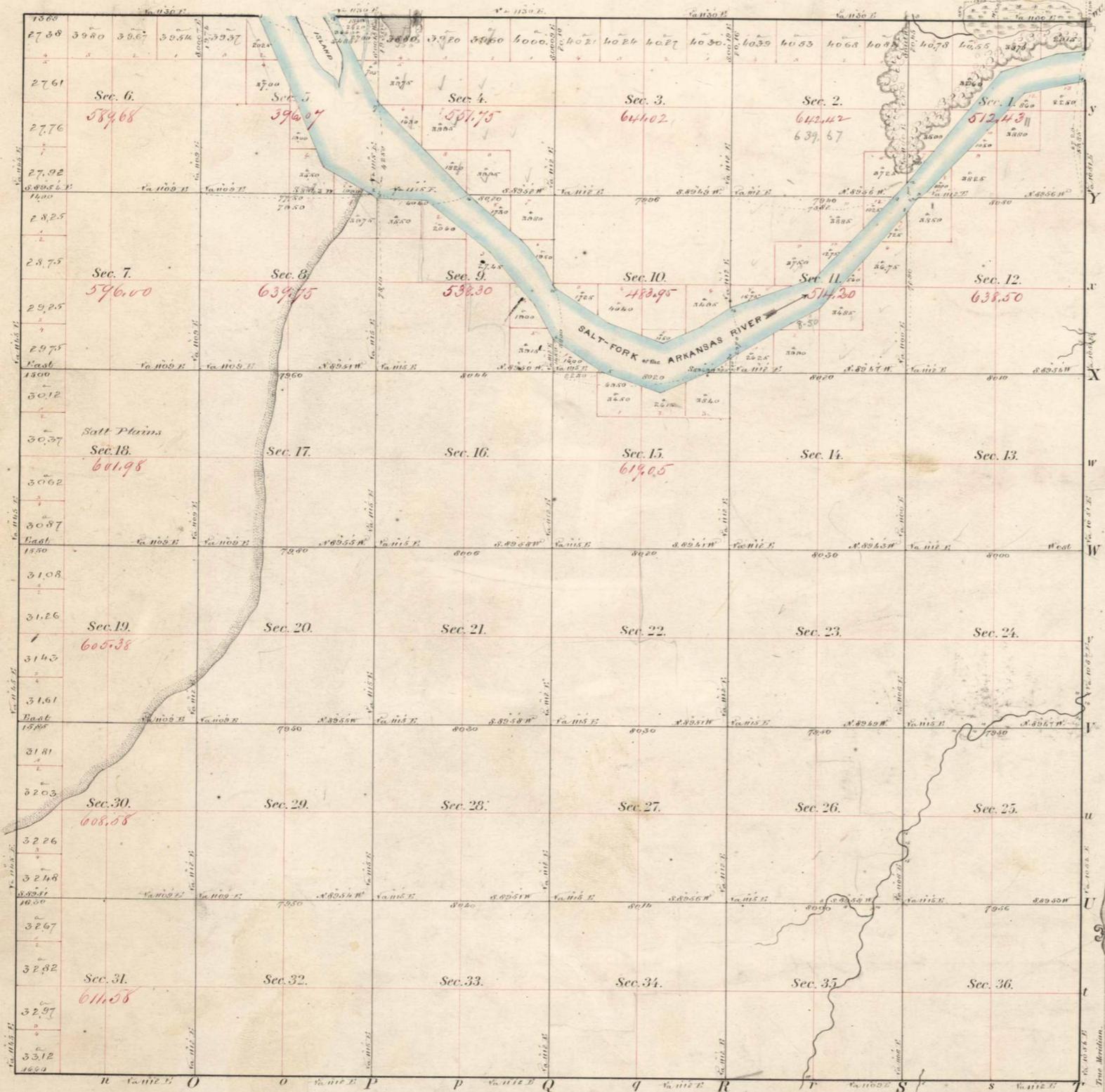
Ya. 10° 40' E

*Recd with P. A. Darling, 11th May 24, 1893*

TOWNSHIP N°26 NORTH RANGE N°9 WEST of the INDIAN MERIDIAN

G I F e E d D c C b B a A

Course East



*Recd with P. A. Darling, 11th May 24, 1893*  
Meanders of Salt Fork of the Arkansas River.

Posts	Courses	Ch. & M.	Posts	Courses	Ch. & M.
<b>Right Bank</b>					
In Sec. 5					
1	S 85 1/2° E	37.60			
2	S 24° E	36.35			
3	S 87° E	22.00			
In Sec. 8					
1	S 87° E	3.50			
In Sec. 9					
1	S 89° E	21.15			
2	S 82 1/2° E	37.45			
3	S 41° E	31.92			
4	S 33° E	22.35			
In Sec. 10					
1	S 87° E	27.00			
2	S 71 1/2° E	23.00			
In Sec. 11					
1	S 82 1/2° E	13.10			
In Sec. 12					
1	S 61° E	31.02			
2	S 64° E	16.00			
3	S 82 1/2° E	6.00			
In Sec. 13					
1	S 80 1/2° E	9.10			
In Sec. 14					
1	S 76° E	3.50			
2	S 45° E	6.20			
3	S 76 1/2° E	23.05			
4	S 73 1/2° E	2.15			
<b>Left Bank</b>					
In Sec. 1					
1	S 81 1/2° W	12.50			
2	S 72 1/2° W	26.00			
3	S 40 1/2° W	6.25			
In Sec. 2					
1	S 42° W	2.35			
In Sec. 3					
1	S 63 1/2° W	5.00			
2	S 71 1/2° W	4.25			
In Sec. 10					
1	S 58° W	20.00			
2	S 71 1/2° W	14.65			
3	S 71° W	25.60			
4	S 87° W	31.60			
In Sec. 20					
1	S 33° W	3.50			
2	S 41° W	23.85			
3	S 48 1/2° W	28.60			
In Sec. 31					
1	S 47 1/2° W	5.75			
In Sec. 35					
1	S 87° W	41.50			
<b>Total Meanders</b>					
M - C - L					
12 - 08 - 00					

Surveys Designated	By Whom Surveyed	Date of Contract	Amount of Surveys	When Surveyed
Township lines	P. A. Darling	Sept 7, 1872	M - 65 - 69	Nov 3, Dec 1872
Subdivisions			71 - 63 - 86	Dec 1872 & Jan 1873

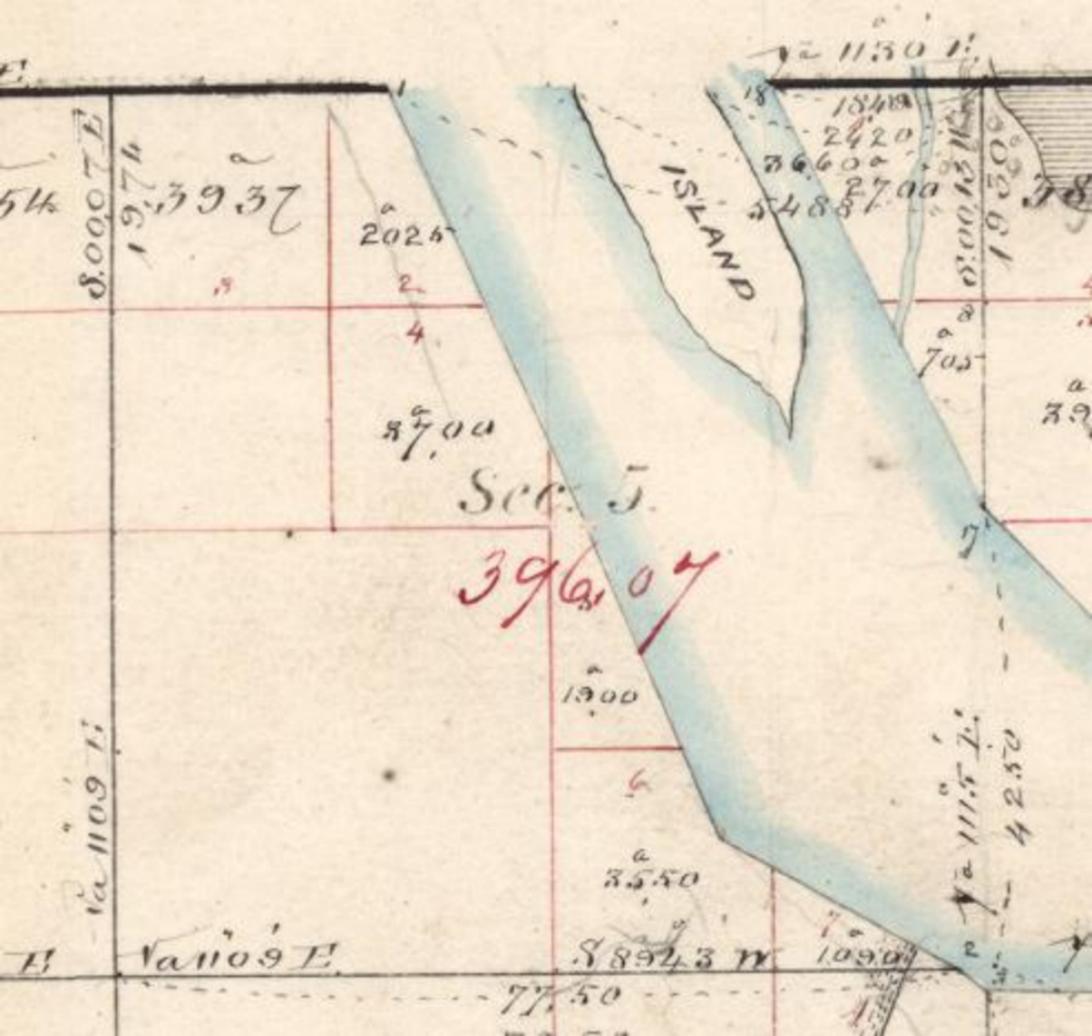
The above Map of Township N°26 North of Range N°9 West of the Indian Meridian Indian Territory is strictly conformable to the field notes of the survey thereof on file in this Office, which have been examined and approved.

General Land Office  
May 24, 1893

W. W. Courts, Commissioner

*may 9 - 1893  
1893*

*275*



S.0007 E

1974

3937

2024

2  
4

8700

Sec. 5

396,04

1300

3550

S.892.3 W

77.50

1130

1848

2420

36600

2700

54887

S.0003 N

19500

705

39

1109 E

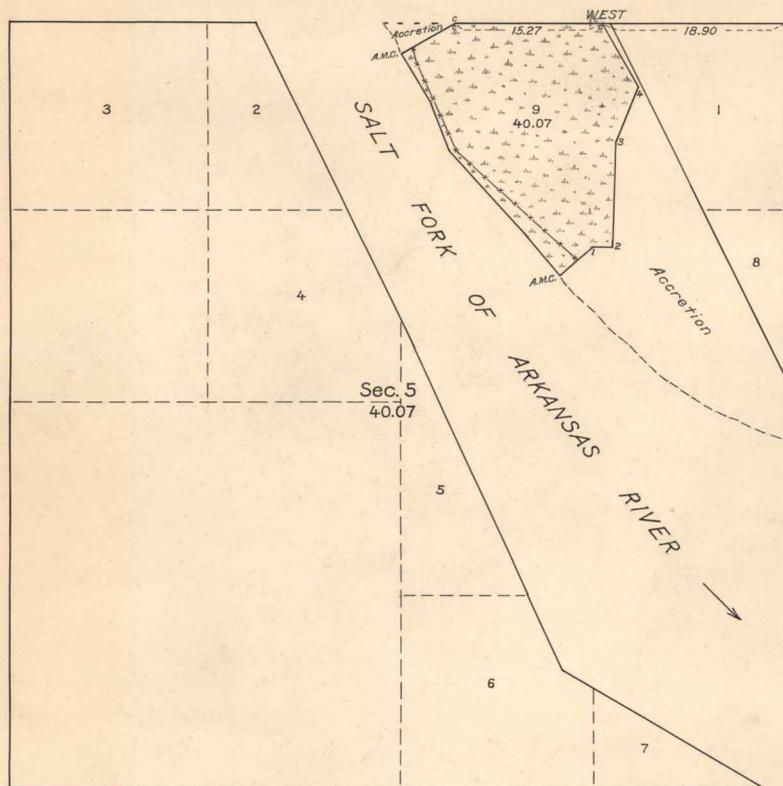
1109 E

1115 E

4250

1099

TOWNSHIP No. 26 NORTH, RANGE No. 9 WEST, OF THE INDIAN MERIDIAN, OKLAHOMA  
 PLAT OF AN ISLAND IN SALT FORK OF ARKANSAS RIVER, SECTION 5



MEMORANDUM

THIS PLAT REPRESENTS THE SURVEY OF AN AREA WHICH WAS FORMERLY AN ISLAND IN THE SALT FORK OF THE ARKANSAS RIVER, NOT INCLUDED IN THE ORIGINAL SURVEY OF THE TOWNSHIP AS REPRESENTED BY THE PLAT APPROVED MAY 29, 1873.

THE SURVEY WAS EXECUTED PURSUANT TO AUTHORITY CONTAINED IN GENERAL LAND OFFICE LETTER 1334813 "E", DATED SEPTEMBER 5, 1930, WHICH BEARS DEPARTMENTAL APPROVAL UNDER DATE OF SEPTEMBER 9, 1930.



**ORIGINAL**  
**DUPLICATE PLAT**  
 The following annotations are not a part of this plat

Received with letter dated .....  
 1334813 March 1, 1932

From  
 Donald B. Clement

Posted in Div. "O" 7/22/32  
 66-38-913

Plat filed in local land office  
 Dec 28, 1932-133-813

Miscellaneous

DEPARTMENT OF THE INTERIOR 130277

OFFICE OF U.S. SUPERVISOR OF SURVEYS  
 DENVER, COLORADO, FEBRUARY 27, 1932.

THE ABOVE PLAT OF AN ISLAND IN THE SALT FORK OF THE ARKANSAS RIVER IN SECTION 5, TOWNSHIP NO. 26 NORTH, RANGE NO. 9 WEST, INDIAN MERIDIAN, OKLAHOMA, IS STRICTLY CONFORMABLE TO THE FIELD NOTES OF THE SURVEY THEREOF WHICH HAVE BEEN EXAMINED AND APPROVED.

*Sumner Johnson*  
 U. S. SUPERVISOR OF SURVEYS.

SCALE: 10 CHAINS TO AN INCH. AREA SURVEYED: 40.07 ACRES.

LINES DESIGNATED	BY WHOM SURVEYED	GROUP NO.	DATE	MILEAGE		WHEN SURVEYED	
				MLS.	CHS.	BEGUN	COMPLETED
EXTERIOR	HUGH B. CRAWFORD, U.S. TRANSITMAN.	9	APRIL 21, 1931.	0	34.17	JUNE 25, 1931.	JUNE 29, 1931.
MEANDER				0	28.32		
MISCELLANEOUS				0	37.73		

DEPARTMENT OF THE INTERIOR  
 GENERAL LAND OFFICE  
 WASHINGTON, D. C., MARCH 16, 1932.

THE SURVEY REPRESENTED BY THIS PLAT HAVING BEEN CORRECTLY EXECUTED IN ACCORDANCE WITH THE REQUIREMENTS OF LAW AND THE REGULATIONS OF THIS OFFICE, IS HEREBY ACCEPTED.

*W. C. Hall*  
 ASSISTANT COMMISSIONER.

*sd*  
 1930

# **STATE GI COUNCIL**

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## The State GI Council

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## Creation of the State GI Council

- Authorized in 1994 by SB 722
  - ✓ Consisted of 11 member agencies and university representatives
  - ✓ Designated the OK Conservation Commission as the Chair of the Council
  - ✓ Original mission was to assist the Conservation Commission in the preparation of a strategy for the development of a statewide GIS and the submission of that strategy to the Legislative leadership

## Creation of the State GI Council

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- HB 1964 in 1995
  - ✓ Added three additional members to the Council
    - State Finance, OK Tax Commission, Regional Universities
  - ✓ Created Digital Orthophoto Base Mapping Fund
  
- Amendment in 2001
  - ✓ Added additional member to the Council
    - OK Wildlife Conservation Commission

## Changes to the State GI Council

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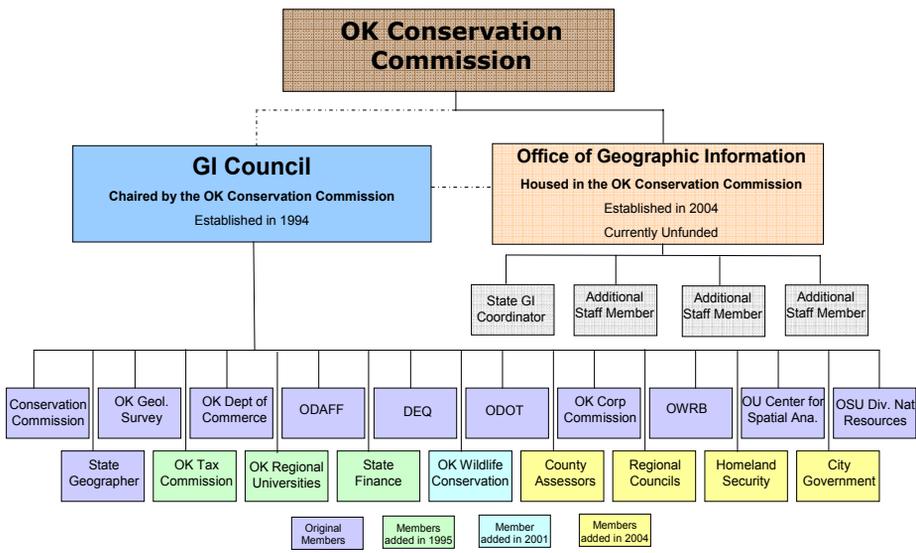
- Legislative Interim Study H2003-105
  - ✓ Presented December 4, 2003
  - ✓ Issues for Consideration
    - Add Public Safety/County/Local Members
    - Designate a State-wide Coordinator
    - Authority to Set Policy & Standards

# Changes to the State GI Council

## ➤ HB 2457 in 2004

- ✓ Changed the name from State GIS Council to State GI Council
- ✓ Added 4 new members to the Council
  - Homeland Security, County Assessors, City Government, OK Association of Regional Councils
- ✓ Specified Duties for the Council
- ✓ Created the Office of Geographic Information
  - Specified Duties for the Office
- ✓ Created the State Geographic Information Coordinator Position

# Structure of the State GI Council



## Goals of State GI Council

---

- Reduce Duplication of Efforts
- Enhanced Homeland Security
- Awareness of Available Data
- Data Works Across Jurisdictional Lines
- Data Reliability
- Agency Coordination & Involve More People
- Cost Savings to Taxpayers

## Activities of the State GI Council

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- Monthly Meetings
  - ✓ September 10, 2010
- GIS Day at the Capitol
  - ✓ March 2, 2011
- GI Council Website
  - ✓ [www.okmaps.onenet.net](http://www.okmaps.onenet.net)
- OK GIS List Serve (In Cooperation with CSA)
  - ✓ [www.csa.ou.edu](http://www.csa.ou.edu)

## Office of Geographic Information

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- Office and State Coordinator Position  
Currently Unfunded
- Volunteer Staff
- Projects include:
  - ✓ Strategic Plan Grant completed in 2007
  - ✓ Serving up NAIP Photography (in cooperation with CSA)
  - ✓ Homeland Security Grant
  - ✓ Oklahoma Broadband Mapping Grant

## Office of Geographic Information Mission

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The OK Office of Geographic Information provides geographic information services to governments, academia, industry, and the public.

The Office:

- Supports the GI Council with technical assistance.
- Coordinates and promotes geographic information awareness, activities, data, and training.
- Develops standards, policies, and operating procedures.
- Maintains a centralized statewide clearinghouse of accurate and timely data while protecting data security.
- Facilitates data development, sharing and access.
- Fosters the values and benefits of GIS technology to ensure good stewardship of the State's resources.

## Strategic Direction and Goals

---

- Building a Sustainable Future
  - ✓ Annually prepare three-year budget
  - ✓ Develop state coordinator and GI job classifications and descriptions for approval
  - ✓ Conduct awareness campaign with agency directors and legislative leaders
  
- Marketing GI as an Important Decision Making Tool
  - ✓ Develop pilot project to increase awareness of GIS need
  - ✓ Increase website utility
  
- Maximize Geographic Information Benefits for the State
  - ✓ Participate in national multi-state GI organizations
  - ✓ Participate in regional and national coordination efforts
  - ✓ Initiate data sharing/stewardship agreements among specific stakeholders
  - ✓ Leverage existing national organization participation
  - ✓ Develop partnerships for data sharing and stewardship
  - ✓ Establish official statewide information clearinghouse

## NAIP Photography

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- Available for Download on FTP Site
  - Data Available Includes
    - ✓ 1 meter Full Color Leaf On
      - 2003 – 2005, 2008
      - 2010 is in process. Western 1/2 of state complete
    - ✓ 2 meter Full Color Leaf On
      - 2006

<ftp://ftp.okcc.state.ok.us/gis/County/>

## OKMAPS

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- Funded by OK Dept of Homeland Security
- On Line Mapping Application for Public Use
  - Allows Viewing and Downloading of Data
  - Secure Log In for Sensitive Data

<http://ogi.state.ok.us/ogi/search.aspx>

## OK Broadband Mapping Grant

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- Locate areas that are served with broadband Internet services and those that are underserved or unserved.
  - Areas determined by:
    - Provider Data
    - Community Anchor Institution Input
    - Community Involvement

<http://broadbandmapping.ok.gov>

# Questions

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For More Information

Shellie Willoughby

OK Conservation Commission  
Office of Geographic Information

[Shellie.willoughby@conservation.ok.gov](mailto:Shellie.willoughby@conservation.ok.gov)

405.521.4828

**USGS**



National Geospatial Program Office

## The National Geospatial Program and *The National Map* - Update

**Presenter:** Darryl S. Williams  
USGS Geospatial Liaison for Oklahoma

**Event:** Oklahoma Tax Commission, Sixty-Six Annual Ad Valorem  
Education Conference for Oklahoma Assessing Officers

**Date:** August 11, 2010

U.S. Department of the Interior  
U.S. Geological Survey



National Geospatial Program Office



## Regions and Areas

Western Region      Central Region      Eastern Region



USGS the Interior  
urvey



science for a changing world

## Selected REx Duty Stations

National Geospatial Program Office



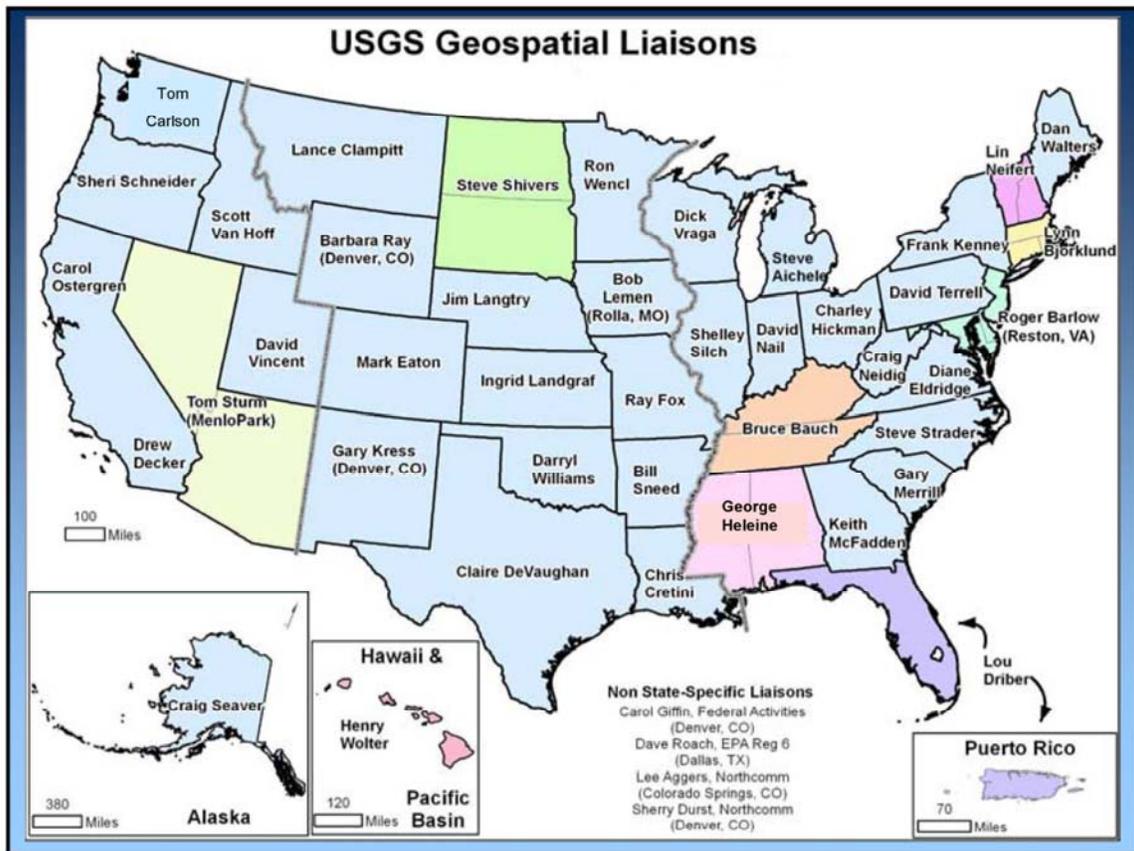
science for a changing world

National Geospatial Program Office

## Criteria for Establishing Boundaries of New Areas

- Science drivers, societal issues, opportunities
- Physiographic provinces and ecoregions
- Common ways of working with customers and partners
- External span of control—DOI, other Federal agency partners, non-Federal partnerships





## USGS Information Policy

Taken from [www.usgs.gov/laws/info\\_policies.html](http://www.usgs.gov/laws/info_policies.html)

- “The USGS, as the science arm of the Department of the Interior and the earth and natural science agency for the Nation, has an ongoing obligation to keep the broadest spectrum of the public advised and engaged in its scientific research, investigations, and ongoing information releases.”
- “It is the policy of the USGS to conduct its activities and make the results of its scientific investigations available in a manner that will best serve the whole public.”

## ***The National Map***

***The National Map is a collaborative effort to improve and deliver topographic information for the nation***

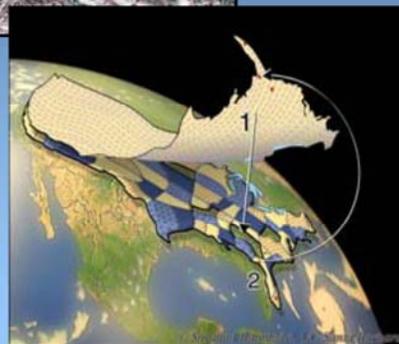
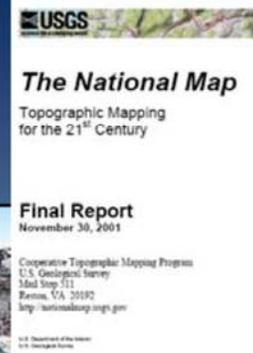
The goal of *The National Map* is to become the nation's source for trusted, nationally consistent, integrated and current topographic information available online for a broad-range of uses

***The National Map contributes to the NSDI***



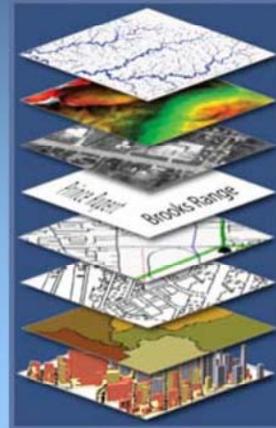
## ***The National Map Vision***

- A **seamless, continuously maintained, nationally consistent** set of base geographic data
- Developed and maintained through **partnerships**
- A national **foundation** for science, land and resource management, recreation, policy making, and homeland security
- Available over the **Internet**
- The source for revised **topographic maps**



## The National Map

- *The National Map* includes eight data layers: hydrography, elevation, orthoimagery, geographic names, boundaries, transportation, land cover, structures
- Public domain data to support
  - USGS topographic maps at 1:24,000-scale
  - Products and services at multiple scales and resolutions
  - Analysis, modeling and other applications at multiple scales and resolutions
- *The National Map* is built on partnerships and standards



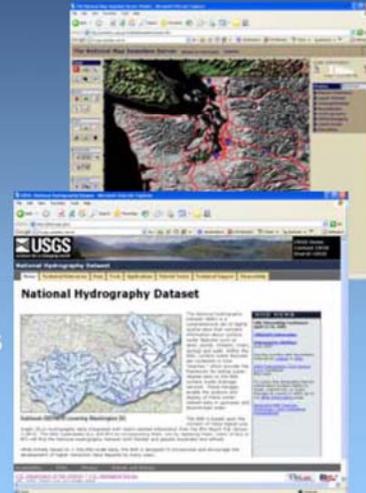
## Partner input to *The National Map*

- State, local, Tribal, Federal, and private entities produce and maintain a vast array of current, accurate geospatial data
- Over the years, a significant objective and investment focus of NGP has been the development of mutually beneficial **partnerships** to coordinate data acquisition, integration, maintenance and stewardship
- **Partner contributions and data** remain a primary input and **foundation of TNM**



## ***The National Map Products and Services***

- National Hydrography Dataset (NHD) and NHD stewardship
- Seamless Server and Orthoimagery partnerships
- National Elevation Dataset (NED) and elevation partnerships
- Best Practices Database – transportation, boundaries and structures
- Geographic Names Information System (GNIS)
- Digital 7.5-Minute Topographic Maps



## ***The National Map Partnership Opportunities Partnering on Data Acquisition***

- Farm Service Agency National Aerial Imagery Program (NAIP)
  - Statewide 1-m orthophotography coverage on three-year or better cycle
  - FSA program with additional funding contributed by USFS, NRCS, and USGS
  - States (with other partners) can partner for CIR.
- National Geospatial-Intelligence Agency (NGA) 133-Urban Areas hi-resolution orthoimagery acquisition. (some elevation data)
  - Major population centers of US, state capitals, other Areas of Interest, upcoming national events
- American Recovery and Reinvestment (ARRA) Act stimulus funds

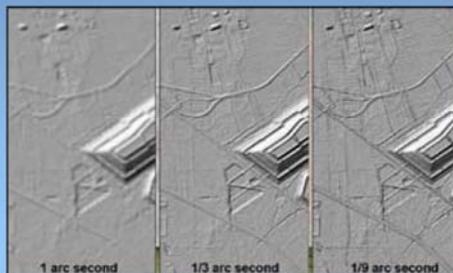


# The National Map Partnership Opportunities

## Free data download available

### ORTHOIMAGERY

- National 1-Meter available
- 1-foot natural color orthoimagery in the 133 urban areas



### ELEVATION

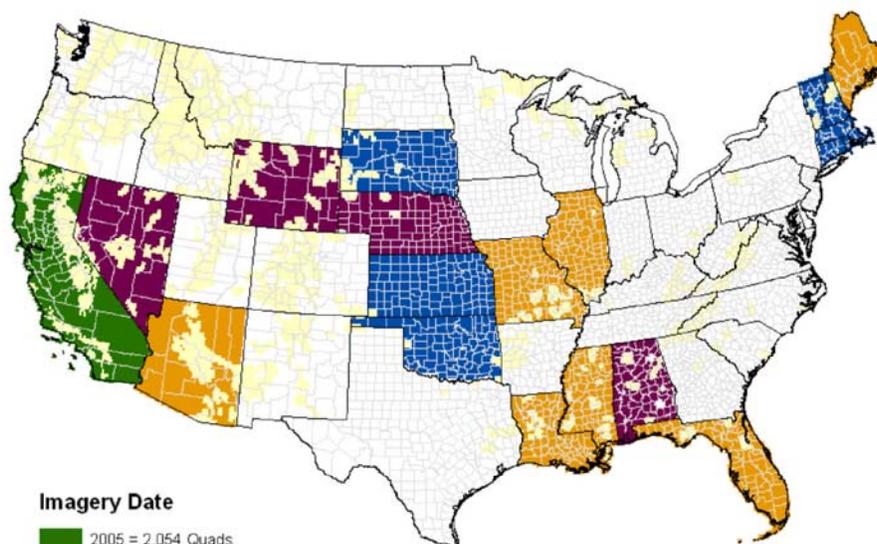
- Bare earth LiDAR over many Urban Areas through NGA partnerships
- Bare earth LiDAR over other areas of interest
- Point Clouds available for some areas



<http://seamless.usgs.gov/>



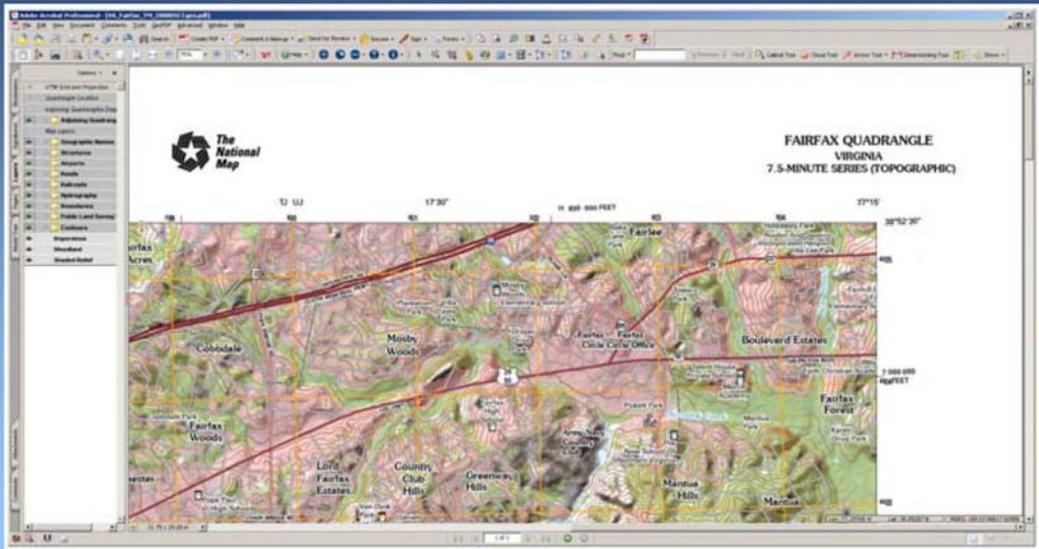
## FY09 Graphic Mapping Work Plan



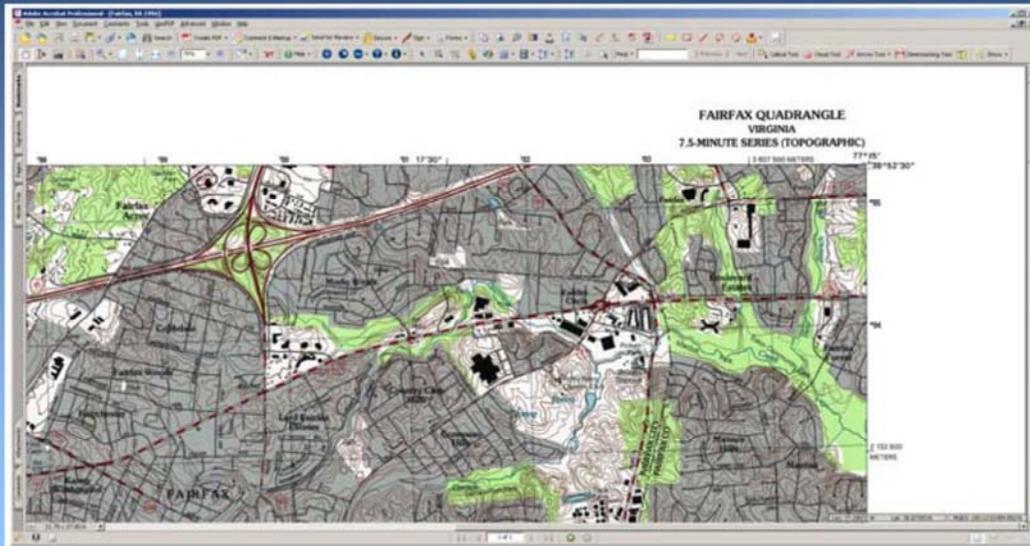
Total targeted quads = 17,531

January 7, 2008

## GeoPDF Digital Maps Being Generated from The National Map Data Bases



## High-resolution Scans Being Produced of All Previous Versions of USGS Topoquads



## Factors Considered in Allocating Partnership Funding

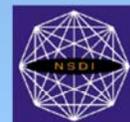
- USGS to Partner funding ratio
- NGP geographic area priorities
- More current data
- Improvement of resolution or accuracy
- Data integration goals
- Partner Priority/Statewide Plans
- Technical soundness/completeness of proposal
- Areal amount of coverage
- Partner Stewardship Agreement
- Partner Past Performance
- Regional science priority
- Leverages Federal partnerships



## FGDC Cooperative Agreement Program (CAP)

**Category 7:** Demonstration of Geospatial Data Partnerships across Local, State and Federal Government

- Begin institutionalizing practices that engage local agencies in statewide coordination efforts to build State Spatial Data Infrastructures (SSDIs) that feed into Federal data programs and advance the NSDI
- Document and share best practices to serve as models for other communities



## Planned TNM Products and Services (continued)

- **Land Cover**
  - NLCD 2001 land cover, impervious product, and canopy product completed
  - NLCD 1992–2001 change product completed
- **Orthoimagery**
  - Based on Farm Service Agency's 3-year NAIP Cycle
- **Boundaries (Governmental Units)**
  - Apply Census 2008 and 2009 MTAIP updates
  - Update major Federal boundaries
- **Structures**
  - National coverage of essential facilities, including hospitals, schools, police stations, and fire stations available
- **Transportation**
  - 20% of nation under active stewardship for roads data
  - Work with providers of other transportation data, including airports, pipelines, trails and railroads, to develop nationally maintained and integrated geospatial data inventories



## Planned TNM Products and Services (continued)

- **Scanned 7.5 Minute Topographic Maps**
  - 3,000 7.5' quadrangles covering the east and gulf coast areas available as hi-res
  - Approximately 250 additional 7.5' hi-res for low selling, out-of-stock quadrangles
- **7.5 Minute Digital Topographic Maps**
  - Customer input on prototype products
  - Develop streamlined production process
  - Produce topographic maps based on quality and currentness of available data
- **Data Download**
  - Data download prototypes



## US Topo Maps

- Produced from best-available orthophoto
  - Preferred NAIP Imagery, 1-Meter Resolution, Tonal-Balanced
- Produced in response to program or national needs
- Rapid, semi-automatic, production methods
- Georeference PDF format
- 1:24,000-Scale

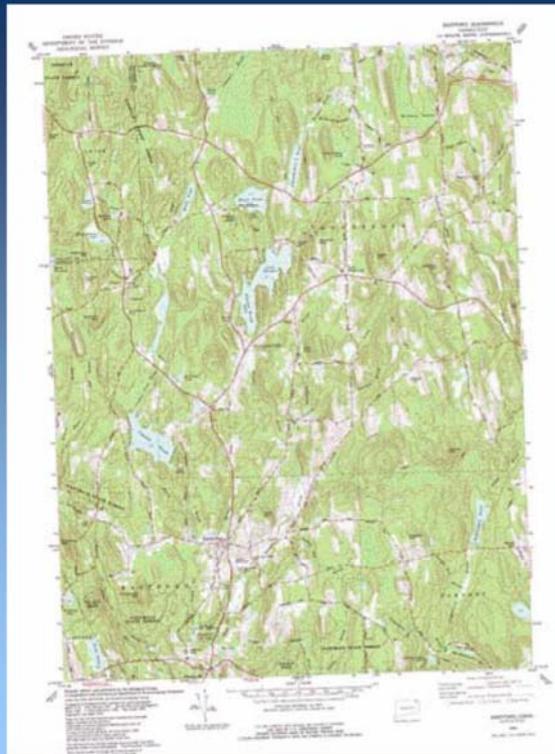
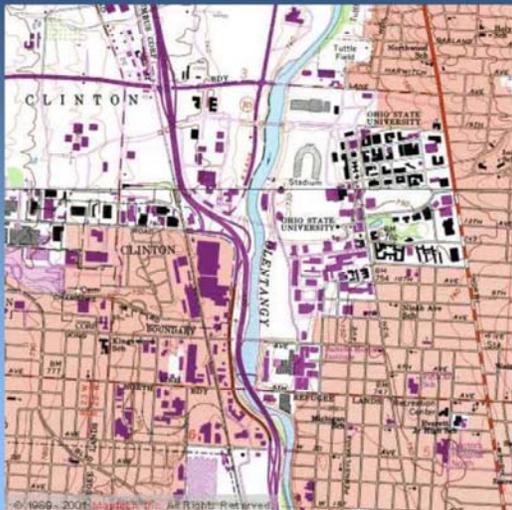


## US Topo Maps

- Framed with 7.5-Minute Projection Line
- Overlays (Overlays in Blue may be Added over Time)
  - Major Towns, Local Names, Local Names & Major Road Symbols
  - Full-Line National Grid with Labels
  - Minimum Map Margin Information and Credit Notes
  - Hydrographic names
  - Enhanced, Layered & Georeferenced PDF



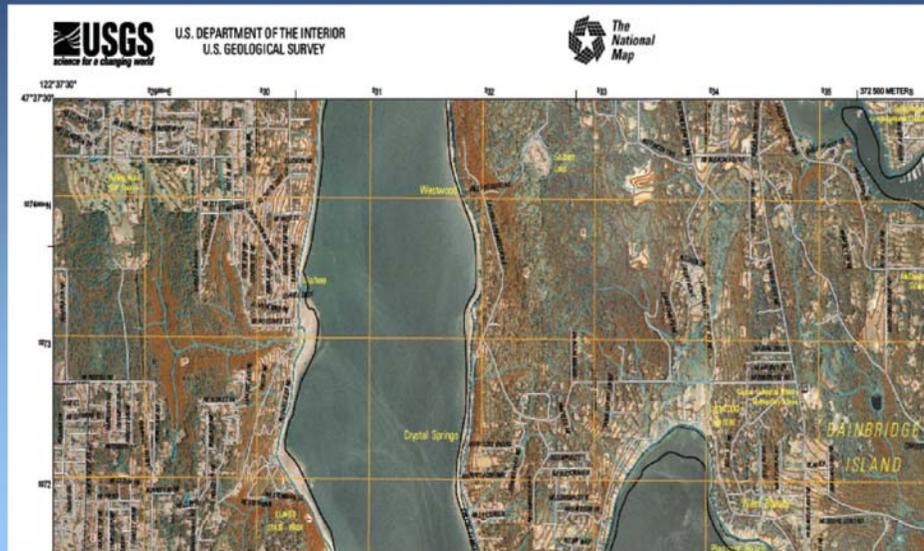
# Topographic Maps



# Sample Image Map



## Sample US Topo Map

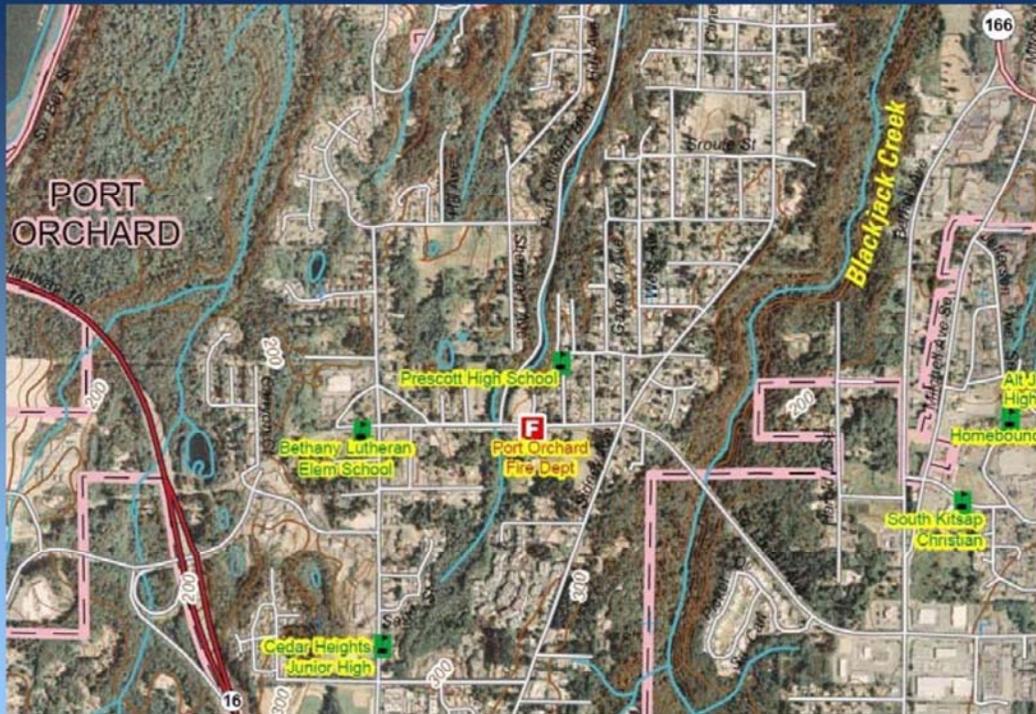


## Topographic Map Content and Quality

- Made only using suitable data
  - Defined in the Product Specification
  - Critical Need – National Coverage of Data for Mapping
- Differences will be apparent between published and *new US Topo Quads*
- Enhanced, layered & georeferenced PDF file format







## Partner Support Needed

### ■ Data Integration

- Integrate their Data with others' Data
  - Vertically
  - Horizontally
- Integrate Data with the National Data
- Build Commitment within the State to Integrate State-Level Data from Cities, Counties, and other Agencies
- Work with Adjoining States to Maintain Seamlessness of Geospatial Data Across State Boundaries



## Reasons for Retaining *The National Map* Data in the Public Domain



WY gas field development

An Informed Public is a Hallmark of a Democratic Society



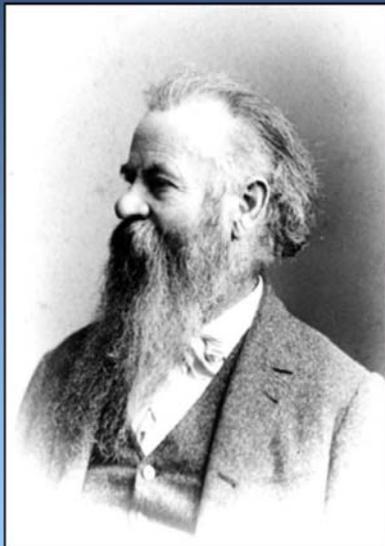
Colorado beetle kill



Anytown, USA



## Powell on National Mapping



Testimony to Congress on December 5, 1884

*“A Government cannot do any scientific work of more value to the people at large, than by causing the construction of proper topographic maps of the country”*



## Contact Information

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Cell Ph: 405-443-6879

Email: [dwilliams@usgs.gov](mailto:dwilliams@usgs.gov)



**Thank You!**



**WHAT CAN I USE  
THIS MAPPING FOR**

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**Mapping Session**

# What Can I Use All This Mapping For?

Presented by Troy Frazier, OTC

**Troy Frazier, CMS  
Cartographer  
Ad Valorem Division**

**Phone: (405) 319-8200**

**Facsimile: (405) 521-0166**

**E-mail: [tfrazier@tax.ok.gov](mailto:tfrazier@tax.ok.gov)**

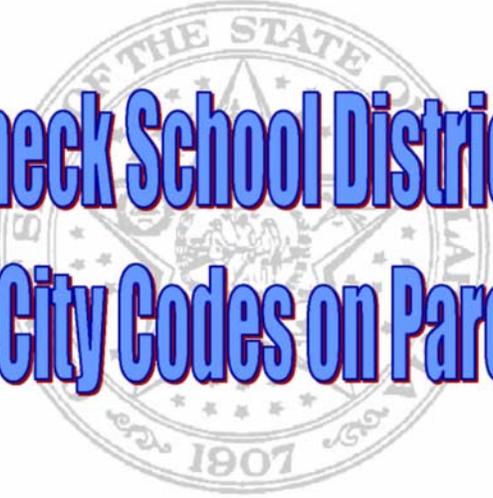
**Mailing Address:**

**PO Box 269060, Oklahoma City, Ok 73126-9060**

**We offer county visits, remote  
“TeamViewer” help sessions,  
phone help, and quarterly  
ArcView training at the CLGT  
computer lab in Stillwater.  
We supply you with all free  
mapping data we can find.**



**Why do you map  
and what can you  
do with it?**



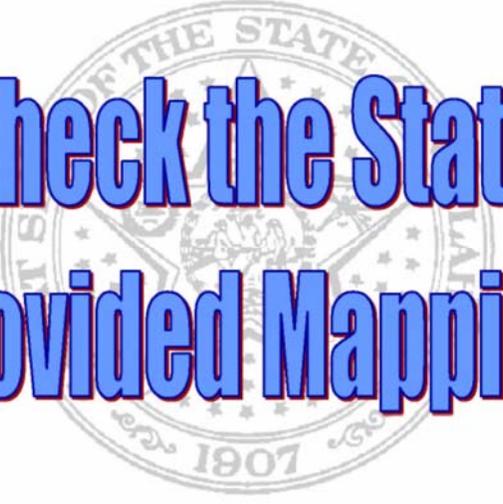
**Check School District  
and City Codes on Parcels**

**Title 68  
Article 28. Ad Valorem Taxes**

---

**§2815.2. County Assessor Maintain Current Boundary  
Description of School Districts.**

The county assessor shall maintain and use the current boundary descriptions of each and every school district or part of a district in the county furnished by the State Department of Education pursuant to Section 4-104 of Title 70 of the Oklahoma Statutes.



# Check the State Provided Mapping

**Title 11**  
**Article 21. Cities and Towns**

---

**§21-112. Record Regarding Territory Annexed or Detached.**

When any territory is annexed to or detached from a municipality, whether by ordinance or court order, the mayor shall file and record a duly certified copy of the ordinance or court order, together with an accurate map or plat of the territory, in the office of the county clerk of the county in which the territory, or the greater portion of it, is located and with the Ad Valorem Division of the Oklahoma Tax Commission. The record in the office of the county clerk shall be conclusive evidence of such annexation or detachment.



# Assist With Fair and Equitable Valuation of Property

**Title 68**  
**Article 28. Ad Valorem Taxes**

---

**§2821. Physical Inspection of Real Property - Recording of Information –  
Comprehensive Sales File - Drafting Facilities.**

A. Each county assessor shall cause real property to be physically inspected as part of the visual inspection cycle and shall require such examination as will provide adequate data from which to make accurate valuations.

B. The information gathered from the physical inspection shall be relevant to the type of property involved, its use category, the valuation methodology to be used for the property, whether the methodology consists of the cost approach, an income and expense approach or sales comparison approach, and shall be complete enough in order to establish the fair cash value of the property in accordance with accepted standards for mass appraisal practice.

C. Information gathered during the physical inspection shall be recorded using a standard method as prescribed by the Oklahoma Tax Commission in computerized or noncomputerized form. The information may include property ownership, location, size, use, use category, a physical description of the land and improvements or such other information as may be required.

D. In order to conduct the visual inspections of real property during the four-year cycle, **each county assessor shall acquire and maintain cadastral maps and a parcel identification system. The standards for the cadastral maps and the parcel identification system shall be uniform for each county of the state and shall be in such form as developed by the Ad Valorem Task Force.**

E. The county assessor shall maintain a comprehensive sales file for each parcel of real property within the county containing relevant property characteristics, sales price information, adjustments to sales price for purposes of cash equivalency, transaction terms and such other information as may be required in order to establish the fair cash value of taxable real property.

**Each county assessor shall ensure that the office is equipped with adequate drafting facilities, tools, equipment and supplies in order to produce or update maps, sketches or drawings necessary to support the proper administration of the ad valorem tax and such other tools or equipment as may be required to perform duties imposed by law for the discovery and valuation of taxable property.**



**Help With the Purchase  
of Computer Hardware  
and Software  
(related to mapping)**

**Title 68**  
**Article 28. Ad Valorem Taxes**

---

**§2829.1. County Assessor Fee Revolving Fund.**

There is hereby created in the office of the county treasurer a revolving fund for the office of the county assessor, to be designated the **"County Assessor Fee Revolving Fund"**. The fund shall be a continuing fund, not subject to fiscal year limitations, **and shall consist of all fees collected by the assessor and all monies accruing to the fund.** Monies deposited to the fund shall be expended by the county assessor and **shall not be transferred to any other account for a purpose other than:**

- 1. For maintenance, replacement and upgrade of computer hardware and software associated with county assessor databases and geographic information systems; and**
- 2. To provide products and services generated from the database and geographic information system to both public and private parties.**

The intent of this section is to increase the net funding level available to the county assessor to maintain electronic databases and geographic information systems as required pursuant to Section 2829 of this title.

**Title 28**  
**Section 60. Ad Valorem Taxes**

---

**§60. County Assessor Fee Guide.**

All county assessors **shall charge and collect the following flat fees** to be uniform throughout the state, and the county assessor shall not be required to itemize or charge these fees pursuant to any other schedule, except as specifically provided by law:

For furnishing all records available for copying; in paper form and in a size 8 1/2" x 14" or smaller, and in one color on white paper, per page the fee shall be as provided in the Oklahoma Open Records Act, Section 24A.1 et seq. of Title 51 of the Oklahoma Statutes;

For furnishing standard maps; in paper form and **in one color on white paper or blue line**, per map and in the following standard sizes when available:

1. 'A' size approximately 8 1/2" x 11"..... \$5.00
2. 'B' size approximately 11" x 17"  
'C' size approximately 17" x 22"  
'D' size approximately 22" x 34"..... \$7.00
3. 'E' size approximately 34" x 44"..... \$10.00

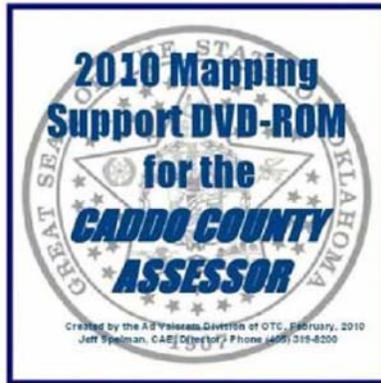
Individual property owners obtaining records for their own records shall be exempt from the provisions of this section.



**Some of What You  
Have at Your Disposal**



**The yearly Mapping  
Support DVD-ROM's**



This DVD-ROM contains:

- 2008aerials (1 meter mosaic color aerials)
- 2006aerials (2 meter mosaic color aerials)
- 2005aerials (2 meter mosaic color aerials)
- 2004aerials (2 meter mosaic color aerials)
- 2003aerials (1 meter mosaic color aerials)
- 1996aerials (1 meter mosaic black-white aerials)
- ROADS (2002 Census Road Layer)
- RAILROAD (2002 Census Railroad Layer (if applicable))
- WATER (pre-2000 Census Hydrology (Water) Layer)
- SOILS (NRCS Digitized Soil Map Layer)
- OTC-SCH ("official" school district boundaries)
- OTC-PREC (precinct boundaries)
- OTC-CITY (incorporated city limits)
- OTC-FEMA (FEMA flood map "FIRM" boundaries (if available))
- TatukGIS (a free mapping display program)

There are two directories on this CD:

First, in the "TatukGIS" directory is an installation program for a map viewer. You can install TatukGIS viewer by running the program called "TatukGIS\_VWR\_1\_12\_0\_365.exe".

Second, the "UTM" directory contains the above mentioned layers. This set of mapping layers is in "shapefile" format to be used in the TatukGIS viewer and ESRI products. All of these layers are the most current available.

# Digital Aerial Photography Rectified Photos Ortho-Photos

## Digital Aerial Photography

Digital aerial photography is any aerial photography available in a digital (or computer) format. These photos could be take by anything from a crop duster to a satellite in space. These photos can vary in quality and purpose. These photos can have anywhere from 10 meter to a half foot resolution. They can be in color or black and white. They can have some, most, or none of the distortions removed. They can be projected in Oklahoma State Planes, Albers, UTM, or not at all.

## **Rectified Photos**

Rectified photos have some of the distortions removed. They have the “tilt” (the camera on the plane not being level with the earth) displacements removed. This allows you to accurately measure acreages and distances off the aerials and accurately match property boundaries on flat land. However, use it at your own risk for hilly country. This type of aerial photography is what was supplied to most counties in 1991-93 by the OTC.

## **Ortho-Photos**

Ortho-photos have most of the distortions removed. They have the “tilt” (the camera on the plane not being level with the earth) and “relief” (the earth not being flat like the photo paper) removed. This allows you to accurately measure acreages and distances off the aerials and accurately match property boundaries. This type of aerial photography is the most useful for us. You should have copies of the 1995's, 2003's, 2004's, 2005's, 2006's, and 2008's.

## **The 1995 Aerial Photography**

In 1999, the State of Oklahoma agreed to pay for half of \$7 million needed to process the 1995, black & white, leaf-off, 1-meter aerial photo flight for the entire state. In 2000 & 2001, these aerial photos were supplied to you by the Tax Commission.

## **The 2003 Aerial Photography**

In 2003, the FSA (Farm Services Administration), the NRCS (Natural Resources Conservation Service), and several county assessors agreed to pay for a new color, leaf-on, 1-meter aerial photo flight for the entire state. As soon as the photos became public-domain, they were supplied to all the counties.

## **The 2004 Aerial Photography**

In 2004, the FSA (Farm Services Administration) flew their color, leaf-on aerial photography without any partnerships. As a result, the photos were processed as 2-meter resolution instead of 1-meter. These photos were supplied to the counties this year.

## **The 2005 Aerial Photography**

In 2005, the FSA (Farm Services Administration) once again flew their color, leaf-on aerial photography without any partnerships. And again, the photos were processed as 2-meter. These photos were supplied to the counties this year.

## **The 2006 Aerial Photography**

**In 2006, the FSA (Farm Services Administration) once again flew their color, leaf-on aerial photography without any partnerships. And again, the photos were processed as 2-meter. These photos were supplied to the counties this year.**

## **The 2007 Aerial Photography**

**None was flown.**

## **The 2008 Aerial Photography**

**In 2008, the FSA (Farm Services Administration) once again flew their color, leaf-on aerial photography without any partnerships. This time, the photos were processed as 1-meter. These photos were supplied to the counties this year.**

# **The 2009 Aerial Photography**

**None was flown.**

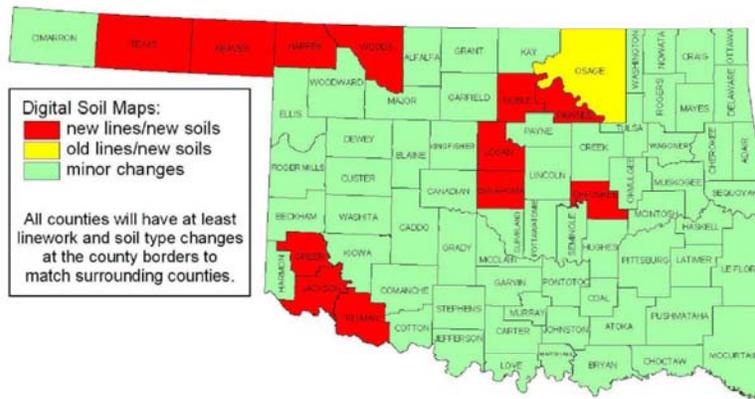
# **The 2010 Aerial Photography**

**In 2007, the FSA (Farm Services Administration) decided to fly better resolution (1-meter), color, leaf-on aerial photography. Their plan was to fly each state once every three years. Our last flight was the 2008's. Our next flight will be finished in early Fall 2010 but was actually scheduled for Spring 2011.**

# **The Digital Soil Layer**

**The NRCS (Natural Resources Conservation Service) started converting their soil books into digital mapping layers during the 1990's. All 77 counties are now digitized. Having a digital soil layer, a parcel layer, and a land use layer allows automated ag land valuation based on approved State methodology.**

# Status of Soil Maps



Map created by the Ad Valorem Division of OTC, June 24, 2008  
Jeff Spelman, CAE, Director - Phone (405) 319-8200

**Let's Not Forget:**  
**Parcels**  
**Lots**  
**Blocks**  
**Subdivisions**  
**Roads**  
**Etc...**

**And Web Mapping:**

- [www.cartercountyassessor.org](http://www.cartercountyassessor.org) (interactive)
- [www.clevelandcountyassessor.us](http://www.clevelandcountyassessor.us) (interactive)
- [www.garfieldcountyassessor.com](http://www.garfieldcountyassessor.com) (pay site)
- [www.lincolnessessor.org](http://www.lincolnessessor.org) (interactive)
- [www.rogerscounty.org/assessor/index.htm](http://www.rogerscounty.org/assessor/index.htm) (interactive)
- [www.assessor.tulsacounty.org](http://www.assessor.tulsacounty.org) (pdf)

# **WRITING VBA MACROS**

## Advanced ArcGIS (Writing VBA Marcos)

"Visual Basic for Applications" (VBA) is a common programming language that can be used in almost any Windows based software. It is derived from Visual Basic 6 and allows the user to modify the program to better fit what is needed. Here, at first, we will examine basic VBA commands that we can use in various places in the ArcGIS environment.

### Common VBA numeric commands:

**x^y** gives **x** number to the **y** power

MyNum = **8^2** is the same as 8x8x8 which gives 512.

**x\*y** gives **x** number multiplied by **y** number

MyNum = **8\*7** is the same as 8x7 which gives 56.

**x/y** gives **x** number divided by **y** number (this can give you a decimal answer)

MyNum = **8/2** is the same as 8÷2 which gives 4.

**x\y** gives **x** number divided by **y** number (this gives you a integer or whole number answer)

MyNum = **100\3** is the same as the whole number of 100÷3 which gives 33.

**x+y** gives the sum of **x** number plus **y** number

MyNum = **5+6** gives 11.

**x-y** gives the different of **x** number minus **y** number

MyNum = **8-7** gives 1.

**Abs( x )** gives the absolute value of any number **x**

MyNum = **Abs(-64)** gives 64, MyNum = **Abs(64)** gives 64.

**Int( x )** gives the integer (or whole number) portion of any number **x**

MyNum = **Int(3.14)** gives 3.

**Round( x, y )** gives number **x** rounded to the **y** decimal point

MyNum = **Round(3.14, 1)** gives 3.1.

**Sqr( x )** gives the square root of any number **x**

MyNum = **Sqr(64)** gives 8.

**Val( string )** gives the numeric value of any number **string**

MyNum = **Val("11325 Justin Rd")** gives 11325, MyStr =**Val("11 N 25th")** gives 11.

### Common VBA string (text) commands:

**Concatenating (adding strings together)** use either **+** or **&**

MyStr = "Hi" **&** " " **&** "There" gives "Hi There".

**Format( string, format )** gives the **string** (or label) used in the **format** specified

MyStr = **Format(MyTime, "h:m:s")** gives "17:4:23".

MyStr = **Format(MyTime, "hh:mm:ss AMPM")** gives "05:04:23 PM".

MyStr = **Format(MyDate, "dddd, mmm d yyyy")** gives "Wednesday, Jan 27 1993".

MyStr = **Format(5459.4, "##,##0.00")** gives "5,459.40".

MyStr = **Format(3.9, "###0.00%")** gives "390.00%".

MyStr = **Format**("HELLO", "<") gives "hello".

MyStr = **Format**("This is it", ">") gives "THIS IS IT".

**LCase( string )** gives the **string** (or label) in lower case

MyStr = **LCase**("Hi There") gives "hi there".

**Left( string, x )** gives the portion of the **string** (or label) left of **x** places

MyStr = **Left**("Hi There", 4) gives "Hi T".

**Len( string )** gives character length of **string** (or label)

MyNum = **Len**("Hi There") gives 8.

**Mid( string, x, y )** gives the portion of the **string** (or label) starting at position **x** for **y** characters

MyStr = **Mid**("Hi There", 2, 3) gives "i T".

**Right(string, x )** gives the portion of the **string** (or label) right of **x** places

MyStr = **Right**("Hi There", 4) gives "here".

**Space( x )** used to insert **x** number of spaces into a string (or label)

MyStr = "Hi" & **Space**(10) & "There" gives "Hi        There"

**Str( x )** gives a string value to any number **x**

MyStr = **Str**(11325) gives "11325".

**UCase( string )** gives the **string** (or label) in upper case

MyStr = **UCase**("Hi There") gives "HI THERE".

**vbNewLine** gives a new line (or carriage return) in the string (or label)

MyStr = "Hi" & **vbNewLine** & "There" gives

"Hi"

"There".

### Common VBA date commands:

**Date** gives current date

MyStr = **Format**(**Date**, "dddd, mmm d, yyyy") gives "Thursday, Aug 12, 2010".

**Now** gives current date and time

MyStr = **Format**(**Now**, " h:m, dddd, mmm d, yyyy") gives "2:11, Thursday, Aug 12, 2010".

**Time** gives current time

MyStr = **Format**(**Time**, "hh:mm:ss AMPM") gives "02:11:23 PM".

### VBA "If... Then" statements:

**If... Then** allows you to set a condition on doing something

**If... Then... Else** allows you to do one thing or something **Else** based on a condition

**If** x < 10 **Then**

    MyStr = "small"

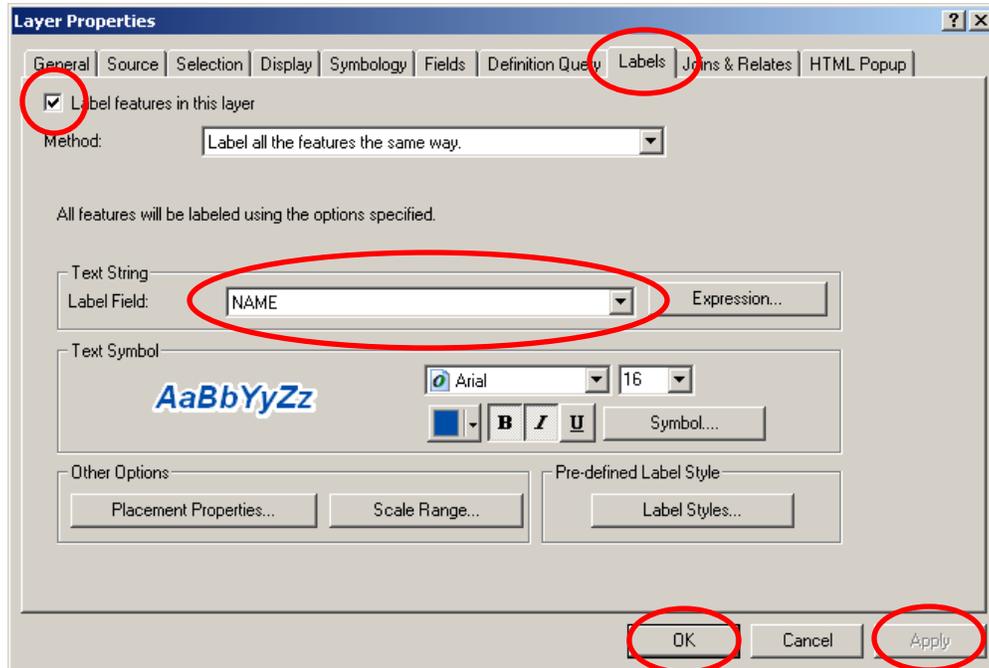
**Else**

    MyStr = "large"

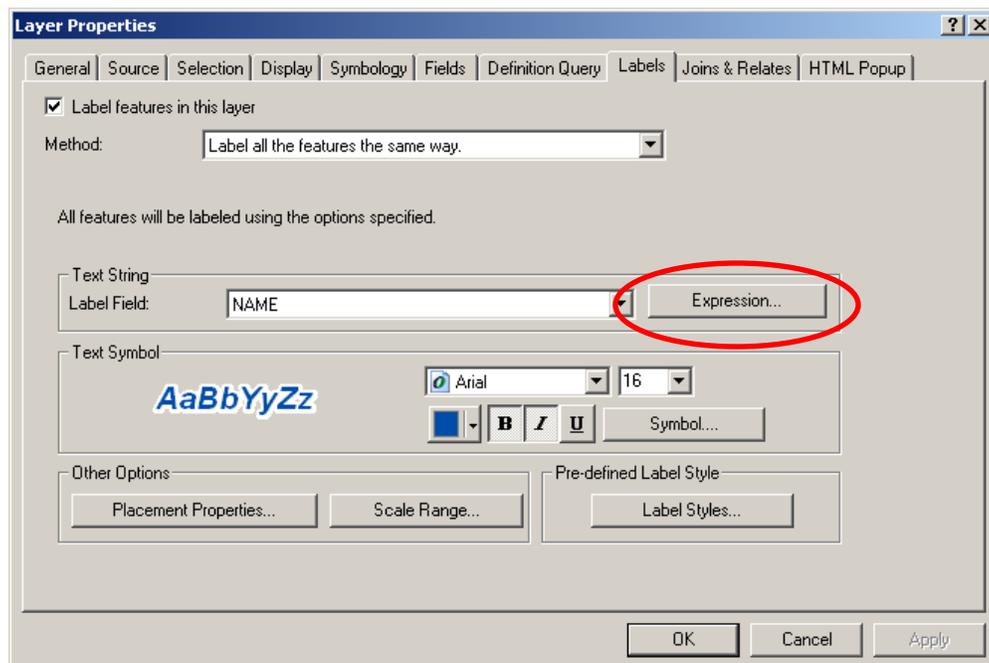
**End If**

## Basic labeling:

Go to the **Layer Properties** pop-up box, click on the **Labels** tab, and select a field from the **Label Field** list (*make sure the **Label features in this layer box** is checked*). After selecting your field, hit the **OK** or **Apply** buttons. (*OK closes the **Layer Properties** pop-up box. Apply does not.*)

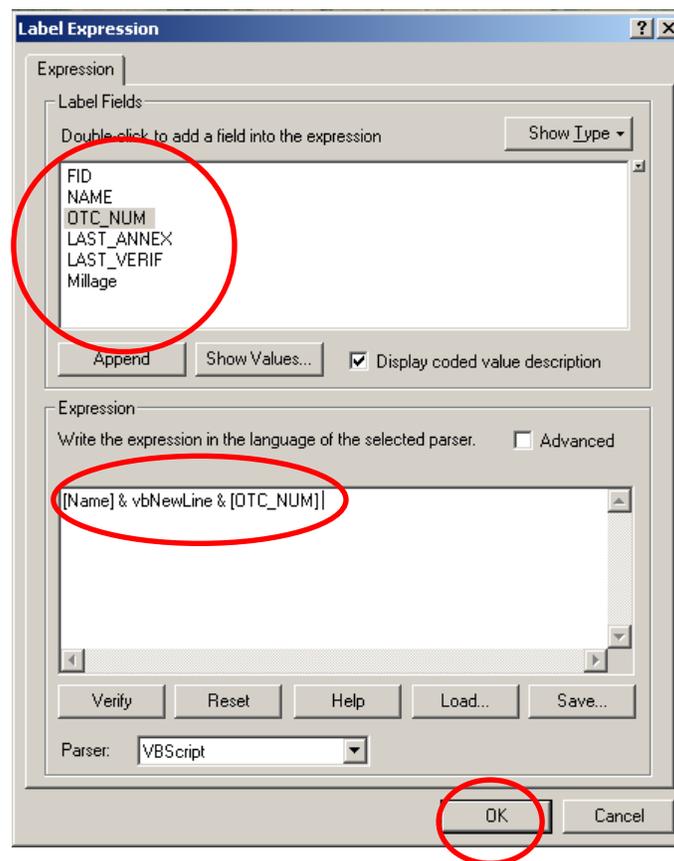


## Adding two or more fields to your labeling:



Click on the **Expression** button to pull up the **Label Expression** pop-up box.

Double-click on the fields you want to add from the **Label Fields** list. Then, add **&** between fields that you want on the same label line on the map. Add **& vbNewLine &** between fields you want on separate label lines on the map. Hit the **OK** button to close the **Label Expression** pop-up box.

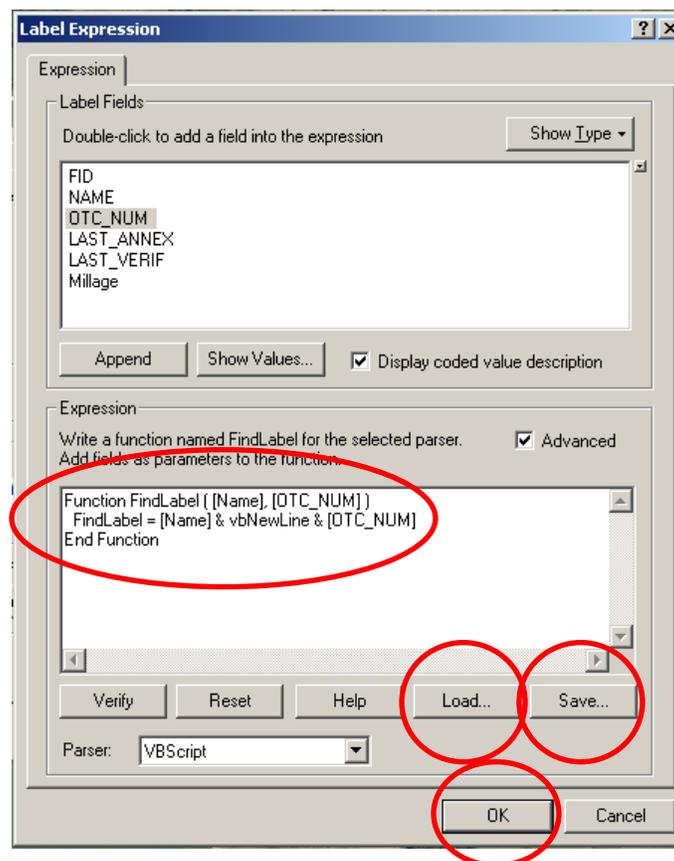


## Using the Advanced (VBA) option for your labeling:

Click on the **Advanced** button in the **Label Expression** pop-up box. Notice the changes in the **Expression** window. Now you have a **Function FindLabel** line and an **End Function** line. You are now looking at Visual Basic!!

1. The **Function FindLabel** line is important. Notice that the fields chosen from the **Label Fields** list are inside the parenthesis. Each field is enclosed by brackets and they are separated by commas. In order to use a field anywhere in the **Expression** window, the field **MUST** be listed here first.
2. The **FindLabel =** line tells the map what to use for the map label.
3. Nothing can appear after the **End Function** line.

With these rules in mind, we can change the expression any way we want. We can save our expression code by hitting the **Save...** button. We can load previously created expression codes by hitting the **Load...** button. Just hit the **OK** button to close the **Label Expression** pop-up box.



**Some sample (VBA) code for your road labeling:**

```
Function FindLabel ( [FENAME] )  
  If Mid( [FENAME],1,2) = "I-" Then  
    FindLabel = Mid( [FENAME],3,3)  
  End If  
End Function
```

```
Function FindLabel ( [FENAME] )  
  If Mid( [FENAME],1,21) = "United States Highway" Then  
    FindLabel = Mid( [FENAME],23,3)  
  End If  
End Function
```

```
Function FindLabel ( [FENAME] )  
  If Mid( [FENAME],1,13) = "State Highway" Then  
    FindLabel = Mid( [FENAME],15,3)  
  End If  
End Function
```

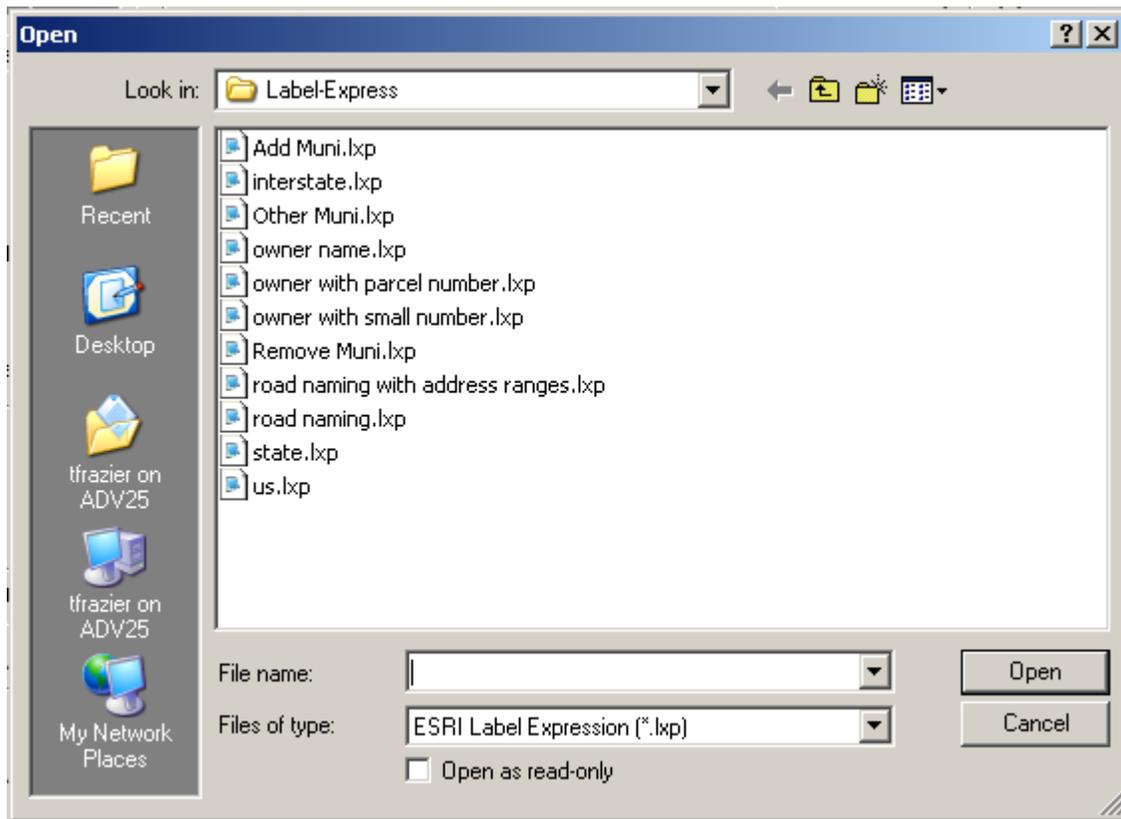
```
Function FindLabel ( [FENAME] )  
  If Mid( [FENAME],1,2) = "I-" Then  
    FindLabel = ""  
  ElseIf Mid( [FENAME],1,13) = "State Highway" Then  
    FindLabel = ""  
  ElseIf Mid( [FENAME],1,21) = "United States Highway" Then  
    FindLabel = ""  
  Else  
    FindLabel = [FENAME]  
  End If  
End Function
```

**Some sample (VBA) code for your ownership/parcel labeling:**

```
Function FindLabel ( [Owner] )
t = "False"
If Len( [Owner] ) >= 12 Then
  For i = 1 To Len( [Owner] )
    If Mid( [Owner], i, 1) = " " and t = "False" Then
      FindLabel = Mid( [Owner], (i + 1), 1) & " " & Left( [Owner], (i - 1))
      t = "True"
    End If
  Next
Else
  FindLabel = [Owner]
End If
End Function
```

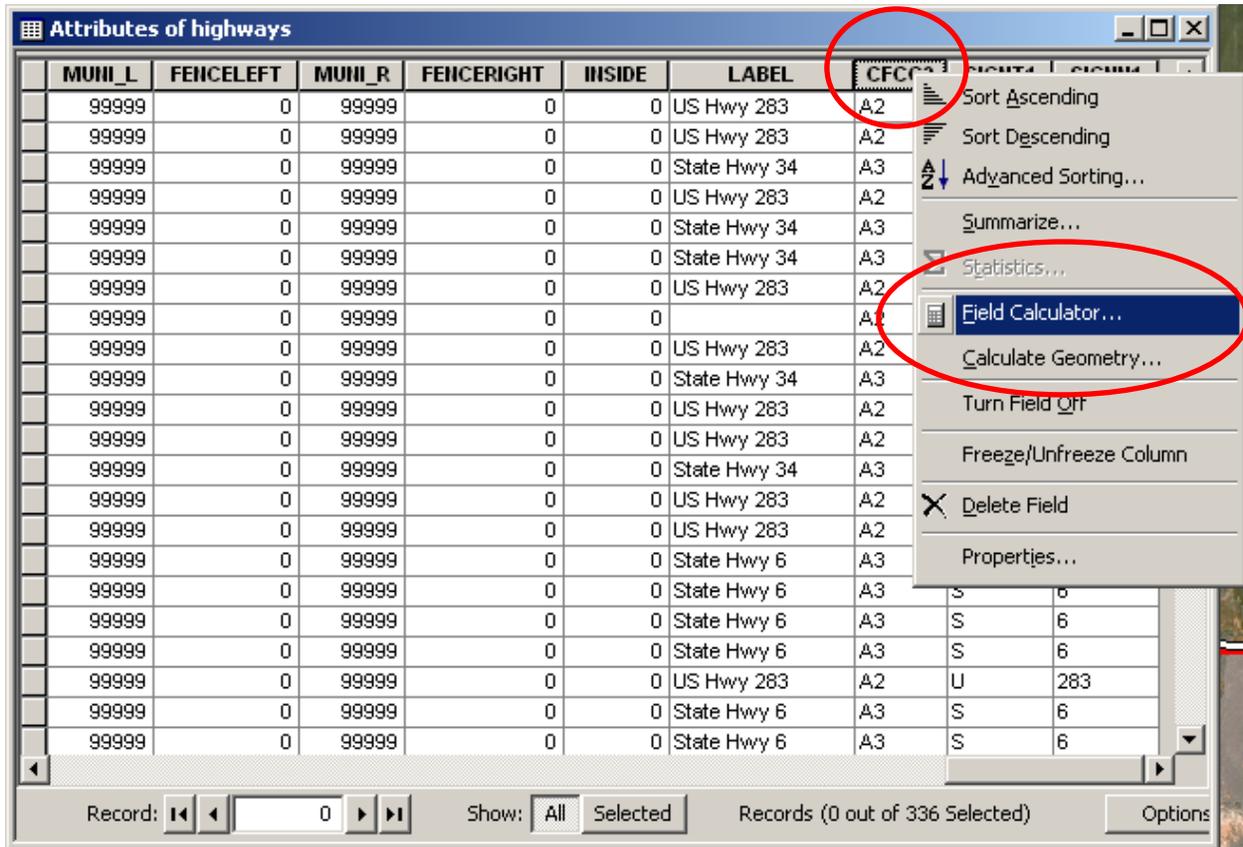
```
Function FindLabel ( [Owner], [ParcelID] )
t = "False"
If Len( [Owner] ) >= 12 Then
  For i = 1 To Len( [Owner] )
    If Mid( [Owner], i, 1) = "," and t = "False" Then
      FindLabel = Mid( [Owner], (i + 1), 1) & " " & Left( [Owner], (i - 1)) & vbNewLine &
[ParcelID]
      t = "True"
    End If
  Next
Else
  FindLabel = [Owner] & vbNewLine & [ParcelID]
End If
End Function
```

**Remember, you can create as many label codes as you have imagination:**



### Making field calculations in your attribute table:

Go to the attribute table of the layer of interest. Right-click on the name of the field of interest (the bold printed name on the top of the column). Click on the **Field Calculator** in the pop-up list.



### Basic field calculations:

To simply match the field match an existing one, just double-click on one of the fields found in the left window under **Fields:**. Notice that field now appears in the bottom window. Then, hit the **OK** button.

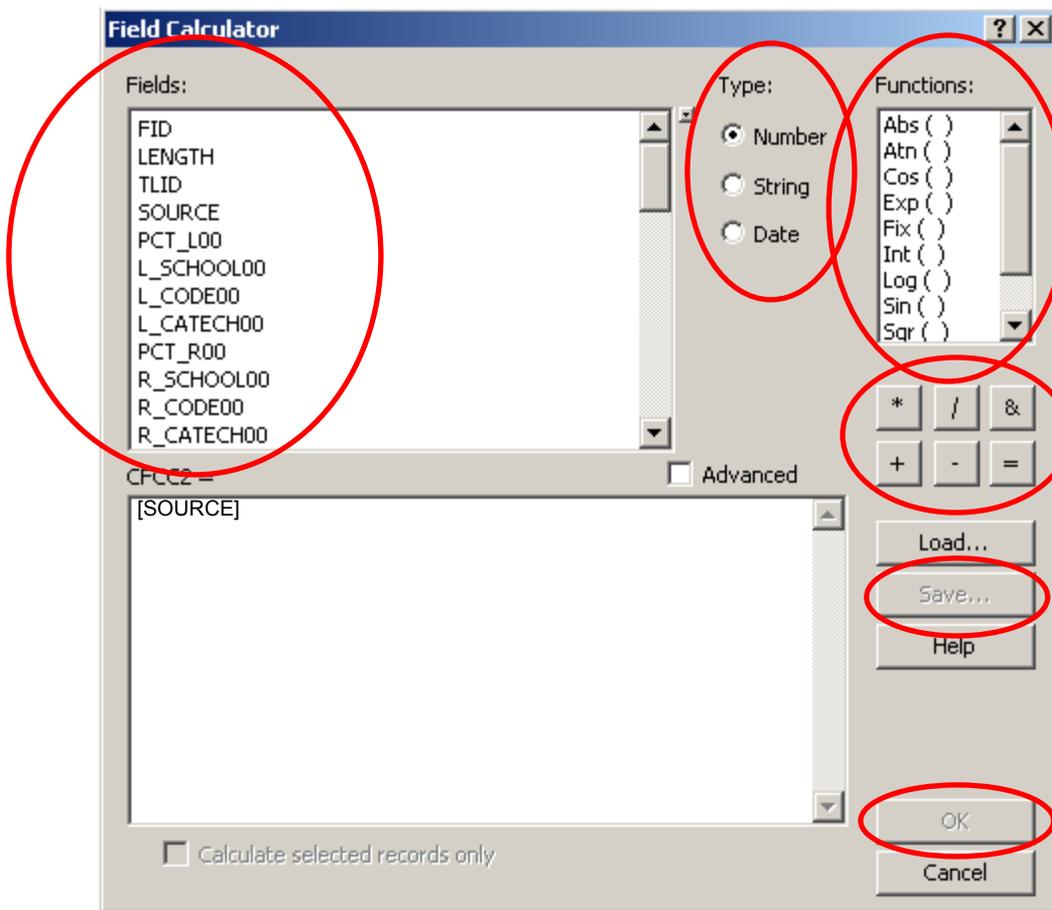
*If you copy data from a string field into a numeric field, you will only get numbers on the left side of each record ("11325 Justin Rd" = 11325, "12 N 5th Str" = 12, and "North 3rd Str" = 0).*

### More advanced field calculations:

Chose one of the functions from the right window under **Functions:**. Notice that there are three choices of functions just to the left. You can chose between **Number**, **String**, or **Date** functions. Double-click on with ever function you want to use. Notice that function now appears in the bottom window. Next, move the mouse down to the bottom window and click inside the parenthesis. Then, move the mouse back up to the left window and double-click on the field you want. After the field appears in its proper location in the bottom window, finish the function as described in the first two pages of this manual. Finally, hit the **OK** button to execute (or **Save...** first and then hit the **OK** button).

Notice the mathematic buttons below the Functions: window. You can use these as well. If you want to add two fields together, go ahead. REMEMBER, two numeric fields added together get the resulting mathematic result (4 + 5 will give you 9). Two string (text) fields will give you the combination of both fields. ("Justin" + "Rd" will give you "JustinRd".) Combining numeric and string fields together may be unpredictable.

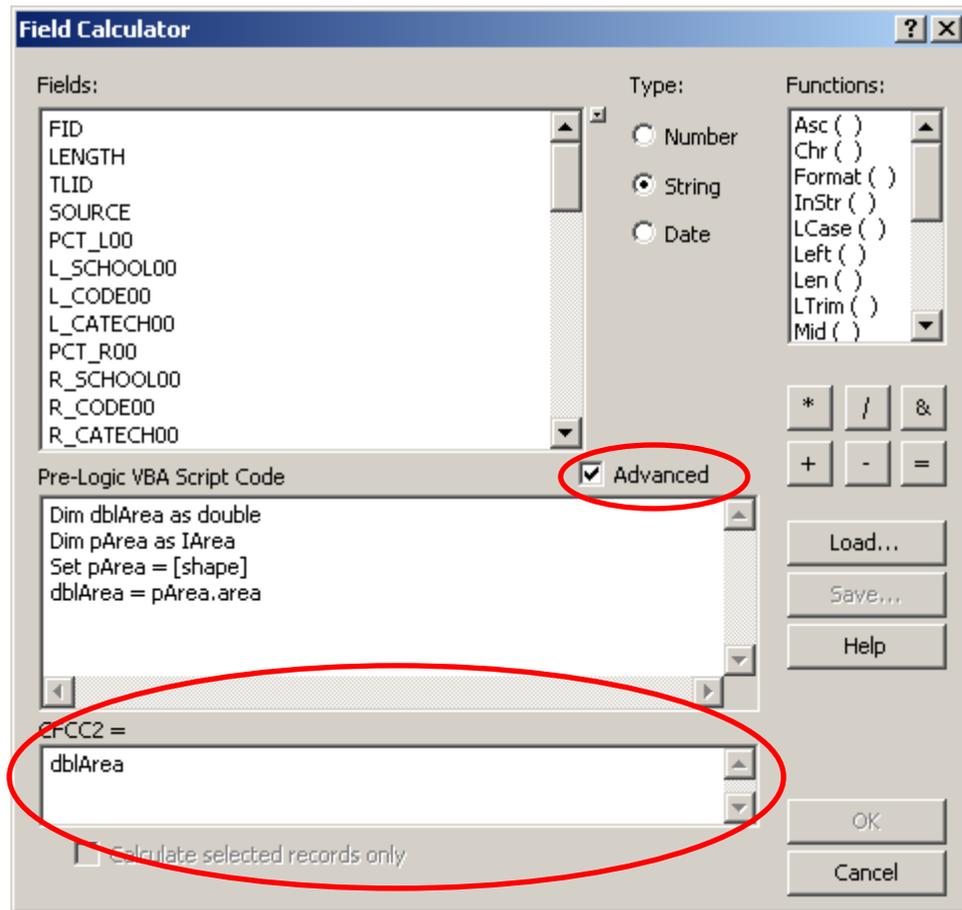
*You may get errors. What type of field are you calculating on? You can do numeric functions resulting into a string field but you cannot do string functions resulting into a numeric field. You cannot do numeric functions using a string field source or string functions on a numeric field source.*



### Using the Advanced (VBA) option for your field calculating:

The advantages of the advanced **Field Calculator** are that you can use measurements from the layers themselves instead of whatever may be typed into a table. Plus, you can use **If... Then** statements.

Click on the **Advanced** button. Notice the new, smaller window on the bottom. This window is for assigning the variable from the VBA code that will be used to our resulting variable for our field we are calculating.



Here are some new commands that we use to create temporary variable to calculate with.

- **Dim x as double** – creates **x** as a numeric variable that can have decimal number
- **Dim x as integer** – creates **x** as a numeric variable that can have only whole numbers
- **Dim x as string** – creates **x** as a string (text) variable
- **Dim pCurve as ICurve** – creates **pCurve** as a special ArcGIS numeric variable that measures layer shape lengths
- **Dim pArea as IArea** – creates **pArea** as a special ArcGIS numeric variable that measures layer shape areas
- **[shape]** – This tells the code to actually measure the shapes in the layer. Generally, one of the special ArcGIS variables is **SET** equal to it somewhere in the equation. (**Set pArea = [shape]**)
- **.area** or **.length** – This tells the code to give you the actual measurement taken and place it into your regular, numeric variable (**x = pArea.area** or **x = pCurve.length**). *The [shape], pArea or pCurve, and .area or .length statements must all be consistent!!!!*

**Some sample (VBA) code for simple polygon area calculations:**

```

Pre-Logic VBA Script Code  Advanced
Dim dblArea as double
Dim pArea as IArea
Set pArea = [shape]
dblArea = pArea.area
    
```

CFCC2 =

dblArea

**Same code for converting square feet to acres, rounding to the 5<sup>th</sup> decimal point:**

```

Pre-Logic VBA Script Code  Advanced
Dim dblArea as double
Dim pArea as IArea
Set pArea = [Shape]
dblArea = Round((pArea.area / 43560), 5)
    
```

CFCC2 =

dblArea

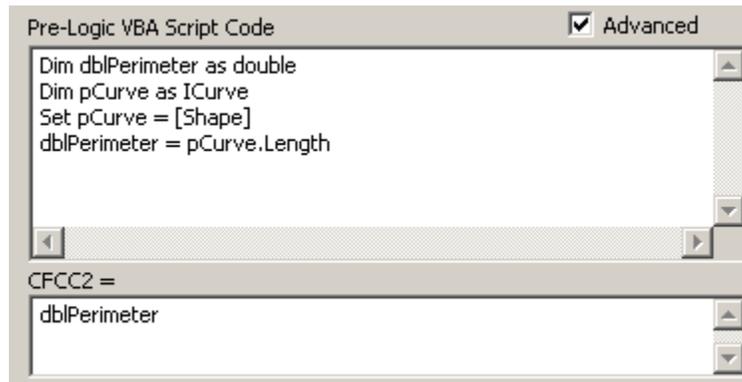
**Same original code converting from square meters to acres:**

```

Pre-Logic VBA Script Code  Advanced
Dim dblArea as double
Dim pArea as IArea
Set pArea = [shape]
dblArea = pArea.area/0.0929/43560
    
```

CFCC2 =

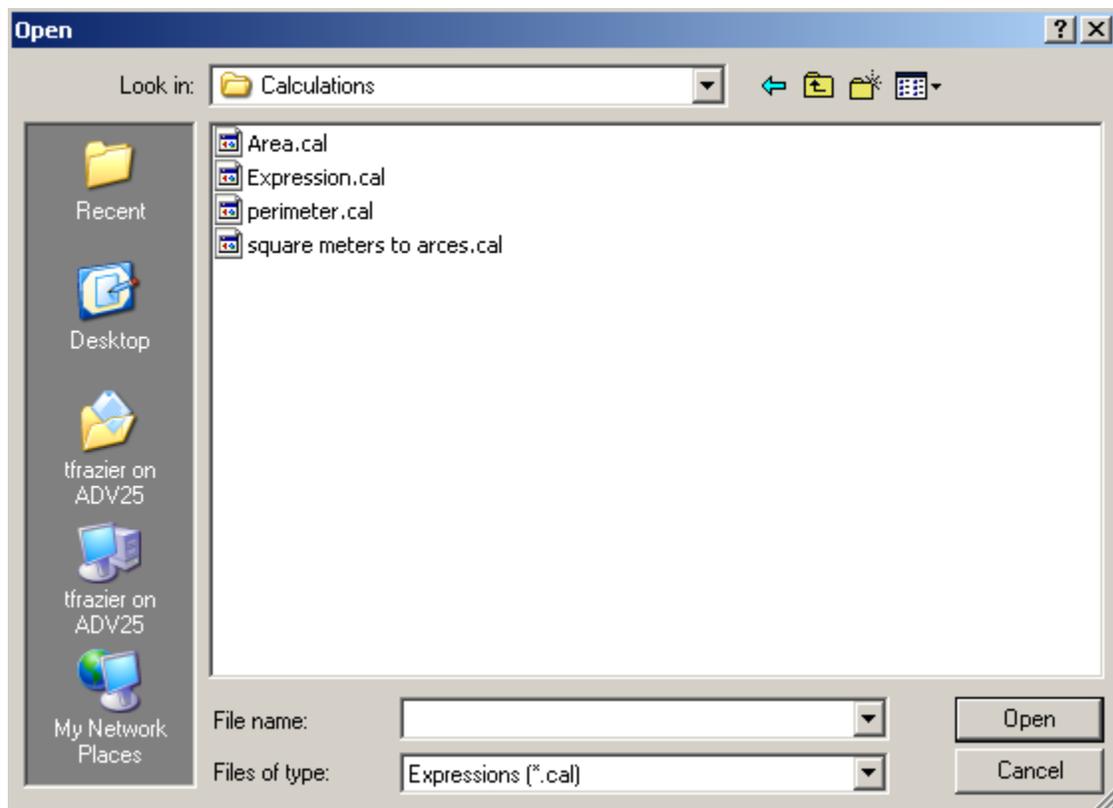
dblArea

**Some sample (VBA) code for simple line layer length calculations:**

```
Pre-Logic VBA Script Code  Advanced
Dim dblPerimeter as double
Dim pCurve as ICurve
Set pCurve = [Shape]
dblPerimeter = pCurve.Length

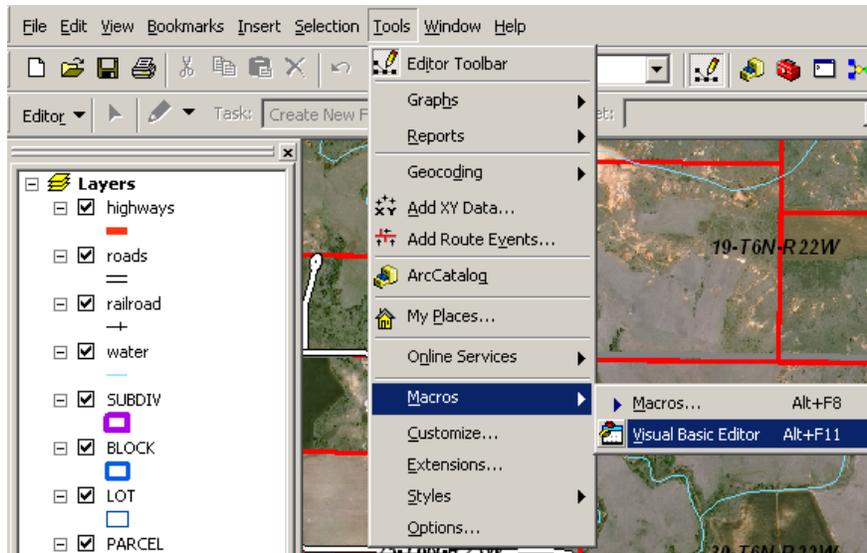
CFCC2 =
dblPerimeter
```

**Remember, you can create as many field calculation codes as you want:**

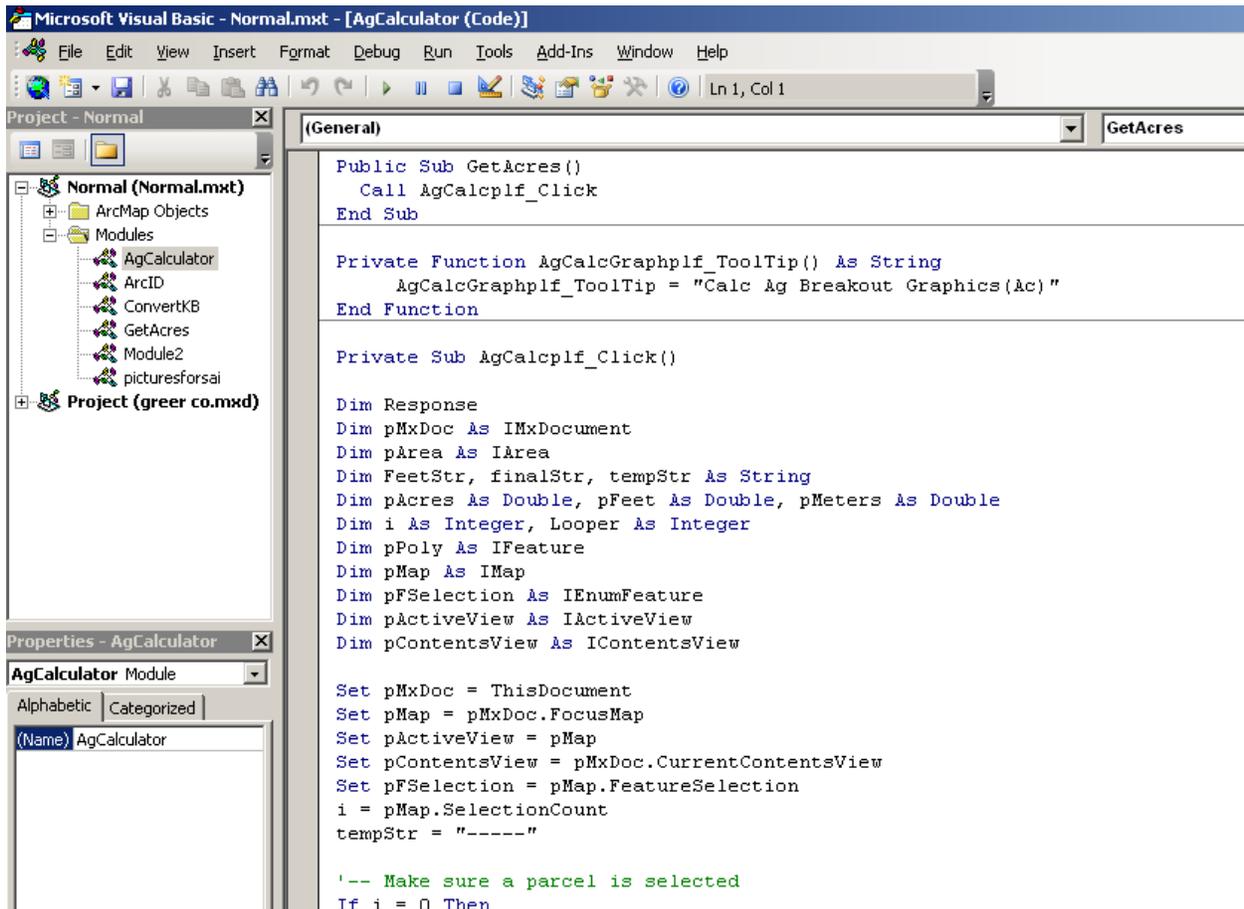


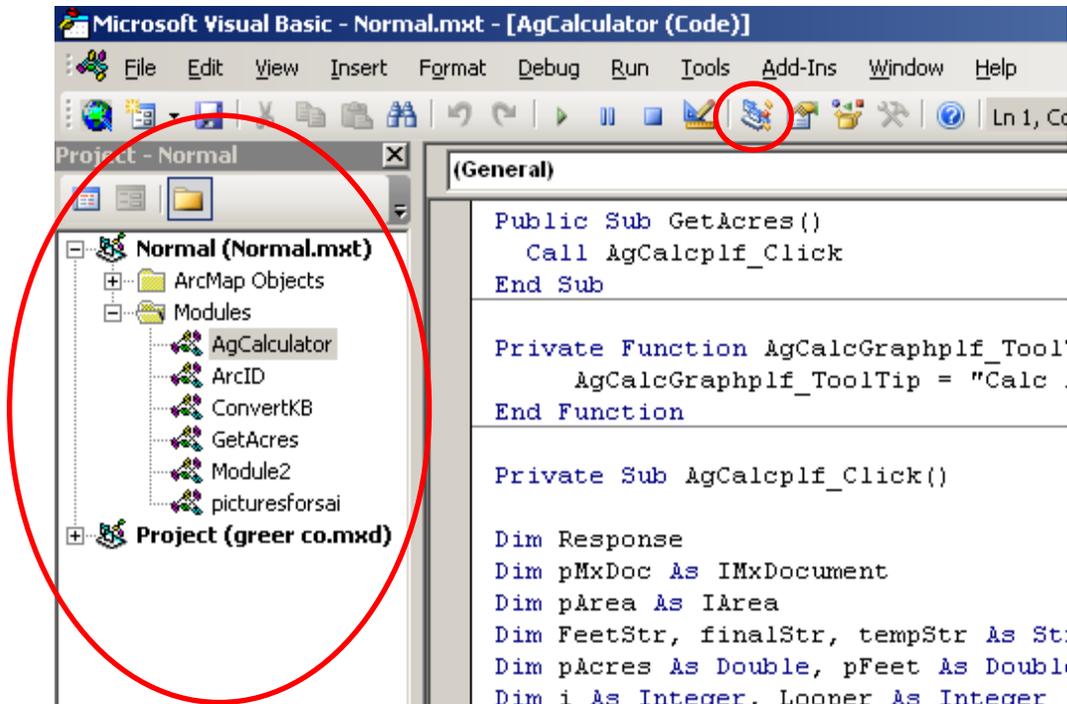
### Writing VBA macros with the Windows standard Visual Basic Editor:

Look at your main menu and click on the **T**ools option. Then, highlight the **M**acro option in the pop-up list. Click on the **V**isual Basic Option on the new pop-up list to open the Visual Basic Editor.



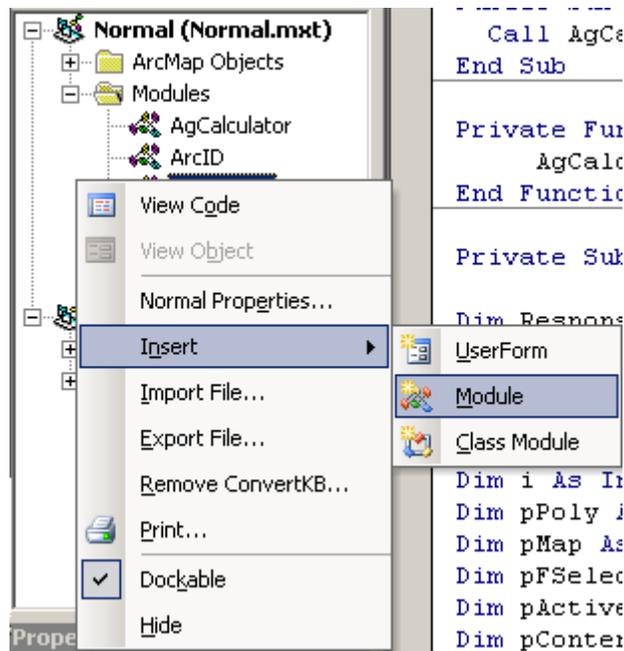
Here it is!!!





When the Visual Basic Editor window pops up, make sure that you can see the **Project Explorer** window. If not, click on the **Project Explorer** button.

As we load, create, modify, and save code, we will be using Modules which will be placed, found under the **Normal (Normal.mxt)** project. This way, whatever we do will be available on the rest of our ArcGIS projects.



When you right-click under the **Normal (Normal.mxt)**, you have the options to **Insert Module** (create a new one), **Import File...** (import an existing module), **Export File...** (save a modified/new module), and **Remove...** (remove/delete highlighted module from project).

**So, let's have some fun.....**

**Here is the "GetAcres" module:**

```
Public Sub GetAcres()  
    Call Calcplf_Click  
End Sub
```

```
Private Function CalcGraphplf_ToolTip() As String  
    CalcGraphplf_ToolTip = "CalcAcreage(Ac)"  
End Function
```

```
Private Sub AgCalcplf_Click()  
    Dim Response  
    Dim pMxDoc As IMxDocument  
    Dim pArea As IArea  
    Dim FeetTotal, pFeet As Double  
    Dim i As Integer, Looper As Integer  
    Dim pPoly As IFeature  
    Dim pMap As IMap  
    Dim pFSelection As IEnumFeature  
    Dim pActiveView As IActiveView  
    Dim pContentView As IContentView  
  
    Set pMxDoc = ThisDocument  
    Set pMap = pMxDoc.FocusMap  
    Set pActiveView = pMap  
    Set pContentView = pMxDoc.CurrentContentView  
    Set pFSelection = pMap.FeatureSelection  
  
    i = pMap.SelectionCount  
  
    '-- Make sure a parcel is selected  
    If i = 0 Then  
        MsgBox "Please select one or more parcels"  
        Exit Sub  
    End If  
  
    Do Until Looper = i  
        Set pPoly = pFSelection.Next  
        Looper = Looper + 1  
        Set pArea = pPoly.Shape  
        pFeet = pArea.Area * 3.280839895 * 3.280839895 / 43560 '-- converts from map units (meters) to feet  
then acres  
        FeetTotal = pFeet + FeetTotal  
    Loop  
  
    MsgBox "Total Acres: " & Format(FeetTotal, "#,###.##")  
End Sub
```

**Here is the "ConvertKB" module:**

```
Public Sub subGetCASMAP()
  Call subConvertCASMAP
  Call subADDCASMAP
  Call subJoinCASMAP
End Sub
```

```
Public Sub subConvertCASMAP()
  Dim strFiller, strParcelID, strOwner, strAddr1, strAddr2, strCity, strState, strZip As String
  Dim strSch, strLegal, strAcres, strOwnerPerc, StrMktLand, strAssdLand, strMktImp As String
  Dim strAssdImp, strMktOther, strAssdOther, strExempt, strDbExempt, strImage As String
  Dim strBookPage, strSitusName, StrSitusDir, strSitusType, strSitusNumber, strTax, strUse As String

  If FileSystem.Dir("C:\MAPPING\CASMAP.TAB") = "C:\MAPPING\CASMAP.TAB" Then
    FileSystem.Kill "C:\MAPPING\CASMAP.TAB"
  End If

  Open "F:\ASCII\CASMAP.DAT" For Input As 1
  Open "C:\MAPPING\CASMAP.TAB" For Output As 2

  Print #2, "ParcelID" & Chr$(9) & "Owner" & Chr$(9) & "Addr1" & Chr$(9) & "Addr2" & Chr$(9) & _
    & "City" & Chr$(9) & "St" & Chr$(9) & "Zip" & Chr$(9) & "Situs" & Chr$(9) & "School" & _
    Chr$(9) & "Use" & Chr$(9) & "Acres" & Chr$(9) & "OwnerPerc" & Chr$(9) & "MktLand" & Chr$(9) & _
    & "AssdLand" & Chr$(9) & "MktImp" & Chr$(9) & "AssdImp" & Chr$(9) & "MktOther" & Chr$(9) & _
    "AssdOther" & Chr$(9) & "Exemption" & Chr$(9) & "DbExempt" & Chr$(9) & "Tax" & Chr$(9) & _
    "Image" & Chr$(9) & "Book Page" & Chr$(9) & "Legal"

  Do Until EOF(1)
    strParcelID = Input(24, 1)
    strFiller = Input(1, 1)
    strOwner = Input(30, 1)
    strSitusName = Input(20, 1)
    StrSitusDir = Input(2, 1)
    strSitusType = Input(2, 1)
    strSitusNumber = Input(6, 1)
    strFiller = Input(32, 1)
    strUse = Input(1, 1)
    strAddr1 = Input(30, 1)
    strAddr2 = Input(30, 1)
    strFiller = Input(30, 1)
    strCity = Input(20, 1)
    strState = Input(2, 1)
    strZip = Input(5, 1) & "-" & Input(4, 1)
    strFiller = Input(6, 1)
    strSch = Input(5, 1)
    strLegal = Input(255, 1)
    strFiller = Input(1267, 1)
    strBookPage = Input(6, 1) & "/" & Input(6, 1)
    strAcres = Input(4, 1) & "." & Input(2, 1)
    strFiller = Input(6, 1)
    strOwnerPerc = Input(1, 1) & "." & Input(5, 1)
    strFiller = Input(1, 1)
    StrMktLand = Input(9, 1)
    strAssdLand = Input(9, 1)
    strMktImp = Input(9, 1)
    strAssdImp = Input(9, 1)
```

```

strMktOther = Input(9, 1)
strAssdOther = Input(9, 1)
strFiller = Input(18, 1)
strExempt = Input(6, 1)
strDbExempt = Input(6, 1)
strFiller = Input(22, 1)
strTax = Input(9, 1) & "." & Input(2, 1)
strFiller = Input(21, 1)
'reworking the parcel id number
strParcelID = Left(strParcelID, 5) & Mid(strParcelID, 14, 3) & _
Mid(strParcelID, 6, 8) & Mid(strParcelID, 17, 8)
strImage = "\\PICTURE DIRECTORY HERE\" & strParcelID & ".jpg"

Print #2, strParcelID & Chr$(9) & strOwner & Chr$(9) & strAddr1 & Chr$(9) & strAddr2 & Chr$(9) _
& strCity & Chr$(9) & strState & Chr$(9) & strZip & Chr$(9) & strSitusNumber & " " & StrSitusDir _
& " " & strSitusName & " " & strSitusType & Chr$(9) & strSch & Chr$(9) & strUse & Chr$(9) & _
strAcres & Chr$(9) & strOwnerPerc & Chr$(9) & StrMktLand & Chr$(9) & strAssdLand & Chr$(9) _
& strMktImp & Chr$(9) & strAssdImp & Chr$(9) & strMktOther & Chr$(9) & strAssdOther & _
Chr$(9) & strExempt & Chr$(9) & strDbExempt & Chr$(9) & strTax & Chr$(9) & strImage & _
Chr$(9) & strBookPage & Chr$(9) & strLegal
Loop

Close 1
Close 2
End Sub

```

```

Public Sub subADDCASMAP()
Dim pFact As IWorkspaceFactory
Dim pWorkspace As IWorkspace
Dim pFeatws As IFeatureWorkspace
Dim pTable As ITable

Set pFact = New TextFileWorkspaceFactory
Set pWorkspace = pFact.OpenFromFile("C:\MAPPING", 0)
Set pFeatws = pWorkspace
Set pTable = pFeatws.OpenTable("CASMAP.TAB")

Add_Table_TOC pTable
End Sub

```

```

Private Sub Add_Table_TOC(pTable As ITable)
Dim pDoc As IMxDocument
Dim pMap As IMap
Dim pStTab As IStandaloneTable
Dim pStTabColl As IStandaloneTableCollection

Set pDoc = ThisDocument
Set pMap = pDoc.FocusMap
Set pStTab = New StandaloneTable
Set pStTab.Table = pTable
Set pStTabColl = pMap

pStTabColl.AddStandaloneTable pStTab
pDoc.UpdateContents
End Sub

```

```

Public Sub subJoinCASMAP()
On Error GoTo errJoinCASMAP

```

```
Dim pDoc As IMxDocument
Dim pMap As IMap
Dim pFeatLayer As IFeatureLayer
Dim pDispTable, pDispTable2 As IDisplayTable
Dim pFCLayer As IFeatureClass
Dim pTLayer, pTTable As ITable
Dim intIndex As Integer
Dim pTabCollection As IStandaloneTableCollection
Dim pStTable As IStandaloneTable
Dim pMemRelFact As IMemoryRelationshipClassFactory
Dim pRelClass As IRelationshipClass
Dim pDispRC As IDisplayRelationshipClass

Set pDoc = ThisDocument
Set pMap = pDoc.FocusMap

intIndex = 0

Do While pMap.Layer(intIndex).Name <> "Parcel" And intIndex < pMap.LayerCount
    intIndex = intIndex + 1
Loop

If pMap.Layer(intIndex).Name <> "Parcel" Then
    MsgBox "Must have a Parcel layer loaded to use this function"
    Exit Sub
End If

Set pFeatLayer = pMap.Layer(intIndex)
Set pDispTable = pFeatLayer
Set pFCLayer = pDispTable.DisplayTable
Set pTLayer = pFCLayer
Set pTabCollection = pMap

intIndex = 0

Do While pTabCollection.StandaloneTable(intIndex).Name <> "CASMAP.TAB" And _
    intIndex < pTabCollection.StandaloneTableCount
    intIndex = intIndex + 1
Loop

If pTabCollection.StandaloneTable(intIndex).Name <> "CASMAP.TAB" Then
    MsgBox "Creation of CASMAP.TAB has failed"
    Exit Sub
End If

Set pStTable = pTabCollection.StandaloneTable(0)
Set pDispTable2 = pStTable
Set pTTable = pDispTable2.DisplayTable
Set pMemRelFact = New MemoryRelationshipClassFactory
Set pRelClass = pMemRelFact.Open("TabletoLayer", pTTable, "ParcelID", pTLayer, _
    "ParcelID", "forward", "backward", esriRelCardinalityOneToMany)
Set pDispRC = pFeatLayer

pDispRC.DisplayRelationshipClass pRelClass, esriLeftOuterJoin
Exit Sub

errJoinCASMAP:
MsgBox Err.Number & " " & Err.Description
End Sub
```

**Here is the "picturesforsai" module:**

```
Private Function ConvertRWToPixels(RWUnits As Double) As Double
    Dim realWorldDisplayExtent, sizeOfOnePixel As Double
    Dim pixelExtent, test1, test2 As Long
    Dim pDT As IDisplayTransformation
    Dim deviceRECT As tagRECT
    Dim pEnv As IEnvelope
    Dim pMxDoc As IMxDocument

    Set pMxDoc = ThisDocument
    Set pDT = pMxDoc.ActiveView.ScreenDisplay.DisplayTransformation

    deviceRECT = pDT.DeviceFrame
    test1 = deviceRECT.Right - deviceRECT.Left
    test2 = deviceRECT.bottom - deviceRECT.Top

    If test1 > test2 Then
        pixelExtent = test1
    Else
        pixelExtent = test2
    End If

    Set pEnv = pDT.VisibleBounds

    realWorldDisplayExtent = pEnv.Width
    sizeOfOnePixel = realWorldDisplayExtent / pixelExtent
    ConvertRWToPixels = RWUnits / (sizeOfOnePixel * 2)
End Function
```

```
Public Sub subSavePictures()
    Dim pExporter As IExporter
    Dim pDriverBound, pEnv, pEnv1 As IEnvelope
    Dim screenResolution, lLoop As Long
    Dim hDC As OLE_HANDLE
    Dim deviceRECT, userRECT As tagRECT
    Dim pMxDoc As IMxDocument
    Dim pCancel As ITrackCancel
    Dim intIndex As Integer
    Dim saiName As String
    Dim pMap As IMap
    Dim pEnumFeat As IEnumFeature
    Dim pFeature As IFeature
    Dim pEnumFeatureSetup As IEnumFeatureSetup

    Set pMxDoc = ThisDocument
    Set pMap = pMxDoc.FocusMap

    intIndex = 0

    Do While pMap.Layer(intIndex).Name <> "sai_layer" And intIndex < pMap.LayerCount
        intIndex = intIndex + 1
    Loop

    If pMap.Layer(intIndex).Name <> "sai_layer" Then
        MsgBox "Must have [sai_layer] layer loaded to use this function"
        Exit Sub
    End If

    Set pEnumFeat = pMxDoc.FocusMap.FeatureSelection
```

```
Set pEnumFeatureSetup = pEnumFeat
pEnumFeatureSetup.AllFields = True
pEnumFeat.Reset
For ILoop = 1 To 100000
  Set pFeature = pEnumFeat.Next
  If pFeature Is Nothing Then
  Else
    Set pEnv1 = New Envelope
    CurrentIndex = CurrentIndex + 1
    Set pEnv1 = pFeature.Shape.Envelope.Envelope
    saiName = pFeature.Value(pFeature.Fields.FindField("SAI_NAME"))
    pEnv1.Expand 1.1, 1.1, True
    pMxDoc.ActiveView.Extent = pEnv1
    pMxDoc.ActiveView.Refresh
    Set pEnv = pMxDoc.ActiveView.ScreenDisplay.DisplayTransformation.VisibleBounds
    screenResolution = pMxDoc.ActiveView.ScreenDisplay.DisplayTransformation.Resolution

    If Mid(saiName, 1, 3) = "SAI" Then
      saiName = "SAI" & CurrentIndex
    End If

    If saiName < "0" Then
      saiName = "SAI" & CurrentIndex
    End If

    Set pExporter = New JpegExporter
    pExporter.ExportFileName = "f:\casmenu\maps\" & saiName & ".jpg"
    pExporter.Resolution = screenResolution
    deviceRECT = pMxDoc.ActiveView.ScreenDisplay.DisplayTransformation.DeviceFrame
    userRECT.Top = 0
    userRECT.Left = 0
    userRECT.Right = ConvertRWTToPixels(pEnv.Width)
    userRECT.bottom = ConvertRWTToPixels(pEnv.Height)
    Set pDriverBounds = New Envelope
    pDriverBounds.PutCoords userRECT.Left, userRECT.bottom, userRECT.Right, userRECT.Top
    pExporter.PixelBounds = pDriverBounds
    hDC = pExporter.StartExporting
    Set pCancel = New CancelTracker
    pMxDoc.ActiveView.Output hDC, screenResolution, userRECT, pEnv, pCancel
    pExporter.FinishExporting
  End If
Next
pMxDoc.ActiveView.Refresh
End Sub
```

**Here is the "pdfSections" module:**

```
Private Function ConvertRWToPixels(RWUnits As Double) As Double
    Dim realWorldDisplayExtent, sizeOfOnePixel As Double
    Dim pixelExtent, test1, test2 As Long
    Dim pDT As IDisplayTransformation
    Dim deviceRECT As tagRECT
    Dim pEnv As IEnvelope
    Dim pMxDoc As IMxDocument

    Set pMxDoc = ThisDocument
    Set pDT = pMxDoc.ActiveView.ScreenDisplay.DisplayTransformation

    deviceRECT = pDT.DeviceFrame
    test1 = deviceRECT.Right - deviceRECT.Left
    test2 = deviceRECT.bottom - deviceRECT.Top

    If test1 > test2 Then
        pixelExtent = test1
    Else
        pixelExtent = test2
    End If

    Set pEnv = pDT.VisibleBounds

    realWorldDisplayExtent = pEnv.Width
    sizeOfOnePixel = realWorldDisplayExtent / pixelExtent
    ConvertRWToPixels = RWUnits / (sizeOfOnePixel * 0.5)
End Function
```

```
Public Sub subSavePictures()
    Dim pExporter As IExporter
    Dim pDriverBound, pEnv, pEnv1 As IEnvelope
    Dim screenResolution, lLoop As Long
    Dim hDC As OLE_HANDLE
    Dim deviceRECT, userRECT As tagRECT
    Dim pMxDoc As IMxDocument
    Dim pCancel As ITrackCancel
    Dim intIndex As Integer
    Dim saiName As String
    Dim pMap As IMap
    Dim pEnumFeat As IEnumFeature
    Dim pFeature As IFeature
    Dim pEnumFeatureSetup As IEnumFeatureSetup

    Set pMxDoc = ThisDocument
    Set pMap = pMxDoc.FocusMap

    intIndex = 0

    Do While pMap.Layer(intIndex).Name <> "Sections" And intIndex < pMap.LayerCount
        intIndex = intIndex + 1
    Loop

    If pMap.Layer(intIndex).Name <> "Sections" Then
        MsgBox "Must have [Sections] layer loaded to use this function"
        Exit Sub
    End If

    Set pEnumFeat = pMxDoc.FocusMap.FeatureSelection
```

```
Set pEnumFeatureSetup = pEnumFeat
pEnumFeatureSetup.AllFields = True
pEnumFeat.Reset
For ILoop = 1 To 100000
  Set pFeature = pEnumFeat.Next
  If pFeature Is Nothing Then
  Else
    Set pEnv1 = New Envelope
    CurrentIndex = CurrentIndex + 1
    Set pEnv1 = pFeature.Shape.Envelope.Envelope
    saiName = pFeature.Value(pFeature.Fields.FindField("SECTION"))
    pEnv1.Expand 1.1, 1.1, True
    pMxDoc.ActiveView.Extent = pEnv1
    Set pEnv = pMxDoc.ActiveView.ScreenDisplay.DisplayTransformation.VisibleBounds
    screenResolution = pMxDoc.ActiveView.ScreenDisplay.DisplayTransformation.Resolution

    If saiName < "01" Then
      saiName = "SAI" & CurrentIndex
    End If

    Set pExporter = New PDFExporter
    pExporter.ExportFileName = "c:\PDFpicts\" & saiName & ".pdf"
    pExporter.Resolution = screenResolution
    deviceRECT = pMxDoc.ActiveView.ScreenDisplay.DisplayTransformation.DeviceFrame
    userRECT.Top = 0
    userRECT.Left = 0
    userRECT.Right = ConvertRWTToPixels(pEnv.Width)
    userRECT.bottom = ConvertRWTToPixels(pEnv.Height)
    Set pDriverBounds = New Envelope
    pDriverBounds.PutCoords userRECT.Left, userRECT.bottom, userRECT.Right, userRECT.Top
    pExporter.PixelBounds = pDriverBounds
    hDC = pExporter.StartExporting
    Set pCancel = New CancelTracker
    pMxDoc.ActiveView.Output hDC, screenResolution, userRECT, pEnv, pCancel
    pExporter.FinishExporting
  End If
Next
pMxDoc.ActiveView.Refresh
End Sub
```

**Here is the "AgCalculator" module:**

```
Public Sub GetAcres()
    Call AgCalcplf_Click
End Sub
```

```
Private Function AgCalcGraphplf_ToolTip() As String
    AgCalcGraphplf_ToolTip = "Calc Ag Breakout Graphics(Ac)"
End Function
```

```
Private Sub AgCalcplf_Click()
    Dim Response
    Dim pMxDoc As IMxDocument
    Dim pArea As IArea
    Dim FeetStr As String
    Dim pFeet As Double
    Dim i, Looper As Integer
    Dim pPoly As IFeature
    Dim pMap As IMap
    Dim pFSelection As IEnumFeature
    Dim pActiveView As IActiveView
    Dim pContentView As IContentView
    Dim pGP As Object

    Set pMxDoc = ThisDocument
    Set pMap = pMxDoc.FocusMap
    Set pActiveView = pMap
    Set pContentView = pMxDoc.CurrentContentView
    Set pFSelection = pMap.FeatureSelection

    i = pMap.SelectionCount

    '-- Make sure a parcel is selected
    If i = 0 Then
        MsgBox "Please select one or more parcels"
        Exit Sub
    End If

    Set pGP = CreateObject("esriGeoprocessing.GPDispatch.1")
    pGP.Workspace = "C:\Mapping\SoilTemp" '-- whichever folder your original shapefiles are in

    Do Until Looper = i
        Set pPoly = pFSelection.Next
        Looper = Looper + 1
        Set pArea = pPoly.Shape
        pFeet = pArea.Area * 3.280839895 * 3.280839895 / 43560 '-- converts from map units (meters) to feet
    then acres
        FeetStr = pFeet
        pGP.CalculateField "PARCEL", "CAL_AREA", FeetStr '-- places current mapped acreage into existing
    field in parcel shapefile
    Loop

    Set pGP = CreateObject("esriGeoprocessing.GPDispatch.1")
    pGP.Workspace = "C:\Mapping\SoilTemp" '-- a directory to store the temp files

    On Error GoTo errERASER '-- there may be some
    Kill "C:\Mapping\SoilTemp\*" '-- clearing out the old temp files
    Kill "C:\Mapping\SoilTemp\info\*" '-- clearing out the old temp files
    pGP.Union_Analysis "PARCEL; soils", "TEMP1"
```

```
pGP.Union_Analysis "TEMP1; LANDUSE", "TEMP2"  
pGP.AddField "TEMP2", "SOILAREA", "double"  
pGP.Clip_analysis "TEMP2", "PARCEL", "TEMP3"  
pGP.CalculateAreas_stats "TEMP3", "CAMASOIL"  
pGP.CalculateField "CAMASOIL", "SOILAREA", "([F_AREA] * 3.280839895 * 3.280839895 / 43560) *  
([ACRES]/[CAL_AREA])"  
pGP.AddField "CAMASOIL", "SORT", "text", "50"  
pGP.CalculateField "CAMASOIL", "SORT", "[[PARCELID] & "" "" & [musym] & "" "" & [USE]"  
pGP.Statistics "CAMASOIL", "SOILACRE", "SOILAREA sum", "SORT"  
pGP.DeleteField "SOILACRE", "FREQUENCY"
```

Exit Sub

errERASER: '-- there may be none

```
pGP.Union_Analysis "PARCEL; soils", "TEMP1"  
pGP.Union_Analysis "TEMP1; LANDUSE", "TEMP2"  
pGP.AddField "TEMP2", "SOILAREA", "double"  
pGP.Clip_analysis "TEMP2", "PARCEL", "TEMP3"  
pGP.CalculateAreas_stats "TEMP3", "CAMASOIL"  
pGP.CalculateField "CAMASOIL", "SOILAREA", "([F_AREA] * 3.280839895 * 3.280839895 / 43560) *  
([ACRES]/[CAL_AREA])"  
pGP.AddField "CAMASOIL", "SORT", "text", "50"  
pGP.CalculateField "CAMASOIL", "SORT", "[[PARCELID] & "" "" & [musym] & "" "" & [USE]"  
pGP.Statistics "CAMASOIL", "SOILACRE", "SOILAREA sum", "SORT"  
pGP.DeleteField "SOILACRE", "FREQUENCY"
```

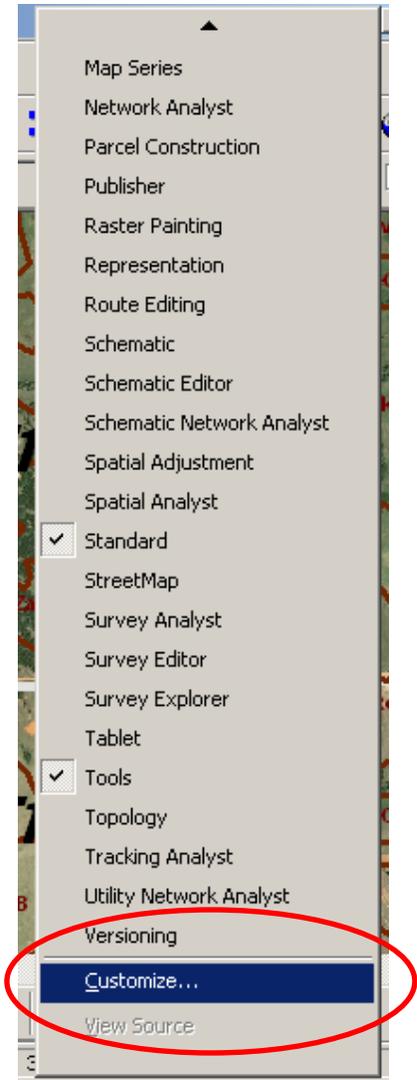
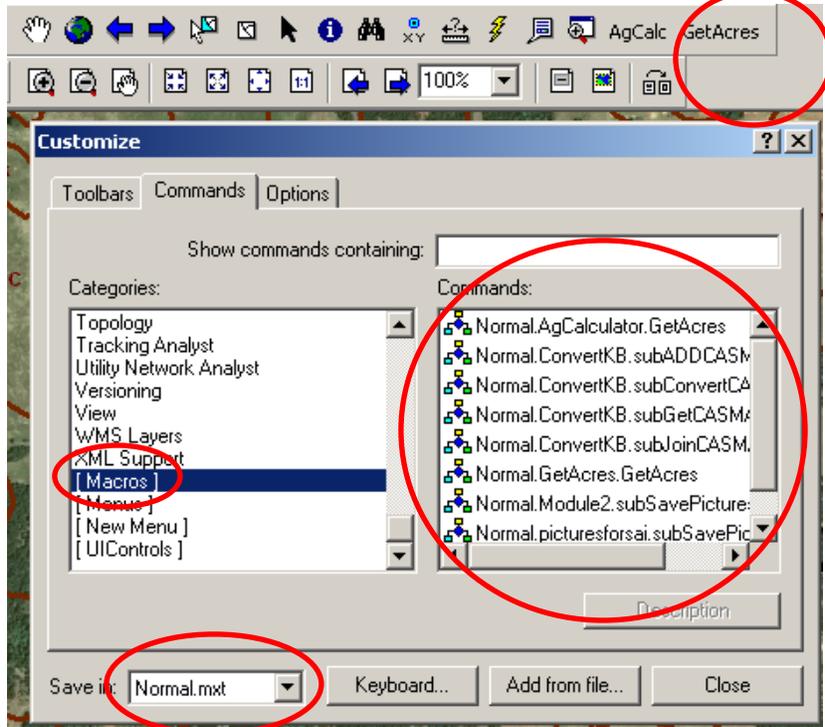
End Sub

### Adding/Removing modules from ArcGIS:

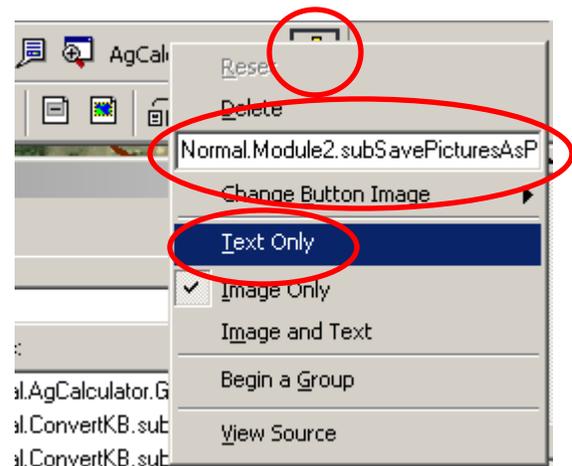
Right-click on any blank spot on your toolbars. Scroll down on the pop-up list and click on **Customize...**

When the **Customize** pop-up window appears, click on the **Commands** tab, scroll on the **Categories** window down and highlight **[Macros]**. Chose the **Normal.mxt** option in the bottom left **Save in:** drop-down box.

Find the command/module you want from the **Commands:** window. Click and drag that command/module to a blank space on a toolbar.



Right-click on the new button. Click on the **Text Only** option on the new pop-up window (which closes the pop-up window). Right-click on the new button that now has a lot of text instead on the button shape. Change the text in the textbox on the new pop-up window to read as you want and hit enter. Now you can close the **Customize** pop-up window. Save your project!



**MAPSERVER  
COUNTY MAPPING VIEW**



# MapServer - County Map Viewer

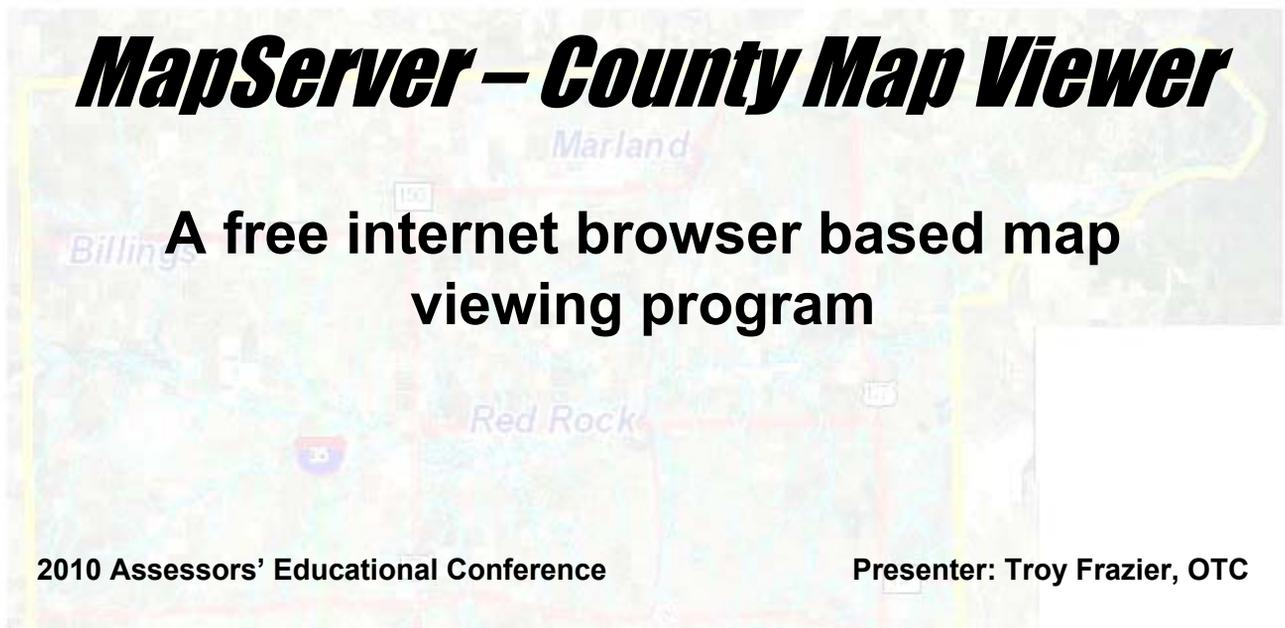
Final viewer as designed copyrighted © 2010 [Billings Division - Montana Tax Commissioner](#)

MapServer 5.2.1 copyrighted © 1999-2009 [Deputy of the State of Minnesota](#)



An introduction to the current version

## ***MapServer – County Map Viewer***



A free internet browser based map  
viewing program

2010 Assessors' Educational Conference

Presenter: Troy Frazier, OTC

## ***MapServer – a short history*** County Map Viewer

MapServer was originally developed by the University of Minnesota “ForNet” project in cooperation with NASA and the Minnesota Department of Natural Resources. Later it was hosted by the “TerraSIP” project, a NASA sponsored project between the university and a consortium of land management interests.

MapServer is now a project of the Open Source Geospatial Foundation. The OSGeo was “created to support and build the highest-quality open source geospatial software.” As such, MapServer is currently being supported by nearly 20 developers world-wide. This group is continually making improvements to MapServer. We are using version 5.2.1.

## ***MapServer – and the Oklahoma Tax Commission***

As a part of our continuing effort to support the assessor mapping, we look for ways to supply you with free mapping software. So far, all such software has been for viewing only.

This process started in 2000 with ESRI’s ArcExplorer 2. ArcExplorer allowed you to view your mapping on top of the digital aerial photography. For many of you, this was the first time that this could be done! However, ArcExplorer 2 was written before the latest versions of Mr. SID aerial photo compression were created, and ESRI has not updated this “stand alone” program. (ESRI has newer versions of a web-based ArcExplorer which requires a live connection to ESRI to run.)

## ***MapServer – and the Oklahoma Tax Commission***

In the mid-2000's we found TatumGIS. This free map viewer is written and supported by a company in Poland. We found this program as we were looking at federal mapping sites for more mapping data for you.

The TatumGIS is a very powerful program. It allows data from different projections without the need of re-projecting. It allows for “halo'ing” text on the map. It prints in full color.

The problems are that it measures only in the map units (which are usually in meters), and it is hard to set up and to search data with. Only a couple of counties ever became comfortable with this viewer.

## ***MapServer – and the Oklahoma Tax Commission***

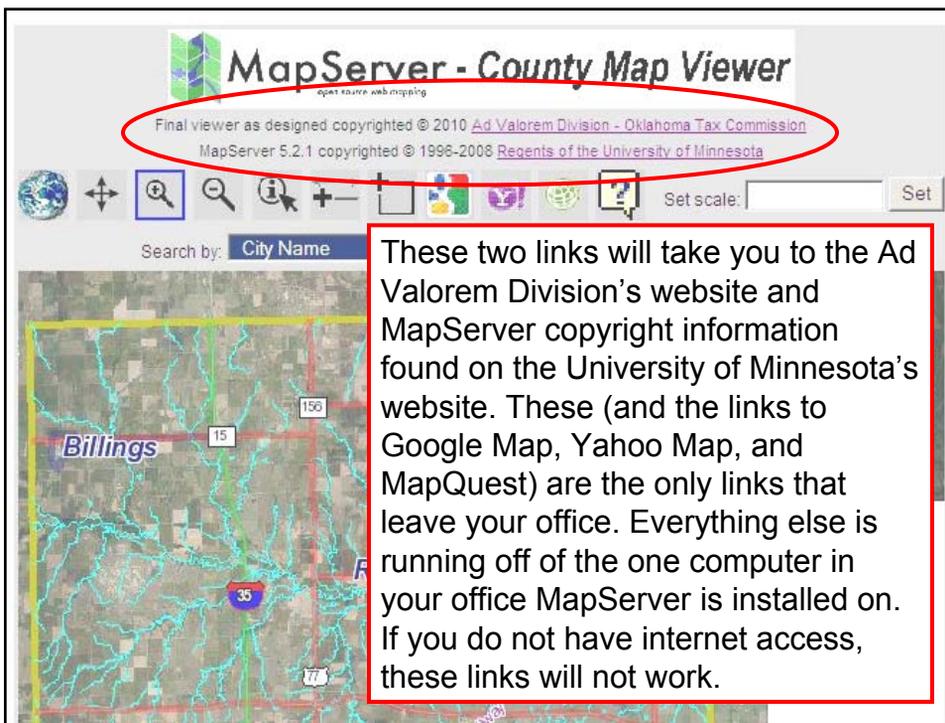
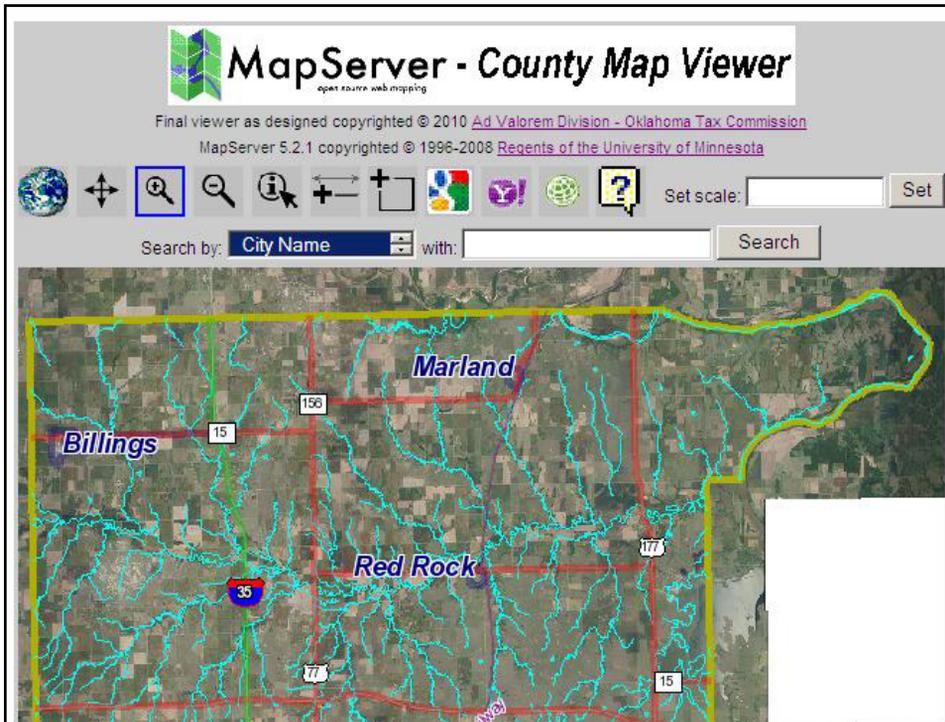
We had found MapServer a few years ago, but we had a hard time doing anything with it. With the issues of ArcExplorer's poor color printing and its inability to use the 2005, 2006, and 2008 aeriels and TatumGIS's lack of easy of use, we revisited MapServer.

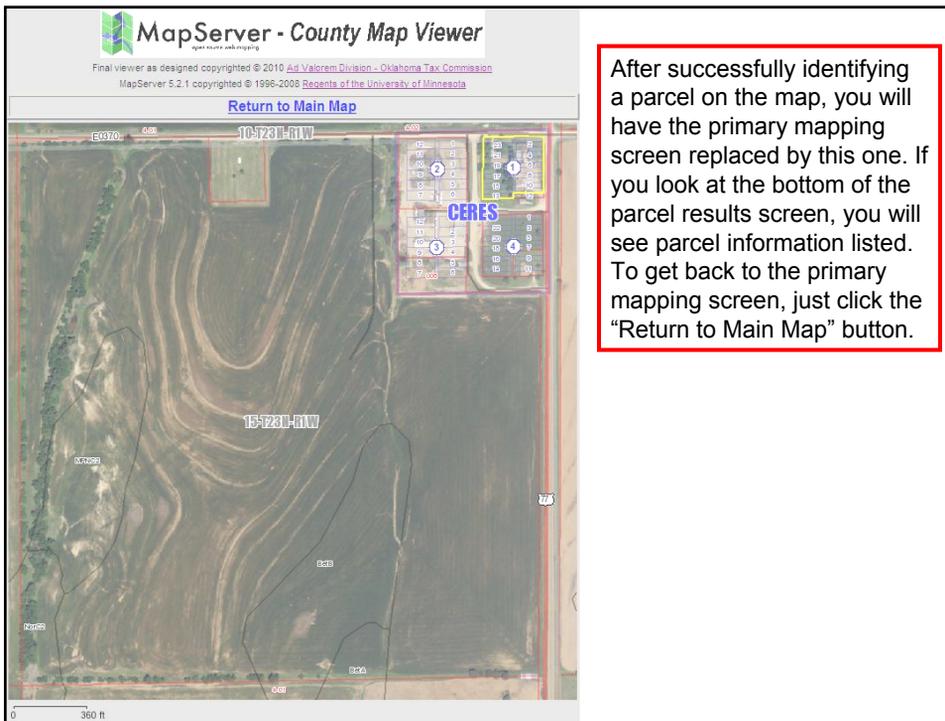
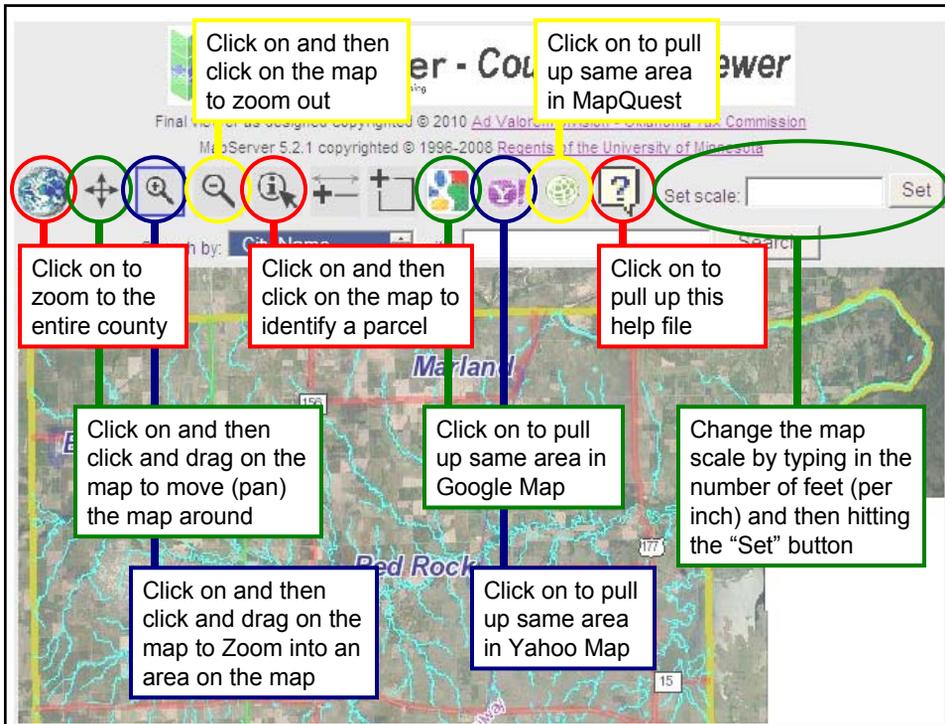
It seemed that a cloud was lifted, everything seemed to be so easy. MapServer wasn't as hard to understand as it had been just a couple of years previously. It was easy to customize and install. As a result, here is



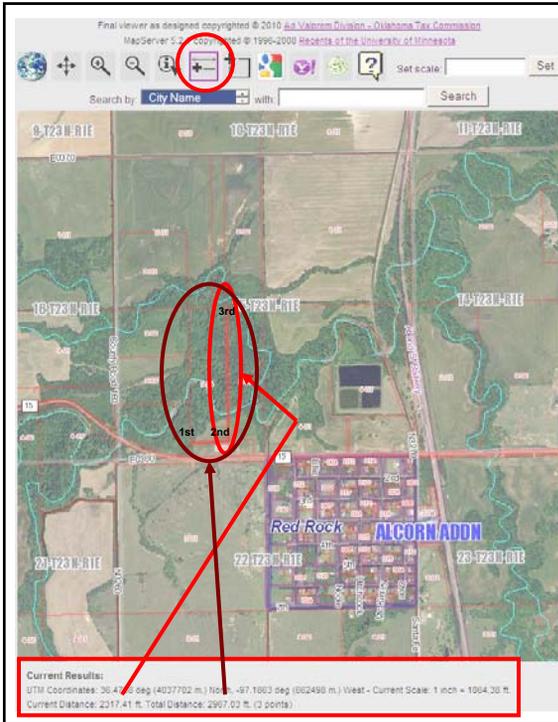
**MapServer - County Map Viewer**

open source web mapping





After successfully identifying a parcel on the map, you will have the primary mapping screen replaced by this one. If you look at the bottom of the parcel results screen, you will see parcel information listed. To get back to the primary mapping screen, just click the "Return to Main Map" button.



To measure a length, click on the “measure length” button. Then click on the map each corner that you want to measure. The “Current Results:” box will include the last length measured and the total length measured to this point. In this example, we have measured from the 1<sup>st</sup> point to the 2<sup>nd</sup> point to the 3<sup>rd</sup> point. The distance from points 2 and 3 is 2317.41 ft. The total distance from 1 to 2 to 3 is 2967.03 ft. These measure tools do NOT snap to the mapping, so click as precise as you can.



To measure an area, click on the “measure area” button. Then click on the map each corner that you want to measure. The “Current Results:” box will include the total enclosed area and the total distance measured to this point. In this example, the total enclosed area is 3521450.15 sq. ft. (80.84 acres). The total distance from the 1<sup>st</sup> point to the 2<sup>nd</sup> point to the 3<sup>rd</sup> point to the 4<sup>th</sup> point is 5313.23 ft. These measure tools do NOT snap to the mapping, so click as precise as you can.

## MapServer - County Map Viewer

Final viewer as designed copyrighted © 2010 [Ad Valorem Division - Oklahoma Tax Commission](#)  
 MapServer 5.2.1 copyrighted © 1998-2008 [Regents of the University of Minnesota](#)

Scroll through and highlight one of four search choices: "City Name", "Parcel Id", "Section Number", and "Situs Address".

Type in your search entry. Searches are not case sensitive. However, on the "Situs Address" search, type in the street name **ONLY**. Examples: for **525 S 1st St** use **1st** and for **420 Ranch Rd** use **Ranch**.

Finally, click on the "Search" button. If the program can not find a match and you get an error screen, just hit the "Back" button on your browser and try again.

Address Range	Direction	Street Name	Type	Zip Code	Go To
0 - 0		15th	St	73077	<- this road segment
1601 - 1799	N	15th	St	73077	<- this road segment
1501 - 1599	N	15th	St	73077	<- this road segment
1401 - 1499	N	15th	St	73077	<- this road segment
1367 - 1399	N	15th	St	73077	<- this road segment
1301 - 1365	N	15th	St	73077	<- this road segment
1201 - 1299	N	15th	St	73077	<- this road segment
1101 - 1199	N	15th	St	73077	<- this road segment
1001 - 1099	N	15th	St	73077	<- this road segment

After searching by street name with the "Situs Address" search, you will have the primary mapping screen replaced by this one. The screen will list all of those street name segments mapped. Scroll down the list until you find the correct address range and zip code. Once you find the address you want, click on the "<- this road segment" button. You will be taken to the search results map screen. From there, you can return to the primary mapping screen.



**MapServer - County Map Viewer**  
Open source web mapping

Final viewer as designed copyrighted © 2010 by Valerem Division - Oklahoma Tax Commission  
 MapServer 5.2.1 copyrights © 1998-2006 Benedek, University of Minnesota

Return to Main Map



After successfully searching by “City Name”, “Parcel Id”, “Section Number”, or “Situs Address”, you will have the primary mapping screen replaced by this one (in this example, zoomed into the town of Red Rock). To get back to the primary mapping screen, just click on the “Return to Main Map” link. You will return to the primary mapping screen zoomed into the same location as on this screen. If you searched by parcel id number, there will be parcel information listed at the bottom of the screen.

## ***MapServer – in conclusion*** County Map Viewer

MapServer can give all your computers map viewing capability with installation on only one computer. Any computer connected to your network can access this mapping (public view stations, computers in connected offices like county treasurers or clerks). It is even possible to share this viewer directly to the internet.

MapServer actually only runs on the computer it is installed on. It creates pictures and “servers” them up through the browser. At no time is any other computer getting direct access to your actual mapping layers!

Unfortunately, MapServer can not use MIMS or dxf layers. We have a “clunky”, free dxf to shapefile converter.

Remember, MIMS counties always have the option of buying Dr. Paul Bendt’s MIM2SHP conversion program.

# **OKLAHOMA DATA WAREHOUSE**



# Oklahoma Data Warehouse:

[www.csa.ou.edu](http://www.csa.ou.edu)

**Scott March**  
**GIS Specialist**  
**Center for Spatial Analysis**

**University of Oklahoma**  
**Norman, OK**  
**(405) 325-5480**  
**scmarch@ou.edu**

# Oklahoma Data Warehouse

[www.csa.ou.edu](http://www.csa.ou.edu)

UNIVERSITY OF OKLAHOMA  
**CENTER FOR SPATIAL ANALYSIS**

**ABOUT CSA**  
**RESEARCH & DEVELOPMENT**  
**CONTACT LIST**  
**DATA, PRODUCTS & TOOLS**  
**EDUCATION & TRAINING**  
**APPLICATIONS & SERVICES**  
**INITIATIVES**  
**INTERNAL LOGIN**

**NEWS**  
**Congratulations to Geosomatics Scholarship Winners**  
**Darrel Kingfield and Grant DeLator**  
**Geospatial Summer Institute Application Period Open**  
**GEOINT Travel Award**  
**SEE ALL STORIES**

**CALENDAR**  
**No Upcoming Events Found**  
**SEE CALENDAR**

The Center for Spatial Analysis (CSA) at the University of Oklahoma is a multidisciplinary university research center specializing in the study and application of geospatial science and technology. CSA is composed of three working units that focus on research and development, outreach and training, and applications and services. Through efforts in each of these units CSA seeks to advance the geospatial vision of the university and contribute to education, research, and economic development in the State of Oklahoma. Housed within the College of Atmospheric and Geographic Sciences, CSA is a member of the National Weather Center program and the OUI Research Campus, an affiliate member in the Oklahoma NASA Space Grant Consortium, and a partner to the Center for Applied Social Research.

PEOPLE | LINKS | DATA | OUTREACH | EVENTS | RESEARCH | CONTACT | LOGIN

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## What is the Center for Spatial Analysis?



The Center for Spatial Analysis (CSA) at the University of Oklahoma is a multidisciplinary university research center specializing in the study and application of geospatial science and technology.

CSA is composed of three working units:

- 1) Research and Development
- 2) Outreach and Training
- 3) Applications and Services

CSA provides services to the state and local governments to promote applications and workforce development in geospatial information science and technology. Through efforts in each of these units, CSA seeks to advance the geospatial vision of the university and contribute to education, research, and economic development in the State of Oklahoma.

Housed within the College of Atmospheric and Geographic Sciences, CSA is a member of the State Geographic Information Council, the National Weather Center program and the OU Research Campus, an affiliate member in the Oklahoma NASA Space Grant Consortium, and a partner to the Center for Applied Social Research.

## State Projects

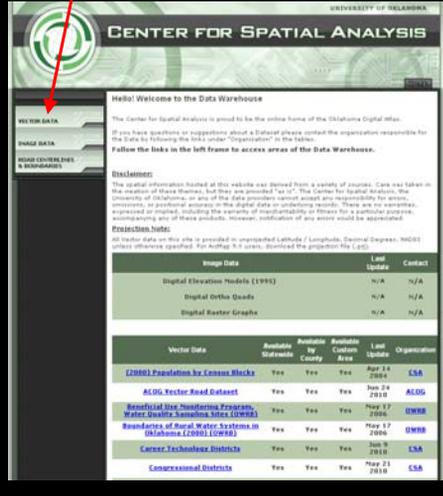
CSA works closely with the Oklahoma Tax Commission, State Election Board, Oklahoma Department of Commerce, Oklahoma Department of Education, Oklahoma Department of Wildlife and Fishery, and various cities and county assessor offices to develop GIS databases and applications.

Through these projects, CSA has developed unique programs for education and research developments in Oklahoma's higher education in Geographic Information Science and Technology, as well as strong partnerships with state government, councils of governments, and government offices of cities and counties across the state.

- [Oklahoma State Election Board](#) Long-term On-going Geo-Referencing Maintenance For the Oklahoma Voter Registration System with the Oklahoma Election Board
- [Oklahoma State Board of Education](#) On-going Processing School and Career Technical District Updates for the Oklahoma Department of Education
- [Oklahoma Tax Commission](#) A Long-term On-going Project with the Oklahoma Tax Commission to update and maintain municipal boundaries within the state of Oklahoma
- [Oklahoma Department of Commerce](#) On-going GeoCIP© Project to Coordinate Geospatial Information for Asset Management in support of Capital Improvements in Oklahoma Rural Communities
- [Central Oklahoma Workforce Investment Board](#) Working with COWIB to develop a comprehensive asset mapping system for workforce and economic development in central Oklahoma

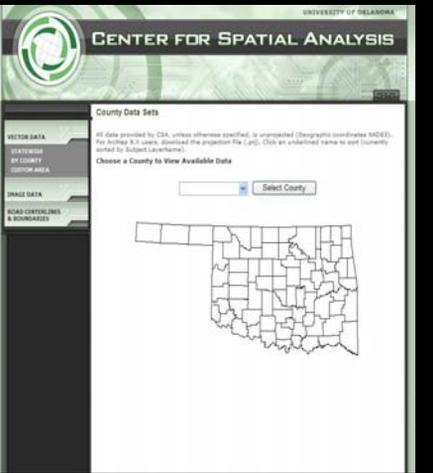
# Oklahoma Data Warehouse

- Click on the **"DATA, PRODUCTS & TOOLS"** tab
- Click on the **"VECTOR DATA"** tab to view and download shapefiles



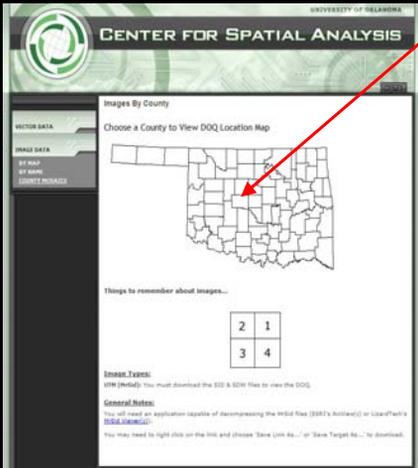
# Oklahoma Data Warehouse

- Choose to download vector data by **STATEWIDE**, **COUNTY** or **CUSTOM AREA**
- Watch for new and updated layers



# Oklahoma Data Warehouse

- Download image data by Map Name or as a County Mosaic.

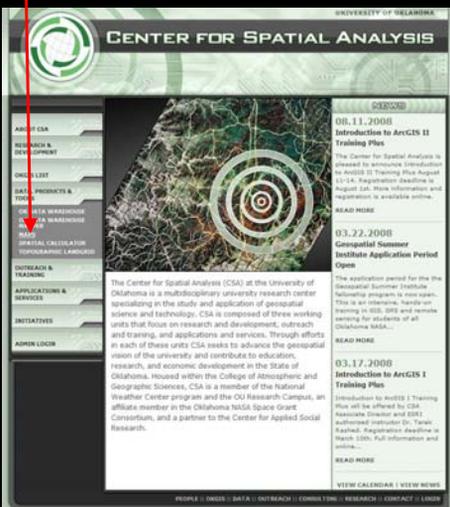


- Click the interactive county map of Oklahoma for your county of interest.
- Download county mosaics from 2003 through 2008 in SID format



# Oklahoma Data Warehouse

- Click on Maps



- view municipal maps
- view county precinct/school district maps



## To help verify Municipal Boundaries--

- Scroll around to check your municipal boundaries reflected on the online maps.

- To correct boundary errors, forward signed copies (by city clerk, etc.) of annexation orders or map corrections to Troy Frazier: (405) 319-8200.

- These boundaries impact property tax collections, sales tax collections, and municipal elections.



## Since last year

- Approximately 70 municipalities have sent in updates in the last year.
- All 600 municipal maps have been converted to .pdf format. STR, ward and precinct lines have all been added.
- Oklahoma and Tulsa Centerlines have been added to the Data Warehouse.

## By next year

- Incorporate Tiger 2009 roads into our system in order to have the most accurate data available.

# Oklahoma Data Warehouse Road Centerlines

Click on **“ROAD CENTERLINES & BOUNDARIES”**

Access centerline adjusted **Shapefiles** for Oklahoma and Tulsa Counties

Access online maps for Oklahoma and Tulsa Counties by clicking the **Map** link

**CENTER FOR SPATIAL ANALYSIS**

Howdy! Welcome to the Data Warehouse

The Center for Spatial Analysis is proud to be the online home of the Oklahoma Digital Atlas. If you have questions or suggestions about a Dataset please contact the organization responsible for the data by following the links under "Organization" in the tables.

Follow the links in the left frame to access areas of the Data Warehouse.

**Disclaimer:**  
The spatial information hosted at this website was derived from a variety of sources. Care was taken in the creation of these datasets, but they are provided "as is". The Center for Spatial Analysis, the University of Oklahoma, or any of the data providers cannot accept any responsibility for errors, omissions, or inaccuracy in the digital data or underlying records. There are no warranties, expressed or implied, including the accuracy or completeness of records for a particular purpose. Accompanying any of these products, therefore, constitutes a certification of fitness for a particular purpose.

**Resolution Note:**  
All vector data on this site is provided in unprojected Latitude / Longitude, Decimal Degrees, NAD83 unless otherwise specified. For ArcView 3.2 users, download the projection file (.prj).

Image Data	Last Update	Contact
Digital Elevation Models (1995)	N/A	N/A
Digital Ortho Quads	N/A	N/A
Digital Raster Graphs	N/A	N/A

Vector Data	Available by Statewide	Available by County	Available by Area	Last Update	Organization
<b>(2001) Presentation by Census Blocks</b>	Yes	Yes	Yes	Apr 14 2004	CSA
<b>ACOG Vector Road Dataset</b>	Yes	Yes	Yes	Mar 18 2008	ACOG
<b>Beneficial Use Monitoring Program, Water Quality Sampling Sites (OWB)</b>	Yes	Yes	Yes	May 17 2006	OWB
<b>Boundaries of Rural Water Systems in Oklahoma (2001) (OWB)</b>	Yes	Yes	Yes	May 17 2006	OWB
<b>Census Tract/County Districts</b>	Yes	Yes	Yes	Aug 30 2009	CSA

**Tulsa County Data**

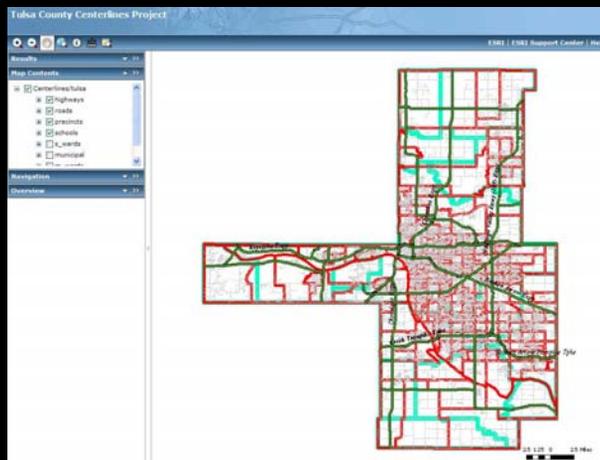
Online maps for Oklahoma and Tulsa Counties are developed using ArcGIS Server for ArcSDE to view road centerline adjusted layers. These layers provide more accurate depictions of the world based on spatially accurate (a 3 meter) aerial orthorectification.

All shapefile data provided by CSA is unprojected (Geographic coordinates NAD83) unless otherwise specified. For ArcView 3.2 users, download the projection file (.prj).

Dataset	Layer Name	Download	Map
Online map	Multi layer	NA	Map
Transportation	Road Centerlines	Shapefile .arc1	Metadata
Administrative Boundaries	Municipal boundaries	Shapefile .arc1	Metadata
Administrative Boundaries	Municipal wards	Shapefile .arc1	Metadata
Administrative Boundaries	Precincts	Shapefile .arc1	Metadata
Administrative Boundaries	School districts	Shapefile .arc1	Metadata
Administrative Boundaries	School district wards	Shapefile .arc1	Metadata

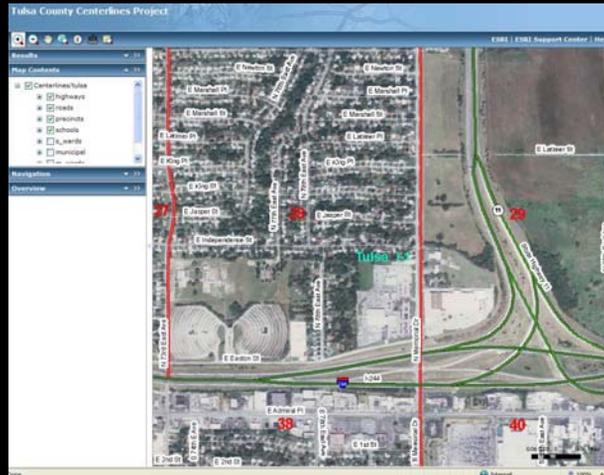
# Oklahoma Data Warehouse Road Centerlines

- Click on **“Map Contents”** to see the group layer
- Click **Centerlines/Tulsa** layer to see all the layers in the group
- Use **zoom, pan, identify** tools to navigate around the map



# Oklahoma Data Warehouse Road Centerlines

- Map labels and details increase with zoom level
- More tools will be added for increasing map functionality



# Oklahoma Data Warehouse Mapper

- Click on [OKLAHOMA DATA WAREHOUSE MAPPER...](#)

**DATA, PRODUCTS & TOOLS**

- OK DATA WAREHOUSE
- OK DATA WAREHOUSE MAPPER
- RAISE
- SPATIAL CALCULATOR
- TOPOGRAPHIC GRID

**Oklahoma Data Warehouse Mapper**

MAP TOOLS

- 200M IN
- 200M OUT
- 200M TO
- 200M FULL
- PAUSE
- IDENTIFY
- REFRESH
- PRINT MAP
- E-MAIL
- HELP
- MAP SIZE
- X-SMALL
- SMALL
- MEDIUM
- LARGE
- X-LARGE

Provided by Map Server

Identify Results

Tulsa County, Congressional District 01, Senate District 037, House District 980, Commissioner District 03

Environmental

- DWRB Wet Lags
- Substation
- Streams (DWRB)
- USFWS State
- USFWS State
- Waterbodies (DWRB)
- Flood (Zone A, F10)
- Flood (Zone A)
- Flood (Zone B)
- Flood (Zone C)
- Lakes (DWRB)
- USFWS Hydrographic Features (DWRB)
- Lake Sites (DWRB)
- Stream Sites (DWRB)
- Unfettered Watersheds (DWRB)
- DWRB Major Aquifers
- DWRB Reported Wet Lags
- Road Boundaries
- Road Pipelines

Transportation

- Local Roads (TSGER)
- Local Roads (DWRB)
- Highways (TSGER)
- Local Roads (SCOG)
- Local Roads (SCOG)
- Highway (DWRB)
- Highways
- Highways
- Highways (TSGER)
- Highways (TSGER)
- Highways (TSGER)

# Oklahoma Data Warehouse Mapper

- Interactively map over 60 data layers

- Turn on/off labels
- Select "Identify" layer
- Download zoom extents

