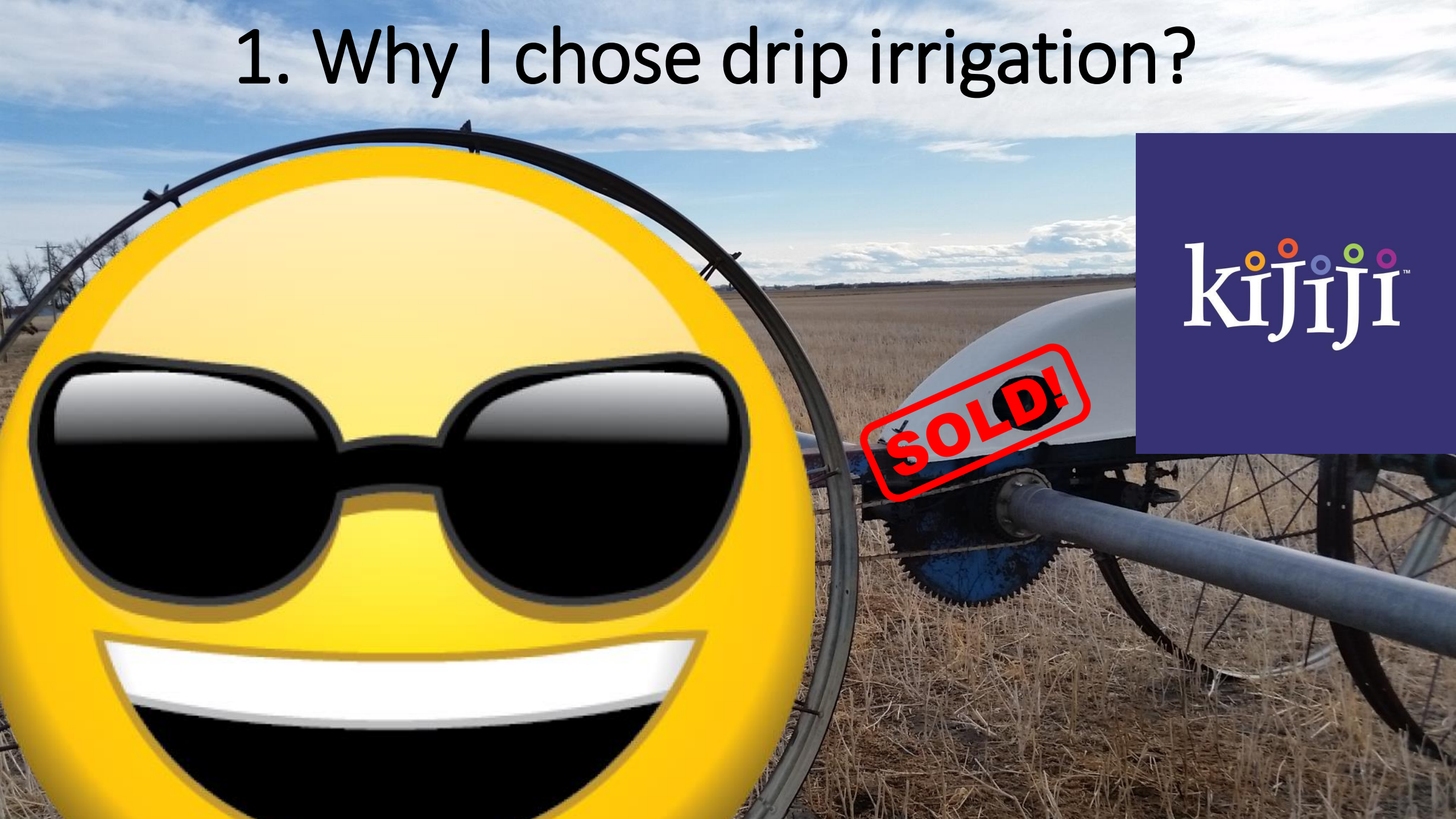
I’m a dripper

The Ken Coles experience with subsurface drip irrigation

1. Why I chose drip irrigation?
2. Installation, Operation and Maintenance
3. Results: Pros & Cons

1. Why I chose drip irrigation?




WESTEEL-ROSCO
WESTEEL-ROSCO
SOLD!
SOLD!


SOLD!


SOLD!
UC 301


SOLD!


LX 225 S
LARSON
LARSON


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

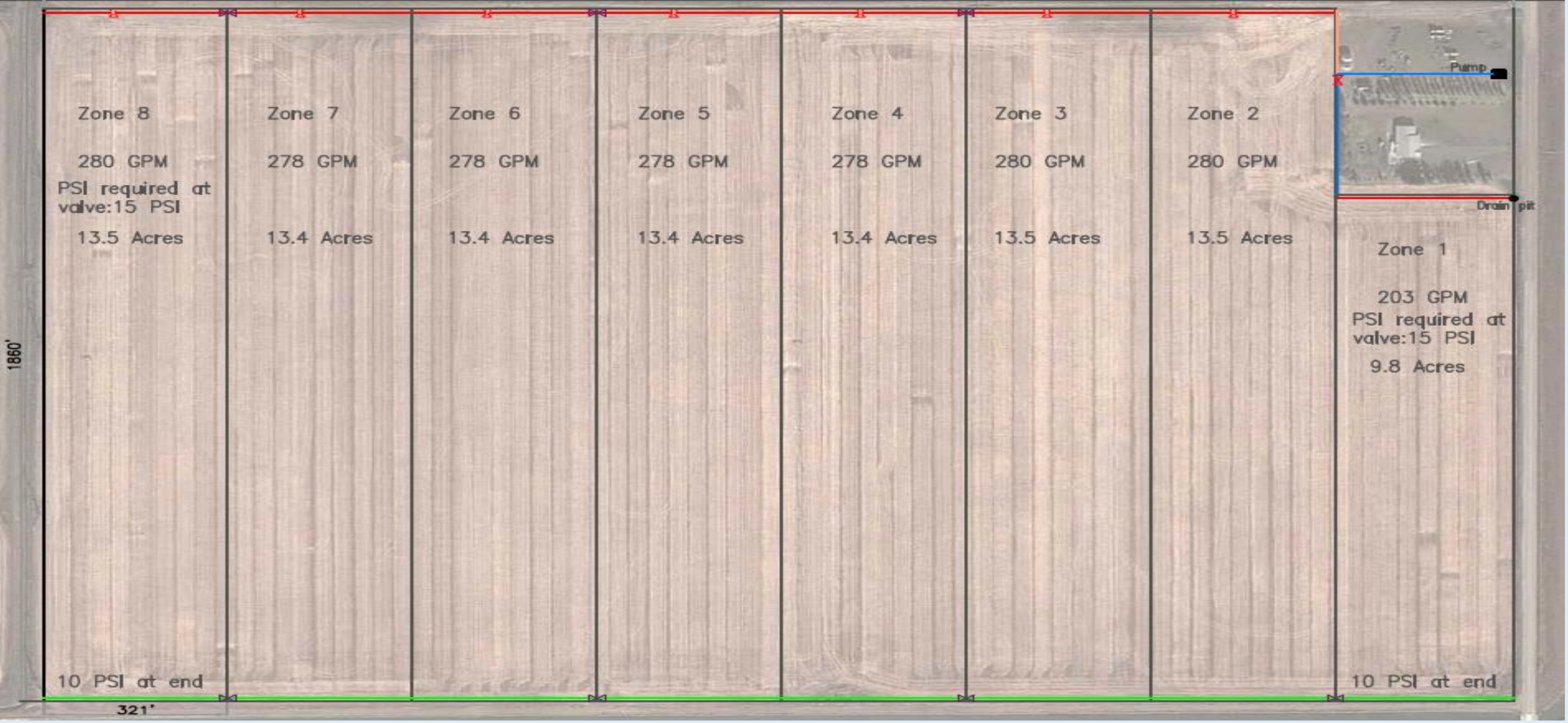
Risks and Concerns

- salinization of land
- land use limitations (root crops and tillage)
- drip tape damage (frost and rodents)
- uneven distribution of water
- inability to irrigate a crop up
- cost

1. Why I chose drip irrigation?

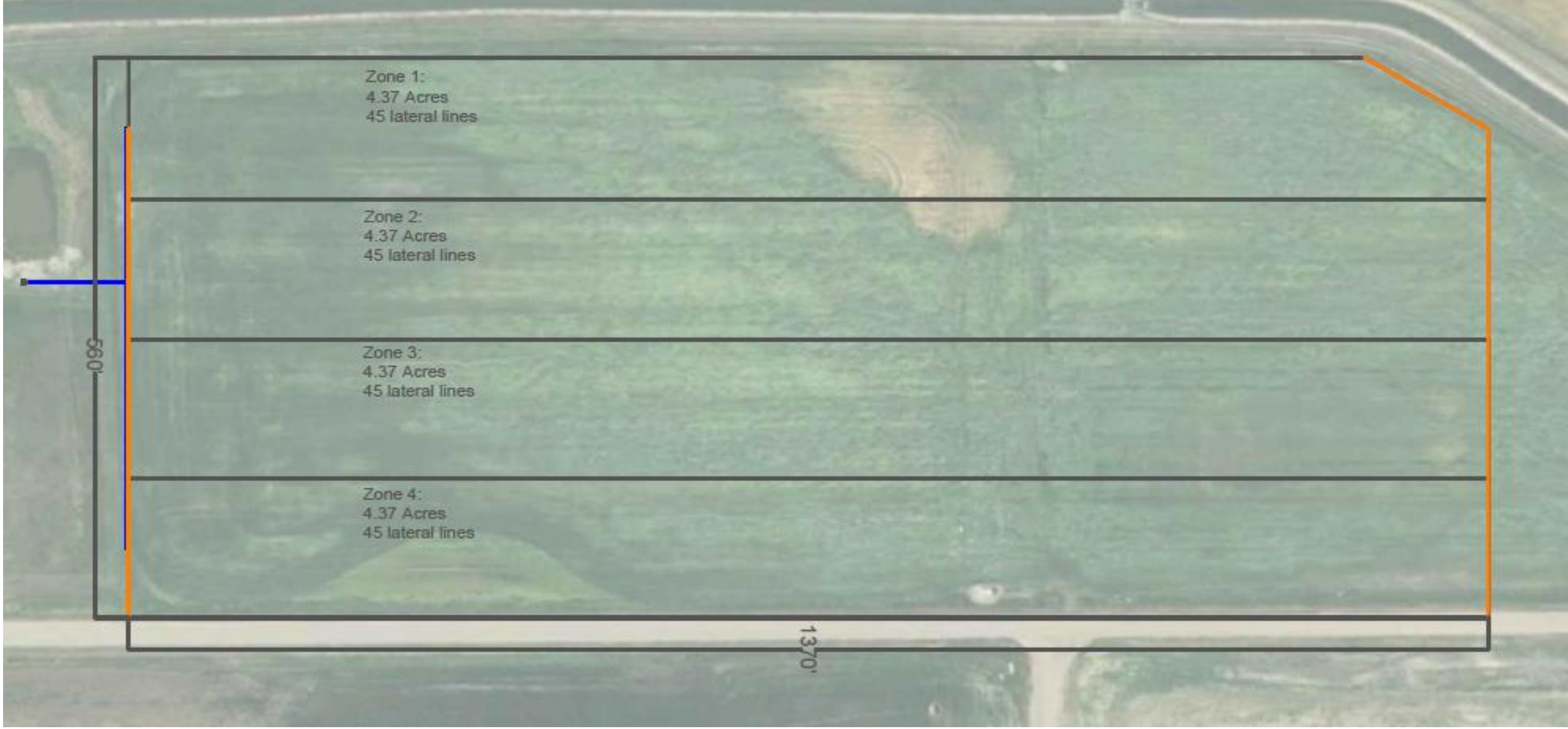
- time management
- irregular shaped fields
- better job irrigating
- opportunity for higher value crops
- possibility of better agronomy
  - **seed first, fertilize later**
  - **integration of zero tillage**

2. Installation, Operation and Maintenance

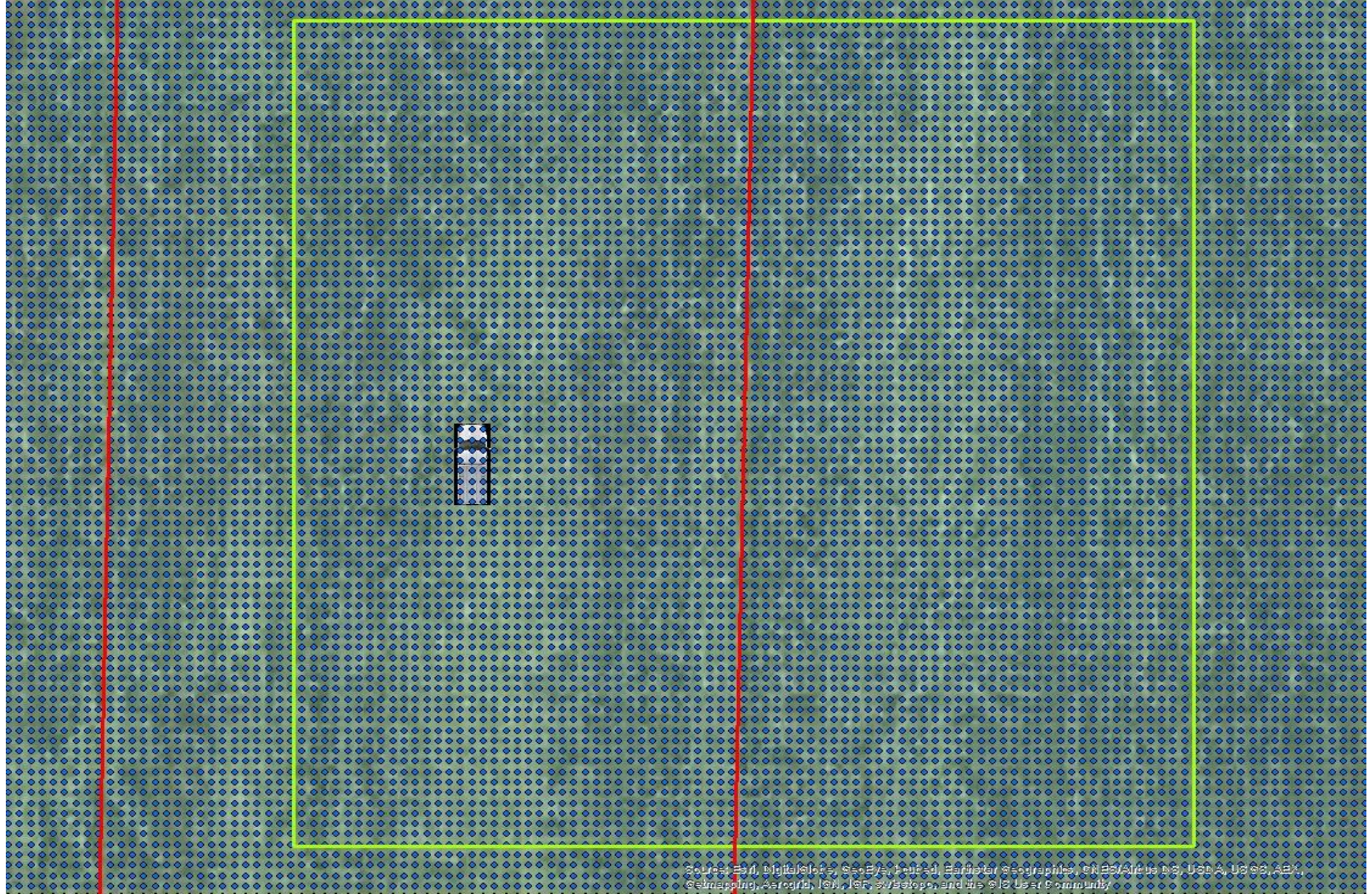

Zone 8
280 GPM
PSI required at valve:15 PSI
13.5 Acres
Zone 7
278 GPM
13.4 Acres
Zone 6
278 GPM
13.4 Acres
Zone 5
278 GPM
13.4 Acres
Zone 4
278 GPM
13.4 Acres
Zone 3
280 GPM
13.5 Acres
Zone 2
280 GPM
13.5 Acres
Pump
Drain pit
Zone 1
203 GPM
PSI required at valve:15 PSI
9.8 Acres
1860'
10 PSI at end
10 PSI at end
321'


NETAFIM
SOUTHERN IRRIGATION


WARNING


Zone 1:
4.37 Acres
45 lateral lines
Zone 2:
4.37 Acres
45 lateral lines
Zone 3:
4.37 Acres
45 lateral lines
Zone 4:
4.37 Acres
45 lateral lines
560'
1370'


PROLITE

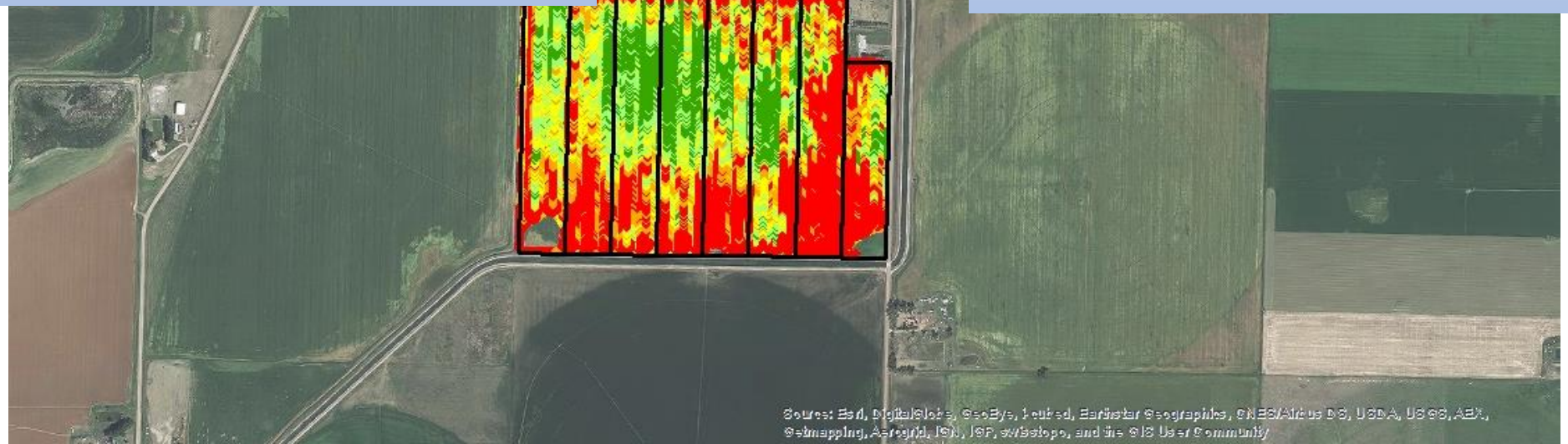


Installed spring 2016

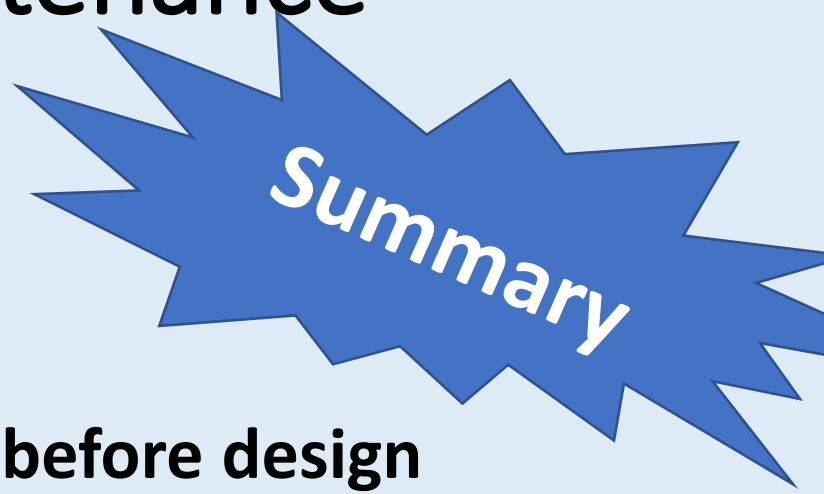
- 110 Acres
- 30 hp variable frequency pump
- 600gpm - 0.28in/day
- 40” lateral X 20” emitter spacing
- 440 km of 7/8th tape, 11” deep
- 2200 connections
- 858,000 emitters
- Really, really fancy controller

Installed spring 2017

- 18 Acres
- 7.5 hp pump
- 100gpm / 0.33in/day
- 40” lateral X 24” emitter spacing
- 72 km of 5/8th tape, 9” deep
- 350 connections
- 117,000 emitters
- Basic controller



2. Installation, Operation and Maintenance



- plan out well in advance
  - **three phase power**
  - **do one calls before design**
  - **look at soil, drainage, topography variability before design**
  - **get property lines marked, check for easements**
  - **talk to neighbours (may have to drive over land)**
  - **pump out of lake or dug out if possible**
  - **preference to early fall**

- Operation is easy (once you learn it)
- Maintenance includes flushing the system, fixing leaks, clean filter (time, low cost)

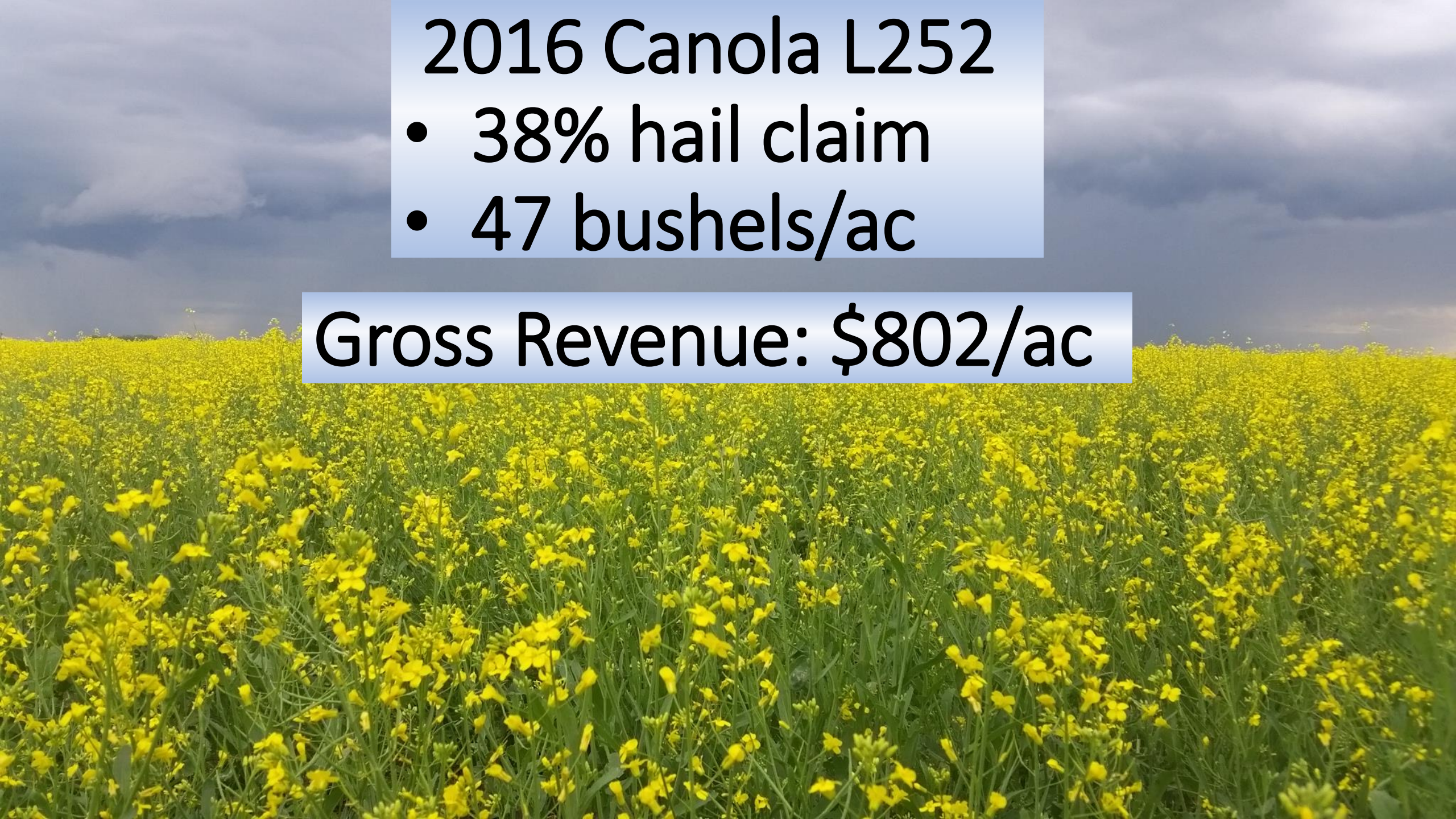
3. Results: Pros & Cons

Rain and Irrigation

Year	Precipitation (mm)			Irrigation (mm)	
	Normal	Actual	% Norm	Applied	Total
2016	256	267	104%	190.5	457.5
2017	256	146	57%	304.8	450.8

Heat

Corn Heat Units (CHU)	
Actual	% Normal
2291	99%
2576	111%

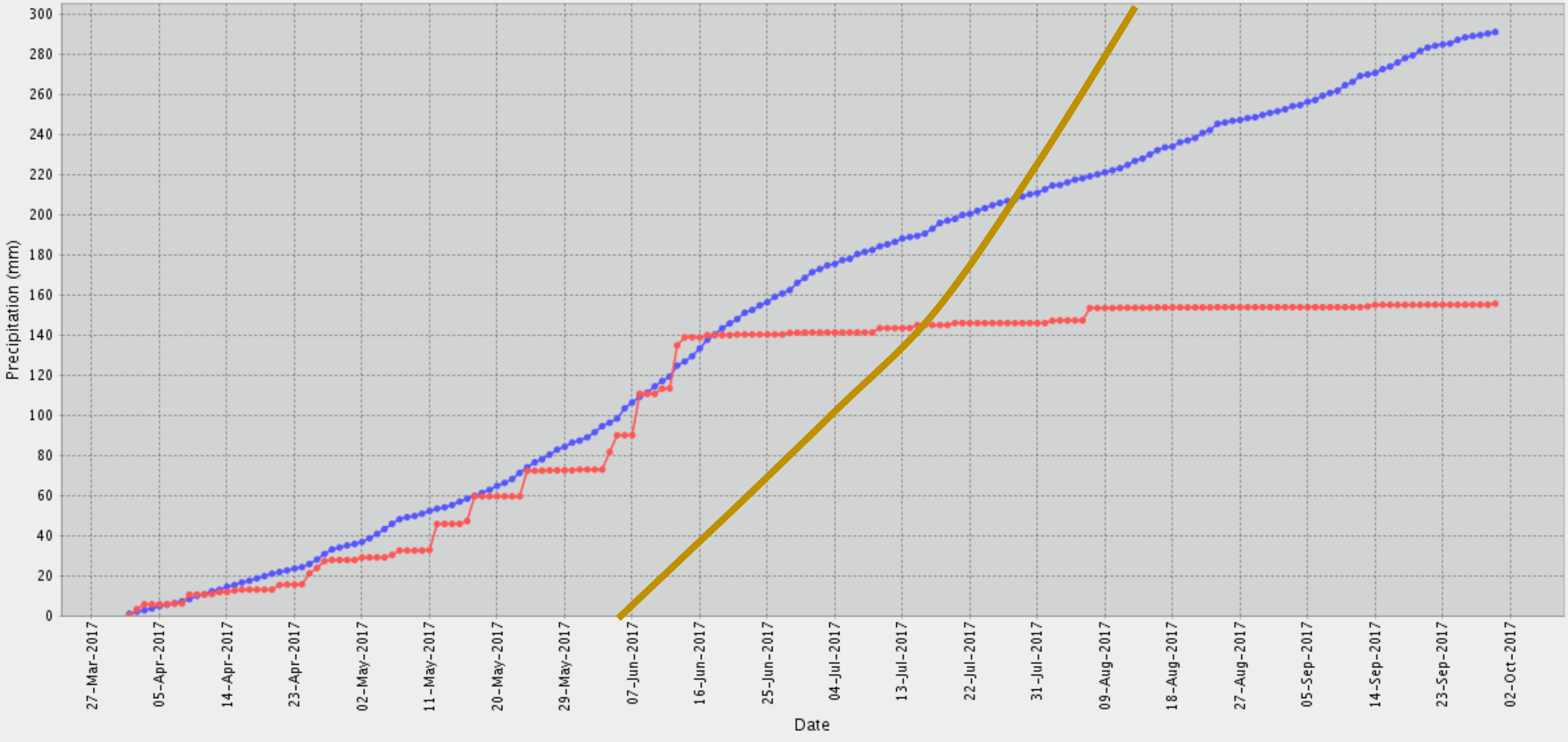

2016 Canola L252
• 38% hail claim
• 47 bushels/ac
Gross Revenue: $802/ac

2017 Spitfire Durum

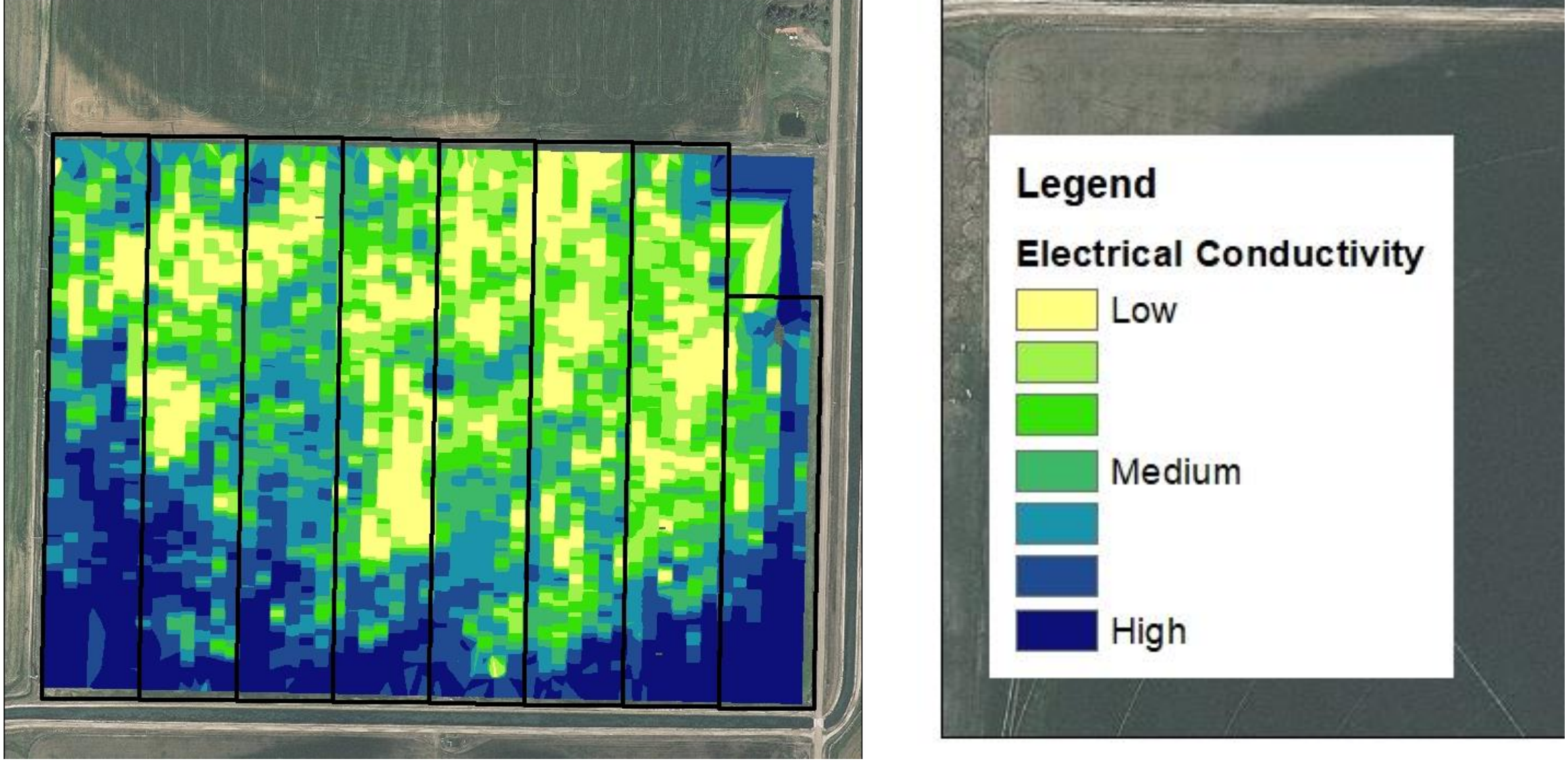
- Alfalfa seed production
- 44 bushels/ac

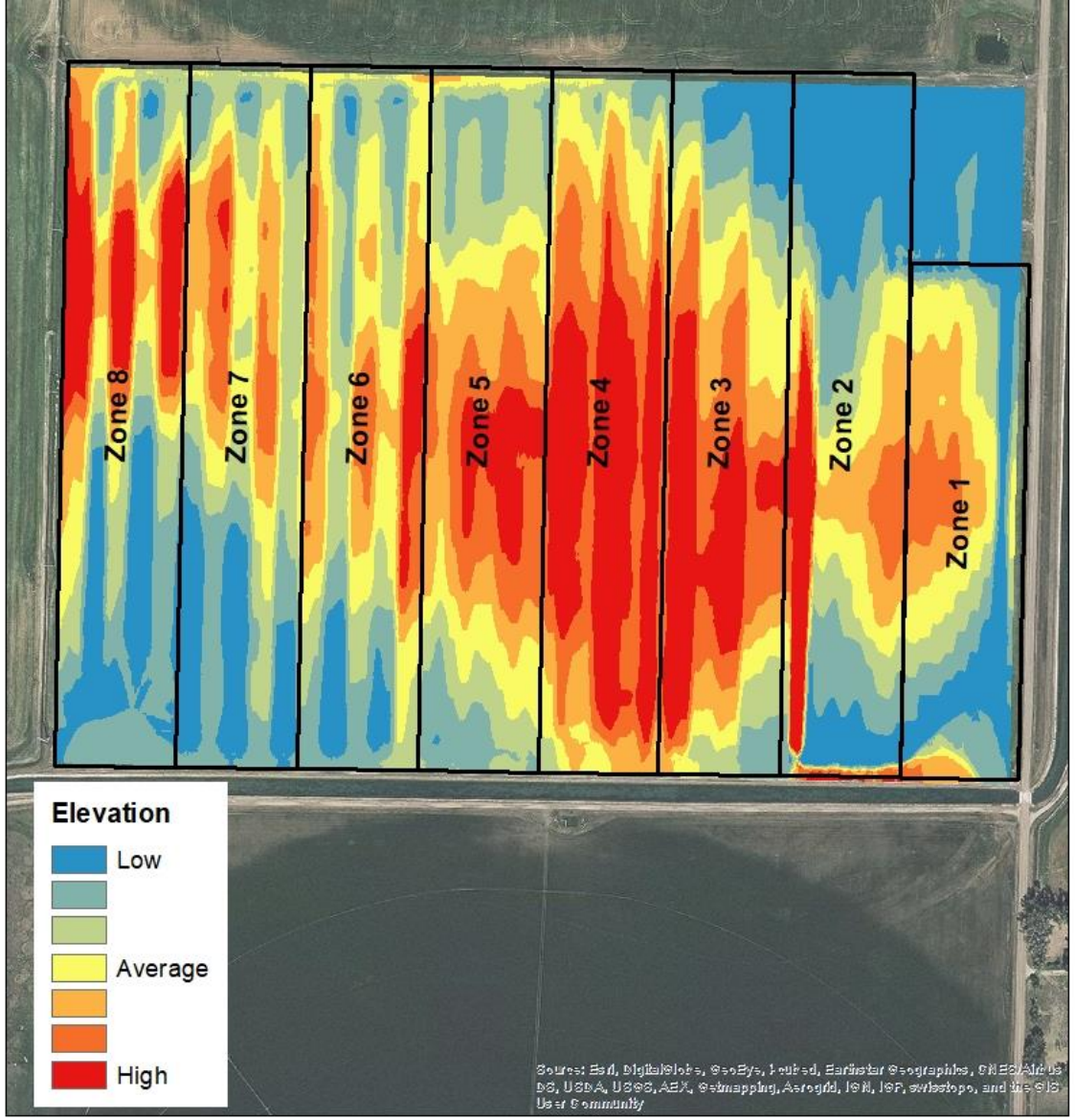
Predicted Gross Revenue: $400/ac

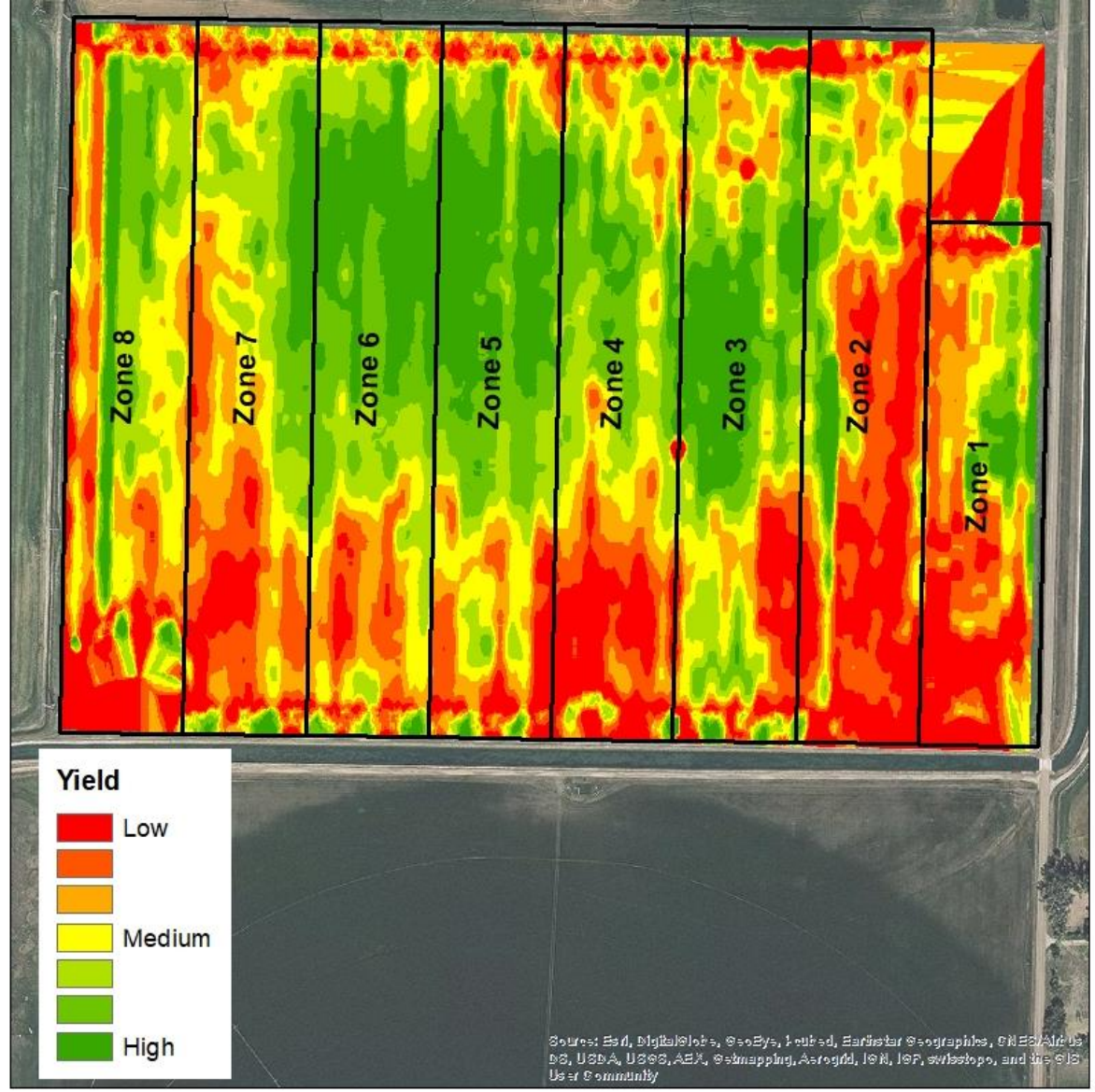
2017 Lethbridge Precipitation



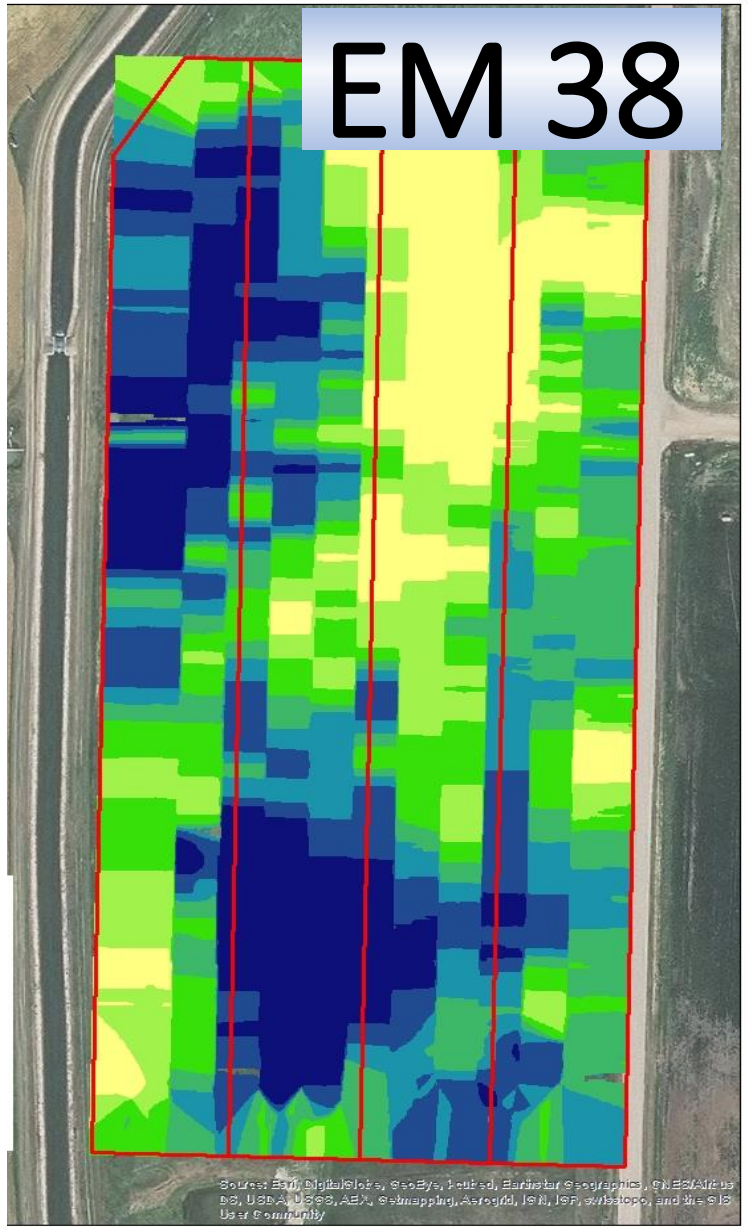
AJM Seeds

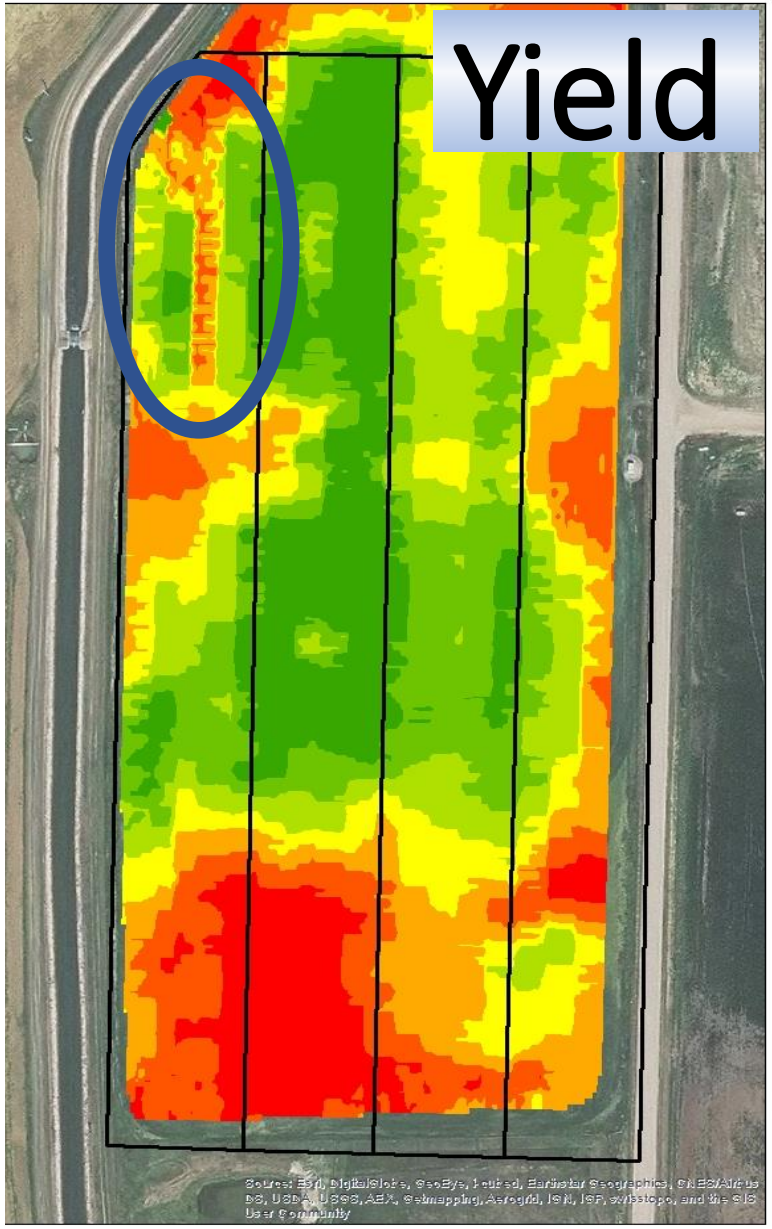

Legend
Electrical Conductivity
Low
Medium
High


Zone 8
Zone 7
Zone 6
Zone 5
Zone 4
Zone 3
Zone 2
Zone 1
Elevation
Low
Average
High
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community


Zone 8
Zone 7
Zone 6
Zone 5
Zone 4
Zone 3
Zone 2
Zone 1
Yield
Low
Medium
High
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

AJM Seeds





3. Results: Pros & Cons

- very efficient and manageable system
- comfortable and confident with ROI
- Southern Irrigation dedicated to success
- full analysis / opinion will require more time and analysis
- more work needed to better understand irrigation timing
- more work needed to study fertility distribution

Thanks to:

SOUTHERN IRRIGATION

Lewis Baarda

FARMING SMARTER
Growing new ideas

Morton Molyneux
K2 Communications