



## Snow Melt Runoff Maintenance Plan 2019

### MAINTENANCE PLAN

#### 1. Objective:

To reduce the impact of snow melt runoff on public and private infrastructure within the Sturgeon County.

#### 2. Background:

Outside of rivers and large bodies of water, local municipal governments are responsible for the management of storm water flow within Municipal Boundaries. Rural infrastructure is susceptible to overload during the spring runoff period. Contributing factors to overload are snowfall "melt" volumes, melting velocities, frozen culverts and damaged or poorly functioning infrastructure.

Warm melting temperatures early in the year followed by extreme cold temperatures have resulted in ice blocked culverts throughout the County. In addition, large snowfall accumulations have created a significant volume of potential runoff storm water. Because of these conditions, Transportation Services can expect a severe spring runoff, therefore a preventative maintenance strategy must be implemented.

#### 3. Strategy:

##### 3.1 Traffic Safety-

"Road Closed" and "Bridge Closed Barricades" will be stocked and available for use as required. These will be used when a road or bridge washout has occurred or is expected to occur and is deemed non-preventable.

##### 3.2 24 Hour/Day-7 Day/Week- On Call Service

Supervisors, staff and equipment will be available throughout the entire spring runoff period for emergency response. Residents must call 939-4321 for service.

##### 3.3 Operations (Services)-

Snow Clearing (Preventative Measure)- Transportation will employ a backhoe to multiple known trouble sites to remove snow that is currently blocking culvert ends. This is a preventative maintenance measure. This measure can be taken by the general public using hand tools in order to facilitate natural drainage in their respective areas.

Culvert Steaming (Reactive Measure)- Transportation deploys two in house steamer units and 1-2 contract steamer units as necessary. The goal is to facilitate the flow of water through centerline and approach culverts to eliminate flooding and/or erosion.

Pumping (Reactive Measure)- Transportation employs various sizes of pumps for increasing the flow of water where required. This measure is taken when there is an immediate threat of damage to public or private infrastructure.



## **Snow Melt Runoff Maintenance Plan 2019**

### **3.4 Resident Communication**

Transportation Services front line staff will be available during business hours to receive requests for information or services as listed above. Customer Service staff will triage the issues and provide information on the priority system to the residents.

Residents will also be given an estimated time of resolution should their issue fall within the scope of work for Transportation.

### **3.5 Aftermath/Repair and Maintenance**

Roads- If any washouts do occur, Transportation Services will place resources in place to repair and reopen all roads as soon as possible if it is safe to do so.

Culverts/Ditches- Transportation Services will use the information gathered during the spring runoff period to plan necessary maintenance work to prevent reoccurrence. This includes ditch cleaning, culvert replacements, culvert flushing and culvert end repairs.

## **4. Priority Areas (Map Attached)**

Transportation Services will place dedicated resources within high impact areas such as known troublesome multi lot subdivision areas and industrial parks.

Dedicated resources will also be placed in targeted areas to increase efficiency and response times.

## **5. Prioritization (Triage) Guidelines:**

Transportation Services will dispatch resources with the intention of preventing or resolving damage in accordance with the following priority sequence.

**1A:** Immediate damage occurring to public infrastructure

**1B:** Immediate damage occurring to private infrastructure

**2A:** High risk of damage occurring to public infrastructure

**2B:** High risk of damage occurring to private infrastructure

**3A:** Med to low risk of damage occurring to public infrastructure \*

**3B:** Med to low of damage occurring to private infrastructure \*

\*Unfortunately, some residents who suffer from flooding as a result of private infrastructure or who suffer "minor" flooding may not get priority assistance by County Services if there is a larger than average volume of urgent and high priority damage concerns.



## Snow Melt Runoff Maintenance Plan 2019

### CREW TASK PROCEDURE

#### 1. County Crew Types:

Steam Crew # 1	Two staff members One pickup truck mounted steam unit One pickup truck with 4 inch pump, tools and supplies
Steam Crew # 2	Two staff members One pickup truck mounted steam unit One pickup truck with 4 inch pump, tools and supplies
Steam Crew # 3	Two staff members One enclosed trailer- large steamer unit One pickup truck with 2 inch pump and, tools and supplies
Sign Crew # 4	Two staff members Two pickup trucks Signage trailer or dynamic message board
Pump Crew # 5	Two staff members Picker truck and 6 inch pump Additional contingency pumps (6 inch)

#### 2. Contractor Involvement:

Contractor Crew # 1	Combination vacuum truck/ steam/ flusher unit
Contractor Crew # 2	Combination vacuum truck/ steam/ flusher unit
Contractor Crew # 3	Enclosed trailer steamer unit
Contractor Crew # 4	Beaver control and dam management

#### 3. Equipment Allocation:

Crew # 1	East County Cardiff Casa Vista	Crew # 2	West County Rivière Que barre Villeneuve
Crew # 3	North County Sturgeon Valley Fertilizer Alcomdale Braun Village	Crew # 4	Whole County
		Crew # 5	Whole County



## Snow Melt Runoff Maintenance Plan 2019

### 4. Water Fill Stations

- Sturgeon County fleet shop
- Sturgeon County water fill stations:
  - Greystone/Summerbrook
  - Villeneuve
  - RQB
  - **Redwater (NEW) (See attached map)**
  - Cardiff
  - SIP
- Legal water fill

### 5. Crew Shifts:

Steam Crew # 1	6:00 AM TO 4:30 PM	AND	3:00 PM TO 1:30 AM
Steam Crew # 2	6:00 AM TO 4:30 PM	AND	3:00 PM TO 1:30 AM
Steam Crew # 3	6:00 AM TO 4:30 PM	AND	3:00 PM TO 1:30 AM
Crew # 4 or # 5	6:00 AM TO 4:30 PM	AND	3:00 PM TO 1:30 AM

\*Start times will adjust according to operational requirements

\*At peak runoff times, hours may be extended to 12 hour shifts

\*Evening shift crews will plan to relieve dayshift crews in the field to reduce downtime.

### 6. Triage Desk (admin):

During peak runoff periods, the administration desk hours will be extended through the addition of one staff member to monitor the phone lines later into the evening.

All phone calls outside of the scheduled administrative desk hours will be directed to the on-call service and will be answered by a Transportation Services

### 7. Equipment Housing Plan:

Equipment will be housed inside of the fleet services shop- in Bay # 4 overnight in order to stay thawed out and ready for use the following day.

### 8. Contingency Plan

A list of contractors and suppliers is available for additional resources as required such as backhoes, steamer units, flusher units, pumps, hoses etc.



# TOWN MAP

Public Works  
Office

Transfer  
Station

**BULK FILL  
STATION**

#9 Daycare

#10

Diamond Spring  
Lodge

Golden  
Villas

Legion  
Hall

Emergency  
Services

Library

Town  
Office

Museum

Pioneer  
Club

Redwater  
School

Outdoor  
Swimming  
Pool

Campground  
#13

Redwater  
Golf Course

Soccer  
Pitches

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Ball  
Diamond

Redwater Park Index

1. Poplar Park
2. Ochre Park School
3. Smally Park
4. Kinsman Park
5. Redwater Golf Course
6. Centennial Park
7. Redwater School
8. Patony Park
9. Cook Park
10. McDonald Park
11. Devonian Park
12. Southside Park
13. Campground

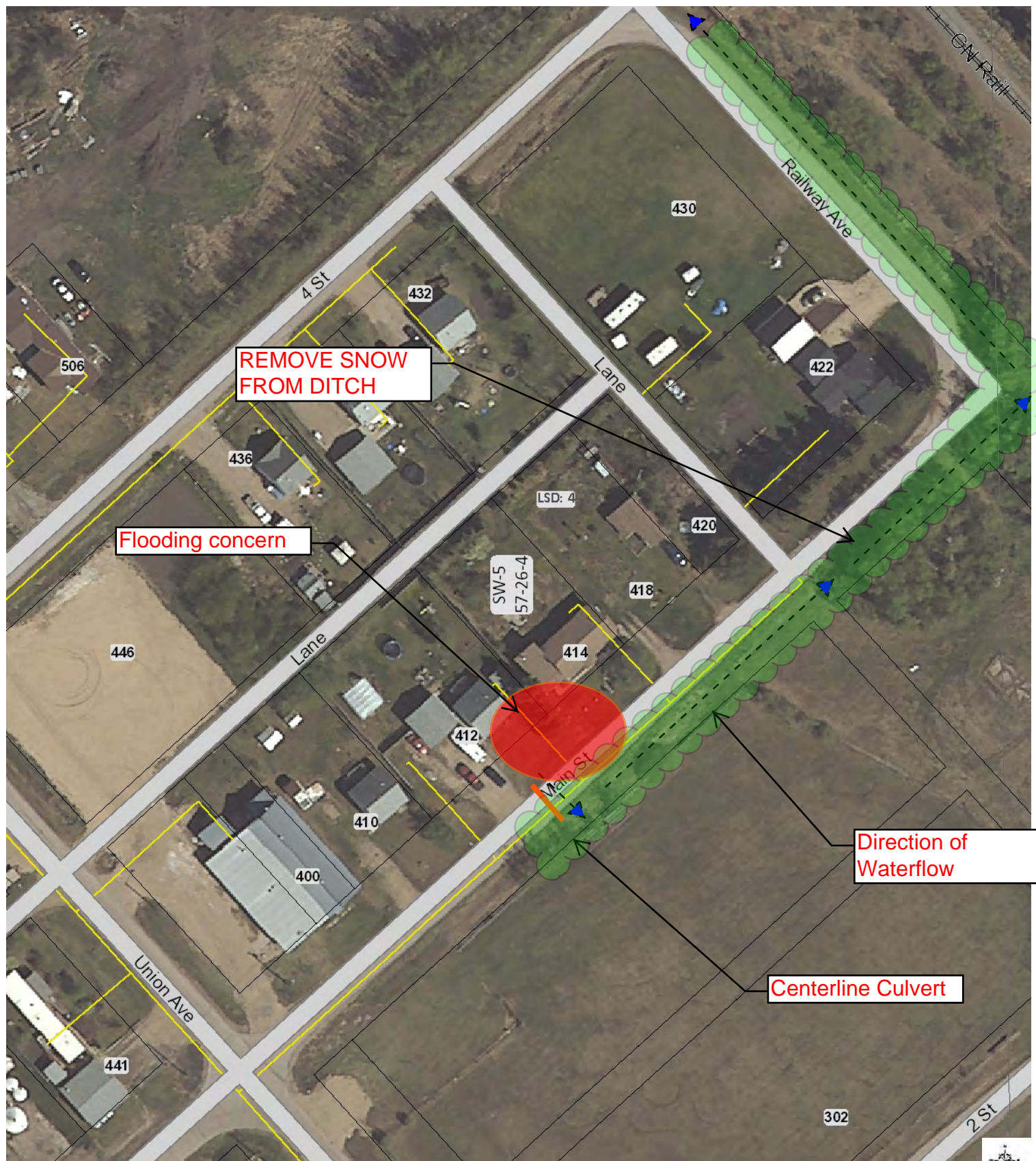
HIGHWAY 38

The Town of Redwater makes no representation or warranties regarding the information contained in this document, including, without limitation, whether said information is accurate or complete. Persons using this document do so solely at their own risk, and the Town of Redwater shall have no liability to such persons for any loss or damage whatsoever.



# Alcomdale - Flood Prevention

1 of 2



0 Distance / 2 Distance Units

NAD\_1983\_UTM\_Zone\_10TM  
© Sturgeon County

Notes

20180419

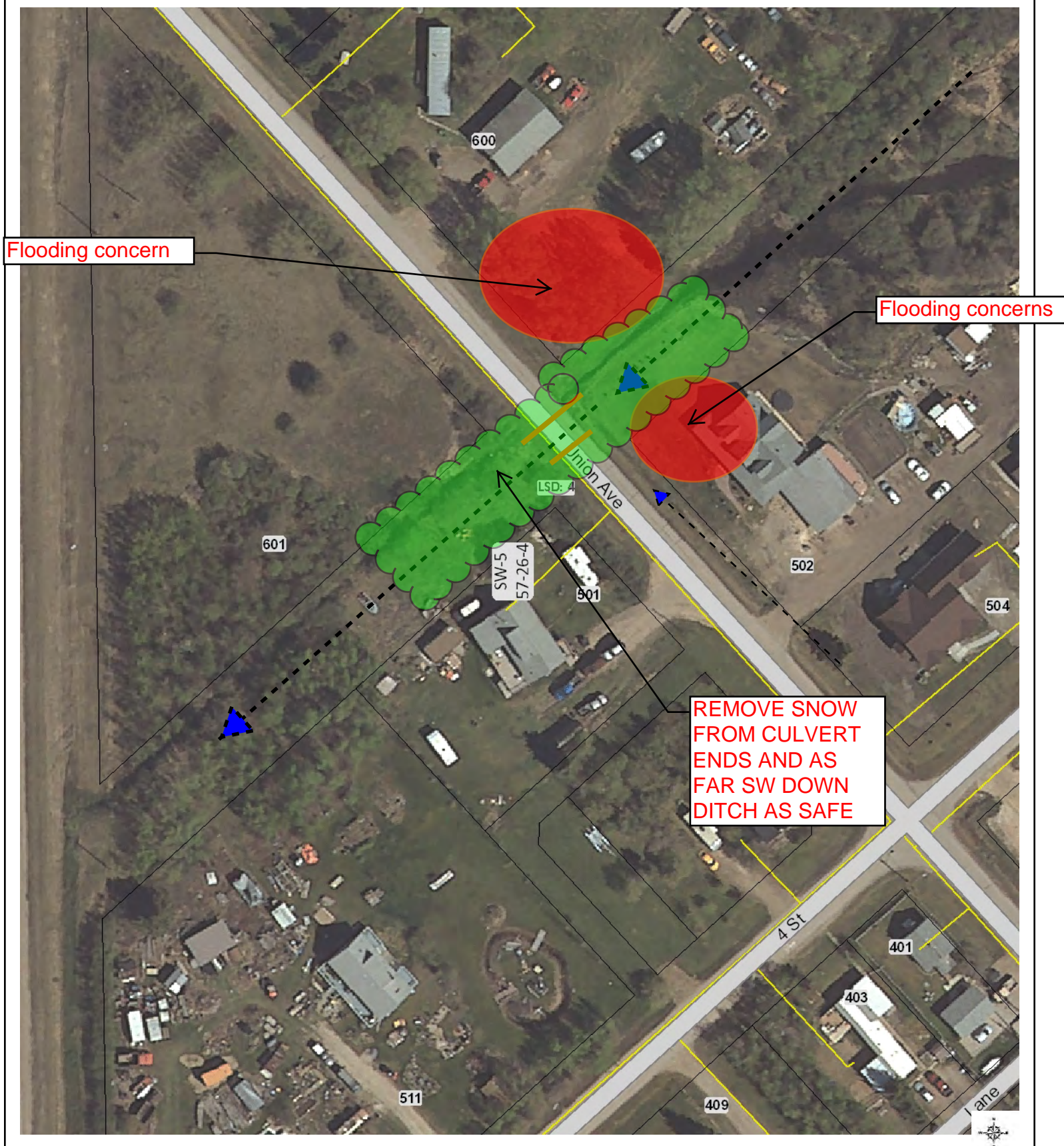
11,000

Information on this map is provided solely for the user's information and, while thought to be accurate, is provided strictly "as is" and without warranty of any kind.



# Alcomdale - Flood Prevention

2 of 2



0 Distance / 2 Distance Units

NAD\_1983\_UTM\_Zone\_10TM  
© Sturgeon County

11,000

Notes

20180419

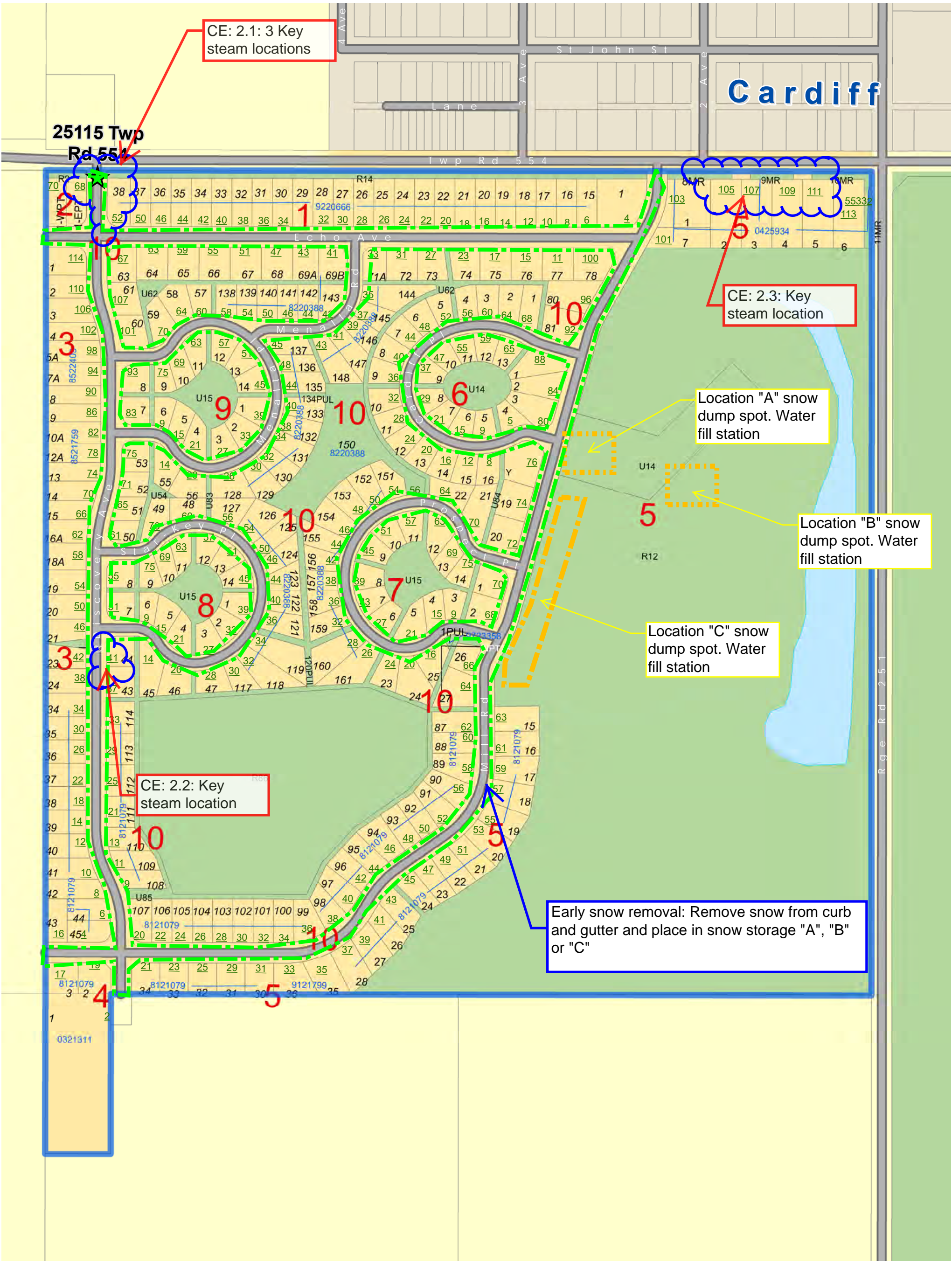
Information on this map is provided solely for the user's information and, while thought to be accurate, is provided strictly "as is" and without warranty of any kind.



Cardiff Echoes  
Spring Drainage Plan



Sturgeon  
County



Legend

- # Civic Address # Block # Lot # Plan
- Municipal Land
- Subdivision Entrance

Base Map compiled from the Provincial Title Mapping Digital Base 10TM Projection, 115 Degree Central Meridian, NAD 83 Datum Land Ownership derived from Land Titles. Spatial Data Warehouse Ltd. format="short"/> Sturgeon County 2015 All Rights Reserved. Not to be copied in whole or in part. Disclaimer: The information on these maps is based on the most Current information available to Sturgeon County Geographic Information Systems. Sturgeon County does not warrant its accuracy or suitability for any particular purpose. The information on this map is not intended to replace engineering, financial or primary records research. Document Path: E:\G\Sturgeon\_General\Subdivision\_Hamlet\_Project\Hamlets\Cardiff\_Hamlet\Cardiff\_2016.mxd Date: 10/4/2016



# Cardiff Pitsburg

## Spring Drainage Plan



0 Distance Units

NAD\_1983\_UTM\_Zone\_10TM  
© Sturgeon County

Notes 20180216

Information on this map is provided solely for the user's information and, while thought to be accurate, is provided strictly "as is" and without warranty of any kind.



# Heritage Industrial Park - Drainage

RR 254 & Hwy 642



0 Distance Units

WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere  
© Sturgeon County

Notes 20180412

Information on this map is provided solely for the user's information and, while thought to be accurate, is provided strictly "as is" and without warranty of any kind.



# Pro-North Industrail Park

Drainage Flow Path 1 of 2





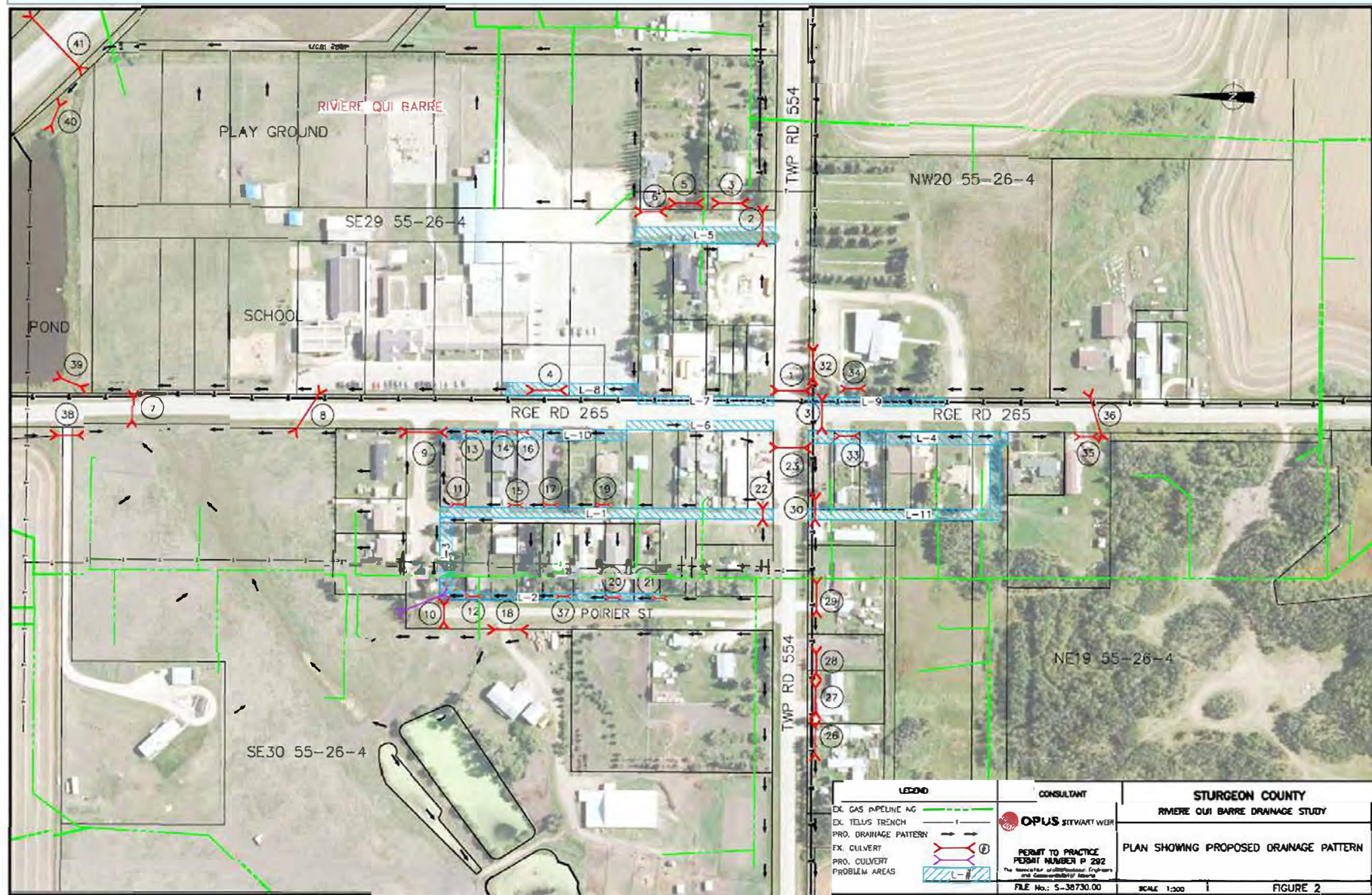
# Pro-North Industrail Park

Drainage Flow Path 2 of 2





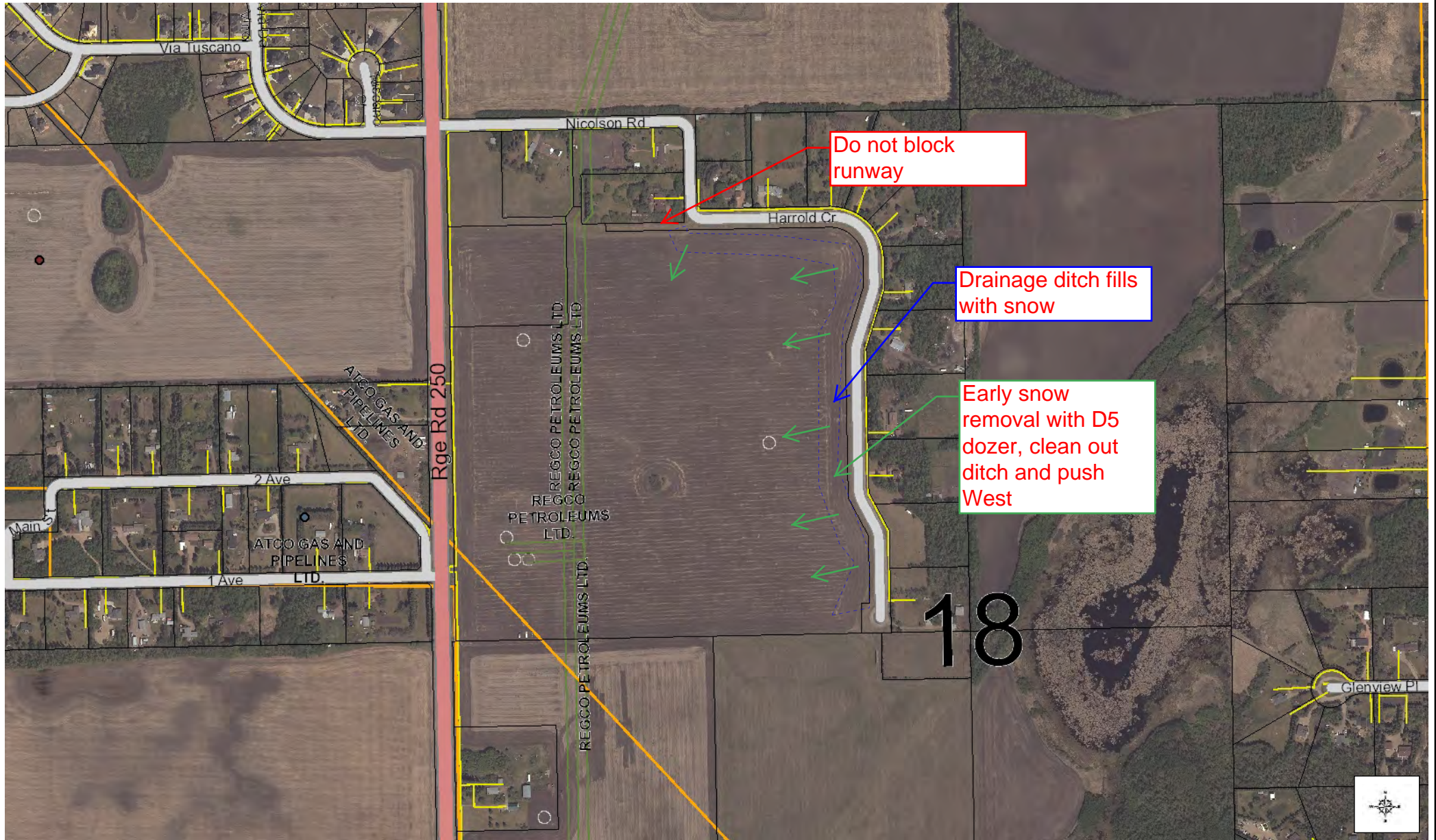
# RQB DRAINAGE FLOW PATH





# Skyglen

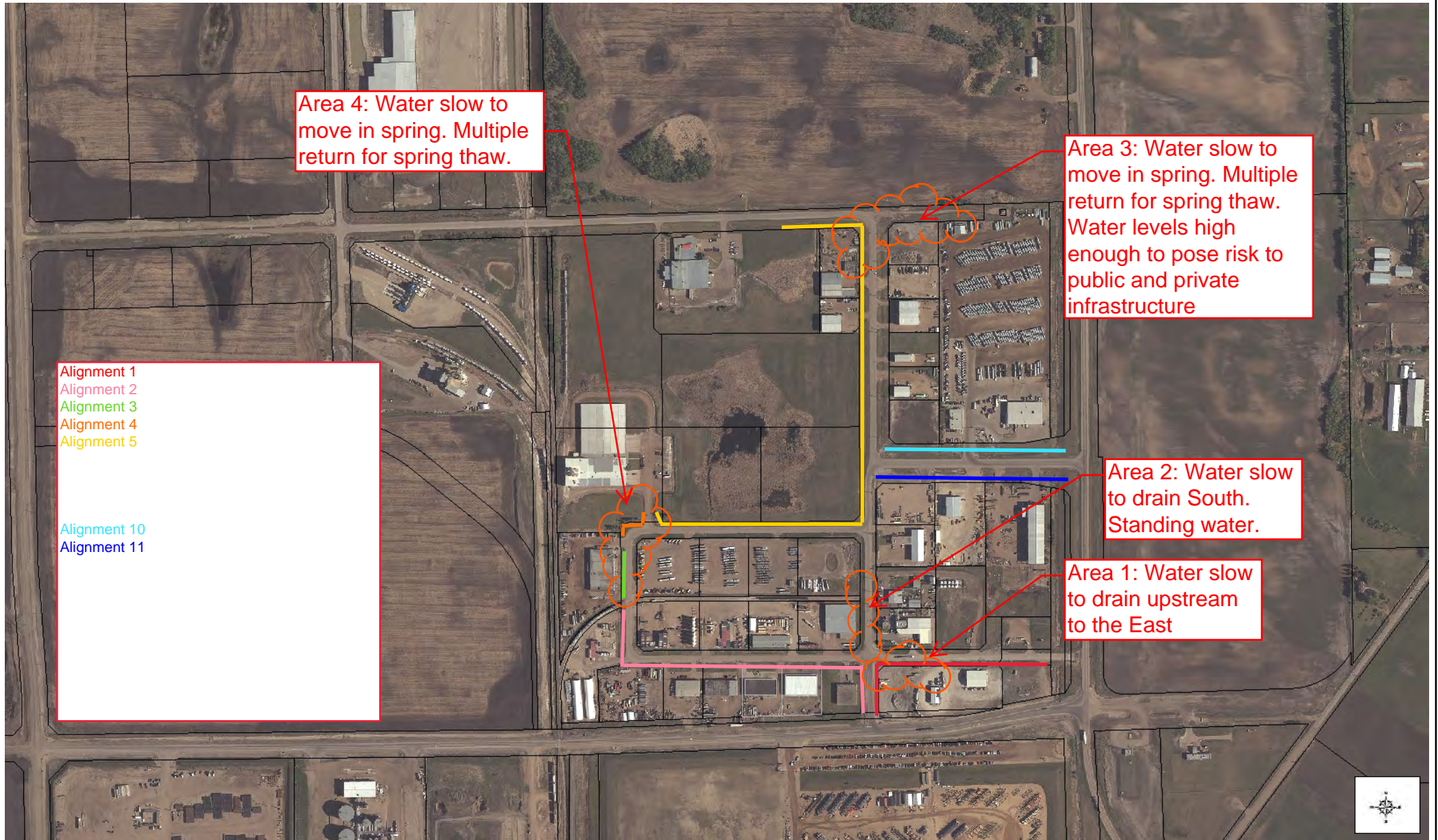
## Spring Drainage Plan





# Sturgeon Industrial Park

## Drainage Alignments



0 Distance Units

NAD\_1983\_UTM\_Zone\_10TM  
© Sturgeon County

### Notes

Information on this map is provided solely for the user's information and, while thought to be accurate, is provided strictly "as is" and without warranty of any kind.



# Sturgeon Industrial Park

Alignments 1, 2, & 5



0 100 Distance Units

NAD\_1983\_UTM\_Zone\_10TM  
© Sturgeon County

Notes 20180315

Information on this map is provided solely for the user's information and, while thought to be accurate, is provided strictly "as is" and without warranty of any kind.



# Sturgeon Industrial Park

Alignments 2, 3, & 4





# Sturgeon Industrial Park

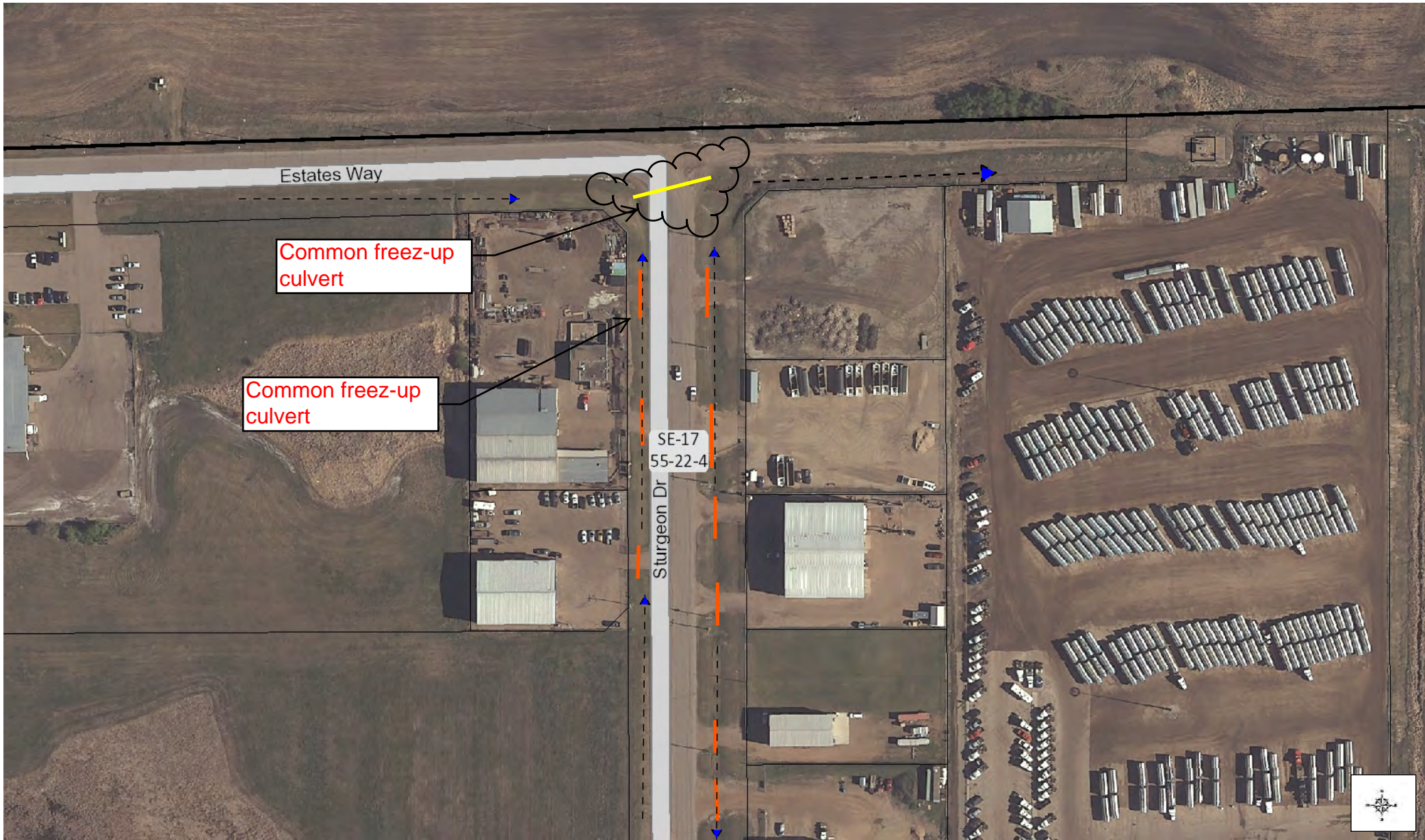
Alignment 5, 10 & 11





# Sturgeon Industrial Park

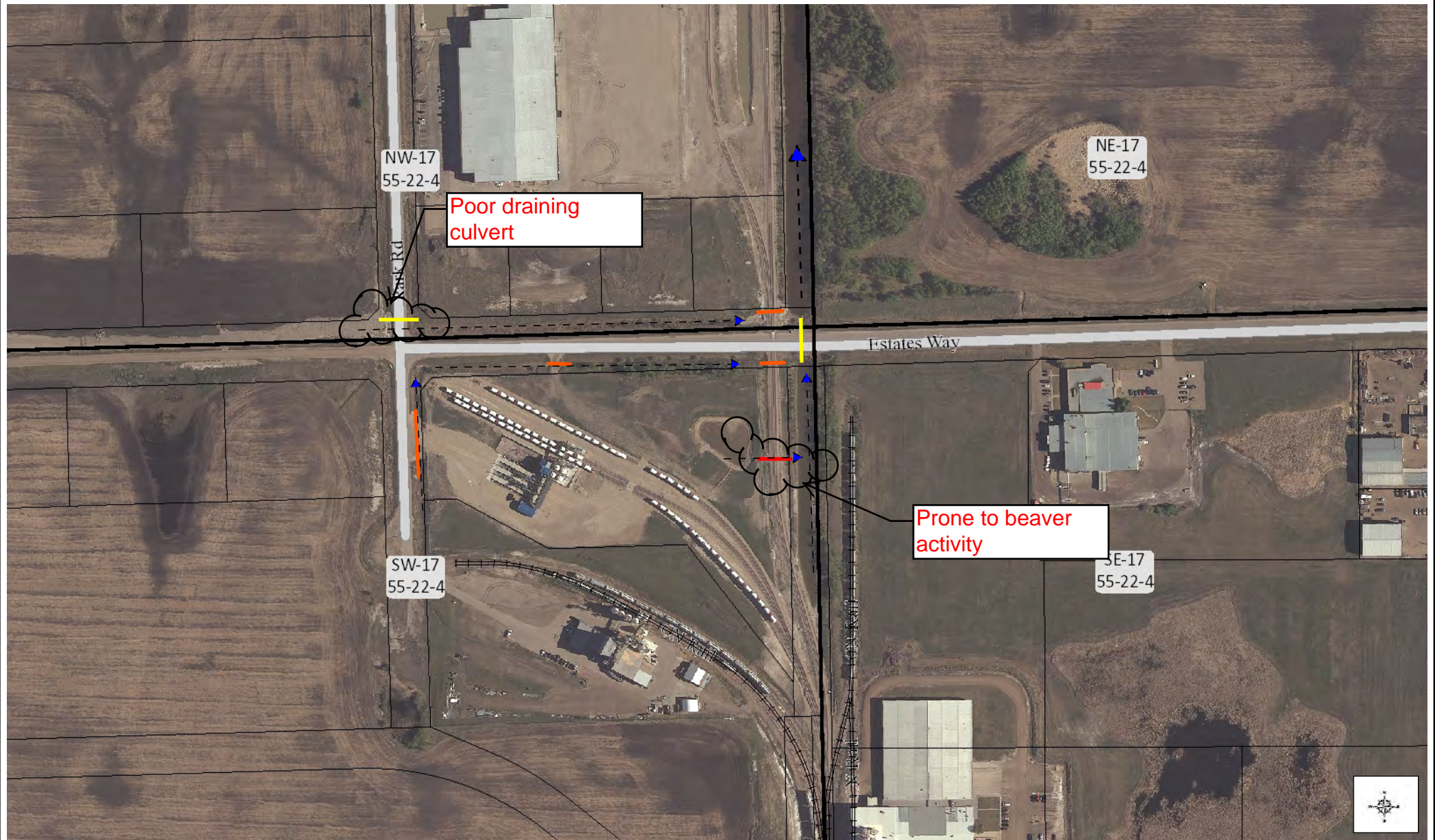
Alignment 5





# Sturgeon Industrial Park

Additional



0 Distance Units

NAD\_1983\_UTM\_Zone\_10TM  
© Sturgeon County

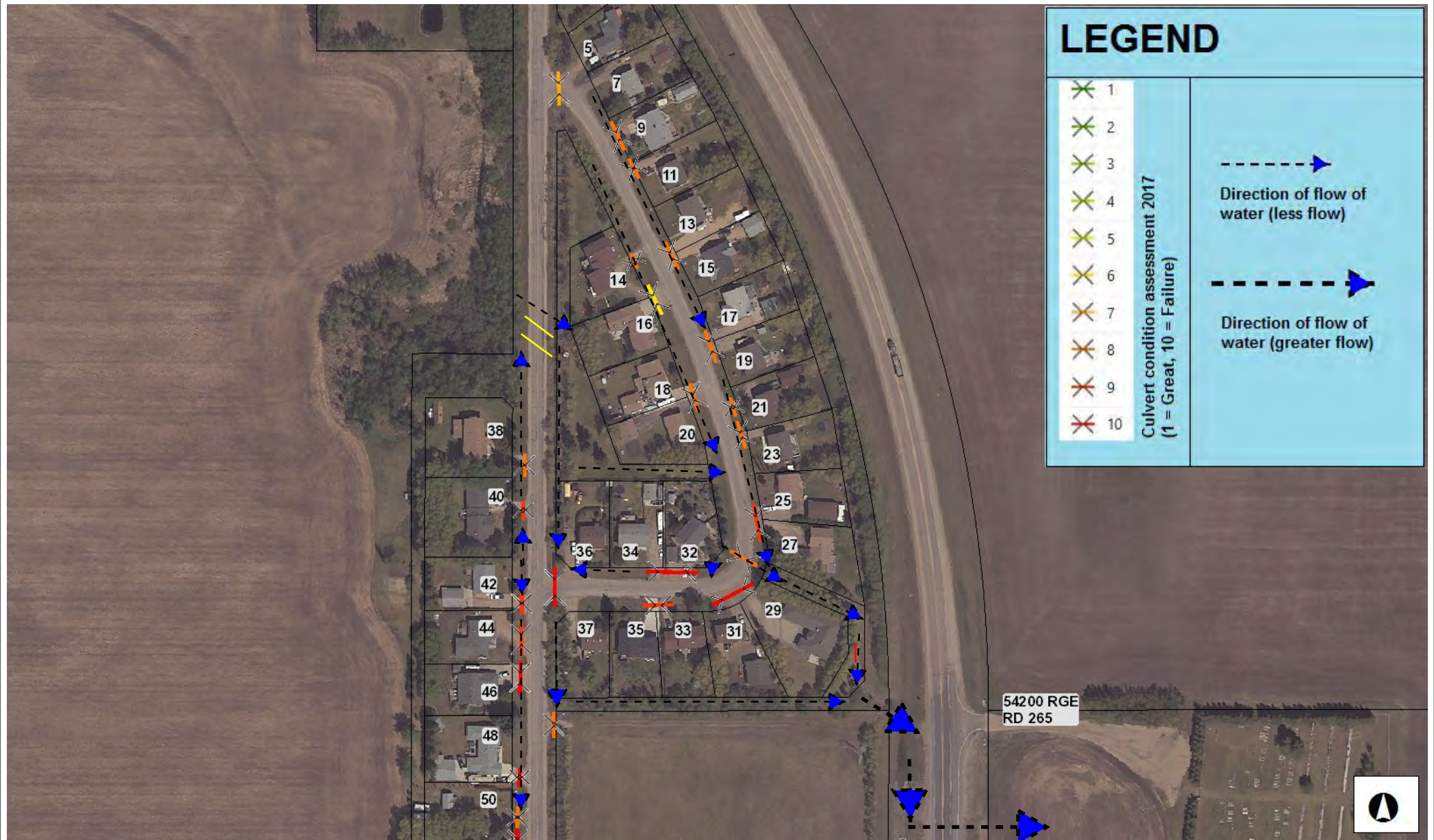
Notes 20180315

Information on this map is provided solely for the user's information and, while thought to be accurate, is provided strictly "as is" and without warranty of any kind.



# Villeneuve

Drainage Flow Path 1 of 2



0 Distance Units

WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere  
© Sturgeon County

Notes 20180309

Information on this map is provided solely for the user's information and, while thought to be accurate, is provided strictly "as is" and without warranty of any kind.



# Villeneuve

Drainage Flow Path 2 of 2



0 Distance Units

WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere  
© Sturgeon County

Notes 20180309

Information on this map is provided solely for the user's information and, while thought to be accurate, is provided strictly "as is" and without warranty of any kind.



## Road Closure 1 of 2

Twp 543 BTW RR 270 & Hwy 44

15-Feb-2019



Information on this map is provided solely for the user's information and, while thought to be accurate, is provided strictly "as is" and without warranty of any kind.

NAD\_1983\_10TM\_AEP\_Resource  
© Sturgeon County

Prepared By: Devin Patterson

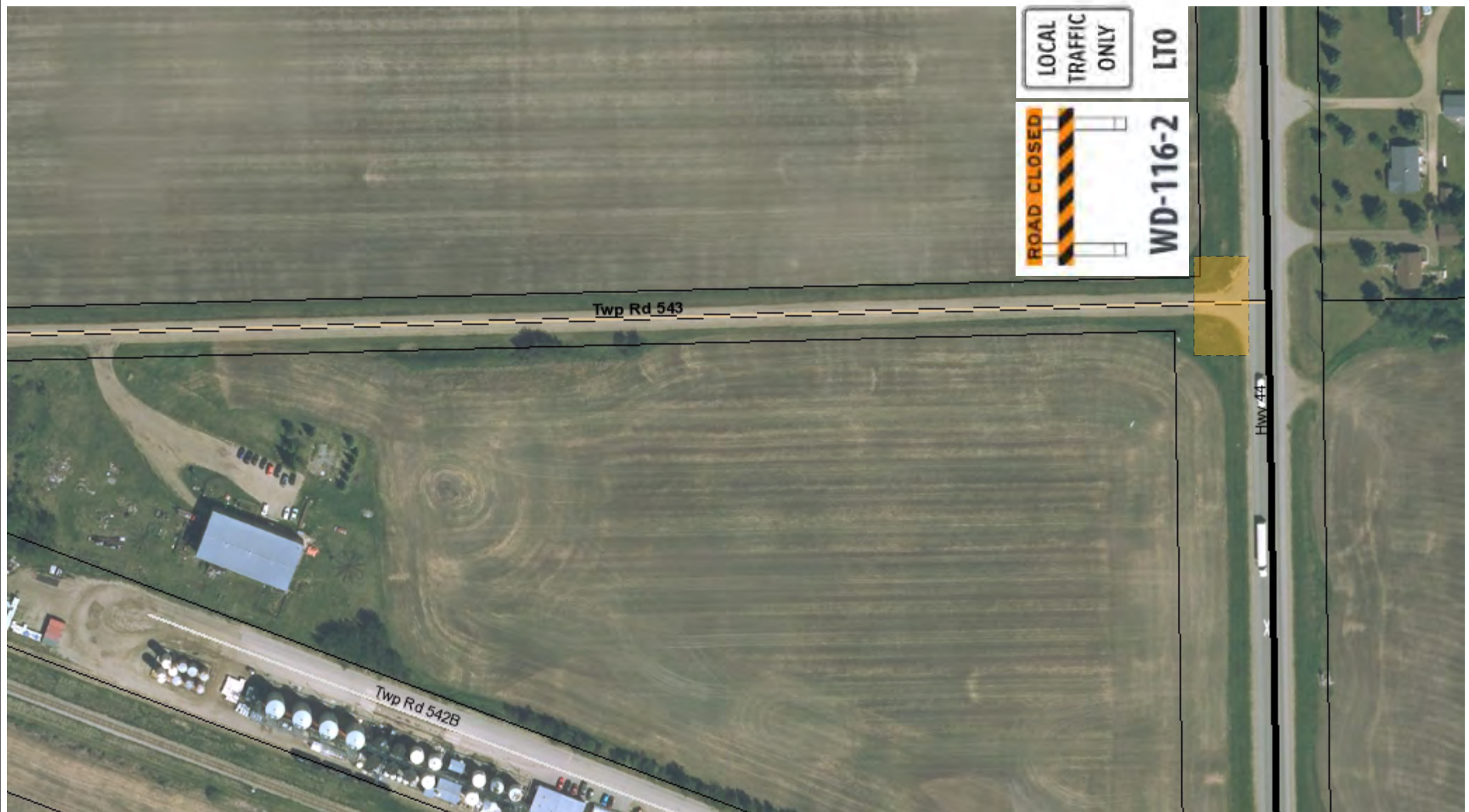




## Road Closure 2 of 2

Twp 543 BTW RR 270 & Hwy 44

15-Feb-2019



Information on this map is provided solely for the user's information and, while thought to be accurate, is provided strictly "as is" and without warranty of any kind.

NAD\_1983\_10TM\_AEP\_Resource  
© Sturgeon County

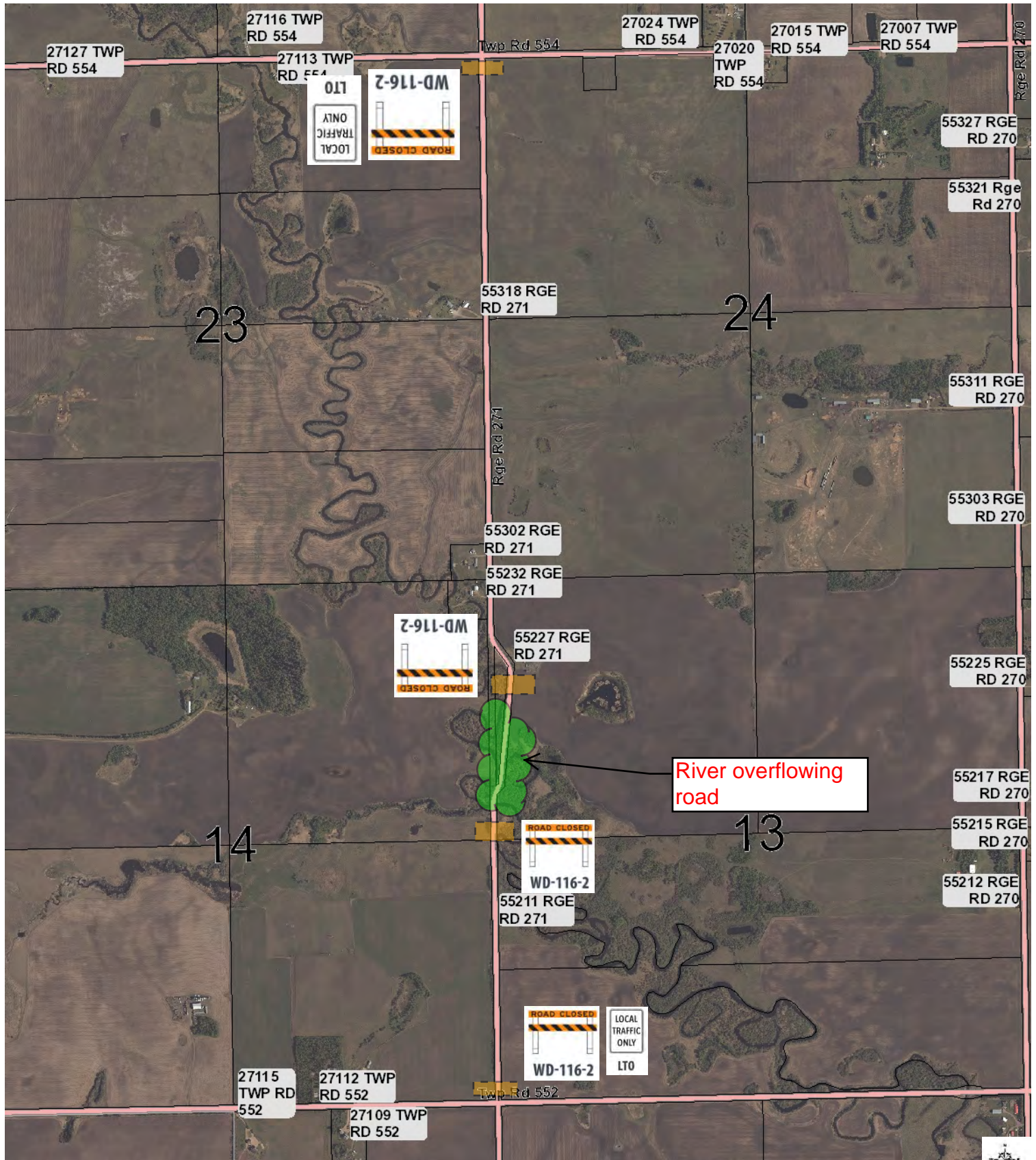
Prepared By: Devin Patterson





# Road Closure

RR 271 BTW Twp 552 & Twp 554



0 Distance / 2 Distance Units

NAD\_1983\_UTM\_Zone\_10TM  
© Sturgeon County

Notes

20180421

1:16,000

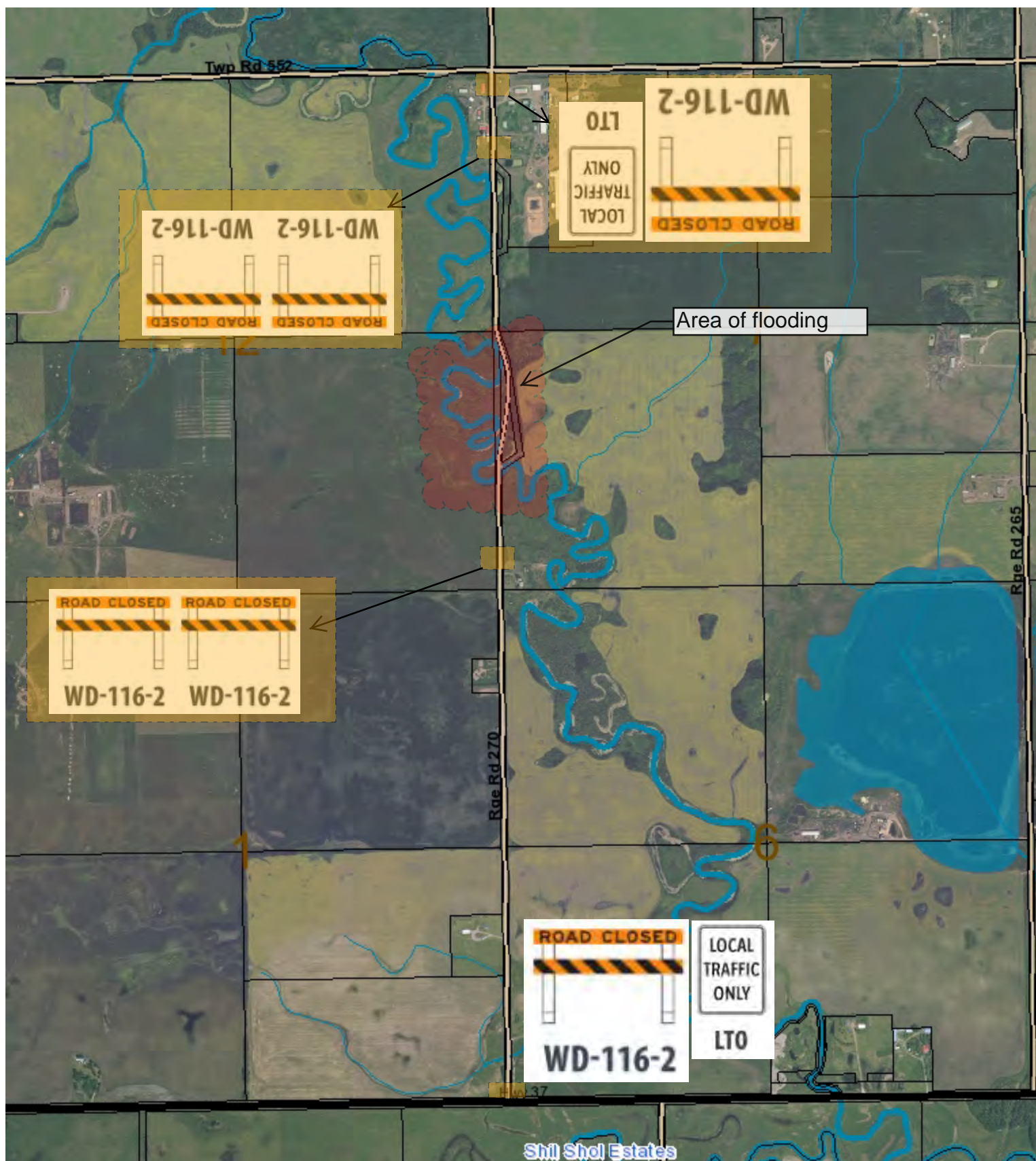
Information on this map is provided solely for the user's information and, while thought to be accurate, is provided strictly "as is" and without warranty of any kind.



# Road Closure

RR 270 BTW Hwy 37 to Twp 552

19-Feb-2019



Prepared By: Devin Patterson

NAD\_1983\_10TM\_AEP\_Resource  
© Sturgeon County

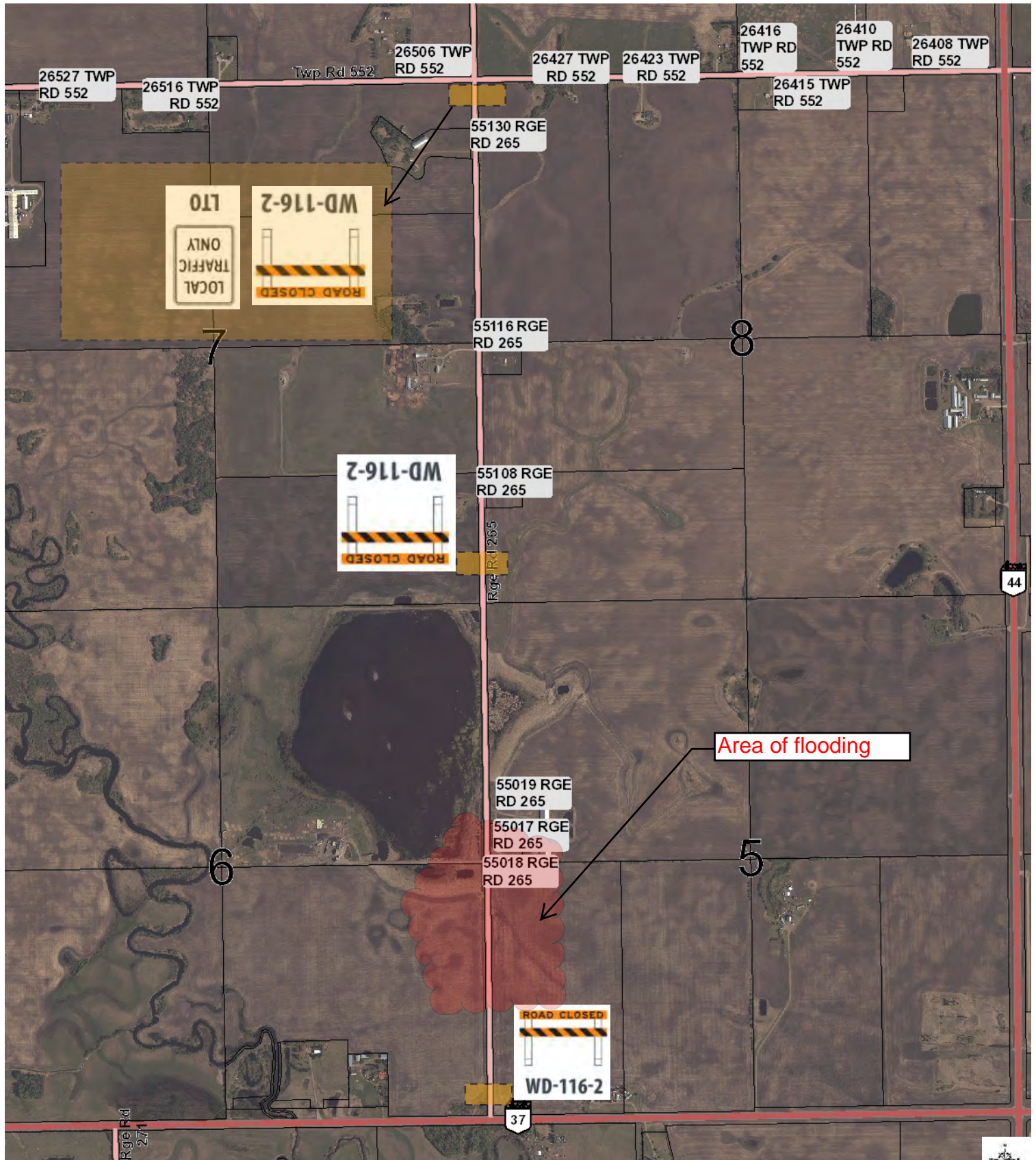
Information on this map is provided solely for the user's information and, while thought to be accurate, is provided strictly "as is" and without warranty of any kind.





# Road Closure

RR 265 BTW Hwy 37 & Twp 552



0 Distance / 2 Distance Units

NAD\_1983\_UTM\_Zone\_10TM  
© Sturgeon County

Notes

20180423

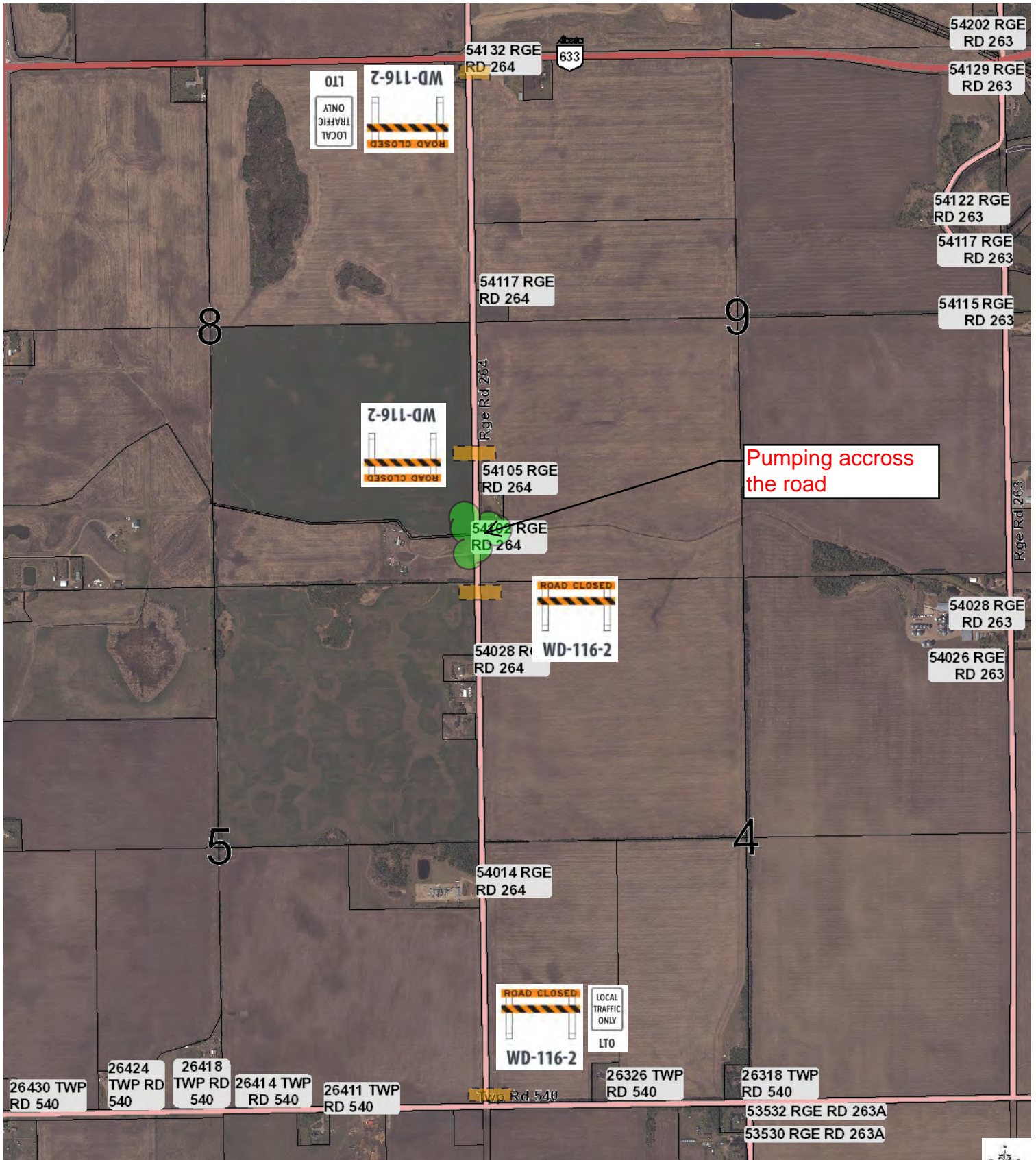
1:16,000

Information on this map is provided solely for the user's information and, while thought to be accurate, is provided strictly "as is" and without warranty of any kind.



# Road Closure

RR 264 BTW Twp 540 & Hwy 633



0 Distance / 2 Distance Units

NAD\_1983\_UTM\_Zone\_10TM  
© Sturgeon County

1:16,000

Notes

20180421

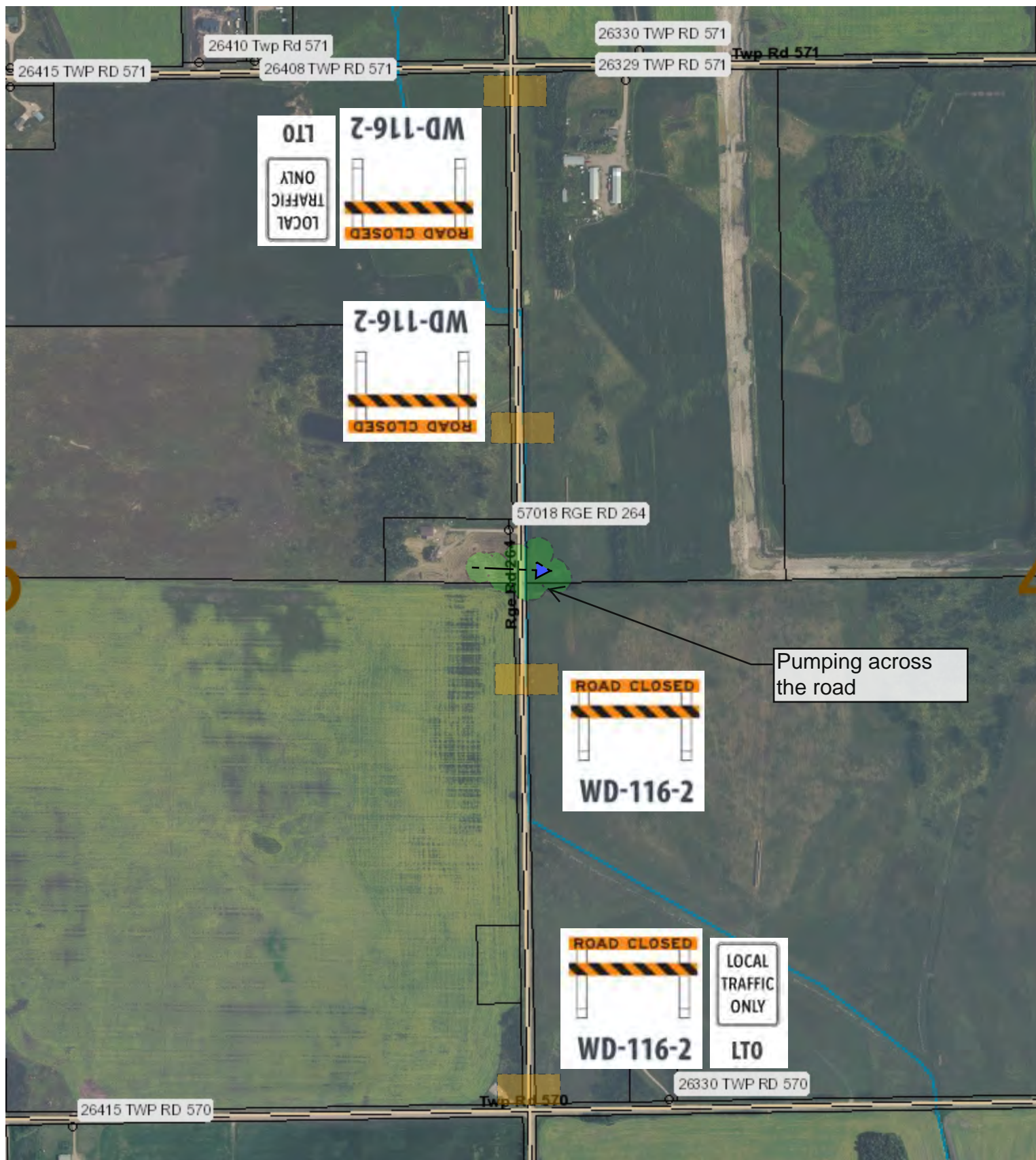
Information on this map is provided solely for the user's information and, while thought to be accurate, is provided strictly "as is" and without warranty of any kind.



# Road Closure

RR 264 BTW Twp 570 & Twp 571

12-Feb-2019



Prepared By: Devin Patterson 20190212

NAD\_1983\_10TM\_AEP\_Resource  
© Sturgeon County

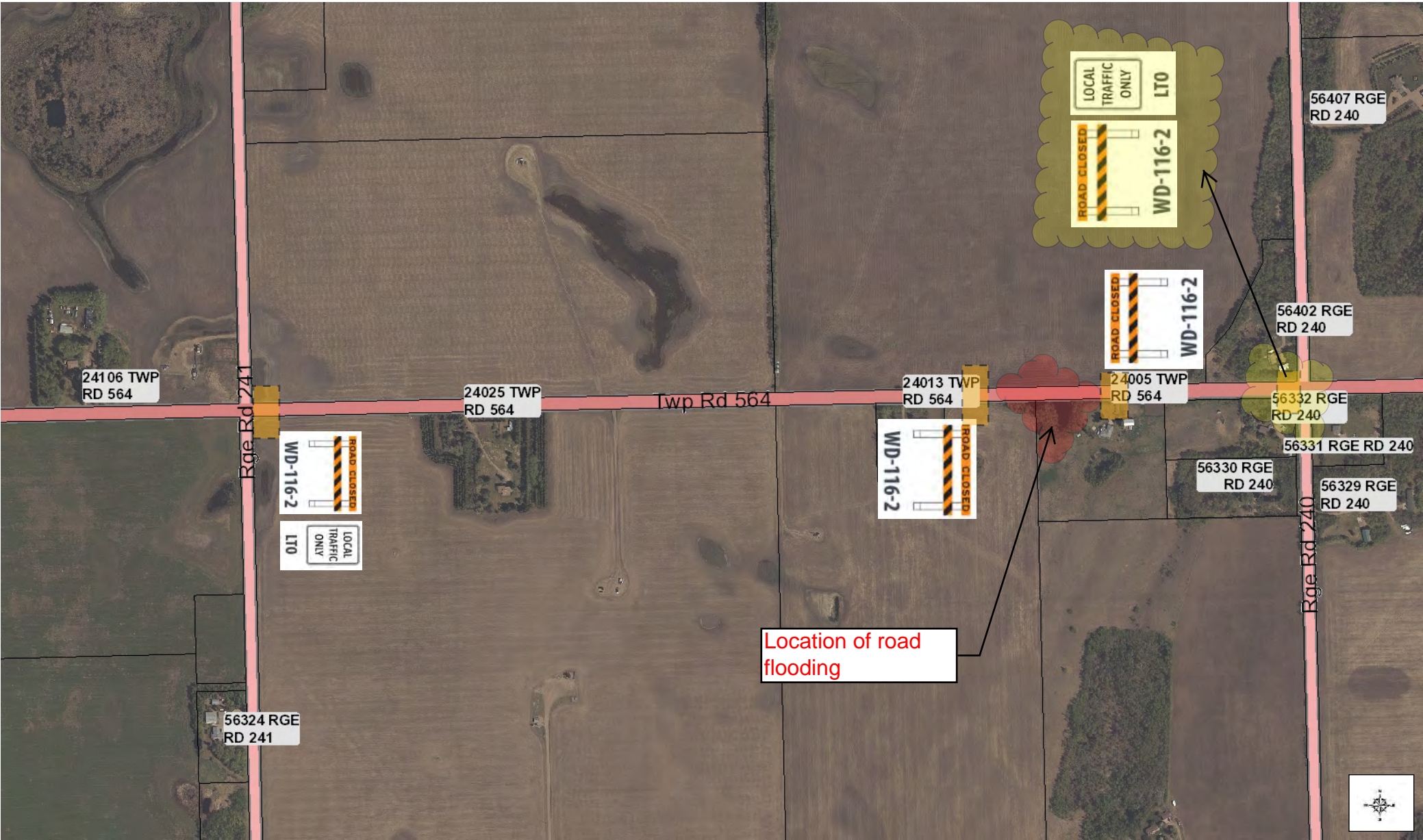
Information on this map is provided solely for the user's information and, while thought to be accurate, is provided strictly "as is" and without warranty of any kind.





# Road Closure

Twp 564 BTW RR 240 & RR 241



0 Distance Units

NAD\_1983\_UTM\_Zone\_10TM  
© Sturgeon County

Notes 20180423

Information on this map is provided solely for the user's information and, while thought to be accurate, is provided strictly "as is" and without warranty of any kind.



Eastbound desirous traffic will be traveling on Rge Rd 260 North or Southbound when they come upon the Twp Rd 544 Closure.

Northbound traffic will take Rge Rd 260 to Hwy 37 and back down Rge Rd 255 to Twp 544. Southbound traffic will travel down Rge Rd 260 to Hwy 633 (Villeneuve Rd), travel east and then come back north on Rge Rd 255 (Hogan Road) to Twp Rd 544.

Access will be given to residents on Twp Rd 544 east of the bridge, but will be closed to all through traffic.

