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Water Security Agency

February 2024

Agriculture Water Management

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Manager, Approval South
Agriculture Water Management

Overview

I. Introduction and History

II. Drainage Approvals

III. C&Ds/ WAs/Water Stewardship Organizations

IV. Research and Development

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I. INTRODUCTION & HISTORY

SASKATCHEWAN WATER HISTORY

- 1984 SK Gov't formed Saskatchewan Water Corporation

-2002 SaskWater Corporation was split into SaskWater and Saskatchewan Watershed Authority.

TODAY

- The Water Security Agency is a unique organization in Canada, bringing together all of government's core water management responsibilities
- Formed in 2012 to address water management responsibilities province-wide to:
  - better protect our most precious resource
  - provide better customer service to the citizens of Saskatchewan

Water Security Agency

Our **Vision**

To be the best water management agency in North America providing safe, reliable water that drives economic growth


Water
AND
Agriculture

Water Security Agency

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II.DRAINAGE APPROVALS

Agriculture Water Management Strategy

Our **Mission:** Facilitate responsible drainage in resilient watersheds.

Drainage is Important

EFFICIENCY

FARM PROFITABILITY

RESILIENCY

ECONOMIC GROWTH

Drainage Must be Done Responsibly

How do you get an approval?

01

Contact WSA and/or a Qualified Person

02

Work with neighbours on a coordinated plan

03

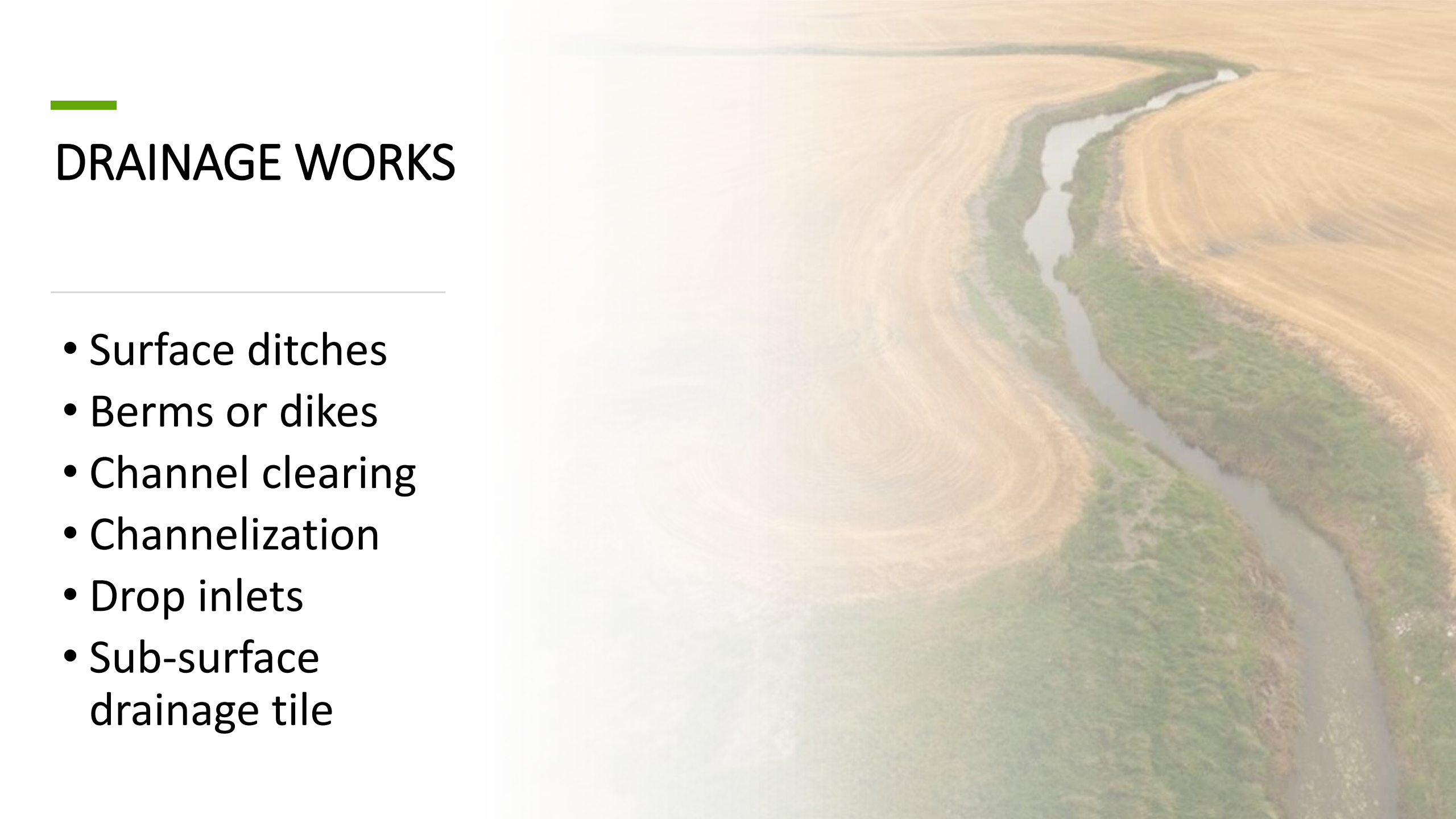
Obtain Land Control

04

Complete and sign an Application and Approval for Drainage Works

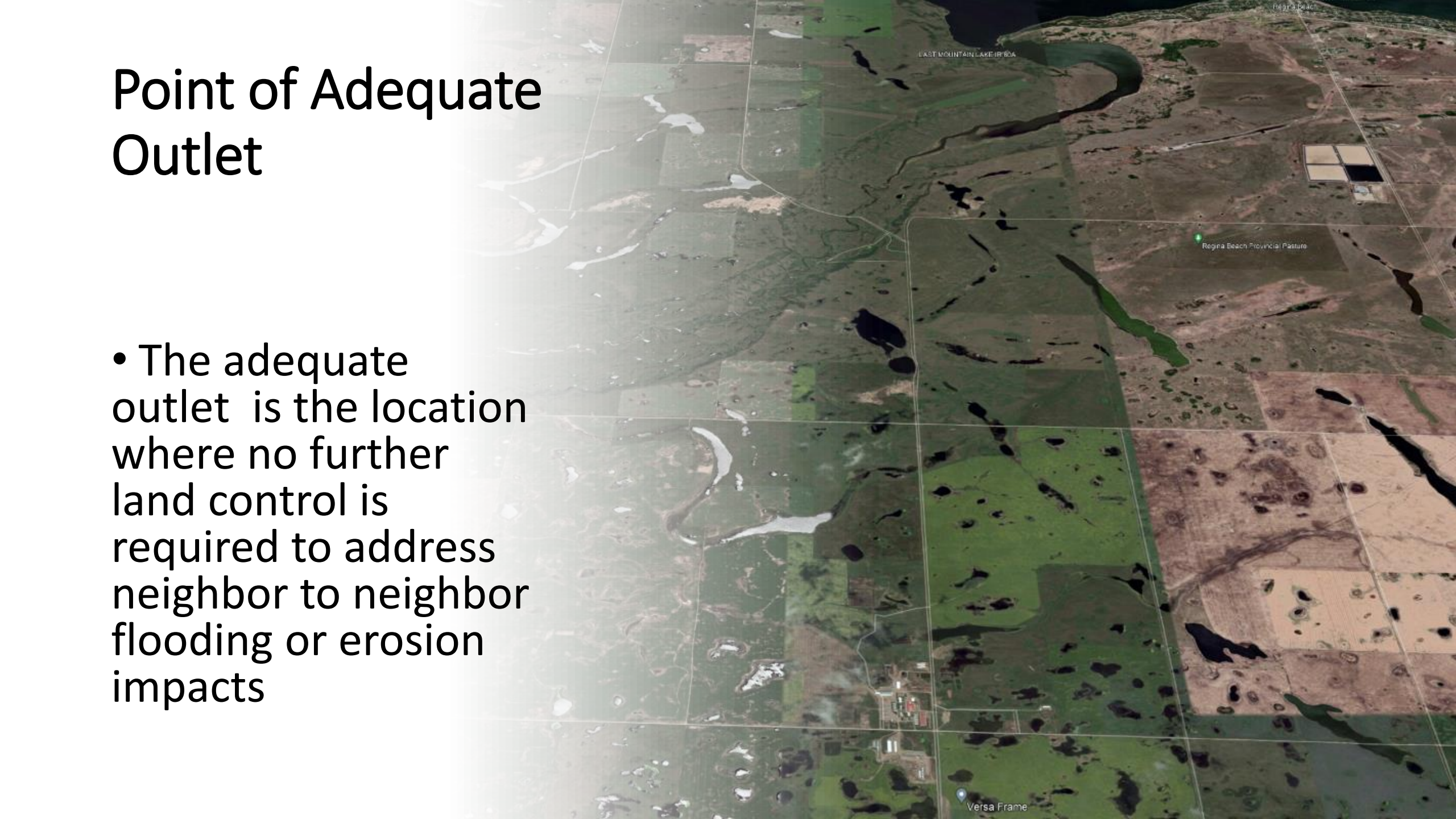
DRAINAGE WORKS

- Surface ditches
- Berms or dikes
- Channel clearing
- Channelization
- Drop inlets
- Sub-surface drainage tile



Point of Adequate Outlet

- The adequate outlet is the location where no further land control is required to address neighbor to neighbor flooding or erosion impacts



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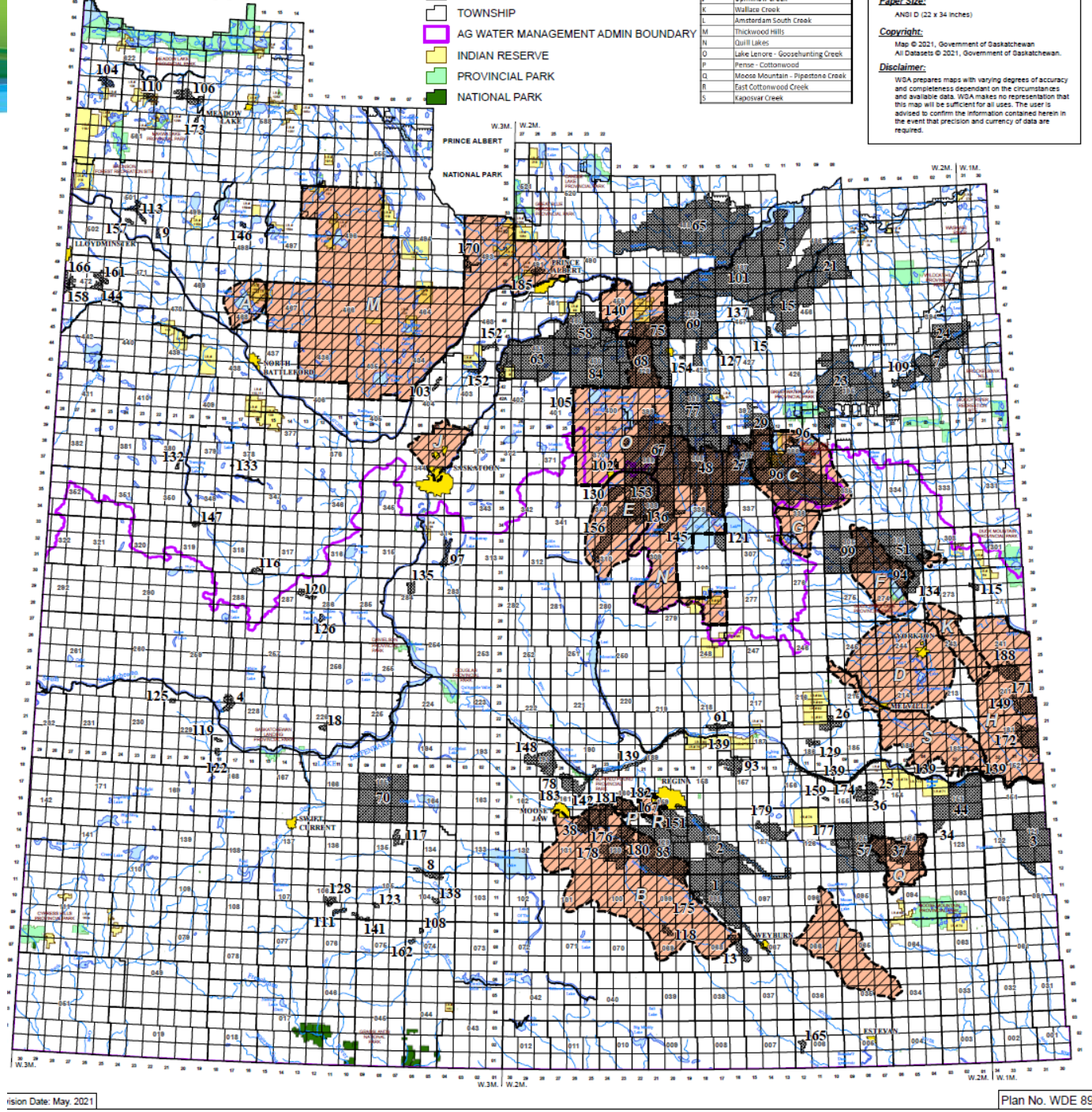
III. *CONSERVATION & DEVELOPMENT AREA (C&D)*

WATERSHED ASSOCIATION (WA)

WATER STEWARDSHIP ASSOCIATION

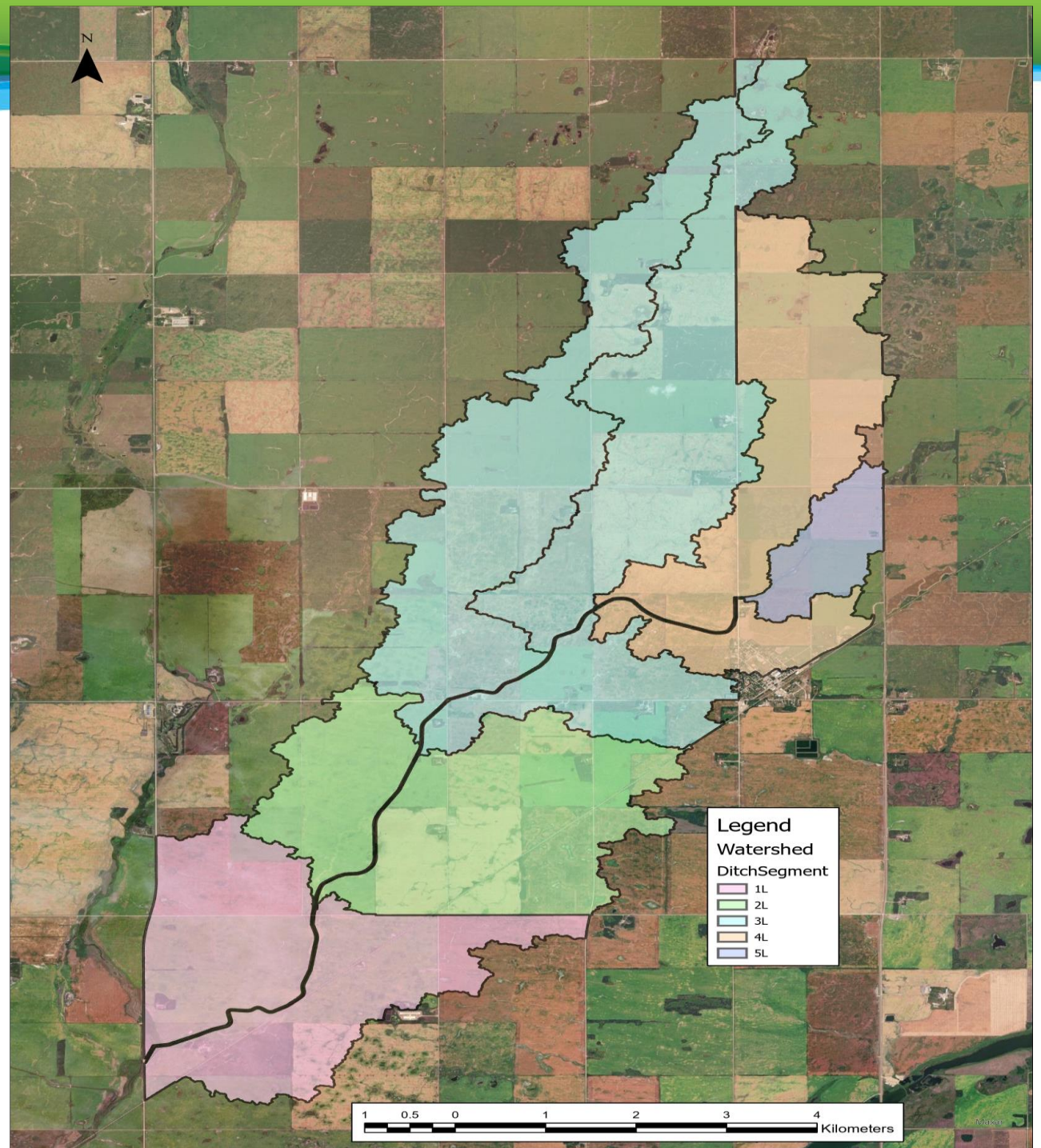
C&D

- Organization formed by private landowners
- Legal authority under the Conservation and Development Act
- They can own, operate and maintain agricultural water management projects and fund them by taxing the benefitting landowners.



C&D

- Big black line through the middle is the main stem ditch
- Constructed in 1970’s
- Approved under current processes
- Each colored section is a sub-network draining into the main stem ditch



WATERSHED ASSOCIATION

- Local form of government that acts with the legal authority of the Watershed Association Act
- Comprised of agencies, such as RMs, towns, villages and C&Ds.
- Like C&Ds, WAs can own, operate and maintain water management projects.

WATER STEWARDSHIP GROUPS

- Not for profit corporation
- Stakeholder driven and governed by a board that includes local municipal leaders and non-governmental organizations

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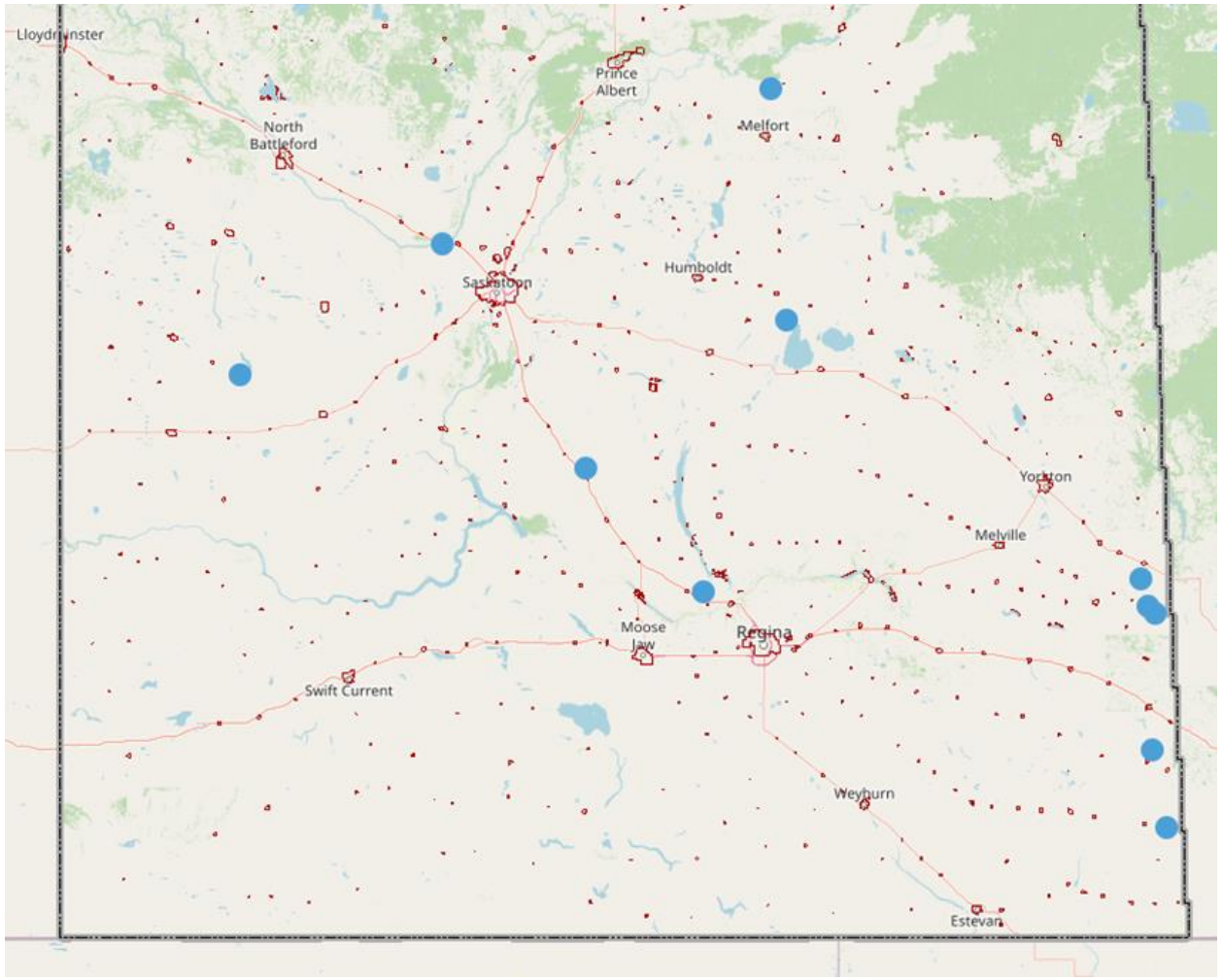
II. UPDATES & RESEARCH

Process Improvements

- Service Standards
- Drainage Extension
  - Goal: Responsible drainage is something that producers are proud of.
- Auto-fill applications
- File prioritization tools and project management dashboard
- Improved communication/processes to obtain land control from:
  - Highways
  - Rail lines
  - RM’s

Demonstration and Research Projects



Ten external partners assisted with projects and evaluation (PAMI, SRC, SCDA)

- **Policy tools and approaches being evaluated include:**
  - Flow and erosion controls
  - Wetland retention
  - Wetland consolidation
  - Using drained water for irrigation
  - Beneficial management practices
    - crop residue management
    - variable rate of fertilizer application
    - poly-cropping of annual forages

What are we learning from Demo Projects

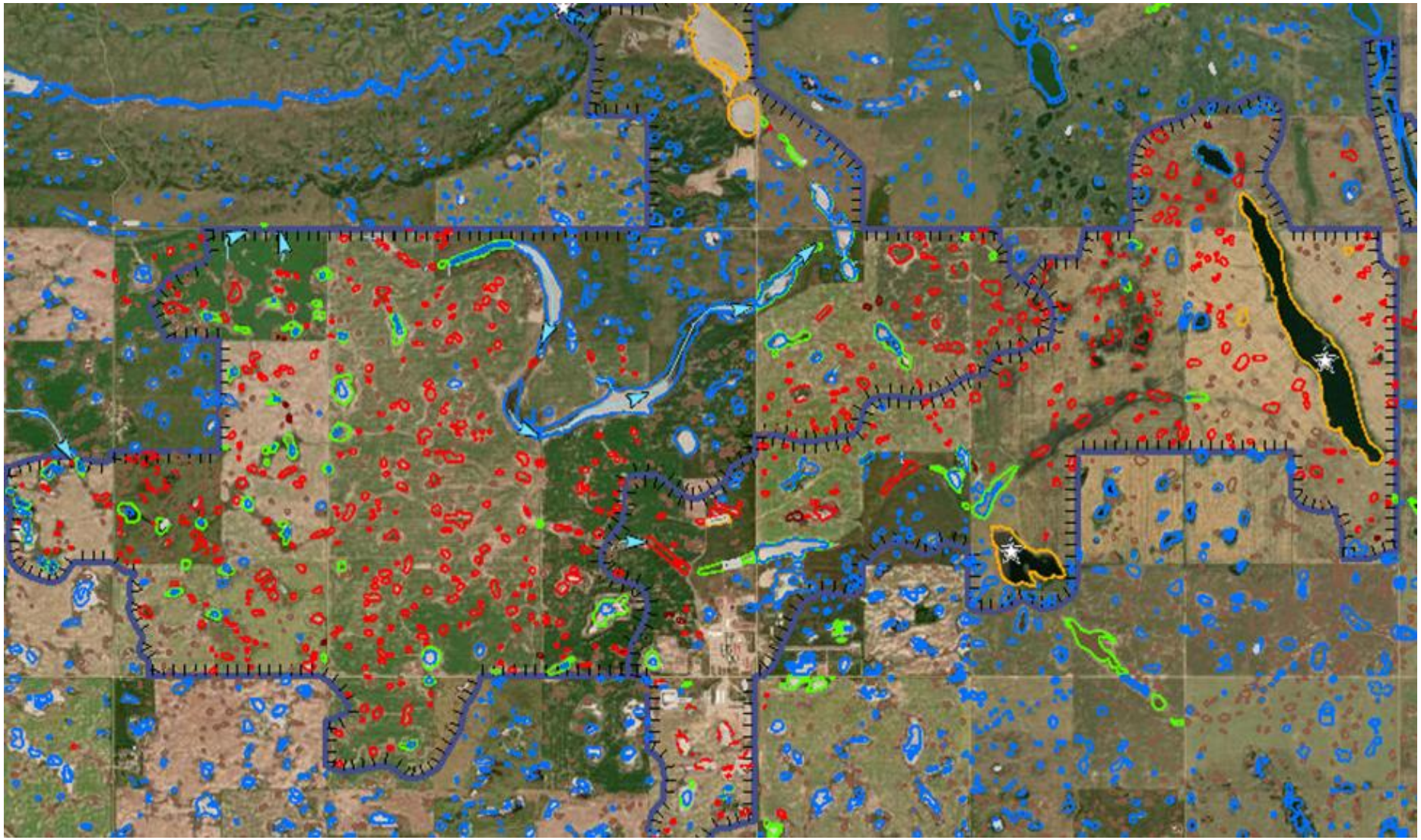
Flooding and water quality

Current landowner practices (flow controls and wetland retention) are protecting downstream neighbors from flooding and water quality impacts.

Habitat

Current landowner practices (retaining a substantial amount of wetlands) are supporting the expected diversity of wetland related wildlife species.

Demo Project – Arm River Drainage Networks



-2 drainage networks

-7,600 acres

-Wetland retention
* east network 66%
*west network 57%

-Flow control
*buried pipe

What are we learning from Demo Projects

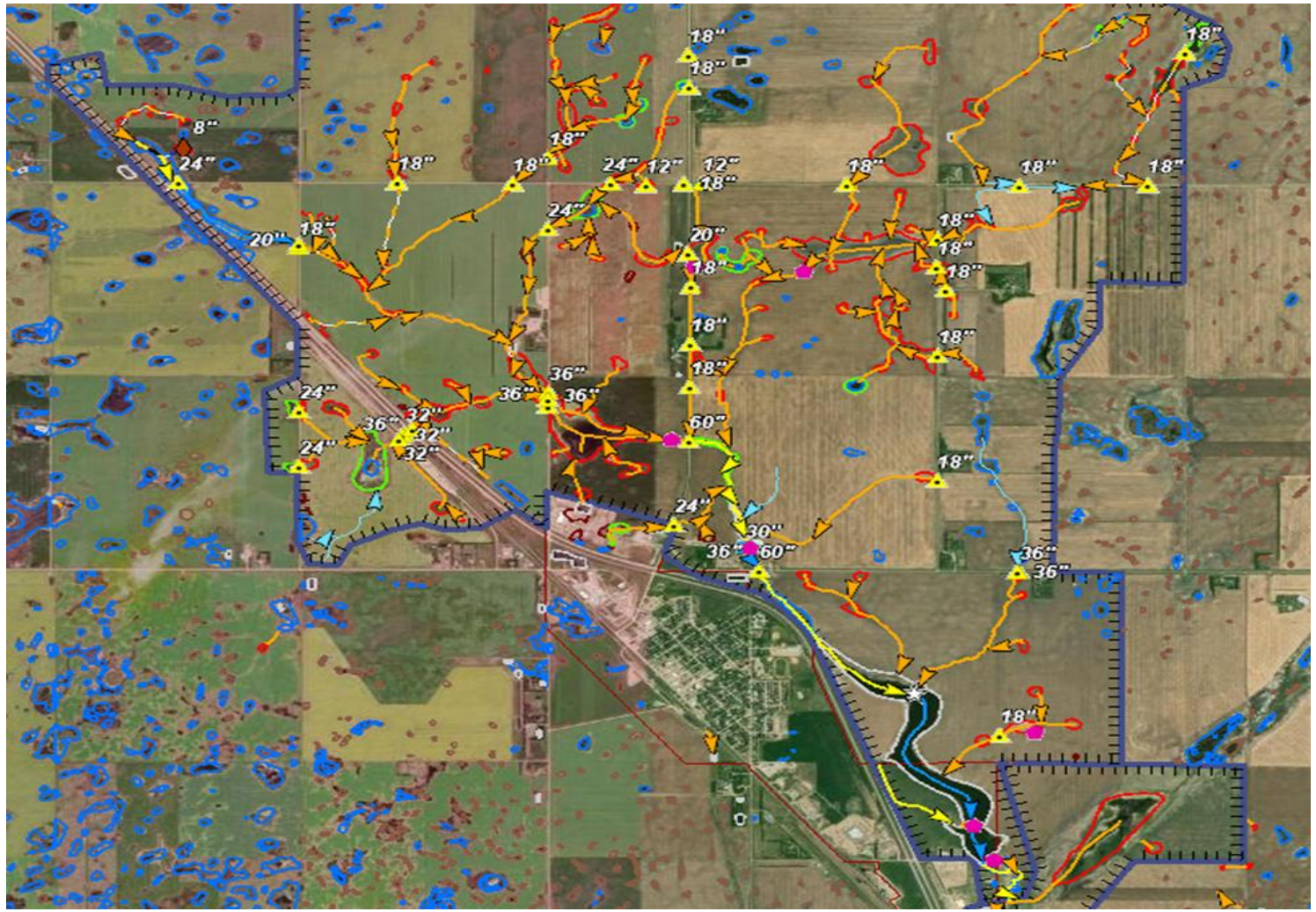
Irrigation

Drainage increases the viability of irrigation projects and can effectively mitigate flooding and water quality impacts. Projects that require the construction of storage are more likely to have obstacles (cost, logistics).

Economics

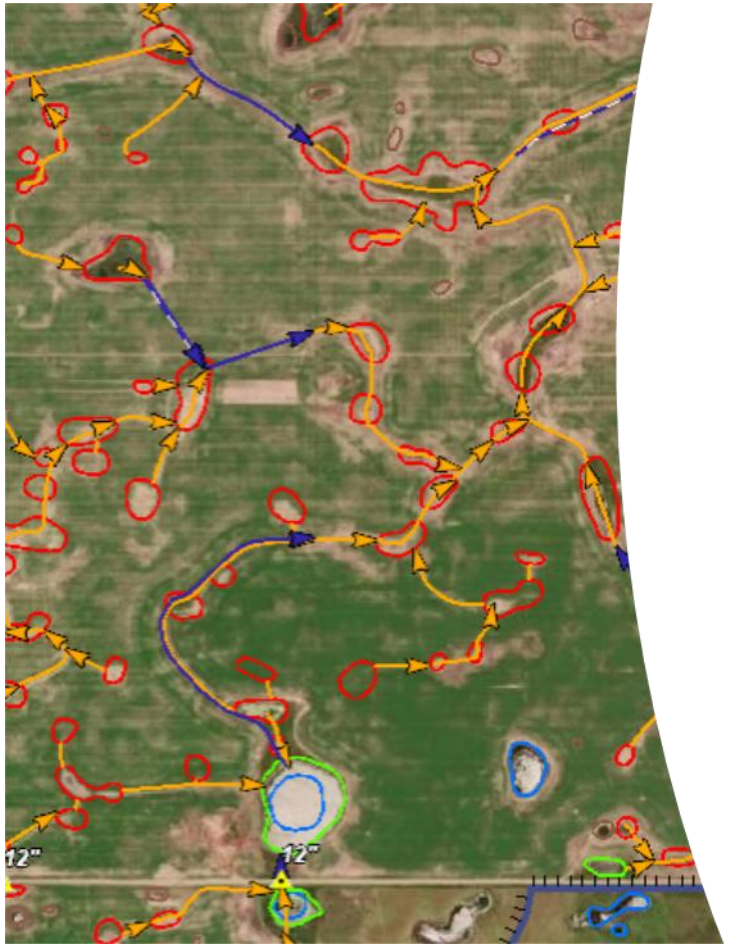
Landowners were able to substantially increase profitability through drainage while retaining wetlands.

Irrigation to capture drainage water



Gerrid Gust project- mitigating downstream flooding and water quality impacts from 7,800 acres of drainage area with two irrigation pivots.

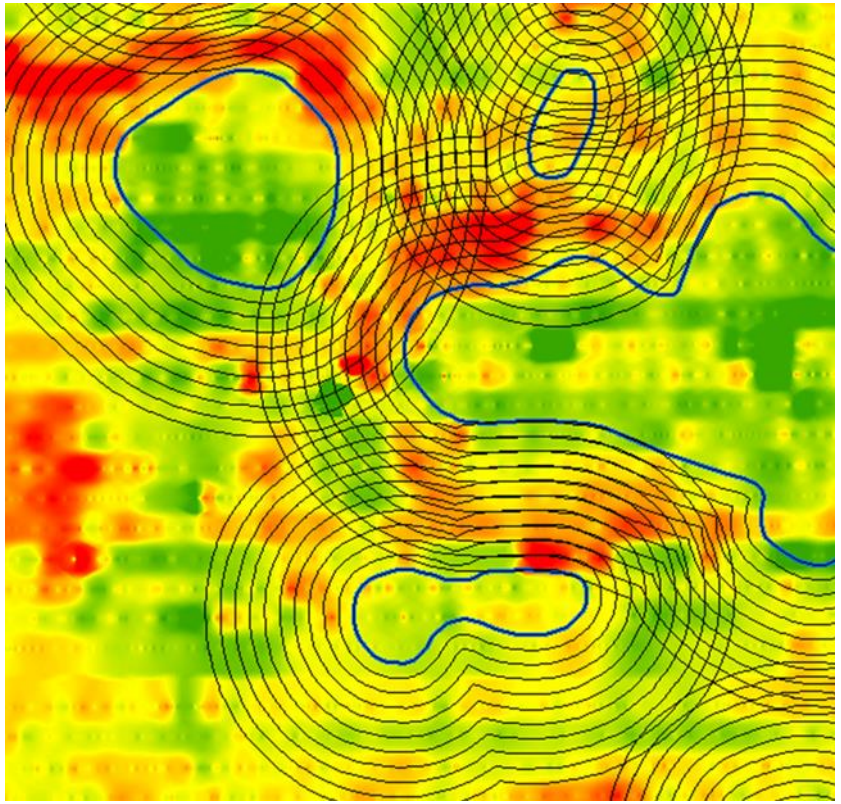
PAMI economic study



The economic analysis was based on the 2022 Crop Production Guide from the Ministry of Agriculture and considered wide range of economic benefits that can be provided by drainage:

- Gains in acres
- Nuisance effect
- Mechanical overlap
- **Yield response in 50 m buffer around wetland**
- **Delays in Seeding**

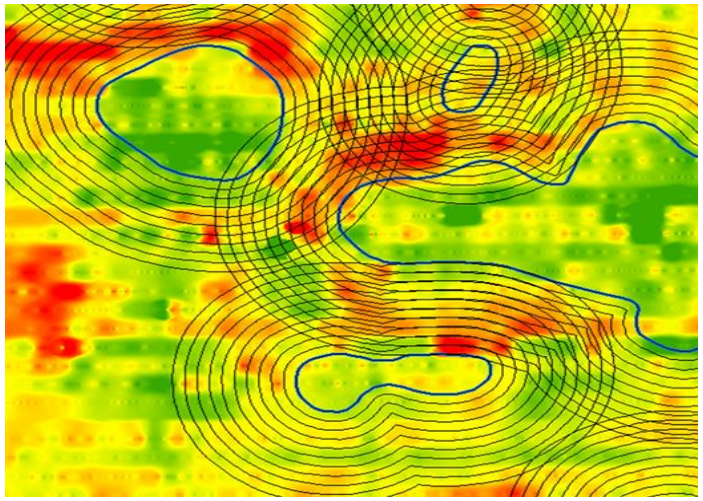
PAMI economic study

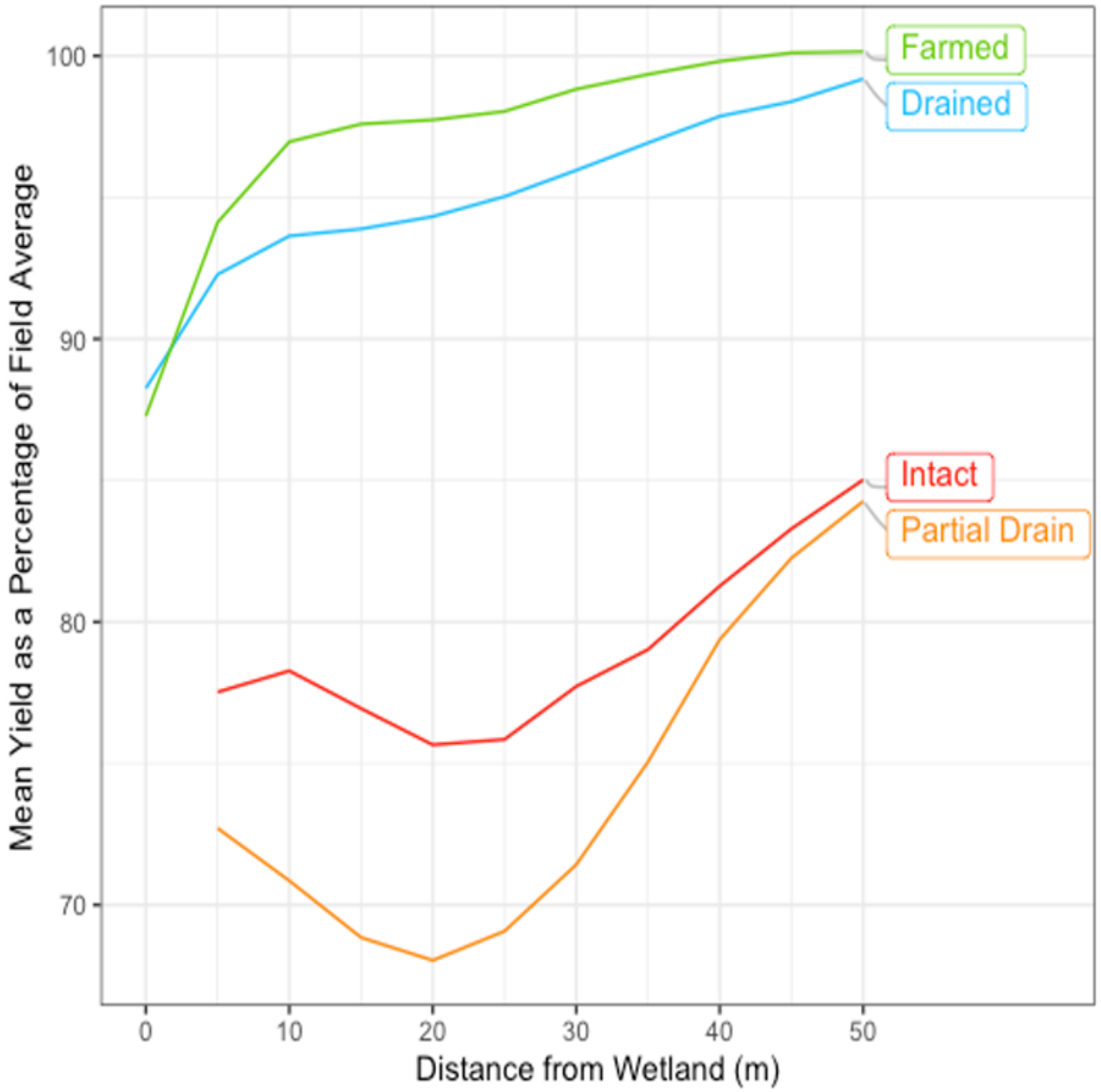


- Agronomic analysis investigated the yield data from drained wetlands and in the 50-meter buffer area around both drained and undrained wetlands.
- Data was utilized from 16 fields within the Black soil zone with up to seven years of data and 20 fields in the Dark Brown soil zone with up to four years of data.
- This represents data from around thousands of wetlands.

PAMI economic study

- Agronomic analysis investigated the yield data from drained wetlands and in the 50-meter buffer area around thousands of drained and undrained wetlands.
- In the Black soil zone the yield in the 50-meter buffer around drained wetlands had a 20% increase compared to intact wetlands





What we've also learned

Conditions vary greatly across the province

Drainage contributes to economic growth on farm efficiency and soil health

Wetland are important to protect infrastructure, water quality and habitat.

Best Management Practices continue to evolve

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Thank you

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