

Welcome to the 2020 IAAO Conference

IAAO
CONFERENCE
+ EXHIBITION

Aug 30 – Sept 1, 2020

Your Session Will Begin Momentarily



▶ TRANSFORMING VALUATION THROUGH TECHNOLOGY ◀

PROJECT BACK TO THE FUTURE



IAAO

CONFERENCE
+ EXHIBITION

Aug 30 - Sept 1, 2020

Agricultural Land Valuation in Mountrail County, ND



▶ **TRANSFORMING VALUATION THROUGH TECHNOLOGY** ◀

Starting Out...

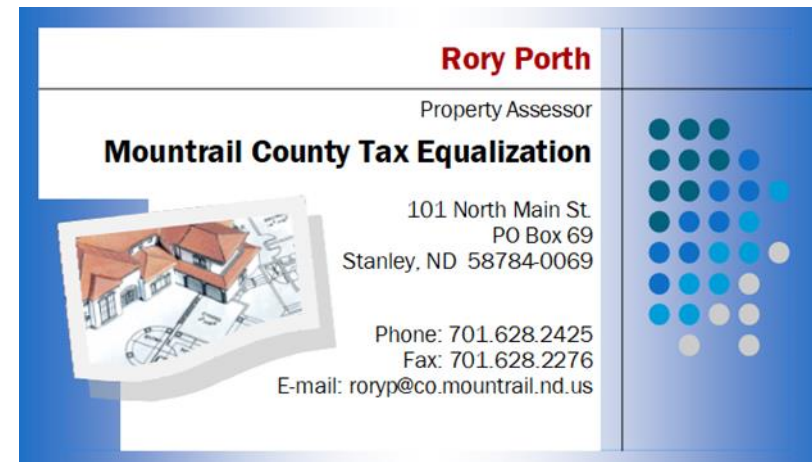
- What is very unique about this picture?
- *Hint – Apollo 11 ‘Eagle’ lunar lander returning to command module from the historic first moon walk*
- **The astronaut who took this photo – command module pilot Michael Collins, is the only human, alive or dead that isn't in the frame of this picture, July 1969**



Introduction – Our Journey

➤ Quick Bio

- Class 1 Property Assessor in Mountrail County – relatively new to role
- Previously – complex systems integrator / consultant
- Certified Information Systems Auditor (CISA) – ISACA – Information Systems Audit and Control Association



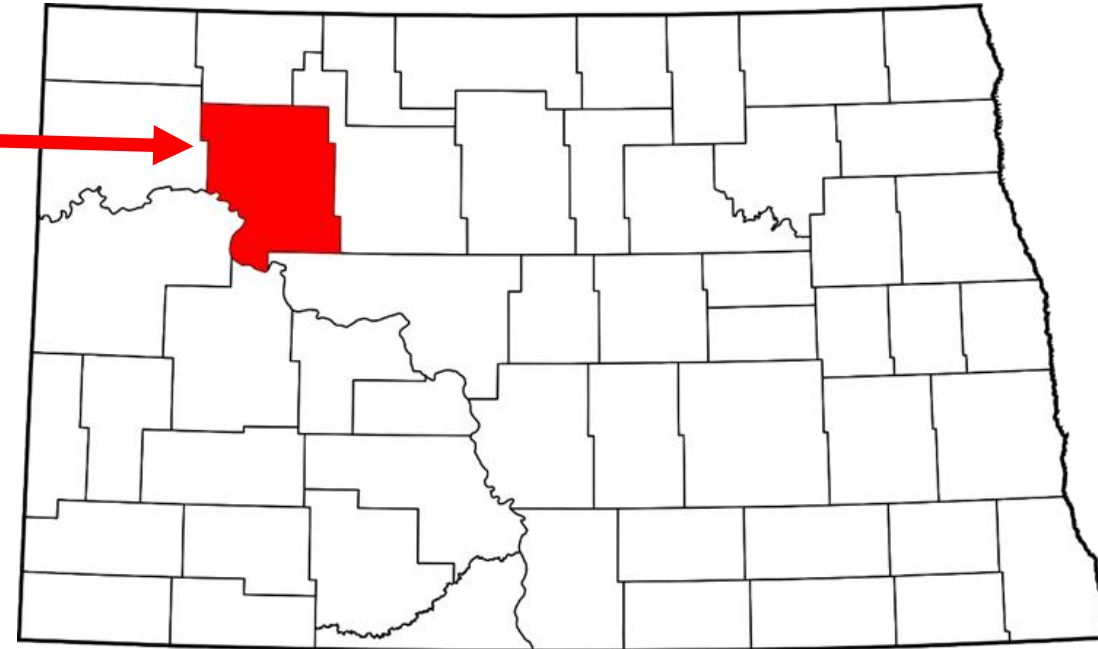
Introduction – Our Journey

- Where / what is Mountrail county?
- A few pictures
- “The Bakken” – oil & natural gas production
- Ag Land Valuation – a little history and lots of work
 - **Maps, numbers, spreadsheets**
- What we did and where we are

OK... the 'fam'...



Mountrail County, North Dakota



- 9th largest county by square miles – 1,824 (4,724 square kilometers)
- Population – 10,265 (2017 Census est.)
- Density – approx. 5.6 persons per sq mi (2.2 per km²)

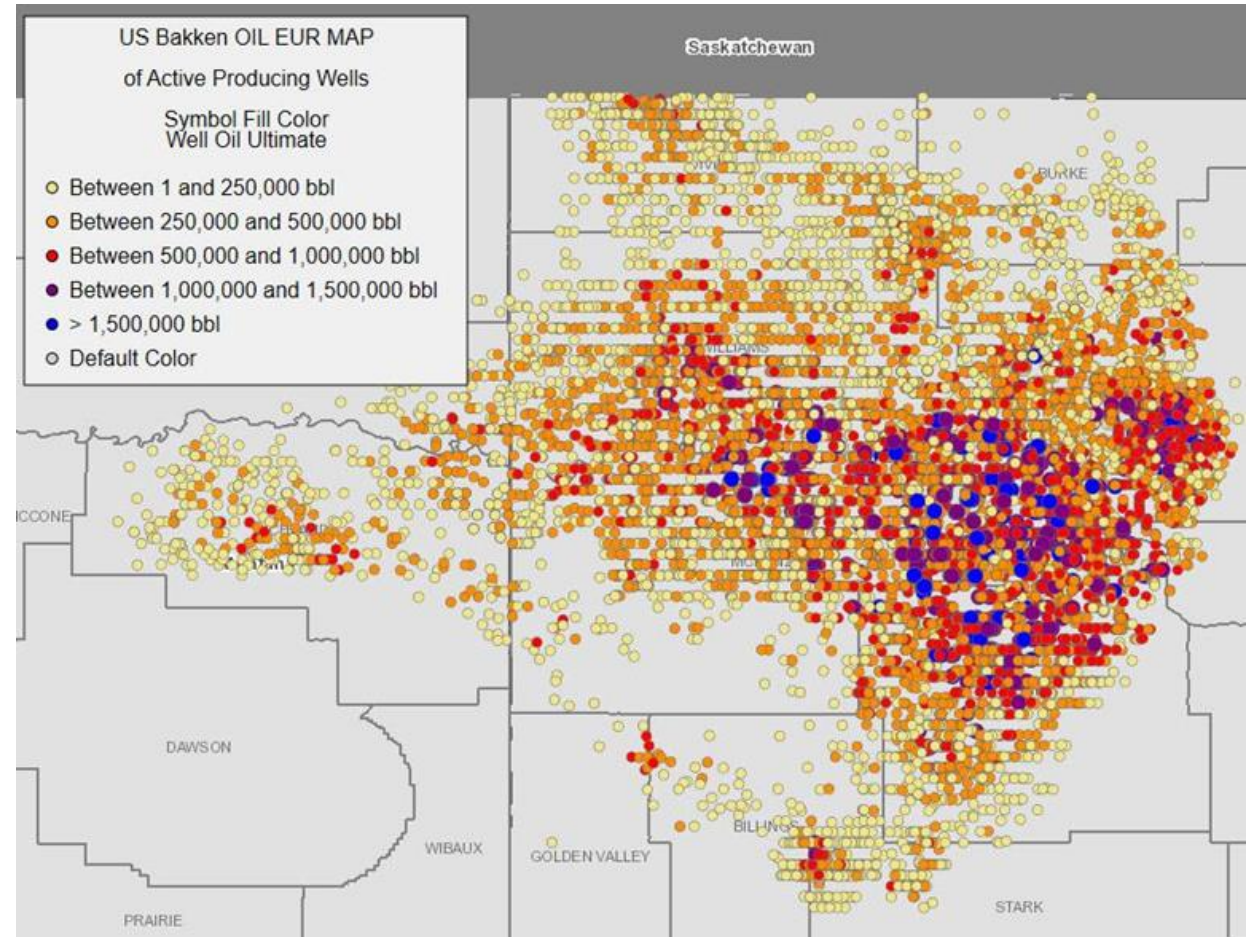
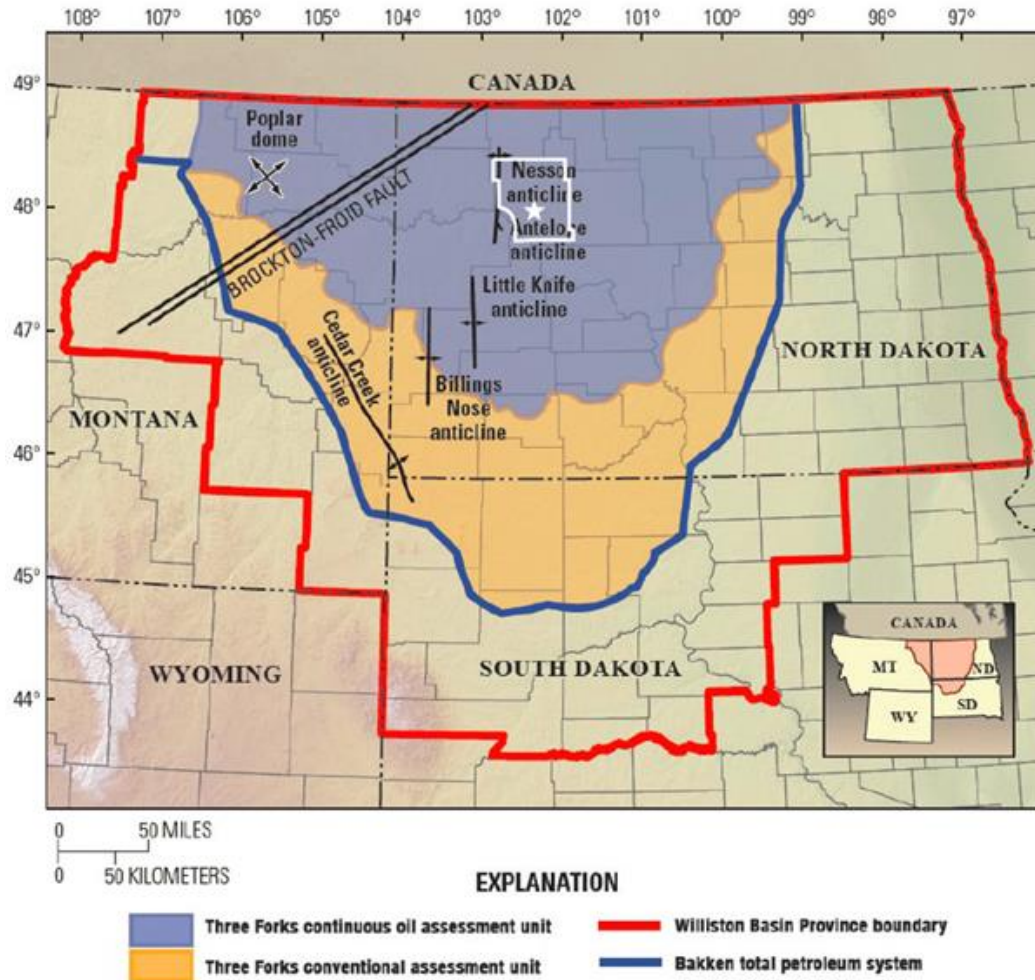
What does Mountrail County look like?



What does Mountrail County look like?



The Bakken – North Dakota is #2 Oil Producer in the US



The Bakken



Winter Temps... Uffda...



Three screenshots of a weather app for Stanley, North Dakota, showing temperatures and conditions for different dates in December 2017. Each screenshot includes a 'WIND CHILL WARNING' banner.

| Date | Temperature | RealFeel | Conditions |
|-------------------|-------------|----------|---------------|
| December 24, 2017 | -4°F | -36°F | Partly cloudy |
| December 25, 2017 | -19°F | -47°F | Partly cloudy |
| December 26, 2017 | -18°F | -36°F | Sunny |

Three screenshots of a weather app for Stanley, North Dakota, showing temperatures and conditions for different dates in December 2017. Each screenshot includes a 'WIND CHILL WARNING' banner.

| Date | Temperature | RealFeel | Conditions |
|-------------------|-------------|----------|------------|
| December 26, 2017 | -18°F | -36°F | Sunny |
| December 29, 2017 | -11°F | -37°F | Sunny |
| December 30, 2017 | -24°F | -45°F | Clear |

A screenshot of the AccuWeather app for Stanley, North Dakota, showing a 'WIND CHILL WARNING' banner and a temperature of -26°F with a RealFeel of -56°F. The RealFeel temperature is circled in red.

-56 f = -48 c

Check MinuteCast®
TODAY: -12°/-21°

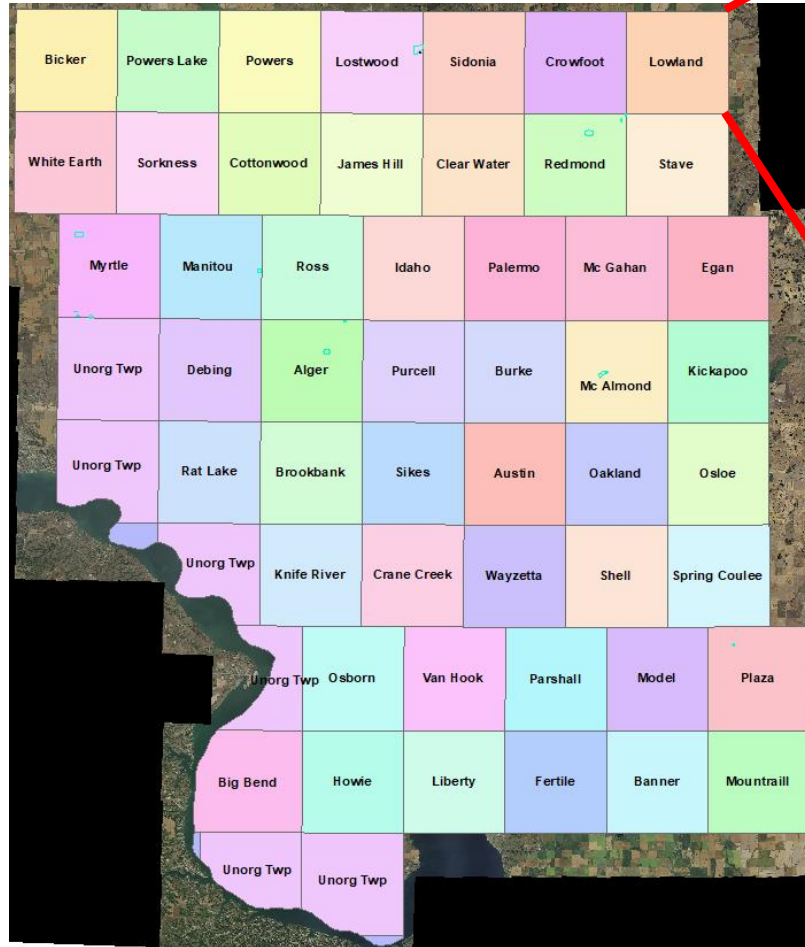
AccuWeather

Valuation in Mountrail – 2020 Values

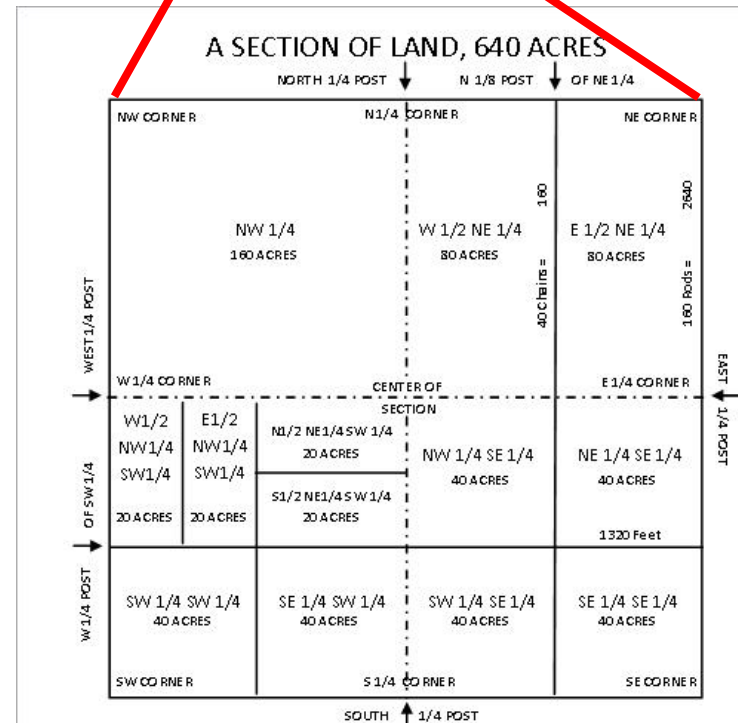
| Assessment Code* | Description | Parcels | Parcel % | True & Full Value | Value % |
|---|--------------|---------|----------|-------------------|---------|
| 101 | Agricultural | 9,008 | 58.8% | \$471,046,900 | 27.4% |
| 201 | Residential | 3,487 | 22.8% | \$415,135,700 | 24.2% |
| 233 | Commercial | 968 | 6.3% | \$797,646,700 | 46.5% |
| 250 | Vacant Land | 1,864 | 12.2% | \$32,335,200 | 1.9% |
| | Total | 15,327 | | \$1,716,164,500 | |
| *NOTE: Centrally assessed properties are not included in the list | | | | | |

Some Land Definitions

- **County**-largest administrative division of a state.
- **Township**-An approximately **thirty-six-square mile** division of land used in the Federal Rectangular Survey System (**93.23 sq km**)
- **Section**-A unit of land approximately one mile square and normally containing **640 acres**, as laid out by the government survey.
- **Parcel**-A contiguous area of land described in a single legal description or as one of a number of lots on a plat

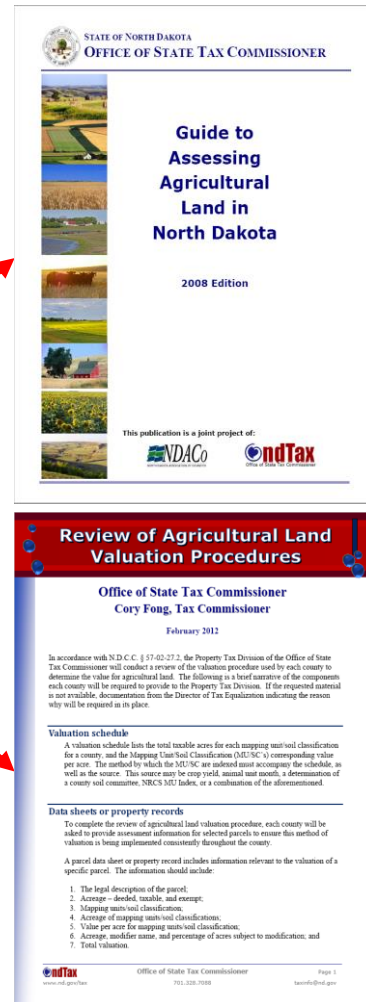


| | | | | | | |
|----|----|----|----|----|----|----------|
| 6 | 5 | 4 | 3 | 2 | 1 | SECTIONS |
| 7 | 8 | 9 | 10 | 11 | 12 | |
| 18 | 17 | 16 | 15 | 14 | 13 | |
| 19 | 20 | 21 | 22 | 23 | 24 | |
| 30 | 29 | 28 | 27 | 26 | 25 | |
| 31 | 32 | 33 | 34 | 35 | 36 | |



Ag Land Valuation

- **Must be based on soil type – detailed or general**
 - Soils information from NRCS – National Resources Conservation Service – US Dept. of Agriculture
 - Implement NDSU average values by NRCS soil type for Agricultural land valuation
 - State Tax Dept. Ag Land valuation guide & Certification guide



Ag Land Valuation – Basically Two Methods

- **1. “Breakpoint” – generalized use “Productivity Index”**
 - Better quality soils considered “cropland”
 - Lower quality soils considered “non cropland”
 - Much Simpler to implement

- **2. “Actual Ag Land Use” – use GIS to map land use acres + Productivity Index-Soils**
 - GIS is used to draw land use (cropland, non-crop, oil wells, etc)
 - More complex and time consuming to implement – most precise

North Dakota Ag Land Valuation Overview

ND Tax Dept

The document is a table showing agricultural value per acre for the 2017 assessment. It includes a header with the ND Tax Dept logo and title. The table lists various agricultural products and their corresponding values per acre. The values are organized into columns for different categories of crops and land uses.

2019 Average Ag Land Values

NDSU Ag Land
Production Value 2018
Average Ag - \$454.62
Cropland - \$692.46
NonCrop - \$156.54

Problem: How to make Allocation Equitable?

Need to know how many crop and noncrop acres, other types of land use and soil quality

How much to Where?



$$\begin{aligned}
 &\text{Mountrail Ag Acres} \\
 &1,048,451.07 \\
 &\times \quad \underline{\$454.62} \\
 &= \\
 &\text{Ag Acre Total Value} \\
 &\quad \underline{\$476,646,825} \\
 &\text{at 100\% Threshold}
 \end{aligned}$$

NDSU Ag Values
"Capitalized average annual gross return"



NRCS Web Soil Survey – Soils Data

USDA United States Department of Agriculture Natural Resources Conservation Service

Web Soil Survey

Home About Soils Help Contact Us

You are here: Web Soil Survey Home

The simple yet powerful way to access and use soil data.

START WSS

Welcome to Web Soil Survey (WSS)

Web Soil Survey (WSS) provides soil data and information produced by the National Cooperative Soil Survey. It is operated by the USDA Natural Resources Conservation Service (NRCS) and provides access to the largest natural resource information system in the world. NRCS has soil maps and data available online for more than 95 percent of the nation's counties and anticipates having 100 percent in the near future. The site is updated and maintained online as the single authoritative source of soil survey information.

Soil surveys can be used for general farm, local, and wider area planning. Onsite investigation is needed in some cases, such as soil quality assessments and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center at the following link: [USDA Service Center](#) or your NRCS State Soil Scientist at the following link: [NRCS State Soil Scientist](#).

I Want To...

- Start Web Soil Survey (WSS)
- Know Web Soil Survey Requirements
- Know Web Soil Survey operation hours
- Find what areas of the U.S. have soil data
- Find information by topic
- Know how to hyperlink from other documents to Web Soil Survey
- Know the SSURGO data structure
- Use Web Soil Survey on a mobile device

Announcements/Events

- Web Soil Survey 3.3.2 has been released! View new features and fixes.

Search

Enter Keyword

All NRCS Sites

Browse by Subject

- Soils Home
- National Cooperative Soil Survey (NCSS)
- Archived Soil Surveys
- Status Maps
- Official Soil Series Descriptions (OSD)
- Series Extent Explorer
- Geospatial Data Gateway
- eFOTG
- National Soil Characterization Data
- Soil Health
- Soil Geography

- <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>
- Soil Name
- Soil Code
- Productivity Index
- Pounds of Forage for Soil Type (used for Animal Unit Month calculation – AUM)
- Mountrail County has 150 soil types

“Breakpoint Method” – 2017 Valuation

Better Soils

| Productivity Index (PI) or AUM (noncrop) | Land Valuation – “Cropland” per acre | Land Valuation – “NonCrop” per acre |
|--|--------------------------------------|-------------------------------------|
| 95 | \$917 | -- N/A -- |
| 90 | \$880 | -- N/A -- |
| 80 | \$770 | -- N/A -- |
| 70 | \$688 | -- N/A -- |
| 60 | \$578 | -- N/A -- |
| 50 | \$486 | -- N/A -- |
| 49 | -- N/A -- | \$217 |
| 40 | -- N/A -- | \$178 |
| 30 | -- N/A -- | \$132 |
| 20 | -- N/A -- | \$89 |
| 10 | -- N/A -- | \$40 |
| 0 | -- N/A -- | \$15 |

Poorer Soils

2017 Ag Values

Average Ag - \$458.53
 Crop - \$678.66
 NonCrop - \$147.91

Breakpoint

Cropland

Non-Cropland

Note the Difference between Soil Types - \$269



2017 Breakpoint Method Implemented – Processed New Ag Land Values

- Different method for the county – changed historical Ag Land values
- Updated 8,900+ parcels
- ND “Notice of Increase” – approx. 3,000 letters sent out
 - \$3,000+ increase in valuation **AND** 10% or more of previous value
- Minimal communication with public – one small article in paper
 - **(our “bad”)**
- Result?
- Confusion, some angst, some happy – **some *VERY* unhappy vocally...**

Contention!

May 10, 2017 Paper

ATTENTION MOUNTRAIL COUNTY LANDOWNERS! Do Your 2017 Farmland Valuations Make Sense?

Sign our petition today at

<https://www.ipetitions.com/petition/reverse-mountrail-countys-taxation-method>

The petition reads: "We, the undersigned, call on Mountrail County Commissioners to continue to use 2016 farmland valuations until: 1. A new valuation method is developed based on actual land use as cropland or non cropland. 2. A Soils Committee is formed to recommend tax assessment methods to the county commission."

The site is easy to use, just follow the instructions.

Let your voice be heard concerning proposed changes in taxable valuations in Mountrail County.

Voice your concerns, not only by signing the petition, but also call your County Commissioners and attend the Commissioners Meeting on Tuesday, May 16 at noon at the Courthouse in Stanley

Concerned Citizens of Mountrail County, including Charlie Sorenson and Fred Evans

ship met with the Board to discuss the soil implementation. Also present from the Tax Directors Office was Rory Porth, Assessor and Teresa Captain, Deputy Tax Director. Fred Evans stated the County is not utilizing the implementation of soils correctly and feels usage should be utilized.

Charlie Sorenson suggested a soil board be created that would make suggestions to the Tax Director's Office. Charlie Sorenson stated the land should be split into pasture vs crop land.

Assessor Porth explained that the surrounding counties are following the same procedures.

States Attorney Enget stated that modifiers are not dead but it does have to be approved by the state before implementation and the assessing rules come from the legislation.

May 24, 2017 Paper

Landowners Question 2017 Taxable Valuations



Since receiving their new taxable valuations on agricultural land, some landowners in Mountrail County have been expressing their concerns to County Commissioners. Landowner Charlie Sorenson addressed the commission saying they will keep coming back to the meetings as they believe it is important to all citizens to do the valuations cor-

There clearly are some flawed issues with the Revised/Proposed Taxation of Land in Mountrail County.

We see the main Problem is land use, assessing crop-land and non-cropland the same.

The ND Century Code is very clear on landuse and how it is to be dealt with.

Concerned citizens can do two things:

1. Sign the petition on-line (ipetitionmountrailcounty) it will pop up. It asks to continue 2016 tax rate for 2017 and start a five member soil committee.

No need to donate!

2. Come to the Mountrail County Commissioners meeting on June 6th, 9:00 a.m. and Tax Equalization meeting at 10 a.m. Be ready to hear people share their concerns, along with being ready to share your concerns.

Paid for by Charlie Sorenson and Fred Evans

May 31, 2017 Paper

IT'S THE LAW

The assessor shall apply
"Actual use of the property for cropland or noncropland purposes by the owner of the parcel"
(subsection 8 of NDCC 57-02-27.2)

2017 valuations of agricultural property in Mountrail County do not consider use and have been made in direct violation of this law.

Persuade Mountrail County Commissioners to change direction

Attend the Mountrail County Equalization Meeting on Tuesday, June 6th at 10:00 a.m. at the courthouse.

Search online "ipetitions Mountrail County" and sign our petition

Paid for by Fred Evans and Charlie Sorenson

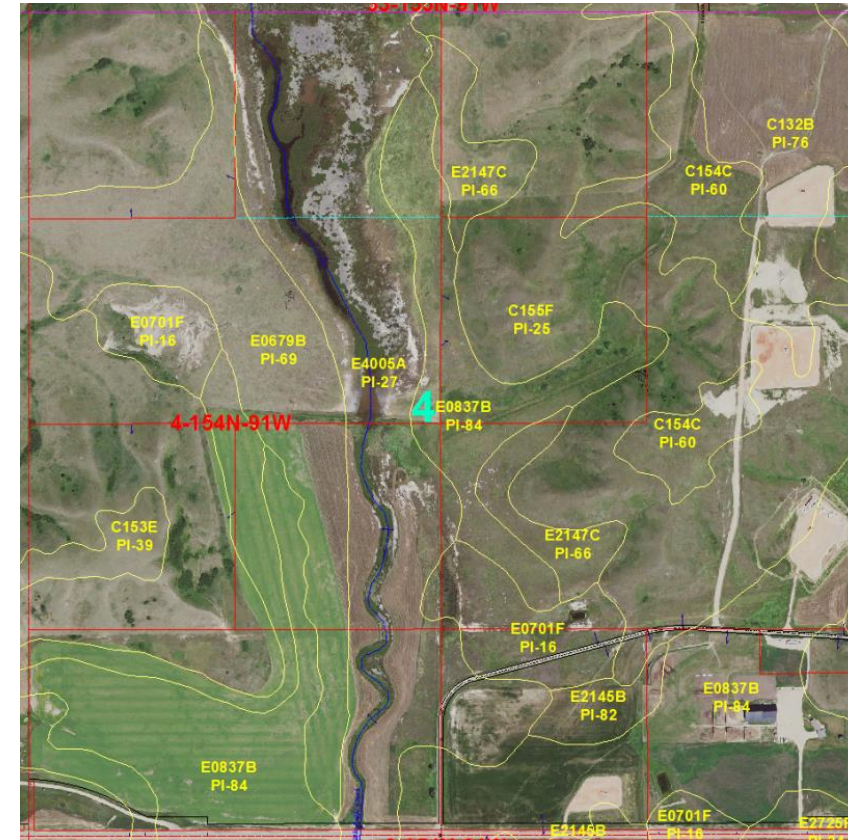
60 + individuals protesting Ag Land values at County Board of Equalization Meeting



Ag Land Valuation

- Each parcel has various soil types within it
- Each soil type has a “Productivity index” associated
- Higher PI’s = better soil
- Higher PI’s have higher \$ value applied, lower PI’s have a lower \$ value applied
- **2017 Mountrail used ND State approved ‘breakpoint method’ in setting values – did not use actual use**
- **June 2017 - County Board of equalization voted to utilize actual land use for valuation**

Example Section



**WENT ~~BACK~~ TO 2016 LAND
VALUES FOR THE ~~FUTURE~~
OF ACTUAL LAND USE**

Just over Two Years Ago...

“How do we do this...?”

RORY'S "BEAUTIFUL MIND"

VANGUARD ROCKS!

RON JOY SURF SHOP
SHE OF A KIND
St. Pete Beach, Fla.

BRAIN BUBBLES

MUST ID ACRES BY LAYERS

TEST-ADLER POWERS RAT LAXE

TRG
IAAO-811-INTRO GIS-18MS \$100
IAAO-812-ADV GIS-18MS \$100
IAAO-812-INC. APPROACH-20 \$400
RORY

SOILS LAYER
- CDDE - not color
- ARCMAP

FARM RES EX
- 2 AC RES
- OILSITES/ROADS
- CRP
- GRAVEL
- COMMERCIAL
- TRUCKS & BOATS
- PRIVATE DRIS

WHAT IS UNIQUE ABOUT THIS PICTURE?

SPACE

12-1200 \$100 2016 AT VALUE

16-655-00-2016

NEW PLAN
VMS PROJECT - \$58865
VMS VISIO - \$58999 + \$33299
SIDWELL DISCUSSIONS
FARMS - \$1599 / \$999 MAINT.

ARCMAP - \$1250 / \$400-500 ANNUAL
- TRAINING - 1-1.5 DAYS

SW TOOLS INVESTIGATION
- OFFROAD - \$2K-2.5K/ATR
- SIDWELL GIS - FARMSE-NAIP AIRPHOTOS

CROP/NON CROP TOOLS
- CROPLAND
- ASBIDATA

TAX DEPT REPORTING TOOLS & FARMS SERVER

2 VALUES

SCHOOL DIST
- VOTING DIST
- AMBULANCE
- FIRE

LAYERS
- HISTORICAL PHOTOGRAPHY
- CROPLAND CRP
- NONCROPLAND
- RANGELAND
- PASTURE LAND
- NON PRODUCTIVE
- ALL MODIFIERS
- INUNDATED
- COMMERCIAL
- OIL SITES
- SALT WATER
- RESIDENTIAL
- ASMT CODES

VALVE SCHEDULES
Pi
AUM
NON PRODUCTIVE

SOILS 6/20

| | |
|-------------------|------------------|
| 2-132017 | \$421.83 |
| 8942 | \$421.83 |
| 6,991.70 | 1,066,991.70 |
| 1,569,500 | \$450,085,337.04 |
| VALUE AT \$412.85 | |
| DO NOT ERASE | |
| DIFF 8,515,837.04 | \$422.13 |
| | 422.93 |
| | 450,114,400 |

DO NOT ERASE

GO BACK - GTTF
W PARCELS 25K20
520

STATE AID
3510K
SECTIONS 2-1800
UGOS-1

MAX \$2300
\$1600
\$1380
\$1261
\$11970
\$1250
\$12600

53 & 538

SIDWELL GIS
- UPDATE AERIAL PHOTOGRAPHY - YEARLY ALSO - \$900/120YR
- LAND USE LAYER(S) \$86K
- CROP
- NON-CROP
- OTHERS
- EXAMPLE COUNTY W/LAND USE - WHAT IS PROVIDED
- FARMS QUARTERLY PULL - \$1500
- PORTICO? WHEN
- WHEN TO ROUNDPARCEL SOIL CODES?

**D-U
D-U
D-P**

2-132017

8942

6,991.70

1,569,500

VALUE AT \$412.85

DO NOT ERASE

DIFF 8,515,837.04

\$422.13

422.93

450,114,400

GO BACK - GTTF

W PARCELS 25K20

520

STATE AID 3510K

SECTIONS 2-1800

UGOS-1

MAX \$2300

\$1600

\$1380

\$1261

\$11970

\$1250

\$12600

53 & 538

SIDWELL GIS

- UPDATE AERIAL PHOTOGRAPHY - YEARLY ALSO - \$900/120YR

- LAND USE LAYER(S) \$86K

- CROP

- NON-CROP

- OTHERS

- EXAMPLE COUNTY W/LAND USE - WHAT IS PROVIDED

- FARMS QUARTERLY PULL - \$1500

- PORTICO? WHEN

- WHEN TO ROUNDPARCEL SOIL CODES?

LAYERS

- HISTORICAL PHOTOGRAPHY

- CROPLAND CRP

- NONCROPLAND

- RANGELAND

- PASTURE LAND

- NON PRODUCTIVE

- ALL MODIFIERS

- INUNDATED

- COMMERCIAL

- OIL SITES

- SALT WATER

- RESIDENTIAL

- ASMT CODES

VALVE SCHEDULES

Pi

AUM

NON PRODUCTIVE

SOILS 6/20

2-132017

8942

6,991.70

1,569,500

VALUE AT \$412.85

DO NOT ERASE

DIFF 8,515,837.04

\$422.13

422.93

450,114,400

GO BACK - GTTF

W PARCELS 25K20

520

STATE AID 3510K

SECTIONS 2-1800

UGOS-1

MAX \$2300

\$1600

\$1380

\$1261

\$11970

\$1250

\$12600

53 & 538

SIDWELL GIS

- UPDATE AERIAL PHOTOGRAPHY - YEARLY ALSO - \$900/120YR

- LAND USE LAYER(S) \$86K

- CROP

- NON-CROP

- OTHERS

- EXAMPLE COUNTY W/LAND USE - WHAT IS PROVIDED

- FARMS QUARTERLY PULL - \$1500

- PORTICO? WHEN

- WHEN TO ROUNDPARCEL SOIL CODES?

LAYERS

- HISTORICAL PHOTOGRAPHY

- CROPLAND CRP

- NONCROPLAND

- RANGELAND

- PASTURE LAND

- NON PRODUCTIVE

- ALL MODIFIERS

- INUNDATED

- COMMERCIAL

- OIL SITES

- SALT WATER

- RESIDENTIAL

- ASMT CODES

VALVE SCHEDULES

Pi

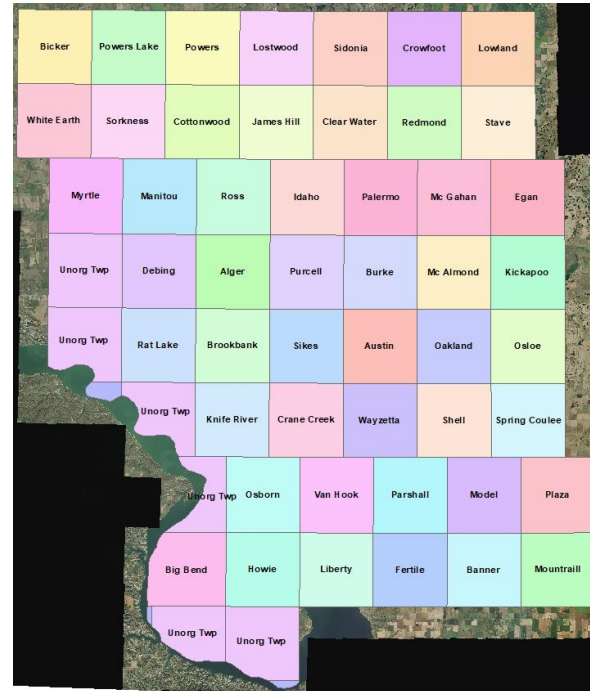
AUM

NON PRODUCTIVE

Actual Land Use – Bounding the Problem

Much to keep track of:

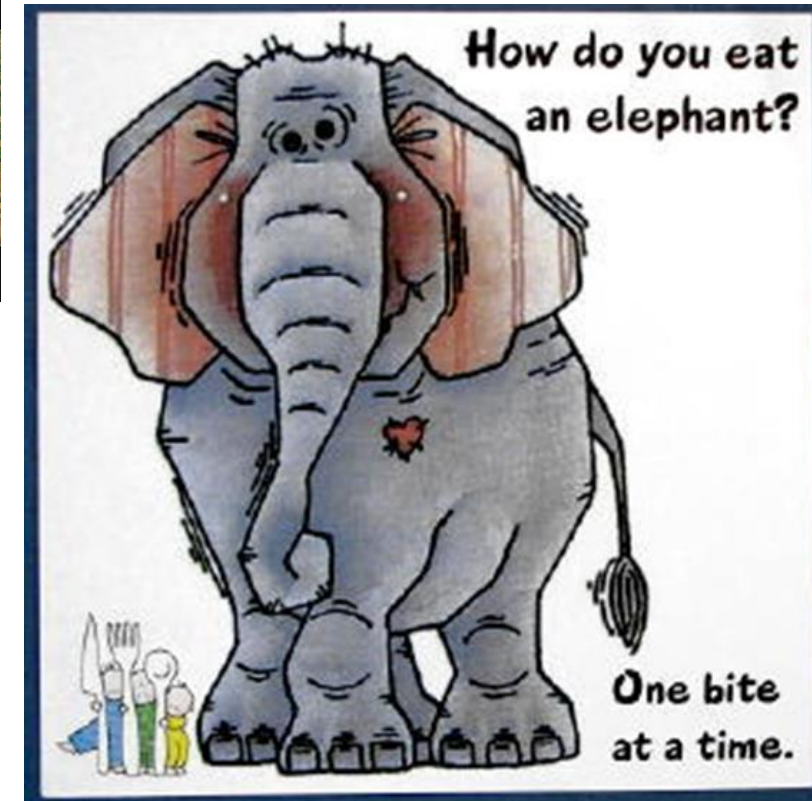
- Mountrail County Comprised of
 - 55 Townships – 7 cities
 - 1,803 Sections
 - 1,048,451.07 Ag related acres
 - 8,946 Ag related parcels
 - 2,200 Ag related parcel owners
 - 150 Soils Codes - \$ values applied
- Where are those soils?
- How is each parcel being used?
 - Cropland
 - Non-Cropland
 - Farmstead
 - Commercial
 - Gravel Pit
 - Roads
 - Oilwell Sites
 - Saltwater disposal



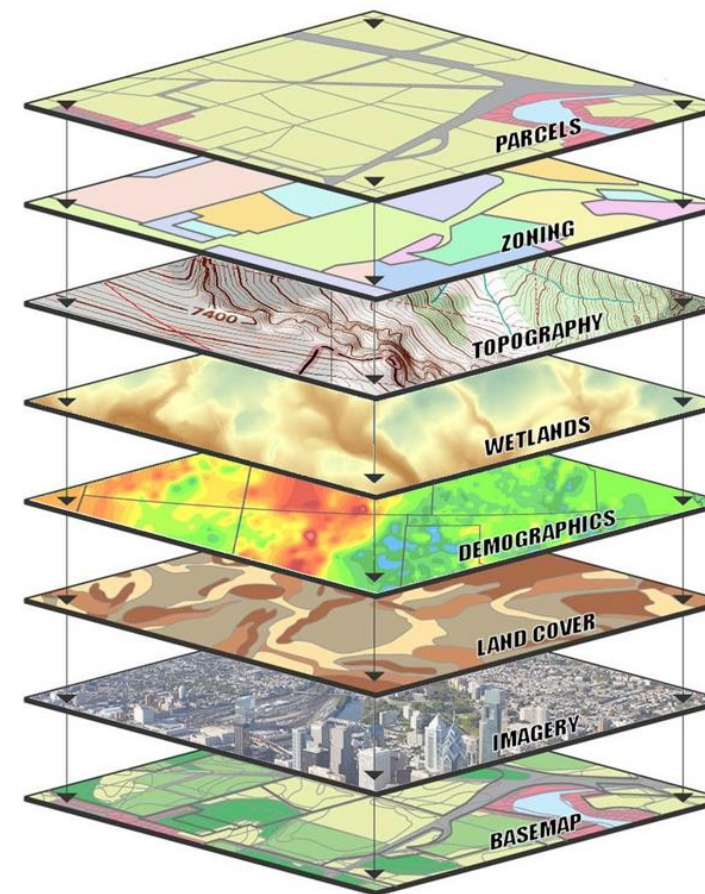
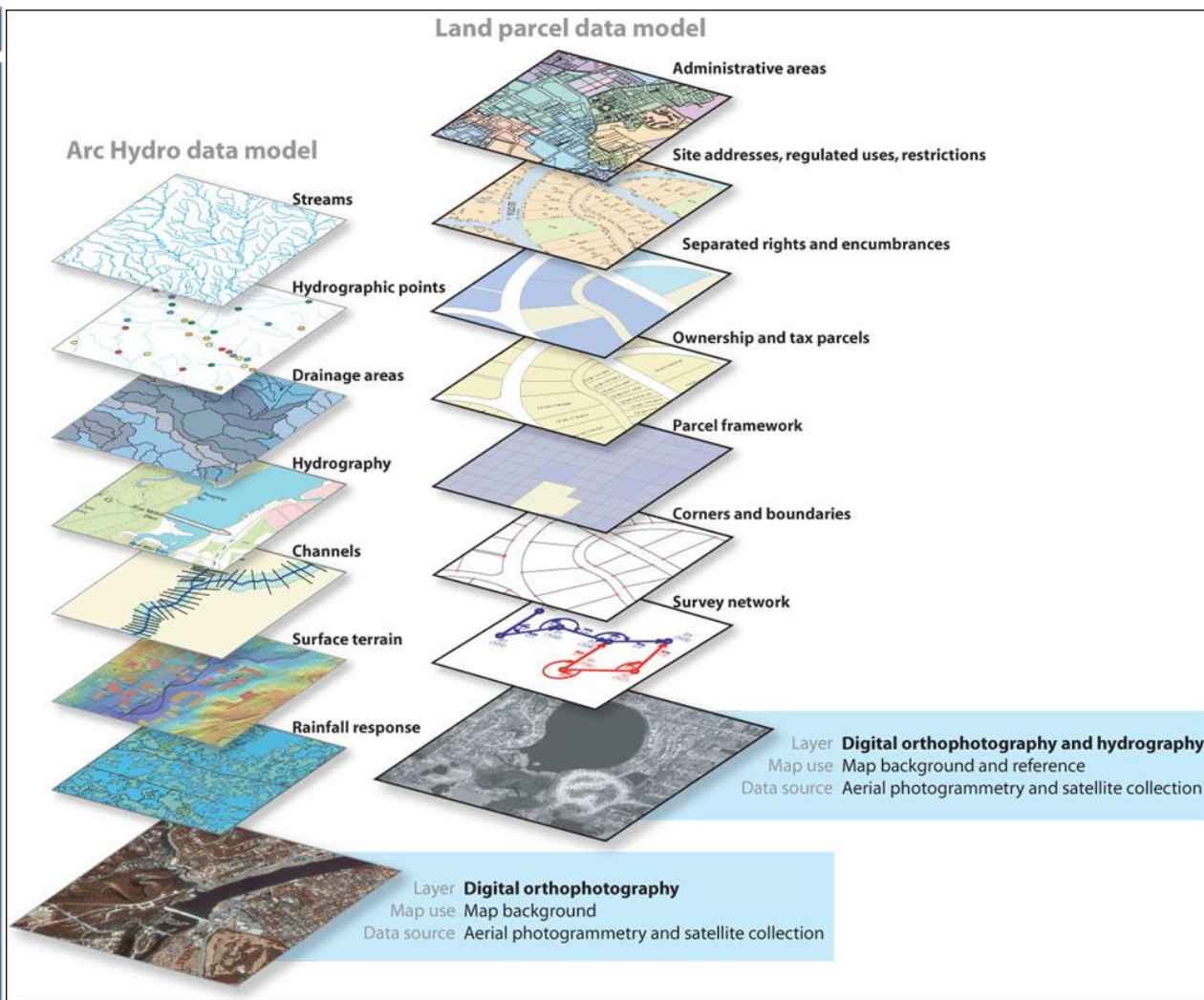
Answer? – utilize a GIS system

Problem – we were VERY new to GIS

Education needed – our office AND our constituents



'GIS' – Geographic Information System



GIS DATA LAYERS

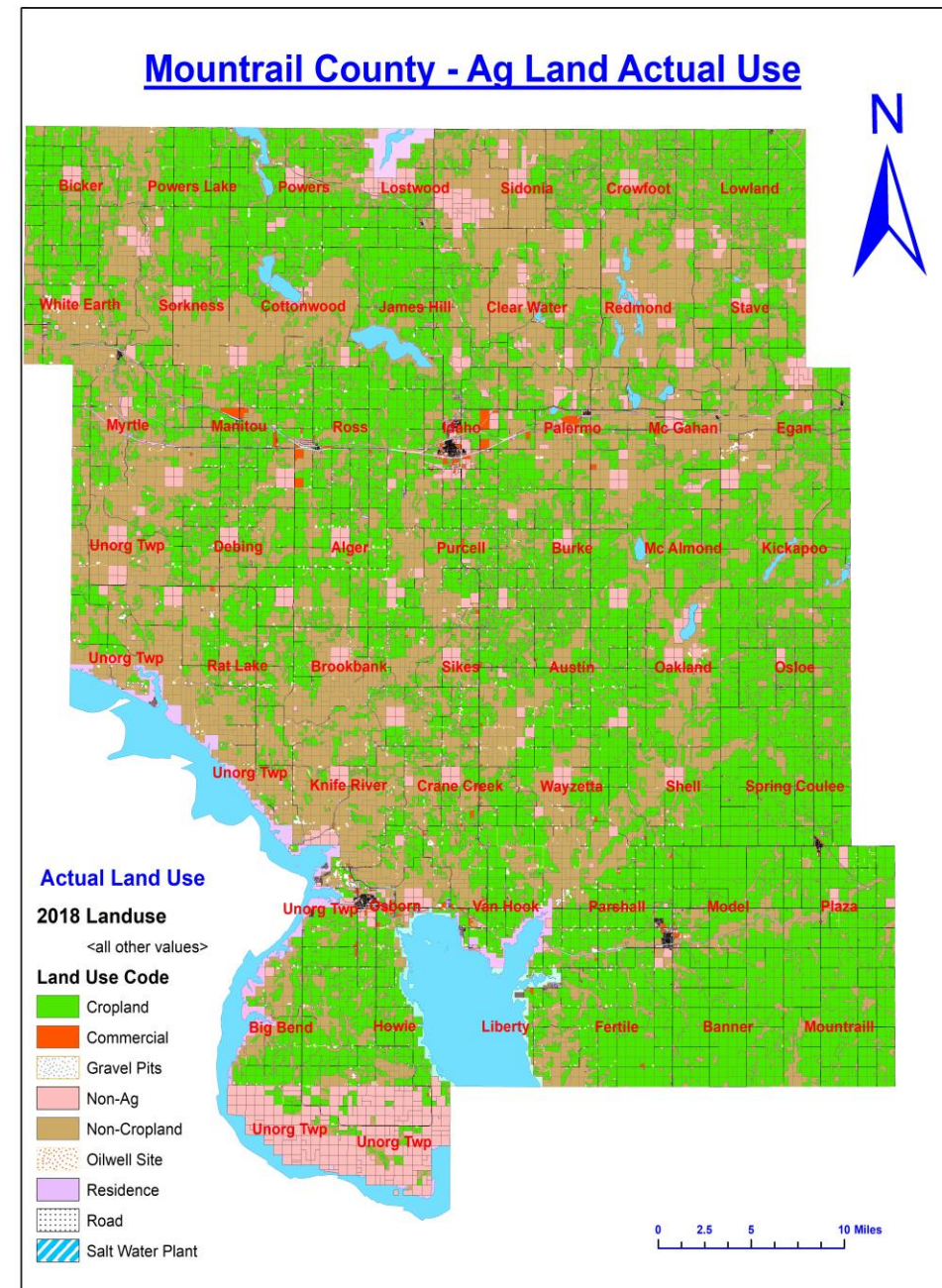
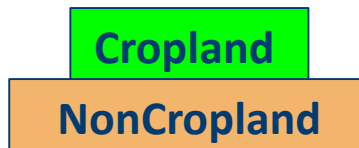
Many different types of data can be integrated into a GIS and represented as a map layer.

Examples can include: streets, parcels, zoning, flood zones, client locations, competition, shopping centers, office parks, demographics, etc.

When these layers are drawn on top of one another, undetected spatial trends and relationships often emerge. This allows us to gain insight about relevant characteristics of a location.

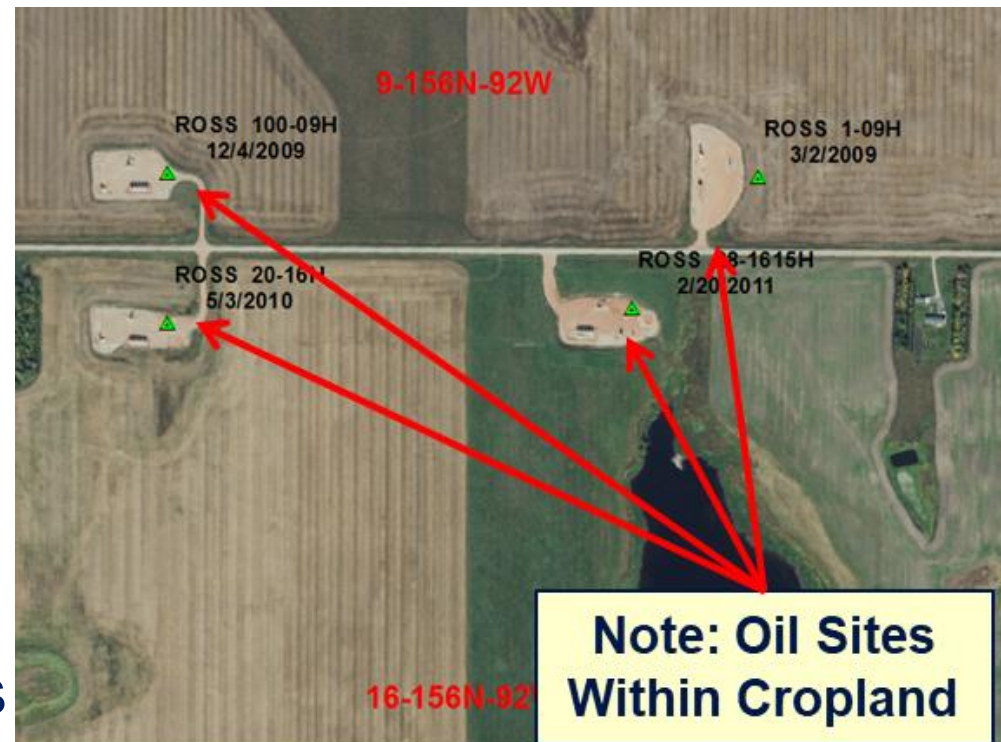
Project Plan

- GIS Software in House – ArcMAP
 - ArcMap Publisher, Sidwell FARMS
- Soils Committee Formed
- Drawing Ruleset Defined and Approved
- Valuation Ruleset Drafted and Approved
- All phases start – July 2017
 - 3 Sections – “Pre-Pilot”
 - Pilot Section
 - Drawing by Tier
- Tier Deliveries Started Fall 2017
- Total Tier county delivery – Feb 2018
- 2017 Aerial Photography Reviews-Update
- Used for 2019 Equalization Process



Drawing Ruleset Example – Oilwell Sites

- ND Century Code – “Ag property used for oil, natural gas, or subsurface minerals must continue to be assessed as Ag property for the remainder....”
- **Challenge: Was it cropland or non-cropland before?**
 - Some parcels found oil sites partially on crop land, partially on non-cropland
 - Very difficult to manage acres
- **Simplified Approved Decision – all oil site acreage will be valued as non-cropland based off soil types underneath oil site (includes road leading to oil site)**



Land Used for Extraction of Oil, Natural Gas, or Subsurface Minerals

Land that was assessed as agricultural property at the time the land was put to use for extraction of oil, natural gas, or subsurface minerals as defined in N.D.C.C. § 38-12-01 must continue to be assessed as agricultural property if the remainder of the surface owner's parcel of property on which the subsurface mineral activity is occurring continues to qualify for assessment as agricultural property under subsection 1 of N.D.C.C. § 57-02-01.

Farmsteads and Modifiers

- Farmsteads are considered ‘non-crop’ and are valued at non-cropland value based off soils under farmstead
- With **Actual Land use** – modifiers are **not** necessary and are not used in Mountrail County
 - With breakpoint method, modifiers could be considered and are used for cropland areas only



| Rocky* | Very Rocky* | Salinity* |
|-------------------------------|---------------|------------------|
| Non-Productive | Obstacles | Multiple Factors |
| Irregular Field | Trees | Inaccessibility |
| Electrical Transmission Lines | Public Road | Brush & Ponding |
| Abandoned Railroad | Oil Well Site | Non-Tilled |
| Pasture | Non-Cropland | Drain Ditch |
| Marsh | Land Use (?) | Easements |

Examples of Modifiers from ND State List

*Items handled By NRCS Soil Survey

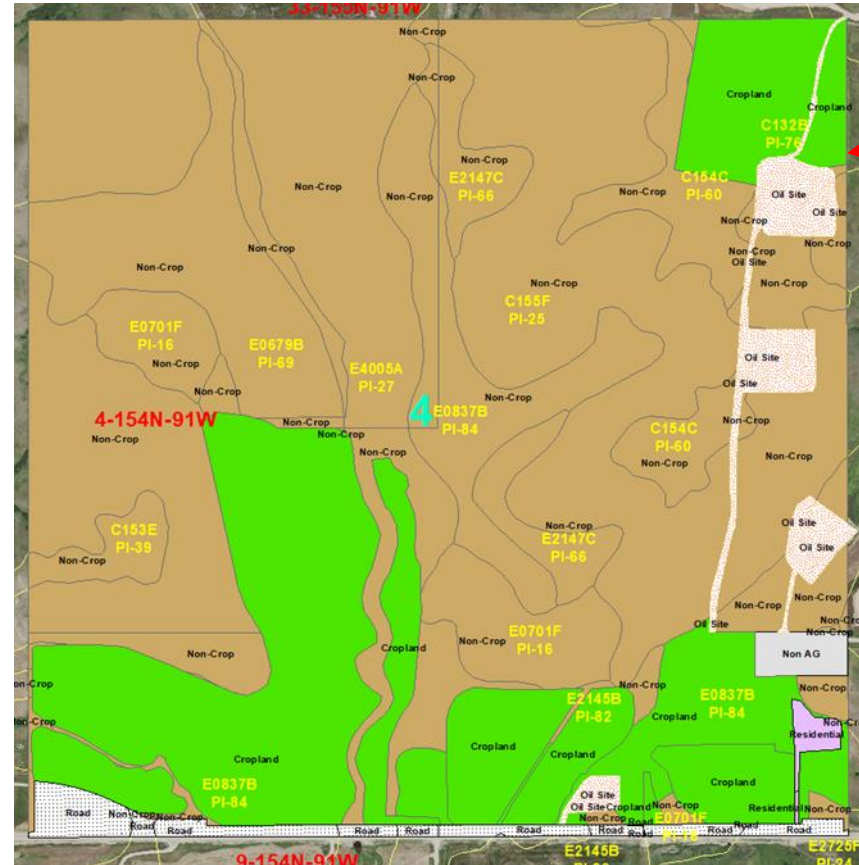
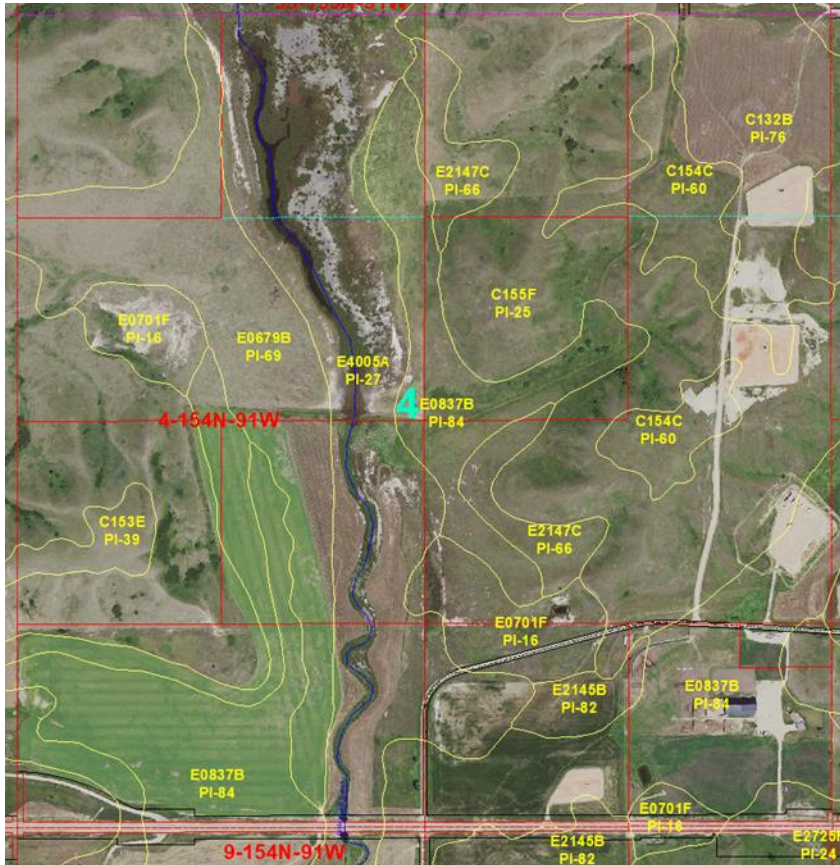


Land Valuation Ruleset

| GIS Item | Valuation Method |
|--------------------------------|--|
| Cropland | Cropland values - Productivity Index (PI) |
| Non Cropland | Noncrop values – based off AUM (Animal Unit Month) calculation (lbs air dry forage x 0.25 / 913 lbs/month = AUM/ac) Ex. 2000lbs forage x 0.25=500lbs / 913 = 0.55 AUM/ac |
| Farmsteads | Noncrop values |
| Oilwell Sites | Noncrop values |
| Salt Water Wells | 1) Commercial wells @ Commercial Values (Tax Dept) 2) Private Wells @ Noncrop values |
| <u>Taxable</u> Rural Residence | 2 Acres at \$2,000 / acre |
| Roads | \$0 for Right-of-Way acreage of TWP Certified Roads, County Roads, State Highways |
| Commercial Land / Structures | Commercial Values (Tax Dept) |
| Gravel Pits | Commercial Values (Tax Dept) |
| Non-Ag (vacant land) | Vacant Land Values (Tax Dept) |

What it Looks Like

- Left – Section with NRCS Soil Layer
- Right – Same section with Actual Use drawn in
- Types – Cropland, non-cropland, Residential, Roads, Oil Sites,



Note Portion
Of Oil Well site

Envisioning Data ... An Idea!



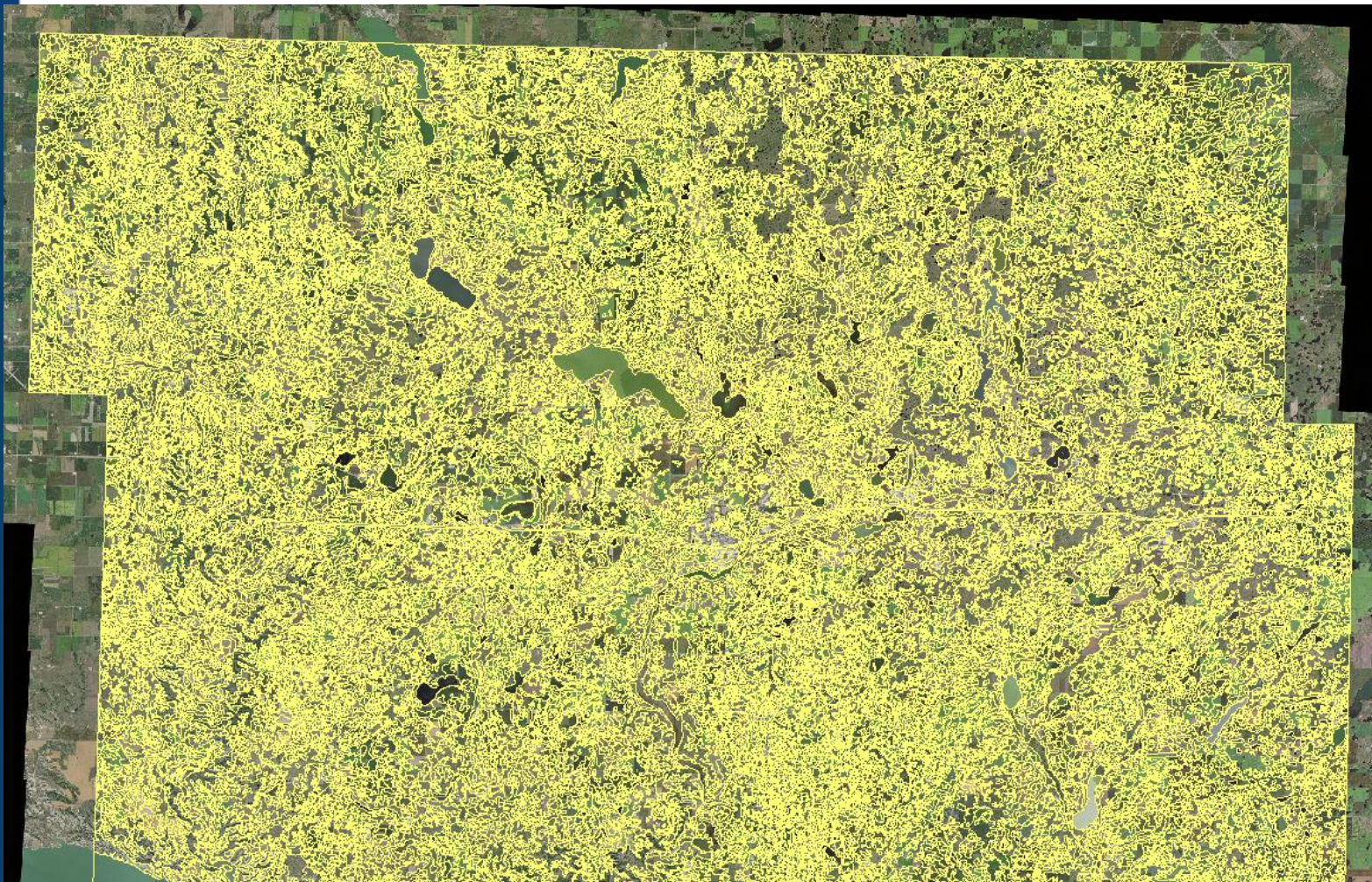
➤ NRCS Soils Info:

| Map unit symbol | Map unit name | PI | Acres in AOI |
|-----------------|--|----|--------------|
| C2A | Tonka silt loam, 0 to 1 percent slopes | 42 | 5,040.90 |
| C3A | Parnell silty clay loam, 0 to 1 percent slopes | 20 | 20,932.00 |
| C5A | Southam silty clay loam, 0 to 1 percent slopes | 5 | 12,561.50 |
| C6A | Tonka-Parnell complex, 0 to 1 percent slopes | 80 | 22.2 |
| C64C | Wamduska, west-Mauvai complex, 1 to 9 percent slopes | 32 | 15 |
| C75A | Vallers loam, moderately saline, 0 to 1 percent slopes | 37 | 3,237.70 |
| C132B | Williams-Zahl loams, 3 to 6 percent slopes | 76 | 168,009.50 |
| C132C | Williams-Zahl-Zahill complex, 6 to 9 percent slopes | 56 | 99,634.10 |
| C135C | Zahl-Williams-Zahill complex, 6 to 9 percent slopes | 56 | 1,706.80 |
| C135D | Zahl-Williams loams, 9 to 15 percent slopes | 43 | 201,198.10 |
| C148C | Williams-Zahl-Parnell complex, 0 to 9 percent slopes | 51 | 104.6 |
| C149B | Williams-Bowbells-Tonka complex, 0 to 6 percent slopes | 79 | 475.8 |
| C153E | Zahl-Max loams, 15 to 25 percent slopes | 39 | 4,003.70 |
| C154C | Zahl-Williams-Bowbells loams, 3 to 9 percent slopes | 60 | 122,042.40 |
| C155E | Zahl-Max-Arnegard loams, 9 to 25 percent slopes | 36 | 400.2 |
| C155F | Zahl-Max-Arnegard loams, 15 to 60 percent slopes | 25 | 28,940.40 |



Soil Code 'Productivity Index'

➤ Northern Mountrail County with NRCS Soils Layer



| Map unit symbol | Map unit name | PI | Acres in AOI |
|-----------------|--|----|--------------|
| C2A | Tonka silt loam, 0 to 1 percent slopes | 42 | 5,040.90 |
| C3A | Parnell silty clay loam, 0 to 1 percent slopes | 20 | 20,932.00 |
| C5A | Southam silty clay loam, 0 to 1 percent slopes | 5 | 12,561.50 |
| C6A | Tonka-Parnell complex, 0 to 1 percent slopes | 80 | 22.2 |
| C64C | Wamduska, west-Mauvai complex, 1 to 9 percent slopes | 32 | 15 |
| C75A | Vallers loam, moderately saline, 0 to 1 percent slopes | 37 | 3,237.70 |
| C132B | Williams-Zahl loams, 3 to 6 percent slopes | 76 | 168,009.50 |
| C132C | Williams-Zahl-Zahill complex, 6 to 9 percent slopes | 56 | 99,634.10 |
| C135C | Zahl-Williams-Zahill complex, 6 to 9 percent slopes | 56 | 1,706.80 |
| C135D | Zahl-Williams loams, 9 to 15 percent slopes | 43 | 201,198.10 |
| C148C | Williams-Zahl-Parnell complex, 0 to 9 percent slopes | 51 | 104.6 |
| C149B | Williams-Bowbells-Tonka complex, 0 to 6 percent slopes | 79 | 475.8 |
| C153E | Zahl-Max loams, 15 to 25 percent slopes | 39 | 4,003.70 |
| C154C | Zahl-Williams-Bowbells loams, 3 to 9 percent slopes | 60 | 122,042.40 |
| C155E | Zahl-Max-Arnegard loams, 9 to 25 percent slopes | 36 | 400.2 |
| C155F | Zahl-Max-Arnegard loams, 15 to 60 percent slopes | 25 | 28,940.40 |

Soil Code by NRCS Productivity Index

➤ Symbology - PI Breakdown

- 0-Blue-Water
- PI - 10 Step Color change
- Above 50 varying shades of green

Layer Properties



Show:

Features

Categories

Quantities

- Graduated colors
- Graduated symbols
- Proportional symbols
- Dot density

Charts

Multiple Attributes

Draw quantities using color to show values. Import...

Fields

Value: PI

Normalization: none

Classification

Manual

Classes: 11

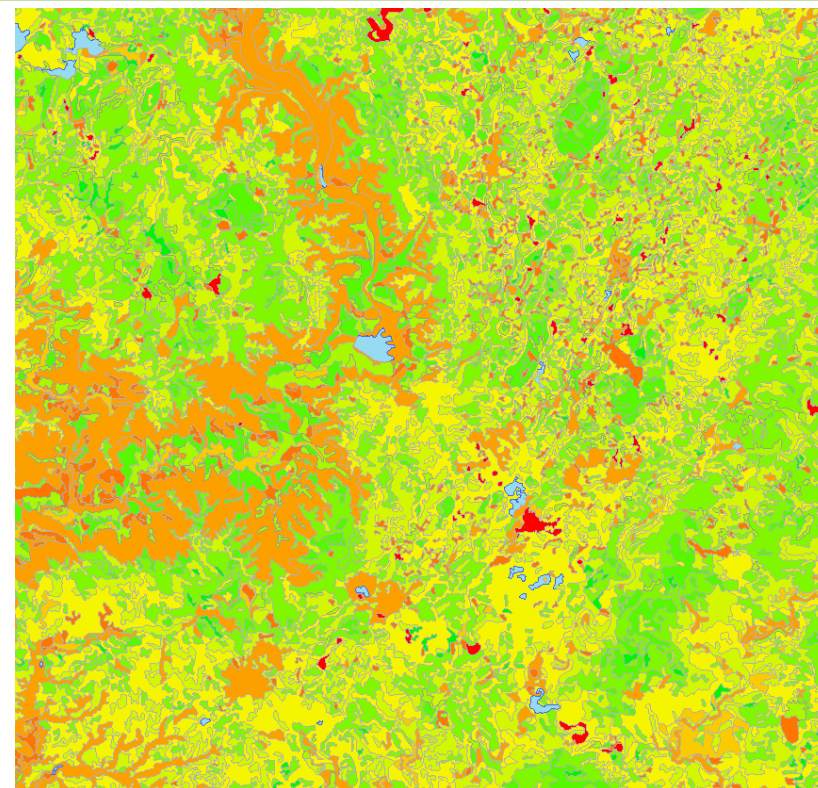
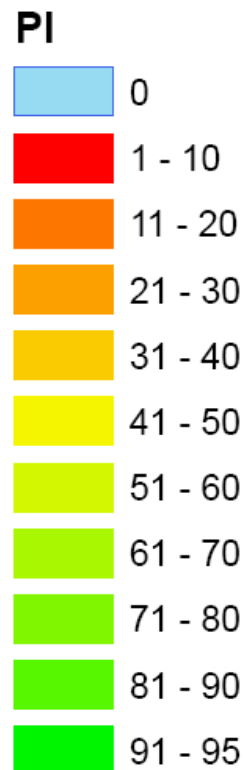
Classify...

Color Ramp: [Color Ramp]

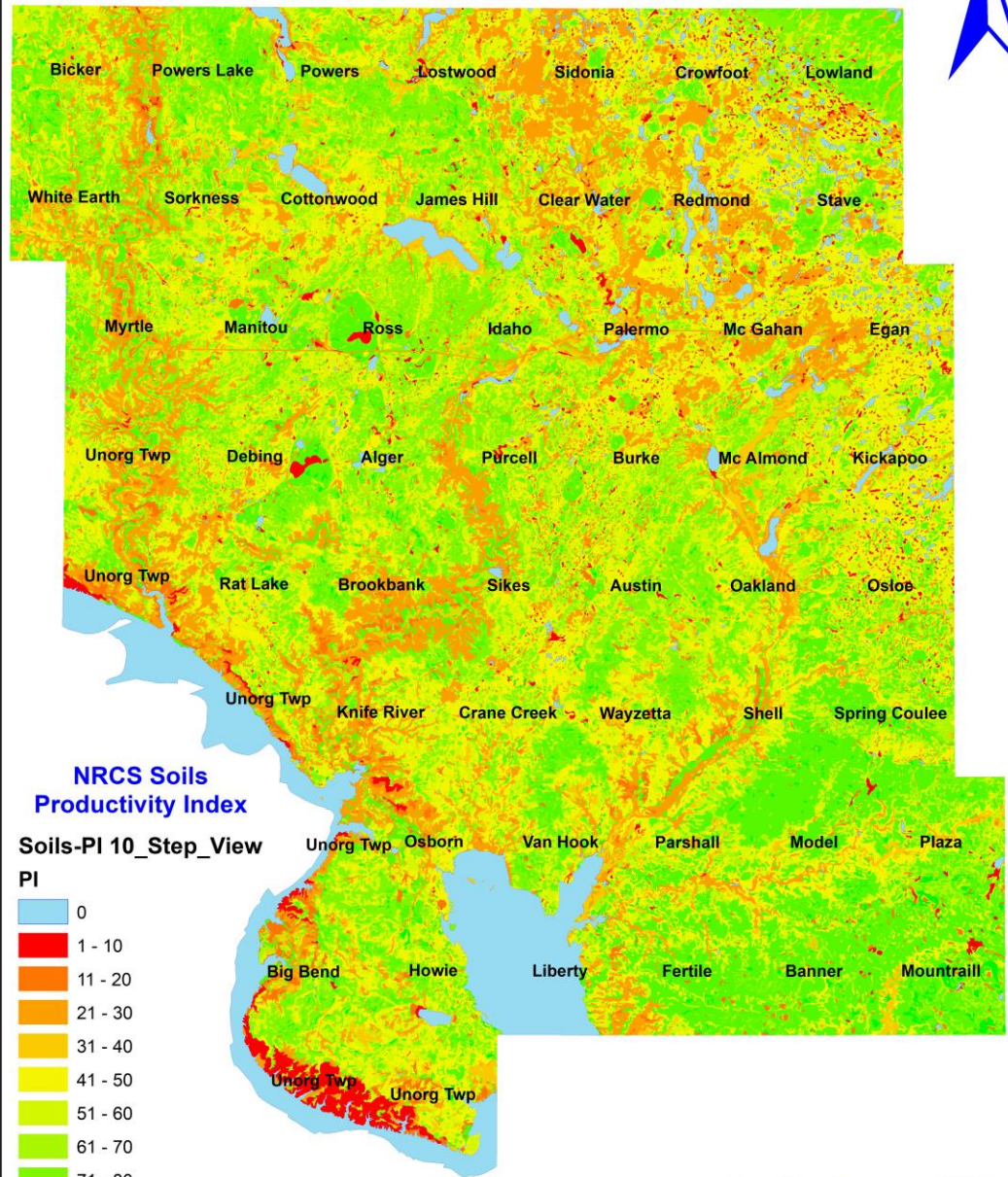
| Symbol | Range | Label |
|--------------------|--------------------------|-----------------------|
| [Blue] | 0.00000000 | 0.000000 |
| [Red] | 0.000001000 - 10.0000000 | 0.000001 - 10.000000 |
| [Orange] | 10.0000010 - 20.0000000 | 10.000001 - 20.000000 |
| [Light Orange] | 20.0000010 - 30.0000000 | 20.000001 - 30.000000 |
| [Yellow-Orange] | 30.0000010 - 40.0000000 | 30.000001 - 40.000000 |
| [Yellow] | 40.0000010 - 50.0000000 | 40.000001 - 50.000000 |
| [Light Green] | 50.0000010 - 60.0000000 | 50.000001 - 60.000000 |
| [Green] | 60.0000010 - 70.0000000 | 60.000001 - 70.000000 |
| [Dark Green] | 70.0000010 - 80.0000000 | 70.000001 - 80.000000 |
| [Light Blue-Green] | 80.0000010 - 90.0000000 | 80.000001 - 90.000000 |
| [Dark Blue-Green] | 90.0000010 - 95.0000000 | 90.000001 - 95.000000 |

Show class ranges using feature values

Advanced



Mountrail County - NRCS Soils



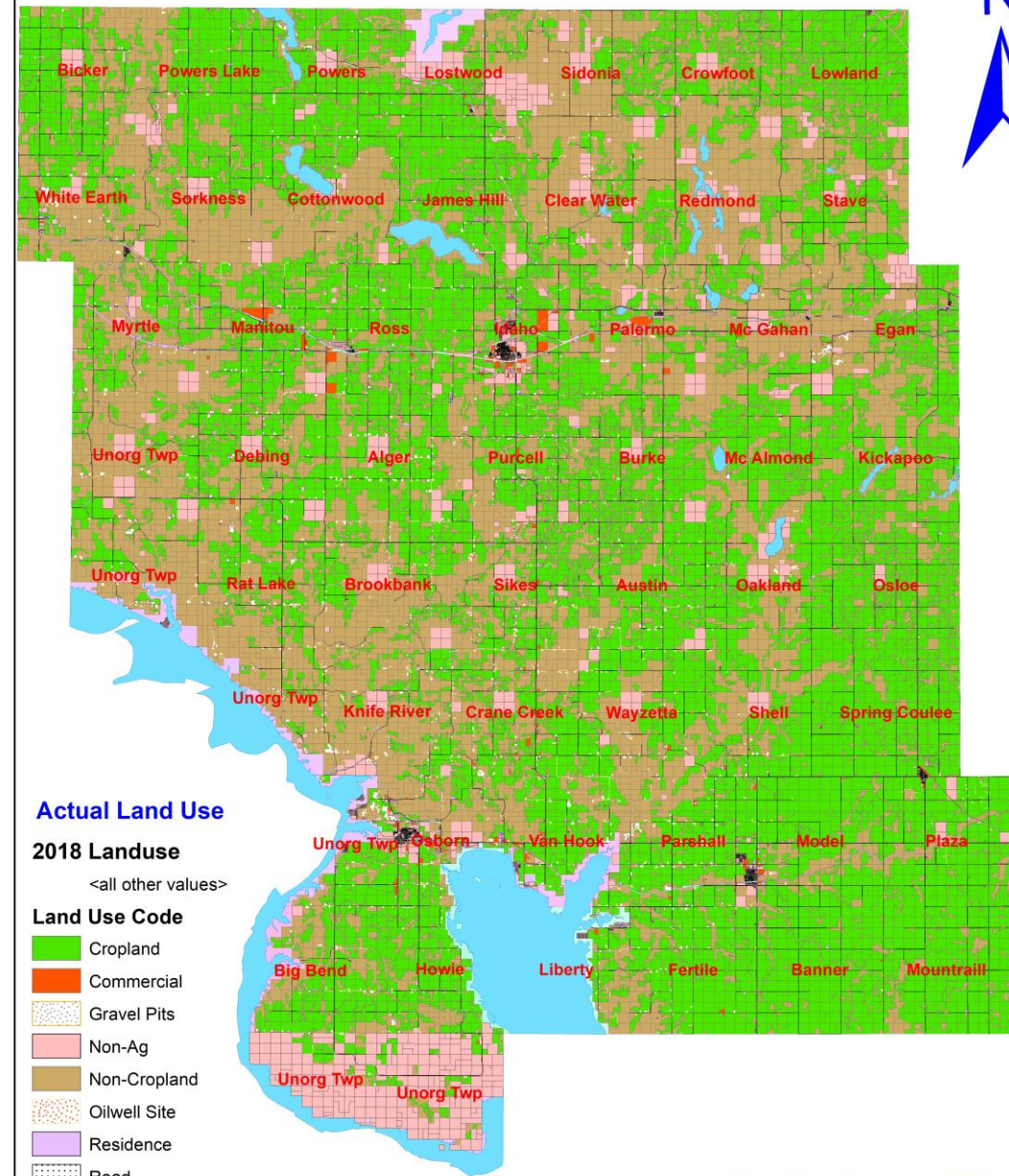
NRCS Soils Productivity Index

Soils-PI 10_Step_View

PI



Mountrail County - Ag Land Actual Use



Actual Land Use

2018 Landuse

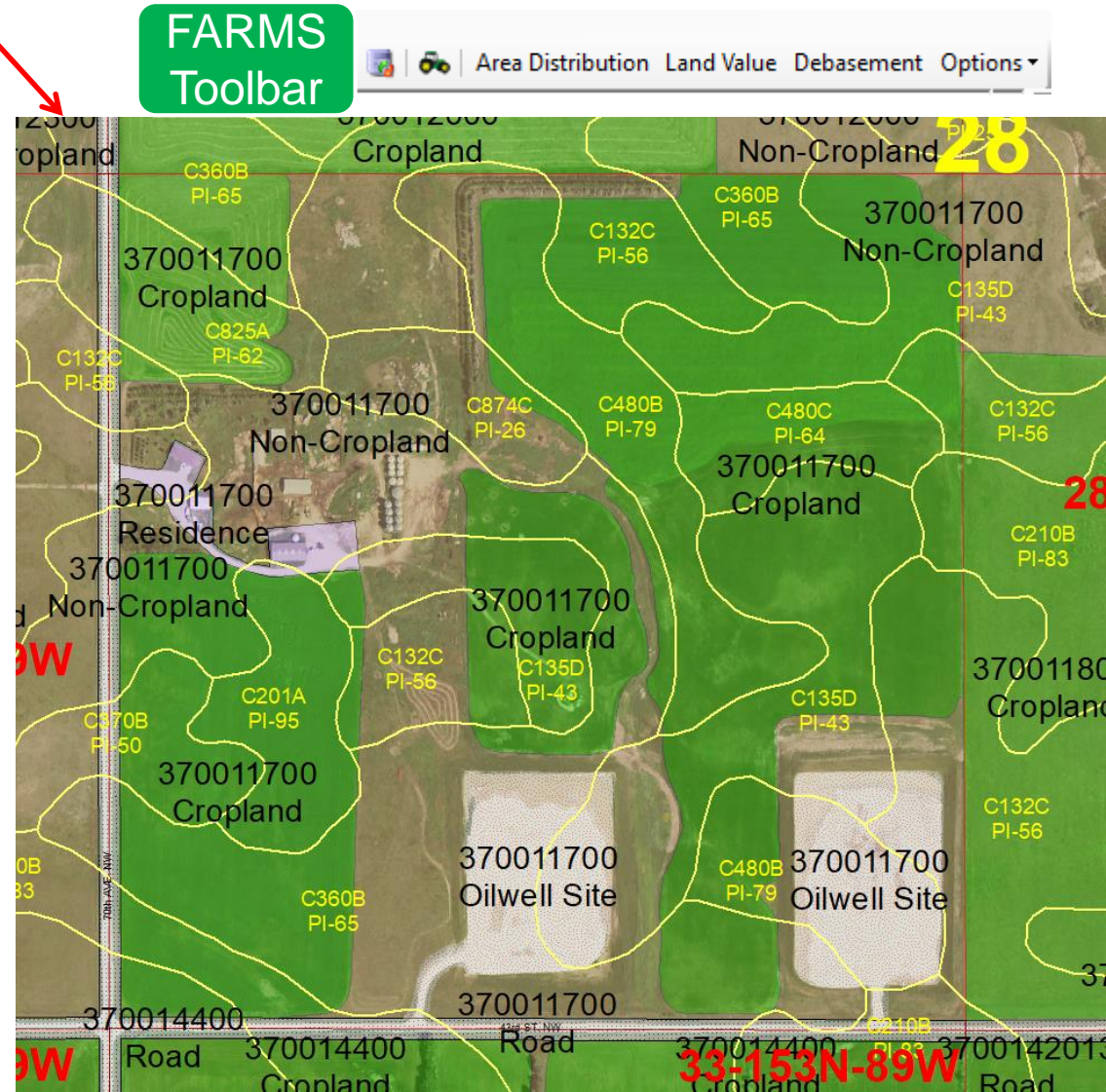
- <all other values>
- Cropland
- Commercial
- Gravel Pits
- Non-Ag
- Non-Cropland
- Residence
- Road
- Salt Water Plant



FARMS Processing – FARMS program

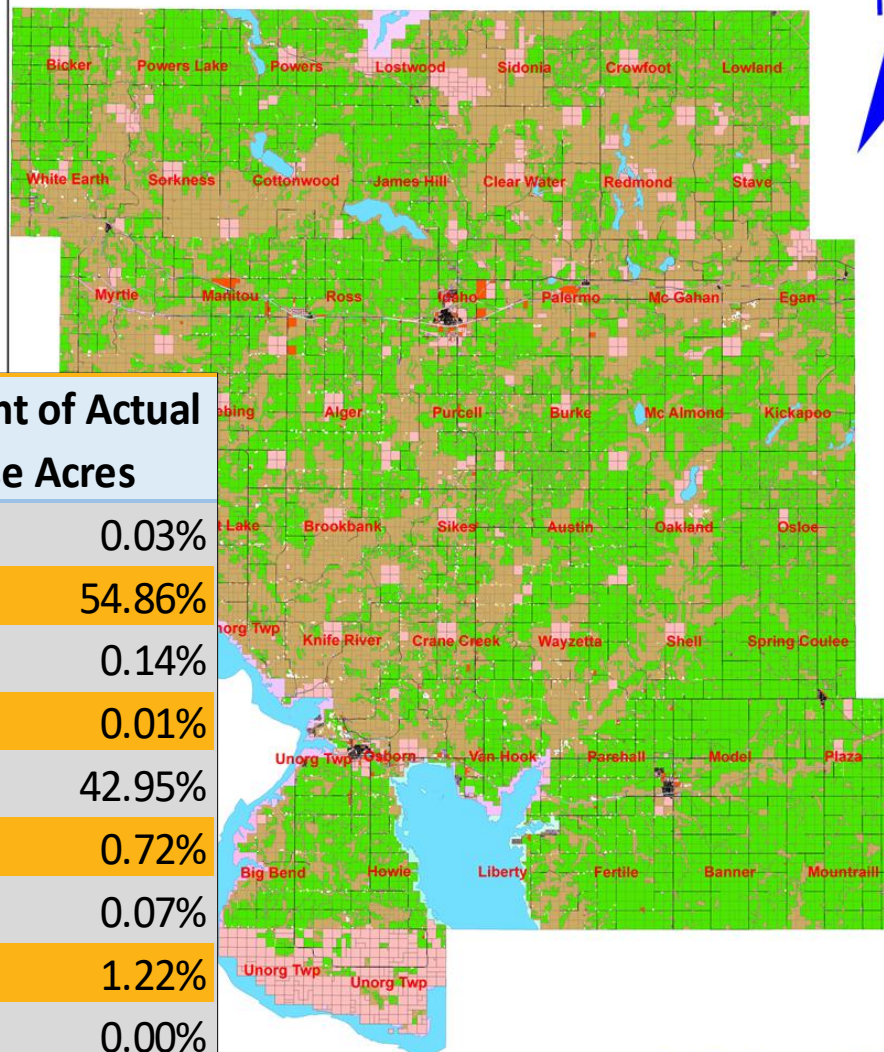
Sample Parcel –
SW ¼ Section

- Cropland, noncrop, Residence, Oil Site, Roads
- Utilizes Soil Types within Actual Land use
- “Slices” Actual Land use and Soil Type layers into acres – used for valuation
- Plenty of data provided
 - **This parcel – 32 rows**
 - **Entire county - 107,671 rows**



Detailed Acreage Reporting

Mountrail County - Ag Land Actual Use



| Land Use | Actual Use Acres | Percent of Actual Use Acres |
|--------------------|---------------------|-----------------------------|
| Commercial | 334.80 | 0.03% |
| Cropland | 583,785.01 | 54.86% |
| Gravel Pit | 1,496.77 | 0.14% |
| Non-Ag | 123.23 | 0.01% |
| NonCrop | 457,047.22 | 42.95% |
| Oilwell Site | 7,618.84 | 0.72% |
| Residence | 790.80 | 0.07% |
| Road | 12,964.26 | 1.22% |
| (blank) | | 0.00% |
| Grand Total | 1,064,160.93 | 100.00% |

| Land Use | Actual Use Acres | Percent of Actual Use Acres |
|---------------------|------------------|-----------------------------|
| 01-Lowland 158-88 | | |
| Cropland | 16,906.39 | 15.67% |
| NonCrop | 4,837.26 | 4.48% |
| Residence | 3.97 | 0.00% |
| Road | 343.95 | 0.32% |
| 02-Crowfoot 158-89 | | |
| Cropland | 10,858.88 | 10.06% |
| NonCrop | 10,366.88 | 9.61% |
| Oilwell Site | 17.07 | 0.02% |
| Residence | 7.32 | 0.01% |
| Road | 250.69 | 0.23% |
| 03-Sidonia 158-90 | | |
| Cropland | 4,662.05 | 4.32% |
| NonCrop | 15,002.39 | 13.90% |
| Oilwell Site | 98.18 | 0.09% |
| Residence | 5.95 | 0.01% |
| Road | 200.89 | 0.19% |
| 34-Rat Lake 154-93 | | |
| Commercial | 6.04 | 0.01% |
| Cropland | 8,380.50 | 7.77% |
| Gravel Pit | 60.42 | 0.06% |
| NonCrop | 12,473.27 | 11.56% |
| Oilwell Site | 295.64 | 0.27% |
| Residence | 11.24 | 0.01% |
| Road | 206.27 | 0.19% |
| 48-Mountrail 151-88 | | |
| Cropland | 19,619.87 | 18.18% |
| NonCrop | 2,959.16 | 2.74% |
| Road | 334.56 | 0.31% |

Soils Valuation Actual Land Use

Better Soils



Poorer Soils

| Productivity Index (PI) or AUM | Land Valuation – Cropland | Non-Crop AUM |
|--------------------------------|---------------------------|--------------|
| 95 | \$974 | \$380 |
| 90 | \$872 | \$342 |
| 80 | \$818 | \$295 |
| 70 | \$720 | \$270 |
| 60 | \$614 | \$228 |
| 50 | \$516 | \$192 |
| 40 | \$409 | \$152 |
| 30 | \$312 | \$114 |
| 20 | \$205 | \$76 |
| 10 | \$93 | \$38 |
| 0 (Water) | \$16 | \$16 |

2019 Values

NDSU Ag Land
Production Value
Average Ag - \$454.62
Cropland - \$692.46
NonCrop - \$156.54



FARMS Processed and overall Ag Land Values

| Land Use | Actual Use Acres | Percent of Actual Use Acres | Total Value | Percent of Total Value |
|--------------------|---------------------|-----------------------------|----------------------|------------------------|
| Commercial | 334.80 | 0.03% | \$0 | 0.00% |
| Cropland | 583,785.01 | 54.86% | \$391,166,486 | 84.57% |
| Gravel Pit | 1,496.77 | 0.14% | \$0 | 0.00% |
| Non-Ag | 123.23 | 0.01% | \$0 | 0.00% |
| NonCrop | 457,047.22 | 42.95% | \$70,201,573 | 15.18% |
| Oilwell Site | 7,618.84 | 0.72% | \$1,184,966 | 0.26% |
| Residence | 790.80 | 0.07% | \$0 | 0.00% |
| Road | 12,964.26 | 1.22% | \$0 | 0.00% |
| (blank) | | 0.00% | | 0.00% |
| Grand Total | 1,064,160.93 | 100.00% | \$462,553,026 | 100.00% |

***Note: Only Ag Related Acres are valued**

| Land Use | Actual Use | | Total Value |
|----------------------------|------------|-----------------------------|--------------|
| | Acres | Percent of Actual Use Acres | |
| 01-Lowland 158-88 | | | |
| Cropland | 16,906.39 | 15.67% | \$11,669,808 |
| NonCrop | 4,837.26 | 4.48% | \$705,233 |
| Residence | 3.97 | 0.00% | \$0 |
| Road | 343.95 | 0.32% | \$0 |
| 02-Crowfoot 158-89 | | | |
| Cropland | 10,858.88 | 10.06% | \$6,451,763 |
| NonCrop | 10,366.88 | 9.61% | \$1,647,974 |
| Oilwell Site | 17.07 | 0.02% | \$2,596 |
| Residence | 7.32 | 0.01% | \$0 |
| Road | 250.69 | 0.23% | \$0 |
| 03-Sidonia 158-90 | | | |
| Cropland | 4,662.05 | 4.32% | \$2,557,570 |
| NonCrop | 15,002.39 | 13.90% | \$2,650,996 |
| Oilwell Site | 98.18 | 0.09% | \$15,830 |
| Residence | 5.95 | 0.01% | \$0 |
| Road | 200.89 | 0.19% | \$0 |
| 34-Rat Lake 154-93 | | | |
| Commercial | 6.04 | 0.01% | \$0 |
| Cropland | 8,380.50 | 7.77% | \$5,551,158 |
| Gravel Pit | 60.42 | 0.06% | \$0 |
| NonCrop | 12,473.27 | 11.56% | \$1,931,692 |
| Oilwell Site | 295.64 | 0.27% | \$45,240 |
| Residence | 11.24 | 0.01% | \$0 |
| Road | 206.27 | 0.19% | \$0 |
| 48-Mountrail 151-88 | | | |
| Cropland | 19,619.87 | 18.18% | \$15,466,023 |
| NonCrop | 2,959.16 | 2.74% | \$527,571 |
| Road | 334.56 | 0.31% | \$0 |

Just over Two Years Ago...

"How do we do this...?"

RORY'S "BEAUTIFUL MIND"

VANGUARD ROCKS!

RON JOY SURF SHOP
SHE OF A KIND

BRAIN BUBBLES!

MUST 10 ACRES BY LAYERS

TEST-ADLER POWERS RAT LAKE

TRG
IAAO-811-INTRO GIS-18MS \$100
IAAO-812-ADV GIS-18MS \$100
IAAO-802-INC. APPROACH-70 \$400

NEW PLAN
VMS PROJECT - \$58865
VMS VISIO - \$58999 + \$33299
SIDWELL DISCUSSIONS
FARMS - \$1599 / \$999 MAINT.

ARC MAP - \$1250 / \$400-500 ANNUAL
- TRAINING - 1-1.5 DAYS

SW TOOLS INVESTIGATION
- OFFROAD - \$2K-2.5K/ATR
- SIDWELL GIS - FARMSE-NAIP AIRPHOTOS

CROP/NONCROP TOOLS
- CROPLAND
- ASGIDATA

TAX DEPT REPORTING TOOLS & FARMS SERVER

SCHOOL DIST AMBULANCE FIRA

2 VALUES

SOILS LAYER
- CDDE - NOT COLD
- ARCMAP
- FARM EX - NONCROP
- 2 AC RES
- OIL SITES/ROADS
- CRP
- GRAPPL
- DISCUSS TRAILS
- PRIVATE DRIS

SIDWELL GIS
- UPDATE AERIAL PHOTOGRAPHY - YEARLY ALSO - \$900/120YR
- LAND USE LAYER(S?) \$86K
- CROP
- NON-CROP
- OTHERS
- EXAMPLE COUNTY W/LAND USE - WHAT IS PROVIDED
- FARMS QUARTERLY PULL - \$1500
- PORTICO? WHEN
- WHEN TO ROUNDPARCEL SOIL CODES?

VALVE SCHEDULES
Pi
AUM
NON PRODUCTIVE

CROPLAND CRP
NONCROPLAND 39,515
- RANGELAND
- PASTURE LAND
NON PRODUCTIVE
ALL MODIFIERS
INUNDATED TAPROADS
COMMERCIAL
CITY ROADS

OIL SITES
SALT WATER
RESIDENTIAL
- ASMT CODES

WHAT IS UNIQUE ABOUT THIS PICTURE?

MAX
\$22800
\$1600
\$1687
\$1380
\$1261
\$1970
\$1250
\$12600

12-1200 \$100 2016 AT VALUE

16-655-90-2016

53 & 53

NESSDEN

DO NOT ERASE

2-132017

| | |
|-------------------|------------------|
| 8942 | \$421.83 |
| 6,991.70 | 1,066,991.70 |
| 1,569,500 | \$450,085,337.04 |
| VALUE \$412.85 | |
| DIFF 8,515,837.04 | \$422.13 |
| | 422.93 |
| | 450,114,400 |

GO BACK - BTTF
W PARCELS 25K20
520

STATE AID
3510K
SECTIONS 2-1800
UGOS-1

JUST DO IT
485K
534K

SOILS LAYER
- CDDE - NOT COLD
- ARCMAP
- FARM EX - NONCROP
- 2 AC RES
- OIL SITES/ROADS
- CRP
- GRAPPL
- DISCUSS TRAILS
- PRIVATE DRIS

SOILS LAYER
8942 \$421.83
6,991.70 1,066,991.70
1,569,500 \$450,085,337.04
VALUE \$412.85
DIFF 8,515,837.04 \$422.13
422.93
450,114,400

NEW PLAN
VMS PROJECT - \$58865
VMS VISIO - \$58999 + \$33299
SIDWELL DISCUSSIONS
FARMS - \$1599 / \$999 MAINT.

ARC MAP - \$1250 / \$400-500 ANNUAL
- TRAINING - 1-1.5 DAYS

SW TOOLS INVESTIGATION
- OFFROAD - \$2K-2.5K/ATR
- SIDWELL GIS - FARMSE-NAIP AIRPHOTOS

CROP/NONCROP TOOLS
- CROPLAND
- ASGIDATA

TAX DEPT REPORTING TOOLS & FARMS SERVER

SCHOOL DIST AMBULANCE FIRA

2 VALUES

SOILS LAYER
- CDDE - NOT COLD
- ARCMAP
- FARM EX - NONCROP
- 2 AC RES
- OIL SITES/ROADS
- CRP
- GRAPPL
- DISCUSS TRAILS
- PRIVATE DRIS

SIDWELL GIS
- UPDATE AERIAL PHOTOGRAPHY - YEARLY ALSO - \$900/120YR
- LAND USE LAYER(S?) \$86K
- CROP
- NON-CROP
- OTHERS
- EXAMPLE COUNTY W/LAND USE - WHAT IS PROVIDED
- FARMS QUARTERLY PULL - \$1500
- PORTICO? WHEN
- WHEN TO ROUNDPARCEL SOIL CODES?

VALVE SCHEDULES
Pi
AUM
NON PRODUCTIVE

CROPLAND CRP
NONCROPLAND 39,515
- RANGELAND
- PASTURE LAND
NON PRODUCTIVE
ALL MODIFIERS
INUNDATED TAPROADS
COMMERCIAL
CITY ROADS

OIL SITES
SALT WATER
RESIDENTIAL
- ASMT CODES

WHAT IS UNIQUE ABOUT THIS PICTURE?

MAX
\$22800
\$1600
\$1687
\$1380
\$1261
\$1970
\$1250
\$12600

12-1200 \$100 2016 AT VALUE

16-655-90-2016

53 & 53

NESSDEN

DO NOT ERASE

2-132017

| | |
|-------------------|------------------|
| 8942 | \$421.83 |
| 6,991.70 | 1,066,991.70 |
| 1,569,500 | \$450,085,337.04 |
| VALUE \$412.85 | |
| DIFF 8,515,837.04 | \$422.13 |
| | 422.93 |
| | 450,114,400 |

GO BACK - BTTF
W PARCELS 25K20
520

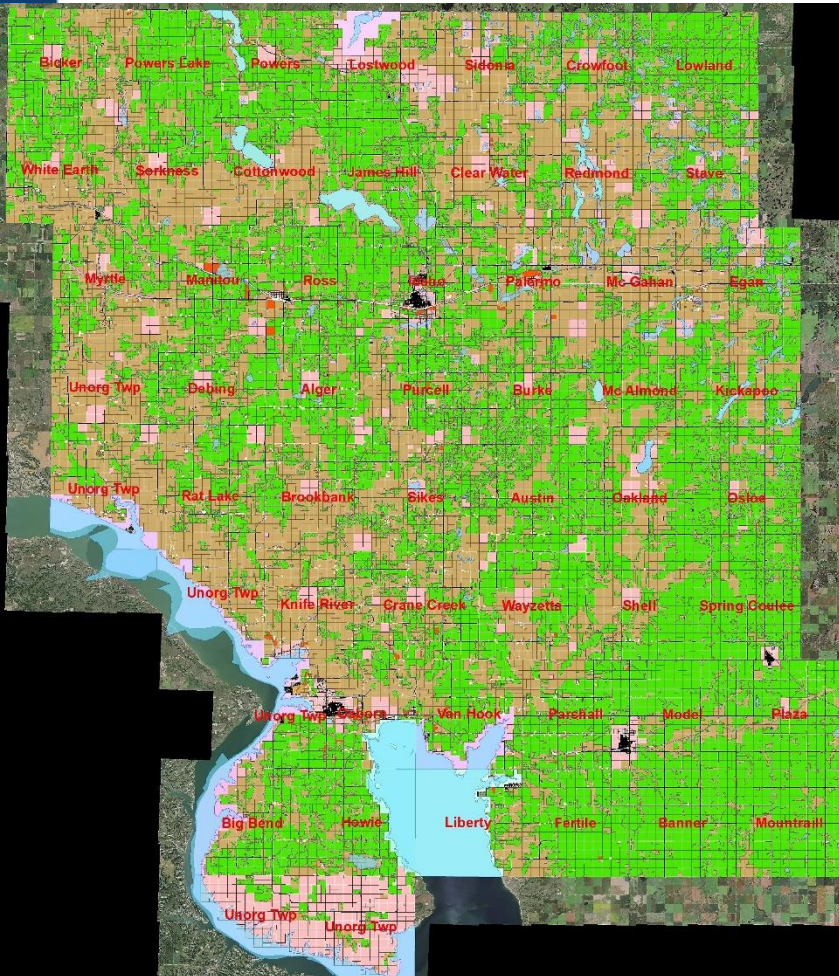
STATE AID
3510K
SECTIONS 2-1800
UGOS-1

JUST DO IT
485K
534K

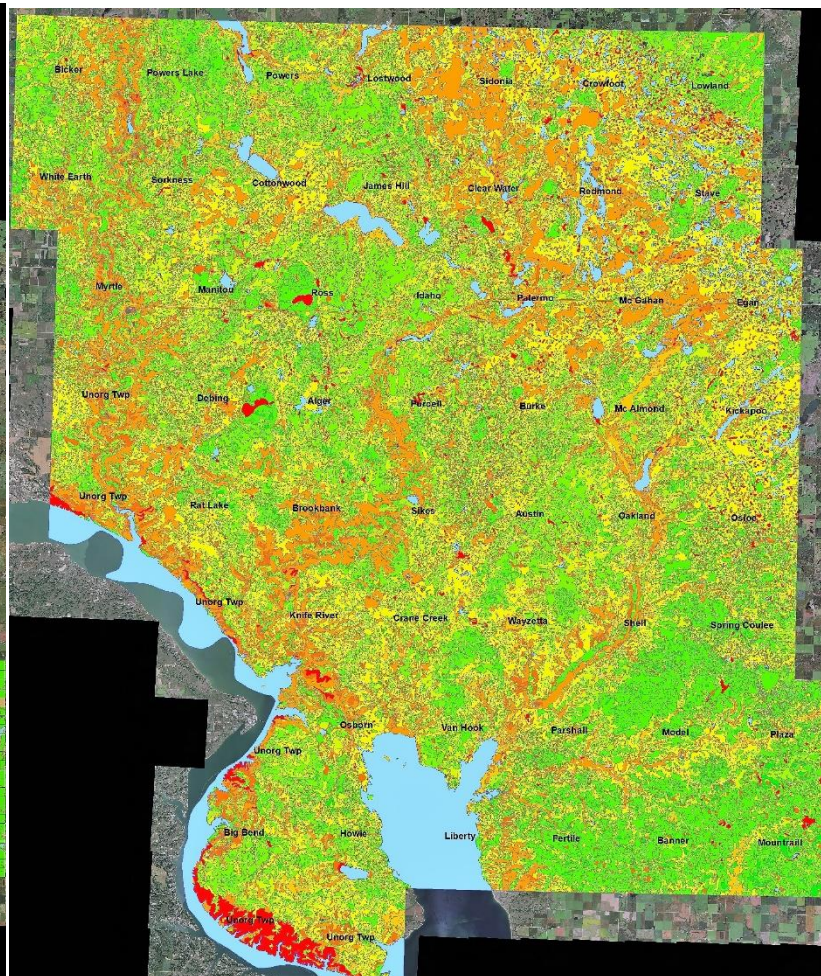


GIS is the Answer!

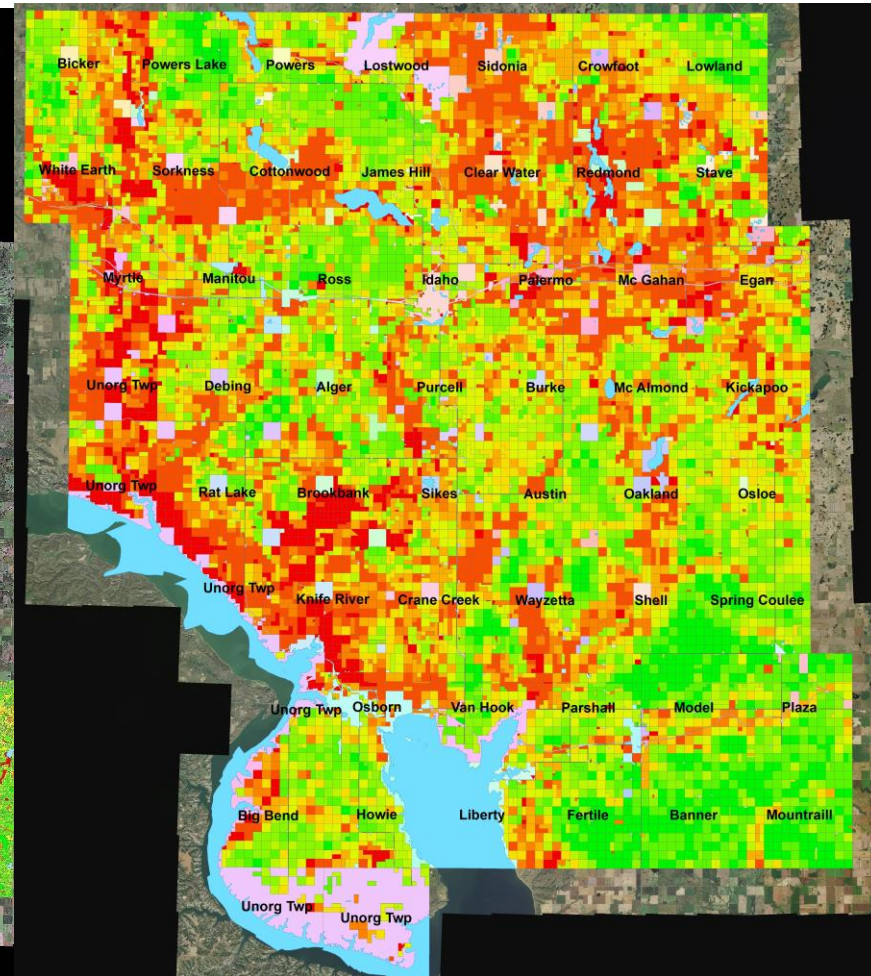
Actual Use Layer



NRCS Soils Quality Layer



Average Ag Land Parcel Value per Acre



Robust Communication Campaign

- Ongoing throughout life of project
- Several Soils Committee meetings
 - Collaborative effort for rulesets
 - Additional input and suggestions
 - Attendance at Township Review Meetings
 - **Result? - “Ownership” of Ag Land Solution**
- Articles in the official County paper
- Presentations at County Commissioner meetings
- Presentations at Township Officer’s meetings
- Presentation to Lion’s Club
- Township Review Meetings – 55 Townships!
 - Ag Land Valuation overview
 - Reviewed and updated individual’s land for Actual Land Use

Township Officers Hold Fall Meeting



The Mountrail County Township Officers Association held their...

Page 3

Township Officers Meet

(Continued from Page 1) legislative hearings that they must up and be heard. The proposed changes mean to have mutual effects to most entities, but townships are “ground zero” and they need to be heard because even a small change can make a big impact.

Edwards also encouraged townships to take advantage of the county maintenance and assistance programs as well as the uniform permit system.

Tom Wheeler of the State Township Officers Association reminded officers about the state meeting in Bismarck on December 4 and 5 and the speakers they had on. He stressed also that township officers communicate with the state organizations about what they need. They are an advisory board to help townships and he encouraged townships to use their website to find information.

He also expressed his concerns about how townships are getting left out, urging townships need to speak up, get out there and be heard. Townships in western North Dakota need money to keep the roads in good shape. Meanwhile there is the perception that the area has more money than they need. Roads are finally being better, but if they will be built when they want. He also worries about the area legislative session and the impact it will have on the oil producing counties.

The final presentation came from the County Treasurer’s office. Lori Hanson, Rory Fort and Teresa Caplan were on hand. Hanson first discussed the annual township tax separation meeting, asking that townships consider holding these meetings in centralized locations so that her office can hold several in the area for convenience and efficiency. Some townships did that last year and it made the process easier.

Up next, they discussed the changes to land valuations after the county’s separation meeting. The county’s separation meeting was to use the best cost method, but after that meeting, it was decided to use actual land use and detailed soils as a valuation method. To that end, a committee was established, and they are developing the land use drawings. Using satellite, they started with less sections of land in the first test and did a pilot township test with Red Lake Township. This is a complex process and they were offering information to help township officers understand when they are in the process and how it will move forward.

Rory Fort stated by describing the process of going through the 1,656 million acres of actual land use in Mountrail County. The main requirements and rules are a complex process. They will be using the Sabelle GIS, NRCS Web Soil Survey and the county tax system as they move forward.

The GIS system will provide data layers. Right now the county website has the soil type layer, but they will also be adding the land use layers and more as they go. The mapping can include many more information items as they move forward.



LAND VALUATION RATES

| Category | Rate |
|-------------|------|
| Residential | ... |
| Commercial | ... |
| Industrial | ... |
| ... | ... |

2019 Agricultural Land Valuation Information

From Lori Hanson, Director of Tax Equalization Mountrail County. Mountrail County is in the process of implementing the use of detailed soil types with actual land use to determine the value of all agricultural land within the county. This soil valuation method is required by North Dakota Century Code 57-02-27.2.

The North Dakota Office of State Tax Commissioner provides counties with estimates of agricultural value per acre on a state-wide and on a county-wide basis as compared for the year by the Agriculture Department of NDSD. As part of the Web Soil Survey from the USDA, hydrology, productivity, soil types and productivity indices are identified for all lands within the county.

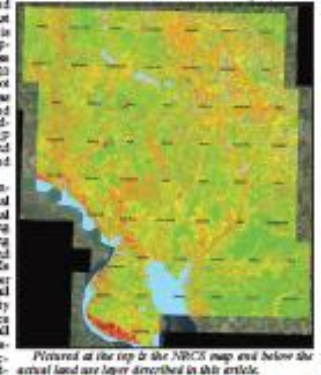
There is much to keep track of when utilizing Actual Land Use within Mountrail County – for instance, Mountrail County is comprised of:

- 55 Townships – 7 cities
- 1,802 Sections
- 1,971,325 Acres
- 1,241,398 Total Acres
- 1,665,908.96 Ag related acres
- 3,942 Ag related parcels
- 2,216 Ag related parcel owners
- 147 Soil Codes

Along with what Mountrail County is comprised of listed above, for equalized valuation, the Assessor’s office needs to know how each parcel is being actually used:

- Cropland
- Non-Cropland
- Pastureland
- Commercial
- Residential
- General PA
- Roads
- Oil/Water Sites
- Solid Waste Disposal Wells

With this much information to keep track of – it is necessary to utilize advanced computing systems to perform this work. A GIS – Geographic Information System is being developed and utilized within Mountrail County to keep track of all this information. ArcGIS, an Industry Standard software, was selected to provide a high return on investment. The GIS system will provide data layers. Right now the county website has the soil type layer, but they will also be adding the land use layers and more as they go. The mapping can include many more information items as they move forward.



Pinpoint at the top of the NRCS map and below the actual land use layer described in this article.



Township Review Meetings

➤ Section by Section Reviews



GIS – Public Facing

- Various search capabilities
- Several NAIP Years Aerial Photography available
- Actual use Layer
- Soils Layer and information
- Valuation Reporting

The screenshot displays a GIS web application interface. At the top, the browser address bar shows the URL: <https://portico.mygisonline.com/html5/?viewer=mountraind>. The main interface is divided into several sections:

- Parcel Information Panel (Top Left):** Displays details for parcel 320015000, including acreage (160), owner (JORGENSEN/ELROY S & EMOJEAN S), owner address (4955 HIGHWAY 8 NEW TOWN ND 58763), legal description (NW), township (SIKES TWP), and soil information (C132B - Acres 14.91, C132C - Acres 95.05, C135D - Acres 38.85, C424A - Acres 1.67, C810A - Acres 3.52, C816B - Acres 5.40).
- Layers Panel (Bottom Left):** Lists various layers with checkboxes and sliders. The 'Imagery' section is expanded, showing options for '2019 Aerial (Hi-resolution)', '2017 Aerial (NAIP)', '2012 Aerial (NAIP)', '2010 Aerial (NAIP)', and '2003 Aerial (NAIP)'. The 'BaseMap' section is also visible, with 'World Street Map' selected.
- Map View (Center):** Shows a map of the parcel area with various layers overlaid. The parcel number 320015000 is highlighted in green. The map includes labels for '50th ST-NW', '81st AVE-NW', and various soil types like C132B, C132C, C135D, C424A, C810A, and C816B.
- Search Bar (Top Right):** A search bar with the text 'Parcel: 320015000' and a search icon.

Land Valuation Reporting



Mountrail

Final Calculation Report

| Parcel | 37-00-136-00 | Assessed Acres : | 147.30 | | |
|---------------|--------------|------------------|---------------|----------------|-------------------|
| LAND USE | SOIL CODE | SOIL NAME | NET ACRES | PRICE PER ACRE | TRUE & FULL VALUE |
| Cropland | | | | | |
| | C132C | Williams-Zahl- | 46.81 | 634.39 | 29,695.80 |
| | C135D | Zahl-Williams | 26.66 | 446.05 | 11,891.69 |
| | C201A | Bowbells | 7.30 | 991.23 | 7,235.98 |
| | C210A | Williams-Bow | 4.94 | 902.02 | 4,455.98 |
| | C210B | Williams-Bow | 16.77 | 862.37 | 14,461.94 |
| | C3A | Parnell silty | 1.42 | 208.16 | 295.59 |
| | C800B | Appam sandy | 12.10 | 396.49 | 4,797.53 |
| | C810A | Bowdle loam, | 5.10 | 594.74 | 3,033.17 |
| | C816B | Lehr loam, 2 | 9.87 | 455.96 | 4,500.33 |
| | | | <u>130.97</u> | | <u>80,368.01</u> |
| Non-Cropland | | | | | |
| | C132C | Williams-Zahl- | 1.74 | 157.61 | 274.24 |
| | C135D | Zahl-Williams | 1.76 | 153.77 | 270.64 |
| | C3A | Parnell silty | 2.50 | 384.43 | 961.08 |
| | C800B | Appam sandy | 0.25 | 157.61 | 39.40 |
| | | | <u>6.25</u> | | <u>1,545.36</u> |
| Oilwell Site | | | | | |
| | C132C | Williams-Zahl- | 3.33 | 157.61 | 524.84 |
| | C135D | Zahl-Williams | 0.13 | 153.77 | 19.99 |
| | C800B | Appam sandy | 3.26 | 157.61 | 513.81 |
| | | | <u>6.72</u> | | <u>1,058.64</u> |
| Road | | | | | |
| | C132C | Williams-Zahl- | 0.85 | 0.00 | 0.00 |
| | C135D | Zahl-Williams | 0.63 | 0.00 | 0.00 |
| | C800B | Appam sandy | 1.44 | 0.00 | 0.00 |
| | C816B | Lehr loam, 2 | 0.44 | 0.00 | 0.00 |
| | | | <u>3.36</u> | | <u>0.00</u> |
| Totals | | | 147.30 | \$ | 82,972.01 |



Handling Valuation Protests

- Developed “Request for Ag Land Use Review” process and form
- Reviewed by Tax Dept. personnel, Soils Committee, and County Board of Equalization for concurrence
- Result? 12 Reviews in 2019; 2 Reviews in 2020

Mountrail County Request for Ag Land Use Review

ID # 2020-_____

This request must be filed with the Tax Equalization office for investigation of Ag Land actual use Review. This form must be returned to the Tax Equalization office no later than May 1 of the tax year in question.

Required Information

Parcel Number:

Property Owner:

Owner Address:

Legal Description (required)

Form Ag Review ver 2.05

Date of Submittal: _____

Acres Affected: _____

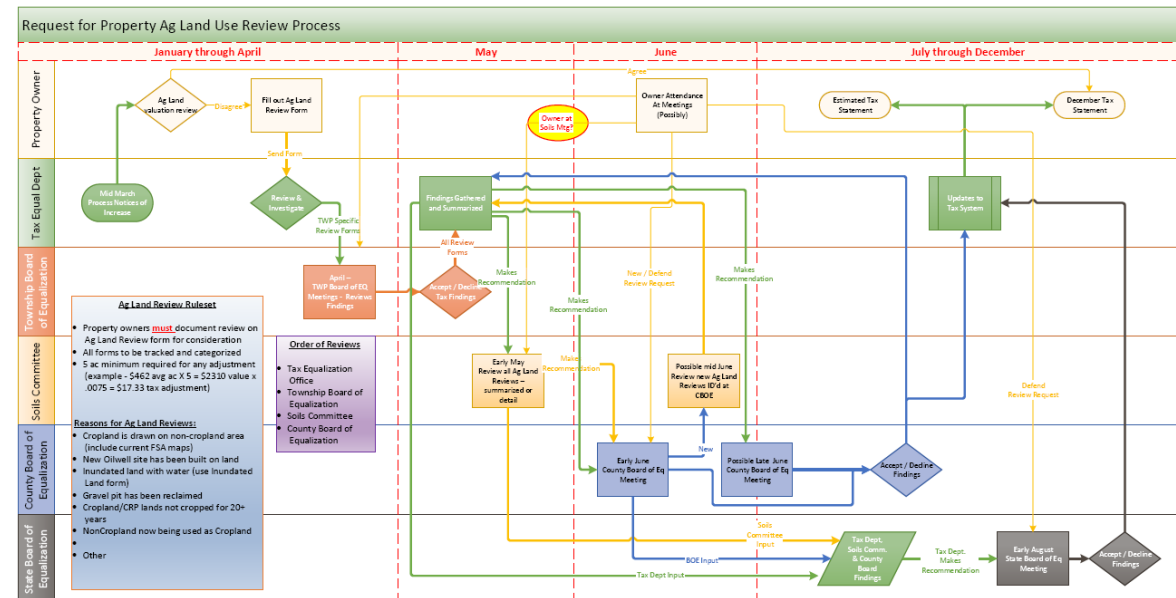
(For valuation changes, a 3 acre minimum correction is required)

Technical Reason for Ag Land Review - include supporting documentation (select any that apply – at least one must be checked)

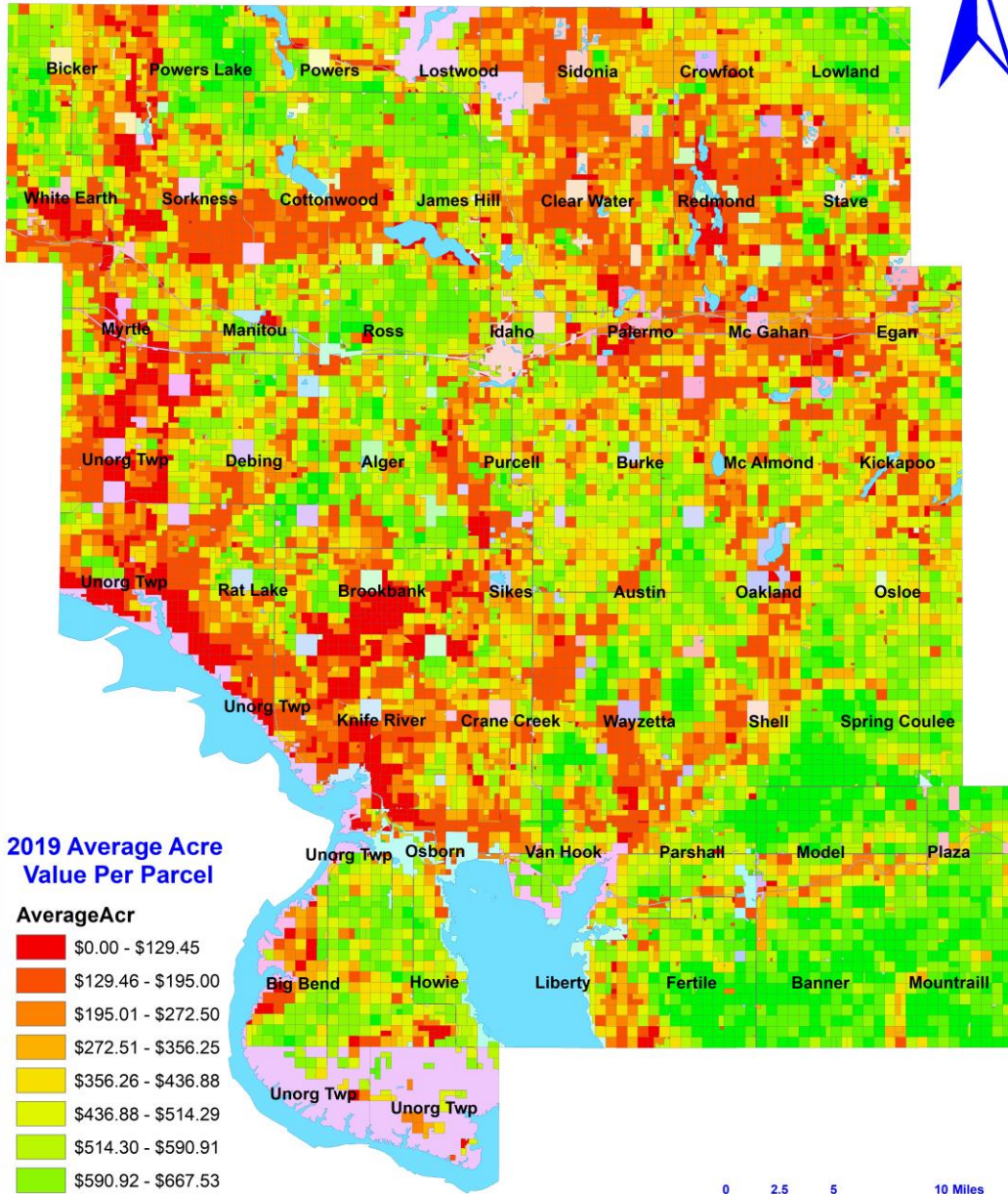
- Cropland is drawn on non-cropland area (include current certified FSA maps)
- New Oilwell site has been built on land (Date?)
- Inundated land with water (use Inundated Land form)
- Gravel pit has been reclaimed (Provide Documentation)
- Cropland/CRP lands not cropped for 20+ years (Provide Documentation)
- Previous NonCropland/CRP now being used as Cropland (all CRP is considered cropland)
- Actively challenging the technical accuracy of the soil survey (Provide documentation of challenge)
- Other:

Description of issue:

Signature



Mountrail County - Average Acre Value

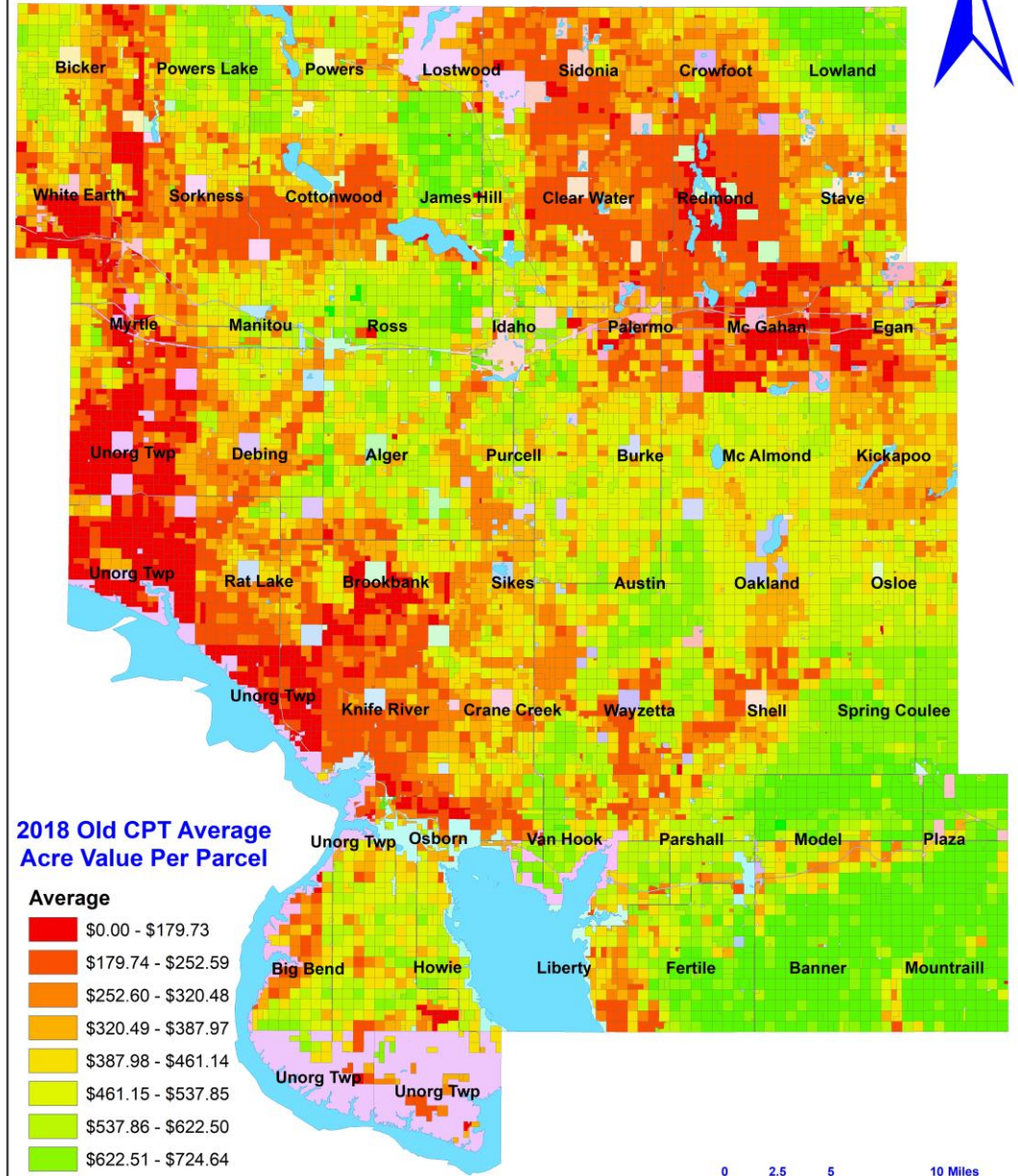


2019 Average Acre Value Per Parcel

AverageAcr



Mountrail County - Average Acre Value

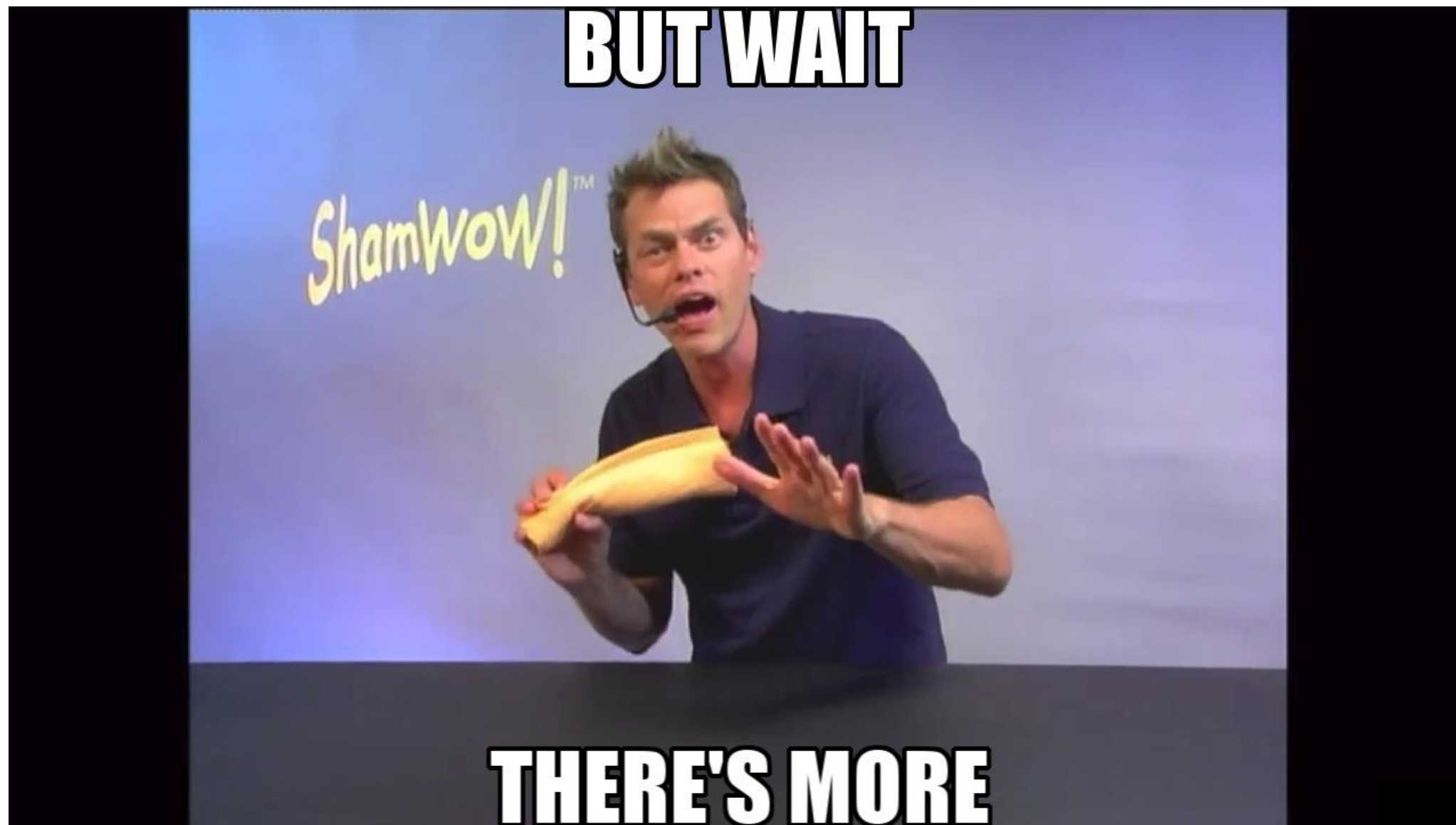


2018 Old CPT Average Acre Value Per Parcel

Average



But Wait...



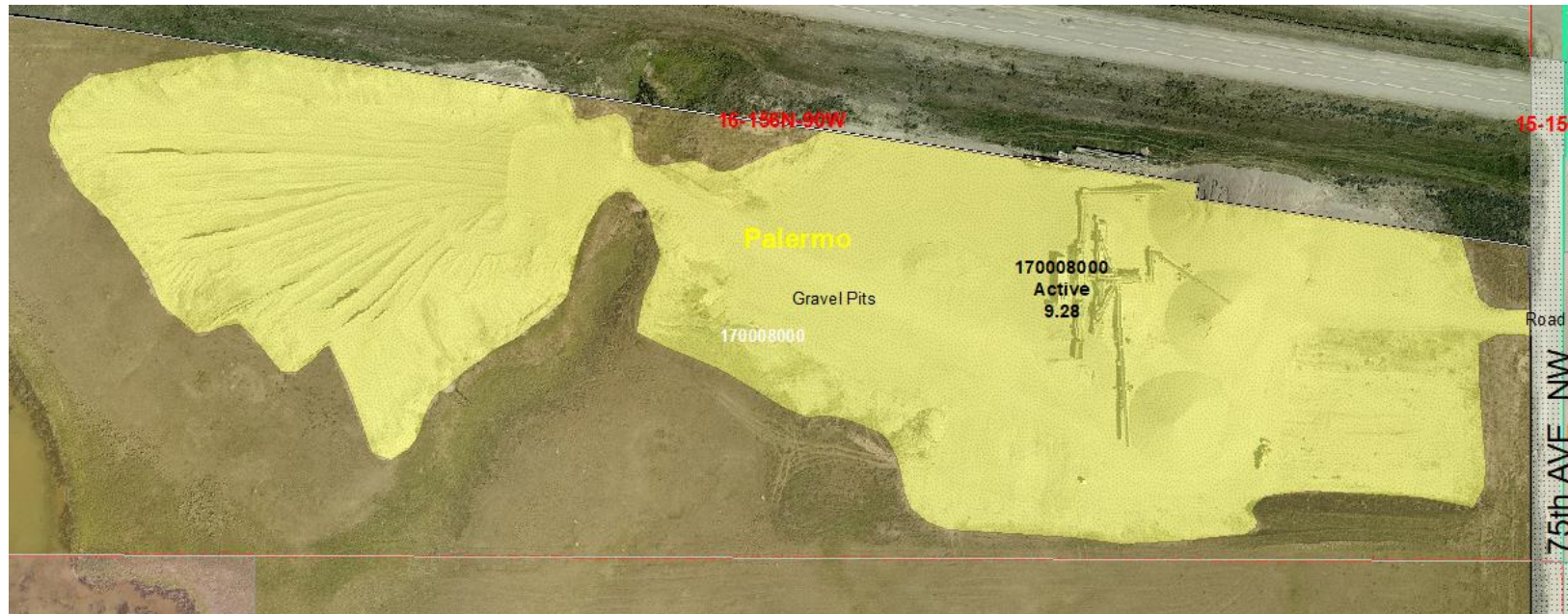
Value of GIS...

- GIS is used for many things
- “Extensible”
- “What if...?”



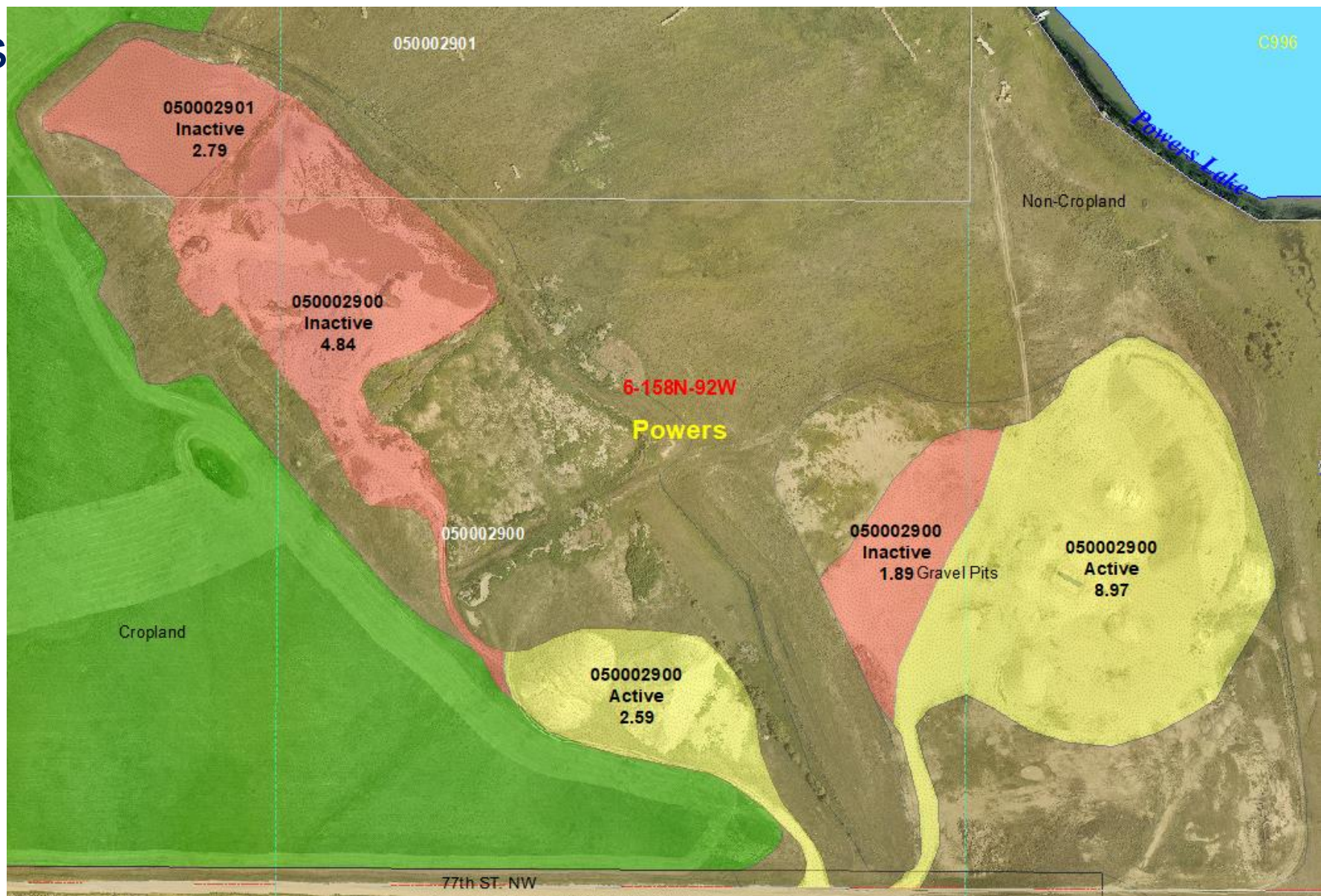
Gravel Pit Valuation

- Commercial Values
- “Active”
- “Inactive”

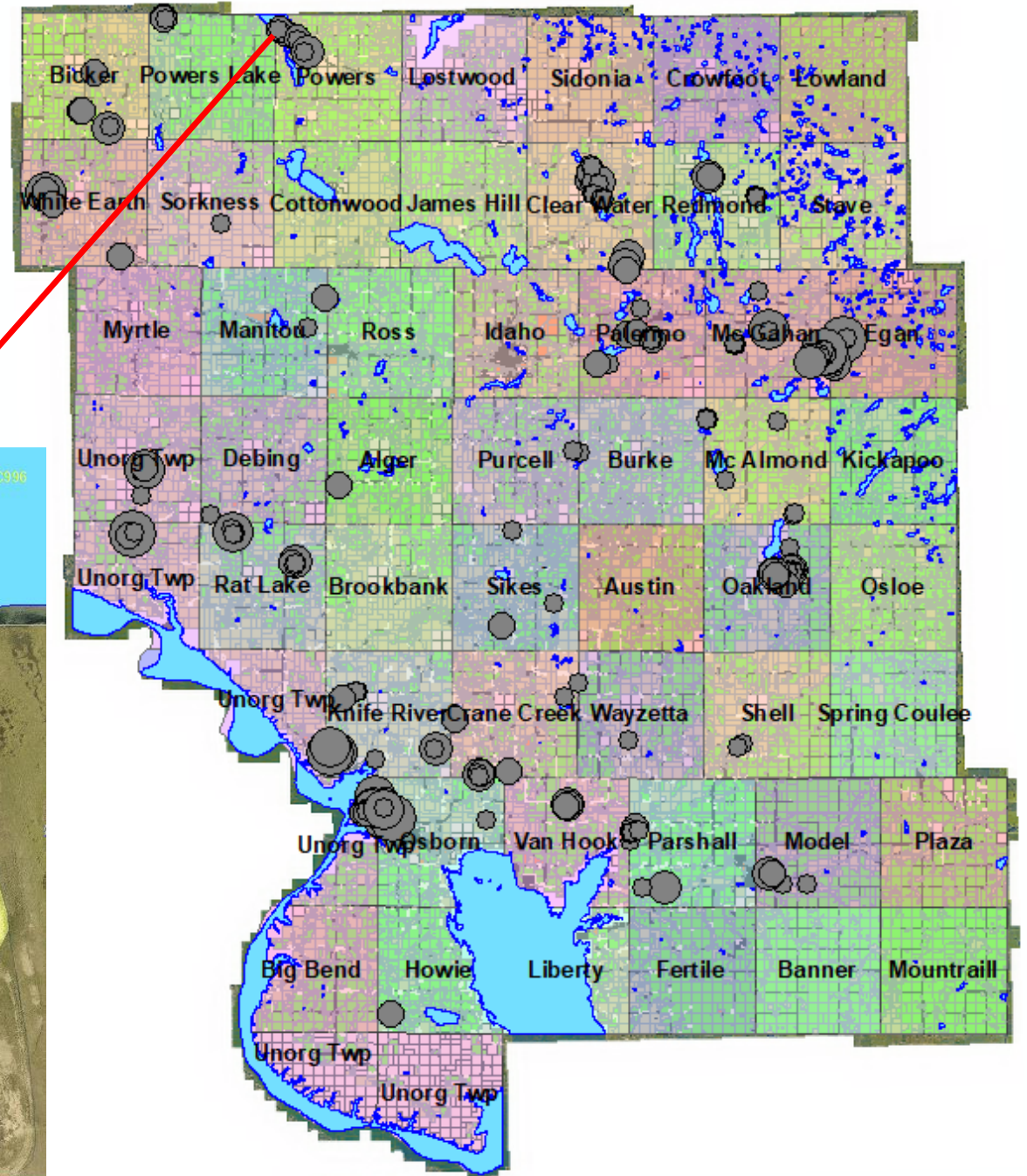
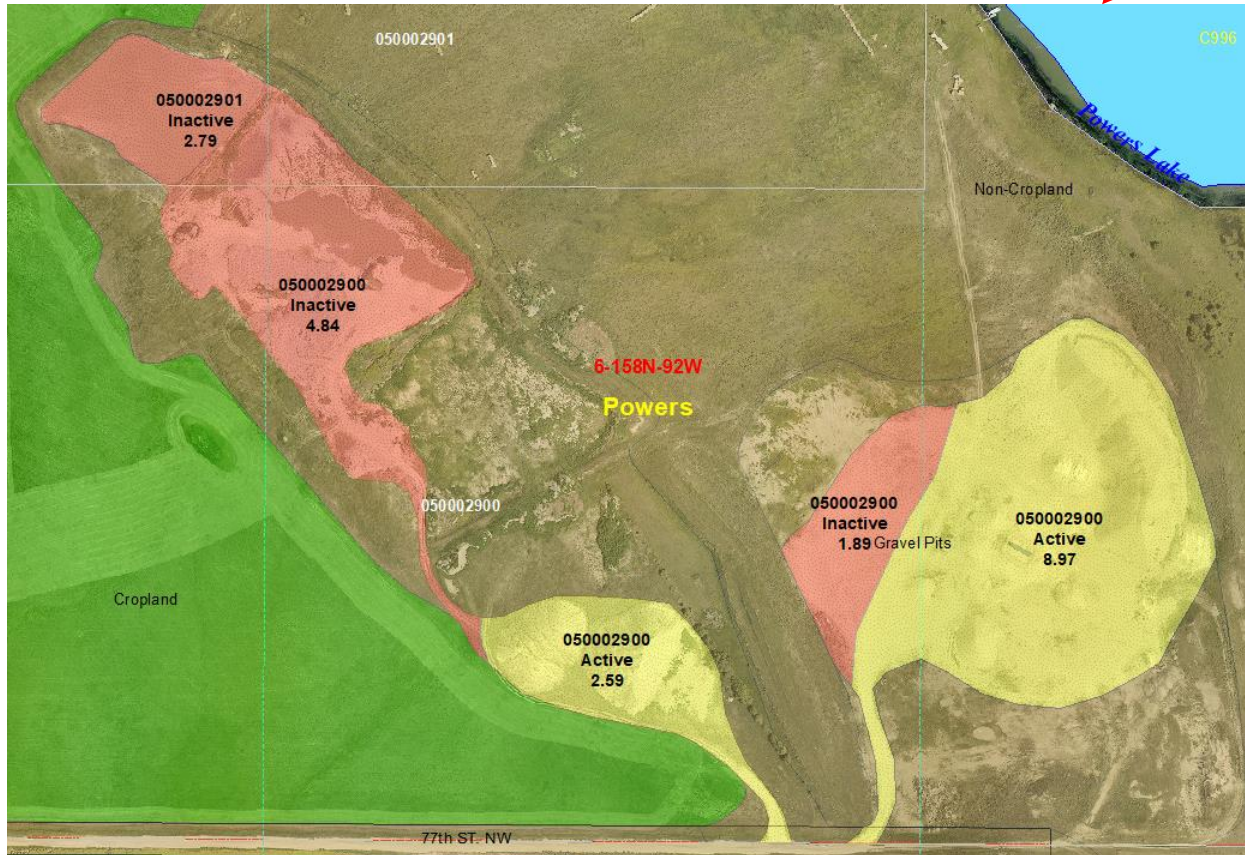


Gravel Pit Valuation

- Commercial Values
- “Active”
- “Inactive”



Gravel Pits – Where?

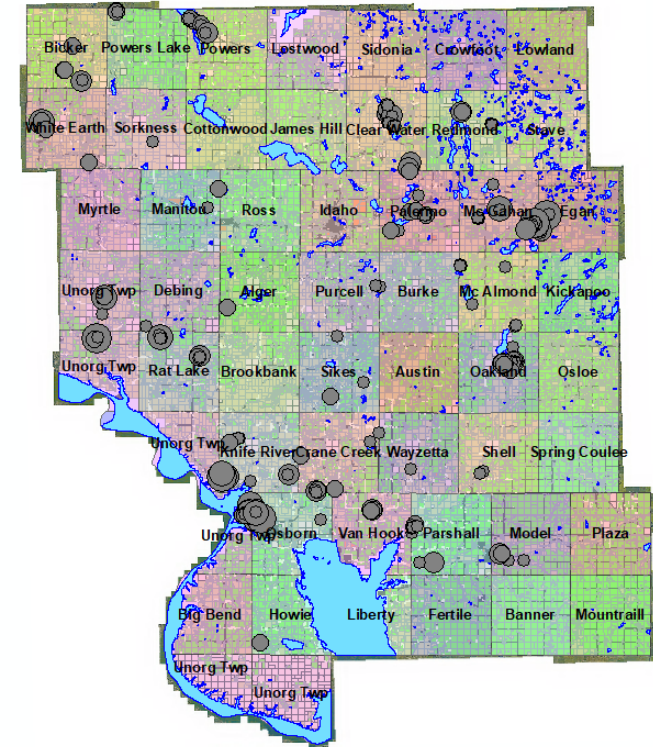


Gravel Pits - Valuation

GP - ActiveOrInactive

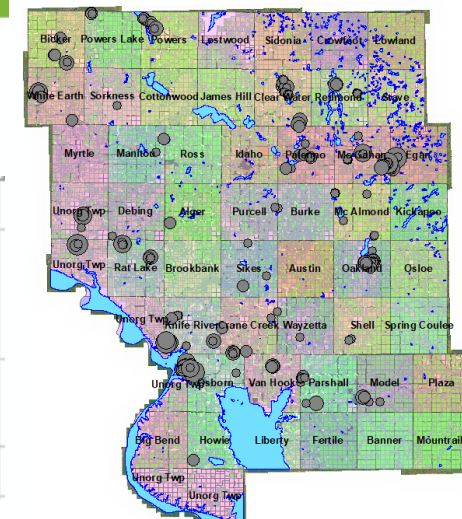
| Parcel | Activity | SHAPE_Area |
|-----------|----------|---------------|
| 340002400 | Inactive | 85739.16195 |
| 340002300 | Inactive | 36846.835202 |
| 340002300 | Inactive | 5377.102819 |
| 340002200 | Inactive | 33863.27371 |
| 340002200 | Inactive | 87022.767323 |
| 050002900 | Active | 390874.247842 |
| 050002900 | Inactive | 82234.015869 |
| 050002900 | Inactive | 210650.1509 |
| 050002900 | Active | 112931.066569 |
| 050004500 | Active | 213907.676844 |
| 050004500 | Inactive | 90169.244217 |
| 050004400 | Active | 90855.948514 |
| 050004301 | Active | 0.095425 |
| 050004301 | Active | 559929.086573 |
| 050004301 | Inactive | 95842.237275 |
| 070007800 | Active | 195192.443747 |
| 070018900 | Active | 591813.569584 |
| 070018900 | Inactive | 158190.371783 |
| 100004000 | Inactive | 142340.914884 |
| 100004000 | Active | 287262.484485 |
| 100004000 | Inactive | 103297.681381 |
| 100005000 | Active | 243211.891103 |
| 100004700 | Active | 52795.081943 |
| 100005000 | Inactive | 382401.370839 |
| 100004700 | Inactive | 219490.735887 |

- Export Data
- Calculate Acres (Sq FT ÷ 43,560)
- Apply Active and Inactive values to Parcel based on 'Activity'



| | A | B | C | D | E | F | G | H | I |
|----|-----------|-----------|-------------|----------|---------------|------------|----------|-------------|--------------|
| | Parcel | ParcelNo | TWP | Activity | SHAPE_Area | Acres_Calc | Per_Acre | TotalValue | ValueRounded |
| 1 | | | | | | | | | |
| 2 | 340002400 | 340002400 | 34-Rat Lake | Inactive | 85739.16195 | 1.97 | \$450 | \$885.74 | \$900 |
| 3 | 340002300 | 340002300 | 34-Rat Lake | Inactive | 36846.835202 | 0.85 | \$450 | \$380.65 | \$400 |
| 4 | 340002300 | 340002300 | 34-Rat Lake | Inactive | 5377.102819 | 0.12 | \$450 | \$55.55 | \$100 |
| 5 | 340002200 | 340002200 | 34-Rat Lake | Inactive | 33863.27371 | 0.78 | \$450 | \$349.83 | \$300 |
| 6 | 340002200 | 340002200 | 34-Rat Lake | Inactive | 87022.767323 | 2.00 | \$450 | \$899.00 | \$900 |
| 7 | 50002900 | 050002900 | 05-Powers | Active | 390874.247842 | 8.97 | \$1,500 | \$13,459.86 | \$13,500 |
| 8 | 50002900 | 050002900 | 05-Powers | Inactive | 82234.015869 | 1.89 | \$450 | \$849.52 | \$800 |
| 9 | 50002900 | 050002900 | 05-Powers | Inactive | 210650.1509 | 4.84 | \$450 | \$2,176.14 | \$2,200 |
| 10 | 50002900 | 050002900 | 05-Powers | Active | 112931.066569 | 2.59 | \$1,500 | \$3,888.81 | \$3,900 |
| 11 | 50004500 | 050004500 | 05-Powers | Active | 213907.676844 | 4.91 | \$1,500 | \$7,365.97 | \$7,400 |
| 12 | 50004500 | 050004500 | 05-Powers | Inactive | 90169.244217 | 2.07 | \$450 | \$931.50 | \$900 |
| 13 | 50004400 | 050004400 | 05-Powers | Active | 90855.948514 | 2.09 | \$1,500 | \$3,128.65 | \$3,100 |

Gravel Pits - Valuation



| Pit Activity | | | | | | Total Sum of Acres_Calc | Total Per Acre Value | Total Value |
|-------------------|----------------|----------------|-------------------|----------------|--------------|-------------------------|----------------------|----------------|
| Active | | | Inactive | | | | | |
| Sum of Acres_Calc | Per Acre Value | Value | Sum of Acres_Calc | Per Acre Value | Value | | | |
| 828.11 | \$1,500 | \$1,242,166.16 | 397.17 | \$450 | \$178,727.73 | 1,225.28 | \$984 | \$1,420,893.90 |

| Township / Parcel | Active | | | Inactive | | | Total Sum of Acres_Calc | Total Per Acre Value | Total Value | Total Value Rounded |
|-------------------|-------------------|----------------|-------------|-------------------|----------------|------------|-------------------------|----------------------|-------------|---------------------|
| | Sum of Acres_Calc | Per Acre Value | Value | Sum of Acres_Calc | Per Acre Value | Value | | | | |
| 05-Powers | 31.42 | \$1,500 | \$47,124.59 | 13.79 | \$450 | \$6,203.30 | 45.20 | \$1,023 | \$53,327.89 | \$53,400 |
| 050002900 | 11.57 | \$1,500 | \$17,348.67 | 6.72 | \$450 | \$3,025.66 | 18.29 | \$975 | \$20,374.33 | \$20,400 |
| 050002901 | | | | 2.79 | \$450 | \$1,256.03 | 2.79 | \$450 | \$1,256.03 | \$1,300 |
| 050004301 | 12.85 | \$1,500 | \$19,281.31 | 2.20 | \$450 | \$990.11 | 15.05 | \$1,150 | \$20,271.41 | \$20,300 |
| 050004400 | 2.09 | \$1,500 | \$3,128.65 | | | | 2.09 | \$1,500 | \$3,128.65 | \$3,100 |
| 050004500 | 4.91 | \$1,500 | \$7,365.97 | 2.07 | \$450 | \$931.50 | 6.98 | \$975 | \$8,297.47 | \$8,300 |
| 06-Powers Lake | 4.45 | \$1,500 | \$6,678.12 | 9.61 | \$450 | \$4,324.38 | 14.06 | \$975 | \$11,002.50 | \$10,900 |
| 060003100 | 2.50 | \$1,500 | \$3,748.37 | 5.54 | \$450 | \$2,493.02 | 8.04 | \$975 | \$6,241.39 | \$6,200 |
| 060003105 | 1.95 | \$1,500 | \$2,929.75 | 4.07 | \$450 | \$1,831.36 | 6.02 | \$975 | \$4,761.11 | \$4,700 |
| 07-Bicker | 23.33 | \$1,500 | \$35,001.52 | 13.24 | \$450 | \$5,960.18 | 36.58 | \$975 | \$40,961.70 | \$40,900 |
| 070007800 | 4.48 | \$1,500 | \$6,721.50 | | | | 4.48 | \$1,500 | \$6,721.50 | \$6,700 |
| 070014800 | 5.27 | \$1,500 | \$7,900.77 | 9.61 | \$450 | \$4,325.98 | 14.88 | \$800 | \$12,226.75 | \$12,200 |
| 070018900 | 13.59 | \$1,500 | \$20,379.26 | 3.63 | \$450 | \$1,634.20 | 17.22 | \$975 | \$22,013.45 | \$22,000 |
| 09-Redmond | 6.59 | \$1,500 | \$9,877.55 | 12.12 | \$450 | \$5,453.95 | 18.70 | \$870 | \$15,331.50 | \$15,400 |
| 090004100 | 3.93 | \$1,500 | \$5,899.03 | 11.09 | \$450 | \$4,992.37 | 15.03 | \$975 | \$10,891.40 | \$10,900 |
| 090007300 | 2.65 | \$1,500 | \$3,978.52 | 1.03 | \$450 | \$461.58 | 3.68 | \$800 | \$4,440.10 | \$4,500 |

**Please make a note of the following
number:**

1008

***You will need this number to
complete the CE form located in the
Resources Section of the
Conference Website***

IAAO
CONFERENCE
+ EXHIBITION

Aug 30 – Sept 1, 2020



Rory Porth
ND Class 1 Property Assessor
County of Mountrail, North Dakota

IAAO

CONFERENCE
+ EXHIBITION

Aug 30 – Sept 1, 2020



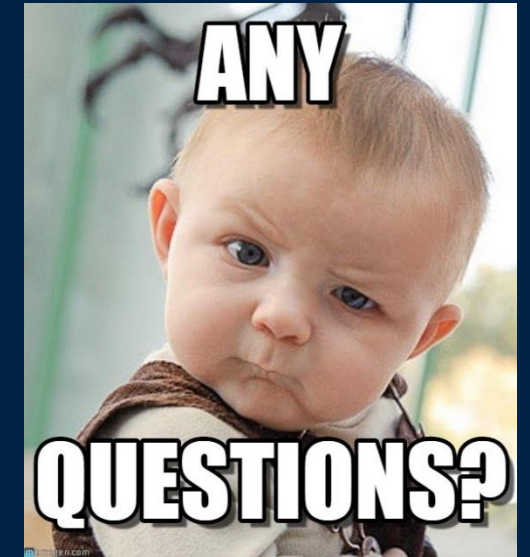
roryp@co.mountrail.nd.us


701-628-2425



▶ TRANSFORMING VALUATION THROUGH TECHNOLOGY ◀

Questions?



| | |
|--|--|
| Rory Porth | |
| Property Assessor | |
| Mountrail County Tax Equalization | |
|  | 101 North Main St. PO Box 69 Stanley, ND 58784-0069 |
| | Phone: 701.628.2425 Fax: 701.628.2276 E-mail: roryp@co.mountrail.nd.us |

Credits

- Project Back to the Future
- Lori Hanson Tax Equalization Director
- Teresa Captain Class 1 Property Assessor
- Kim Savage Class 2 Property Assessor
- Rory Porth Class 1 Property Assessor
- Canola Field Skarsgard Farms
- Stock Footage downloaded from www.videvo.net Drone Flying over Cornfield
- Flying Over Sunflower Field 1
- Drone Flying over Fields
- Tractor Bailing Straw
- Combine Harvester 2
- Music Standard License Inspirational Energetic Motivational Epic Adventure