

Agricultural Program and Services Review

Parkland County

Final Report (Draft)

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John Knapp

(with an irrigation report by Paterson Earth and Water Consulting Ltd.)



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Executive Summary

Background

In March 2018, Parkland County initiated an *Agricultural Program and Services Review*. The review included four key bodies of work: a statistical review of the state of agriculture; an evening conversation about agriculture with 57 producers; an assessment of Parkland's agricultural programs benchmarked against those of 15 other jurisdictions; an irrigation feasibility report.

The findings of these enquiries are presented as four distinct reviews, forming the body of the detailed report that follows. At the end of the report, the findings are integrated into set of recommendations to Council.

A Summary of Significant Findings

1. Parkland's farmland base has declined by 22.2% over the 1996 – 2016 period. A significant continuation of this trend could threaten the viability of agriculture within the County.
2. In spite of this significant land loss, inflation-adjusted net farm income for Parkland County in 2016 compared to 1996, is 37% higher.
3. At the Blueberry Hall discussion, programs that were “most highly valued” by farmers and ranchers aligned well with the County's current budgetary expenditures on agricultural programs.
4. The agricultural community continues to express major concern over the ongoing fragmentation and conversion of agricultural lands.
5. Farmers and ranchers want the County to improve its services regarding the disposal of plastics, containers and other agricultural wastes.
6. They also want the County to improve its communication to rural landowners regarding agricultural programs, services, information, and extension events.

7. Parkland's agricultural programs and services were benchmarked against those of 15 other jurisdictions. An assessment in 43 categories indicates that Parkland's programs may be inferior in two categories, fully equivalent in 31 categories and superior in 10 categories.

8. An assessment of water availability in the North Saskatchewan River Basin indicates that expansion of irrigation in Parkland County is technically feasible. However, future developmental pressures on this water supply coupled with increasingly hotter and drier growing seasons underscore the importance of acquiring water licenses on a timely basis.

Recommendations

Long experience suggests that focused implementation of few but important recommendations will achieve greater progress than thinly applied responses to many recommendations. On that basis only four key recommendations are presented:

- 1. Increase the size of the Prime Agricultural Areas by 40%.*
- 2. Improve agricultural waste management services by conducting an internal review and by assessing the innovative practices of other jurisdictions.*
- 3. Strengthen agricultural communication to farmers, ranchers and acreage owners.*
- 4. Proceed to Stage II of the irrigation feasibility assessment: determination of agricultural producer interest.*

Implementation of these recommendations should require no significant budgetary expenditures and no increase in staff numbers.

Introduction

In March 2018, Parkland County initiated an *Agricultural Program and Services Review*. The *Review* included four key components:

1. *A Statistical Review of the State of Agriculture in Parkland County Based on the 2016 Census of Agriculture* – an examination of emerging trends and the current state of agriculture in Parkland County based on a review of the five sets of census data from 1996 to 2016.
2. *A Conversation About Agriculture in Parkland County* – a report on findings from a discussion with 57 farmers and ranchers and the Agricultural Service Board at Blueberry Hall, June 27, 2018;
3. *A Comparison of Agricultural Programs and Services in Parkland County Versus Fifteen Other Jurisdictions* – a benchmark comparison in 43 categories;
4. *Irrigation Development in Parkland County* – a report on the potential for expanding irrigation in Parkland County. This section of the report is authored by Brent Paterson, one of Alberta’s foremost experts on irrigation.

The work process included an assessment of key background documents including Parkland’s *Strategic Plan, Municipal Development Plan, Integrated Community Sustainability Plan, and Future of Agriculture Report*. A full assessment of Parkland’s current agricultural programs and services was also undertaken, including information interviews with program staff. In addition, County staff worked closely with the author in project meetings and individual streams of work. Without exception, staff supported project work in an exemplary manner.

The four substantial reviews that follow constitute the main body of the report. The report concludes by integrating the detailed findings of these reviews into a final set of recommendations to Council.

A Statistical Review of the State of Agriculture in Parkland County Based on the 2016 Census of Agriculture

Introduction

When the authors of the *Future of Agriculture Study* filed their report with Parkland County on June 30, 2016, the 2016 Census of Agriculture was not yet available. That is not surprising since Statistics Canada generally takes time to carefully scrutinize census returns, releasing information only as it is confident in accuracy, usually during the year following the completion of the census. Thus, through no fault of their own, the authors of the *Study* were forced to rely on older data from the 2011 census in order to assess the state of agriculture in the County from a statistical perspective.

Fortunately, the current *Parkland County Agriculture Program and Services Review* has full access to the 2016 census data. We can therefore rely on more current information to analyze and comment on the state of Agriculture in the County.

The current *Review* will take the analytical approach of assessing the current state of agriculture, and the emerging trends, by responding to a series of critical questions. In sum, these questions will outline a clear picture of the current state of agriculture in the County, and as part of a trend-line, offer a glimpse into the future. A more detailed set of agricultural statistics is included at the end of this section of the report.

Question # 1 – Is There a Continuation of the Trends Noted in Previous Census Reports?

Response – In a word, yes. For example, the last five census reports on the number of farms in Parkland County paints a picture that looks like this:

1996	2001	2006	2011	2016
1196	1144	979	782	679

The 2016 numbers represent a 13.2% reduction in the number of farms from 2011 and a total 43.3 % reduction in the number of farms over the

past 20 years. Provincially, the total number of farms in Alberta looks like this:

1996	2001	2006	2011	2016
59,007	53,652	49,431	43,234	40,638

Provincially, the number of farms is down 6.0% in 2016 compared to 2011 and 31.1% in total over the past 20 years. Clearly, the trend towards fewer farm business units that is occurring across Alberta (and throughout most of North America) is also occurring in Parkland County.

The note of concern in these trend lines centers on a declining rural population, a reduced diaspora off the farm into mainstream society and hence a reduced rural voice in public policy development.

Disturbingly, a close assessment of the Parkland County data indicates that the rate of decline is 39.2% faster when compared to Alberta overall for the 1996 – 2016 period. Perhaps alarmingly, the decline has proceeded at twice the rate of the provincial decline during the 2011 – 2016 period.

Thus, the trend across Alberta to fewer farms seems to be accelerating in Parkland County. The explanation for this will become apparent in the next set of statistics:

Total Area in Farms:	1996	2001	2006	2011	2016
Parkland County (acres)	482,786	475,926	455,677	401,863	375,449
<i>Change – 2016/2011: -6.6%</i>					<i>Change – 1996 to 2016: -22.2%</i>
Alberta (acres)	51,964,360	52,058,898	52,157,827	50,498,834	50,250,183
<i>Change – 2016/2011: -0.5%</i>					<i>Change – 1996 to 2016: -3.3%</i>

It is evident that the rate of decline in the number of acres farmed in Parkland County over the last 20 years (22.2%) significantly exceeds the provincial rate (3.3%). Parkland County is losing agricultural land approximately seven times faster than the overall province. Perhaps more disturbing is the recent apparent acceleration of the rate of decline in Parkland County. Between 2011 and 2016 Parkland County

reduced its farmland base at a rate that is 13 times faster than the provincial norm.

Part of this alarming trend can be explained by the acquisition of farmland for coal mining over the last 20 years. Part of the trend can also be explained by specific market and economic forces relating to land. Most notable amongst these is the loss of land due to fragmentation and conversion for urban expansion, industrial parks, and rural residential purposes. The subdivision statistics below underscore the impact of fragmentation and conversion in Parkland County.

Subdivisions	1996- 2000	2001- 2005	2006- 2010	2011- 2015	2016- 2017
(acres)	5745	6027	9842	12080	4108

These subdivision numbers also align with the accelerated pace of land loss outlined in the statistical review above. Full details of subdivision statistics going back to the pre-1975 period are available at the end of this section of the report.

Parkland County's Municipal Development Plan, released on August 22, 2017, designates three defined regions of the county as "Prime Agriculture Areas". This may partially mitigate the accelerated rate of land conversion. The phase out of coal-fired electricity generation by 2030 may also result in a faster rate of land reclamation and therefore an accelerated rate of return of land to agriculture. But these two factors alone will not prevent the overall reduction of farmland from continuing at a significant rate.

Agriculture is currently Alberta's second largest industry and its largest renewable resource. Council may want to consider policy options to further reduce the rate of agricultural land loss. One option will be discussed in the "Recommendations" section at the end of the report.

Question # 2 – Are There Other Trend Lines Worth Noting?

Response – Parkland County appears to be at or near the provincial norm for a number of key trends. For example, the change in farm size for Parkland County compared to the provincial norm looks like this:

	1996	2001	2006	2011	2016
Farm size (acres) Parkland County	404	416	465	514	553
Farm size (acres) Alberta	881	970	1,055	1,168	1,237

Over the past 20 years, average farm size in Parkland County has increased 36.9% versus an Alberta average of 40.4%. During the last five years the increases have been in the order of 7.6% for Parkland and 5.9% provincially. These minor differences are not statistically significant. But they do indicate that Parkland County is part of the overall provincial trend to fewer and larger farms.

Also of note is:

- the ongoing increase in the average age of farm operators to 57.0 years in Parkland County and 55.7 for Alberta as a whole;
- the slight increase in total cattle and calves for both Parkland (+3.3%) and Alberta (2.0%) as markets recover strongly from the long period of low prices and herd reduction following the discovery of bovine spongiform encephalopathy on May 20, 2003;
- a leveling out, after significant expansion in previous years, in the number of square feet reported in greenhouses (- 5.3% Parkland and - 1.7% Alberta);
- an increase in wheat acreage (+52.2% Parkland and + 4.5 % Alberta) in response to favorable prices, and the agronomic need to rotate other crops with canola as its acreage has increased sharply in recent years;
- a dramatic increase in field pea acreage (2011 Parkland acreage unavailable, but approximately 400% over 2006 census, and 170.2% Alberta). Recent trade concerns with India will likely cause a reduction in this acreage in the immediate future;
- after more than doubling in the last several census periods, canola acreage has stabilized (- 3.4 % Parkland and + 1.5% Alberta);
- the significant acreage of potatoes in Parkland County has remained relatively stable through the last three census periods at about 2600 acres. This is in line with the stable provincial numbers of about 54,000 acres. However, in the near future the irrigated potato acreage in southern Alberta is expected to expand significantly as another new world class potato processing plant comes on line;
- Parkland County continues to have no significant hog operations;

Question # 3 – Are There Any Census Categories Where the Trend Lines Cannot Be Analyzed?

Response – Yes. Statistics Canada employs a long-standing policy of protecting privacy by restricting data where the small number of operations could identify the production levels of individual farms.

For that reason recent trend lines cannot be analyzed in the categories of Fruit, Berries, Nuts; Total Vegetables; Nursery and Sod. The number of operations is reported in 2016, but not the total number of acres. Unfortunately, it is the number of acres that would provide a clearer picture of the size and direction of the industry.

We can see from the statistics that 20 farms reported commercial vegetable production, 24 reported nursery and sod production, and 16 reported fruits and berries. Unlike most other categories of agriculture where the number of farms has declined from 2011, these numbers hold steady with the numbers from 2011. Given the steady acreage expansion of farms in 90% of the “farm type” categories, it is likely that there has been some expansion within the County of these very high value crops.

While total acreage figures are restricted in all three areas, as are figures for many individual crops including apples and strawberries, we do know that producers in the County produced the following acreages of crops in 2016:

Crop	Acreage	Crop	Acreage
Tomatoes	2	Lettuce	1
Peppers	1	Carrots	5
Cherries	2	Dry Onions	3
Cucumbers	1	Raspberries	31
Green wax beans	2	Saskatoons	68
Pumpkins/squash	5	Other vegetables	10

The “hole” in the overall data set is disappointing since these operations represent a significant volume of economic activity in the County. Given the proximity of Parkland County to a metropolitan area of more than 1

million consumers, there is a significant opportunity for this intensive form of agriculture to continue to expand.

This same hole in the data set also exists for poultry production. No numbers are reported for total number of birds. The only transparent data is the 197,512 dozen eggs produced by 34 producers, including many small and hobby producers. In terms of type of operation, the number of farms reporting themselves as primarily “poultry and egg” has increased from 9 in 2011 to 10 in 2016. This is in line with ongoing expansion in the Alberta poultry sector through 2016. While there is no statistical evidence to support the assertion, it is plausible that the poultry sector continues to constitute a significant component of agriculture’s total economic contribution to Parkland County.

Finally, the census data for horses & ponies, bison and goats were unavailable.

Question # 4 – In Addition to the Loss in Total Farmland, Are There Any Other Areas of Concern?

Response – Yes. There are three other areas of concern:

1. In 2016 the number of reported honey bee colonies in Alberta expanded by 29.2% over 2011 and by 79.1% over 1996. This dramatic increase resulted from strengthened global honey prices and reduced overwintering losses derived from new science and better management practices.

Regrettably, the number of colonies in Parkland County paints a very different picture, declining in 2016 by 32.5% from 2011 and by 5.1% from the historically low numbers of 1996. Given the economic multiplier effect of locally processed honey, this reduction in the number of colonies will represent a significant loss of economic activity in the County.

2. While the average farm size in Parkland County continues to grow at a rate similar to the provincial average growth, the size in actual acres continues to be slightly less than half the size of the average Alberta farm (553 acres Parkland, 1237 acres Alberta). On the surface, this

would suggest that the much smaller units in Parkland are more fragile economically. But the assessment of net farm income in a later section of this paper would suggest that is definitely not the case. In addition, the productivity of the soil compared to the provincial average, and the relatively higher number of more intensive operations, tends to offset the smaller acreage base. While on the surface, farms in Parkland are smaller than the provincial average, they appear to be performing well economically compared to other farms in the province.

3. The number of dairy cows in Alberta has been stable in recent years at about 80,000. Unfortunately, the number of dairy cows in Parkland has declined from 1,661 in 2011 to 1,090 in 2016. This represents a 34.4% decrease. Dairy, like honey production, stimulates a significant economic multiplier in the local economy. The 34.4% reduction in dairy cow numbers will certainly impact economic activity.

Question # 5 – Is There Any Good News? Please Tell Me There is at Least *Some* Good News!

Response – Actually, there is some *very* good news. One statistic in particular offsets all the bad news put together. In spite of the decline in the farmland base, the economic size of the agriculture sector in the County is actually growing:

	1996	2001	2006	2011	2016
Gross Farm Receipts:	80,132,000	82,368,000	85,173,000	97,750,000	119,372,000

The 20-year statistical “journey” outlined above, indicates that gross farm receipts have increased by 49.0% during the 1996 – 2016 period. An assessment of the inflation rate over the same 20-year period indicates a compounded rate of 45.4%. Thus the actual growth over this period is + 3.6%. Incredibly, this growth has occurred in spite of a 22.2% reduction in the farmland base in the County.

An even stronger picture emerges for net farm income (gross farm income minus gross farm expenses). In spite of the reduction in the land base, the County’s net farm income, after equalizing for inflation, has actually increased by 37% since 1996.

2016 was a relatively good year for commodity prices. Some caution should therefore be attached to these numbers. At minimum however, it may be safe to conclude that in spite of the significant reduction in land base, the size of the agriculture industry as an economic entity in the County is at least sustaining itself, and probably growing.

How is this happening? It would require a lengthy examination of investment levels, farming practices and commodity prices to conclusively document the contributing factors behind this “good news story”. But the likelihood is that the same factors that are affecting agriculture across Canada, especially those farms in proximity to large metropolitan areas, are causative reasons for the good news story in Parkland County. These factors include accelerated substitution of capital for labour, increased intensification, and improved production and marketing decisions.

There is another good news story. The statistics below outline the farm capital journey over the last 20 years:

Total Farm Capital (land, buildings, machinery, livestock)

1996	2001	2006	2011	2016
666,000,000	897,000,000	1,219,000,000	1,466,000,000	1,658,000,000

Land and buildings represented approximately 85% of the capital investment in agriculture in Parkland in 2016. A previous study completed by the author assessed the growth in land values in Alberta over the past decade, based on a careful examination of the Farm Credit Corporation land value reports. This study suggested that on average in Alberta, \$100 invested in farmland 10 years ago would be worth \$258 today. After adjusting for the 22.2% loss in agricultural land base, a gross extrapolation suggests a 320.0% growth in land values in Parkland over the past 20 years. This is in comparison to the inflation rate over the same period of 45.4%.

The good news here is that the net worth of the average producer in Parkland County has probably grown more than seven times faster than the inflation rate. This higher level of equity means greater borrowing

capacity for intensification, and ultimately an agricultural sector that is capable of higher returns per acre.

The contrasting side to this story is the concern that higher land values create barriers to entry for new and younger producers. While this is certainly a concern, it may not be as significant an issue as it first appears, since most farm succession continues to be intergenerational within the same family. However, the need to fairly settle an estate between several siblings, can effectively reduce the size of productive unit passed on to the next generation on the land.

Notwithstanding the farm transfer concerns above, the extremely rapid growth in net worth of the average producer in Parkland County is clearly a good news story. It will be interesting to observe capitalization in agriculture over the next decades. The growing attractiveness of land as a distinct and separate investment opportunity will certainly drive segmentation of farm capital into two pools: land versus livestock, buildings and machinery. In older agricultural jurisdictions such as the United Kingdom, this phenomenon has driven a fundamental restructuring of agriculture into two capital groups: large, and often affluent tenant farmers who invest in livestock, machinery and buildings, and a landed aristocracy who rent their capital asset (land) to tenant farmers.

Question # 6 – Are There Other Interesting Statistical Stories Worth following?

Response – Yes, there are three other interesting stories.

Age of Farmers Parkland County	2001	2006	2011	2016
Under 35	165	95	45	60
35 – 54	880	710	495	340
55 +	615	655	600	610

The statistics in Parkland County closely parallel the numbers provincially. Essentially, the 35 – 54 age group are either exiting agriculture, or graduating to the 55 + group. A very small number of younger producers are replacing them. The encouraging statistic is the reversal of the decline in the younger age group during the last census period (+ 33% Parkland and + 7.9% provincially). While even greater

numbers of new entrants will be required in future years, the current reversal of the downward trend of younger entrants may be a sign that agriculture is once again becoming an attractive career choice for younger Albertans.

Another interesting story is the 18 producers in Parkland County who reported renewable energy generating systems. These were comprised of solar(16), wind turbine(1) and bio diesel(1). It is the author's contention that solar power generation in particular, offers enormous potential as an additional farm income source.

Last year, Alberta's total electricity consumption was 82,000 giga-watt hours. The source of this generation was 47% coal, 40% natural gas, 7% wind, 3% hydro and 3% biomass/other. As coal-fired electricity generation is completely phased out over the next 12 years, there is potential for Parkland County to sustain its position as a major electricity-generating jurisdiction by encouraging solar production on farms.

It requires approximately 2.8 acres of land to generate 1 giga-watt hour of electricity. Assuming that in Parkland County, about one-third of this requirement would be comprised of existing roof space on larger agricultural buildings, then the actual farm land requirement would be 1.9 acres per giga-watt hour. If Parkland County set a target of generating 10% of Alberta's total electricity requirement, local producers would have to allocate a land base of 15,580 acres to solar panel arrays. This is substantially less land than the total land base of that will be reclaimed and returned to agriculture by the major coal-fired electricity generators. Although some recent work reviewed by the County suggests that returns on "solar farming" may currently be marginal, improving technology and the phasing out of coal suggests significant future opportunities for solar power generation.

The final interesting story is that irrigation seems to have already gained a foothold within Parkland County. In the 2016 census, 18 farms reported a total irrigated land base of 427 acres. The power of irrigation in driving both high returns in primary agriculture and investment in value-added processing is well documented. 4.7% of Alberta's agricultural land base is irrigated, yet it produces 20% of the value of

crops. Furthermore the location of many food processing plants adjacent to irrigation in Southern Alberta (sugar beets, potatoes, vegetables) stimulates local economies through value added investment, employment and taxes.

Irrigation Development in Parkland County is included as a companion report in this document. It provides additional detail regarding the feasibility of irrigation within the County.

Question # 7 – So What Do We Conclude From All These Statistics?

Response – Basically, as we look to the future, the opportunities for agriculture in Parkland County are greater than the threats. Yes, there is concern about ongoing erosion in the size of the agricultural land base. There is also concern about ongoing decline in certain sectors of agriculture such as honey and dairy production within the County. But the economic strength of agriculture is notable. The industry has marginally grown its size economically, despite a 22.2% reduction in the land base. The opportunities for on-farm solar electricity generation are significant. There is also the possibility that irrigation will open the door to a substantially higher-value form of agriculture in some areas of the County.

Conclusion

A careful examination of the statistics supports a clearer understanding of both the current state of agriculture and the emerging trends. This clearer picture will enable practical, “evidence-based” policy recommendations in the final section of the report.

The pathway to Parkland’s agricultural future will require creativity, risk-taking, intellect, hard work and persistence. But given the degree to which these qualities currently exist within the agricultural community, the statistical evidence suggests a strong basis for optimism regarding the future state of agriculture in Parkland County.

A Statistical Review of Parkland County

	Parkland County					Province of Alberta			
Physical attributes group	1996	2001	2006	2011	2016	2001	2006	2011	2016
Total Area of Farms, acres	482,786	475,926	455,677	401,863	375,449	52,058,898	52,127,857	52,706,563	50,250,183
Number of Farms	1,196	1,144	979	782	679	53,652	49,431	43,234	40,638
Average Farm Size, acres	404	416	465	514	553	970	1,055	1,169	1,237
Total Land in Crops (acres)	219,423	227,729	206,235	180,512	187,021	24,038,861	23,775,509	24,102,289	25,261,781
Summer fallow (acres)	8,288	11,541	9,464	3,640	4,026	3,053,214	2,239,633	1,263,051	644,021
Total Pasture Land (acres)	198,685	192,768	180,556	173,840	142,180	22,016,574	22,273,008	21,823,780	21,283,021
All Other Land (including Christmas trees)	56,390	43,888	59,422	17,754	13,872	2,950,249	3,839,707	3,309,714	1,103,880
Farm Size									
< 240 acres	653	643	550	342	382	18,590	17,696	15,464	14,878
240-759 acres	382	315	263	196	158	16,885	14,574	12,306	11,122
760 to 1119 acres	76	81	67	55	55	5,625	4,807	3,997	3,565
Over 1120 acres	85	85	99	89	84	12,552	12,354	11,467	11,073
Farm Type									
Dairy	46	21	15	10	9	776	605	485	411
Cattle	503	514	418	219	217	22,939	20,494	12,022	12,282
Hog	16	8	4	0	0	848	598	193	166
Poultry and Egg	16	9	8	9	10	446	416	339	373
Wheat	13	16	12	4	21	3,718	2,809	2,083	2,894
Grain (except wheat)	102	87	86	102	60	9,327	9,753	10,609	10,557
Total Classified	1,044	1,020	871	782	679	53,652	49,431	43,234	40,638
Farms with Vegetables	17	20	25	20	20	267	286	277	299
Farms with Fruits, Berries and Nuts	32	27	25	19	16	138	227	151	137
Farms with Nursery Products	29	30	29	22	24	832*	910*	826*	605*
Farms with Greenhouse Products	30	28	21	23	15				

* Greenhouse & Nursery combined

A Statistical Review of Parkland County

	Parkland County					Province of Alberta				
Physical attributes group (cont.)	1996	2001	2006	2011	2016	1996	2001	2006	2011	2016
Crop Acres										
Total Wheat	17,647	25,547	24,711	20,976	31,922	7,324,846	6,852,596	6,467,628	6,703,703	7,008,542
Oats	23,785	15,698	17,656	12,106	13,114	1,386,179	1,364,674	1,269,229	891,580	822,185
Barley	59,629	39,851	33,582	28,335	31,776	5,775,824	4,902,090	4,094,689	3,610,111	3,413,856
Mixed Grains	2,478	3,675	4,406	1,317	1,453	226,374	404,174	373,005	201,511	242,206
Canola	16,618	19,738	31,659	36,667	35,114	3,151,296	2,660,509	4,068,511	6,071,744	6,165,746
Potatoes	1,793	1,576	2,739	2,642	2,657	31,488	58,341	54,759	53,440	53,912
Dry Field Peas	2,343	2,623	808	n/a	9,505	286,037	608,217	587,263	706,726	1,909,491
Alfalfa	56,636	77,454	56,227	52,070	39,408	2,997,653	3,915,607	3,935,022	3,657,114	3,056,701
All Other Hay	36,780	39,303	30,242	20,802	18,278	1,755,512	2,279,767	2,060,967	1,466,557	1,161,521
Total Vegetables	56	37	185	47	n/a	13,743	14,194	13,193	10,716	10,108
Total Fruit, Berries, Nuts	125	127	154	104	n/a	1,684	2,517	2,934	2,610	2,164
Area of Nursery Products	238	271	365	376	n/a	6,160	6,642	8,955	9,755	7,420
Greenhouse Areas (Square Feet)	177,422	169,797	127,744	197,465	187,024	8,097,513	11,029,753	12,582,590	12,861,869	12,647,517
Total Dairy Cows	2,759	1,781	1,426	1,661	1,090	102,830	84,044	78,875	80,694	80,014
Total Beef Cows	31,985	31,471	28,343	17,601	17,978	2,016,889	2,099,288	2,035,841	1,530,391	1,576,354
Total Cattle and Calves	79,886	79,084	68,709	45,353	47,134	5,942,257	6,615,201	6,369,116	5,104,605	5,206,999
Total Pigs	9,481	3,312	1,700	n/a	123	1,729,810	2,027,533	2,052,067	1,397,534	1,462,247
Total Sheep	3,993	5,531	4,597	10,422	8,329	259,817	307,302	222,340	202,903	195,511
Horses/ Ponies	3,413	3,840	4,697	3,923	n/a	149,960	159,962	155,533	139,410	108,702
Goats	808	1,101	818	736	n/a	32,960	42,270	29,113	28,920	27,955
Bison	n/a	1,948	1,332	1,360	n/a	22,782	79,731	97,366	57,483	54,907
Colonies of Bees	8,353	11,908	12,832	11,742	7,921	170,288	209,821	230,894	235,951	304,846
Total Hens/Chickens	n/a	188,461	114,022	n/a	n/a	9,485,635	12,175,246	11,757,860	11,956,949	14,125,401

A Statistical Review of Parkland County

	Parkland County					Province of Alberta				
Financial attributes group	1996	2001	2006	2011	2016	1996	2001	2006	2011	2016
Number of Farms	1,196	1,144	979	782	679	59,007	53,652	49,431	43,234	40,638
Under \$25,000	712	621	544	425	302	23,361	19,654	18,511	15,569	11,788
\$25,000 to \$49,999	171	176	152	114	84	9,057	8,335	7,170	6,051	5,165
\$50,000 to \$99,999	139	157	120	74	92	9,689	8,526	7,448	5,934	5,516
\$100,000 and Over	174	190	163	169	201	16,900	17,137	16,302	15,680	18,169
Average Gross Farm Receipts per Farm, \$'000	67	72	87	125	176	134	185	200	265	436
Net Farm Operating Income, \$'000	8	10	8	16	28	21	19	22	40	68
Farm Operating Expenses, \$'000	58	65	79	109	148	113	166	178	225	368
Farm Capital										
Total Farm Capital, \$'mln	666	897	1,219	1,466	1,658	40,150	55,256	71,781	95,572	143,928
Less than \$499,000	857	658	361	150	95	n/a	24,373	16,173	8,697	n/a
\$500,000 to \$1 million	199	263	328	258	203	n/a	13,774	13,776	11,966	n/a
Over \$1 million	140	223	290	374	381	n/a	15,505	19,482	22,571	n/a
Operator Profile attributes group										
Number of Farmers, Operators	n/a	1,665	1,460	1,145	1,005	n/a	76,195	71,660	62,050	57,605
Age of Farmers:										
Under 35	n/a	165	95	45	60	n/a	8,900	6,290	4,550	4,910
35-54	n/a	880	710	495	340	n/a	40,430	35,935	26,720	20,155
Over 54 (55+)	n/a	615	655	600	610	n/a	26,875	29,440	30,785	32,535

Year Of Plan Registration	Subdivisions	Total Parcels	Total Area (ha)	Average Area (ha)
pre-1975		4022	8206.8	2.0
1975		444	1164.4	2.6
1976		939	1491.4	1.6
1977		765	1626.8	2.1
1978		1147	2803.6	2.4
1979		670	1060.2	1.6
1980		994	1561.2	1.6
1981		571	748.9	1.3
1982		274	522.5	1.9
1983		120	286.3	2.4
1984		24	127.7	5.3
1985		18	141.3	7.9
1986		25	76.9	3.1
1987		16	124.6	7.8
1988		28	121.9	4.4
1989		37	218.2	5.9
1990		69	311.5	4.5
1991		63	445.5	7.1
1992		98	365.7	3.7
1993		61	510.8	8.4
1994		63	349.7	5.6
1995		183	912.0	5.0
1996		71	440.5	6.2
1997		116	307.0	2.6
1998		186	654.6	3.5
1999		157	451.8	2.9
2000	15	115	471.2	4.1
2001	20	213	689.8	3.2
2002	17	150	488.2	3.3
2003	30	340	519.0	1.5
2004	27	258	350.3	1.4
2005	19	170	391.8	2.3
2006	24	307	651.7	2.1
2007	29	213	584.6	2.7
2008	23	195	802.4	4.1
2009	38	298	1214.9	4.1
2010	30	207	729.5	3.5
2011	32	577	984.1	1.7
2012	24	167	984.6	5.9
2013	23	138	896.6	6.5
2014	35	343	1103.1	3.2
2015	23	138	920.2	6.7
2016	30	244	1051.8	4.3
2017	25	176	610.8	3.5
Total 1975 to 2012		10349	25687.0	2.5
Annual Average 1975 to 2012		272	676.0	2.5
Total 1975 to 2017		11388	30269.5	2.7
Annual Average 1975 to 2017		265	703.9	2.7
Total 1975 to 2017 (acres)		11388	74795.9	6.67
Annual Average 1975 to 2017		265	1739.3	6.67

A Conversation About Agriculture in Parkland County

Introduction

The importance of listening to the concerns of agricultural producers was recognized as a critical component in the design of Parkland County's *Agricultural Program and Services Review*. The Agricultural Service Board (ASB) strongly endorsed the value of producer input, and invited a large number of leading farmers and ranchers to attend a dinner and evening program to provide their comments and recommendations.

Fifty-seven producers attended the evening event, as well as ASB members, seven County staff and one Councilor. Two agricultural producers who were not able to attend, provided their thoughts via e-mail. Their comments are included in the full report below.

The Event

The evening event took place at Blueberry Community Hall on June 27, 2018. The evening began with an excellent dinner provided by Maureen's Desserts, a local caterer. Susan Schafers, ASB Chair, formally opened the program with a warm welcome and comments on the objectives of the discussion. Then, on behalf of Mayor Rod Shaigec, staff member Dave Cross presented a brief overview of the Edmonton Metropolitan Region Board's development of a Regional Agriculture Master Plan (RAMP). Mayor Shaigec chairs the RAMP Task Force.

John Knapp then facilitated the remainder of the evening. This was comprised of two key discussions. The first discussion was designed to obtain specific comments and recommendations on current agricultural programs and services offered by the County. The second discussion was more forward-looking with a focus on what Parkland County could do to strengthen agriculture as a key industry in future.

The formal program concluded with Councillor Hollands reviewing some of the concerns raised and offering a profound thank-you to everyone for attending.

Discussions during the meeting were focused, lively, and direct. The tone was positive and friendly, but it was clear that participants felt free to openly express any concerns or negative comments. The evening seemed to “flow” well.

Many of the participants remained for more than half an hour after the formal close of the meeting to continue the discussion in small groups. Frequent commentary from those who lingered after the event was, “This was a good evening. We should do this more often.”

The Discussion Process

The first discussion was introduced with five very brief presentations by County staff, describing programs and services in the areas of agriculture, agriculture-focused business development, ALUS & environmental programs, and rural internet/broadband service.

After these presentations, eight table groups caucused for thirty minutes in a breakout session to discuss current programs and services. When the plenary was re-convened, three table groups presented a full report on the key highlights of their discussion. Other table groups were then invited to add anything new/different to the core information presented by the first three tables. An open plenary discussion followed.

The second discussion followed a similar format. John Knapp presented a 25-minute statistical review of the state of agriculture in Parkland County. The eight table groups then caucused to discuss future actions and initiatives the County could undertake to strengthen the future of agriculture. This was followed by three full table reports in plenary, with additional thoughts and recommendations contributed by other table groups. A plenary discussion closed out the second discussion process.

How Were the Discussion Results Captured/Recorded?

A questionnaire template specifically designed for each of the two breakout sessions helped to guide the table discussions. The questions in the template are outlined in the “Results” discussion that follows. Table reporters recorded their group’s recommendations on these handout templates and returned them to the facilitator after each

discussion. With the support of County staff, the facilitator was able to recover all eight templates from each of the two discussions, for a total of 16 detailed input documents. The “results” discussion below presents the 135 comments recorded verbatim on these templates, and in the two emails provided by producers who could not attend.

The *analysis* that follows aligns comments into themes. These themes support some conclusions at the end of this section of the report.

The Results – Discussion # 1

1. How would you rate the overall group of agricultural programs and services offered by the County? (Circle one)

Poor Fair Good Very Good Excellent

Results (Number of discussion table groups that circled each option above)

Poor – 0

Between poor and fair – 1

Between fair and good – 2

Good – 3

Very Good – 2

Excellent – 0

Verbatim producer comments included in this section:

- Hard to evaluate without a comparison to other places.
- Not aware of most programs! Can’t get Parkland County to answer their phone calls.

Analysis

The results were tabulated using a five point scale with poor = 1, fair = 2, etc. A half point was deducted for a “between” rating. The average rating from the eight tables was 2.94, or approximately “good”.

The two included comments are captured in the summary analysis below.

2. What programs and services are of most value to you?

Verbatim Comments

- Economic development, marketing, etc.
- ALUS program various projects very helpful.
- Ditch mowing and spraying – do very good job.
- Legislated programs. Good response when complaints are made.
- Doing good job in Acheson. Fastest growing industrial park. Good, but built on #1 soil.
- Road maintenance, grading, snow.
- Internet work – accessibility.
- Dust control, waste transfer station, jugs, County patrol.
- ALUS has been very beneficial.
- Road maintenance.
- Road/ dumps/ recycle/ weed inspection.
- Mowing is good but is not done very often.
- Weed management.
- Internet access and good cell coverage is vital.
- Internet service.
- ALUS/ education with universities.
- Weed control on roadways.
- Liaison with AAFRD courses eg. marketing in ag.
- Internet.

Analysis

Attendees saw value in a broad cross section of programs and services. 19 comments cited 26 examples of *highest value* programs and services. Ranked in order of frequency, County programs and services were cited the following number of times by attendees:

- mowing/spraying/weed control/weed inspection – 7
- internet access/coverage – 4
- road maintenance/grading/dust control/snow - 4
- dumps/recycling/waste transfer/jugs - 4
- ALUS/environmental programs – 3
- Extension/education – 2
- Economic development/marketing – 1
- County patrol – 1

In question #1 above, attendees collectively gave the County only a “good” rating, yet they generally seemed to highly value most of the *core* programs and services, as outlined in the responses to question #2 above. While the sample size suggests caution in interpreting results, there does appear to be a strong correlation in Parkland County between agricultural service/program budget allocation and agricultural producers’ perception of value.

3. What programs and services are of least value to you?

Verbatim Comments

- Ones we don’t know about.
- Business development – haven’t accessed, but is still good to have.
- The Ag Services Board – we really don’t know what you are doing.
- Improvement needed re club root information, ex. When renting land need to revise the (notification?) program.
- Road programs are not satisfactory in many cases.
- The way weed inspection program is administered without any one-on-one to talk it over.
- Dog license program/ALUS.
- Have very little idea what the County does.

Analysis

In this section of the discussion, eight comments identify 9 programs/services of *least value*. Five of the programs/services are mentioned only once. While each mention should certainly raise a flag for Council/ASB and County administration, these five comments do not seem to represent any sort of broad consensus on programs of *least value*.

One theme in the *least value* comments above is mentioned four times. This theme focuses on the need to improve communication and awareness-building by the County in the area of agricultural programs and services. This comment was also made in response to question #1 above. We will come back to this theme in a later section of the report for more analysis.

It is noteworthy that the *most value* question drew 26 comments, while *least value* drew only nine comments. The fact that *most value* elicited

three times as many comments would seem to suggest that while improvement is needed in some areas, there is generally a reasonable level of approval of the agricultural programs and services offered by Parkland County.

4. What could Parkland County do, at an operational level, to better support agriculture (eg. roads, cellular/internet, plastics, ag waste transfer, etc.)?

Verbatim Comments

- More awareness of various available programs/services.
- Perhaps an 'ag newsletter' sent out to producers about current programs, services, events going on specifically in the county (ie. land leases, etc.) (Not everyone reads the paper.)
- Better cellular/internet, fibre connectivity.
- Support advocacy for rural crime.
- What do we do with netwrap/silage plastic????
- Road ban timings – too long.
- Inadequate roads – when upgrade should make wider and all weather.
- Cellular service still not good (in areas). Internet improving.
- Charging for more and more services (waste management?) forces people to go to other areas or burn.
- Not enough farmer/acreage interface. Not on website.
- Planning dep't needs work – permits – way too many for very small projects. Farms are not the same as acreages.
- Noxious weeds come in when road construction happens.
- Culvert construction problems for farmers – all inspectors need to have accountability.
- Community incineration for dead stock.
- Awareness for diseases/biosecurity – backyard/small producers.
- High containers for jug disposal.
- Chemical waste disposal – not available.
- County Patrol as we are having too much crime in the County!
- Guardrails should be on the outside of road so you can get thru with equipment.
- Develop a protocol for administering farm chemical and plastic at the transfer station. On a seasonal basis for chemical containers instead of having to go to Stony to dumpster.

- Grain bags, silage plastic recycle.
- Rural Crime/access to quarters after cuts subdivisions.
- Road bans cornering us in making it tough to do business - need permits.
- Garbage dumping what do we do – keep dumps open weekends.
- Calcium on roads.
- Access for big trucks at Dump.
- Explain to producers their level of club root infestation – not just a letter saying you have infestation – eg. one plant or patch.
- Huge problem of agricultural plastics and knowing/finding a place to accept them (recycling program).
- Road maintenance in terms of soft spots, culverts and weight limits.
- Having more signage that we are an agricultural community especially near the city – stop the driving through fields for recreational purposes.
- Better internet – more rural areas where primary production is being done.
- Plastic disposal.
- Ag waste transfer.
- Internet again.
- Crime – addressing this growing issue.
- Road grading/plowing.
- We feel there needs to be more info provided to people on what the programs are.
- Glad to see the room filled with mostly full time producers – not acreage owners.
- Last year my ditches were mowed in Sept for the first time – herbicides aren't going to work in Sept and weeds have all gone to seed was a waste of money.
- Need P. County to help us work with AB Transportation – issues – road, transportation require safe access onto service roads.
- Not salting our road in front of the farmhouse.
- Crime prevention – when do we call RCMP and when do we call County Peace Officers?
- Problem with garbage – been dumped on roadsides.
- Road culverts have collapsed and need to be repaired to stop roads from flooding in the spring.
- Wildlife control (deer, moose, porcupine, etc.)

- Water availability from source coming from Spruce Grove (container washer?)
- Garbage issue facing County is very important. Current method is unsustainable. Idea that the garbage can be burned in the coal plants or perhaps in the future changing it to natural gas. Have read studies showing European countries digging up landfill sites and burning the waste (using modern scrubbing/clean technology).
- Cell internet service is quite poor across various parts of the County.

Analysis

49 comments provided a rich set of recommendations. A summary of recommendations produced the following rankings:

- Agricultural plastics/chemical waste/containers/recycling/garbage/incineration – 14
- Road bans/maintenance/culverts - 11
- Rural crime prevention - 7
- Extension/communication/awareness/newsletter - 5
- Internet/cellular coverage – 5
- Weed control/club root/biosecurity – 4
- Reasonableness in permitting – 1
- Wildlife control – 1
- Water access/availability – 1

It is clear from these recommendations that farm and ranch residents want the County to review and improve services related to disposal of plastics, containers, chemical waste and dead stock. Also, as in most rural municipalities, roads and culverts remain an ongoing issue.

Rural crime has been much in the news recently and Parkland residents are clearly concerned about the issue. Also, as in other sections above, the recurring theme of improving education, communication and awareness emerges as a significant concern.

Results – Discussion #2

1. In order to strengthen agriculture as a key future industry, what actions or initiatives could Parkland County undertake?

Verbatim Comments

- Irrigation.
- Agriculture in the classroom? done in the county.
- Promote agriculture to youth and general public.
- Distinguish agricultural areas and uses.
- Support Ag groups.
- Stop breaking up farmland.
- Promote farming to county residents.
- Allow farmers to farm no complaints for noise, dust, etc.
- Roads need to be wider and all weather.
- Look more closely at smaller farms as they may well become bigger farms in the near future, as the smaller farms may be increasing in #'s in the near future.
- Younger generation may be more able to market their products as they need help on a smaller scale. They need to build a data base from the small scale farmers, to be able to help others that are just starting.
- A master plan on increasing access to irrigation for a greater number of farms/producers.
- Better protection of farm land (good agricultural producing lands) – from suburban sprawl/gravel industry – this is a growing concern.
- Awareness of alternative options (ie. solar, other crops to grow) – the market for these would need to be secure too.
- Education. Partnering with the Ag Society – they need new, younger blood and new ideas to educate the urban community on what rural life is about.
- Need opportunities for young people to “test drive” farming.
- Highlight local farms to get more awareness of the diversity of the farms in the area. Farm Days is a start.
- Water control/quality assurance especially with new construction.
- Reduce taxes and bureaucracy red tape.
- Education of the public on agriculture.
- Good business environment and encourage growth.
- Encourage value added (champion flax oil plant).
- County needs to support businesses starting up.
- Work together with towns/cities for weed pressures on industrial and outskirts.
- Water security.
- Assistance in developing renewable energy.

- Help minimize rural crime.
- Minimize fracturing of farmland.
- Manage the loss of agricultural land to residential development (put residential areas in poor land areas)
- Breaking up of the land base for acreages.
- Support smaller scale intensive agriculture operations that aren't just hobby farms.
- Remove some restrictions w/regards to policy/regulations to speed certifications/permits.
- Melissa Freeman of the West Central Forage Association, offices by Entwistle, be included in these broader discussions.
- Both the County and the Province need to recognize the renewable sustainable resource that our black soil zone provides. This soil is Alberta's black gold and too much of this resource is being urbanized.
- Is there any thing that allows a farmer to farm, or if his combine makes too much dust or noise going to be a problem in this County? It has happened to a farmer close to Stony Plain that received a call because of the noise at harvest time.
- Parkland County also provides a lot of primary services to greater Edmonton area power plants and gravel. The number of times a gravel truck has passed on a solid yellow or passed on the left after I have stopped to make a left turn on 627. My point being as there is no respect for the farm units on the roads.

Analysis

36 comments covered a broad cross section of issues.

Recommendations are ranked under themes as follows:

- Reduce fragmentation/conversion/preservation of farmland – 7
- Communication/rural-urban agriculture education awareness – 6
- Encouragement/support/for younger farmers/smaller farms – 5
- Permitting issues/red tape/right to farm -5
- Irrigation/water security – 4
- Value added/business growth/assistance for renewable energy – 3
- Education/extension -3
- Road improvement – 1
- Rural crime – 1
- Urban weed control – 1

Twenty-seven of the 36 recommendations focused squarely on securing a stronger future for agriculture against a backdrop of competing land uses and urban growth. This is not surprising, given the rising concern about the sacrifice of high quality farmland to urban expansion in Edmonton, Spruce Grove and Stony Plain. It also reflects some of the acreage versus farm tensions within the County, and the need for human resource renewal, given the increasing average age of farmers.

2. Any other comments?

- Don't forget about us.
- Increase the County's agric. base. Is this possible? Instead of having a diminishing base for farming.
- Edmonton is about 1 million people but is larger in size than most 5 to 15 million people cities. They need to fix this.
- If land is not zoned farm or ag. It is not considered as farm even though they are farmers.
- Area size of farm should not define if farmer, as a 5-acre farm can be more productive than a larger acreage.
- Labour laws restrict access of young people (less than 18 years) into the industry as they deem farm activities too dangerous eg. under 16 years they are not allowed to use pruners – no youth wages.
- Nurseries are no longer considered farms by the Alberta Gov.
- Data base on "farm trips" for school trips. CAP program – get a lot of volunteer farmers to present in the classrooms. Farmers need to be proactive in educating urban folk.
- Highway 60 at the (redacted to preserve anonymity of individual) Ave. service road been 3 years without service road to farm (sprayer was hit by gravel truck last week)
- I am sure a pile of \$ was spent on Toma & Boma and their plan that went where? I heard that it wasn't adopted by council and now onto another plan. As a taxpayer, this is hugely disappointing. I contributed a considerable amount of time into that plan and thought the resulting recommendations were very poor.
- There are bylaws/policies like (16 words redacted to preserve anonymity of individual). I called the County and was told to just (11 words redacted) or write a bylaw change proposal – not my job. Need a practical policy in place that exempts working farms. Just an

example of a practical situation that County could easily fix by looking at what other counties are doing.

- Concerned about the divide between farmers and rural residential.
- Recent problem with a subdivision I farm behind that due to the truck traffic of making silage local peace officers shut me down. Who has the right and whom was there first?? It was a rented piece of land but I was farming it long before the subdivision was there.
- Concerned that the cost of this type of engagement must provide real value to the residents of the County, not just the farming community.
- The majority of County lands are suitable to cattle production; however, there is a major problem with the lack of hay this year (particularly since there was so much winterkill)

Analysis

15 comments, many of them extensive in nature, provided some very useful additional perspectives. Ranked in order, the comments are grouped into the following categories:

- Fragmentation/conversion/policies relating to protection of farmland and farming – 10
- Urban education/promotion of agriculture – 2
- Road access for farm equipment – 2
- Toma & Boma report disappointing -1

Once again, the overwhelming concern about the loss of valuable farmland surfaced as the dominant issue in the final discussion of the evening. This issue formed a major component of the recommendations in the *Future of Agriculture Study*. The County has made a good start in responding to these concerns by designating three large zones within the County as “prime agriculture areas”. But the issue remains uppermost in producers’ minds, suggesting the County may want to consider additional policy solutions.

Conclusions

1. There is a high level of interest in the County in strengthening and improving agricultural programs and services, as evidenced by the excellent producer turnout and the comprehensive list of concerns articulated during the evening. Some concerns were mentioned so frequently that they have been identified as key themes in #3, below.

But every concern raised should be reviewed and acted upon wherever possible. The consultant recommends that Council, Agriculture Service Board members and County staff read this report to understand each of the individual concerns raised and to consider how the County might respond to them.

2. While the comments suggest there is room for improvement in several areas, the discussions on *most valued* and *least valued* programs suggest that Parkland County has broadly aligned its current agricultural program expenditures with program areas that are *most valued*.

3. Three areas stand out as requiring further discussion by the Agricultural Service Board and possible action by County Council:

a) Agricultural plastics/containers/residual herbicides/dead stock – while existing programs are appreciated, it is clear that producers want more help from the County in addressing these critical agricultural concerns.

b) Fragmentation/conversion of agricultural lands and urban/acreage education/conflicts with agriculture – while there is no “silver bullet” here, agricultural producers want the County to do more to preserve prime agricultural land and to reduce misunderstanding and conflicts with non-agricultural interests.

c) Communication/education – producers want more direct communication from the County agriculture team about programs and services. They also want this same team to sponsor more agricultural education/awareness programs for acreage owners and urban residents. Agricultural producers indicate that more of this type of work by the County will be vital to sustaining the social license that will be a critical factor in enabling a strong future for agriculture.



A Comparison of Agricultural Programs and Services in Parkland County Versus Fifteen Other Jurisdictions

Introduction

The project design for Parkland's *Review of Agricultural Programs and Services* includes a significant survey of programs and services provided by other municipalities. The survey results provide a strong data set that enables a benchmarking process, in 43 categories, of Parkland County's programs against those of other jurisdictions.

Benchmark Jurisdictions

Fifteen rural municipalities were chosen for the survey to ensure confidence in results. Twelve surveyed jurisdictions were Alberta rural municipalities, operating within the same statutory framework as Parkland County. These Alberta municipalities comprised three groups:

1. Large, metropolitan-adjacent municipalities that were most likely to face similar issues to those in Parkland County: Sturgeon, Leduc, Strathcona, Rockyview, and Foothills. The average 2018 Equalized Assessment Base for this group is \$10.278 B.
2. Large rural municipalities adjacent to urban areas but not in the same metropolitan category as Edmonton or Calgary: Grande Prairie, Yellowhead, Vermillion River, and Mountain View. The average 2018 Equalized Assessment Base for this group is \$6.151 B.
3. Predominantly rural municipalities: Fairview, Two Hills, and Warner. The average 2018 Equalized Assessment Base for this group is \$0.553 B.

The overall average 2018 Equalized Assessment Base for the 12 survey jurisdictions is \$6.471 B compared to \$10.335 B for Parkland County. (Note: due to the unique nature of one unusually urban County, approximately one-third of its assessment base was included for comparative purposes.)

The survey also included three non-Alberta jurisdictions to ensure a broader scope of comparison. These jurisdictions operate under significantly different statutory and governance frameworks than Alberta municipalities. While their survey responses do not always

constitute an “apples to apples” comparison, they add value by broadening the overall scope of the benchmarking process.

The three non-Alberta jurisdictions included:

1. Rural Municipality #159 in Saskatchewan. This municipality was chosen because it completely surrounds the City of Regina and was therefore likely to face similar metropolitan-adjacent issues as Parkland County.

It should be noted that there are 296 rural municipalities (RM's) in Saskatchewan compared to 69 in Alberta. RM's are typically three townships latitude by three townships longitude, although some are slightly larger. As such these Saskatchewan municipalities are significantly smaller than the average Alberta rural municipality. In terms of land base the average Alberta rural municipality is approximately 3.4 times larger than the average Saskatchewan rural municipality. RM #159 occupies a total land base of 216,000 acres compared to a total base of 599,000 acres in Parkland County.

2. Grey County, Ontario. Rural Ontario currently operates under two differing levels of governance. In some areas, the traditional counties have added an extra regional layer of governance, similar to the regional governance model in British Columbia. Other areas operate under the traditional county model, similar to Alberta's rural municipalities.

Grey County was chosen because it operates along more traditional county lines, similar to Alberta jurisdictions. Occupying a key agricultural zone in the Owen Sound area of South-western Ontario, Grey County is also one of Ontario's leading agricultural municipalities, including 2300 farms and a land base of 1.12 million acres.

3. Carroll County, Maryland. Located northeast of Baltimore, the County is primarily rural and covers a base area of 290,000 acres. It was chosen for comparative purposes because of its international reputation for innovative agricultural legacy/conservation programming. Carroll County offers four different legacy/conservation programs that range from county-funded to state/private-funded. Included in these is a unique beginning farmer program that pays up to 52.5% of the land

purchase price in exchange for an agricultural legacy covenant. Agriculture has been a part of the rural landscape in Carroll County for approximately 200 years longer than in Alberta or Saskatchewan.

Survey Dynamics

An e-mail to agricultural fieldmen in the 12 Alberta jurisdictions requested their participation in a telephone survey. The survey template was included in the e-mail so that participants could prepare themselves in advance for the telephone discussion.

In the three non-Alberta jurisdictions, a website search was conducted and a call placed to the individual whose job title most closely approximated a typical agricultural fieldman in Alberta.

In 100% of the chosen municipalities, respondents willingly agreed to participate in the survey. Average telephone call time was 38 minutes and 16 seconds. Participants were very helpful, sharing information freely and in a collegial manner.

Survey Results

The chart below summarizes the responses from the 15 jurisdictions and compares them to the programs and services in Parkland County. Note that results are reported in *miles* versus *kilometers* and *acres* versus *hectares*. These standard Imperial measurements were chosen because the majority of rural Albertans work commonly within the Imperial system when considering land-related measurements of distance and area.

Weed Control

Weed control comparisons with the 12 Alberta municipalities were relatively straightforward and could be directly translated into a benchmarking analysis.

Benchmark comparisons were more difficult in the three non-Alberta jurisdictions. In Carroll County, Maryland, for example, the state government conducts roadside weed control. There is no weed notice system on private land and response is based purely on a complaint-

driven model. In Grey County Ontario, weed control is delegated to the four conservation authorities that manage the county's system of drainage canals. In RM #159 in Saskatchewan, noxious weed control on private land is managed primarily on a complaint basis with a third party weed inspector process.

In some of the benchmarking categories for the three non-Alberta jurisdictions, the author was able to extrapolate a comparison from extensive verbal communication. In others a reasonable comparison was not possible, resulting in "n/a" in the benchmarking table below. The designation "Other" refers to the three non-Alberta jurisdictions.

	Alberta	Other	Combined	Parkland
# of Jurisdictions	12	3	15	Yes
Operating Under Some Form of Weed Control Legislation				
Average miles of road	1484	747	1320	1325
Average municipal size (acres) adjusted for Yellowhead's large non-agricultural area	899,484	542,000	827,987	599,452
Standard Spray Program	12	1	13	Yes
No Spray Program	10	n/a	n/a	Yes
Average # of participants- No spray program	34(51)	n/a	n/a	30
Mower-mounted sprayer	1	1	2	Yes
Roadside Seeding	12	0	12	Yes
Roadside Mowing	12	3	15	Yes
Average Number of Mowings	1.5	1.5	1.5	1.5
Weed Inspection Program	12	2	14	Yes
Average Number of Weed Inspectors	4.6	2.5	4.3	6
Average Number Weed Notices	31(95)	2	19(73)	100
Sprayer Rental Program	8	0	8	Yes

Comments

There was a remarkable degree of similarity in roadside weed control programs across Alberta jurisdictions. This is not surprising since all 13 Alberta jurisdictions (including Parkland) operate under the same Agricultural Service Board grant agreements and the same legal framework as set out under the provincial *Agricultural Service Board Act* and *Weed Control Act*.

Two jurisdictions reported they formerly ran a no-spray program but discontinued it because compliance was poor. The average number of no spray program participants per municipality (51) was skewed by the very large number in one fairly urban county. Excluding this county's unique situation, the average number is 34, very similar to the 30 in Parkland County.

Like most of the surveyed jurisdictions, Parkland County relies on a combination of mowing and herbicide application to control problem weeds. While there is slight variance in how often mowing occurs, the norm seemed to be either twice annually on major collector roads and once annually on lower traffic roads, or a combination of two passes one year and one pass the next year, on a rotating basis. This is almost identical to Parkland's twice on collector and once on other roads.

Most agricultural fieldmen identified negative perceptions by urban and acreage residents regarding sprayer trucks and regular spray programs for roadside weed control. Parkland County has reduced the negative image of sprayer trucks by converting to a mower-mounted spray system. In this regard they are well ahead of most jurisdictions.

All 12 Alberta jurisdictions engaged in roadside seeding programs, but many indicated that this activity now constituted a very small program component, as most of the intended back sloping had now been completed.

14 of the 15 surveyed jurisdictions conducted routine weed inspection on private land, although outside Alberta, entities other than the municipality delivered the program. Based on Parkland's land base, which is approximately two-third's the size of the average surveyed Alberta municipality, the County should be deploying 3 weed inspectors.

In actual practice, the County deploys 6 weed inspectors. This significantly stronger coverage level fits well with the high value that agricultural producers placed on the weed inspection program during the discussion at Blueberry Hall. Parkland's higher ratio of weed inspectors is also driven by the large number, proportionately, of acreage parcels. This is consistent with other near-metropolitan municipalities.

Of the 12 surveyed Alberta municipalities, one municipality's significant urban environment skews the weed notice average strongly upwards. Averages are therefore reported exclusive of this jurisdiction's numbers (see averages in brackets that include this county's numbers).

It is noteworthy that two very distinct philosophies appear to guide the 12 surveyed Alberta jurisdictions regarding the issuance of weed notices. One group of six is characterized by the issuance of very few or no weed notices, combined with more frequent individual interaction with producers in an attempt to "coach" them into controlling weeds. This group issues an average of 3.5 notices/annum.

The other group of six is characterized by a step-wise "policy approach" resulting in an automatic weed notice after non-compliance with either one or two warning letters. If we exclude the more urban-based municipality from this group, the average for the "policy" group is 64.2 notices annually. This is about 18 times the average number of notices issued by the "coaching" group.

At an average of approximately 100 notices annually, Parkland clearly falls into the "policy" group. It is noteworthy that most of the near-metropolitan and larger municipalities fall into this "policy" group.

These two different approaches to issuing weed notices are derived from a long history of local experience and cumulative policy decisions by successive generations of municipal councils. There is no "right" or "wrong" approach, providing both are characterized by fairness, firmness and consistency. Parkland's "policy" approach appears to have been reasonably well endorsed by the 57 agricultural producers at the Blueberry Hall meeting. It may therefore be reasonable to conclude that the "policy" approach generally works well in Parkland County. At the

Blueberry Hall meeting, the only concern expressed regarding this approach, was that producers wanted more individual interaction with weed inspectors so that they could better gauge the urgency and severity of warnings.

Only eight of the 12 surveyed Alberta jurisdictions, and none of the non-Alberta jurisdictions ran a sprayer rental program. Programs ranged from backpack only to the full range of towed-boom, skid-mounted and backpack sprayers. Several agricultural fieldmen indicated that sprayer rentals had declined in recent years, but that their council wanted to continue to offer the program as a backup to their policy approach. Parkland continues to offer a sprayer rental program ranging from backpacks to pasture sprayers. This may be fitting, given their “policy” approach to weed notices.

Conclusion – Weed Control

In every instance, Parkland County’s weed control program is at least equivalent to the benchmark average of surveyed jurisdictions. In its use of mower-mounted sprayers and in the deployment of weed inspectors, Parkland County’s program is superior.

Problem Wildlife/Pests

In comparison with weed control, the problem wildlife/pest component of agricultural programming occupies significantly less time for a typical agricultural fieldman. Nevertheless, it requires training, careful maintenance of records, especially in the issuance of toxicants, and significant interaction with many acreage owners who have been less exposed to wildlife/pests. It also requires knowledge of the *Agricultural Pests Act*, *Livestock Industry Diversification Act*, and *Wildlife Act*, as well as several relating pieces of federal legislation.

The table below summarizes the responses from the 15 surveyed jurisdictions:

	Alberta	Other	Combined	Parkland
Education/ Outreach	12	1	13	Yes
Bounty	5	1	6	Yes
Trap rentals	9	0	9	Yes

	Alberta	Other	Combined	Parkland
Dedicated Problem wildlife Officer on staff	4	0	4	Yes
Toxicants	11	1	12	Yes

Comments

All 12 surveyed Alberta municipalities and one of the other jurisdictions engaged in education and outreach activities regarding problem wildlife. These activities included seminars, newsletters, demonstrations and one-on-one extension activities. Many agricultural fieldmen shared the philosophy that proactive education resulting in prevention was a good investment of time compared to time-consuming reactive responses. Parkland County takes a similar approach.

Only five of the Alberta municipalities offered a bounty program. Two municipalities offered wild boar bounties, one offered both wild boar and pocket gopher, one offered only pocket gopher and one offered only coyote. One of the other jurisdictions offered a bounty for coyote and beaver. Parkland offers a bounty for wild boar and pocket gophers.

Nine of the Alberta municipalities provided trap rentals and one of this group also sold magpie and pocket gopher traps. Common species covered in trap rentals included skunks, magpies, gophers, pocket gophers, raccoons, squirrels, coyotes and foxes. One municipality was also involved in problem bear trapping. One eastern municipality was heavily involved in rat control trapping and one southern municipality in skunk trapping (rabies monitoring). Parkland rents out traps for skunks, squirrels and magpies. None of the non-Alberta jurisdictions offered a trap rental program.

Few of the surveyed Alberta municipalities and none of the non-Alberta municipalities maintained a dedicated problem wildlife officer position. In most cases problem wildlife were dealt with directly by the agricultural fieldman's team. In one eastern Alberta municipality dedicated rat control officers participated in maintaining Alberta's rat free status. One municipality with a large urban component maintained a team of four problem wildlife officers in preference to using toxicants. Two other large municipalities supported one and two dedicated positions respectively. One municipality contracted out its problem

wildlife work. Parkland maintains one partially dedicated position in its engineering services department.

Eleven of the twelve Alberta municipalities and one of the non-Alberta jurisdictions offered a toxicant program for problem wildlife control. Most maintained one or both of 1080 (coyote control) or 2% liquid strychnine (pocket gophers). Most agricultural fieldmen reported they used the program very sparingly and one jurisdiction had not used any toxicants recently. Parkland maintains 1080 and liquid strychnine toxicants, but takes the approach of using them very sparingly.

Conclusion – Problem Wildlife/Pests

Parkland County offers a problem wildlife/pest control program that is fully equivalent in most aspects to the benchmark average of surveyed Alberta municipalities. In the area of dedicated problem wildlife officers, Parkland’s program is slightly superior to the benchmark average.

Environmental Programming

Over the last two decades environmental programming has become a significantly larger policy element in municipal planning and delivery. It has also recently become a critical element in building and sustaining the social license granted to agriculture by society at large.

A survey of the 15 jurisdictions provided the findings below:

	Alberta	Other	Combined	Parkland
Environmental Farm Plan Support (EFP)	10 + 2	n/a	10 +2	Yes
ALUS/Other Major Programs	4	1	5	Yes
Environmental Programs for Acreage Owners	9	n/a	9	Yes
Other GF II/CAP Environmental Programs	9	n/a	9	Yes

Comments

All 12 surveyed Alberta municipalities provided support to rural landowners to develop and update their environmental farm plans under the federal-provincial program. Ten municipalities provided this

support directly, although in one case it was through a cost-sharing arrangement with neighbouring municipalities. Two provided it in the form of funding to a local forage association or conservation group that delivered the program directly.

In one of the surveyed Canadian jurisdictions no support was provided, and in the other a third party received partial funding to deliver the program. Parkland County provides direct EFP support to rural landowners.

Four surveyed Alberta municipalities participate directly in the Alternate Land Use Services (ALUS) program. Three more are currently exploring participation in the ALUS program. One other Canadian jurisdiction supports ALUS through partial funding to a third party. Other major environmental programs cited by Alberta municipalities were Cows and Fish, and Ducks Unlimited. Parkland provides direct staff support to the ALUS program. It also participates in Rural Heritage, Balanced Landscapes, and Ecosystems & Biodiversity programs as well as the Sustainability Awards program.

Nine of the surveyed Alberta municipalities offered environmental programs for acreage owners. More than half of these jurisdictions mentioned the Green Acreages program. Others cited local programs adapted to the needs of acreage owners in their specific municipality. Parkland participates in the Green Acreages Program and offers other environmental programming to acreage owners.

Nine of the surveyed Alberta municipalities participated in Growing Forward II/Canadian Agricultural Partnership programs. Initiatives mentioned included riparian, wetlands and biodiversity programs. Parkland County participates in some of these programs in conjunction with other groups.

In terms of overall environmental and heritage programming one other jurisdiction stood out for breadth of its programming and for the depth of funding behind these programs.

Conclusion – Environmental Programming

Parkland County's environmental programming is at least equivalent to the benchmark average of other Alberta jurisdictions. In the delivery of ALUS, other environmental programming and acreage-focused environmental programming Parkland's program is superior.

Extension Services

As a result of Alberta Agriculture's staged withdrawal from front line extension services during the 1993 – 2002 period, agricultural service boards and agricultural fieldmen have become more heavily involved in directly delivering extension programming. This is evident in the chart below, where almost every jurisdiction in Alberta offers a very full range of extension programming. Second only to weed control, extension programming constitutes a significant volume of work for every surveyed agricultural fieldman.

	Alberta	Other	Combined	Parkland
Extension Events	12	0	12	Yes
Classroom Ag Program/ Farm Safety/ AB Farm Animal Care	12	0	12	Yes
Crop Reports/Weed/Insect surveys	11	0	11	Yes
Disease Testing/Clubroot/ Fusarium/etc.	12	0	12	Yes
Farm Family Awards	11	0	11	Yes
Grants/bursaries	12	1	13	Yes
Horticulture extension	12	0	12	Yes
Involved in horticulture maintenance on municipal land	10	0	10	Yes

Comments

Almost all extension programming in non-Alberta jurisdictions is delivered by agencies other than the municipality. In Carroll County extension is delivered out of the land grant university - the University of Maryland, through the cooperative state extension system. In Grey County, Ontario, extension is delivered by a collaborative, non-profit

organization titled Grey Agricultural Services. In RM # 159, it is delivered through a variety of agencies.

Every surveyed Alberta jurisdiction offered a rich variety of extension events. Examples include Working Well workshops, beef nutrition, riparian management, wills and estate management, solar panels, home economics, agronomy, soil health, rotational grazing, etc. Many of these programs were offered directly by the municipality, while many others were offered in collaboration with local forage or applied research associations.

Parkland offers a broad range of extension programs, including in recent years, City Slickers, Working Wells, Acreage Days, CAP, etc. Parkland also provides \$4000 funding each year to support the extension activities of West Central Forage Association and an additional \$4000 annually to support Gateway applied research association. At the Blueberry Hall meeting, rural landowners identified increased communication about agricultural programs and services as an area for improvement. Many of the surveyed jurisdictions provided regular newsletters to their rural ratepayers. Parkland has recently begun to address the communication issue with “Friday Facts About Agriculture” on its Facebook page. Further communication strategies are currently being pursued.

Every surveyed Alberta jurisdiction participated in the Classroom Agriculture Program for grade four students and/or farm safety/ Alberta Farm Animal Care programs. Parkland participates fully in the Classroom Agriculture Program.

All 12 municipalities participated in disease testing, weed and insect surveys. Eleven of the 12 municipalities participated in the crop-reporting program with Agriculture and Forestry. None of the non-Alberta jurisdictions participate directly in these programs. Parkland participates fully in all of these programs.

Eleven of the 12 Alberta municipalities participate in farm family awards, although several commented that it was becoming more difficult to select families for the award. One municipality had discontinued participation in 2016, but was contemplating resuming

participation. Parkland participates fully in the Northland's sponsored farm family awards.

All 12 Alberta municipalities and one other Canadian municipality provided grants or bursaries to various entities. 4-H was most commonly cited, but farm safety, applied research, conservation, farm animal care, and student support were also mentioned. Some municipalities also provided in-kind support through pen set-up for 4-H events, staff support for Agricultural Society fairs, etc. Parkland County provides grants and support to 4-H, funding to West Central Forage Association and Gateway Research Organization as well as five - \$500 post-secondary bursaries.

All 12 surveyed jurisdictions engaged in horticultural extension and on-site diagnostics. Three of the surveyed jurisdictions maintained professional staff to conduct these activities and nine others managed horticulture extension as an "add on" to their other duties. Ten of the Alberta municipalities also engaged in providing horticultural maintenance advice and/or directly managing flowers, grass, trees and shrubs on planted municipal sites. None of the non-Alberta jurisdictions engaged in horticulture extension or maintenance. Parkland County maintains a seasonal horticulturist and also engages in horticultural management at County buildings.

Conclusion – Extension Services

Parkland's extension programming is at least fully equivalent to the benchmark average in almost every category. Their programming may be slightly inferior to the benchmark average in communicating programs and services to rural landowners. Parkland's programs are slightly superior in the level of combined funding (\$8000) provided to two applied research and extension associations, and in the number of post secondary bursaries offered to students whose families reside within the County. Horticulture extension also stands out as an area of superior service.

Economic Development

Within the municipal context, economic development in agriculture is generally focused primarily on value-added food and fibre processing,

direct marketing and agri-tourism. Historically, rural municipalities also co-funded co-operative municipal seed-cleaning plants. As these plants became well established or privatized, most annual municipal funding has been discontinued.

Economic development activities are delivered through a variety of agencies, including municipalities. The comparison below is based on the question of whether a surveyed municipality directly delivered an economic development activity. In some cases where the answer was “no”, the service may still have been available, but was delivered through another agency.

	Alberta	Other	Combined	Parkland
Value-added agricultural development activities	6	0	6	Yes
Value-added asset-Mapping	4	1	5	Yes
Annual Seed-cleaning Plant Funding	1	0	1	No

Comments

Only half of the surveyed municipalities directly delivered value-added agricultural economic activities. In most cases the municipality delivered these activities through a different administrative unit than the Agricultural Fieldman’s office. Parkland participates directly in value added agricultural economic activities, through staff located in Development Services.

Four of the surveyed Alberta municipalities and one other Canadian jurisdiction maintained an active value-added asset map. Parkland also maintains a value-added asset map.

Only one of the twelve surveyed Alberta municipalities, and none of the other surveyed jurisdictions provided regular seed-cleaning plant funding. It should be noted however that seven of the surveyed municipalities identified forgivable loans, one-time funding for colour sorters and other upgrades, tax breaks and maintenance of access roads as special support provided to local seed plants by their municipalities. Parkland does not provide regular seed-cleaning plant funding but has recently provided support for a colour sorter upgrade.

Conclusion – Economic Development

The scope of Parkland County's economic development activities in the area of value-added agriculture is slightly superior to the benchmark average of the twelve surveyed Alberta jurisdictions. Its seed-cleaning plant support is fully equivalent to the benchmark average.

Rural Broadband Connectivity/GPS

Approximately 25 years ago, as internet usage became mainstream for business, government, education and communication purposes, many rural municipalities began assessing the quality of coverage in their jurisdictions. Where service providers were unwilling to provide high-speed coverage at a reasonable cost, some municipalities stepped in to fund tower and/or fibre installation. The chart below tracks the degree of participation of surveyed municipalities in tower installation and related activities.

	Alberta	Other	Combined	Parkland
Funding for tower Installation	6	2	8	Yes
Tower site vegetation Management	7	1	8	Yes
GPS weed mapping	10	2	12	Yes

Comments

Half of the surveyed Alberta municipalities and two of the other jurisdictions provided funding for tower installation. Many of those municipalities who did not engage in this activity indicated that coverage was reasonably strong in their area. Parkland has put in place an extensive program that has funded 20 towers in recent years and has mapped tower and fiber optic expansions for the future. The program resides in Parkland's Development Services division.

Seven surveyed Alberta municipalities and one other jurisdiction provided tower site vegetation management. In many cases this was an informal arrangement based on shared tower usage for emergency radio usage and other purposes. Parkland engages in tower site vegetation management.

Ten of the surveyed Alberta municipalities and two of the Other jurisdictions employed GPS applications for mapping noxious weeds, sprayer activity etc. GPS “tracking” applications are clearly becoming mainstream components of municipal weed control operations. Parkland employs GPS applications for these purposes.

Conclusion – Rural Broadband Connectivity/GPS

Parkland County’s commitment to tower site management and use of weed mapping GPS applications are fully equivalent to the benchmark average of surveyed jurisdictions. The County’s aggressive approach to tower installation is superior to the benchmark average.

Miscellaneous

This “catch-all” category was designed to capture programs and services that did not fit neatly in the other major survey areas. Most of these programs and services are not mainstream activities for county agricultural teams, but cumulatively they can demand a significant component of time.

	Alberta	Other	Combined	Parkland
Hazardous tree program	7	0	7	Yes
Hay and grazing permits	9	3	12	Yes
Internal health & safety program	12	3	15	Yes
Equipment rentals	10	0	10	Yes
Beaver flood control	10	2	12	Yes

Comments

Seven of the surveyed Alberta jurisdictions maintained a hazardous tree removal program. Some of the Alberta jurisdictions that did not provide the service were located in areas where the prairie environment was not conducive to tree growth. Other jurisdictions cited prairie environment, utility companies or other authorities as reasons for not offering a hazardous tree program. Based on its mixed aspen/conifer environment, Parkland County maintains a hazardous tree removal program through its Agricultural Services department.

Nine of the surveyed Alberta municipalities and all of the Other jurisdictions offered hay and grazing permits on vacant county land. Two of those with no program indicated they allowed hay or grazing on vacant land with verbal permission. Access to forage on these vacant lands during periods of drought can provide significant relief to some livestock producers. Parkland offers hay and grazing permits through its Agricultural Services department.

Encouragingly, all 15 surveyed jurisdictions provided an internal health and safety program for employees. Parkland provides a similar program.

Ten of the surveyed Alberta municipalities and none of the Other jurisdictions offered equipment rental programs. There was a broad range in the types of equipment rented, including livestock scales, squeezes, post-pounders, soil testers, electronic ear-tag readers, pest traps, backpack sprayers, skid-mounted sprayers, towed sprayers, pasture sprayers, plastic mulchers, grain bag rollers, tree planters, etc. It was noteworthy that many agricultural fieldmen indicated demand for this rental equipment has declined in recent years, as these items were available for rent or purchase commercially. Some speculated about the future discontinuance of an equipment rental program. Parkland maintains a significant equipment rental program, including several types of sprayers, livestock equipment, tree planters, plastic mulchers, etc.

Ten of the surveyed Alberta municipalities and two of the Other jurisdictions were active in beaver flood control programming. Activities included live-trapping and relocating beaver, dynamiting dams, or where equipment access was possible, opening dams with backhoes. In some cases the program was delivered through the municipality's public works division, and in others the service was contracted out.

Many surveyed jurisdictions indicated that their beaver flood control activities were restricted to situations where flooding affected municipal infrastructure. They commonly referred landowners to specialized contractors where flooding affected private land. Parkland maintains an active beaver flood control program.

The final miscellaneous survey category was designed to enable agricultural fieldmen to comment on other significant programming. Programs mentioned included agricultural plastics and herbicide containers(3), environmental programs(2), urban agriculture, soil management, agriculture facilities, agriculture master plan, rat control, rabies control, and back sloping. Parkland County offers several special programs in environment and extension services.

Conclusion – Miscellaneous

In almost all areas of the miscellaneous category, Parkland's programs and services are fully equivalent to the benchmark average. A detailed assessment of the specific features of agricultural plastics and herbicide container programs in surveyed jurisdictions was not conducted. An in-depth comparison with Parkland's already significant services in these areas is therefore not possible within the scope of this review. However, commentary received from many agricultural producers at the Blueberry Hall meeting suggests that Parkland may be below the benchmark average in these program areas.

Staffing and Budget Benchmarks

Survey question #'s 2 and 3 were designed to compare Parkland's human and financial resource commitments to agricultural programming with those of benchmark municipalities. In order to develop an "apples to apples" comparison, agricultural programs and services were deemed to include all of the survey categories except economic development and broadband/GPS.

It became apparent during the telephone interviews that these resources were sometimes distributed over several operating divisions within the surveyed municipality. As a result, the author had to sometimes "cobble together" these numbers with the active participation of the surveyed agricultural fieldman. The comparison below is offered with the disclaimer that the author's confidence in absolute accuracy is not high. Nevertheless, the comparison offers useful insights.

	Alberta	Other	Combined	Parkland
Av. # FTE's allocated to agriculture programs and services	9.8	n/a	n/a	13
Budget allocation	\$ 1.52 M	n/a	n/a	\$ 2.13 M

Comments

Relative to its land base, Parkland's human and financial resource investment in agricultural programming appears to be higher than the benchmark average. This same higher investment level was noted in other near-metropolitan municipalities. This may be based in part on the additional demands placed on agricultural services by a significantly larger acreage community and by other urban-rural interface issues.

Conclusion – Staffing and Budget Benchmarks

Parkland County's resource commitment to agricultural programming and services is fully equivalent to the average of near-metropolitan municipalities. It is superior to the overall benchmark average.

Organizational Design

This question was intended to understand the basic organizational design approaches to providing the broad range of agricultural programming and services. A chart-based comparison with numerous categories would have required a much more extensive survey process. Several observations are presented below based on a summation of comments:

Comments

1. No two municipalities were identical in the organizational design through which programs and services were offered to rural residents.
2. Most frequently, the overwhelming majority of programs were offered through the agricultural fieldman's office/agriculture services unit. Occasional outliers included mowing through public works, hay permits through planning, problem wildlife through operations, and some extension through municipally-funded forage/applied research associations.

3. Parkland is unusual amongst surveyed Alberta jurisdictions in separating its environmental program delivery from its agricultural services unit.

Conclusion – Organizational Design

Organizational structures in almost every jurisdiction evolve over time based on ratepayer needs, administrative capacity and policy decisions by councils. Most of Parkland’s mainstream agricultural programming appears to be offered within a structure that is broadly comparable to the twelve surveyed Alberta municipalities. The County takes a noticeably different organizational approach to other municipalities in delivering its environmental programming.

How Can Municipalities Best Support Agriculture in Future?

This final survey question was designed to encourage agricultural fieldmen to think expansively about the future. There was no benchmark comparison intended here. But the comments provided by agricultural fieldmen were illuminating in several areas outlined below:

1. The dominant theme mentioned by 80% of respondents was social license. This included strengthening urban-rural and acreage-rural trust through education, awareness, tours, newsletters, social media, farm visits, local food, school programs and education for children.
2. Perhaps allied to this issue was the need to continue a strong extension program for farmers, ranchers and acreage holders, and urban neighbours.
3. A third issue frequently identified was the loss of valuable farmland and the need for regional planning to designate large tracts of land as primary agriculture.
4. The importance of strengthened environmental programming was mention several times, especially within the context of the social license issue.

5. Other issues referenced were: preserving confined feeding operations, addressing rural crime, economic development, access for larger farm equipment, agriculture master plans, urban agriculture, and jump-starting new entrants to agriculture.

Taken as a whole, the key themes seem to be the need to strengthen the social license of agriculture, increase extension programming, preserve farmland and increase environmental programming. Discussion within Parkland County appears to align well with these main themes.

Overall Conclusion

In 31 of the 43 survey categories, Parkland County's agricultural programs and services were fully equivalent to the benchmark average of surveyed municipalities. Parkland's programming may be slightly inferior in 2 categories: communication of services to rural landowners; and programming for agricultural plastics and containers.

In 10 categories, Parkland's programming and services are superior to the benchmark average.

Overall, there were very few deficiencies in Parkland's agricultural programs and services relative to other jurisdictions. There were also a significant number of easily identifiable strengths.

When Alberta's agricultural fieldmen relate the strength of their municipality's agricultural programs and services to their equivalents in other provinces and states, they are universally recognized as offering some of the strongest programming in North America. Going back to 1945, Alberta's unique Agricultural Service Board program is underpinned by solid board governance, collaborative provincial-municipal relationships, and by the dedication of agricultural fieldmen and their teams.

In assessing Parkland's agricultural programs and services against other Alberta jurisdictions, the comparison is therefore against the "best of the best". Within this context, Parkland County's agricultural programs and services compare favourably.

Irrigation Development in Parkland County

Introduction

The world's population is projected to grow from the current seven billion people to about 9.2 billion by 2050 (United Nations, 2009). World food demand is expected to increase as a result. Agricultural production will need to increase by 70 to 100% to meet the growing demand for food (FAO, 2011). This translates to an additional one billion tonnes of cereal grains and 200 million tonnes of livestock products that will need to be produced each year (Bruinsma, 2009). It is projected that irrigation will play a dominant role in the future growth in crop production to meet projected food demands, particularly in many of the developing countries.

Irrigation development, which began in Alberta in the late 1800s, increased steadily throughout the 1900s. Alberta's irrigated area totals about 705,000 ha, and is located in most of Alberta's major drainage basins (AAF, 2017) (Figure 1). Almost 70% of Canada's total irrigated area is in Alberta.

The majority of Alberta's irrigation (579,000 ha) is within the 13 irrigation districts, which are in the South Saskatchewan River Basin (SSRB). An additional

126,000 ha are irrigated throughout the province as private developments. Table 1 shows the irrigated area within each of the river basins.

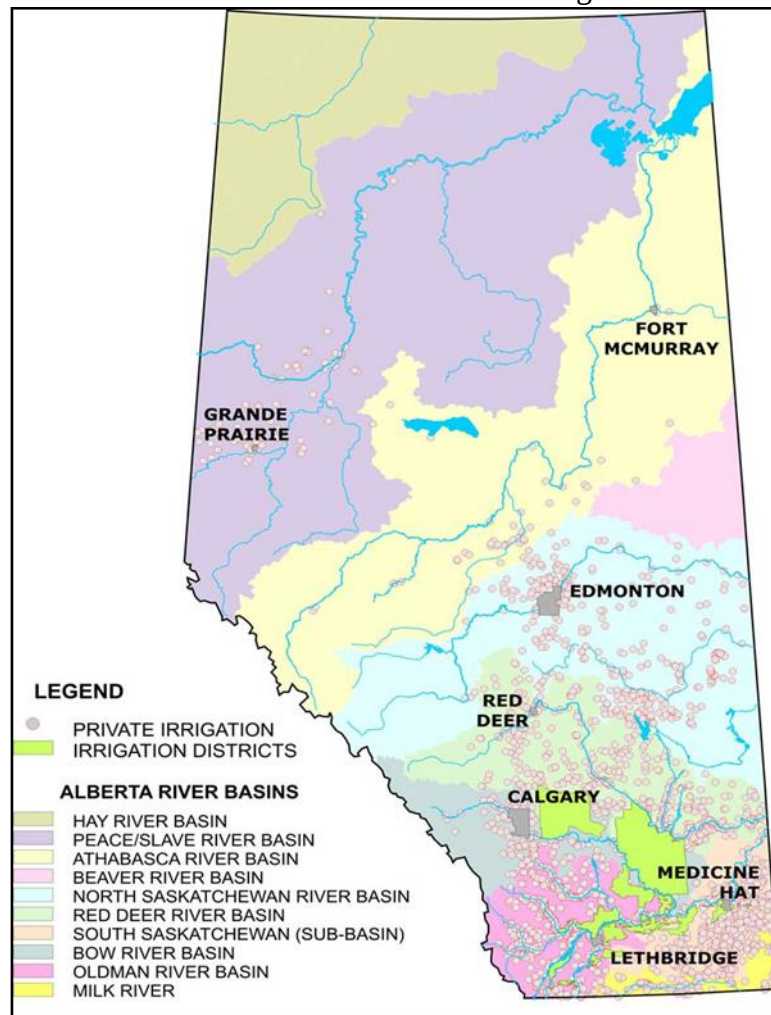


Figure 1. Location of irrigation in Alberta

Table 1. Private irrigation licences in 2016.

River Basin	Total Irrigated Area (ha)	Number of Licences			
		1 to 40 ha	41 to 122 ha	>122 ha	Total
Athabasca River	484	43	6	0	49
Milk River	7,644	99	43	14	156
North Saskatchewan River	11,000	312	56	15	383
Peace River	1,362	65	9	0	74
South Saskatchewan River (SSRB)					
• Bow River	10,465	149	60	18	227
• Little Bow River	13,330	125	70	26	221
• Oldman River (Lower)	7,154	27	28	14	69
• Oldman River (Upper)	3,065	63	20	4	87
• Red Deer River	18,747	421	94	18	533
• South Saskatchewan River	18,977	528	81	23	632
• Waterton/Belly/St. Mary Rivers	20,381	136	71	17	224
• Willow Creek	13,148	158	78	17	253
SSRB - Total	105,267	1,607	502	137	2,246
Total	126,000	2,126	616	166	2,908

Source: AAF, 2017

Economic Impact

Alberta's irrigation industry plays a significant role in the province's economic and social well being. Alberta's irrigation industry annually generates about \$3.7 billion to the provincial gross domestic product (GDP), and represents about 30% of Alberta's total agri-food GDP (Paterson Earth & Water Consulting Ltd., 2015). In addition, \$2.3 billion in labour income is generated, and about 57,500 jobs created.

Irrigated cropland produces about four times more revenue per hectare than dryland crop production. Sales of irrigation crop and livestock products, on about 4.7% of Alberta's cultivated land base, generates 19% of total primary agricultural sales. Irrigation-related agricultural processing generates almost \$1.7 billion to the Alberta GDP, accounting for 17% of the total GDP generated by Alberta's food processing industry. Increasing global population, combined with changing climatic conditions will see Alberta's irrigation industry playing an increasingly significant role in the production and processing of agricultural products to meet the world's future food demand.

North Saskatchewan River Basin Water Use

Water is a critical requirement for the development of a sustainable irrigation industry. Approximately 7.3 billion m³ of water flows annually from the North Saskatchewan River Basin (NSRB) (AMEC, 2007). Of that amount, about 2.0 billion m³ are licenced for withdrawal each year, which is about 26% of the total annual flow. Figure 2 shows the distribution of water allocations in the NSRB. Within this chart, “Other” refers primarily to water allocated for water management by Alberta Environment and Parks and habitat enhancement by Ducks Unlimited. “Registration” refers to traditional agricultural water use for livestock production and pesticide application prior to January 1, 1999.

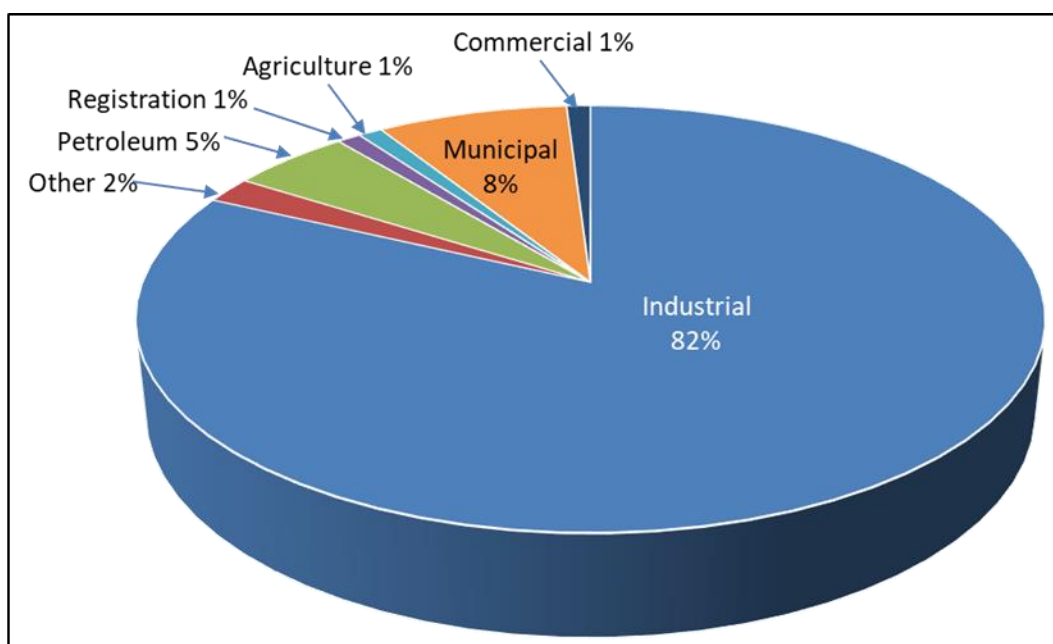


Figure 2. Distribution of water allocations in the NSRB (2005)

Source: AMEC, 2007

The amount of water actually used is estimated at 186 million m³, which represents only about 9.5% of the licenced withdrawal and 2.5% of the natural flow of the NSRB. By comparison, it is estimated that about 56% of the licensed volume is used in the Oldman sub-basin (AMEC, 2007). Unlike the Bow, Oldman, and South Saskatchewan River sub-basins, the NSRB remains open for additional licenced withdrawals of water.

Agriculture accounts for about 1.3% of the total water allocations in the NSRB (AMEC, 2007), which represents about 26.7 million m³. Figure 3 shows the distribution of water allocation among the different agricultural uses. About 383 private irrigation projects are currently licenced to withdraw water in the North Saskatchewan River Basin (Table 1). Water allocation for private irrigation projects was about 9.7 million m³ in 2005 (AMEC, 2007) which represents about 37% of the total water allocated for agriculture. Current withdrawal volumes are not known, but are unlikely to be significantly higher than reported by AMEC (2007). Future water use in the NSRB is expected to increase from a low of 8% to a high of 44%, depending on economic growth scenarios for the region (AMEC, 2007).

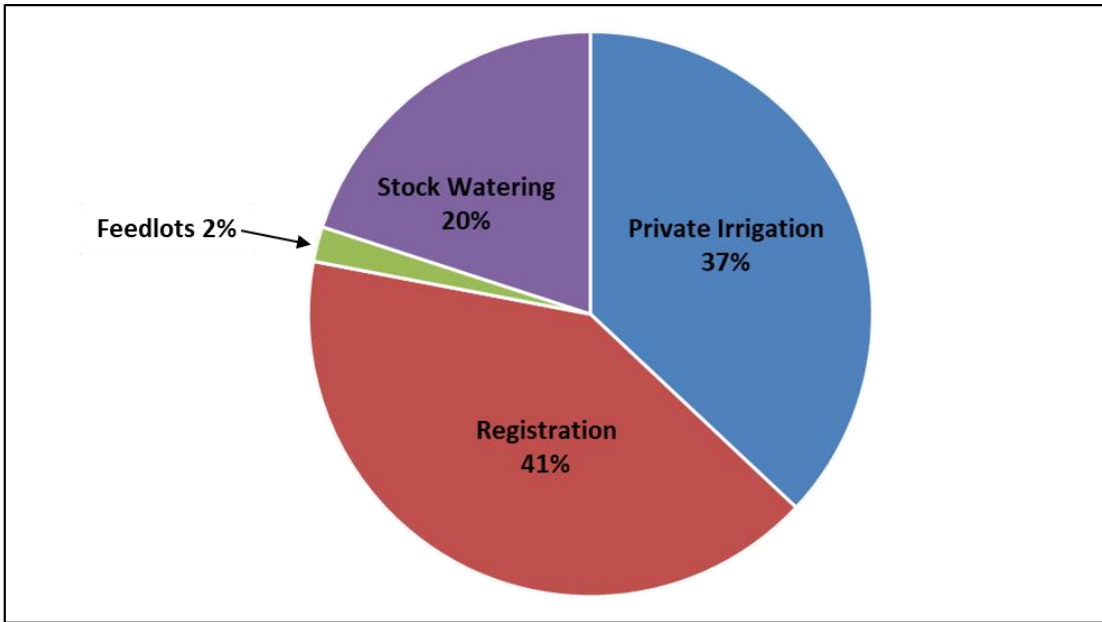


Figure 3. Water Allocation for Agricultural Uses (2005)

Source: AMEC, 2007

Parkland County Irrigation

Soils

There are significant areas of Canada Land Inventory Class 1, 2 and 3 soils located with Parkland County. Many of these better class soils are located in the eastern portion of the county (Figure 4) (Toma and Bouma, 2016). These soils have the potential to grow a wide variety of crops, and many of the higher value crops currently being grown in the county are not surprisingly located in this part of the county.

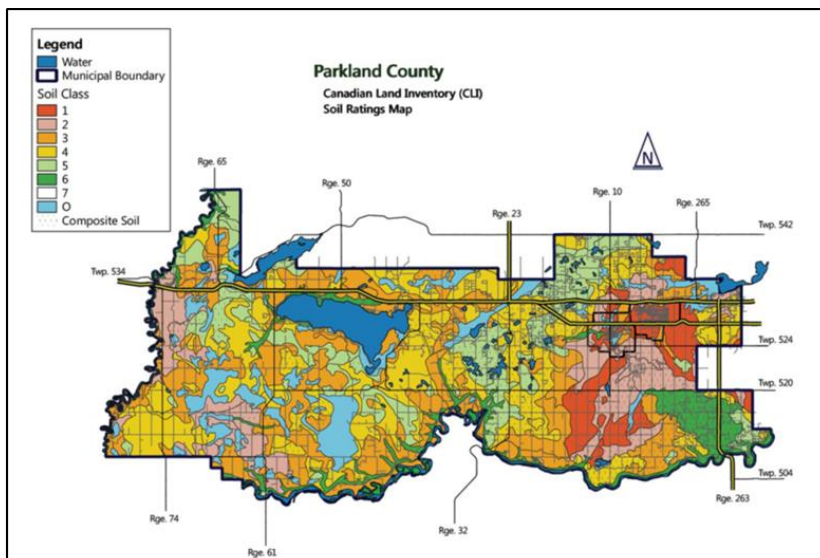


Figure 4. Canada Land Inventory Soil Rating Map of Parkland County

Source: Toma and Bouma, 2015

Irrigation Development

Currently, irrigation is practiced on a relatively small area in Parkland County. About 15 parcels of land are currently being irrigated (Gerald Ontkian, personal communication), with about 67% of these parcels irrigating less than 28 ha, and the remaining 33% of the parcels irrigating between 40 to 65 ha. Precipitation in this area has been considered sufficient to meet the needs of most crops being grown, and irrigation has not been considered economically feasible.

Projected changes in Alberta's climate may change that dynamic, providing both opportunities and challenges for the NSRB and Parkland County. Increasing temperatures may result in reduced summer flows in rivers, and increased frequency, duration, and intensity of dry spells and droughts in Alberta. However, the increased temperatures, combined with improved crop genetics, may allow producers to significantly increase their crop production potential, and diversify production towards higher value crop varieties that may be processed in Alberta. Increased crop-water demand for existing and new crop varieties in this region may require irrigation to optimize production potential and quality of high value crops for processing. Ensuring crops receive sufficient water at critical stages in growth will be required for producers to meet the strict quality requirements of provincial, national, and international processors.

In the southern Alberta's irrigation districts, the changing climatic conditions are now supporting increased acreage of existing crops such as potatoes and seed canola, plus new crops such as grain corn and soybeans. Irrigation producers are paying increased attention to water management and agronomic issues to ensure that crop quality is maintained or enhanced.

Future irrigation development in Parkland County region will likely take place on a smaller scale than irrigation development in southern Alberta, partly because of demand, and partly because of water availability. The investment in irrigation systems is relatively high, and the focus of the new irrigation development will be on the higher value specialty crops, rather than the traditional grains, oilseeds and forages. It is also recognized that relatively small, intensively managed irrigated specialty crop production can be economically viable for Parkland County, because of its close proximity to major urban markets such as Edmonton and the surrounding cities and towns. Increasing demand for high quality, regionally grown produce makes Parkland County a very suitable place for these irrigated lands to develop and prosper.

Irrigation, whether for larger operations that cover a full quarter section of land, or smaller, more intensely managed market gardens, will benefit from the use of automated, pivot irrigation (Figure 5) or lateral move (Figure 6) irrigation systems. These new systems, which utilize low energy, drop tube irrigation systems, require much less energy to operate than earlier generation irrigation systems, and can achieve water use efficiencies that range from 75% – 95% because water application is relatively close to the crop canopy (AAF, 2016). The average efficiency for these systems is about 84%. In addition, individual irrigation nozzles can be programmed to ensure that water application accounts for changing topographic and soil conditions within a field. The automation features of these systems also reduce labour requirements, which is a significant benefit for producers. About 73% of the total irrigation within the southern Alberta irrigation districts currently uses low pressure drop tube irrigation pivot systems (AAF, 2017). This percentage is expected to increase as older irrigation systems are being replaced by irrigation producers.



Figure 5. Pivot Irrigation System



Figure 6. Lateral Move Irrigation System

Source: Lindsay Corporation

Climate change may increase the opportunity to grow specialty vegetable crops, small berries and fruit trees in Parkland County. Drip irrigation can precisely place the water near the crop roots, and significantly reduces water losses through evaporation and runoff. Irrigation of these crops is often carried out using micro-spray or drip irrigation systems. Irrigation water use efficiency for these systems range from 70% - 95%, which is similar to the efficiency range for low pressure drop tube pivot irrigation systems. Average water use efficiencies are about 82% for the micro-spray systems, and 88% for drip systems. Labour requirements for these systems can be quite high, depending on the crop being grown. A sand/gravel filter, combined with an automated back-flushing system, may be required to prevent clogging of the irrigation emitters. This may be required if raw water from a lake or river is used for irrigation.

Irrigation development in Parkland County requires a ready supply of water, that can be pumped directly from the North Saskatchewan River, or from existing reservoirs and lakes. All withdrawal, diversion and use of water in Alberta is regulated under the Government of Alberta *Water Act*, and anyone who wants to divert or use water (other than for basic household or domestic use) must obtain a licensed allocation or approval to divert the water from Alberta Environment and Parks (AEP). Water licences are not issued for speculative purposes, and each applicant must explain the intended use and identify the maximum volume of water to be diverted each year. A specified time is given to successful licence applicants for project development. It is recognized that the volume actually diverted in a given year will depend on natural precipitation and cropping patterns. Larger water users may be required to report the annual volume of water diverted, consumed and returned to the source.

Diverting water from any source (river, stream, lake) will often require the installation of a comprehensive pumping system. Alberta Environment and Parks has strict environmental guidelines that must be followed to ensure that aquatic habitat and species are not unduly impacted. For future irrigation projects, it may be more economically feasible for a group of irrigation producers located in the same area to cooperate and install a single pumping station that can supply all of the producers' needs.

Summary

Significant increases in food requirements are occurring throughout the world because of population growth and increased economic development in many developing countries. The increased demand will likely be for high quality, processed foods, rather than primary crops such as grains and oilseeds. Canada is well positioned to play a major role in helping meet the increased production of agricultural products required to meet the increased demand for food.

Ongoing climate changes throughout Alberta will likely result in increased temperatures, longer growing seasons, increased crop water demand, and more opportunities for production of diversified high value crops in the NSRB. The County of Parkland's proximity to the city of Edmonton and other urban centres provides a significant opportunity for production and processing of a variety of high value crops. Irrigation will likely be required for many of these high value crops to ensure that both crop production and crop quality meet the strict requirements of food processing companies.

Sustainable irrigation development requires comprehensive planning and a significant investment by producers. Any diversion of water for irrigation requires the producer apply for a licence from AEP.

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Recommendations - Parkland County Agricultural Program and Services Review

Introduction

No organization has access to unlimited resources. Parkland County's elected Council is therefore challenged with the same difficult choices as other municipal governments - balancing reasonable service with reasonable assessment.

The recommendations below are therefore designed to be few in number, responsive to the input of ratepayers, and sensitive to the County's current budget base.

The recommendations are based on four key studies undertaken during the review process. Findings from these reviews are included in the body of this paper. Recommendations are based on an integrated assessment of these findings.

No increase in staff resources, and no significant expansion in program budget should be necessary to implement these recommendations.

The number of recommendations is limited to four. Many more recommendations could have been developed from the information and input gathered during the review. However, long experience suggests that a focused response to a short list of the most significant recommendations leads to greater progress than attempting to respond to an impossible list of dozens of recommendations.

Two of the recommendations that follow require improvement in the delivery of existing programs. One requires an adjustment to existing policy and one requires innovative future thinking.

Recommendation # 1: "Keep Agriculture In the County"

Previous studies have identified the number one strategic concern of farmers and ranchers as the fragmentation and conversion of farmland into subdivisions, industrial parks and urban expansion. During the

Conversation at Blueberry Hall, farmers and ranchers again identified this as their number one strategic concern.

The current review conducted an assessment of land absorption over the 20-year period between 1996 and 2016. During this time frame, Parkland County's agricultural land base decreased by 22.2%. A significant component of these reductions occurred on some of the most productive agricultural soils in the Province.

If this trend continues, Parkland County may no longer rank as a significant contributor to Alberta's agriculture economy. Ongoing agricultural land reductions will also cause the local agricultural service sector to become economically unviable, which in turn will contribute to the tragic cycle of farming families seeing no future in agriculture within the County. The resulting out-migration will deprive Parkland County of some of its best rural intellect, business skills, and heritage families.

Recommendation: Increase the size of the MDP designated Prime Agricultural Areas by 40%.

A preliminary assessment of this option indicates that it may be feasible, especially on lands adjacent to the designated Prime Agricultural Area West. Currently only 231,768 acres of the County's agricultural land base of 375,449 acres are designated as Prime Agricultural Areas. This includes Prime Agricultural Area West (117,304 acres), Prime Agricultural Area South East (86,341) acres, and Prime Agricultural Area Smallholdings (28,123) acres.

A 40% increase to this designated base would add 92,707 acres to the Prime Agricultural Areas. This would increase the total Prime Agricultural Areas to 324,475 acres, constituting 54% of the total area of the County and 86% of the farmland base.

Recommendation # 2 – Improve Waste Management Services Related to Agricultural Plastics, Containers and Refuse

This issue emerged as the number one operational concern of agricultural producers during the discussions at Blueberry Hall.

It has also been raised in previous studies. Parkland County is not alone in this regard, as the same concern is expressed frequently in other municipalities.

Parkland County already provides significant services in this area. But it could benefit from conducting an internal review of these services and assessing the innovative practices of several other municipalities.

Recommendation: *Improve agricultural waste management services by conducting an internal review and by assessing innovative practices of other jurisdictions.*

A small team of County staff drawn from both the agricultural and public works areas could conduct the review. The recommendations of this group would be presented to the Agricultural Service Board, prior to going to Council.

Recommendation # 3 - Improve Communication Regarding Agricultural Programs and Services to Farmers, Ranchers and Acreage Owners.

This issue emerged as another significant operational concern during the discussions at Blueberry Hall. During one-on-one interviews, County staff also identified a desire to improve this aspect of service. The issue has several dimensions:

1. Farmers and ranchers want more frequent communication about new weed concerns, ongoing County weed and pest control practices, extension events and other seasonally topical agricultural issues.
2. They also believe that County communications about agricultural topics to acreage owners would help improve that sector's appreciation of agricultural practices.
3. Finally, agricultural producers want to hear more details about the various agricultural programs and services offered by the County, and about the role of the Agricultural Service Board.

Recommendation: *Strengthen agricultural communication to farmers, ranchers and acreage owners.*

This improved communication should be developed within the context of a strategic agricultural communication plan that determines:

- desired outcomes;
- target audiences;
- appropriate communication tools/vehicles for each audience;
- successful communication tools of neighbouring municipalities;
- feedback and evaluation process.

This work can be undertaken with existing staff and should not require the addition of a communication specialist.

Recommendation # 4 - Irrigation – The Game Changer

Almost without exception, irrigated agriculture generates the following outcomes:

- two to four fold increase in production during normal precipitation periods;
- ten to twenty fold increase during periods of drought;
- consistent and predictable volume of production;
- significant improvement in product quality;
- co-location of food processors and other value-added industries;
- growth in the agricultural service sector;
- increased wealth generation in primary agriculture.

The report *Irrigation Development in Parkland County* draws two key conclusions:

1. In the North Saskatchewan basin, unlike many other basins that are now closed, water is still available for allocation to new irrigation licenses. However, given growing urban and industrial development pressures, those licenses should be secured in the near future to assure supply.
2. The progressive march of climate change (hotter and drier summers, longer droughts), suggests investment in irrigation may be a prudent choice for many farmers in Parkland County.

Recommendation: Proceed to Stage II of the irrigation feasibility assessment: determination of agricultural producer interest.

After completing the Stage I preliminary assessment of expanding irrigation within the County, it may now be opportune to talk to agricultural producers to determine interest. This exercise (Stage II) will be relatively low cost (\$9000 - 10,000). It will include the “off ramp” of proceeding no further if there is little expression of interest.

The process would include a one-day seminar featuring the following speakers:

- irrigation farmers (one south and one Edmonton area)
- technical experts (economics, system design, licensing process)
- a food processor (potatoes or vegetables)

At the conclusion of the seminar, producers would be asked if they were interested in pursuing the process to Stage III. If there were sufficient interest to proceed, Stage III would require the interested parties to form a non-profit association to apply for a grant to conduct an engineering feasibility study.

The study could be conducted in two “legs”: firstly, a study and recommendations on best approach to water/energy dynamics and overall system design; secondly, detailed system design, including construction and maintenance cost estimates. Once again there would be an off-ramp during each “leg”. This work would be targeted for completion in November 2019.

If the engineering and costing assessment suggested positive economic margins, producers could proceed to Stage IV. This would entail formation by them of a legal entity to apply for an irrigation license for the irrigation district and to govern the annual allocation of water. This work would be targeted for completion in November 2020, in time for construction to commence in 2021. Irrigation would commence in 2022.

This recommendation has the greatest strategic potential to transform agriculture in Parkland County. The risks and cost to the County of proceeding to Stage II are minor, but the benefits may be substantial.

Conclusion

Three of the recommendations above respond directly to the strategic and operational concerns expressed by farmers and ranchers within Parkland County. One recommendation addresses an innovative opportunity that could strengthen the future of agriculture within the County. If implemented, these steps will underscore Parkland County's commitment to one of its most significant economic resources and to the agricultural families who make a foundational contribution to the social fabric of the community.

Respectfully submitted,

John Knapp

14 September 2018

