

VULCAN COUNTY & VILLAGE OF ARROWWOOD  
INTERMUNICIPAL DEVELOPMENT PLAN  
BACKGROUND REPORT 2019





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Prepared for Vulcan County and the Village of Arrowwood**

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## 1.0 INTRODUCTION

Vulcan County and the Village of Arrowwood are located in southern Alberta surrounded by an abundance of prime agricultural land. Arrowwood is located in the northern part of Vulcan County, just south of the Bow River (see Map 1) approximately 110 kilometers southeast of Calgary and 140 kilometers north of Lethbridge. The municipalities have economic and social ties and given these ties; it is logical for both municipalities to coordinate land use planning as well.

Intermunicipal planning recognizes that land surrounding an urban municipality, known as the fringe area, is subject to challenges and opportunities and both urban and rural municipalities benefit from proper intermunicipal planning. Urban municipalities gain by having input into the types of uses, development standards and subdivision that can occur within the fringe area. Since land in the fringe is outside their jurisdiction, the urban municipality has an interest in influencing certain lands from development that may negatively affect future growth. Conversely, rural municipalities benefit by gaining some insight into the potential expansion strategies of the urban municipality. The coordination and collaboration between municipalities is essential to managing planning matters in an efficient manner.

In 2017, Vulcan County and the Village of Arrowwood agreed to undertake the preparation of an Intermunicipal Development Plan (IMDP). The first step of the IMDP process is to outline in this background document existing land use, goals, objectives, and the implementation of intermunicipal planning and work in conjunction with existing statutory plans in the affected area. Following the completion of the background report, meetings, discussions and the creation of the IMDP will take place in 2018.

### 1.1 COMMUNITY CONTEXT

Vulcan County contains approximately 5,433 square kilometres (1,342,524 acres) of land and is bordered by the Municipal Districts of Foothills and Willow Creek to the west, Lethbridge County to the south, the Municipal District of Taber to the southeast, the County of Newell to the east, and Wheatland County and Siksika First Nation to the north. The 2016 Federal Census indicated there were 3,984 residents in Vulcan County. The economy of Vulcan County is predominately agriculture-based, with grain crops accounting for the bulk of production.

The Village of Arrowwood has a population of 207 residents (2016 Federal Census) within a corporate boundary of 0.40 square kilometers (97.89 acres). The Village is an attractive area for those employed in local industries and farming operations. With its location along Highway 547, the community has a short driving distance to major transportation routes such as Highway 1 and Highway 23. While acting as a service centre to neighbouring agricultural operations, Arrowwood also benefits from oil and gas activity in the surrounding area.

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## 1.2 PURPOSE

The purpose of this background report is to examine the characteristics in the fringe area outside of the Village of Arrowwood's boundary in Vulcan County. This report will provide a population analysis, identify land use types, subdivision activity, and opportunities for growth within the study area in which both the Village and County have agreed upon to address areas of mutual interest. The purpose of this report is as follows:

- provide an analysis of the existing circumstances,
- attempt to identify issues and opportunities that have emerged from the analysis of the preliminary information, and
- act as an agenda for future discussions by the Intermunicipal Plan Committee.

Data has been collected and summarized for a defined study area (see Map 2), encompassing those lands within and adjacent to the Village boundary. Although the final intermunicipal plan boundary may be different, the impacts of certain land uses have more far-reaching influences and it is important to understand the landscape at a greater scale. This information will be utilized, in part, in the preparation of an Intermunicipal Development Plan (IMDP).

## 1.3 LEGISLATIVE FRAMEWORK

Due to recent changes to the *Municipal Government Act, Revised Statutes of Alberta 2000 (as amended)* (MGA), an IMDP is now a compulsory requirement as of April 1, 2018 and must be in place by April 1, 2020. In order to foster cooperation and mitigate conflict between municipalities, the MGA requires municipalities to:

*631(1) Two or more councils of municipalities that have common boundaries that are not members of a growth region as defined in Section 708.01 must, by each passing a bylaw in accordance with this Part or in accordance with Sections 12 and 692, adopt an intermunicipal development plan to include those areas of land lying within the boundaries of the municipalities as they consider necessary.*

*631(2) An intermunicipal development plan*

*a) must address*

- i. the future land use within the area,*
- ii. the manner of and the proposals for future development in the area,*
- iii. the provision of transportation systems for the area, either generally or specifically,*
- iv. the co-ordination of intermunicipal programs relating to the physical, social and economic development of the area,*
- vi. environmental matters within the area, either generally or specifically, and*

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vii *any other matter related to the physical, social or economic development of the area that the councils consider necessary.*

*and*

b) *must include*

- i. *a procedure to be used to resolve or attempt to resolve any conflict between the municipalities that have adopted the plan,*
- ii. *a procedure to be used, by one or more municipalities, to amend or repeal the plan, and*
- iii. *provisions relating to the administration of the plan.*

The South Saskatchewan Regional Plan (SSRP) came into effect on September 1, 2014. The Regional Plan is guided by the vision, outcomes and intended directions set by the Strategic Plan portion of the SSRP while the Implementation Plan establishes the objectives and the strategies that will be implemented to achieve the regional vision. As part of the Implementation Plan, *Section 8: Community Development*, includes guidance regarding Planning Cooperation and Integration between municipalities with the intention to foster cooperation and coordination between neighbouring municipalities and between municipalities and provincial departments, boards and agencies. Section 8 contains the following broad objectives and strategies.

#### ***Objectives***

- *Cooperation and coordination are fostered among all land use planners and decision-makers involved in preparing and implementing land plans and strategies.*
- *Knowledge sharing among communities is encouraged to promote the use of planning tools and the principles of efficient use of land to address community development in the region.*

#### ***Strategies***





- 8.1** *Work together to achieve the shared environmental, economic, and social outcomes in the South Saskatchewan Regional Plan and minimize negative environmental cumulative effects.*
- 8.2** *Address common planning issues, especially where valued natural features and historic resources are of interest to more than one stakeholder and where the possible effect of development transcends jurisdictional boundaries.*
- 8.3** *Coordinate and work with each other in their respective planning activities (such as in the development of plan and policies) and development approval process to address issues of mutual interest.*
- 8.4** *Work together to anticipate, plan and set aside adequate land with the physical infrastructure and services required to accommodate future population growth and accompanying community development needs.*

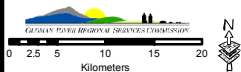


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**LOCATION MAP**

**MAP 1**

-  Arrowwood
-  Vulcan County
-  Major Highway
-  Minor Highway





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- 8.5** *Build awareness regarding the application of land-use planning tools that reduce the impact of residential, commercial and industrial developments on the land, including approaches and best practices for promoting the efficient use of private and public lands.*
  - 8.6** *Pursue joint use agreements, regional services commissions and any other joint cooperative arrangements that contribute specifically to intermunicipal land use planning.*
  - 8.7** *Consider the value of intermunicipal development planning to address land use on fringe areas, airport vicinity protection plan or other areas of mutual interest.*
  - 8.8** *Coordinate land use planning activities with First Nations, irrigation districts, school boards, health authorities and other agencies on areas of mutual interest.*

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## 2.0 STUDY AREA ANALYSIS

For the purpose of analysis, a Study Area was established approximately two miles from the Village of Arrowwood's municipal boundary. As identified in Map 2, the Study Area covers approximately 4,426 hectares (10,937 acres) and encompasses approximately 16 sections of land. The primary highways near Arrowwood include Highway 547, which is the main access point of the Village, Highway 24, and Highway 542. Range Road 234 is also a commonly used road in the Study Area for residents of Vulcan County travelling between Arrowwood and Milo.

For the purpose of this analysis, it was considered reasonable to survey land use patterns and activities on a larger scale to catch any geographic characteristics and soil capabilities that may have the potential to influence land use activities in either the urban and rural areas.

### 2.1 PHYSICAL CHARACTERISTICS

Located within Vulcan County, the Study Area consists of primarily flat topography, ideal for grain production with moderate coulee features to the north along the Bow River. The dominant soil in the region is dark brown chernozemic, having slight moisture limitations. The climate in the region has over 40 centimetres of annual precipitation and approximately 122 frost-free days. Additionally, the area's climate is influenced by the warm chinook winds that blow off the eastern slopes of the Rocky Mountains. The effect for residents is milder winters and hot summers. The warm winds can also create major weather events as cool northern air mixes with warm air to create winter blizzards, thunderstorms and even tornadoes.

### 2.2 SOIL PRODUCTIVITY

The Canada Land Inventory (CLI) classes the varying potential of a specific area according to the Soil Capability Classification for Agriculture, which is based on the characteristics of the soil as determined by soil surveys. Soils are grouped into seven classes according to the potential of each soil for the production of field crops, Class 1 rating the highest and Class 7 rating the lowest.

The study area contains Class 2, Class 3 and Class 5 soils (Map 3). Approximately 2,627.4 hectares (6,492 acres) or 59 percent of soils in the Study Area are Class 2, which have moderate productivity limitations. The soils are deep, hold moisture well, and can be managed and cropped with little difficulty. Under good management, these soils can have moderately high or high productivity for a wide range of crops. Therefore, a substantial portion of the Study Area is good quality agricultural land.

Class 3 soils are located mostly in the southern portion of the Study Area and east of Arrowwood directly west of the East Arrowwood Creek. Sections 29 and 30 are entirely comprised of Class 3 soils and parts of Sections 25, 27, 28, 31, 32, and 38 have Class 3 soils. Class 3 soils comprise approximately 1,351.6 hectares (3,339 acres) or 30 percent of the soils in the Study Area and have moderately high productivity with moderately severe crop limitations. Agricultural activity is somewhat limited in areas with Class 3 soils.

Class 5 soils which have severe limitations are found predominantly east of the Village along the East Arrowwood Creek and north of the Village near the irrigation canal and comprise approximately 447.5 hectares (1,105 acres) or 10 percent of the Study Area. Due to the creek and creek banks, this area is severely limited for cultivated agricultural practices as the soils are not capable of use for sustained production of annual field crops. Class 5 soils are not ideal for cultivated agriculture due to changing elevations and typically low-lying land.

## 2.3 LAND USE

The land within the Study Area is primarily used for agricultural activities and depending upon the topography, the land is either cultivated or used for grazing purposes. Other significant land uses in the fringe area include oil and gas activities, grazing, and country residences. A survey of existing land use was completed in 2018 (see Map 4) and the results found in Table 1.

**Table 1**  
**Vulcan County and Village of Arrowwood**  
**Fringe Area Land Use 2018**

| Type of Land Use     |                     | Number of Uses |
|----------------------|---------------------|----------------|
|                      |                     | Study Area     |
|                      |                     | 2018           |
| <b>Residential:</b>  | Country Residence   | 2              |
|                      | Farmstead           | 17             |
|                      | Abandoned Farmstead | 1              |
|                      | Farm Building       | 5              |
|                      | <b>Total:</b>       | <b>28</b>      |
| <b>Commercial:</b>   |                     | 0              |
| <b>Industrial:</b>   |                     | 0              |
| <b>Institutional</b> | Sewage lagoon       | 1              |
|                      | Cemetery            | 1              |
|                      | Recreational        | 2              |
| <b>Utilities:</b>    | Utilities           | 1              |
| <b>Gas and Oil:</b>  | Wells               | 76             |
| <b>TOTAL:</b>        |                     | <b>109</b>     |

Source: ORRSC

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## 2.4 RESULTS OF THE LAND USE SURVEY

### *RESIDENTIAL*

Residences in this area are mainly farmsteads consisting of a home with farm buildings such as shops, bins, and barns. There are 17 farmsteads within the Study Area, consisting of approximately 88 percent of all residences in the fringe. Conversely, only 2 dwellings in the study boundary are considered country residences, consisting of a home with no farm buildings on the subdivided parcel. Approximately 5 farm buildings stand alone in the fringe which contains shops, barns, grain bins, and livestock pens. Unlike many urban fringe areas in Alberta, there is not a notable prevalence of country residences in the Study Area, with the most recent country residential subdivision occurring in 2007. Many of the recent subdivisions have been for farmsteads, assuming additional buildings on the property are for agricultural purposes.

### *INSTITUTIONAL, GAS, AND OTHER USES*

Non-agricultural uses in the Study Area include oil and gas wells, institutional and utility uses. Institutional uses include the Village's sewage lagoon to the northeast of the Village and the cemetery located southeast of the community. Recreational land use includes the rodeo grounds and corrals situated directly south of Arrowwood. The one utility land use located south of the sewage lagoon is a cell phone tower. The largest land use activity, aside from agriculture, is oil and gas with 76 wells located within the Study Area.

### *SUBDIVISION ACTIVITY*

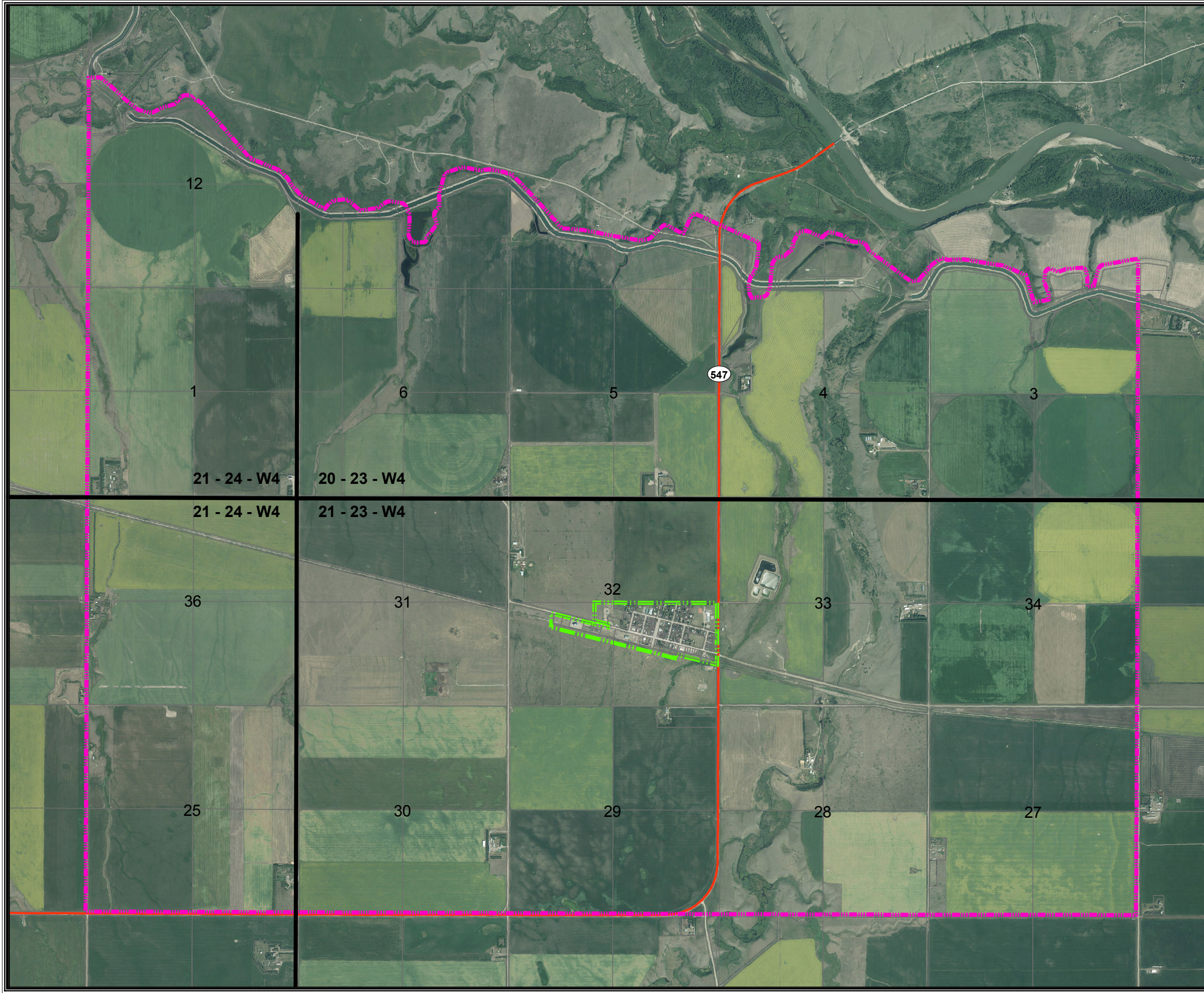
Figure 1 and Table 2 indicate the total number of subdivisions within the Study Area between 1985 and 2015 using five-year periods. Over the last three decades, subdivision activity in the area has been fairly limited with only one subdivision between 1985 and 1989, four between 1990 and 1999 and three between 2000 and 2009. In recent years, two subdivisions occurred between 2010 and 2018.

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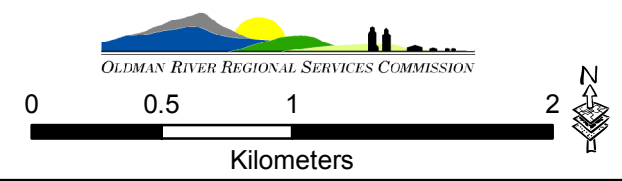
IMDP STUDY AREA

MAP 2

- IMDP Study Area (4426.4±ha)
- Village of Arrowwood Boundary
- Highways









Aerial Photo Date: 2015

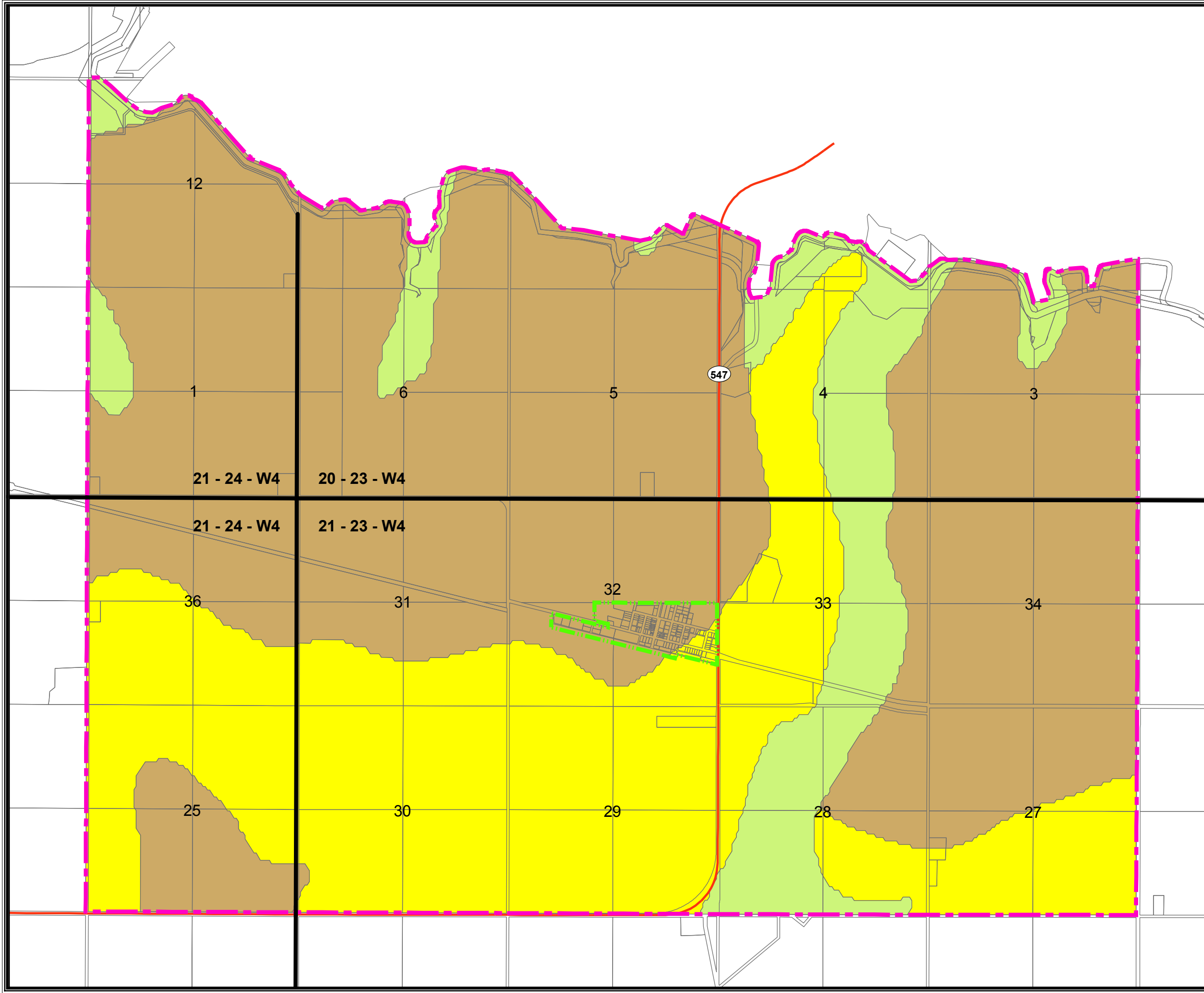


**VULCAN COUNTY  
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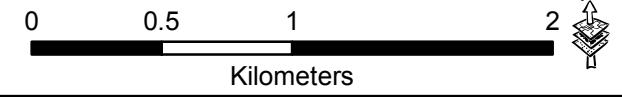
**SOIL CAPABILITY FOR AGRICULTURE  
INDEXED BY CANADA LAND INVENTORY**

**MAP 3**

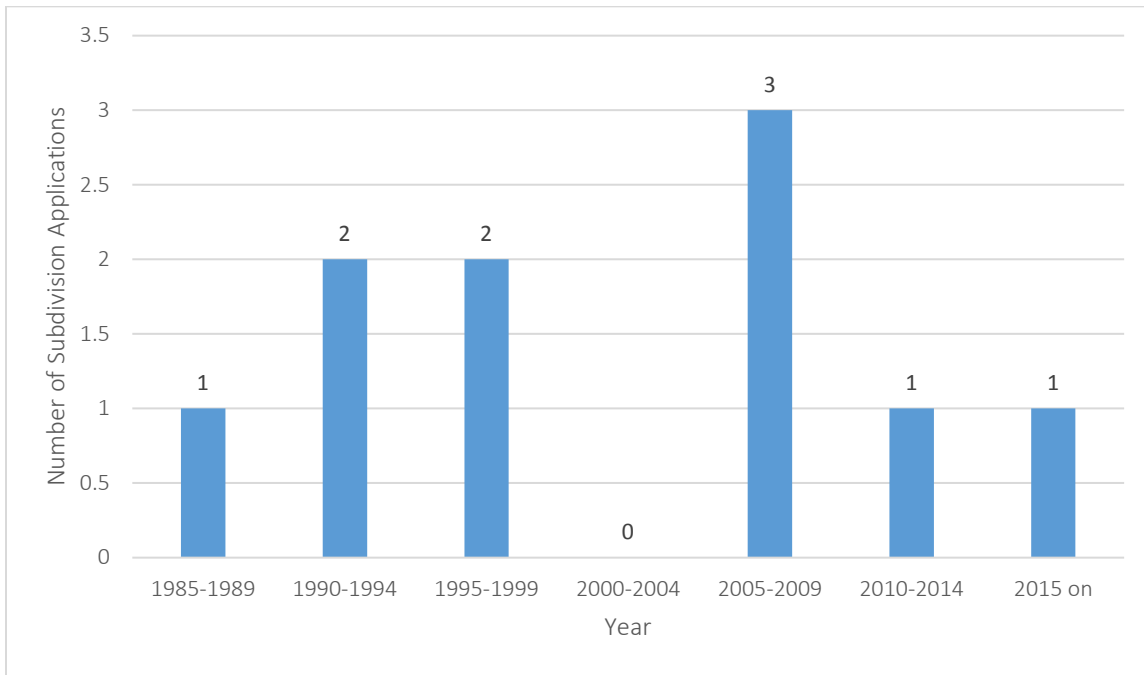
-  IMDP Study Area
-  Village of Arrowwood Boundary
-  Highways
-  2 - Moderately High to High Productivity, Moderate Crop Limitations (2627.4±ha)
-  3 - Moderately High Productivity, Moderately Severe Crop Limitations (1351.6±ha)
-  5 - No Annual Field Crops, Severe Limitations (447.4±ha)



\*Source: Canada Land Inventory, National Soil DataBase, Agriculture and Agri-Food Canada. 1998.



**Figure 1**  
**Comparison of Subdivision Activity in the Study Area: 1985 – 2018**



Source: ORRSC

**Table 2**  
**Comparison of Subdivision Activity in the Study Area 1985 – 2018**

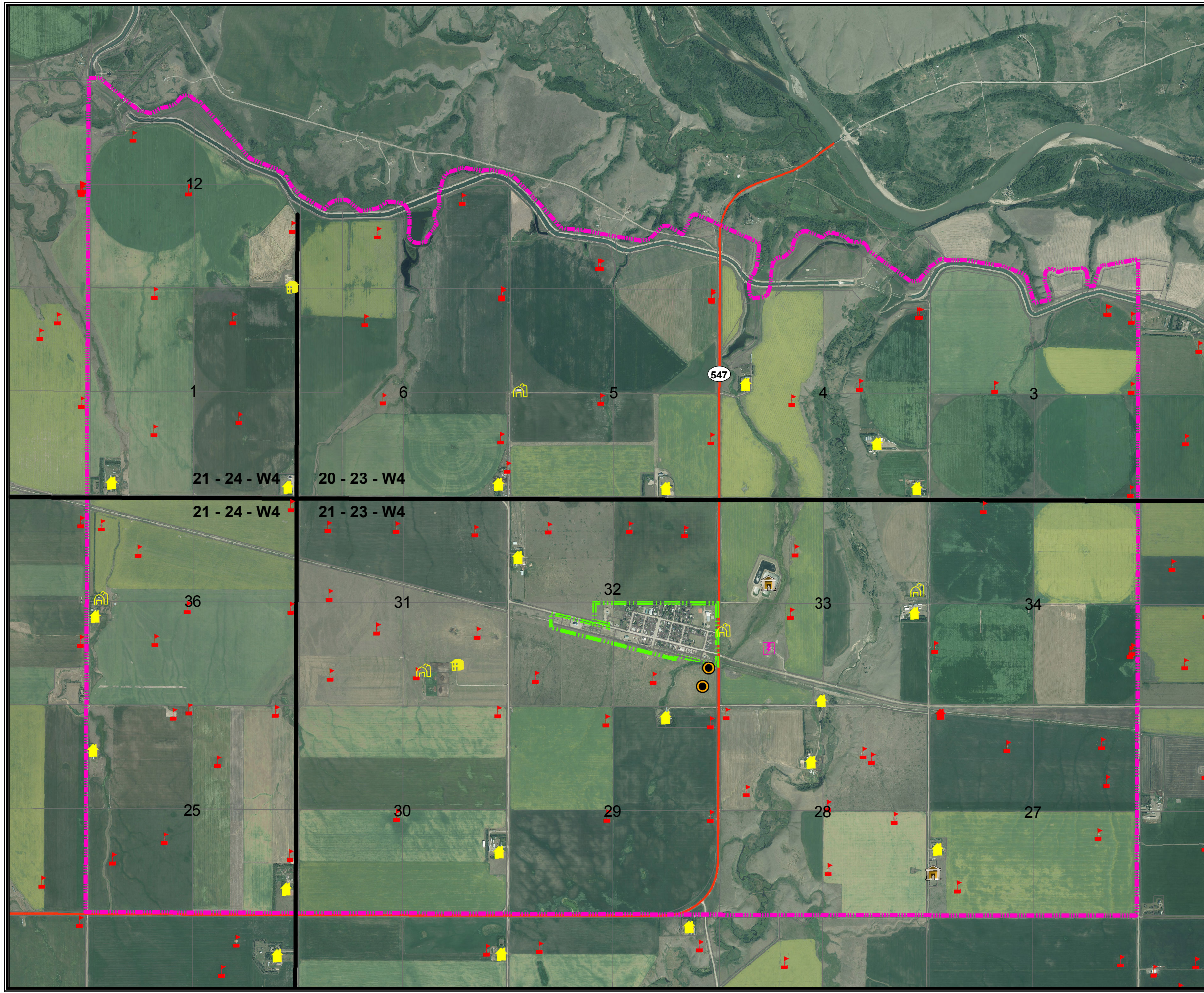
| File Number | Subdivision Use     | Number of Lots | Legal Description                        | Parcel size (acres) |
|-------------|---------------------|----------------|--|---------------------|
| 1986-0-091  | Country Residential | 1              | SW 1/4 36-20-24 W4M                      | 3.44                |
| 1992-0-227  | Country Residential | 1              | SW 1/4 1-21-24 W4M                       | 2.65                |
| 1994-0-043  | Country Residential | 1              | W 1/2 4-21-23 W4M                        | 12.38               |
| 1995-0-051  | Country Residential | 1              | SW 1/4 27-20-23 W4M                      | 3.0                 |
| 1996-0-024  | Country Residential | 1              | SE 1/4 1-21-24 W4M                       | 6.38                |
| 2005-0-027  | Country Residential | 1              | S 1/2 33-20-23 W4M & NE 1/4 28-20-23 W4M | 17.57               |
| 2007-0-011  | Country Residential | 1              | SE 1/4 12-21-24 W4M                      | 2.99                |
| 2008-0-270  | Country Residential | 1              | SW 1/4 27-20-23 W4M                      | 5.48                |
| 2010-0-048  | Sewage Lagoon Site  | 1              | NW 1/4 33-20-23 W4M                      | 19.78               |
| 2015-0-110  | Country Residential | 1              | SW 1/4 5-21-23 W4M                       | 5.0                 |

Source: ORRSC

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**EXISTING LAND USE**

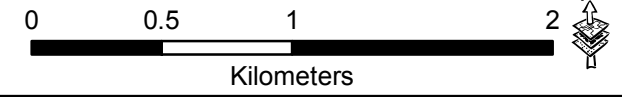
**MAP 4**



- Existing Land Use**
- Farmstead
  - Farm Building
  - Abandoned Farmstead
  - Country Residence
  - Institutional
  - Recreational
  - Utilities
  - Oil/Gas Well
  - IMDP Study Area
  - Village of Arrowwood Boundary
  - Highways



Aerial Photo Date: 2015





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## 3.0 VULCAN COUNTY

### 3.1 POPULATION ANALYSIS

This section illustrates the historical growth of the population and provides a basis for population projections. The way in which the population has changed reveals some important trends in Vulcan County's population. Table 3 displays Vulcan County's historic population change.

**Table 3**  
**Vulcan County Growth Rates 1986 - 2016**

| Year           | Population | Vulcan 5 Year % change | Vulcan Annual % change | Alberta Annual % change |
|----------------|------------|------------------------|------------------------|-------------------------|
| 1986           | 3,656      | --                     | --                     | --                      |
| 1991           | 3,648      | -0.2%                  | 0.0%                   | 1.4%                    |
| 1996           | 3,829      | 5.0%                   | 1.0%                   | 1.2%                    |
| 2001           | 3,778      | -1.3%                  | -0.3%                  | 3.4%                    |
| 2006           | 3,718      | -1.6%                  | -0.3%                  | 2.1%                    |
| 2011           | 3,875      | 4.2%                   | 0.8%                   | 2.1%                    |
| 2016           | 3,984      | 2.8%                   | 0.6%                   | 2.3%                    |
| <b>Average</b> | -          | 1.5%                   | 0.3%                   | 2.1%                    |

Source: Statistics Canada, 1986-2016 Census

Since 1961, Vulcan County's population has declined and then stabilized at just under 4,000 persons. Over the last three decades, the population of the municipality has fluctuated by less than 400 persons, with a low of 3,648 in 1991 and a high of 3,984 in 2016, marked by average annual growth of 0.3 percent.

### 3.2 AGE STRUCTURE

Population pyramids for Vulcan County show the distribution between various age groups as well as between the male and female segments of the population (see Figures 2 and 3). Vulcan County's population structure resembles a more typical Canadian population pyramid with a significant 'bulge' found in the baby boomer age groups born between the early 1950s and the mid-1960s. The young adult population (20 to 35 years) is relatively small compared to what would be expected in a more balanced population pyramid.

Figure 2: Vulcan County – 2011 Population Structure

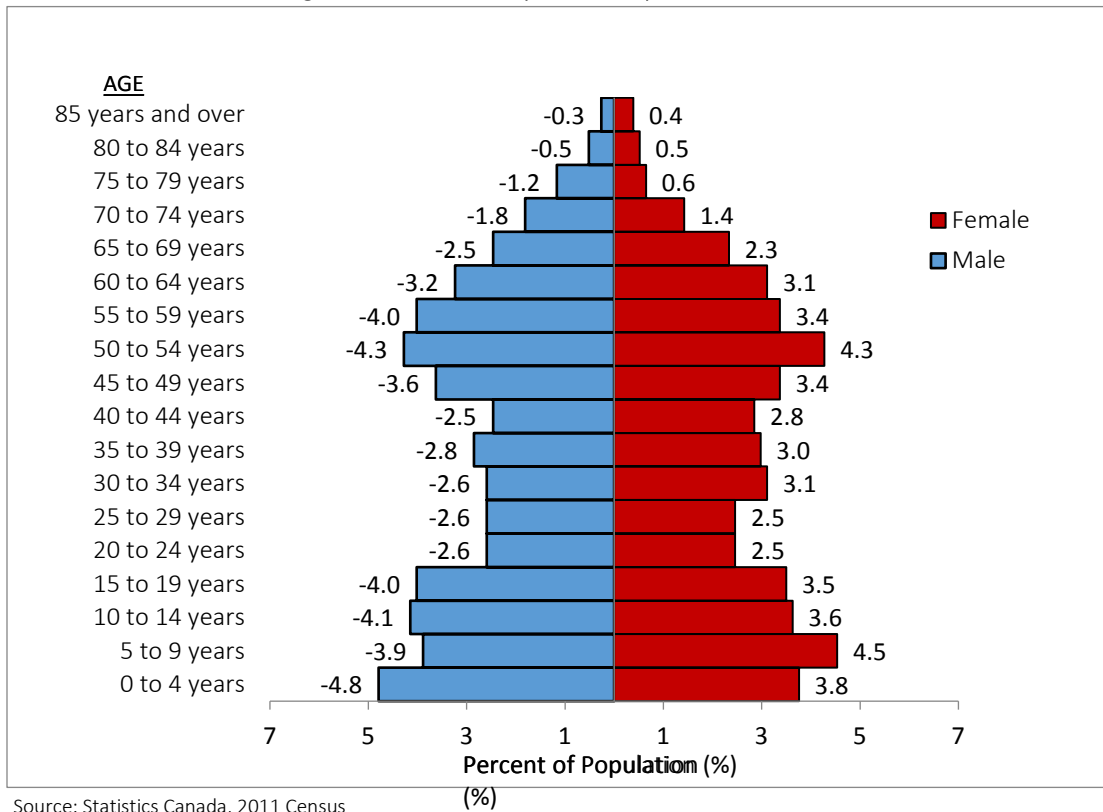
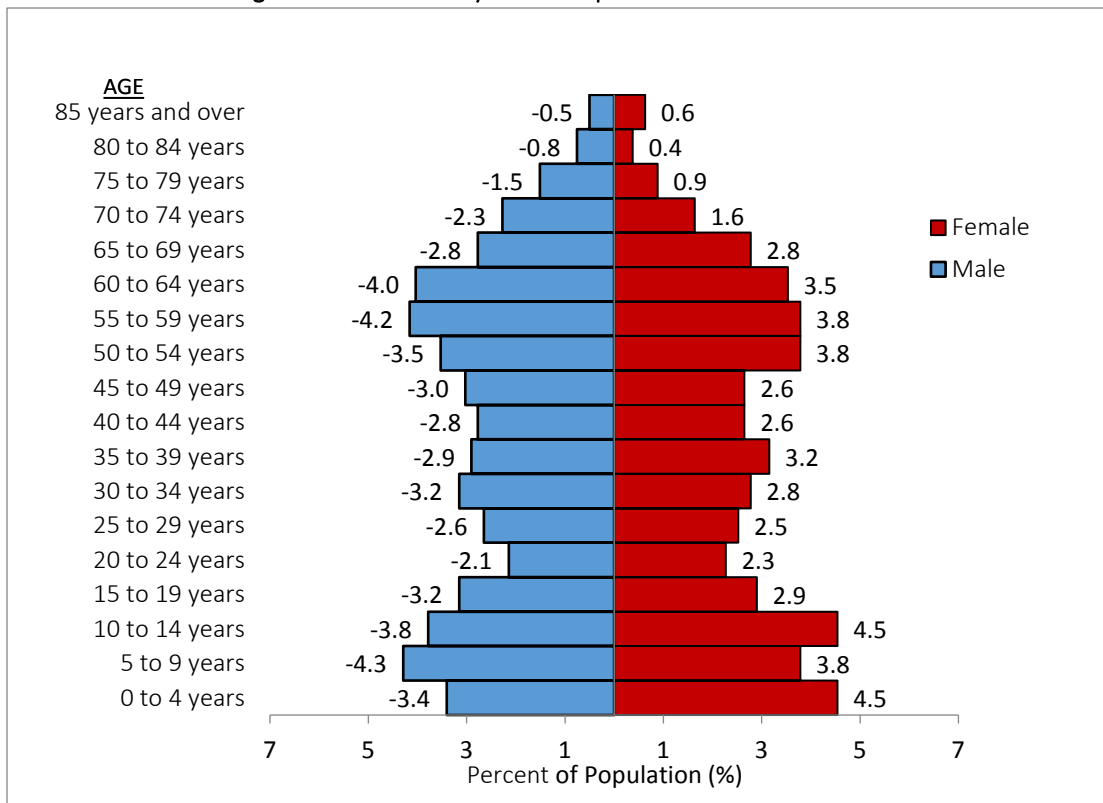


Figure 3: Vulcan County – 2016 Population Structure



### 3.3 POPULATION PROJECTIONS

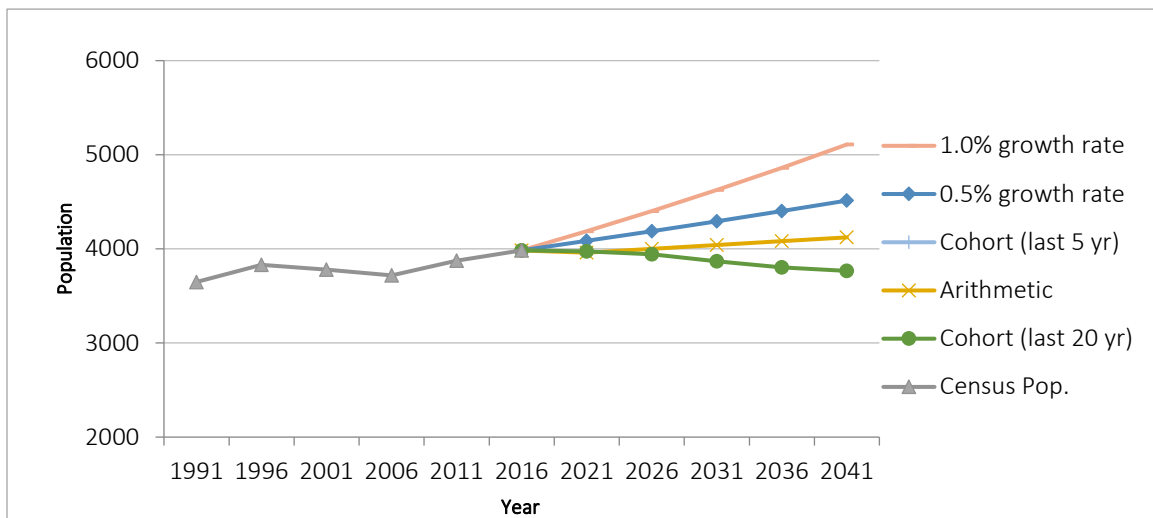
Several different methods of population projections are used in calculating future growth in order to provide the broadest scenario possible. It should be noted that projections are uncertain; they illustrate what a population would be if the assumed trends actually were to occur. The range of results obtained from the various methods of population projections are displayed in Table 4 and Figure 4.

**Table 4**  
Vulcan County Population Projections to 2041

| Year | Census Pop. | Arithmetic | Cohort (last 5 years) | Cohort (last 20 years) | 0.5% growth rate | 1.0% growth rate |
|------|-------------|------------|-----------------------|------------------------|------------------|------------------|
| 1991 | 3,648       |            |                       |                        |                  |                  |
| 1996 | 3,829       |            |                       |                        |                  |                  |
| 2001 | 3,778       |            |                       |                        |                  |                  |
| 2006 | 3,718       |            |                       |                        |                  |                  |
| 2011 | 3,875       |            |                       |                        |                  |                  |
| 2016 | 3,984       |            |                       |                        |                  |                  |
| 2021 |             | 3,959      | 4,043                 | 3,972                  | 4,085            | 4,187            |
| 2026 |             | 4,000      | 4,089                 | 3,941                  | 4,188            | 4,401            |
| 2031 |             | 4,040      | 4,093                 | 3,869                  | 4,293            | 4,625            |
| 2036 |             | 4,081      | 4,101                 | 3,802                  | 4,402            | 4,861            |
| 2041 |             | 4,122      | 4,141                 | 3,766                  | 4,513            | 5,109            |

Source: ORRSC

**Figure 4**  
Vulcan County Population Projections to 2041



Source: Statistics Canada, 1991-2016 Census

The population projections indicate that in 2041 Vulcan County’s population could range between 3,766 and 5,109. The 20-year cohort rate was the only method that projected a decreasing population. Considering the municipality’s historic population trend, it seems most probable that the population in 2041 will be between the arithmetic projection of 3,904 and the 0.5 percent growth rate of 4,513. This would be a slow to moderate growth forecast for the County over the next two decades.

### 3.4 EQUALIZED ASSESSMENT

Equalized assessment is the means of comparing property wealth in a uniform manner for all municipalities. Alberta uses an assessment and tax system where property taxes are based on wealth and wealth is measured by the value of property expressed as an assessment.

Over the last five years the County’s total equalized assessment has increased steadily (see Table 5) with gradual increases in the residential and non-residential sectors, a slight decrease in machinery equipment, and more volatile change in the linear category. Linear assessment experienced a significant gain between 2015 and 2016, followed by a sharp decrease in 2018.

**Table 5**  
**Vulcan County Equalized Assessment 2014 - 2018**

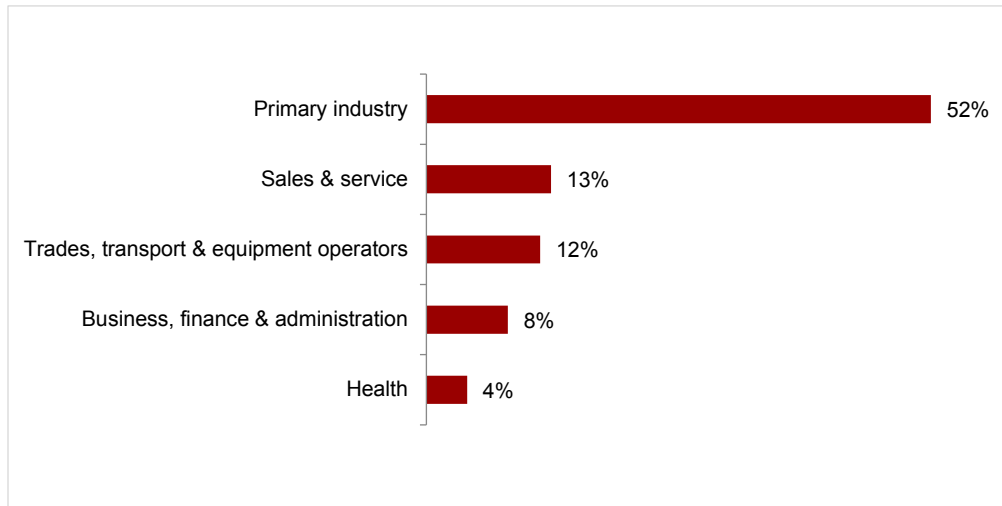
| Year | Residential |    | Non-Residential |   | Farmland    |    | Machinery & Equipment |    | Linear      |    | Total         |     |
|------|-------------|----|-----------------|---|-------------|----|-----------------------|----|-------------|----|---------------|-----|
|      | Amount      | %  | Amount          | % | Amount      | %  | Amount                | %  | Amount      | %  | Amount        | %   |
| 2018 | 453,628,747 | 29 | 85,130,730      | 5 | 203,945,270 | 13 | 116,822,580           | 8  | 688,929,600 | 44 | 1,550,904,657 | 100 |
| 2017 | 450,464,278 | 27 | 80,579,650      | 5 | 203,462,220 | 12 | 123,015,890           | 7  | 813,838,680 | 49 | 1,673,817,618 | 100 |
| 2016 | 420,813,250 | 25 | 71,978,320      | 4 | 204,196,170 | 12 | 135,064,720           | 8  | 854,476,400 | 51 | 1,691,433,400 | 100 |
| 2015 | 383,694,260 | 29 | 67,641,150      | 5 | 204,147,410 | 15 | 144,018,410           | 11 | 541,274,580 | 40 | 1,345,529,490 | 100 |
| 2014 | 366,608,742 | 27 | 65,465,970      | 5 | 204,177,260 | 15 | 163,346,690           | 12 | 540,403,920 | 40 | 1,344,746,802 | 100 |

Source: Municipal Affairs, 2014 - 2018

### 3.5 EMPLOYMENT INFORMATION

According to the 2006 Federal Census, the primary industry was the most common occupation in Vulcan County (see Figure 5). Other common occupations included sales and service; trade, transport and equipment operators; business, finance and administration; and health.

Figure 5  
Vulcan County Top 5 Occupations 2006



Source Statistics Canada, 2006 Census

*\*Note: Current employment information is not available due to change in census methodology*

### 3.6 HOUSING TYPES AND SUPPLY

A total of 91.5 percent of housing in Vulcan County is single-detached houses and is mainly owner-occupied at 79.2 percent (see Table 6). The age of dwellings is older than the provincial average, as 72 percent of County dwellings were constructed before 1991, contrasted to 53 percent provincially.

Table 6  
Vulcan County Dwelling Characteristics 2016

|   | Count | Percent |
|---|-------|---------|
| Number of owned dwellings                             | 950   | 80.2%   |
| Number of rented dwellings                            | 235   | 19.8%   |
| Number of dwellings constructed before 1991           | 850   | 71.7%   |
| Number of dwellings constructed between 1991 and 2016 | 335   | 28.3%   |

Source: Statistics Canada, 2016 Census

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## 4.0 VILLAGE OF ARROWWOOD

### 4.1 POPULATION ANALYSIS

Table 7 displays the Village of Arrowwood’s historic population situation and provides a basis for population projections.

**Table 7**  
**Village of Arrowwood Growth Rates 1986 - 2016**

| Year           | Population | Arrowwood 5 Year % change | Arrowwood Annual % change | Alberta Annual % change |
|----------------|------------|---------------------------|---------------------------|-------------------------|
| 1986           | 154        | -                         | -                         | -                       |
| 1991           | 140        | -10.0                     | -2.0                      | 1.4                     |
| 1996           | 156        | 10.3                      | 2.1                       | 1.2                     |
| 2001           | 195        | 20.0                      | 4.0                       | 3.4                     |
| 2006           | 190        | -2.6                      | -0.5                      | 2.1                     |
| 2011           | 188        | -1.1                      | -0.2                      | 2.1                     |
| 2016           | 207        | 9.2                       | 1.8                       | 2.3                     |
| <b>Average</b> | -          | 4.4%                      | 0.9%                      | 2.1%                    |

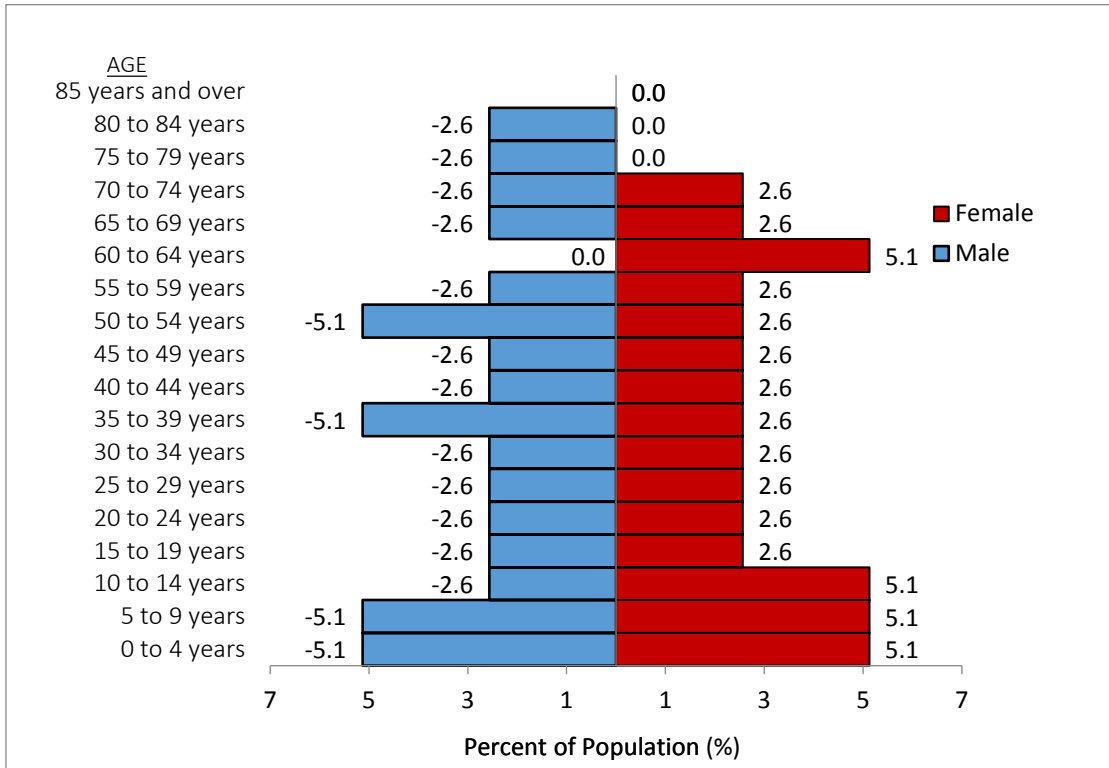
Source: Statistics Canada, 2016 Census

The analysis of historical population trends is important to consider when forecasting future growth. While some small villages in Alberta have struggled with population loss, the Village of Arrowwood’s population has remained at a stable rate over the last 30 years, with the largest change occurring between 1996 and 2001 being a 4 percent increase per annum and a 20 percent increase over a five-year period.

### 4.2 AGE STRUCTURE

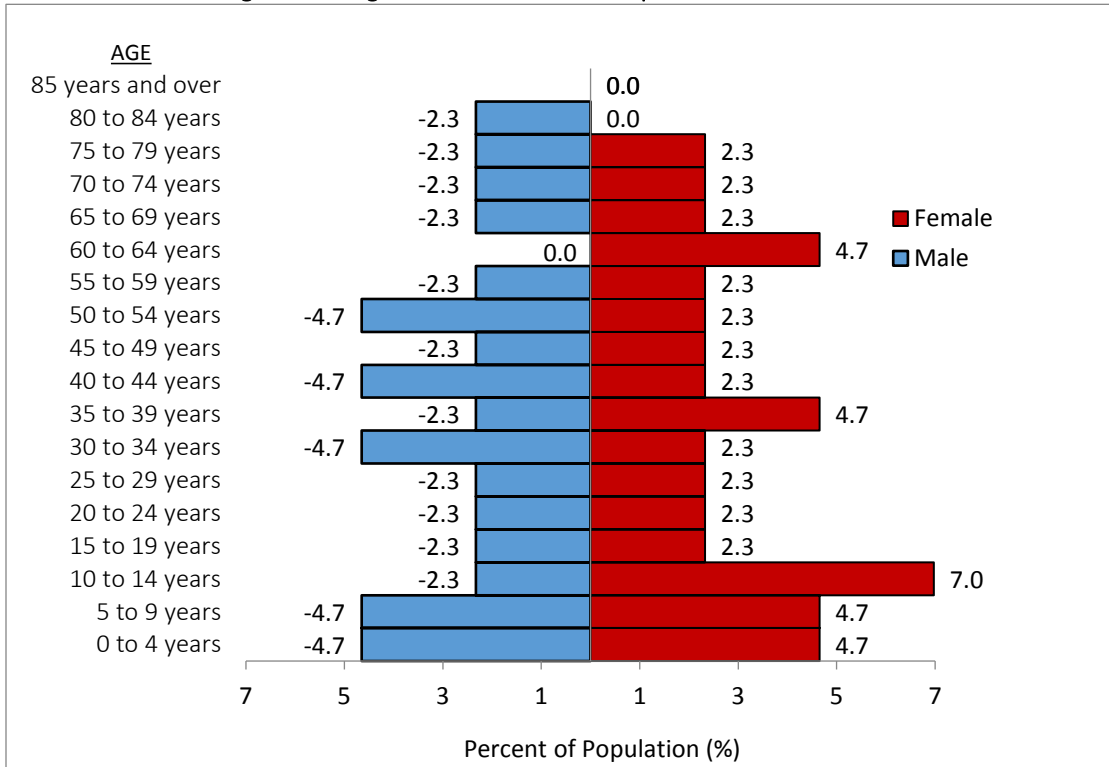
Population pyramids for the Village of Arrowwood illustrate the distribution between the various age groups as well as between the male and female segments of the population (see Figure 6 and 7). The Village of Arrowwood’s population structure is different from a classic population pyramid shape. The structure of the Village’s population is evenly distributed among age groups with the exception of the large children population (0 to 14 years) which comprises 28.6 percent of the total population compared to the much lower provincial average of 19.2 percent. Other age groups are relatively consistent with provincial trends.

**Figure 6: Village of Arrowwood 2011 Population Structure**



Source: Statistics Canada, 2011 Census

**Figure 7: Village of Arrowwood 2016 Population Structure**



Source: Statistics Canada, 2016 Census

### 4.3 POPULATION PROJECTIONS

Population projections for the Village are displayed in Table 8 below. Several statistical methods to calculate population projections were used such as the arithmetic, cohort survival, and the straight linear method. The results displayed below indicate that a slow to moderate growth rate may be expected for the Village. Considering the Village’s past growth rate tendencies, the most probable growth estimation for Arrowwood will likely be the arithmetic method which anticipates a growth of just under 1 percent per year, similar to the current average growth of 0.9 percent over the past 30-years. This indicates that rapid growth is not likely to occur in the coming years, suggesting that the cohort method or 2 percent growth rate projections may be unrealistic.

**Table 8**  
**Village of Arrowwood Population Projections to 2041**

| Year | Census Pop. | Arithmetic | Cohort<br>(last 5 yr) | Cohort<br>(last 20 yr) | 1%<br>growth rate | 2%<br>growth rate |
|------|-------------|------------|-----------------------|------------------------|-------------------|-------------------|
| 1986 | 154         |            |                       |                        |                   |                   |
| 1991 | 140         |            |                       |                        |                   |                   |
| 1996 | 156         |            |                       |                        |                   |                   |
| 2001 | 195         |            |                       |                        |                   |                   |
| 2006 | 190         |            |                       |                        |                   |                   |
| 2011 | 188         |            |                       |                        |                   |                   |
| 2016 | 207         |            |                       |                        |                   |                   |
| 2021 |             | 219        | 235                   | 226                    | 217               | 228               |
| 2026 |             | 227        | 254                   | 239                    | 228               | 250               |
| 2031 |             | 235        | 273                   | 255                    | 240               | 276               |
| 2036 |             | 243        | 297                   | 274                    | 252               | 303               |
| 2041 |             | 251        | 324                   | 296                    | 264               | 333               |

Source: ORRSC



## 4.4 EQUALIZED ASSESSMENT

Table 9  
Village of Arrowwood Equalized Assessment 2014 - 2018

| Year | Residential |    | Non-Residential |    | Farmland |   | Machinery & Equipment |   | Linear  |   | Total      |     |
|------|-------------|----|-----------------|----|----------|---|-----------------------|---|---------|---|------------|-----|
|      | Amount      | %  | Amount          | %  | Amount   | % | Amount                | % | Amount  | % | Amount     | %   |
| 2018 | 11,897,032  | 79 | 2,957,363       | 20 | 370      | 0 | 55,200                | 0 | 149,420 | 1 | 15,059,385 | 100 |
| 2017 | 11,933,565  | 79 | 2,879,922       | 19 | 370      | 0 | 55,200                | 0 | 146,390 | 1 | 15,015,447 | 100 |
| 2016 | 11,497,613  | 79 | 2,815,211       | 19 | 370      | 0 | 54,800                | 0 | 145,460 | 1 | 14,513,454 | 100 |
| 2015 | 11,510,461  | 81 | 2,525,450       | 18 | 0        | 0 | 55,760                | 0 | 146,570 | 1 | 14,238,241 | 100 |
| 2014 | 11,083,925  | 80 | 2,547,670       | 18 | 0        | 0 | 58,960                | 0 | 145,080 | 1 | 13,835,635 | 100 |

Source: Municipal Affairs, 2014-2018

Over the last five years the Village's assessment base has remained relatively steady, with very slight losses in residential and slight gains in non-residential. Approximately 80 percent is residential and approximately 20 percent consists of non-residential, which is a fairly balanced assessment ratio when compared to similar communities in the region.

## 4.5 HOUSING TYPES AND SUPPLY

The housing types within the municipality are dominated by single-detached houses, comprising 92.9 percent of total houses, which is considerably higher than the provincial average of 61.9 percent. The remaining 7.1 percent consists of movable dwellings, which is comparable to the provincial average of 4.3 percent.

The age of the housing stock is older than the provincial average considerably, which is approximately 93 percent of Village dwellings constructed before 1991, compared to 66 percent province-wide (see Table 10). The remaining 14.3 percent has been built after 1991 which represents 10 dwellings in the Village.

Table 10  
Village of Arrowwood Dwelling Characteristics

| Private Dwellings Occupied by Residents               | Count | Percent |
|---|-------|---------|
| Number of dwellings constructed before 1991           | 65    | 92.9%   |
| Number of dwellings constructed between 1991 and 2016 | 10    | 14.3%   |

Source: Statistics Canada, 2016 Census

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## 4.6 GROWTH CONSTRAINTS

Urban expansion is most cost-effective and beneficial when it occurs in a contiguous fashion. Connecting neighbourhoods to one another minimizes servicing costs, reduces conversion of agricultural land and provides more efficient transportation networks. Thus, when an urban municipality considers expansion it needs to study existing constraints that would prevent it from developing in a logical manner.

Map 5 displays growth restrictions and corresponding buffers that may prevent logical urban expansion. A major constraint in the Study Area is the significant amount of oil and gas wells, totaling 76 wells which each require a 100 metre buffer from adjacent development. Other development is somewhat limited northeast of the Village due to the 300 metre sewage lagoon buffer which restricts residential development, hospitals, schools, and some types of commercial development such as food establishments. Similarly, the east Arrowwood Creek and other low-lying wetlands in the Study Area pose a constraint due to the limited ability to develop or produce high yielding crops on this land. Protection of wetlands is also an important consideration in addition to new SSRP policies regarding conservation, protection of water features, and establishing setbacks to preserve water quality.

## 4.7 URBAN EXPANSION STRATEGY

The logical growth areas for the Village would be north and south of the community. Ideally, residential development would expand north of the existing Village boundary, and non-residential development, such as commercial or industrial land uses, could expand south. Urban growth areas are identified on Map 6.

### *Future Residential Development*

Currently Arrowwood has a few residential lots remaining in neighbourhoods within the municipal boundary. Approximately 8 lots are available on the east side of the Village and a few others exist throughout the community. Infill development will be encouraged before annexing additional land. Ideal future residential growth areas would occur north of the current municipal boundary, as it would be adjacent to current residential and public land uses.

### *Future Commercial and Industrial Growth*

As shown on Map 6, commercial and industrial growth will ideally expand south and west of the existing Village. Some industrial lots currently exist within the municipal boundary along Railway Avenue and there is room to expand west along Railway Avenue. Expansion along Railway Avenue would be beneficial for industrial businesses as it would be easily accessible for truck traffic coming from Highway 547. Additionally, some urban reserve land is located north and south of the industrial area which may be used for non-residential development. A few commercial lots are available within the municipal boundary as well.

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## 5.0 IDENTIFICATION OF PLANNING SCOPE

In general, the intermunicipal policies of the respective Village's draft Municipal Development Plan and the County's Land Use Bylaw have been adequate given the current pace of growth in the urban fringe area. Looking forward, both municipalities have recognized the need for the creation of an IMDP, which will contain many fundamental planning components, including:

- clear goals and objectives of both municipalities as guiding parameters for policy,
- balanced and collective strategic visioning, and
- policy for implementation and enforcement of objectives.

When adopted, the new plan will serve as a basis for decision-making and guide development toward both communities' desired future. It will provide both municipalities with a long-term regional strategic policy framework for guiding growth and development in the fringe area, while having regard for protecting prime agricultural land and outlining a regional structure that manages future growth within the urban-rural interface in the most effective and efficient manner.

Unlike other urban municipalities in Vulcan County, Arrowwood did not have a General Municipal Plan under the Alberta Planning Act which many smaller municipalities completed to manage their economic, environmental, and development objectives. Arrowwood is currently in the process of creating a draft Municipal Development Plan, which will be adopted by April 1, 2020. The IMDP and MDP together will provide the Village with clear goals and future planning to guide the municipality.

### 5.1 GOALS AND OBJECTIVES

Goals and objectives provide a framework which guide municipalities in decision making processes and help to achieve a shared vision for land use and development in areas of mutual interest. General goals and objectives are provided below which both municipalities will work together in conjunction to achieve.

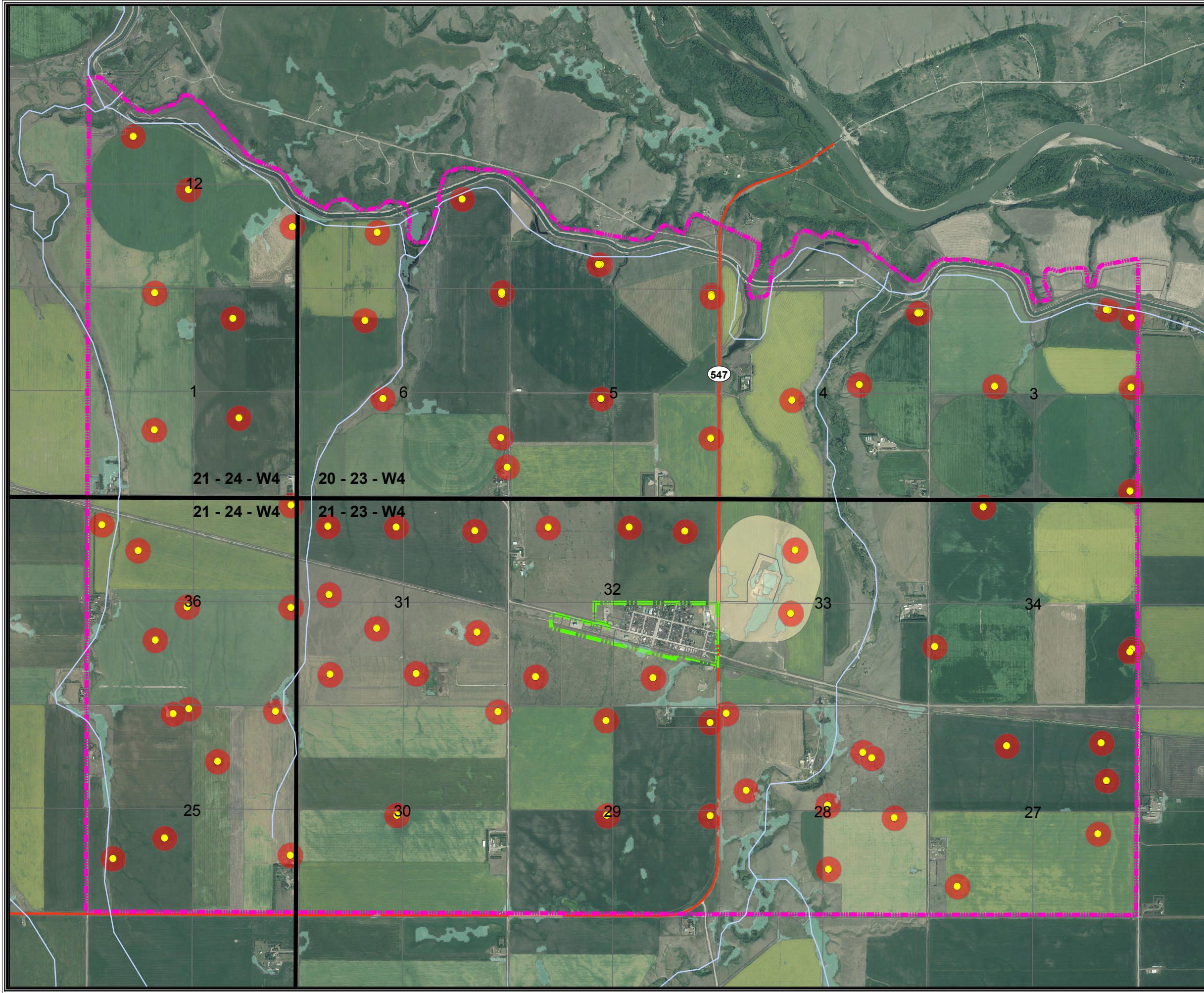
#### *Goals*









1. To provide an intermunicipal policy framework to guide future land use decisions within the Plan boundaries.
2. To address requirements of the Municipal Government Act.
3. To establish principles whereby both municipalities may consistently apply planning policies and land use bylaws within their respective jurisdictions.
4. To protect future servicing and transportation corridors and infrastructure facilities.
5. To address any significant issues that may be identified in the public participation process.

**VULCAN COUNTY  
VILLAGE OF ARROWWOOD  
INTERMUNICIPAL DEVELOPMENT PLAN  
BACKGROUND REPORT 2019**

**GROWTH RESTRICTIONS**

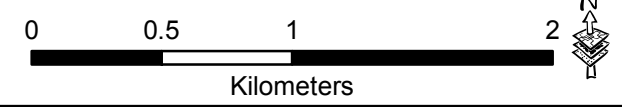
**MAP 5**



-  IMDP Study Area
-  Village of Arrowwood Boundary
-  Highways
-  Creeks
-  Oil/Gas Well
-  Oil/Gas Well Buffer - 100m
-  Sewage Lagoon Buffer - 300m
-  Wetland



Aerial Photo Date: 2015



- 
6. To address any environmental matters.
  7. To protect prime agricultural lands in the fringe area.
  8. To coordinate the future development of the plan area between the County and the Village.
  9. To strengthen the working relationship between the County and the Village.

### *Objectives*

1. The Plan must be strategic in nature, setting broad, high-level, long-term policy directions for the plan area and incorporating the strategic objectives of the County and the Village.
2. The Plan must add value to the planning and development process in the County and the Village, whereas the Plan must not duplicate or infringe on area municipal planning efforts and must have a distinct, complementary and productive role.

## **5.2 URBAN FRINGE**

An urban fringe land use district has a unique role in intermunicipal planning efforts. The fringe area is under the jurisdiction of the rural municipality, where all of the control lies with regards to development, while the urban centre and all its amenities attract the development.

At the present time the Vulcan County Land Use Bylaw identifies an urban fringe area around the Village of Arrowwood (see Map 7). The area contains an approximate two-mile buffer around the Village. The current urban fringe boundary and associated policies should be a significant topic of discussion in the creation of the IMDP.

## **5.3 STRATEGIC VISIONING**

The County and Village are undeniably linked economically and attracting more business to the region is not a mutually exclusive exercise. The decision of one jurisdiction will immediately affect the other in terms of housing, social impact, infrastructure usage, natural resource consumption and the ever-changing sense of place and community.

## **5.4 IMPLEMENTATION**

An IMDP, including the formation of the implementation and enforcement tools will strengthen the municipal partnership between the County and the Village, and further direct future development in the Study Area. The following should be considered:






- 
- A hierarchy of planning documents exists between provincial and municipal land use plans. All municipal planning documents must be in compliance with the MGA and SSRP. Each jurisdiction must embed policies from the IMDP in their other planning documents including their respective MDPs, ASPs, ARPs, and LUBs. Each plan in support of the other will lower the potential for planning decisions in the referral areas that are contrary to the agreed upon common goals of each municipality.
  - The IMDP plan boundary should be reduced from the Study Area boundary. A reduction would make the new plan more manageable and focused.
  - As part of the policy development of the IMDP, the proposed growth areas indicated on Map 6 will need to be reviewed to ensure they still reflect the intentions of the Village and the needs of the County.
  - Review the existing CFO exclusion area for the region in the County's MDP. The current exclusion areas are shown in Map 8.
  - Revisit the current referral system in order to strengthen the IMDP. It is true that each municipality strives to maintain its local autonomy, but in the context of regional and provincial planning this autonomy must be set aside for the plan to have the highest and best results on the region's hub community. Each municipality must recognize this and refer all development within the urban or rural referral areas to the other municipality as the first step of review.

VULCAN COUNTY  
VILLAGE OF ARROWWOOD  
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ARROWWOOD GROWTH AREAS

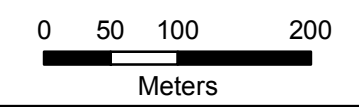
MAP 6



-  Village of Arrowwood Boundary
-  Highways
- Arrowwood Growth Areas**
  -  Recreational
  -  Residential
  -  Commercial and Industrial



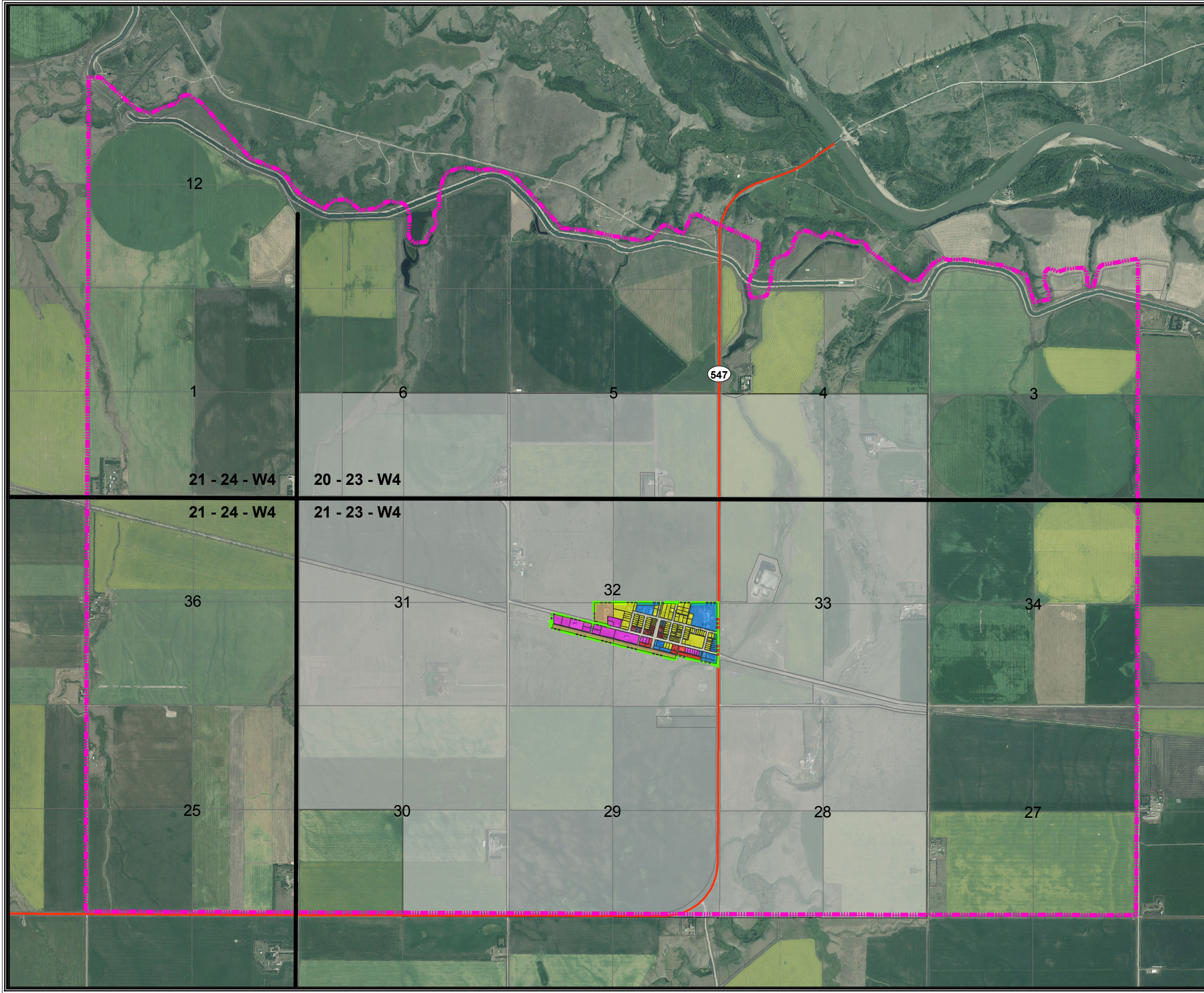
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

**LAND USE ZONING**

**MAP 7**




-  IMDP Study Area (4426.4±ha)
-  Village of Arrowwood Boundary
-  Highways

**Arrowwood Land Use Districts**

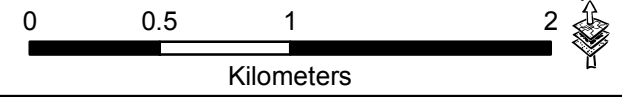
-  Residential R
-  Commercial C
-  Industrial I
-  Public P
-  Urban Reserve UR

**Vulcan County Land Use Districts**

-  Urban Fringe (UF)



Aerial Photo Date: 2015







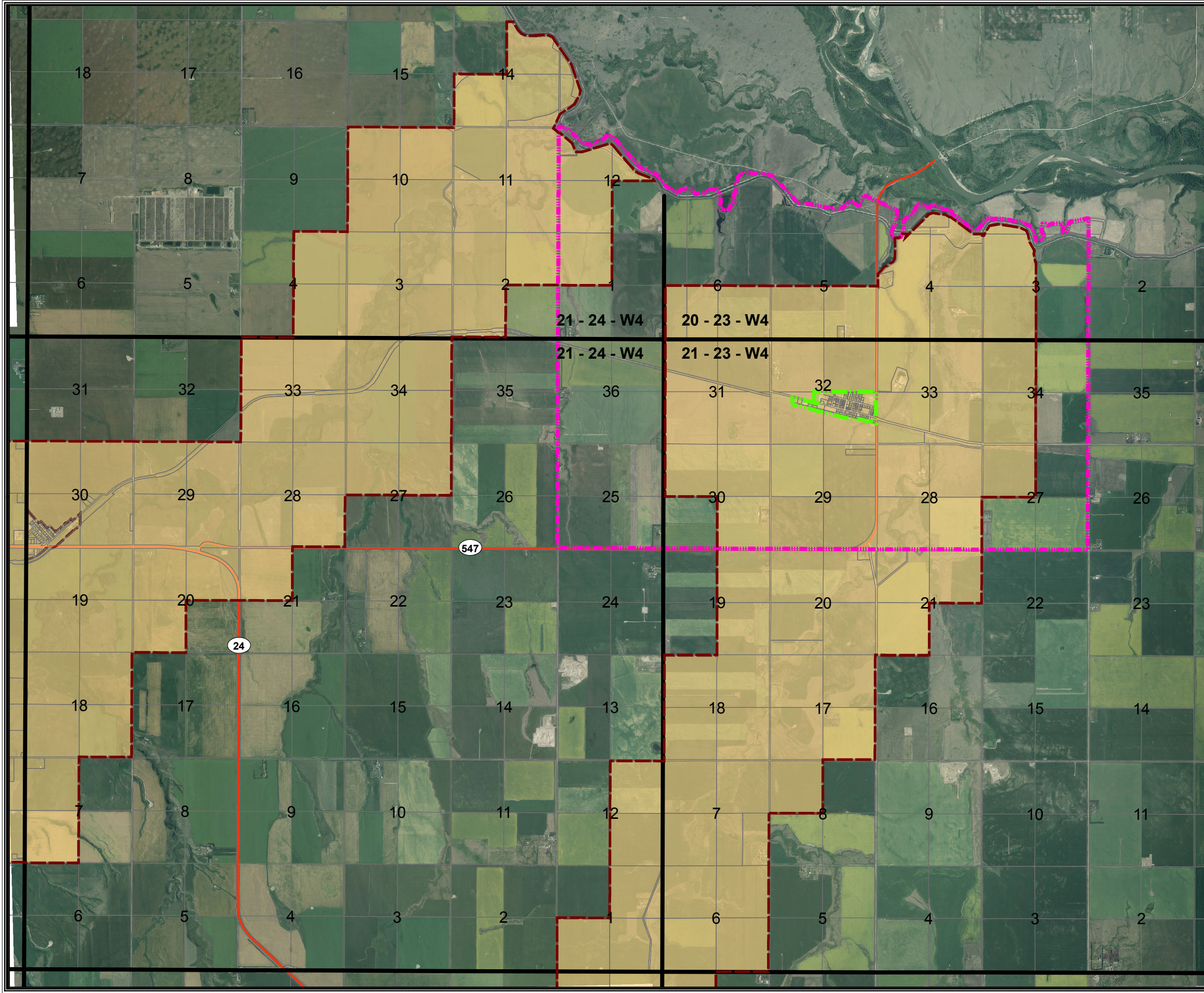


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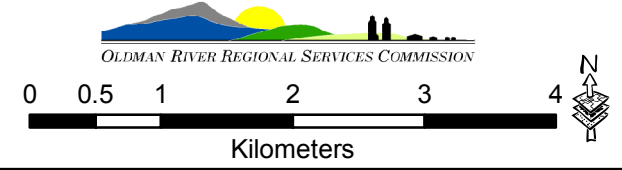
**CONFINED FEEDING OPERATION  
EXCLUSION AREA**

**MAP 8**

-  IMDP Study Area (4426.4±ha)
-  Village of Arrowwood Boundary
-  Highways
-  Confined Feeding Operation Exclusion Area



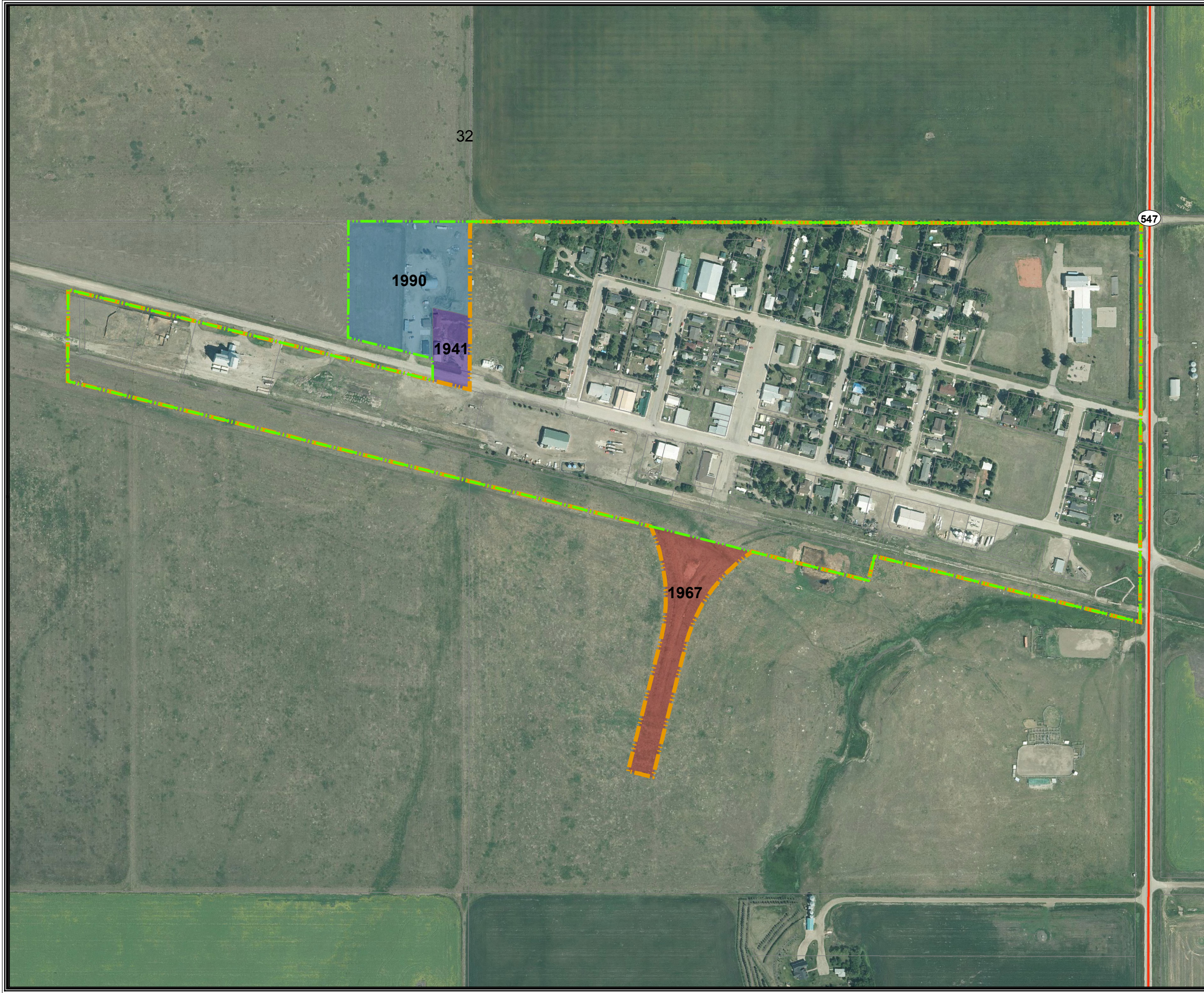
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VILLAGE OF ARROWWOOD  
VULCAN COUNTY  
INTERMUNICIPAL DEVELOPMENT PLAN  
BACKGROUND REPORT 2019

ARROWWOOD HISTORICAL ANNEXATIONS

MAP 9



- Highways
  - Current Village Boundary
  - Original Village Boundary
- Arrowwood Annexation History**
- 1941 Annexation
  - 1967 Annexation to Vulcan County
  - 1990 Annexation

