

Managing Geospatial Land & Resource Data

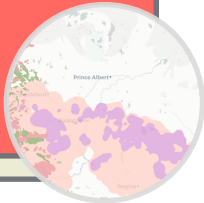


Forum on Indigenous Agriculture in SK
December 19, 2018

Joint Geospatial Projects

- Land acquisition
- Agriculture
- Oil & Gas
- Industrial Minerals

Natural
Resources



- Traditional Territory
- Infrastructure
- Watershed
- Commemorative Maps

Community
Initiatives

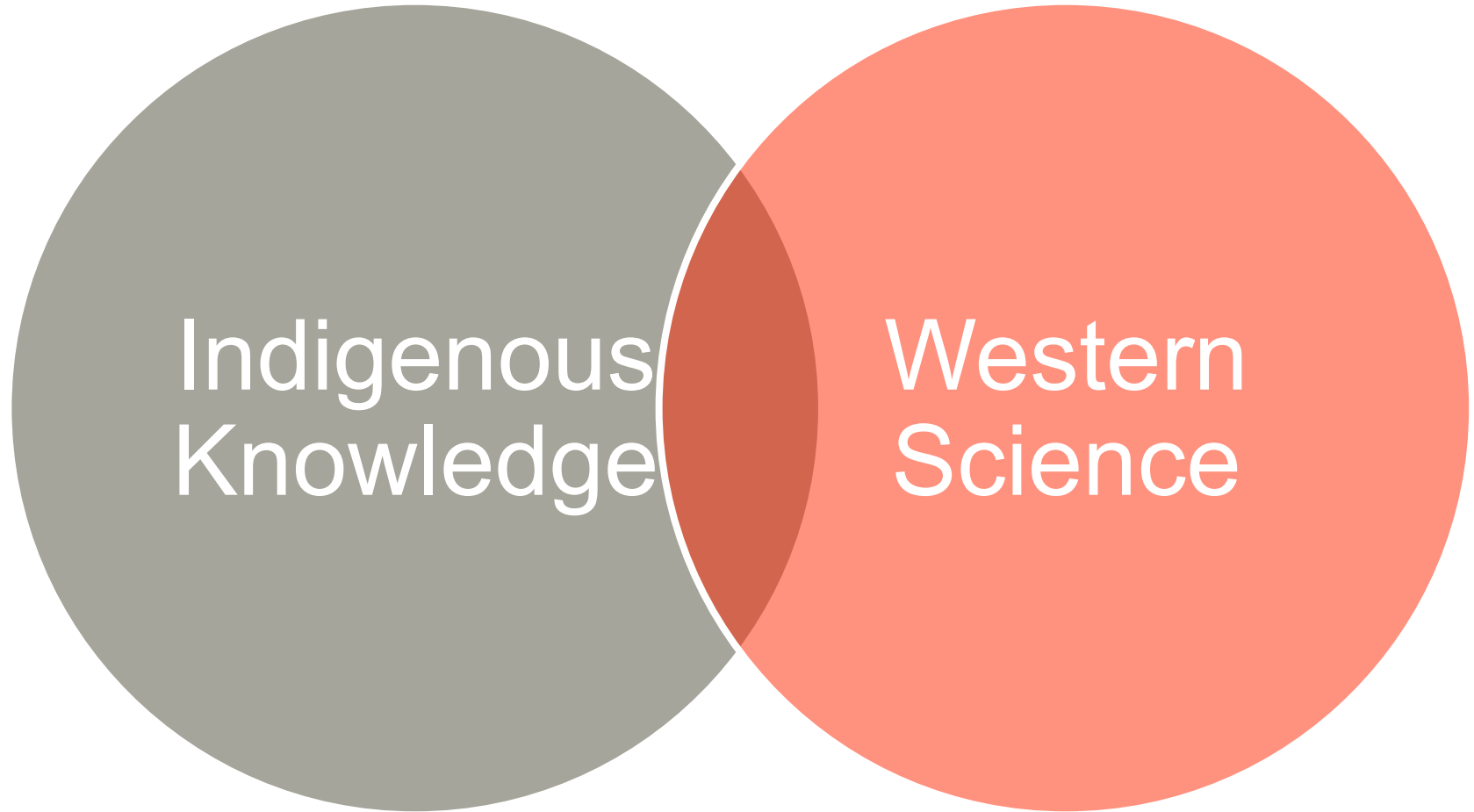


- NSR Oil Spill
- Englishman River Brine Spill
- Onion Lake Oil Release

Environ.
Assessments



Geospatial Land & Resource Data

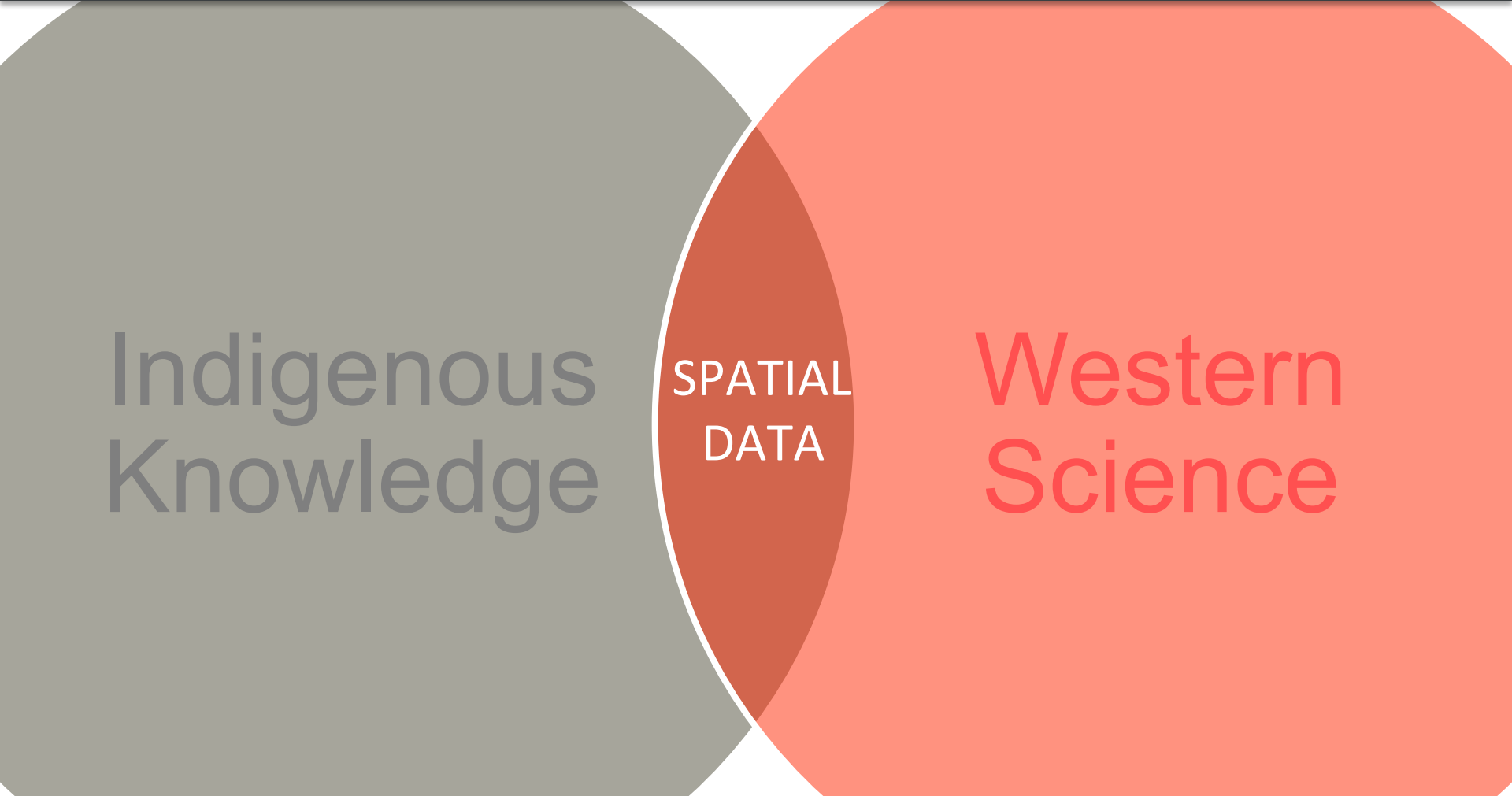


Geospatial Land & Resource Data

Indigenous
Knowledge

SPATIAL
DATA

Western
Science



Geospatial Land & Resource Data

Where was that cultural artifact observed?

Where was the sample taken?

Where are the leased lands?

SPATIAL DATA

Where is the best arable land for sale?

Where are the highest crop yields?

Geospatial Land & Resource Data

Crop Type / Yield

Marketing Strategies

Land Use Decisions

LOCATION

Land Acquisition Strategies

Leased Land Agreements

Geospatial Data & Tech

Relevance of Geospatial Data & Tech

What tools
&
technology
could
support
your
efforts?

GIS Software

- Preferably open source

GIS Data

- See land, other features

Drones

- Remote data capture

Capacity
Building

- Trained staff to use tools

Workshops

- Info sharing

(Yesterday's Land Manager Panel Discussion)

Sharing Geospatial Knowledge

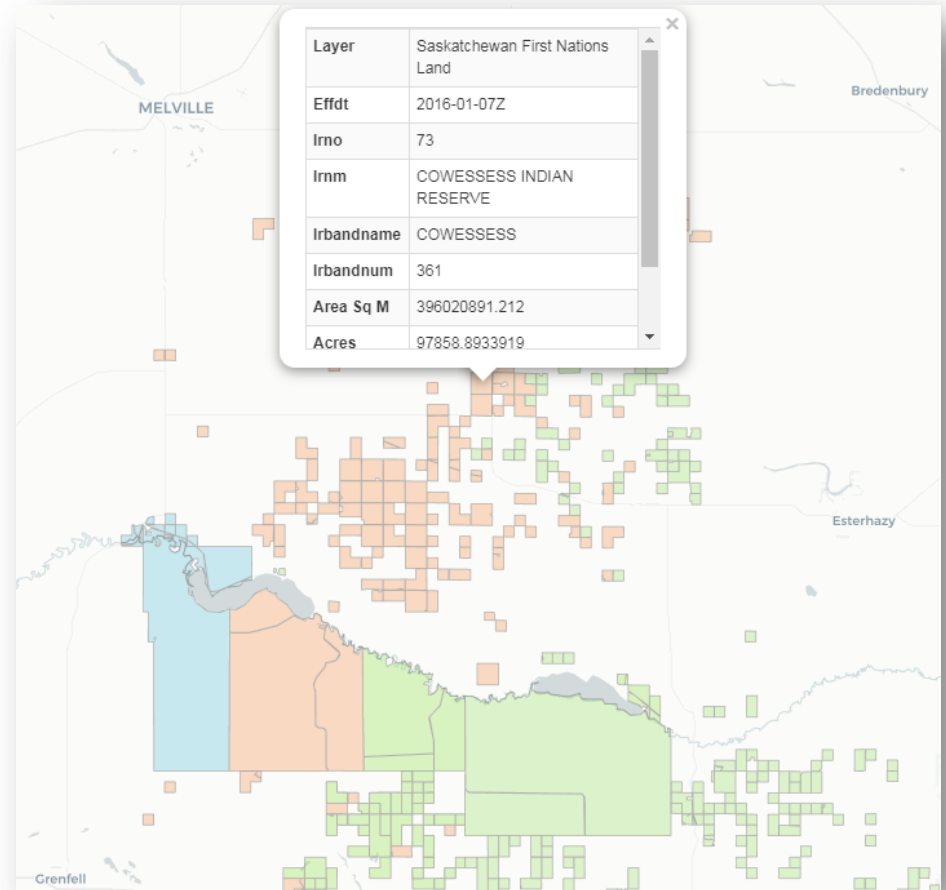
Land Manager Support:

- Cowessess
- George Gordon

Access to mapFeeder

Custom layers

Training on how to use products & ideas for lands management & database management



Sharing Geospatial Knowledge

FN Communities with mapFeeder access:

Thunderchild

Little Pine

Sweetgrass

Poundmaker

Red Pheasant

Beardy's and Okemasis

One Arrow

Saulteaux

Wahpeton Dakota

Peter Ballantyne

Lucky Man

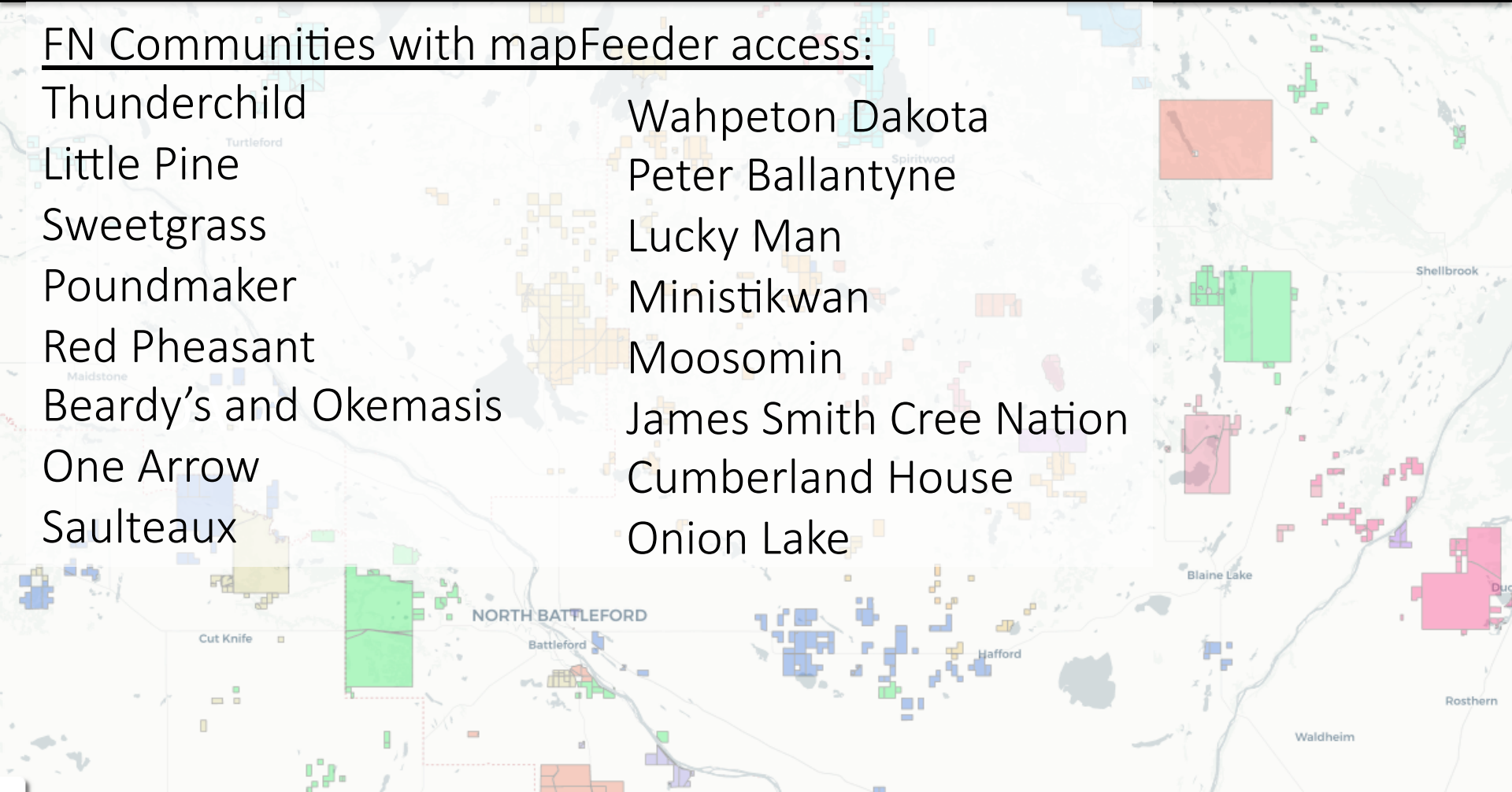
Ministikwan

Moosomin

James Smith Cree Nation

Cumberland House

Onion Lake



Sharing Geospatial Knowledge



UNIVERSITY OF SASKATCHEWAN
College of Agriculture
and Bioresources
AGBIO.USASK.CA

The College of Agriculture and Bioresources and the
Saskatchewan First Nations Natural Resource Centre of
Excellence present

An Aboriginal Land and Resource Management Workshop

Introduction to MapFeeder – How it can inform and relate to

- Land assessments
- Environmental assessments
- Economics development projects

Live demonstration of modules including: oil and gas, uranium, general
mapping, pastures, political boundaries, Treaty boundaries, pipelines, etc.

Thursday, April 12, 2018

11 AM – 4 PM

Agriculture Building, University of Saskatchewan
51 Campus Drive Saskatoon, SK

Lunch will be provided. RSVP your registration form to: (306) 966-8894



About the Project

This educational outreach pilot project engages with elementary and high school girls and young women to educate, debunk stereotypes and raise awareness around STEM-related career opportunities in the mining and minerals industry for women. With the support of innovative approaches and tools, the project connects classrooms with the diverse female mining and minerals workforce as applied examples of the learning outcomes in the public-school curriculum. The ultimate ambition is to feed this key underrepresented group of the mining sector talent pipeline through inspirational interactions.

Creating a Closer Community

The pilot project engages with a diverse cross-section of classrooms in Saskatoon, including academically gifted, inner city, community and Indigenous schools. Just as the classrooms are diverse, the industry women that classrooms will be uniquely connected to will represent wide-ranging careers in the Saskatchewan mining sector, with a focus on in-demand careers identified in the Saskatchewan Mining Industry Hiring Requirements and Available Talent Forecast.

Gathering Top Talent

Women that embody the essence of being a role model will be selected by the project team to participate as mining industry representatives. She will share her education, experiences (both positive and the hurdles she had to overcome), contributions and leadership in her company and community. The representative and her lesson plan materials and activities will link to outcomes and indicators of the school curriculum, as created with the teacher and the Girls In The Classroom team. Lesson plans and other materials created will be made available as downloadable PDF's at www.girlsintheclassroom.org.

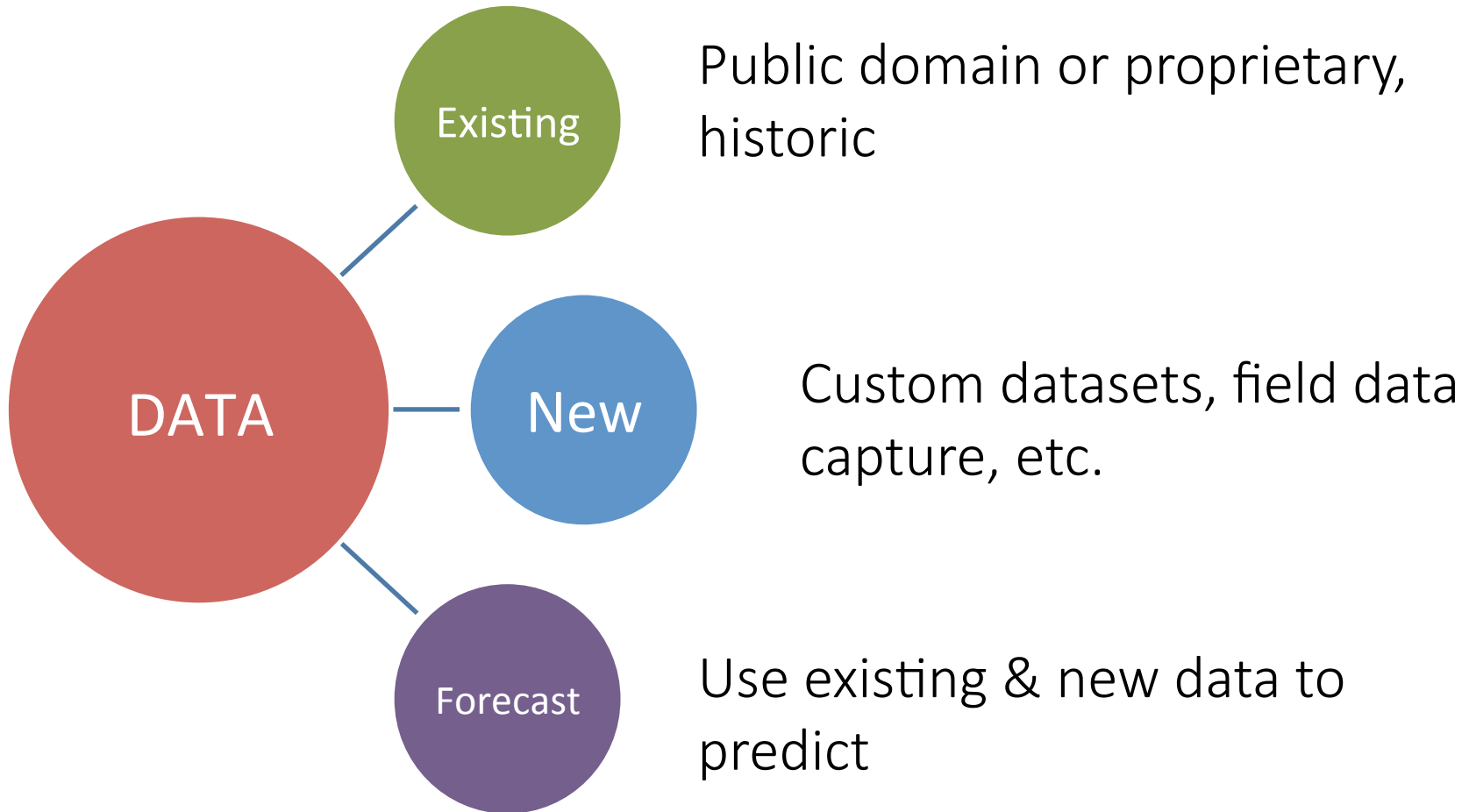
Exploring the Industry

Girls who are interested in more intently exploring the various careers presented can enter an essay competition to win a sponsorship package to a mining-related educational camp of her choosing within the Saskatoon area or a one-day job shadow opportunity with the industry representative and her company. One

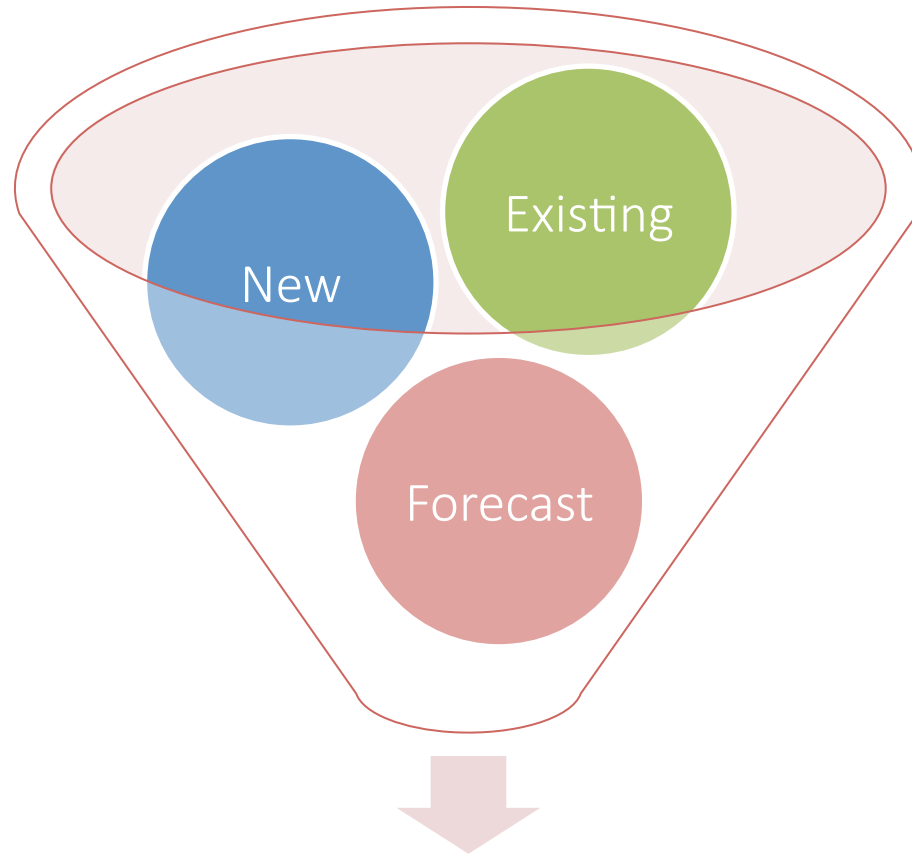
K-12 educational outreach – classrooms have access to mapFeeder for educational & map-making capabilities

Geospatial Data Examples

Geospatial Data Sources



Geospatial Data Sources



GIS & mapFeeder™

Intro to mapFeeder™

The screenshot displays the MapFeeder Oil and Gas web application. The interface includes a top navigation bar with the following elements:

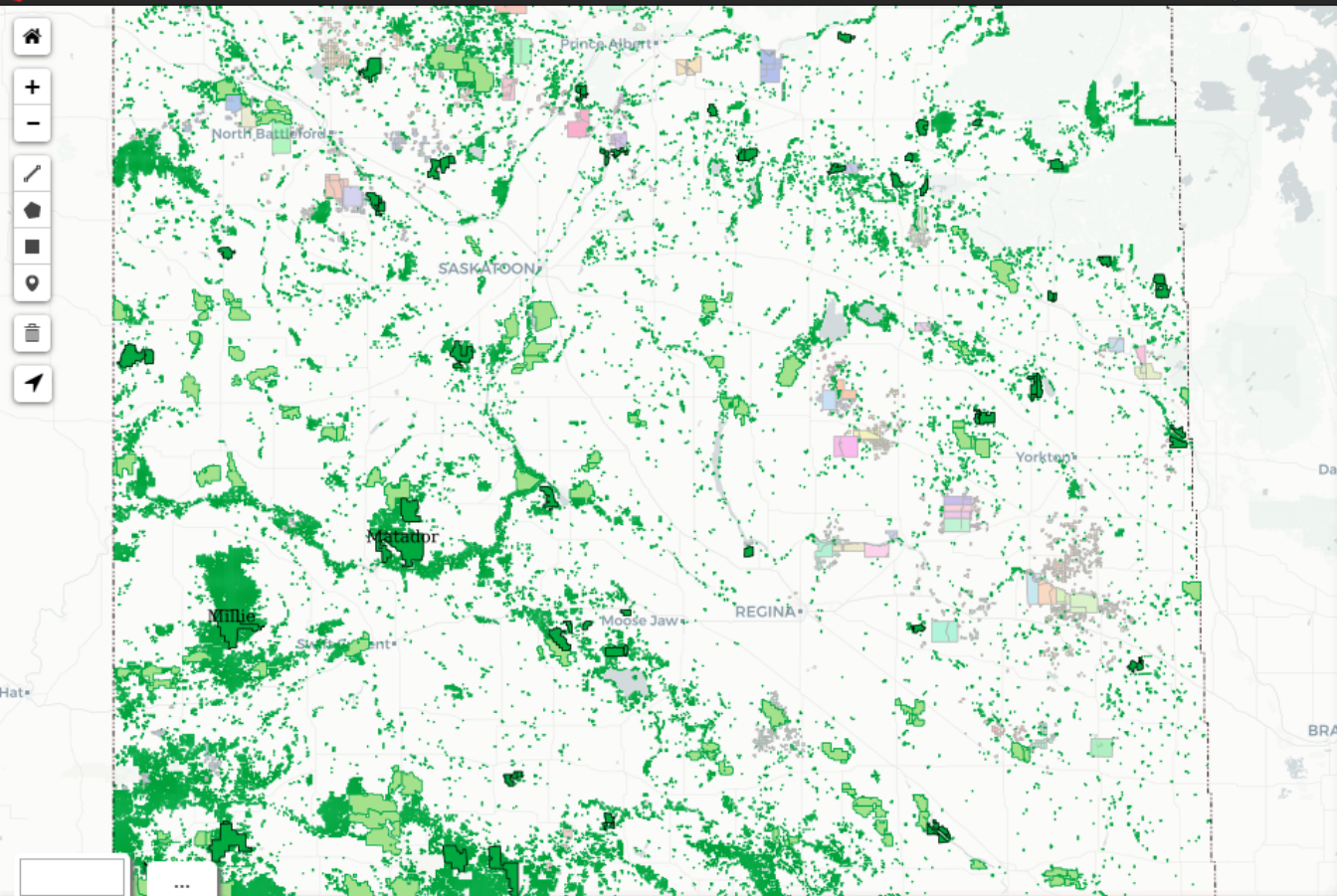
- MapFeeder Oil and Gas** logo on the left.
- Search** icon and text.
- Tools** icon and dropdown menu.
- Modules** icon and dropdown menu.
- Map Layers** icon and dropdown menu.

The main map area shows a satellite-style view of the northern United States and southern Canada. Key geographical features and labels include:

- US States:** BRITISH COLUMBIA, WASHINGTON, OREGON, IDAHO, MONTANA, WYOMING, NEBRASKA, SOUTH DAKOTA, IOWA, MINNESOTA, WISCONSIN, ILLINOIS, INDIANA, OHIO, PENNSYLVANIA, MARYLAND, VIRGINIA, NORTH CAROLINA, SOUTH CAROLINA, GEORGIA, ALABAMA, MISSISSIPPI, LOUISIANA, TEXAS, ARIZONA, CALIFORNIA, NEVADA, UTAH, COLORADO, NEW MEXICO, OKLAHOMA, KANSAS, MISSOURI, ILLINOIS, INDIANA, OHIO, PENNSYLVANIA, MARYLAND, VIRGINIA, NORTH CAROLINA, SOUTH CAROLINA, GEORGIA, ALABAMA, MISSISSIPPI, LOUISIANA, TEXAS, ARIZONA, CALIFORNIA, NEVADA, UTAH, COLORADO, NEW MEXICO, OKLAHOMA, KANSAS, MISSOURI.
- Canadian Provinces:** ALBERTA, SASKATCHEWAN, MANITOBA, ONTARIO.
- Cities:** Juneau, Seattle, Surrey, Calgary, Edmonton, Regina, Winnipeg, Yellowknife.
- Natural Features:** Nahanni National Park Reserve, Wood Buffalo National Park, Rocky Mountains.
- Bodies of Water:** Hudson Bay, James Bay.

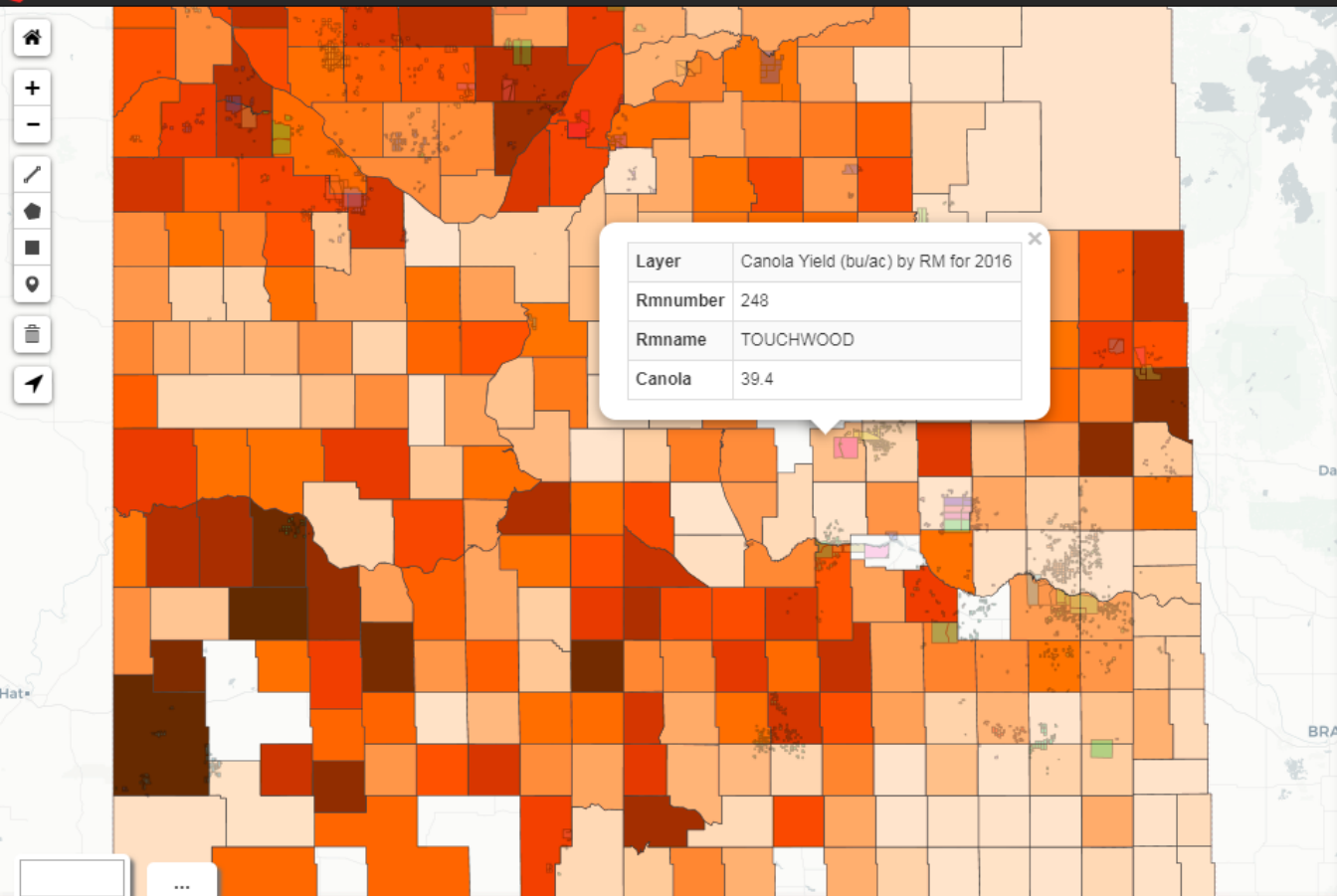
At the bottom left, there is a search input field and a menu icon. At the bottom right, the text "Leaflet | Map © 1987-2014 HERE" is visible.

mapFeeder™ – Agriculture Layers



- Layers
 - Agriculture & Lands (Project Area)
 - Soil Capability
 - Soils
 - Quarter Section Land Use
 - Land Assessment
 - RM 248 Touchwood 2018 Assessment
 - RM 248 Touchwood 2018 Assessment Contours
 - Agriculture & Lands (Saskatchewan)
 - Townships
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 - South Saskatchewan Quarter Sections
 - Drilling
 - Other Wells As Arrows
 - Other Wells
 - Other Wells - Undefined
 - Oil and Gas Wells

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mapFeeder™ – Agriculture Layers

The screenshot displays the MapFeeder Oil and Gas web application. The main map area shows a grid of agricultural land parcels in Saskatchewan, each color-coded. Major cities labeled on the map include Prince Albert, North Battleford, Saskatoon, Regina, Moose Jaw, Swift Current, and Yorkton. The interface includes a top navigation bar with a search function, tools, modules, and map layers. On the left, there are navigation controls for home, zoom in/out, and various map tools. On the right, a 'Layers' panel is open, listing various data layers. The 'Rural Municipality' layer is currently selected and highlighted in green.

MapFeeder Oil and Gas

Search Tools Modules Map Layers

Layers

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mapFeeder™ – Agricultural Layers

MapFeeder Oil and Gas

Search Tools Modules Map Layers

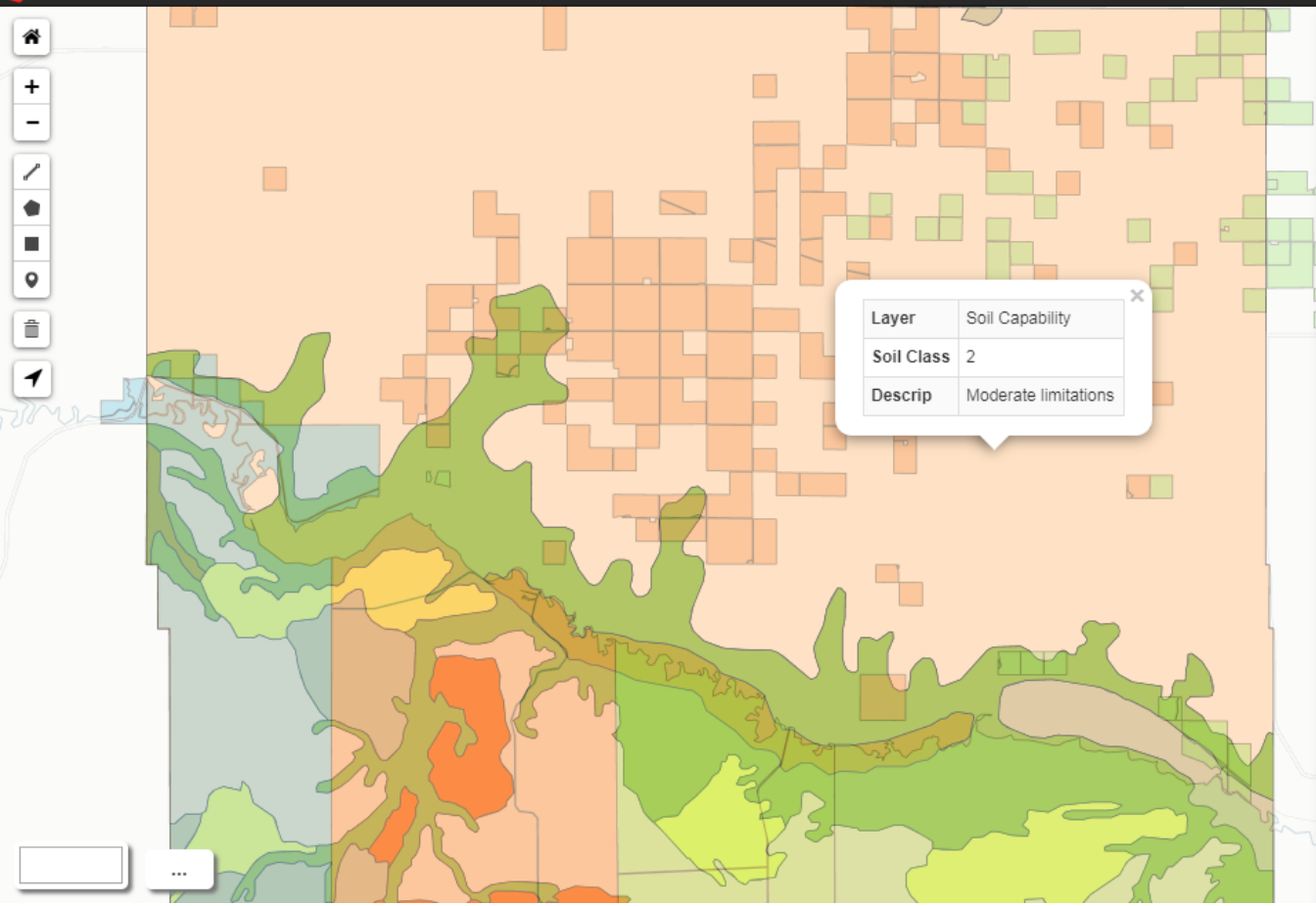
The map displays a grid of Saskatchewan's agricultural regions, with numerous townships labeled. Yellow triangles represent grain elevators, and various colored polygons represent different agricultural and land use layers. The map is overlaid with a grid of quarter sections.

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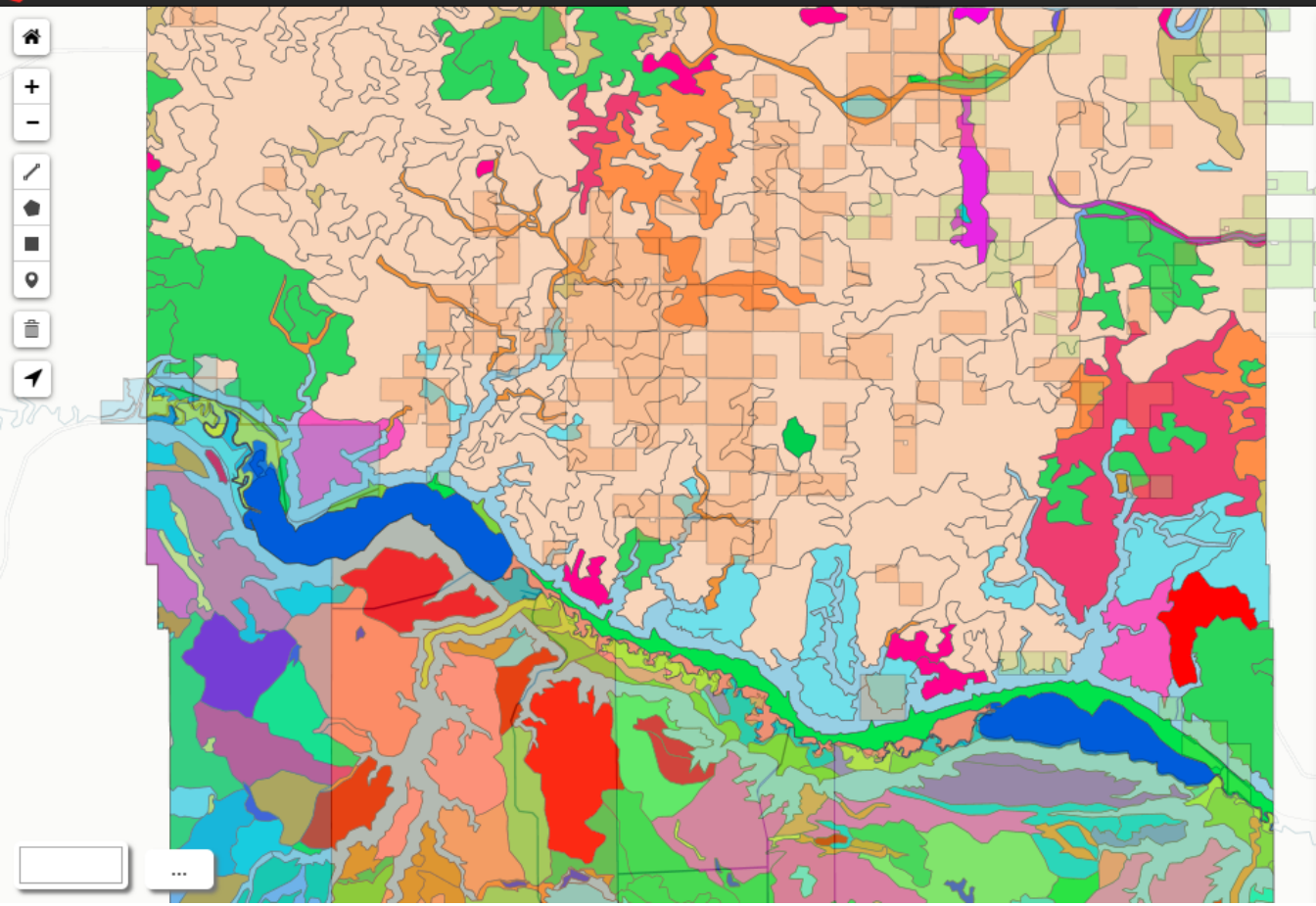
Geospatial Ag Project Areas

mapFeeder™ – Agricultural Project Areas



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mapFeeder™ – Agricultural Project Areas



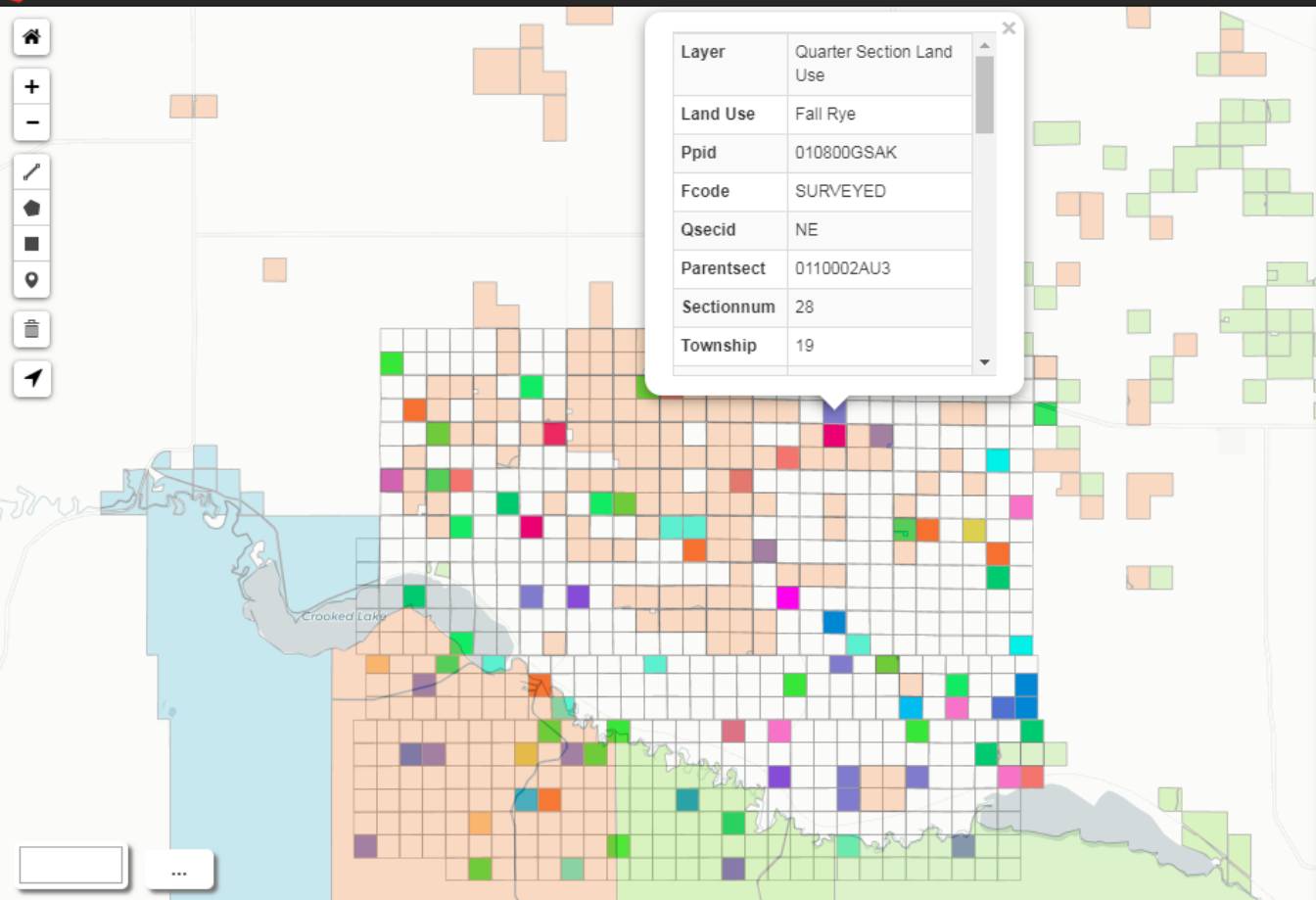
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mapFeeder™ – Agricultural Project Areas



Layer	Quarter Section Land Use
Land Use	Fall Rye
Ppid	010800GSAK
Fcode	SURVEYED
Qsecid	NE
Parentsect	0110002AU3
Sectionnum	28
Township	19

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mapFeeder™ – Agricultural Project Areas

MapFeeder
Oil and Gas

Search Tools Modules Map Layers

Quarter Section Land Use

Search Clear Search

Land_use
Barley
Canary Seed
Canola
Chick Peas

Ppid
01080010L5
01080010L6
01080010L7
01080010LA

Fcode
SURVEYED

Qsecid
NE
NW
SE
SW

Parentsect
01100008TW
01100008TX
01100008TY
01100008U0

Sectionnum
01
02
03
04

Township
18
19
19a
20

View Results

Leaflet | © OpenStreetMap contributors, © CartoDB

mapFeeder™ – Agricultural Project Areas




























The screenshot displays the MapFeeder Oil and Gas web application. The interface includes a top navigation bar with 'Search', 'Tools', 'Modules', and 'Map Layers' options. The main content area is divided into a left sidebar and a central map. The sidebar, titled 'Quarter Section Land Use', shows a list of 9 records. The fifth record is highlighted in yellow, and its 'Edit Record' button is being clicked. The map shows a grid of colored polygons representing agricultural project areas, with a yellow square highlighting the selected record's location. A lake labeled 'Crooked Lake' is visible on the left side of the map.

MapFeeder Oil and Gas

Quarter Section Land Use

9 / 9

View Form Bulk Bulk CSV

Canola Ppid: 010800P38E Fcode: SURVEYED	  
Canola Ppid: 010800P28W Fcode: SURVEYED	  
Canola Ppid: 01080045PC Fcode: SURVEYED	  
Canola Ppid: 0108007HT8 Fcode: SURVEYED	   Edit Record
Canola Ppid: 010800L5SH Fcode: SURVEYED	  
Canola Ppid: 010800DLWN Fcode: SURVEYED	  
Canola Ppid: 010800GSK9 Fcode: SURVEYED	  
Canola Ppid: 010800DMHB Fcode: SURVEYED	  
Canola Ppid: 0108004EF0 Fcode: SURVEYED	  

Leaflet | © OpenStreetMap contributors, © CartoDB

mapFeeder™ – Agricultural Project Areas



Canola <i>Ppid:</i> 010800P38E <i>Fcode:</i> SURVEYED
Canola <i>Ppid:</i> 010800P28W <i>Fcode:</i> SURVEYED
Canola <i>Ppid:</i> 01080045PC <i>Fcode:</i> SURVEYED
Canola <i>Ppid:</i> 0108007HT8 <i>Fcode:</i> SURVEYED
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Canola <i>Ppid:</i> 010800GSK9 <i>Fcode:</i> SURVEYED
Canola <i>Ppid:</i> 010800DMHB <i>Fcode:</i> SURVEYED
Canola <i>Ppid:</i> 0108004EF0 <i>Fcode:</i> SURVEYED

Save Show Map Cancel

The geometry type (MultiPolygon) is not currently supported for geometry editing

Land_use	Canola
Ppid	0108007HT8
Fcode	SURVEYED
Qsecid	SW
Parentsect	01100047RP
Sectionnum	06
Township	20
Range	03
Meridian	2
Shape_leng	3270.62863573
Heritage	--
Crown	--
Developmen	--
Freehold	--
Lld	SW-06-20-03-2
Mask	No



mapFeeder™ – Agricultural Project Areas

MapFeeder Oil and Gas	
Quarter Section Land Use	
9 / 9	View Form
Canola <i>Ppid:</i> 010800P38E <i>Fcode:</i> SURVEYED	
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Save Show Map Cancel

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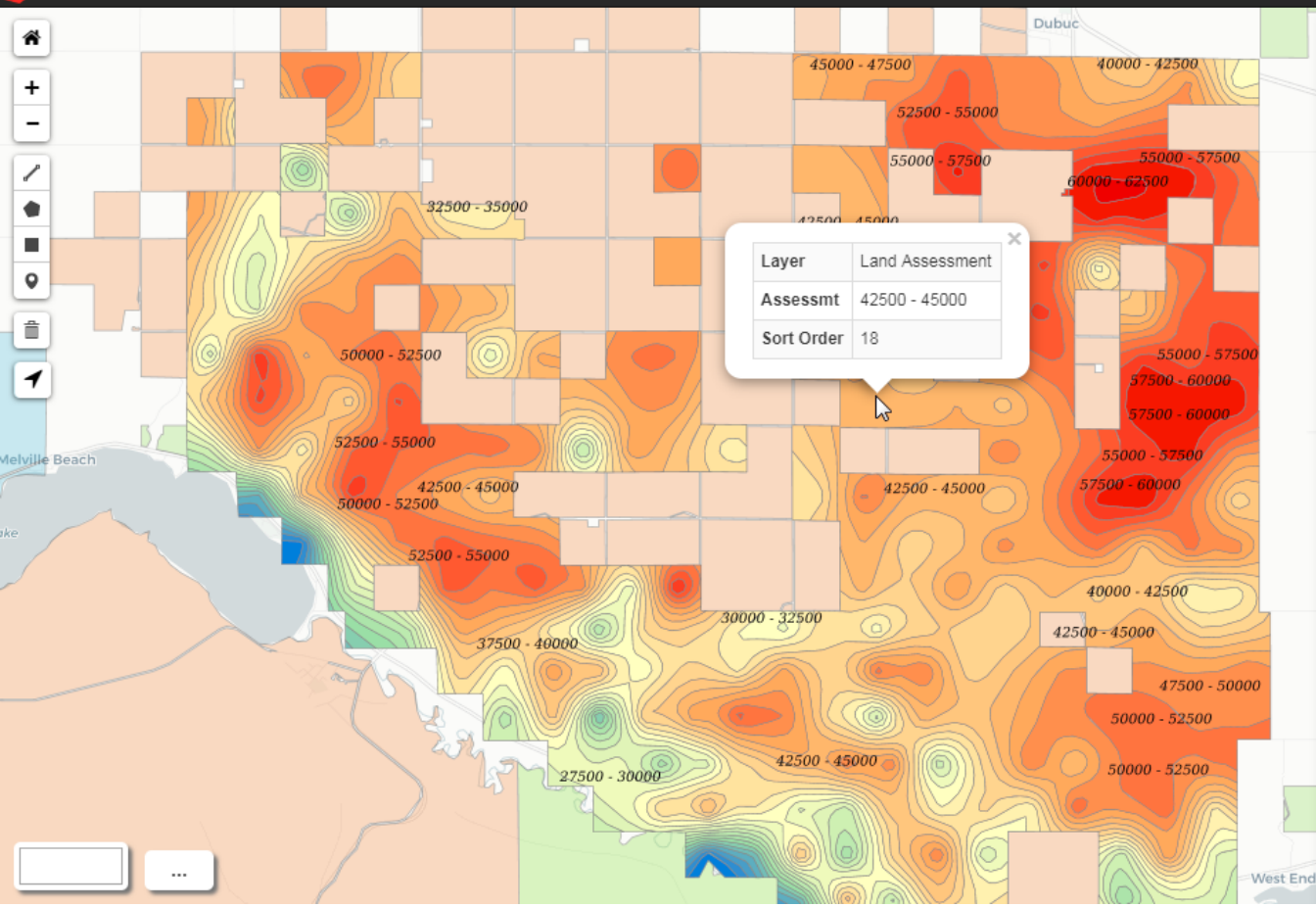
Land_use	Canola
Ppid	--
Fcode	Barley Canary Seed Canola
Qsecid	Chick Peas Durum
Parentsect	Fall Rye Flax
Sectionnum	Lentils Mustard
Township	Not Assigned Oats
Range	Other Pasture
Meridian	Peas Spring Rye
Shape_leng	Spring Wheat Sunflowers
Heritage	Tame Hay Wetlands
Crown	--
Developmen	--
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mapFeeder™ – Agricultural Project Areas

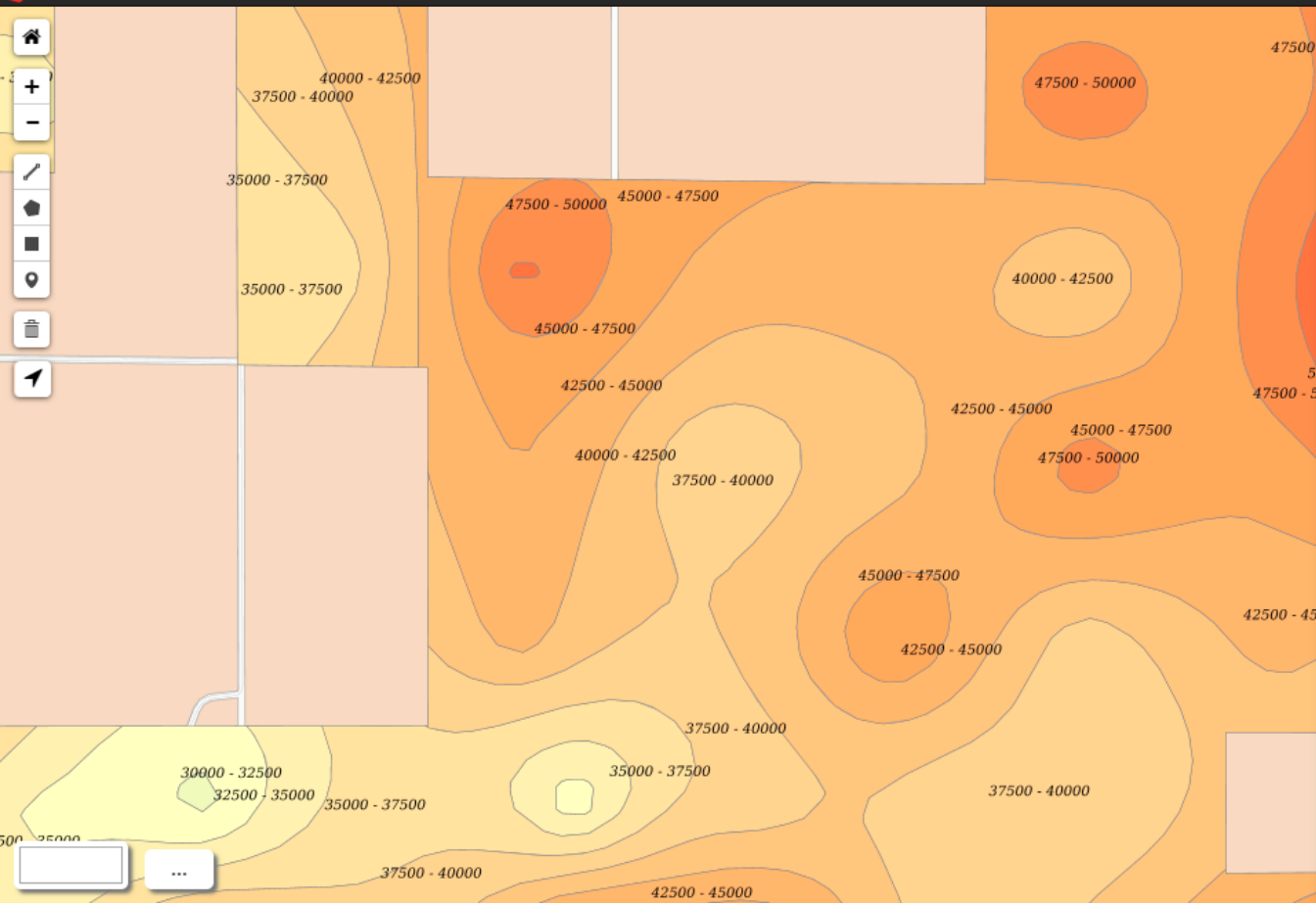
MapFeeder
Oil and Gas

Search Tools Modules Map Layers



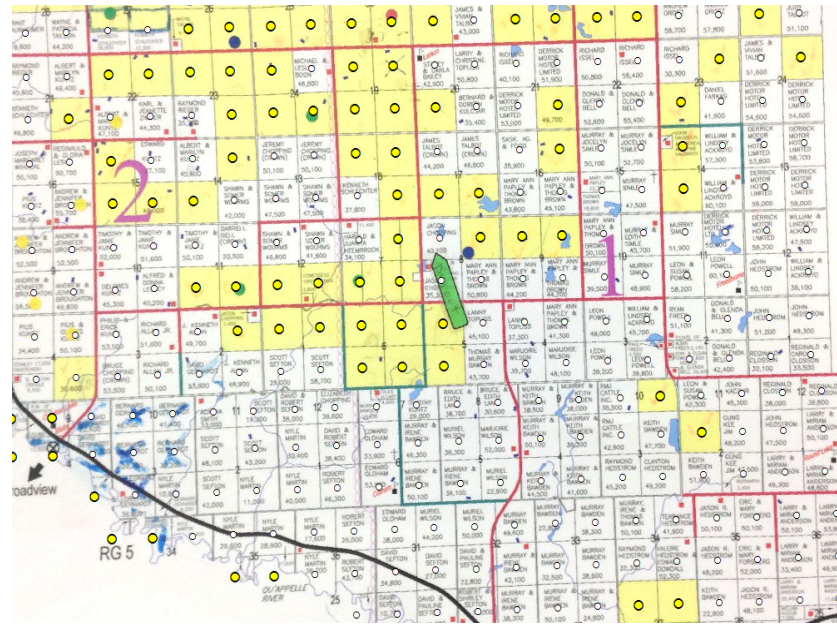
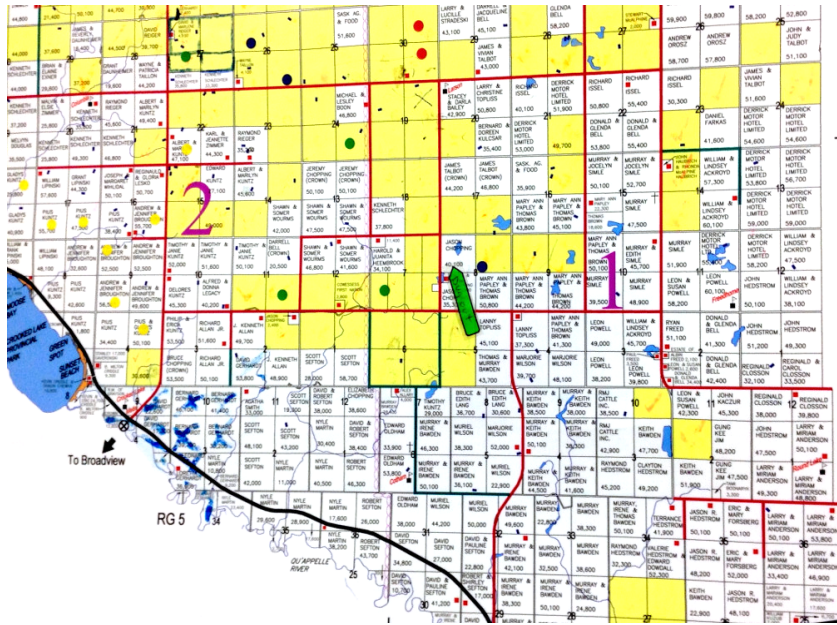
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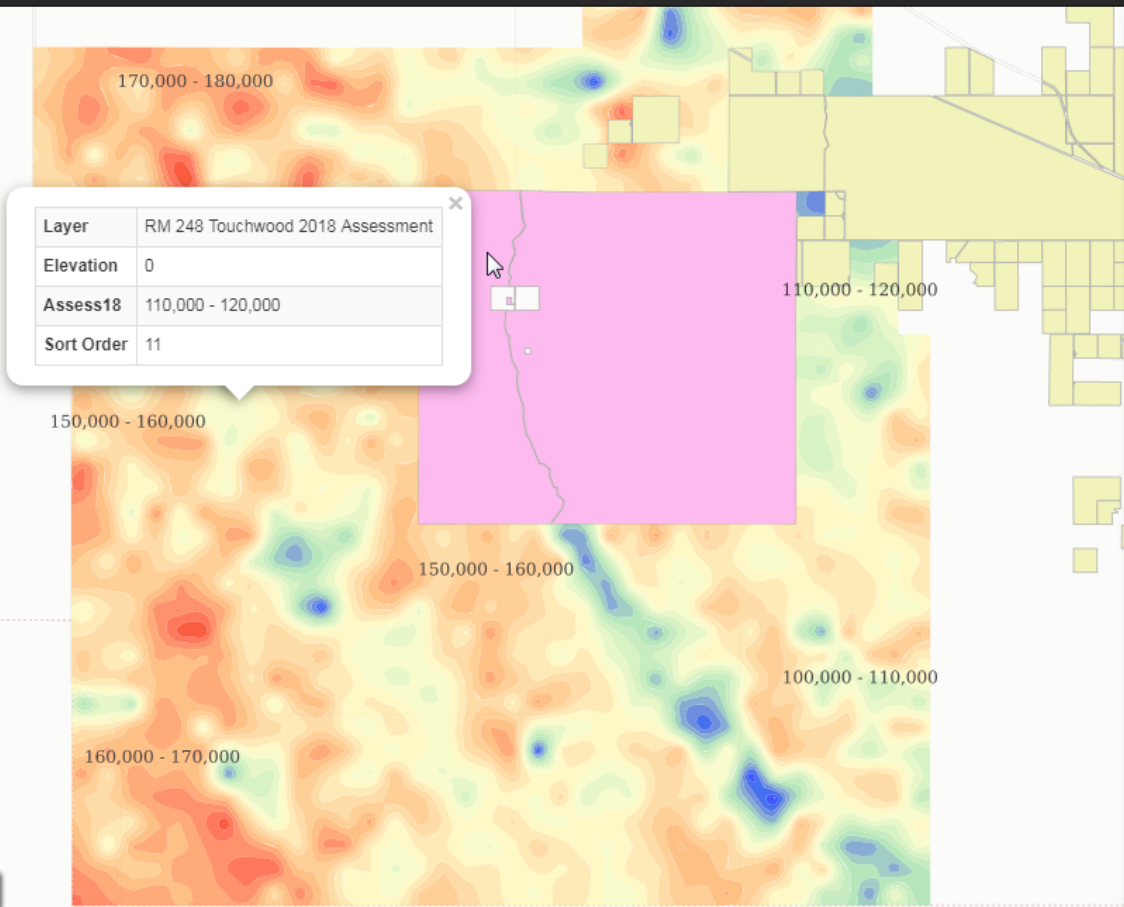
mapFeeder™ and GIS



Create land assessment color ramp map from digital photo of RM maps

- Georeference the image in GIS software
- Then assign land values to the centroid of each parcel

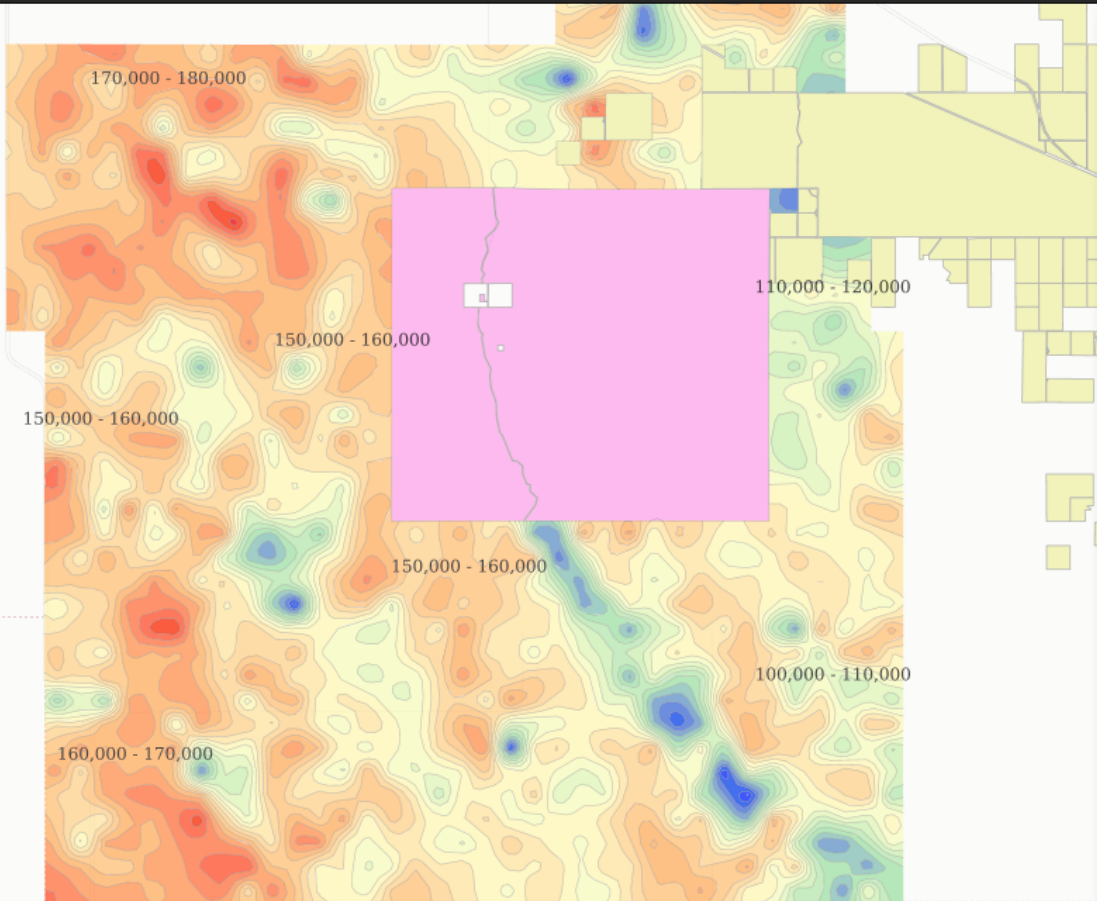
mapFeeder™ – Agricultural Project Areas



Layer	RM 248 Touchwood 2018 Assessment
Elevation	0
Assess18	110,000 - 120,000
Sort Order	11

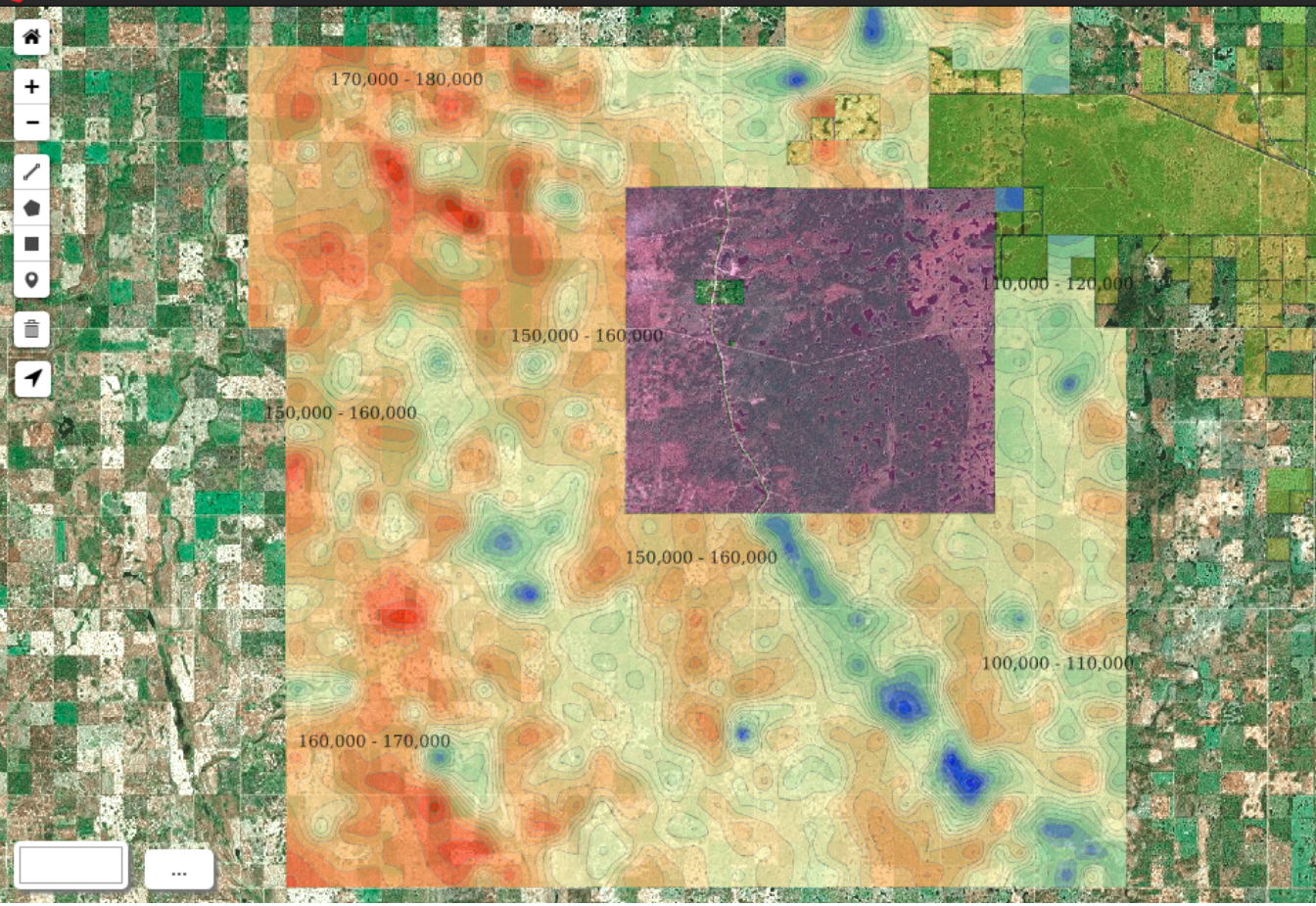
- Basemaps
 - Basemap (Printable)
 - Streets (Printable)
 - Satellite
 - Satellite (Printable)
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mapFeeder™ – Agricultural Project Areas



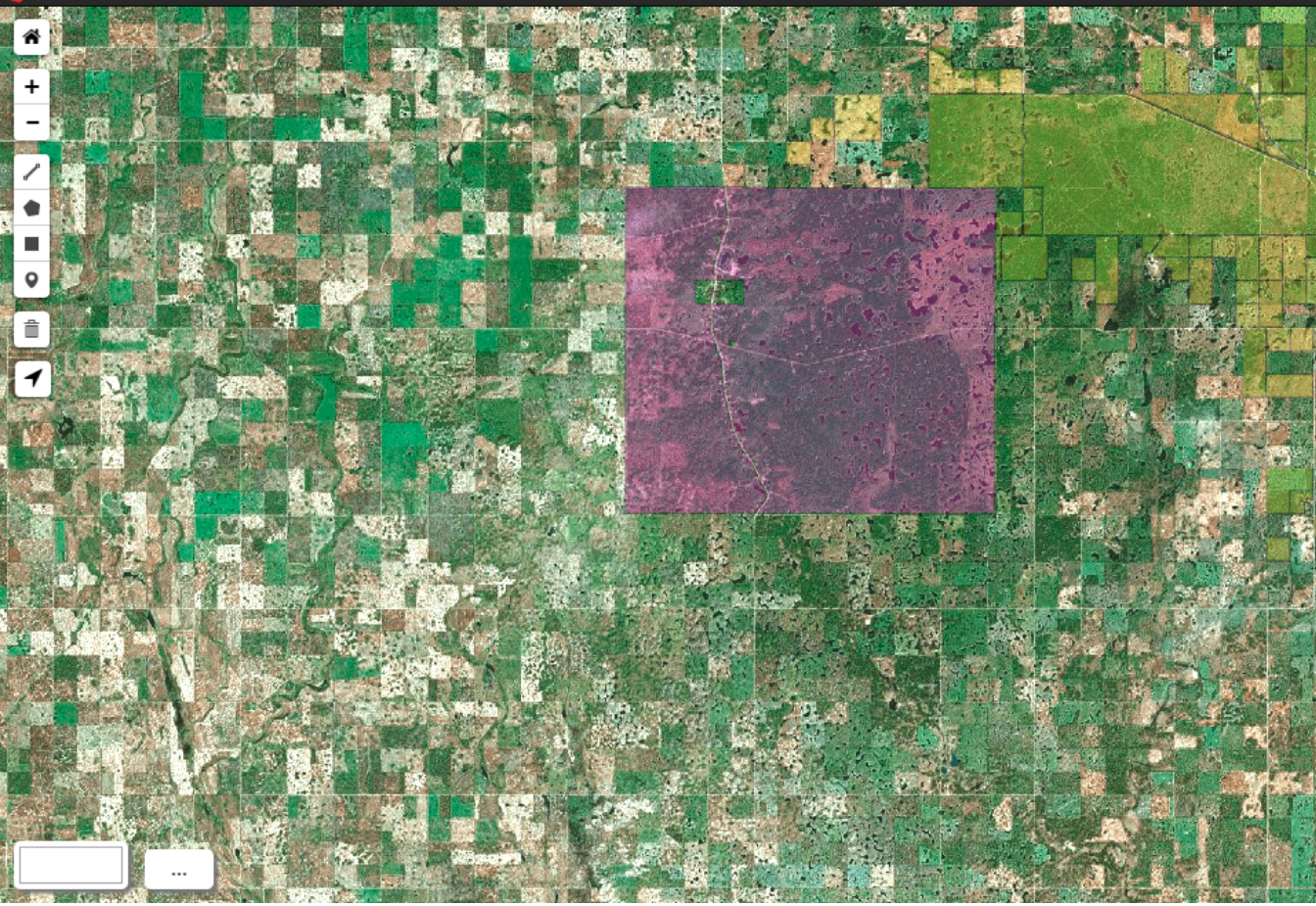
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mapFeeder™ – Agricultural Project Areas



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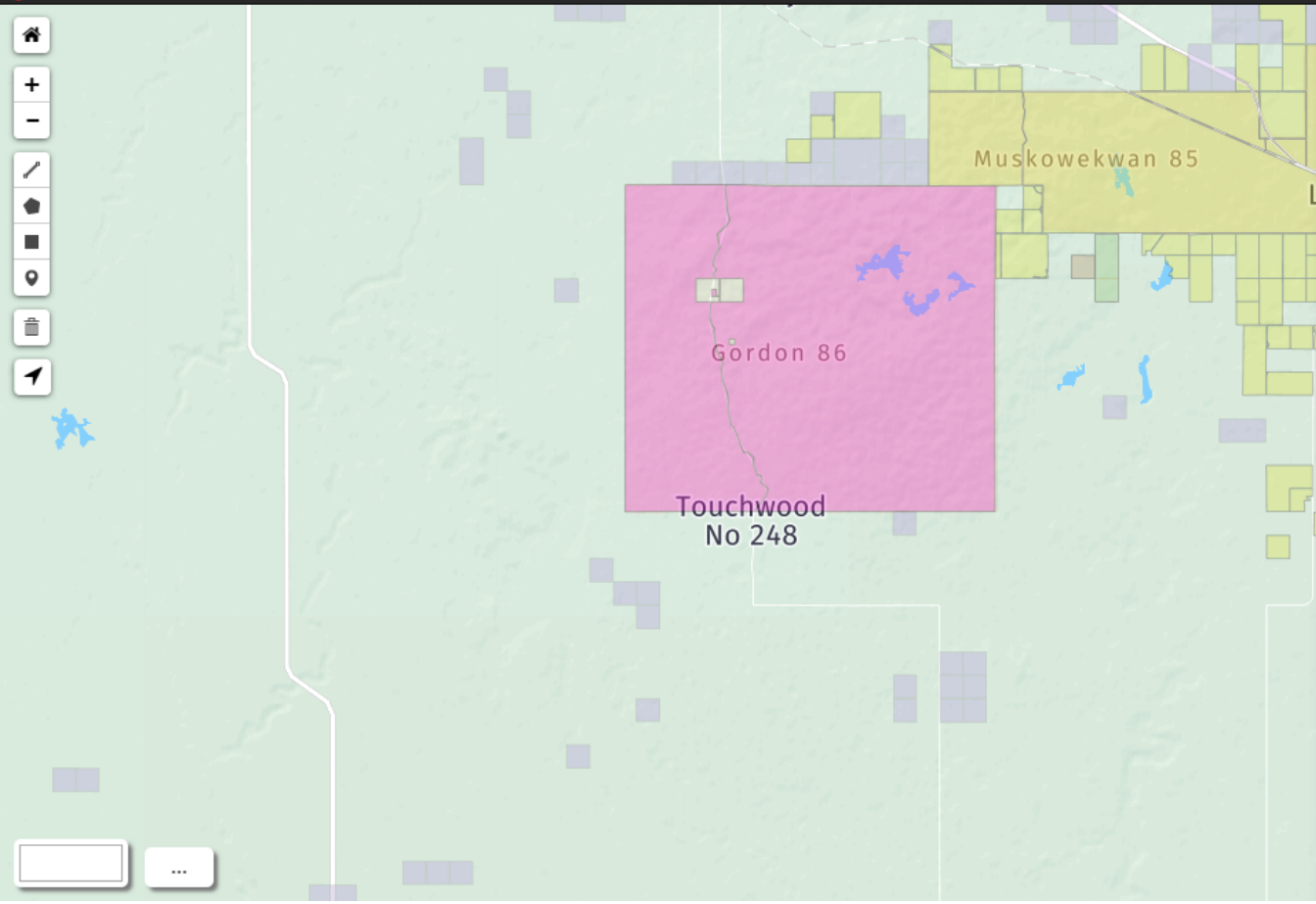
mapFeeder™ – Agricultural Project Areas



- Basemaps
 - Basemap (Printable)
 - Streets (Printable)
 - Satellite
 - Satellite (Printable)
 - Terrain
 - Terrain (Printable)
- Layers
 - Agriculture & Lands (Project Area)
 - Soil Capability
 - Soils
 - Quarter Section Land Use
 - Land Assessment
 - RM 248 Touchwood 2018 Assessment
 - RM 248 Touchwood 2018 Assessment Contours
 - Agriculture & Lands (Saskatchewan)
 - Townships
 - Canola Yield (bu/ac) by RM for 2016
 - Crown Land 2016
 - Rural Municipality
 - Provincial Boundary
 - Pastures - Agri. Env. Services Branch (AESB)
 - Pastures - Sask. Prov. (SPP)
 - Posted Land - Sale Ends Feb. 7, 2017
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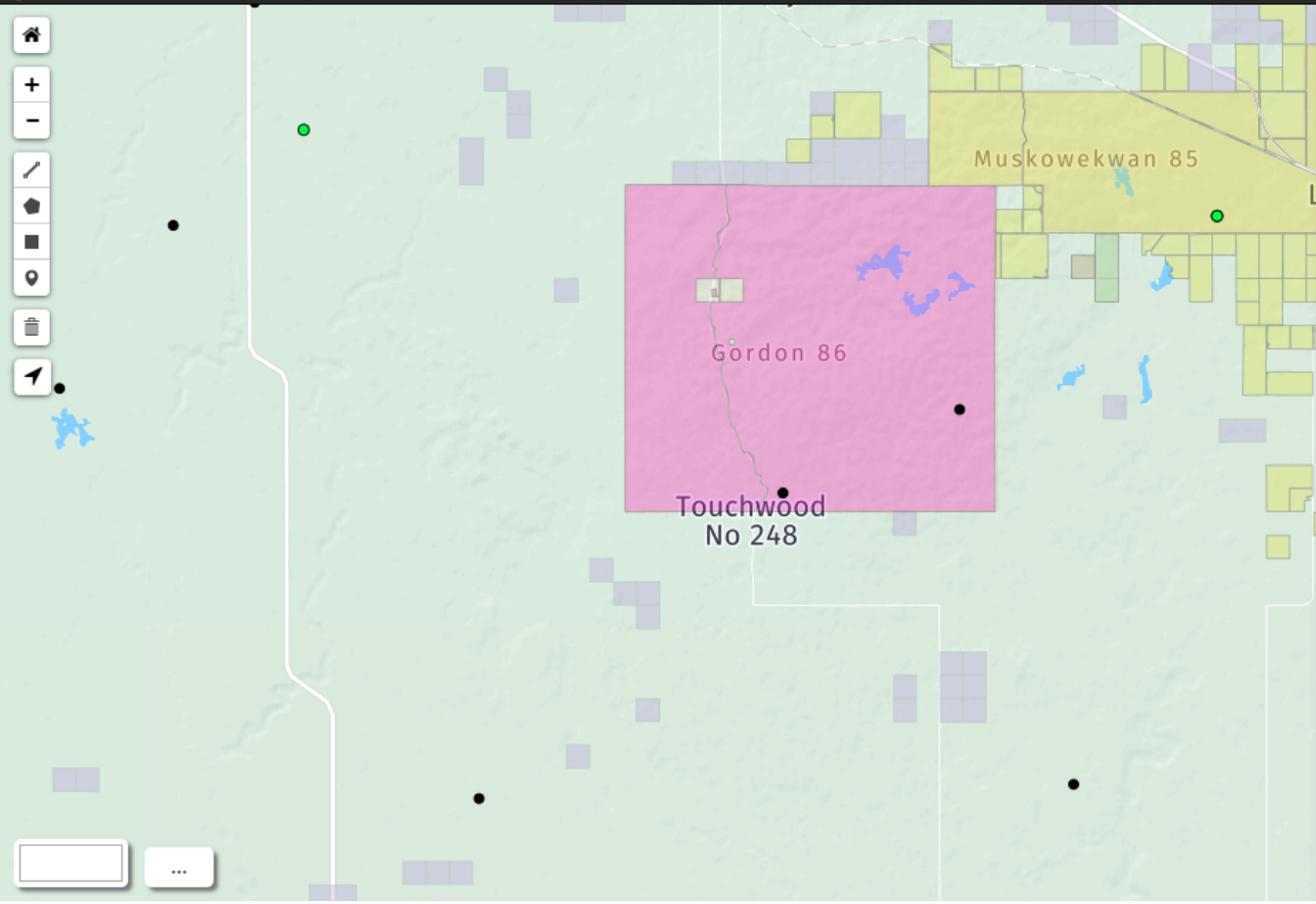
Other Geospatial Land Data

mapFeeder™ – Other Land Data



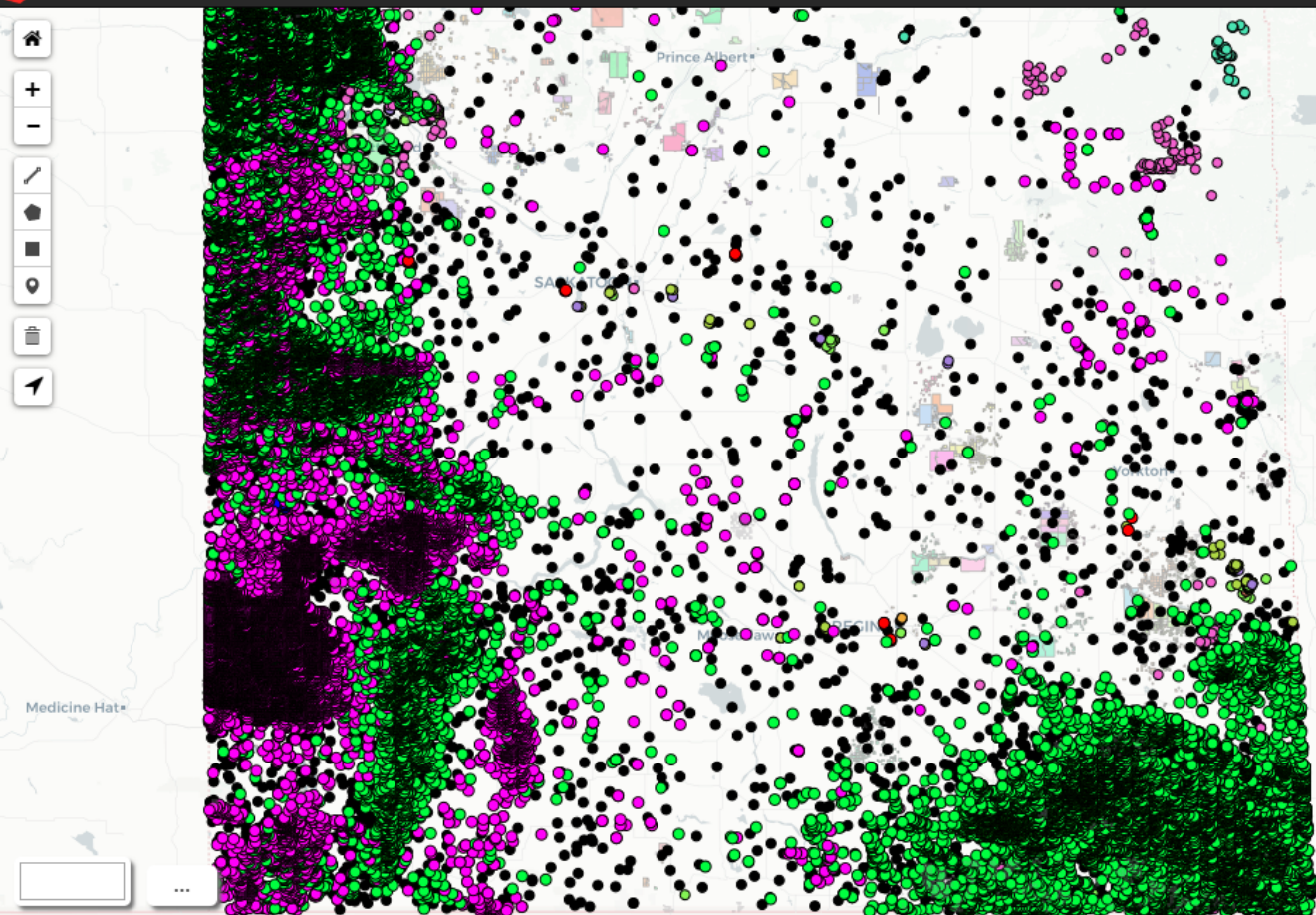
- Drilling**
 - Other Wells As Arrows
 - Other Wells
 - Other Wells - Undefined
 - Oil and Gas Wells
 - Approved Well Licenses - Dec. 6, 2016
 - Horizontal Wells Lines
 - Horizontal Wells Point
- Exploration**
 - Oil and Gas Resource
 - Oil & Gas Dispositions 2018Jul
 - Oil and Gas Dispositions (old)
 - Mineral Resource
 - Commercial Forestry
- First Nations**
 - Canadian First Nations Treaty Lands
 - Saskatchewan First Nations Land
 - Canadian First Nations Land
 - TLE & Specific Claims Agreements
 - Approximate Wood Supply Agreement Area
- Geothermal**
- Infrastructure**
 - Enbridge Line 3 Replacement
 - Pipelines 2014
 - Sask. Hydro Stations
 - Power Lines

mapFeeder™ – Other Land Data



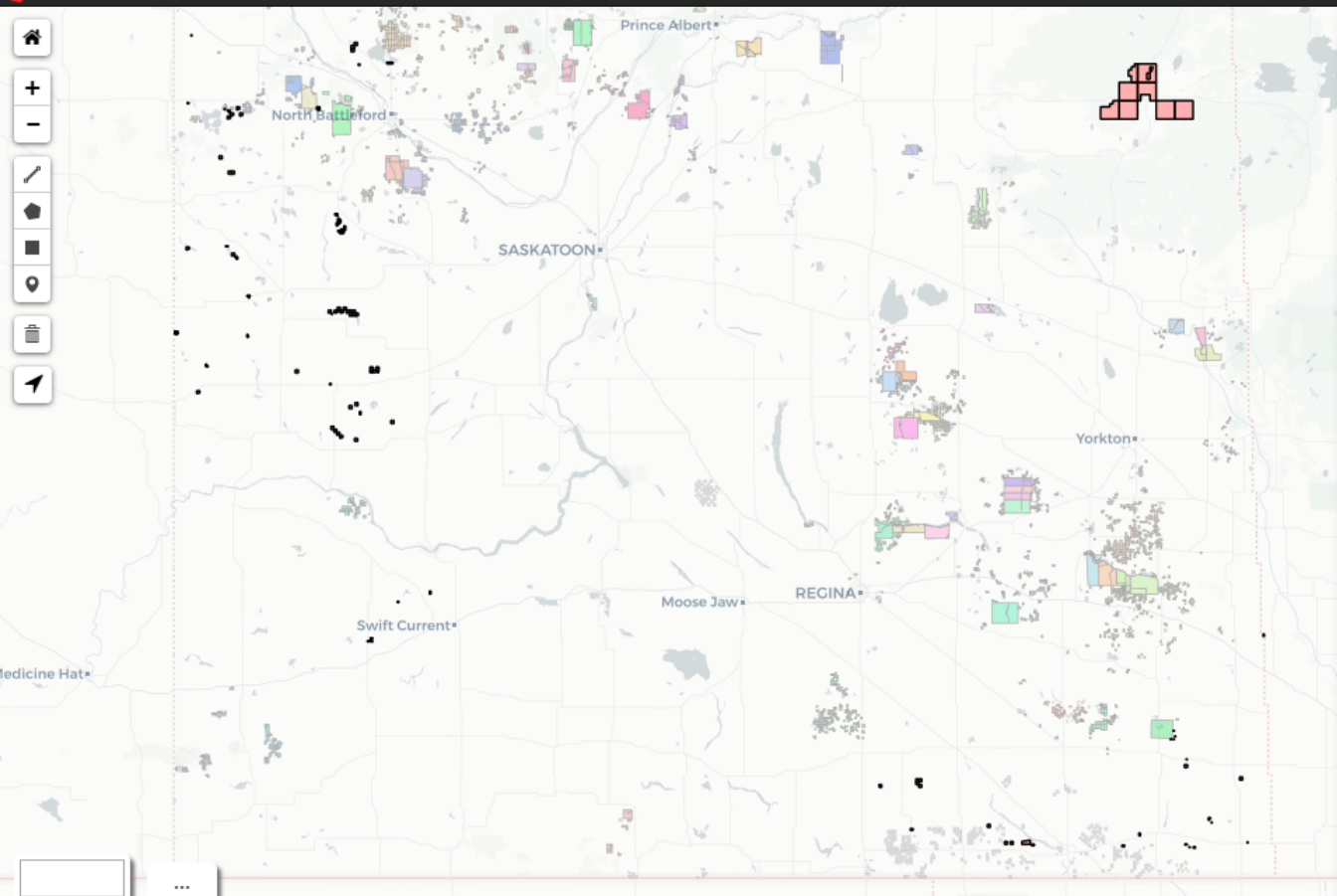
- Drilling**
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 - Sask. Hydro Stations
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mapFeeder™ – Other Land Data



- Provincial Boundary
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- Pastures - Sask. Prov. (SPP)
- Posted Land - Sale Ends Feb. 7, 2017
- Posted Land - Sale Ends Oct. 2, 2018
- Tagged Lands
- Saskatchewan Grain Elevators (2016)
- South Saskatchewan Quarter Sections
- Drilling**
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 - Other Wells
 - Other Wells - Undefined
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 - Mineral Resource
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 - Canadian First Nations Treaty Lands
 - Saskatchewan First Nations Land
 - Canadian First Nations Land

mapFeeder™ – Land Sales



- Agriculture & Lands (Saskatchewan)
 - Townships
 - Canola Yield (bu/ac) by RM for 2016
 - Crown Land 2016
 - Rural Municipality
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 - Oil and Gas Dispositions (old)

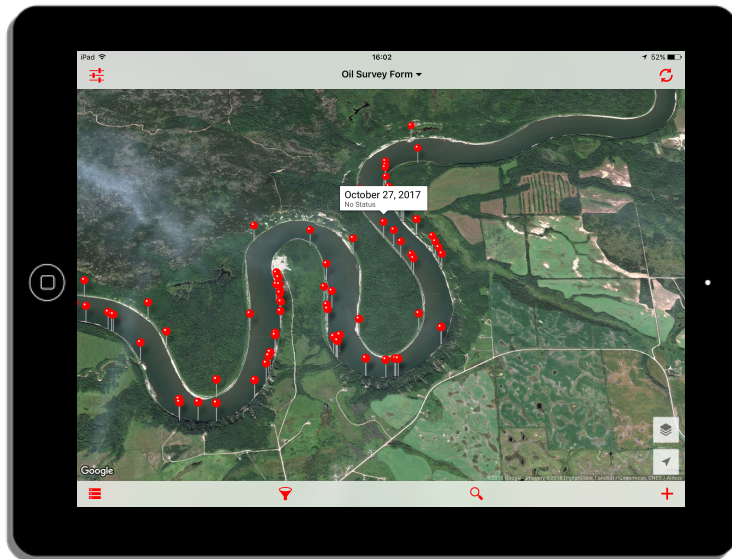
Capturing & Viewing Data with Tech

mapFeeder™ - Capturing Geospatial Data

Use of mapFeeder™ for data collection in the field:

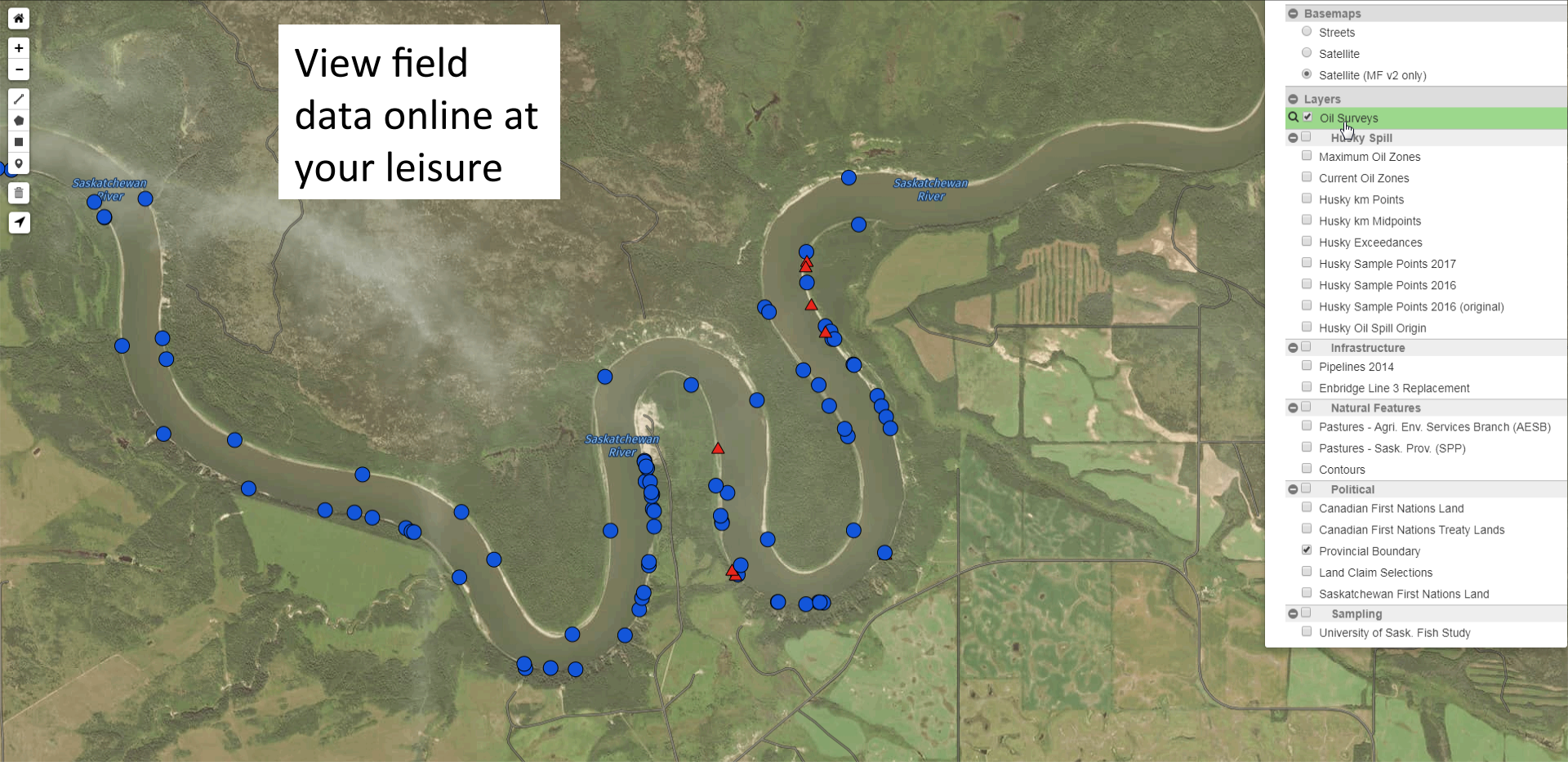
- Use custom forms on tablets to record:
 - Photos, videos – tagged to location
 - Information related to field investigations
 - General observations

Securely
synchronize to
mapFeeder™

A tablet displaying a data entry form titled 'Oil Survey Form'. The form has a 'Cancel' button on the top left and a 'Save' button on the top right. The 'Photos' section shows five thumbnail images of a field. Below that is the 'Activity Information' section with fields for: Activity Date (October 27, 2017), Phase (PHASE II), Start Time (12:08), End Time, Personnel (AM), FN Land (James Smith (JS)), and Organization (RESPEC). The bottom of the form has a 'Location Description' field with a red location pin icon and a trash icon.

mapFeeder™ - Viewing Geospatial Data

View field
data online at
your leisure



mapFeeder™ - Viewing Geospatial Data

MapFeeder
Independent Assessment

Oil Surveys

185 / 185 View Form Bulk CSV

2017-09-15	FN Land: Thunderchild (TC)	Sample ID:	Sample Media:
2017-08-22	FN Land: Thunderchild (TC)	Sample ID:	Sample Media:
2017-09-16	FN Land: Thunderchild (TC)	Sample ID:	Sample Media:
2017-09-15	FN Land: Thunderchild (TC)	Sample ID:	Sample Media:
2017-09-16	FN Land: Thunderchild (TC)	Sample ID: TC-S-T-00098-091617-1130	Sample Media: Sediment
2017-09-15	FN Land: Thunderchild (TC)	Sample ID:	Sample Media:
2017-09-14	FN Land: Thunderchild (TC)	Sample ID:	Sample Media:
2017-09-16	FN Land: Thunderchild (TC)	Sample ID:	Sample Media:
2017-09-16	FN Land: Thunderchild (TC)	Sample ID:	Sample Media:
2017-09-16	FN Land: Thunderchild (TC)	Sample ID:	Sample Media:

Record Attachments

Basemaps

- Streets
- Satellite
- Satellite (MF v2 only)

Layers

- Oil Surveys
 - Husky Spill
 - Maximum Oil Zones
 - Current Oil Zones
 - Husky km Points
 - Husky km Midpoints
 - Husky Exceedances
 - Husky Sample Points 2017
 - Husky Sample Points 2016
 - Husky Sample Points 2016 (original)
 - Husky Oil Spill Origin
- Infrastructure
 - Pipelines 2014
 - Enbridge Line 3 Replacement
- Natural Features
 - Pastures - Agri. Env. Services Branch (AESB)
 - Pastures - Sask. Prov. (SPP)
 - Contours
- Political
 - Canadian First Nations Land
 - Canadian First Nations Treaty Lands
 - Provincial Boundary
 - Land Claim Selections
 - Saskatchewan First Nations Land
- Sampling
 - University of Sask. Fish Study

mapFeeder™ - Viewing Geospatial Data

MapFeeder
Independent Assessment

Oil Surveys

185 / 185 View Form Bulk CSV

2017-09-15	FN Land: Thunderchild (TC)	Sample ID:	Sample Media:
2017-08-22	FN Land: Thunderchild (TC)	Sample ID:	Sample Media:
2017-09-16	FN Land: Thunderchild (TC)	Sample ID:	Sample Media:
2017-09-15	FN Land: Thunderchild (TC)	Sample ID:	Sample Media:
2017-09-16	FN Land: Thunderchild (TC)	Sample ID: TC-S-T-00098-091617-1130	Sample Media: Sediment
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2017-09-16	FN Land: Thunderchild (TC)	Sample ID:	Sample Media:
2017-09-16	FN Land: Thunderchild (TC)	Sample ID:	Sample Media:
2017-09-16	FN Land: Thunderchild (TC)	Sample ID:	Sample Media:
2017-09-16	FN Land: Thunderchild (TC)	Sample ID:	Sample Media:

Save Cancel

Docs / Photos



92fdedad-1b68-49ca-b84f-99cb14ba0304.jpg (380.72 kb) 4/9/2018

Navigation icons: expand, collapse, add, delete

	0b8a1408-0c88-4c99-91fb-65efef4692cb.jpg (302.99 kb)
	92fdedad-1b68-49ca-b84f-99cb14ba0304.jpg (380.72 kb)
	98dfb225-38c9-4f68-98c7-e85f7ef29f68.jpg (282.13 kb)

Search Tools Modules Map Layers

- Basemaps
 - Streets
 - Satellite
 - Satellite (MF v2 only)
- Layers
 - Oil Surveys
 - Husky Spill
 - Maximum Oil Zones
 - Current Oil Zones
 - Husky km Points
 - Husky km Midpoints
 - Husky Exceedances

- Scroll through photos tagged to a location, look at documents.
- Download one or all
- Ability to drag & drop images & document files

mapFeeder™ - Viewing Geospatial Data

Oil Surveys

185 / 185

View Form

Bulk CSV

Download results as CSV

- 2017-09-15
FN Land: Thunderchild (TC)
Sample ID:
Sample Media:
- 2017-08-22
FN Land: Thunderchild (TC)
Sample ID:
Sample Media:
- 2017-09-16
FN Land: Thunderchild (TC)
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- 2017-09-16
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FN Land: Thunderchild (TC)
Sample ID:
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- 2017-09-16
FN Land: Thunderchild (TC)
Sample ID:
Sample Media:

Oil Surveys Report (1).csv - Excel

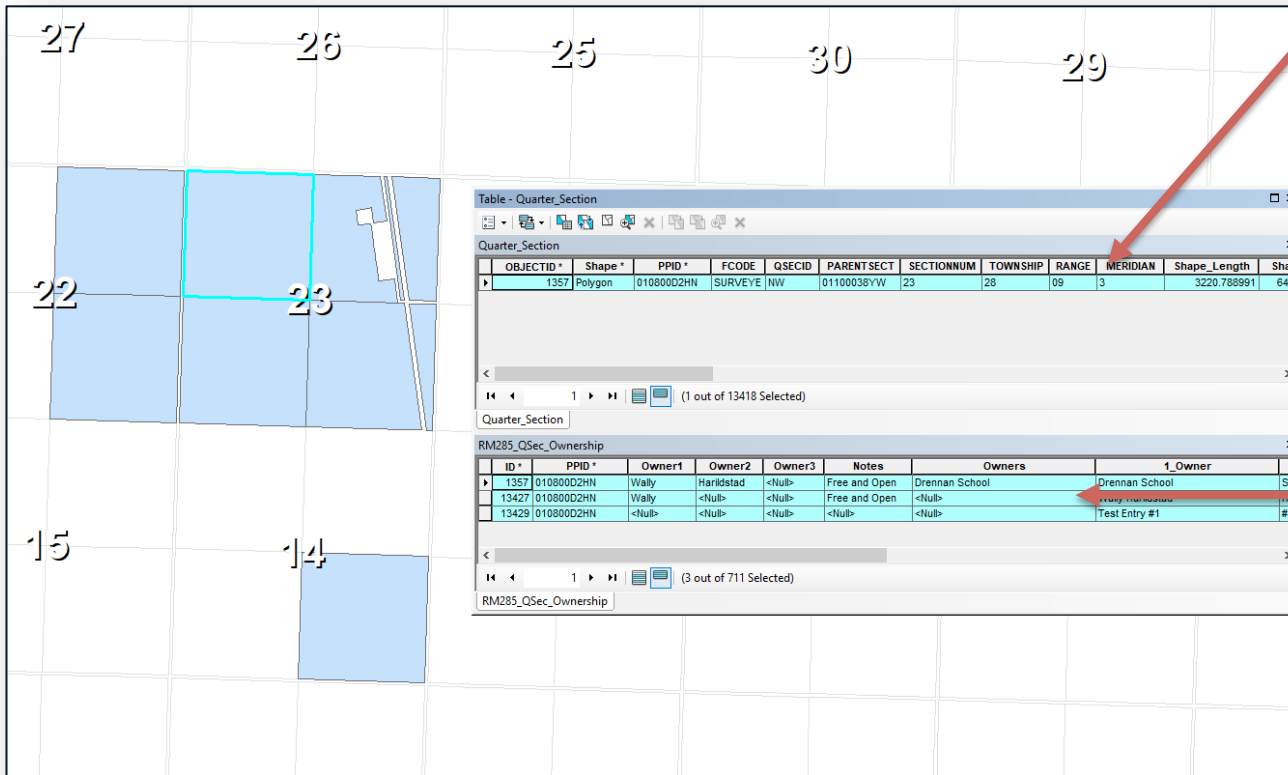
Debra Shewfelt

File Home Insert Page Layout Formulas Data Review View Help ACROBAT Tell me what you want to do

	A	B	E	F	G	I	
1	Activity Date	Phase	Personnel	FN Land	Organization	Side of River	Survey Comments
2	8/22/2017	PHASE II	AM	Thunderchild (TC)	RESPEC	South	
3	9/14/2017	PHASE II	JN,BM	Thunderchild (TC)	RESPEC	South	
4	9/16/2017	PHASE II	JN,BM	Thunderchild (TC)	RESPEC	South	Residue
5	9/15/2017	PHASE II	JN,BM	Thunderchild (TC)	RESPEC	South	Multiple residues
6	9/16/2017	PHASE II	JN,BM	Thunderchild (TC)	RESPEC	South	
7	9/15/2017	PHASE II	JN,BM	Thunderchild (TC)	RESPEC	South	
8	9/14/2017	PHASE II	JN,BM	Thunderchild (TC)	RESPEC	South	Multiple residues
9	9/16/2017	PHASE II	JN,BM	Thunderchild (TC)	RESPEC	South	Extensive tilled area
10	9/16/2017	PHASE II	JN,BM	Thunderchild (TC)	RESPEC	South	Bear tracks
11	9/16/2017	PHASE II	JN,BM	Thunderchild (TC)	RESPEC	South	Extended treated area w apparent tilling
12	9/16/2017	PHASE II	JN,BM	Thunderchild (TC)	RESPEC	South	Residue
13	9/16/2017	PHASE II	JN,BM	Thunderchild (TC)	RESPEC	South	Mussel moving through sediment
14	9/14/2017	PHASE II	JN,BM	Thunderchild (TC)	RESPEC	South	Treated area - sawdust , sample collected by deb/ abi three weeks a
15	9/14/2017	PHASE II	JN,BM	Thunderchild (TC)	RESPEC	South	Residue; debris matting; at least 5 m x 1m . oil odor in soil mat; to "3
16	9/15/2017	PHASE II	JN,BM	Thunderchild (TC)	RESPEC	South	Sheen observed; possible oil
17	9/15/2017	PHASE II	JN,BM	Thunderchild (TC)	RESPEC	South	Oiled roots and soil; beaver lodge nearby
18	9/15/2017	PHASE II	JN,BM	Thunderchild (TC)	RESPEC	South	Residue in rocks
19	9/15/2017	PHASE II	JN,BM	Thunderchild (TC)	RESPEC	South	
20	9/17/2017	PHASE II	JN, BM, Neil, DW, ace, earl	Thunderchild (TC)	RESPEC	South	At POE looking/digging for oil and collecting samples. Extensive tilli
21	9/15/2017	PHASE II	JN,BM	Thunderchild (TC)	RESPEC	South	Globeule; sheen in dug holes

GIS & Databases – Ag Project Areas

Tagging Land with Data – Access & GIS



One entry linked to one quarter section polygon

Multiple entries linked to one polygon; update Access & auto-updates in Arc

Can map on themes – crop type, yield, etc.

mapFeeder™ - Benefits

1. Reliable, digital and secure data capture
 - Eliminate data transcription errors (hard copy to digital)
 - Secure cloud-based synchronization & storage (data archive)
2. Access real-time data online from anywhere in the world
3. View photos, videos, field observations, samples & data tagged to the GPS coordinate.
4. Edits are synchronized & viewable in real-time
5. Ability to upload & download data, make maps to share information
6. View project-specific data in relation to other layers / data, base maps
7. Have a variety of theme data in one place – lands, cultural, ag, infrastructure, etc.

mapFeeder™ - Benefits

Archive all spatial data & documents in a spatial portal.

Document storage in **mapFeeder™**

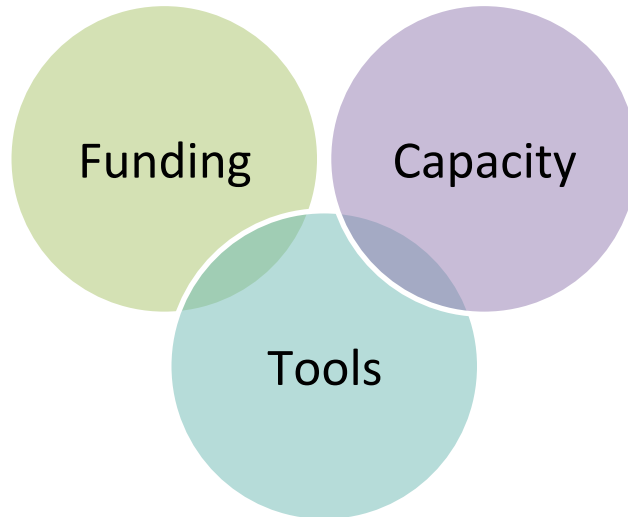
- Historic land information
- Current lease agreements / permits (tagged to quarter section fabric)
- Links to other websites; online storage portals (DropBox)



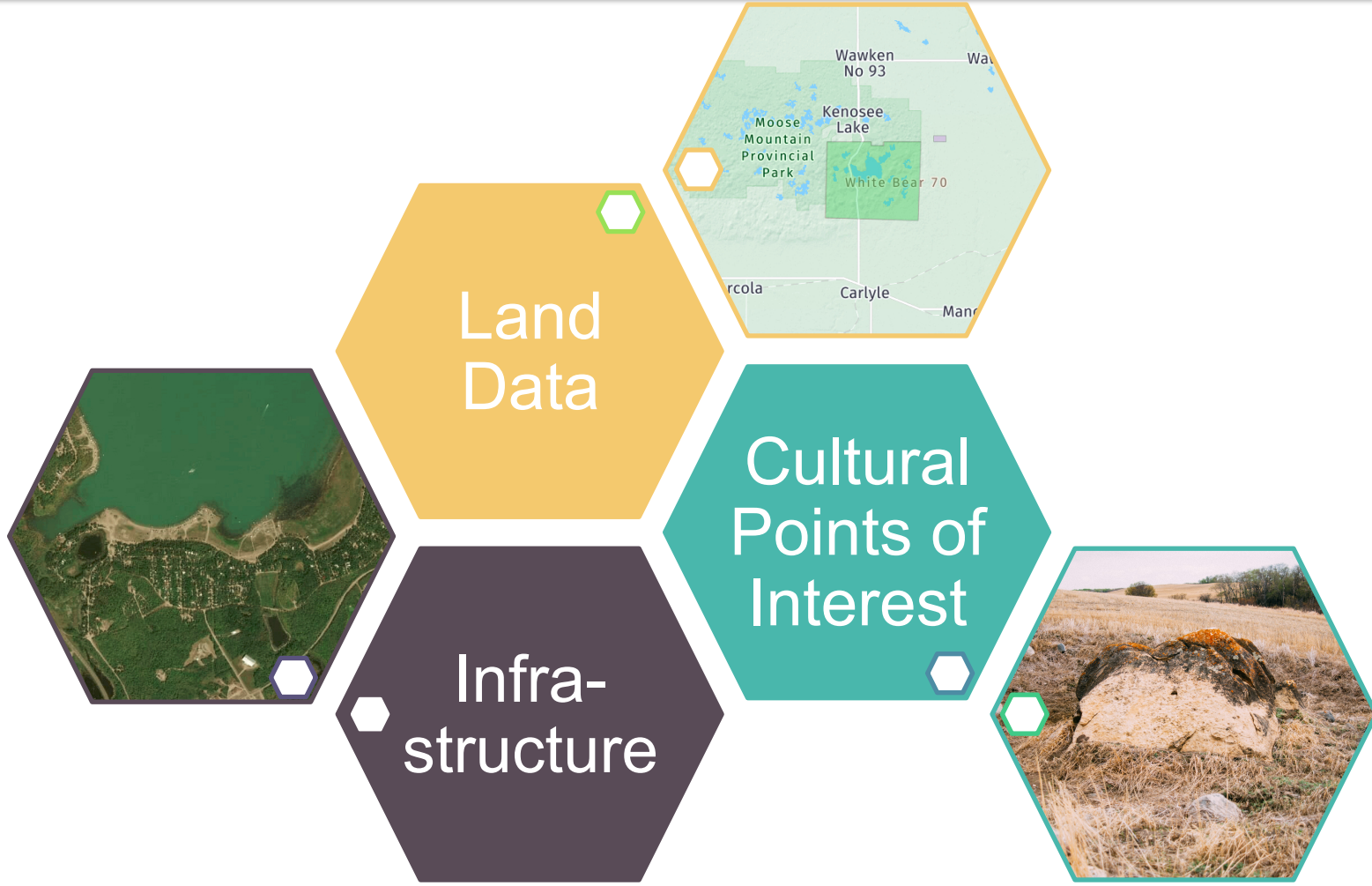
Geospatial Data Challenges

Challenges

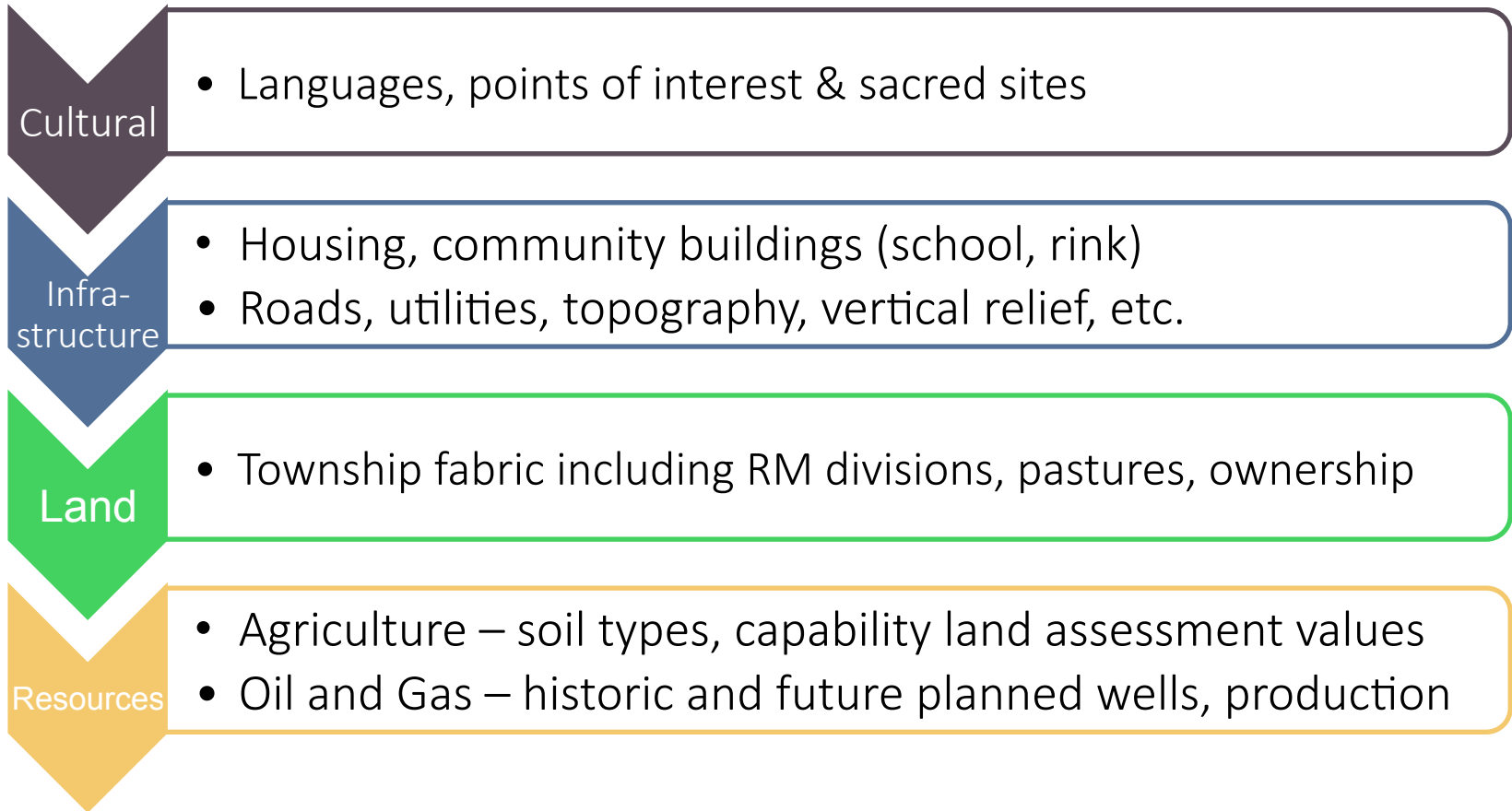
- Funding for access to GIS tech ([mapFeeder™](#)), ArcGIS licenses, computers, internet, other infrastructure
- Funding for collaborative approach to managing geospatial land & resource data
- Capacity building in The Centre team – more ArcGIS licenses



Case Study – White Bear First Nations

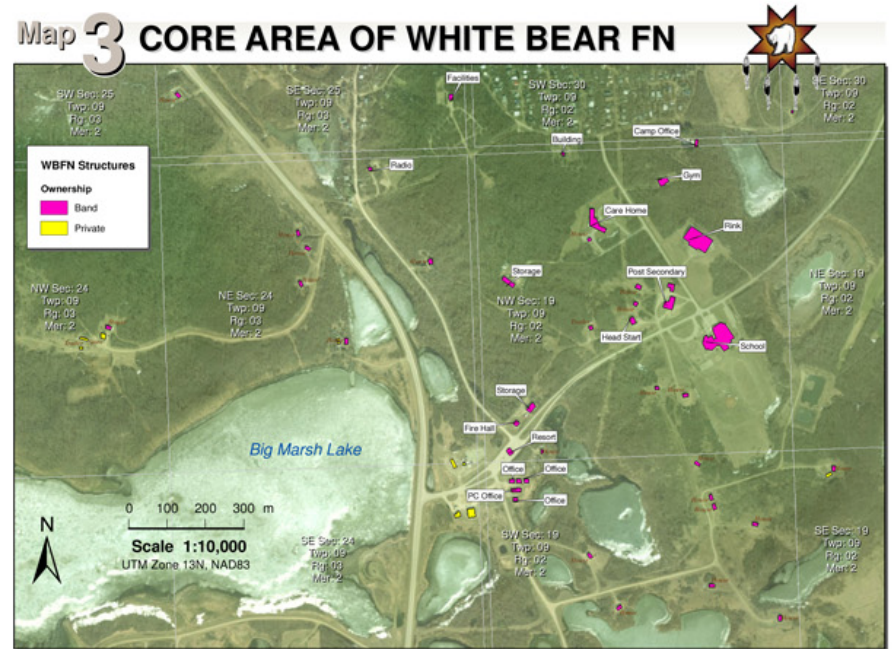


Purpose: to begin the process of digitizing community information:



Where we started....

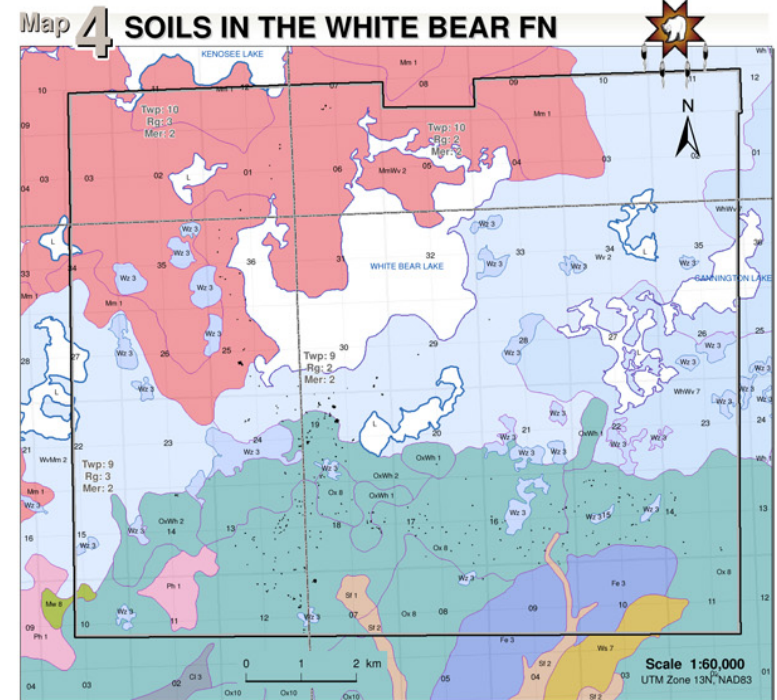
- Blank GIS workspace, then added satellite imagery to locate structures
- Assigned attributes to each structure according to its type, ownership, year built etc.
- Color code & label according to different classifications



Brought in agricultural data including soil type, soil capability, etc.

Labelled soil types

Overlaid reserve outline & township fabric



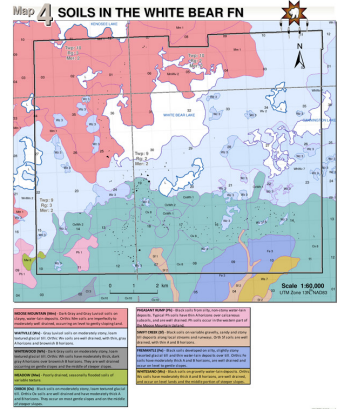
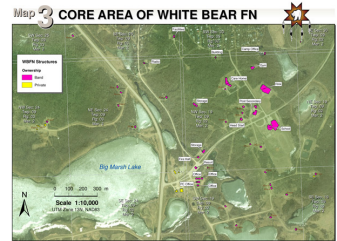
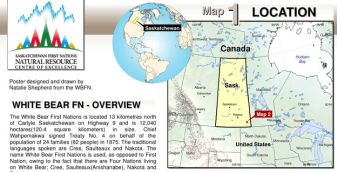
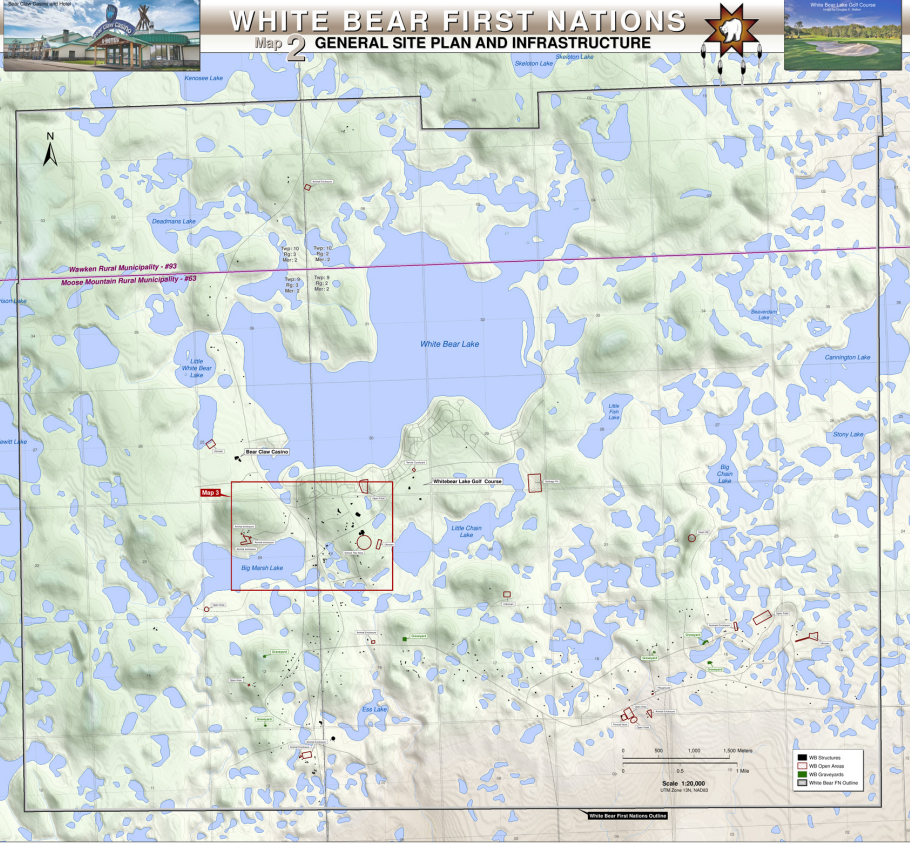
MOOSE MOUNTAIN (Mn) - Dark Gray and Gray Luvisol soils on clayey, water-lain deposits. Orthic Mn soils are imperfectly to moderately well drained, occurring on level to gently sloping land.	PHESANT RUMP (Ph) - Black soils from silty, non-stony water-lain deposits. Typical Ph soils have thin A horizons over calcareous subsoils, and are well drained. Ph soils occur in the western part of the Moose Mountain Upland.
WAITVILLE (Wv) - Gray Luvisol soils on moderately stony, loam textured glacial silt. Orthic Wv soils are well drained, with thin, gray A horizons and brownish B horizons.	SWIFT CREEK (Sf) - Black soils on variable gravelly, sandy and stony silt deposits along local streams and runways. Orth Sf soils are well drained, with thin A and B horizons.
WHITEWOOD (Ww) - Dark Gray soils on moderately stony, loam textured glacial silt. Orthic Ww soils have moderately thick, dark gray A horizons over brownish B horizons. They are well drained occurring on gentle slopes and the middle of steeper slopes.	FREMANTLE (Fe) - Black soils developed on silty, slightly stony resorted glacial silt and thin water-lain deposits over silt. Orthic Fe soils have moderately thick A and B horizons, are well drained and occur on level to gentle slopes.
MEADOW (Mw) - Poorly drained, seasonally flooded soils of variable texture.	WHITESAND (Ws) - Black soils on gravelly water-lain deposits. Orthic Ws soils have moderately thick A and B horizons, are well drained, and occur on level lands and the middle portion of steeper slopes.
OXBOX (Ox) - Black soils on moderately stony, loam textured glacial silt. Orthic Ox soils are well drained and have moderately thick A and B horizons. They occur on most gentle slopes and on the middle of steeper slopes.	

Combined all data into a single compilation

Useful for display, discussion and planning

Good starting point for further posters/displays

WHITE BEAR FIRST NATIONS Map 2 GENERAL SITE PLAN AND INFRASTRUCTURE



How
geospatial
data is
supporting
various
initiatives at
The Centre /
White Bear

Indigenous land use studies,
areas, languages

Future land use & acquisition

Managing water resources



Case Study

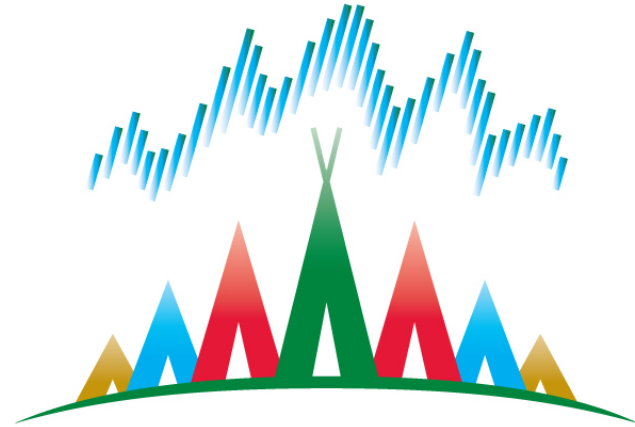
Agriculture -
contoured
assessment values

Indigenous Knowledge
and Land Use

**Future
Work**

Tagging township
fabric according
to land use

Emergency
preparedness



SASKATCHEWAN FIRST NATIONS
NATURAL RESOURCE
CENTRE OF EXCELLENCE