Westlock County
2018 Road Study

Issued for Use

October 2018

Prepared for:
Westlock County
10336 – 106 Street
Westlock, Alberta T7P 2G1

Prepared by:
Stantec Consulting Ltd.
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Red Deer, Alberta T4N 1X7

Executive Summary

Stantec Consulting Ltd. was retained by Westlock County to complete the 2018 Rural Road Study. This report is intended to be used as a planning tool for the County to determine annual road upgrade requirements and the associated costs. This report addresses three specific tasks:

1. Review all the County's key roads, rank all roads in the County to determine which roads require upgrades, and prioritize the road upgrades for the next five years;
2. Identify the projected road maintenance costs for the next ten years; and
3. Identify alternative road maintenance methods for gravel and paved roads.

When discussing road standards, it is first necessary to define the various types of roads and their functions. There are two ways to classify a road. The first is to determine the function of the road. The second is to use a design classification which includes a definition for road width, surface type, number of lanes, and design speed. Two operational road environments were defined, Rural and Urban. Within these environments, three functional road classifications were identified:

- Local roads which provide access to residences and fields;
- Collector roads which provide connectivity between major roads and local roads;
- Arterial roads which provide primary connectivity between highways and communities within the County.

There are approximately 2,305 kilometres of roads within the Westlock County boundary. Table 1-1: Roadway Summary by Classification shows a breakdown of the roads by classification and surface type. The roadway classifications are highlighted in Figure 4-2: Road Classification.

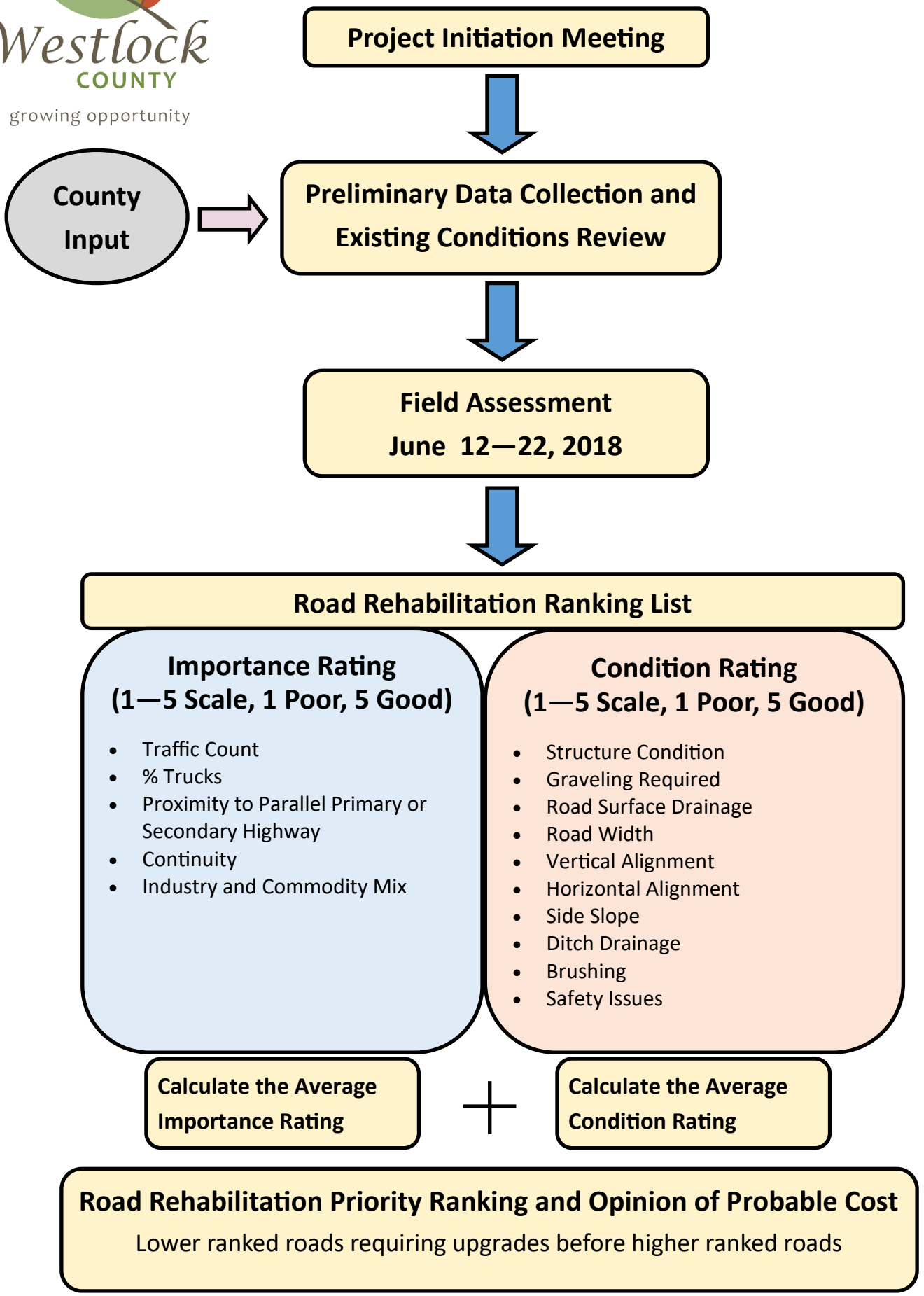
Table 1-1: Roadway Summary by Classification

Road Classification	Gravel Surface (km)	Hard Surface (km) [1,2]	Total Length (km)	Roads Requiring Improvements in the Next 10 years (km)
Local	1,802.4	7.6	1810.1	45.6
Collector	316.1	10.5	326.6	44.3
Arterial	109.4	22.7	132.2	25.2
Urban Environment	17.6	19.1	36.6	13.4
Total	**2,245.5**	**59.9**	**2,305.5**	**128.5**

[1] Based on available data provided by the County and field inspections.
[1] Hard surface includes Oil Bound, Chip Seal, Cold Mix, and Asphalt Concrete Pavement.
[2] All roads in urban environment assumed to be hard surfaced based on data in the Westlock County GIS database. Urban environment is defined as roads within hamlets and multi-lot subdivisions.

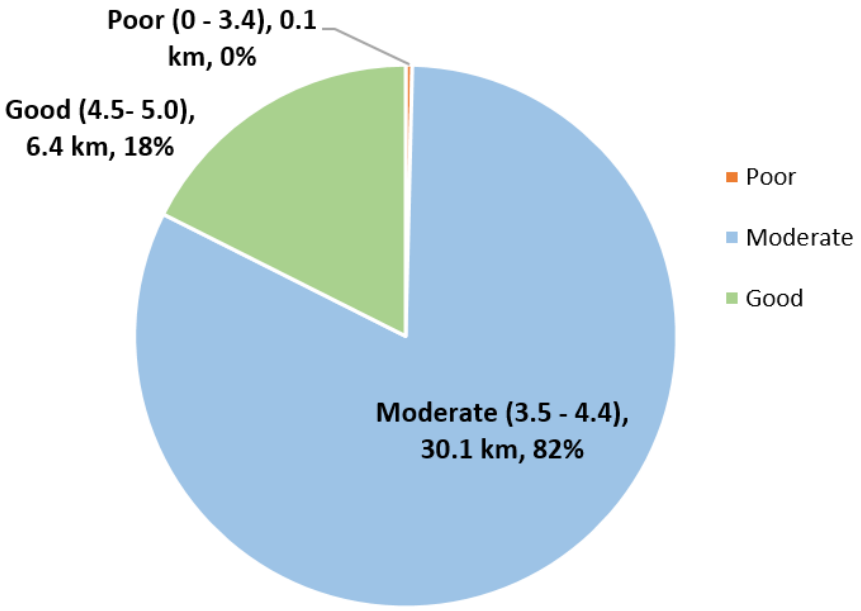
Stantec ranked each road in Westlock County based on a number of criteria including road classification, traffic volumes, and existing conditions. Using these criteria, each road was ranked in order to prioritize road construction, with lower ranked roads requiring upgrades before higher ranked roads. Each construction year has been assigned roadway sections based on priority ranking and segments that have been selected by the County. The annual road programs are shown in Figure 7-1: Road Construction.

A flow chart below outlines the procedure used to determine the proposed construction Program.

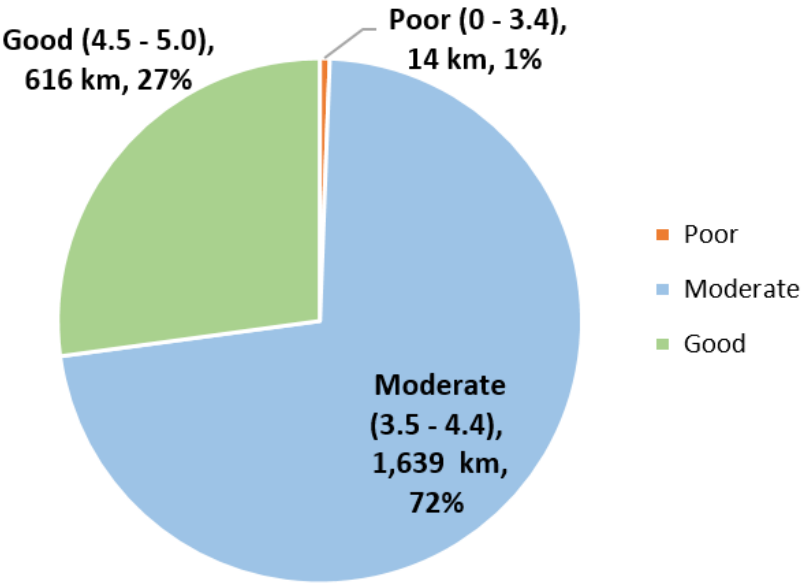

Project Initiation Meeting
County Input
Preliminary Data Collection and Existing Conditions Review
Field Assessment
June 12—22, 2018
Road Rehabilitation Ranking List
Importance Rating (1—5 Scale, 1 Poor, 5 Good)
Traffic Count
% Trucks
Proximity to Parallel Primary or Secondary Highway
Continuity
Industry and Commodity Mix
Condition Rating (1—5 Scale, 1 Poor, 5 Good)
Structure Condition
Graveling Required
Road Surface Drainage
Road Width
Vertical Alignment
Horizontal Alignment
Side Slope
Ditch Drainage
Brushing
Safety Issues
Calculate the Average Importance Rating
Calculate the Average Condition Rating
Road Rehabilitation Priority Ranking and Opinion of Probable Cost
Lower ranked roads requiring upgrades before higher ranked roads

Condition Ranking Results and Review

Urban Road Condition Rating Summary



Rural Road Condition Rating Summary



County Review & Input → **Westlock County Ten Year Recommended Road Construction Program**

Figure 5-1 - Gravel Road in Poor Condition (1) – Rating 2.3

Figure 5-2 - Gravel Road in Poor Condition (2) – Rating 3.0

Figure 5-3 - Gravel Road in Moderate Condition (1) – Rating 3.7

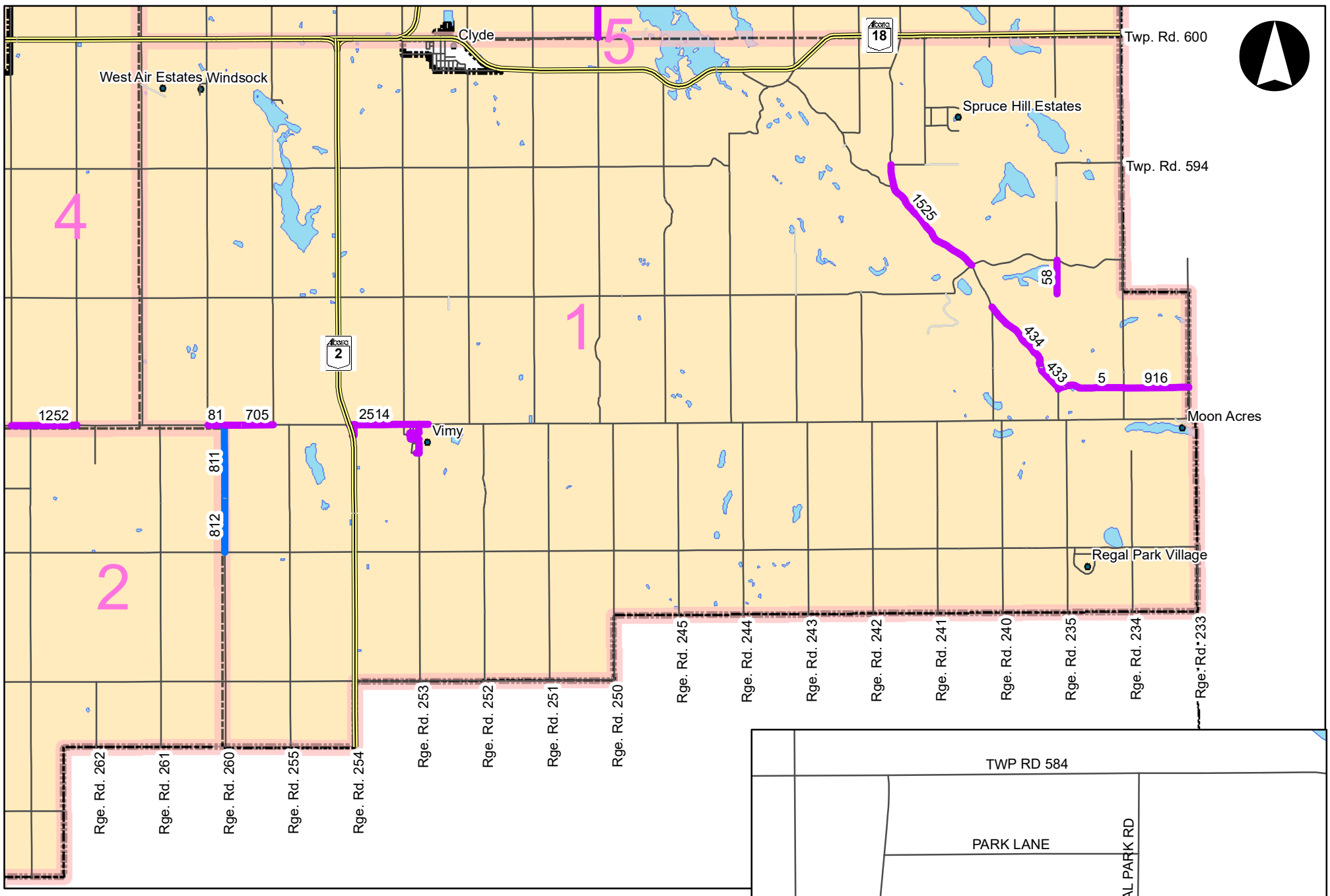
Figure 5-4 - Gravel Road in Moderate Condition (2) – Rating 3.8

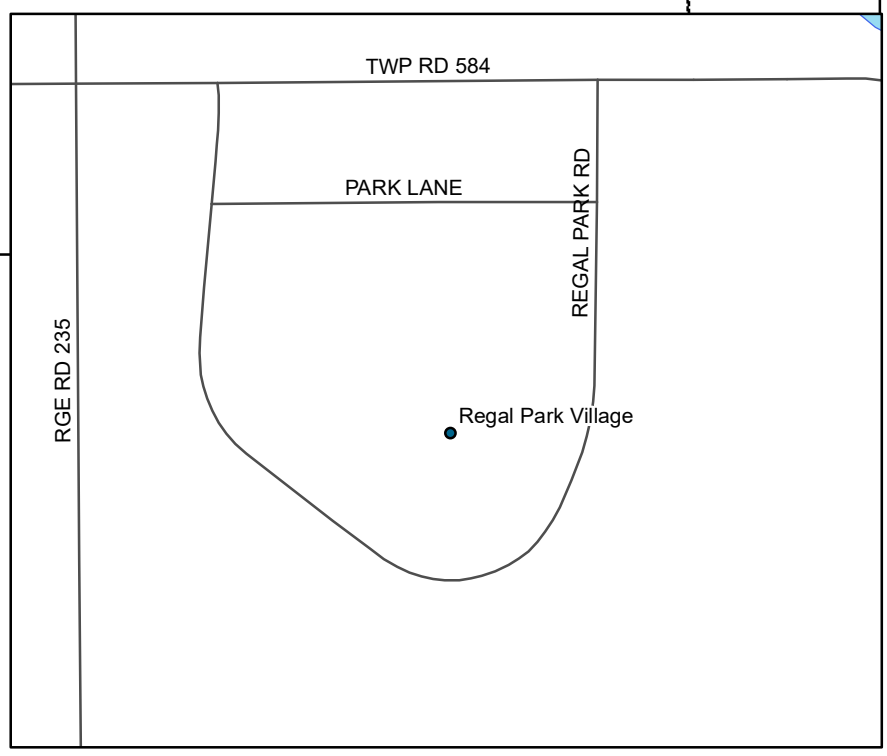
Figure 5-5 - Gravel Road in Moderate Condition (3) – Rating 4.0

Figure 5-6 - Gravel Road in Moderate Condition (4) – Rating 4.3

Figure 5-7 - Gravel Road in Good Condition (1) – Rating 4.6

Figure 5-8 - Gravel Road in Good Condition (2) -Rating 4.8





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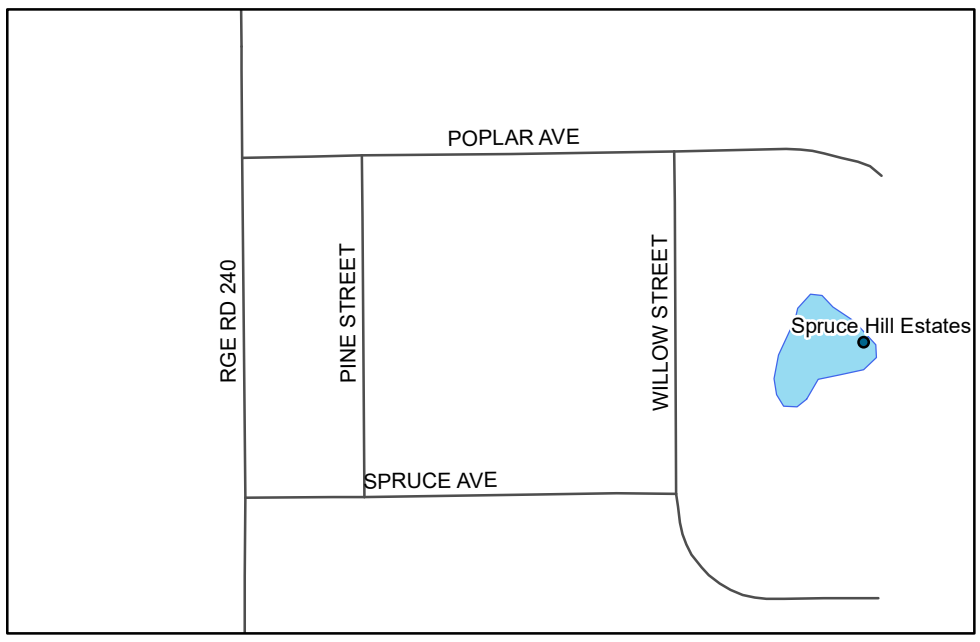
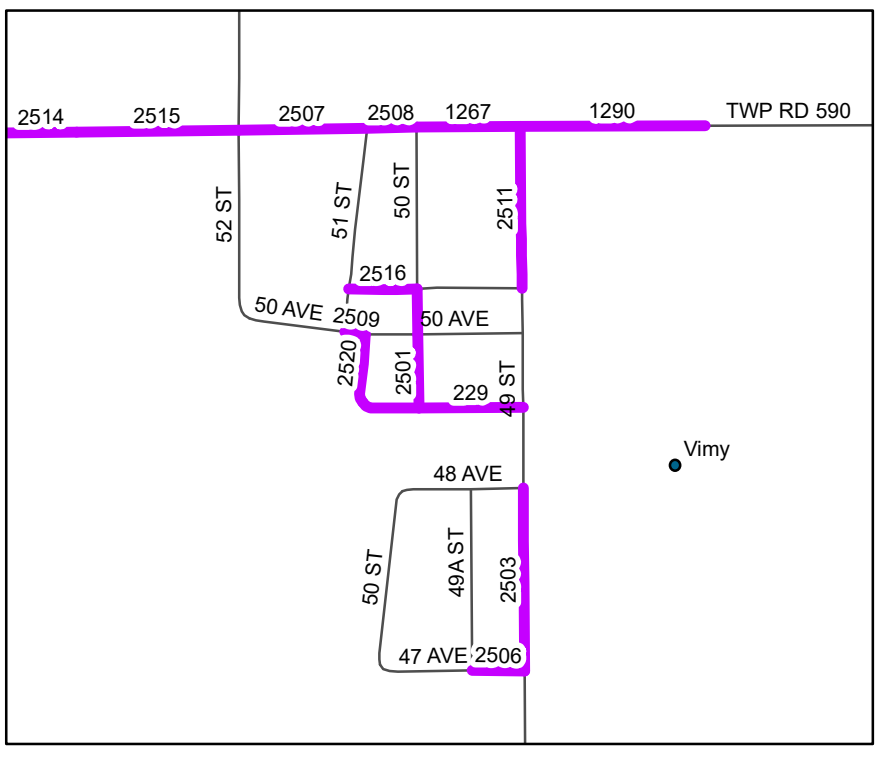


Spruce Hill Estates



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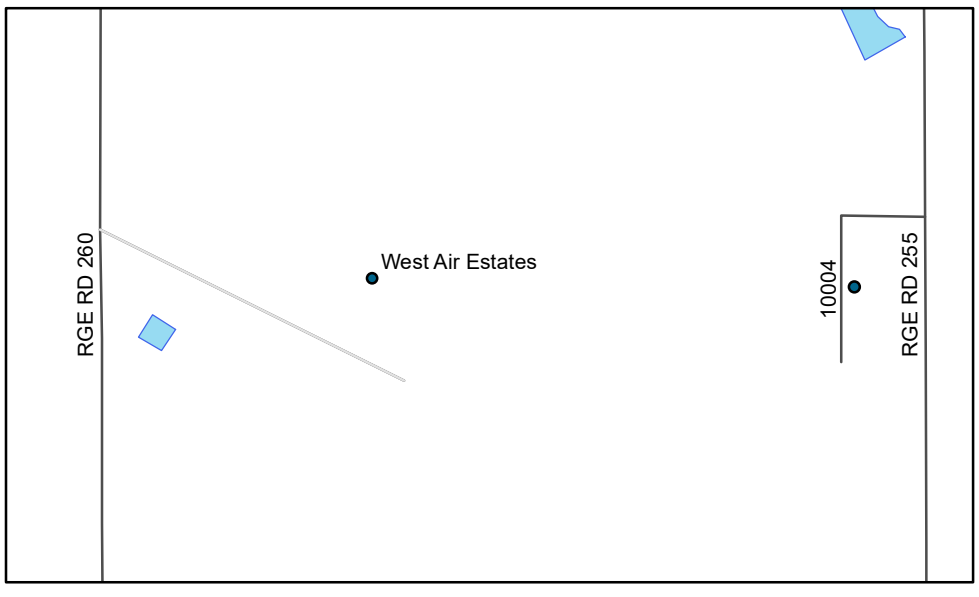

West Air Estates & Windsock

Legend

Year
2019
2020 - 2024
2025 - 2029
Westlock Roads
Divisions
Waterbody

Notes

1. Coordinate System: NAD83 Alberta 3TM ref merid 114 W
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0 2,400 4,800 metres
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Westlock COUNTY
growing opportunity

Stantec

Project Location
Westlock, AB

116239510
Prepared by JA on 2018-07-20

Client/Project
Westlock County

Figure No. **7.1.1**

Title
Division 1: Road Construction

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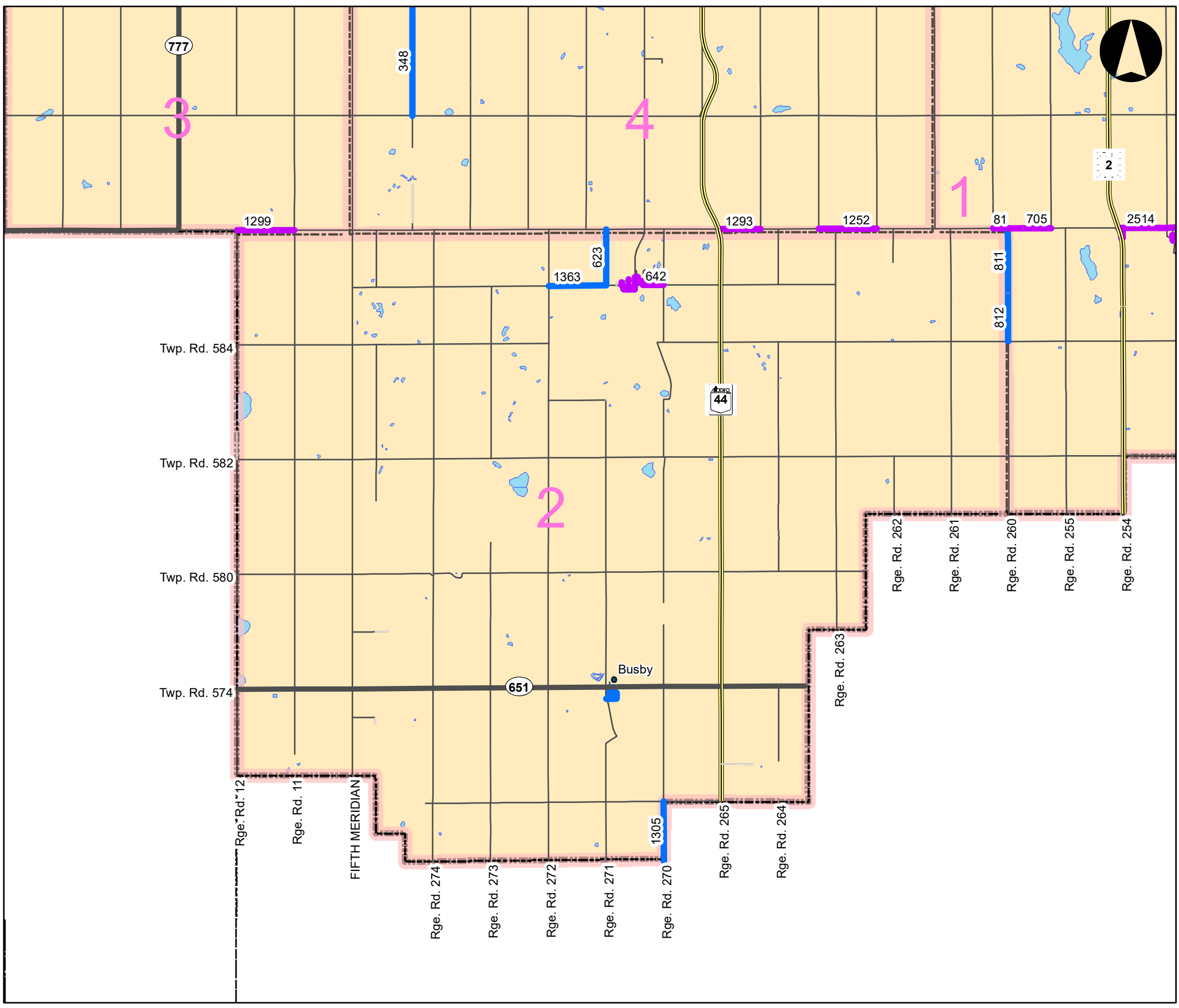
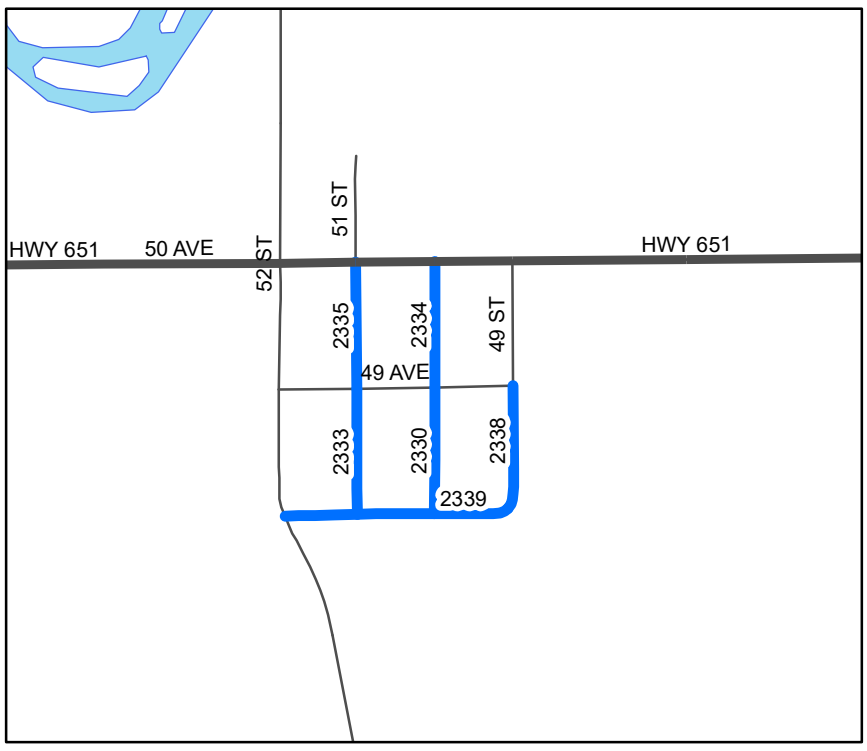
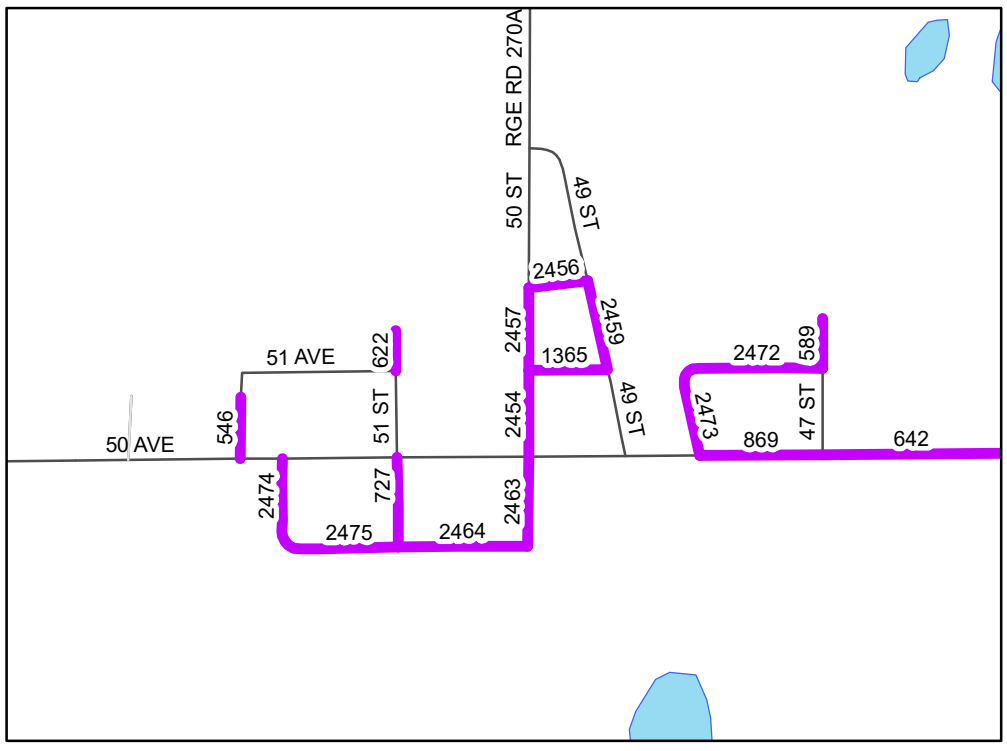




Busby



Pickardville

Legend

Year: 2019 | 2020 - 2024 | 2025 - 2029 | Westlock Roads | Divisions | Waterbody

Notes

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Westlock COUNTY growing opportunity

Stantec

Project Location: Westlock, AB

116239510

Prepared by JA on 2018-07-20

Client/Project: Westlock County

Figure No. **7.1.2**

Title: **Division 2: Road Construction**

V:\1162\active\116239510\05a_dwgs_func_dsgn\01_arcview\MXD\Figure 7-1-2_westlock_road_study_181025.mxd Revised: 2018-10-25 By: john

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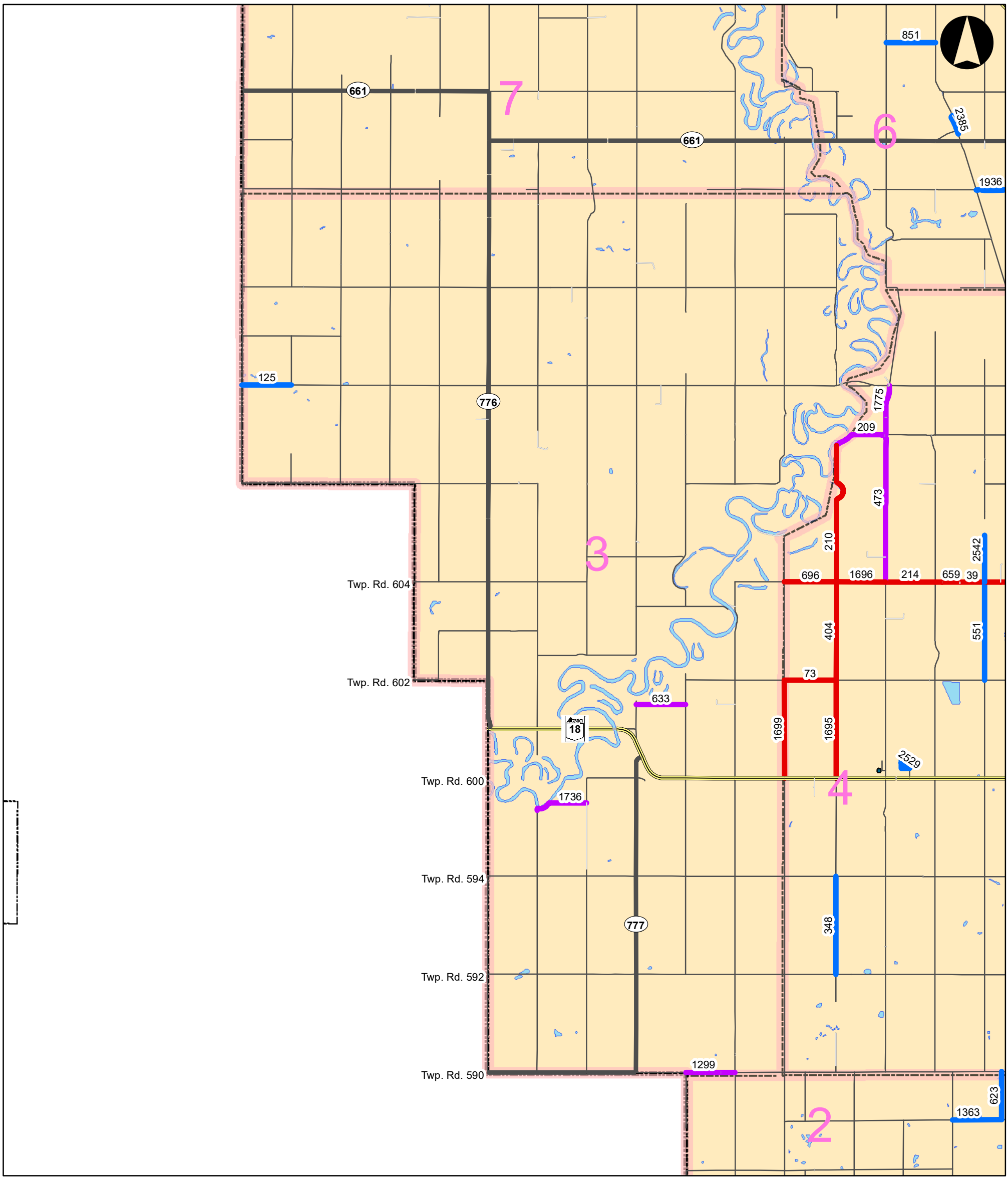

Legend

Year: 2019 | 2020 - 2024 | 2025 - 2029

Westlock Roads

Divisions

Waterbody

Notes

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Westlock COUNTY growing opportunity

Stantec

Project Location: Westlock, AB

116239510

Prepared by JA on 2018-07-20

Client/Project: Westlock County

Figure No. **7.1.3**

Title: **Division 3: Road Construction**

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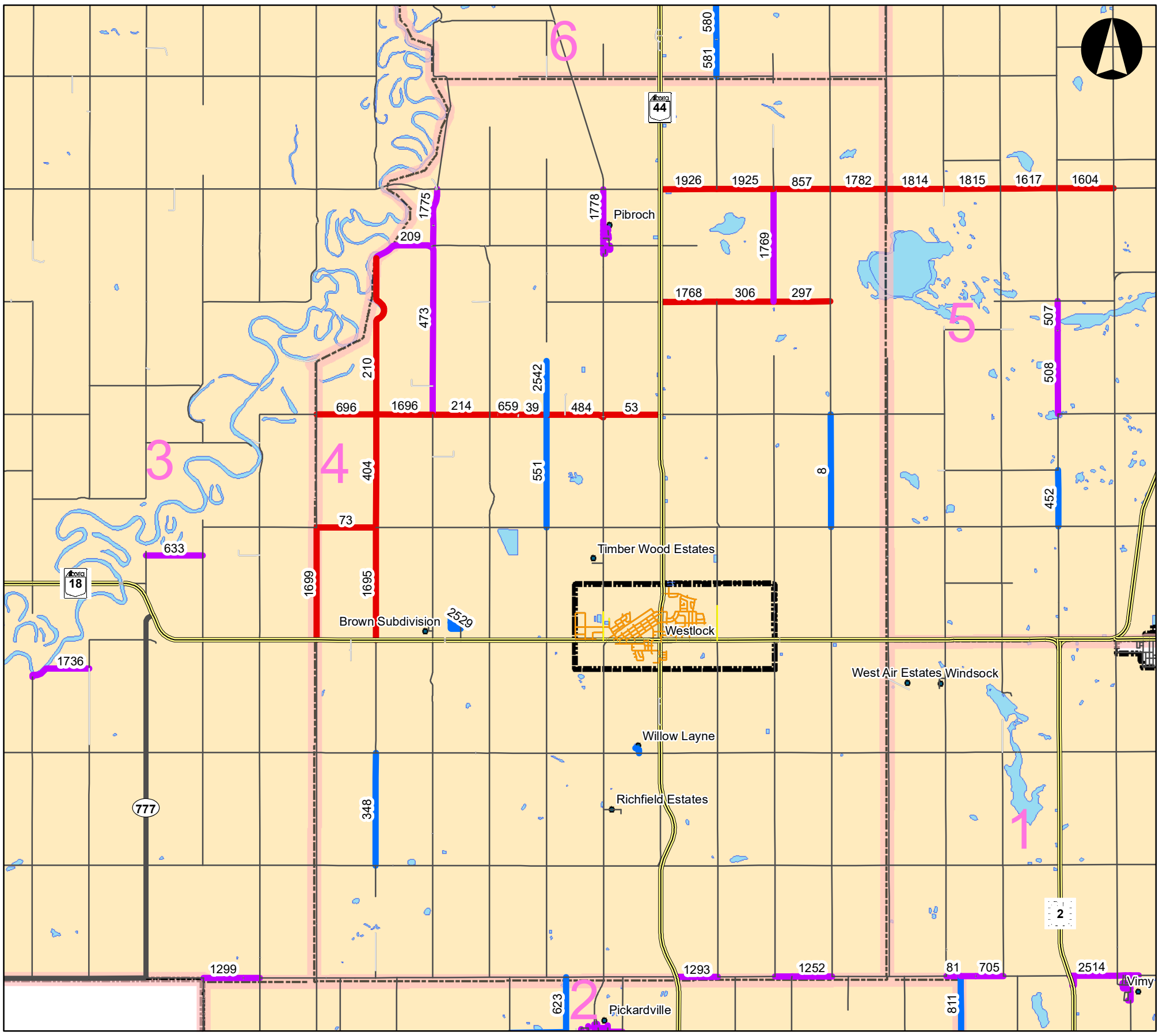

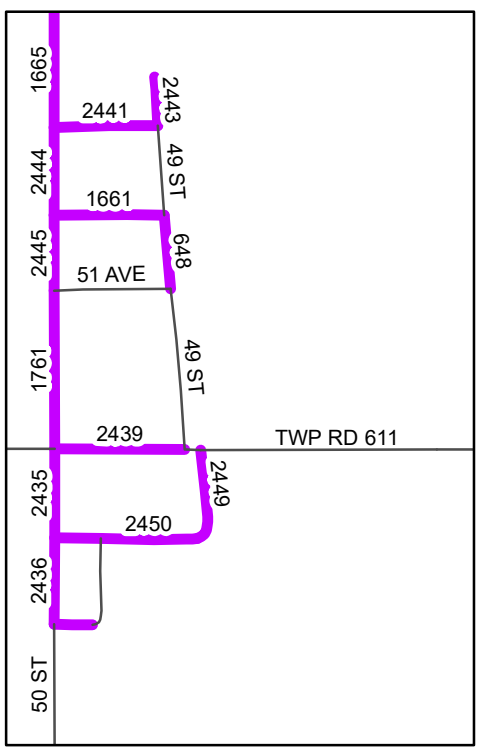

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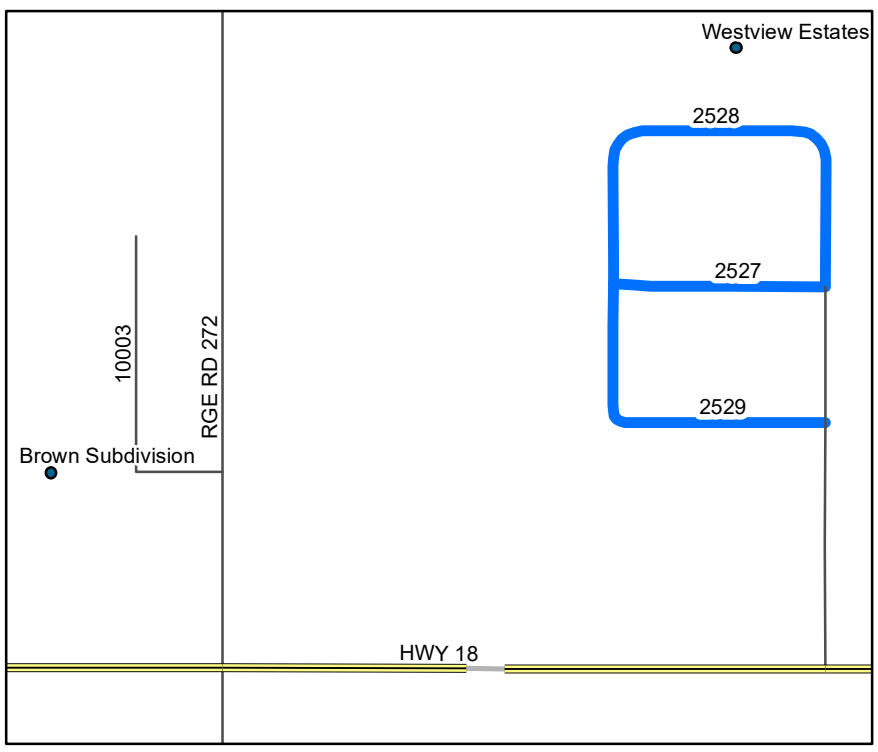
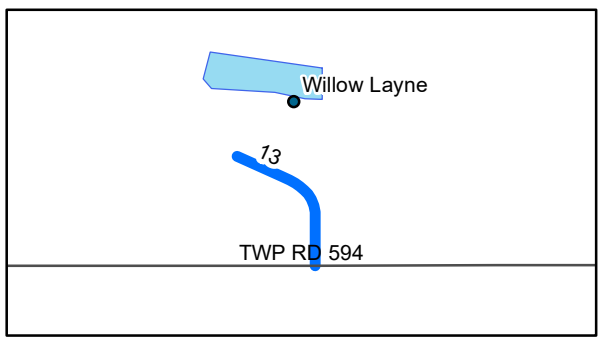
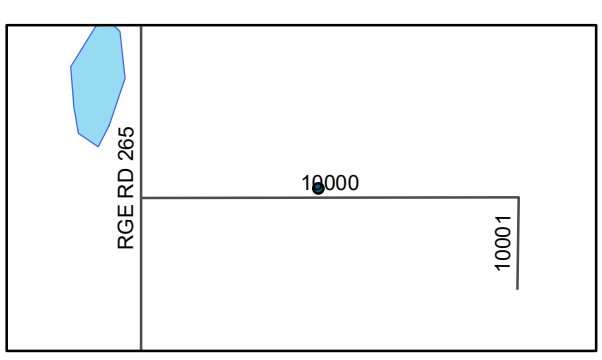


Brown Subdivision & Westview Estates



Willow Layne



Richfield Estates

Legend

Westlock Roads **Year**
2019
2020 - 2024
2025 - 2029
Divisions
Waterbody

Notes

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Westlock COUNTY
growing opportunity

Stantec

Project Location
Westlock, AB

116239510
Prepared by JA on 2018-07-20

Client/Project
Westlock County

Figure No.
7.1.4

Title
Division 4: Road Construction

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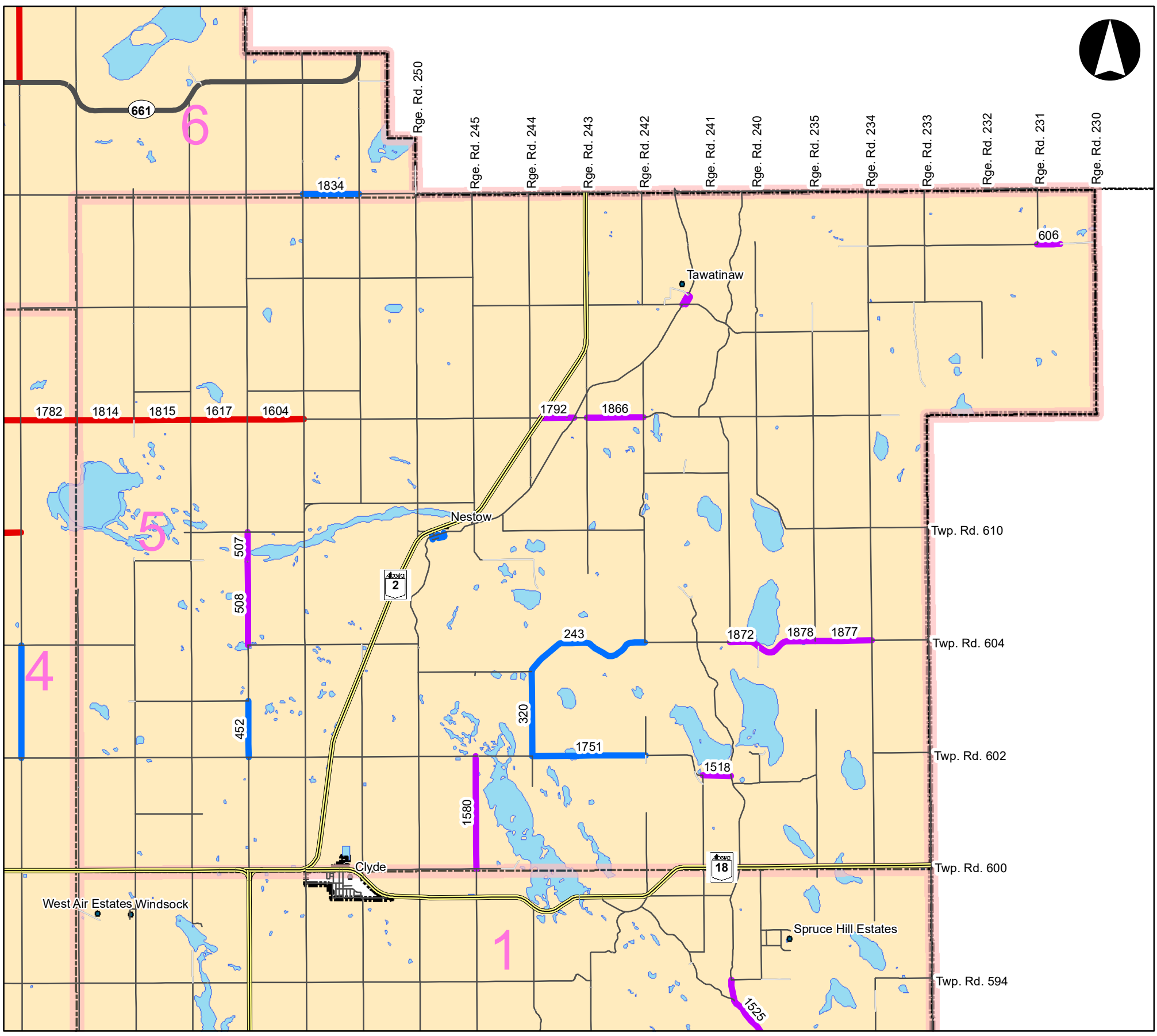

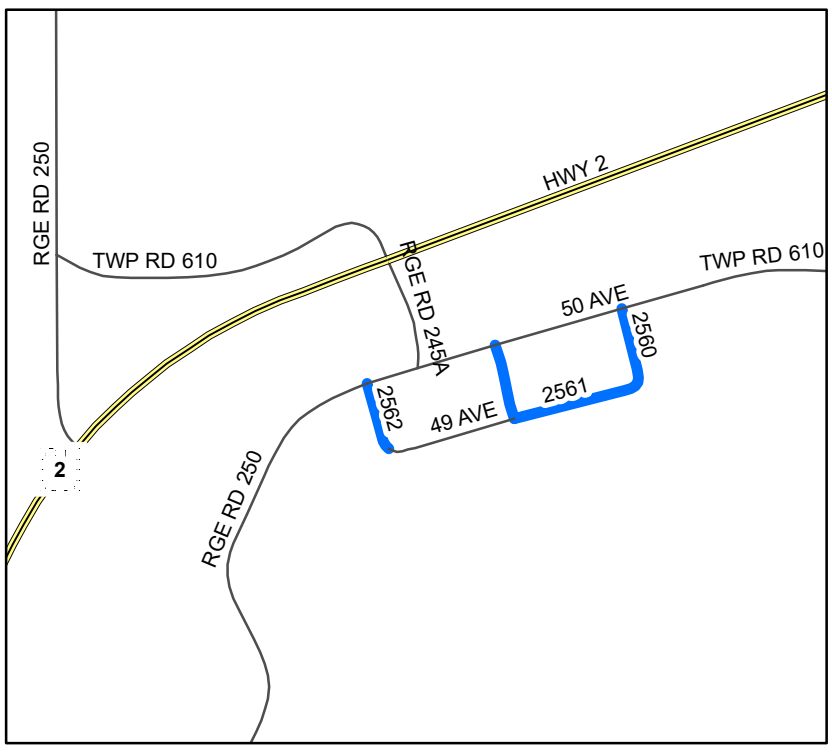

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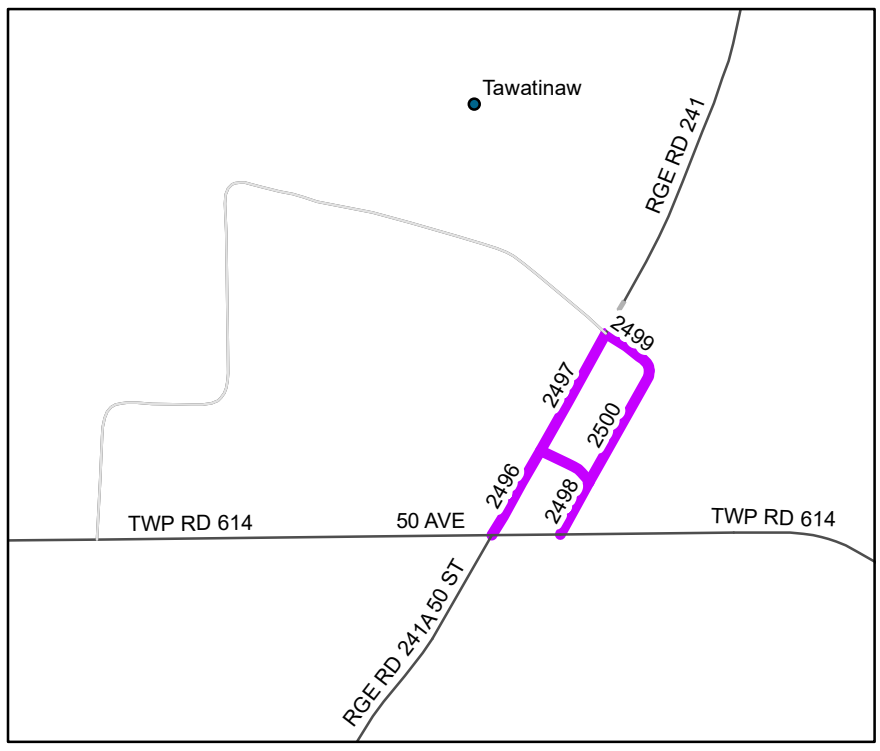

Tawatinaw

Legend

Westlock Roads **Year**: 2019; 2020 - 2024; 2025 - 2029

Divisions

Waterbody

Notes

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Westlock COUNTY growing opportunity

Stantec

Project Location: Westlock, AB

116239510

Prepared by JA on 2018-07-20

Client/Project: Westlock County

Figure No. **7.1.5**

Title: **Division 5: Road Construction**

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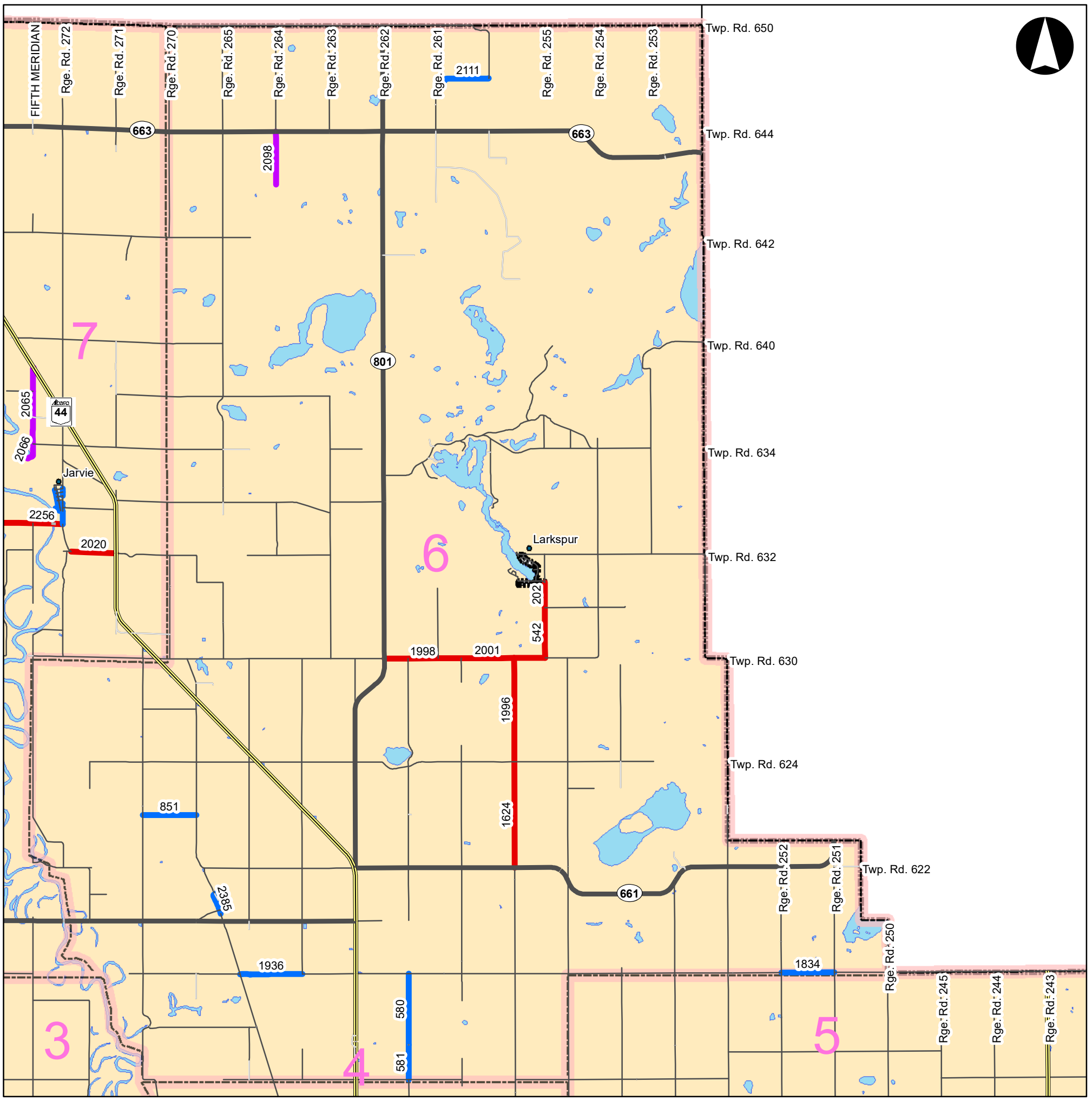
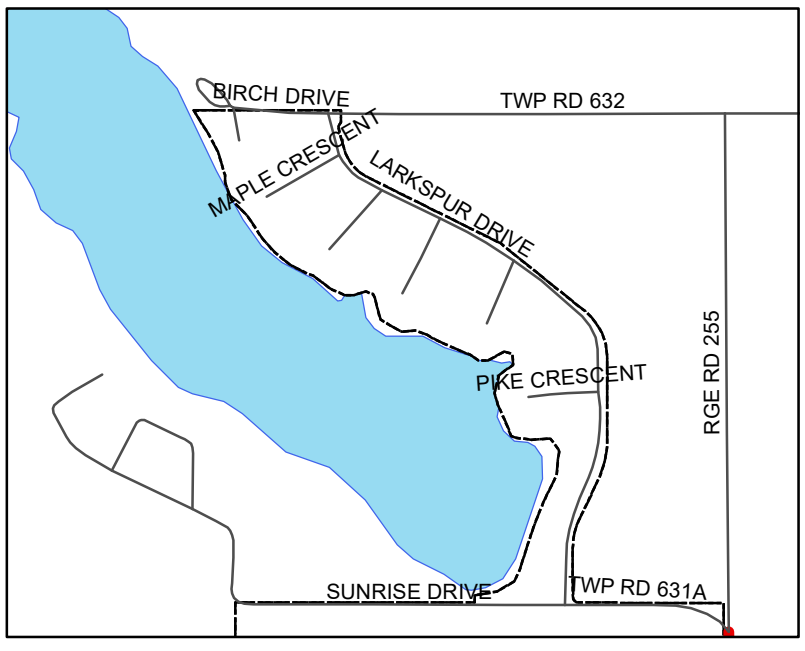
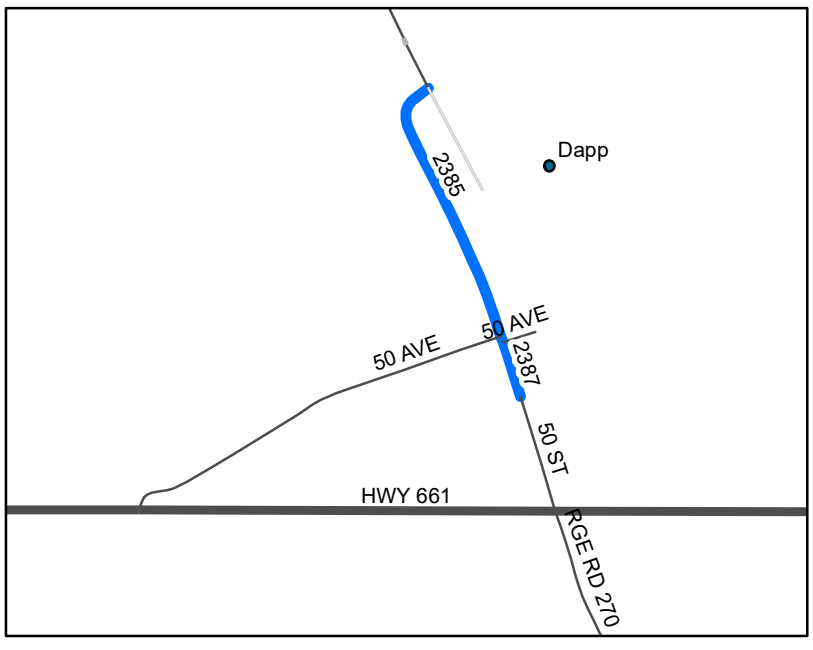




Larkspur



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Westlock Roads **Year**

2019

2020 - 2024

2025 - 2029

Divisions

Waterbody

Notes

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Westlock COUNTY
growing opportunity

Stantec

Project Location
Westlock, AB

116239510
Prepared by JA on 2018-07-20

Client/Project
Westlock County

Figure No.
7.1.6

Title
Division 6: Road Construction

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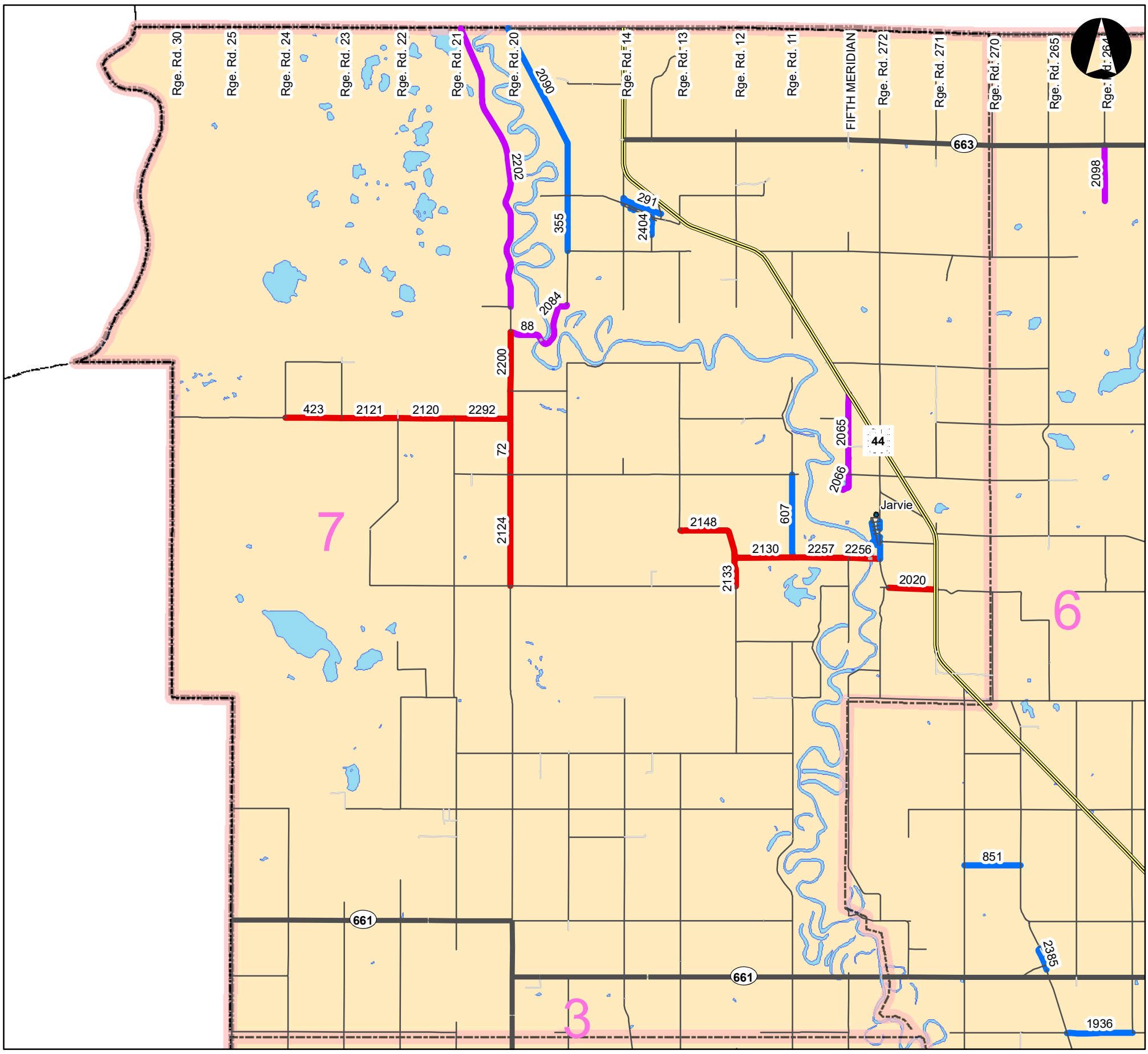
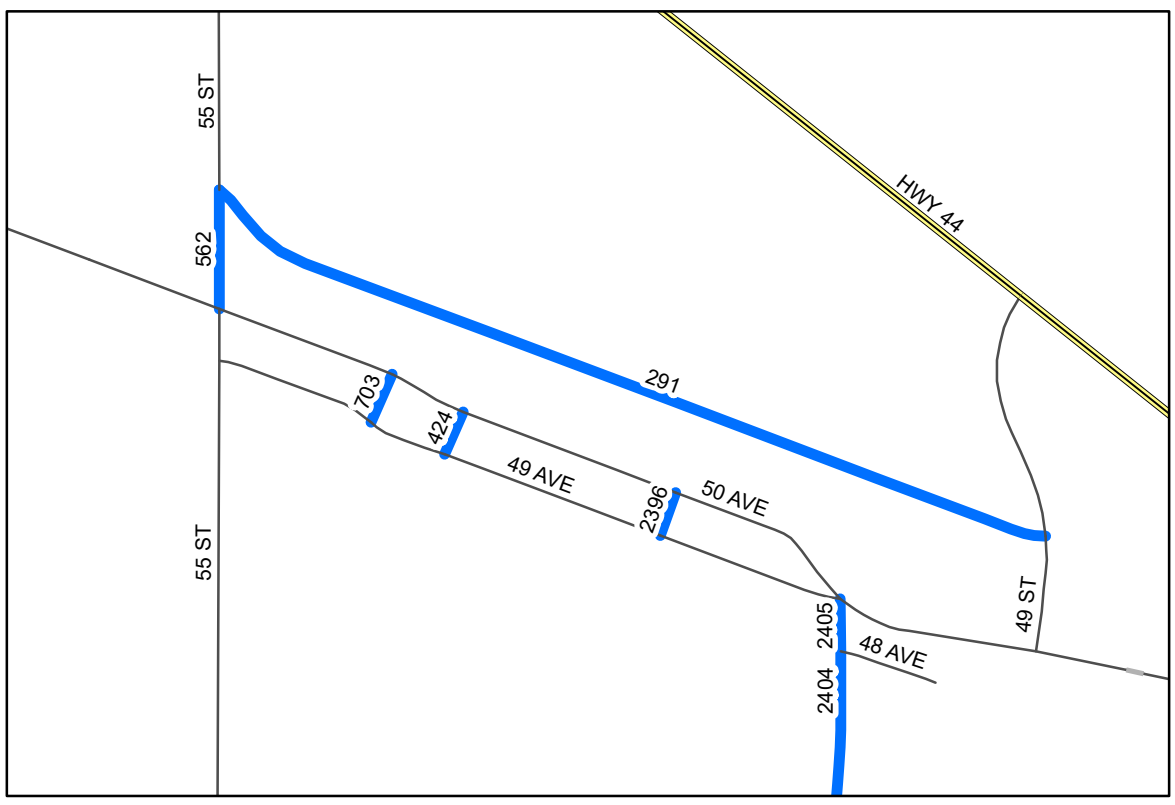
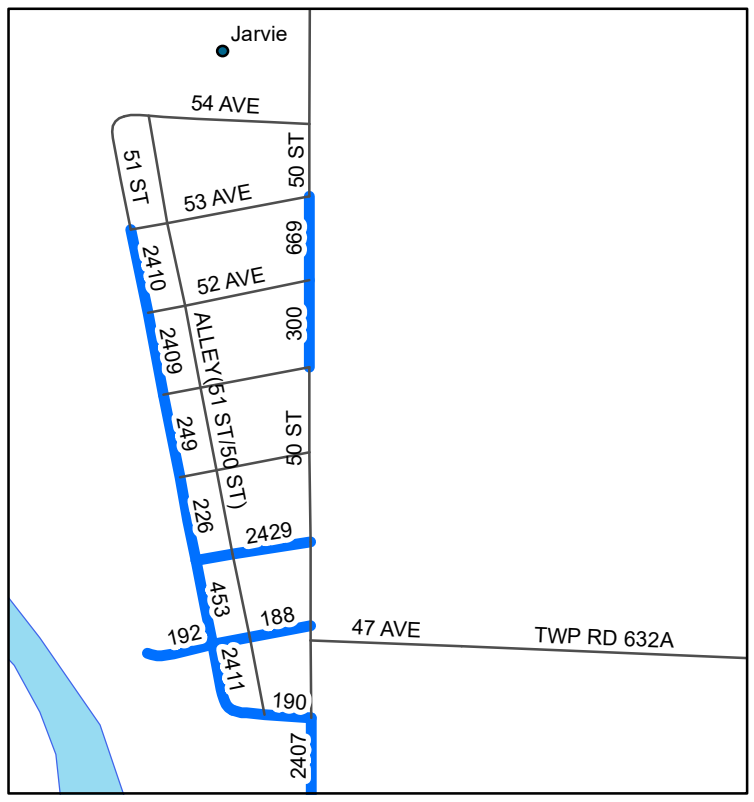




Fawcett



Jarvie

Legend

Westlock Roads **Year**

2019

2020 - 2024

2025 - 2029

Divisions

Waterbody

Notes

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Westlock COUNTY
growing opportunity

Stantec

Project Location
Westlock, AB

116239510
Prepared by JA on 2018-07-20

Client/Project
Westlock County

Figure No.
7.1.7

Title
Division 7: Road Construction

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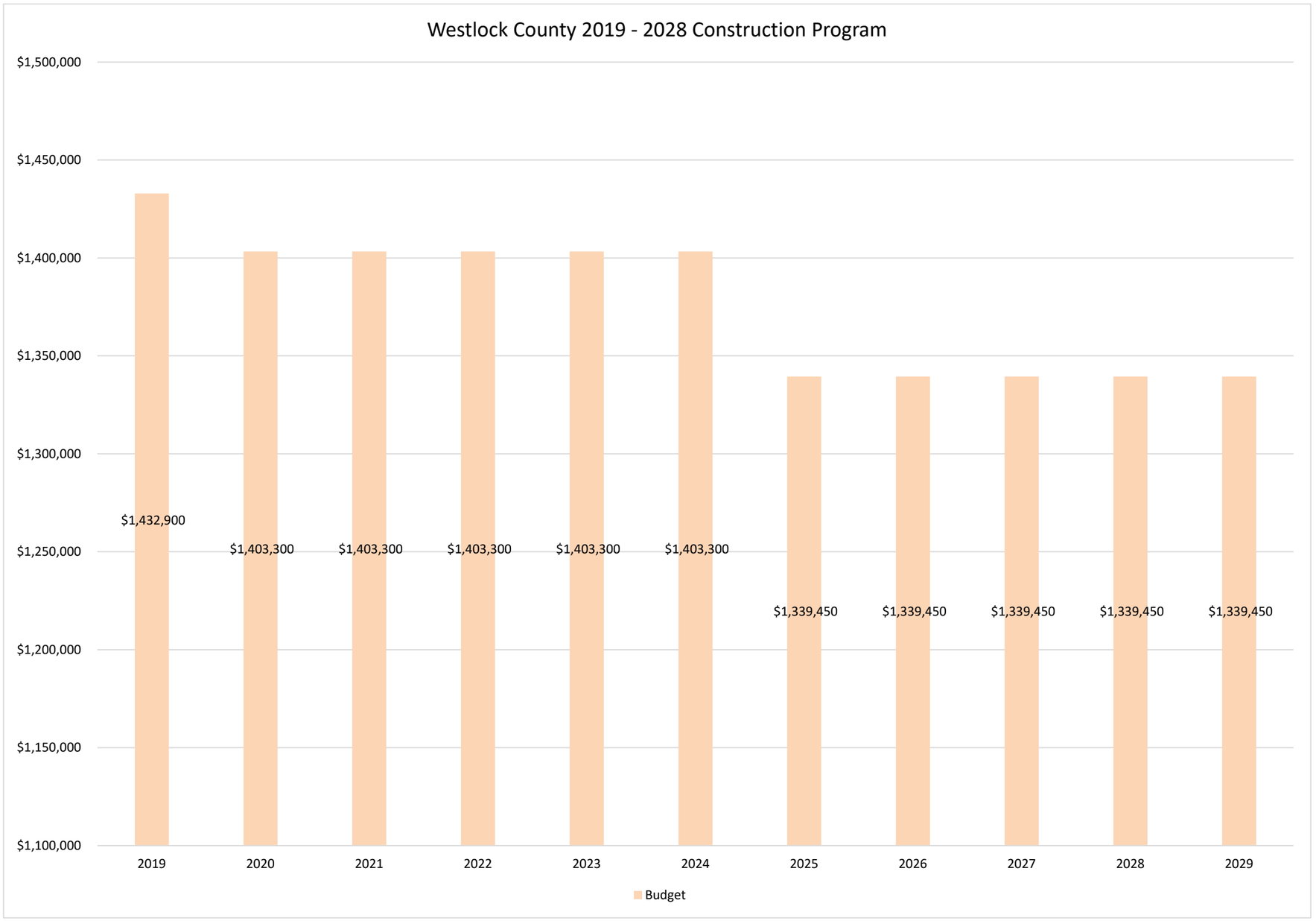
Westlock County 2019 - 2028 Construction Program
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$1,450,000
$1,400,000
$1,350,000
$1,300,000
$1,250,000
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$1,150,000
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2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
Budget