



STAR-ORION SOUTH DIAMOND PROJECT
ENVIRONMENTAL IMPACT STATEMENT

SECTION 5.4
HUMAN ENVIRONMENT



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5.4 HUMAN ENVIRONMENT

This Section describes the social and cultural aspects of the project setting that could be affected by project development. This includes baseline conditions for social and economic; traditional knowledge and traditional land use; non-traditional land and resource use; visual and aesthetic resources; human health and archaeology.

5.4.1 Social and Economic

This Section describes the baseline socio-economic conditions in the area which will potentially be affected by the Project.

5.4.1.1 Introduction

The baseline characterization focuses on key indicators of valued socio-economic components related to population and demographics, employment and economy, infrastructure and services, and community well-being. These indicators can be used to assess the effects of the Project on the socio-economic environment, as suggested in the PSGs.

Local Study Area

For the Project in general, a local study area (LSA) immediately surrounding the project site has been identified as the boundary of the FaC Forest. This LSA has no population settlements within it and, thus, limited socio-economic baseline information can be described for the LSA. As such, the focus on the socio-economic baseline and subsequent impact assessment is a defined Socio-Economic Regional Study Area (SRSA).

Socio-Economic Regional Study Area

The SRSA consists of those urban and rural communities that are most likely to provide the workers, goods and services needed to construct and operate the mine and/or that could be otherwise directly or indirectly affected by mine construction or operation. It includes relevant reserves of self-identified First Nations that have indicated that the proposed Project is located on land asserted to be part of their traditional territories. These First Nations identified themselves to the Crown, requesting consultation regarding potential approvals concerning the Project. They include the three bands of the James Smith Cree Nation, Muskoday First Nation, Red Earth Cree Nation, Wahpeton Dakota Nation, and Sturgeon Lake First Nation. The Métis Nation – Saskatchewan Eastern Region II and Métis Nation – Saskatchewan Western Region II have also asserted that the FaC forest is part of their traditional territories.

The boundary of the SRSA also contains areas beyond particular regional communities to mirror the administrative boundaries for which key statistical and administrative data are typically available. The SRSA is shown in Figure 5.4.1-1 and includes the following:

- two cities (Prince Albert and Melfort);
- six towns (Nipawin, Choiceland, Tisdale, Kinistino, Star City, Birch Hills);
- 13 villages (Smeaton, Weirdale, Love, White Fox, Codette, Meath Park, Ridgedale, Albertville, Beatty, Aylsham, Weldon, Valparaiso, Zenon Park);
- the on-reserve populations of the following First Nations:
 - James Smith IR 100 (the three bands of James Smith Cree Nation);
 - Cumberland IR 100A (the three bands of James Smith Cree Nation);
 - Muskoday First Nation;
 - Red Earth IR 29 (Red Earth Cree Nation);
 - Carrot River IR 29A (Red Earth Cree Nation);
 - Wahpeton Dakota Nation IR 94A and 94B; and
 - Sturgeon Lake IR 101 (Sturgeon Lake First Nation);
- 12 rural municipalities: Tisdale (Rural Municipality (RM) No. 427), Star City (RM No. 428), Flett's Springs (RM No. 429), Connaught (RM No. 457), Willow Creek (RM No. 458), Kinistino (RM No. 459), Birch Hills (RM No. 460), Prince Albert (RM No. 461), Nipawin (RM No. 487), Torch River (RM No. 488), Garden River (RM No. 490) and Buckland (RM No. 491)).

Figure 5.4.1-1 also shows the location of the unincorporated hamlets that are within the SRSA boundaries, as they are identified as home communities for residents within the SRSA and may be useful points of reference. Statistical data for these communities are not available and are amalgamated into the data for the RM in which they are located.

While social and economic baseline conditions have been described for the entire SRSA (the region), there are some significant differences among various segments of the regional population. To highlight these differences, socio-economic information for certain indicators has been aggregated into sub-totals for population subgroups. The subgroups for which data are aggregated include: the City of Prince Albert, the City of Melfort, all towns, all villages, all rural municipalities and the First Nation reserves.

5.4.1.2 Information Sources and Methods

Socio-economic baseline information was obtained primarily through available published secondary data including: federal statistical census data, statistical or administrative data from the Government of Saskatchewan and municipal governments, previous Project-specific reports commissioned by Shore, and relevant issue-specific studies and reports produced by governments, industry groups or non-governmental organizations.



Most of the Statistics Canada information is from the most recent federal census in 2006. Some data from the 2001 and 2011 census were used for demonstrating trends over time. In some cases, census data were not available as Statistics Canada withholds information for communities with small populations for reasons of confidentiality.

A key feature of the 2001 and 2006 censuses is that specific information was gathered on Aboriginal people living off-reserve in communities. For this area, 2006 census information for the off-reserve Aboriginal population¹ was available for the following urban and rural communities in the SRSA:

- Prince Albert;
- Melfort;
- Town of Nipawin;
- RM of Buckland No. 491; and
- RM of Prince Albert No. 461.

There are no census data for the off-reserve Aboriginal population in the other 26 communities in the SRSA. The five mentioned communities for which data are available account for 92% of the off-reserve Aboriginal population in the entire SRSA. Thus, available information is considered to be reasonably representative of the off-reserve Aboriginal population for the SRSA as a whole. Information on the socio-economic characteristics of the off-reserve Aboriginal population in the SRSA has been included in the analysis, where available. However, information on the off-reserve population is also imbedded in the statistics for Prince Albert, Melfort, towns, villages and rural areas which contain Aboriginal people living off reserve.

Interviews with key informed sources (i.e., local municipal officials and service providers) were conducted by Shore when there were gaps in available data, to explore accessing certain administrative data, when local/regional verification was required, or when updating was deemed important to advancing the understanding of the data and related issues/trends.

Requests were made via a series of e-mails and follow-up telephone calls to gather primary data and information from the First Nations about their communities. The objective was to create a community profile of each reserve outlining housing and infrastructure, employment

¹ Aboriginal populations are those that Statistics Canada refers to as Aboriginal Identity population. Included in the Aboriginal Identity population are those persons who reported identifying with at least one Aboriginal group, that is, North American Indian, Métis or Inuit, and/or those who reported being a Treaty Indian or a Registered Indian, as defined by the **Indian Act** of Canada, and/or those who reported they were members of an Indian band or First Nation.



and income, education, health, protection and other services available on the reserve. The information that was received was incorporated into this assessment.

Certain web-based secondary data, particularly regarding services and infrastructure, can change often, reflecting dynamic conditions and trends. The cut-off for accessing such data sources was September 2010 with additional information added for the Wahpeton Dakota Nation in December 2011.

5.4.1.3 Population and Demographics

This Section presents a range of relevant data on population trends, composition and dynamics in the SRSA. This information provides context for understanding how the local population may change in size or composition due to speculative in-migration to the area related to the Project or the temporary or permanent relocation of people to the area to work on the Project.

In 2006, the total population of the SRSA was 69,659. The population counts for all SRSA communities are shown in Table 5.4.1-1. As shown in Figure 5.4.1-2, Prince Albert accounted for nearly half of the SRSA population (49.0%) while 7.5% lived in Melfort. Most of the rest of the regional population lived in one of the 12 rural municipalities (21.6%), with 13.5% living in towns and 2.6% in villages. First Nations people living on the seven reserves accounted for 5.8% of the population.

Between 2001 and 2006 the population of the SRSA decreased by 3.1%. Between 2006 and 2011, however, the population increased by 4.4%. Most of the communities in the SRSA experienced population losses from 2001 to 2006, however over half of these communities experienced population growth from 2006 to 2011 (see Figure 5.4.1-3 and Table 5.4.1-1). In combination, the population of the towns, villages and rural municipalities (i.e., excluding cities) in the SRSA decreased by 7.9% from 2001 to 2006 and increased by 0.4% from 2006 to 2011. From 2001 to 2006, the population of the City of Melfort decreased by 6.6% and the City of Prince Albert only experienced a slight population decrease (0.4%). From 2006 to 2011, the population of the City of Melfort increased by 7.4% and the City of Prince Albert increased by 2.9%.

In contrast, the on-reserve population in the SRSA increased by 16.8% from 2001 to 2006 and increased an additional 14.8% between 2006 and 2011. The First Nation reserves with the highest population growth rates from 2001 to 2011 included the Carrot River 29A reserve (55.9%), Cumberland 100A reserve (53.5%) and Sturgeon Lake 101 reserve (40.0%), Muskoday First Nation reserve (33.8%) and Red Earth 29 (25.8%). Smaller population increases were reported on the Wahpeton 94A reserve (17.6%) and James Smith 100 reserve (8.0%). More detail on population change during this period by SRSA community can be found in Table 5.4.1-1.



Table 5.4.1-1: Population Change in the SRSA between 2001, 2006 and 2011

	Population				
	2001 (No.)	2006 (No.)	Change 2001-2006 (%)	2011 (No.)	Change 2006-2011 (%)
Cities					
Prince Albert	34,291	34,138	-0.4	35,129	2.9
Melfort	5,559	5,192	-6.6	5,576	7.4
City Sub-Total	39,850	39,330	-1.3	40,705	3.5
Towns					
Nipawin	4,275	4,061	-5.0	4,265	5.0
Choiceland	370	346	-6.5	381	10.1
Tisdale	3,063	2,981	-2.7	3,180	6.7
Kinistino	702	643	-8.4	743	15.6
Star City	482	428	-11.2	460	7.5
Birch Hills	957	935	-2.3	1,064	13.8
Town Sub-Total	9,849	9,394	-4.6	9,093	7.4
Villages					
Smeaton	178	183	2.8	181	-1.1
Weirdale	90	83	-7.8	75	-9.6
Love	71	55	-22.5	65	18.2
White Fox	436	348	-20.2	364	4.6
Codette	237	221	-6.8	205	-7.2
Meath Park	204	179	-12.3	205	14.5
Ridgedale	85	66	-22.4	80	21.2
Albertville	132	110	-16.7	140	27.3
Beatty	79	61	-22.8	63	3.3
Aylsham	106	92	-13.2	71	-22.8
Weldon	219	205	-6.4	196	-4.4
Valparaiso	20	20	0	15	-25.0
Zenon Park	231	192	-16.9	187	-2.6
Villages Sub-Total	2,088	1,815	-13.1	1,847	1.8
Rural Municipalities					
Tisdale	1,053	938	-12.7	916	-0.3
Star City	1,011	936	-7.4	911	-2.7
Flett's Springs	780	736	-5.6	751	2.0
Connaught	748	656	-12.3	629	-4.1
Willow Creek	818	719	-12.1	693	-3.6
Kinistino	817	713	-12.7	531	-25.5
Birch Hills	782	701	-10.4	663	-5.4

	Population				
	2001 (No.)	2006 (No.)	Change 2001-2006 (%)	2011 (No.)	Change 2006-2011 (%)
Prince Albert	3,380	2,918	-13.3	3,580	22.2
Nipawin	1,274	1,166	-9.7	1,030	-10.5
Torch River	1,723	1,559	-9.5	1,468	-5.8
Garden River	725	633	-12.7	641	1.3
Buckland	3529	3,429	-2.8	3,658	6.7
Rural Municipalities Sub-Total	16,640	15,104	-9.2	15,471	2.4
First Nation Reserves					
James Smith 100	624	708	13.5	674	-4.8
Cumberland 100A	331	385	16.3	508	31.9
Muskoday 99	514	553	7.6	688	24.4
Red Earth 29	309	383	23.9	389	1.6
Carrot River 29A	526	590	12.2	820	39.0
Sturgeon Lake 101	873	1,116	27.8	1,225	9.8
Wahpeton 94A	260	281	8.1	306	8.9
Reserves Sub- Total	3,437	4,016	16.8	4,610	14.8
Total Regional Study Area					
Total Regional Study Area	71,864	69,659	-3.1	72,726	4.4

Source: Statistics Canada 2007a, 2012.

Aboriginal Population

There is a significant Aboriginal population residing in the SRSA. In 2006, 27.2% of the SRSA population (18,335 people) identified as themselves as Aboriginal. Census information for 2006 indicates that there were 4,016 Aboriginal people living on reserves in the SRSA, which represents 21.9% of the total Aboriginal population in the region. The balance of Aboriginal people lived elsewhere in the region, with the vast majority of these (12,140) living in Prince Albert.

As shown in Figure 5.4.1-4, Aboriginal people account for 10.8% of the population of the rural municipalities, 19.3% in the villages, and 8.1% in the towns.² The majority of

² These percentages are not based on the individual villages and towns, but rather on RM totals, village totals, and town totals.



Aboriginal individuals in the SRSA live in Prince Albert. While only 6.0% of the City of Melfort residents identify themselves as being Aboriginal, 36.3% of Prince Albert residents identify as Aboriginal.

Overall, 99.2% of the residents of five of the seven First Nation reserves in the SRSA identified themselves as being Aboriginal; there is no information available for the Cumberland 100A reserve or the Red Earth 29 reserve. All of the individuals living on the James Smith 100 reserve identified themselves as being Aboriginal, as did 97.3% of residents of the Muskoday 99 reserve, 99.6% of the individuals living on the Wahpeton 94A reserve and 99.1% of the individuals living on the Sturgeon Lake 101 reserve.

As of December 2011, the First Nations included in the SRSA (three bands of the James Smith Cree Nation, Muskoday First Nation, Red Earth Cree Nation, Wahpeton Dakota Nation and Sturgeon Lake First Nation) have a registered population of 9,513 people, of which 3,614 (38.0%) lived off their home reserves ((AANDC, 2011). The Muskoday First Nation had a registered population of 1,665 people, with 585 individuals living on reserve, 17 people living on other reserves, and the balance (1,063) living off-reserve. The James Smith Cree Nation had a registered population of 3,130 people, with 1,913 people living on reserve, 36 living on other reserves, 3 living on Crown land outside the reserves, and 1,178 living off-reserve. Red Earth Cree Nation had a registered population of 1,555 people with 1,330 individuals living on the two reserves, 22 people living on other reserves, and 203 members living off-reserve. Sturgeon Lake First Nation had a registered population of 2,683 people with 1,780 individuals living on the reserve, 46 people living on other reserves, and 856 members living off-reserve. Wahpeton Dakota Nation had a registered population of 480 people with 291 individuals living on the reserve, 24 people living on other reserves, and 165 members living off reserve. Based on the data collected from the 2006 census and information collected from Aboriginal Affairs and Northern Development Canada (AANDC), it appears there has been a significant increase in the on-reserve population since the 2006 census. While some increase in population would be expected, such a significant change is likely attributable to the different methods used to enumerate First Nations populations.

Age and Gender

Of all the Canadian provinces, Saskatchewan has the highest percentage of the population aged 65 years and over (Saskatchewan Bureau of Statistics 2006a). This age group makes up 15.4% of the province's population and 15.8% of the SRSA's population. The working age population is defined as individuals aged between 15 and 64 years (Saskatchewan Bureau of Statistics 2006a). Within the SRSA the working age population makes up 62.8% of the total population; this is 2% lower than the working age population for the entire province (65.2%).

As shown in Figure 5.4.1-5, First Nations communities are much younger overall than the rest of the SRSA. Children aged 0 to 14 years make up 37.7% of the on-reserve Aboriginal population in the SRSA. Elsewhere in the SRSA children make up 17.5% to 22.4% of the population. This trend of younger First Nations communities occurs throughout the Province of Saskatchewan. In Saskatchewan in 2006, 47% of First Nations people were in the 0 to 19 years age group. The corresponding percentage for the non-First Nations population was 24% (Saskatchewan Bureau of Statistics 2006a).

The City of Melfort and the towns have the highest proportion of elderly people (aged 65 and over) in the SRSA compared to other population subgroups. Of the residents living in towns, 25.9% are aged 65 years and over; this age group makes up 15.9% of the total SRSA population. Prince Albert has a younger population when compared to the rest of the SRSA. Excluding the First Nations communities, Prince Albert has both the greatest population of people aged 0 to 14 years (22.4%) and the greatest working age population (63.8%).

As shown in Figure 5.4.1-6, in the Province of Saskatchewan the population is almost equally divided by gender, with 50.9% of the population being female. Within the SRSA, there is a slightly higher percentage of females (52.0%). Overall, there are approximately 2,680 more females than males living in the SRSA.

The villages in the SRSA have an almost equal proportion of males and females; females make up 51.0% of the residents. Similarly, females account for 53.5% of the population of all towns in the SRSA. In the City of Melfort, females represent 54.4% of the population. In the City of Prince Albert 53.2% of the population is female, resulting in 2,190 more females than males. There are an equal number of males and females living on the Aboriginal reserves. However, males outnumbered females on the Muskoday 99, James Smith 100 and Cumberland 100A, Wahpeton 94A and Sturgeon Lake 101 reserves. On the Red Earth 29 and Carrot River 29A reserves, females outnumbered males. The greatest gender difference in population occurred on the Carrot River 29A reserve where females accounted for 54.2% of the population.

Visible Minorities/Immigrants

There is not a substantial population of immigrants³ or visible minorities⁴ living in Saskatchewan when compared to other provinces. However, the proportion of visible minorities in Saskatchewan has increased from 2.9% in 2001 to 3.6% in 2006. The most

³ Statistics Canada defines immigrants as persons who are, or have ever been, landed immigrants in Canada. A landed immigrant is a person who has been granted the right to live in Canada permanently by immigration authorities. Some immigrants have resided in Canada for a number of years, while others are more recent arrivals. Most immigrants are born outside Canada, but a small number were born in Canada.

⁴ Statistics Canada describes visible minorities as being persons, other than Aboriginal people, who are non-Caucasian in race or non-white in colour.



populous visible minorities in Saskatchewan were Chinese, South Asian, Black and Filipino (Saskatchewan Bureau of Statistics 2006b). In 2006, for the first time since 1931, the number of immigrants in Saskatchewan increased, albeit slightly. In 2006 immigrants and non-permanent residents accounted for 5.5% of Saskatchewan's population; this is well below the national average of 20.7% (Saskatchewan Bureau of Statistics 2006c).

Within the SRSA, 1.5% of the population identify as visible minorities, and 3.3% identify as immigrants (see Figure 5.4.1-7). These percentages were less than the Saskatchewan averages. With individuals tending to migrate to urban areas for employment and access to services, the majority of immigrants and visible minorities in the SRSA reside in Prince Albert. The lowest percentages of immigrants were found in the rural municipalities and in the towns.

Population Mobility

Saskatchewan residents and SRSA residents were less mobile than the national average from 2001 to 2006. In 2006, 63.9% of Saskatchewan residents and 63.2% of SRSA residents lived at the same address as five years prior. For both Saskatchewan as a whole and the SRSA, approximately 20% of the residents changed addresses within the same census subdivision (CSD⁵) between 2001 and 2006, while 10.3% of the Saskatchewan population and 12.0% of the SRSA population moved into the community from a different CSD in Saskatchewan. Approximately 4% of the population in Saskatchewan and the region had resided in a different province or territory in 2001 (4.3% for Saskatchewan and 3.6% for the SRSA). Approximately 1.4% of the Saskatchewan population and 0.8% of the SRSA population had lived in a different country. Most of the individuals who moved to Saskatchewan from another province or territory between 2001 and 2006 came from Alberta, British Columbia, Ontario and Manitoba (Saskatchewan Bureau of Statistics 2006c).

Within the SRSA, residents of rural municipalities were the least mobile, with 80.3% having lived at the same address between 2001 and 2006. Residents of the First Nation reserves also show low mobility, with 73.4% having remained at the same address from 2001 to 2006. In contrast, only 53.3% of residents of Prince Albert had lived at the same address for that five-year period. Figure 5.4.1-8 shows that residents of Prince Albert were the most likely to have changed addresses in the same CSD, while the villages showed the highest percentages of people who had moved into the community from a different CSD in Saskatchewan. The towns had the highest percentages of people who had moved from another province or territory, while Prince Albert had the highest percentage of people who had moved into the SRSA from another country.

⁵ Census subdivisions (CSD) are municipalities (cities, towns, villages and rural municipalities) or areas treated as municipal equivalents (including First Nation reserves).



5.4.1.4 Employment and Economy

The economy in the SRSA is primarily resource-based, with quickly growing secondary and service sectors in larger regional centres such as Prince Albert and Melfort. Key primary sectors include agriculture, forestry, and exploration activities for coal and other minerals. The recent downturn in the forestry sector has led to some communities attempting to diversify their economies. Exploration activity for the mining and oil industries activity is currently considered to be growing (North East Enterprise Region 2010).

This Section presents information on the economy of the study area. It examines data available related to labour force characteristics, economic activity, income sources and general economic prospects. This information provides important context for understanding the extent to which the local and regional labour force will be able to meet the labour and skill demands, and assessing the overall potential economic impact of, the Project.

Certain employment and educational attainment data were not available for the Red Earth 29 reserve and Cumberland 100A reserve. Thus, any subpopulation totals for Aboriginal reserves presented in this Section may not include data for these reserves.

Labour Force Characteristics

In 2006, the SRSA had a labour force of 34,860 people. The labour force represents the number of people (aged 15 years and older) who are either employed, actively seeking work, or willing to work. This represents a labour force participation rate of 65.9% for the SRSA. This is less than the participation rate for Saskatchewan as a whole, which is 68.4%.

As shown in Figure 5.4.1-9, approximately 48.3% of the labour force in the SRSA resides in Prince Albert. Further, 27.0% of the labour force lives in the rural municipalities, 12.6% in towns, 7.2% in Melfort, and 2.2% in villages. Approximately 2.7% of the SRSA labour force resides on five of seven First Nation reserves; data were not available for the Cumberland 100A reserve or the Red Earth 29 reserve. Aboriginal people living off-reserve in the urban or rural areas accounted for 27.1% of the labour force.

There are some gender differentials with respect to labour force participation in the SRSA. As shown in Table 5.4.1-2, the participation rate for adult females in the SRSA is 60.7%, while that for males is 71.7%. These rates are less than the gender-disaggregated participation rates for the Province as a whole, which is 74.4% for males and 62.8% for females. Figure 5.4.1-10 and Table 5.4.1-2 show how labour force participation varies among the population segments in the SRSA. The highest participation rate is in the rural population (77.3%). The lowest participation rate is for the First Nation reserves, where the rate is 47.4%. The participation rate is fairly similar between the villages, towns and Melfort, at 59.3%, 58.9% and 60.7% respectively. The rate in Prince Albert (65.2%) was higher than



these subpopulations. About 65.5% of Aboriginal people living off-reserve are in the labour force.

As shown in Table 5.4.1-2 and Figure 5.4.1-11, in 2006 the unemployment rate for the SRSA was 8.3%, compared to the provincial average of 5.6%. The unemployment rate is the proportion of the labour force that is not working, but is actively looking for work or willing to work. Within the SRSA, Prince Albert had an unemployment rate of 9.1%, and the villages had an unemployment rate of 10.3%. The subpopulation with the highest unemployment rate was the First Nation reserves, with a rate of 31.9%. Unemployment rates in Melfort and in the towns and rural areas were generally similar to the provincial average.

As shown in Table 5.4.1-2, the unemployment rate for females in the SRSA (7.7%) is lower than for males (8.7%). This is consistent with provincial trends. However, the subpopulation in villages reported higher unemployment rates for females than for males.

The unemployment rate in 2006 for Aboriginal people living off-reserve in urban or rural areas was 14.5% in the SRSA. While this was nearly twice the regional average, it was less than the provincial unemployment rate for Aboriginal people living off-reserve (18.2%). Further details on labour force participation and unemployment rates within the SRSA can be found in Table 5.4.1-2.



Table 5.4.1-2: Labour Force Activity in the SRSA, 2006

	Saskatchewan	SRSA	First Nation Reserves	Rural	Villages	Towns	Melfort	Prince Albert
Total Population 15+								
Total Population (No.)	766,230	52862	1985	12,180	1315	7,450	4,110	25,825
In the labour force (No.)	524,305	34860	940	9,420	780	4,385	2,495	16,840
Participation rate (%)	68.4	65.9	47.4	77.3	59.3	58.9	60.7	65.2
Unemployment rate (%)	5.6	8.3	31.9	5.7	10.3	6.7	5.8	9.1
Male Population 15+								
Total Males (No.)	373,390	25000	1025	6,245	660	3,405	1,860	11,805
In the labour force (No.)	277,680	17925	535	5,120	435	2,220	1,290	8,325
Participation rate (%)	74.4	71.7	52.2	82.0	65.9	65.2	69.4	70.5
Unemployment rate (%)	5.9	8.7	33.6	5.7	9.2	7.7	7.0	9.5
Female Population 15+								
Total Females (No.)	392,845	27875	980	5,925	655	4,045	2,250	14,020
In the labour force (No.)	246,620	16930	400	4,300	335	2,175	1,205	8,515
Participation rate (%)	62.8	60.7	40.8	72.6	51.1	53.8	53.6	60.7
Unemployment rate (%)	5.3	7.7	30.0	5.6	11.9	5.3	4.1	8.6

Source: Statistics Canada 2007a.

Figure 5.4.1-12 shows that unemployment rates in Saskatchewan have remained relatively stable from 2006 through much of 2010. During 2009 unemployment rates fluctuated seasonally, ranging from a low of 3.9% in June to a high of 6.1% in August, but then dropping to 4.3% at the end of the year (Saskatchewan Bureau of Statistics 2010). In 2010, unemployment rates have risen slightly and are 0.5 percentage points higher than for most of the same months in 2009.

Data on employment and unemployment rates for the SRSA since the 2006 federal census are not available. However the Saskatchewan Bureau of Statistics presents recent information about the employment levels in the Prince Albert & Northern Economic Region, which includes the SRSA (Saskatchewan Bureau of Statistics 2010). The monthly employment estimates for 2009 and 2010 for the Prince Albert and Northern Economic Region are also provided in Figure 5.4.1-12. Despite some seasonal variation, there has been a slight overall downward trend in the number of employed people in the region. In March 2010 there were 1,900 fewer people employed in the Prince Albert & Northern Economic Region than were employed in March 2009. In July 2010, there were 1,600 fewer people working than in 2009. The trend suggests that employment conditions in 2010 were worse than in 2009, suggesting higher regional unemployment and/or workers leaving the region to find work elsewhere. However, in August 2010, the situation had reversed with 300 more people working than in August 2009.

Economic Activity

Table 5.4.1-3 shows the percentage of the labour force in the SRSA that were working in various industries on census day and, thus, have experience in various industries as of 2006.

In general, the pattern of employment by industry in the SRSA was quite similar to that of Saskatchewan as a whole. In the SRSA, 75.2% of the labour force was active in non-basic or service industries (wholesale and retail trade, finance and real estate, health care, education, and business and other services) compared to 72.1% in Saskatchewan. Basic industries include agriculture and other resource-based industries, construction and manufacturing. Overall, the SRSA had smaller percentages of its workforce working in agriculture and other resource-based activities and business services than the province as a whole, but a higher percentage of people active in the "other services" sector.

There is considerable variability in employment by industry among the various population segments in the SRSA, as shown in Table 5.4.1-3. In the rural municipalities, agriculture and other resource-based industries employed the largest proportion (31.9%) of the labour force. Further, the rural municipalities had the smallest percentage of people employed in the health and education industries. In contrast, Prince Albert had the smallest percentage of its workforce active in the basic industries (agriculture and other resource based activities,



construction and manufacturing). This likely reflects the effects of the Weyerhaeuser mill closure in 2006 (City of Prince Albert 2008a). Compared to the other population segments, Prince Albert has higher employment in the retail and other service industries.

Only 7.5% of the experienced labour force living on First Nation reserves was active in the agriculture or other resource-based industries, while 8.7% was active in the construction industry, the highest percentage of all the population segments. The on-reserve population also had the highest percentage of their workforce active in the “other services” sector, which includes repair and maintenance activities as well as governance organizations other than health or education.

In general, the employment profiles by industry for Melfort, towns and villages were similar to the SRSA average. The main difference among these three population segments relates to the percent of the workforce working in agriculture and other resource-based industries. Workers in villages were more likely to work in agriculture than workers in towns, and workers in towns were more likely to work in agriculture than workers in Melfort.

Aboriginal people living off-reserve had an employment profile similar to that of Prince Albert, and this reflects the fact that 85% of the Aboriginal labour force living off-reserve in the SRSA reside in Prince Albert. The main differences between the two population segments were that a higher number of Aboriginal people living off-reserve were active in the agriculture and other resource-based industries, construction and other industries.



Table 5.4.1-3: Labour Force in the SRSA by Industry (2006)

	Saskatchewan	SRSA	Aboriginal Off-Reserve	First Nation Reserves	Rural	Villages	Towns	Melfort	Prince Albert
Total Experienced Labour Force (No.)	517,475	34,270	4,990	805	9,385	770	4,315	2,480	16,515
Basic Industries									
Agriculture and other resource-based (%)	16.3	14.0	6.4	7.5	31.9	18.2	12.5	10.1	4.9
Construction (%)	5.8	5.9	7.3	8.7	6.1	4.5	6.0	3.6	6.0
Manufacturing (%)	5.8	4.5	3.8	2.5	3.7	3.9	4.9	7.1	4.6
Non-Basic Industries									
Wholesale trade (%)	3.7	3.5	2.7	0.0	3.2	3.2	5.4	4.0	3.3
Retail trade (%)	11.0	13.1	13.9	9.3	10.6	11.0	14.6	12.7	14.4
Finance and real estate (%)	4.9	4.2	3.2	0.0	3.2	2.6	5.0	8.3	4.3
Health care and social services (%)	11.3	12.6	12.9	14.9	8.0	11.7	16.3	11.3	14.3
Educational services (%)	7.8	7.8	7.7	13.0	6.7	9.1	7.8	7.3	8.3
Business services (%)	13.6	10.1	7.3	8.1	9.0	12.3	9.5	13.9	10.5
Other services (%)	19.9	23.9	34.5	31.1	17.4	18.8	18.1	21.8	29.4
Non-Basic/Basic Employment Ratio									
	2.59	3.09	4.51	4.10	1.39	2.59	3.28	3.82	5.44

Source: Statistics Canada 2007a.



Industry of employment also varies by gender. Figure 5.4.1-13 shows that females accounted for much more than half of all employment in the health, education, and finance and real estate industries in the SRSA as a whole. Males were more likely to be employed in the construction, manufacturing, agriculture and wholesale trade industries.

A key feature in characterizing local and regional economies and determining the extent to which new employment may create spin-off employment (indirect and induced employment) is the ratio of non-basic to basic employment. Regional economic theory (Nourse 1968) concludes that the amount of employment in non-basic or service industries is dependent on employment in basic or goods-producing industries, and that expanding employment in basic industries generates increased employment and diversity in the non-basic industries. As shown in Table 5.4.1-3, basic industries include agriculture and other resource-based industries, construction and manufacturing, while non-basic industries include all other industries, which are mostly service industries. Typically, large population centres have more diversified economies with more employment in the non-basic industries, so they have high non-basic to basic employment ratios. The ratios tend to be lower in smaller communities that have limited development of their service sectors. This same pattern is evident in the ratios for population segments in the SRSA. The non-basic to basic employment ratios for the SRSA are shown in Table 5.4.1-4 and ranged from a high of 5.44 to 1 in Prince Albert to only 1.39 to 1 in the rural areas.

For a benchmark, Saskatoon had a non-basic to basic employment ratio of 4.37 to 1 in 2006. The observation that Prince Albert had a higher ratio than Saskatoon, which has a labour force nearly seven times larger, reflects the effects of recent changes in basic employment in Prince Albert. Prior to closure in 2006, Weyerhaeuser's pulp and paper mill provided about 1,000 jobs in the basic sector and, had the mill remained in operation, the non-basic to basic employment ratio for Prince Albert would have been about 3.91 to 1. This ratio is more consistent with what would be expected from a community the size of Prince Albert (i.e. smaller than that of Saskatoon but larger than Melfort).

The observed ratio of 5.44 to 1 suggests that Prince Albert has sufficient capacity in its service industries to be able to accommodate new employment in basic industries without creating large amounts of new spin-off employment. But, if basic employment is not created, there may not be sufficient income and spending to maintain current levels of employment in service industries, leading to some additional unemployment. To avoid the risk of additional future job losses, the City of Prince Albert has called upon the governments of Canada and Saskatchewan to help support the forest industry through better science, expanding markets, and promoting the use of wood as green energy (City of Prince Albert 2008a). This situation also highlights the importance of new industry in the SRSA.

A summary of key employment indicators in the SRSA is provided in Table 5.4.1-4. It shows that the bulk of the labour force (48.4%) is located in Prince Albert, which has high

unemployment and a relatively small percentage of its workforce with experience in basic industries such as construction and agriculture and other resource-based industries. The next largest component of the labour pool is in the rural communities (27.1% of the SRSA total), which has a large pool of workers with experience in agriculture and resource-based industries and construction, but relatively low unemployment. The towns have the third largest labour pool (12.6% of the SRSA total), but feature lower percentages of workers in agriculture and resource-based industries and construction, and unemployment rates that are lower than in Prince Albert. Melfort accounts for 7.2% of the SRSA labour pool, with relatively low unemployment and low percentages of people with experience in agriculture and resource-based industries and construction.

Table 5.4.1-4: Summary of SRSA Employment, 2006

SRSA Sub-Population	Labour Force (No.)	Participation Rate (%)	Unemployment Rate (%)	Industry of Employment				Non-Basic to Basic Employment Ratio
				Agriculture & Other Resource-Based		Construction		
				(No.)	(%)	(No.)	(%)	
Prince Albert	16,840	65.2	9.1	810	4.3	995	6.0	5.44
Melfort	2,495	60.7	5.8	250	10.1	90	3.6	3.82
Towns	4,385	58.9	6.7	540	12.5	260	6.0	3.28
Villages	780	59.3	10.3	140	18.2	35	4.5	2.59
Rural	9,420	77.3	5.7	2,995	31.9	570	6.1	1.39
First Nation Reserves	940	47.4	31.9	60	7.5	70	8.7	4.10
Total	34,860	65.9	8.3	4,795	13.7	2,020	5.8	3.09

The balance of the labour force (4.9%) is split nearly equally between residents of villages and people residing on First Nation reserves. Residents of the villages have high levels of unemployment and high participation in agriculture and other resource-based industries but relatively few construction workers. People living on the reserves have very high rates of unemployment but the highest percentages of people with construction experience, although the number of such people is relatively small.

Educational Attainment

Education attainment is an important indicator of work force capability. Table 5.4.1-5 shows that the SRSA population generally has similar levels of educational attainment as in the population of Saskatchewan as a whole. Of the adult population (people aged 15 years and older) in the SRSA in 2006, 33.9% had not completed high school, compared to 30.2% for the province as a whole. The proportion of the adult population without high school



completion was higher for certain sub-populations; it was 39.9% for Aboriginal people living off-reserve, 43.8% for people living in villages, and 55.1% for people living on First Nation reserves.

There are some differences in educational attainment according to gender. Figure 5.4.1-14 shows that women in the SRSA are generally better educated than men. While the percentage of the population without a high school education was fairly evenly balanced between males and females, nearly two-thirds of the population that had a college education were female. Women also accounted for more than half of the population that had at least some university education. However, more than 60% of the population with an apprenticeship or trades certificate was male.



Table 5.4.1-5: Educational Attainment of Population Aged 15 Years and Older

	Saskatchewan	SRSA	Aboriginal Off Reserve	First Nation Reserves	Rural	Villages	Towns	Melfort	Prince Albert
Total Population Aged 15 and over	766,235	52,855	2,550	1,995	12,175	1,300	7,450	4,110	25,825
No certificate; diploma or degree	30.2%	33.9%	39.9%	55.1%	32.3%	43.8%	38.8%	34.4%	30.9%
High school certificate or equivalent	26.8%	24.9%	26.3%	16.3%	29.1%	19.2%	21.7%	25.2%	24.6%
Apprenticeship or trades certificate or diploma	11.3%	12.1%	11.6%	14.3%	11.8%	18.1%	12.7%	9.4%	12.1%
College; CEGEP or other non-university certificate or diploma	14.6%	15.1%	11.8%	8.5%	13.4%	12.3%	14.6%	16.9%	16.5%
University certificate or diploma below the bachelor level	4.2%	3.8%	3.2%	3.8%	4.6%	1.5%	4.0%	3.4%	3.6%
University certificate; diploma or degree	12.9%	10.1%	7.0%	2.25%	8.7%	6.2%	7.9%	10.6%	12.2%

Source: Statistics Canada 2007a.

Income and Earnings

Based on income information, about 50.7% of adult residents of the SRSA who reported employment earnings worked full-time, year round in 2005. The remainder worked on a seasonal or part-time basis. This percentage is about the same as the Saskatchewan average (51.8%). Figure 5.4.1-15 shows how the percentage of people who were fully employed varied among the various population segments. The highest percentages of full time employment were reported by residents of Melfort, Prince Albert and the rural municipalities. However, only 33.7% of people living on First Nation reserves within SRSA reported full time employment; this was lower than the off-reserve Aboriginal population (46.4%).

The median incomes of the adult population in the SRSA for 2005 are shown in Figure 5.4.1-16, both for people who worked full time and all people who worked for some part of the year. The average median income for all SRSA residents aged 15 and older was \$22,625. This was about 4.8% lower than the provincial median. Figure 5.4.1-16 also shows that median incomes were higher in Prince Albert, Melfort and the rural communities and lower for people living on First Nation reserves, in towns, and in villages. The average median income for Aboriginal people living off-reserve was about \$18,220. This was about 18% lower than the regional average, but 52.1% higher than for the people living on reserves in the SRSA (\$8,737). Comparable differences in average median income among the various population segments also applied to people who reported full time employment.

In 2005, earnings accounted for about 71.5% of average incomes for regional residents (Figure 5.4.1-17). This was slightly below the provincial average (74%). The balance of regional incomes came from government transfers (15.5%) and other sources (13%). Within the region, the off-reserve Aboriginal population reported the highest percentage of income from earnings (77%) compared with 66.3% of income for people living on First Nation reserves. Residents of villages reported the lowest reliance on earnings (62%), indicative of an older population with a lower labour force participation rate.

Figure 5.4.1-18 summarizes median family and household income for all population segments in the SRSA. Household structure is different from family structure in that households may consist of single persons, households with more than one family or groups of unrelated adults. Information on household incomes has been included because estimates of family incomes are not available for the off-reserve Aboriginal population. It should be noted that for the region, towns, villages, rural areas and the Aboriginal population (on and off-reserve), the values shown are averages of the median values for the individual communities and are, therefore, not true medians. The figure shows that, overall, family and household income in the SRSA is somewhat (about 5.9%) below the Saskatchewan average. The lowest incomes were reported by the on-reserve Aboriginal population, where the median household income (\$25,943) was about 40.9% less than the regional average



(\$43,947) and 35.7% less than for the off-reserve Aboriginal population (\$40,385). The highest incomes were reported by households and families in the rural areas; rural family incomes were about the same as the provincial average, while rural household incomes were 18.8% higher than the Saskatchewan median household income. Incomes reported by households and families in Prince Albert, Melfort and towns in the SRSA were approximately the same, and close to the SRSA average. However, incomes reported by families and households living in villages were about 27% lower than the regional average.

Economic Prospects

Expected economic growth in the region, including growth in regional employment and income, will be driven by major investments in new infrastructure and major projects. In looking at future economic trends in the SRSA, it is necessary to consider provincial economic prospects and trends. Statistics indicate that, while Saskatchewan experienced average GDP growth of 2.1% per year between 1987 and 2007, there has been more rapid economic growth in recent years due to increased activity in the resource and construction sectors (Sask Trends Monitor 2009). This has resulted in increasing employment in Saskatchewan (1.4% annual employment growth between 2002 and 2008) and declining unemployment (from 5.8% in 2002 to 4.1% in 2008). Estimates of future labour requirements have been developed by considering expected annual GDP growth (from 1.0% to 4.0% per year with a medium projection of 2.5%) and two assumptions about labour productivity. The resulting analysis shows that future employment could increase by 13,000 to 16,000 new jobs per year under the high GDP growth scenarios and would remain constant under the low growth scenarios (Sask Trends Monitor 2009). For estimating future labour requirements in Saskatchewan, it was assumed that employment would increase by about 10,000 jobs per year over the next 5 to 20 years. This is consistent with actual employment increases observed in both 2007 and 2008.

In the short run, it is expected that increasing labour requirements in Saskatchewan can be met by in-migration from other provinces and immigration. After 2013, increased employment of Aboriginal people and other groups currently under-represented in the labour force (like seniors) will be required to meet expected provincial labour requirements.

However, in the long run, labour shortages are expected in the next 10 to 15 years (Sask Trends Monitor 2009). The greatest imbalances between labour demand and supply are expected to be in agriculture, construction, professional and business services, health care and social assistance, and personal and household services. The resource sector, which includes mining, due to its relatively high wages is expected to have a greater relative ability to attract labour.

The prospect of future labour shortages is expected to carry over to the SRSA. There is considerable potential for new construction in the region. The current list of major projects



in Saskatchewan (valued at \$2 million or higher) shows that there are currently 20 projects valued at \$377.6 million under tender or construction (or now completed) in the SRSA (Enterprise Saskatchewan 2012). Economic multipliers for the construction industry (Statistics Canada 2011) suggest that this level of activity would create about 1,260 construction jobs (3.34 construction full-time equivalent jobs for every million dollars of output). However, another 8 projects worth \$212.4 million are in the planning or design phase and there are 4 proposed projects worth \$1190 million (Enterprise Saskatchewan 2011; Internet site). In combination, these other projects could generate considerable demand for additional construction workers in the near future. A list of known proposed major projects in the SRSA is found in Table 5.4.1-6. .

A labour market analysis was recently completed for the North Central Enterprise Region (NCER), which includes the portion of the SRSA around Prince Albert, including the Rural Municipality of Prince Albert No. 461. Regional labour demands were estimated based on maintaining its share of new provincial employment (6.5% of 10,000 jobs per year) plus its current share (4.1%) of new employment in the provincial mining sector. These additional labour requirements, when combined with expected retirements from an aging regional workforce, suggest that 1,014 new workers will be required in the NCER each year for the next 10 years (Strategy Plus 2010). These projections do not include some of the several very large projects being proposed for the region. These demands exceed available labour supplies, with the estimated imbalance being 430 workers in 2011, 962 by 2016 and 1,583 by 2021 (Strategy Plus 2010). The assessment suggests that the NCER is particularly susceptible to labour supply issues because of challenges related to:

- lower levels of education and skills for the resident workforce;
- challenges in attracting immigrant labour, especially to smaller communities;
- employers not being equipped to deal with First Nation cultural issues; and
- higher paying jobs being available outside the region, especially for entry level positions.

Three core strategies have been identified to address potential labour shortages in the NCER including (Strategy Plus 2010):

- higher participation of groups currently under-represented in the labour force (especially First Nations);
- increased in-migration of people currently living outside the NCER; and
- increased immigration.

A recent assessment of training needs identified a number of barriers to employment faced by residents in the northeast region of the province (Northeast Regional Intersectoral Committee 2010). These include:



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- lack of necessary education to undertake entry-level and more advanced employment positions;
- lack of employment skills;
- low self-esteem;
- limited access to childcare;
- limited or non-existent public transportation system;
- lack or loss of driver's license; and
- limited access to adequate housing.

A similar labour market analysis has not been completed for the North East Enterprise Region, which includes the eastern part of the SRSA, Melfort, Tisdale and Nipawin. However, it is expected that the same labour force conditions apply and that regional labour shortages can be expected in the near future.



Table 5.4.1-6: Additional Major Projects in the SRSA Listed by Enterprise Saskatchewan

Sector	Company name	Location	Project	Value in Millions	Project Schedule	
Proposed Projects**1						
Industrial/Manufacturing	Nipawin Biomass New Generation Co-operative	Nipawin	Ethanol Plant	\$80.0	2005	2012
Power	James Smith Cree Nation/ Peter Kiewit Sons/Brookfield Power	Fort a la Corne	Pehonan Hydroelectric Dam	\$1,000.0	2008	2015
Infrastructure	City of Prince Albert, Saskatchewan Ministry of Highways & Infrastructure	Prince Albert	Proposed New Bridge	100	2012	2015
Recreation and Tourism	Town of Nipawin	Nipawin	New Multi-Purpose Facility - Central Park	\$10.0	2011	2013
Projects in Planning and Design Phase						
Commercial and Retail	Wal-Mart Canada Corporation	Prince Albert	Wal-Mart Expansion 15 th Street East	\$10.0	2012	2013
	Avatex Development Corp. Inc.	Melfort	New Shopping Centre	\$50.0	2009	2014
	Avatex Development Corp. Inc.	Prince Albert	New Home Depot and Big Box Retail (15 th Street East)	\$30.0	2009	2012
Infrastructure	City of Prince Albert	Prince Albert	Airport Upgrades	5.9	2012	2013
	City of Prince Albert	Prince Albert	New Fire Sub-Station - TBD	\$4.0	2010	2013
Institutional: Health	Prince Albert Parkland Health Region/Saskatchewan Health	Prince Albert	Pineview Terrace Lodge - 675 15th St. W.	\$25.0	2009	2014
	Prince Albert Parkland Health Region / Saskatchewan Health	Prince Albert	Victoria Hospital Addition and Renovations	\$80.0	2009	2013
Institutional: Education	Saskatchewan Rivers School Division	Prince Albert	Carlton Comprehensive Gymnasium Addition	7.5	2011	2013



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Sector	Company name	Location	Project	Value in Millions	Project Schedule	
Projects in Construction and Tender Phase						
Industrial/ Manufacturing	Paper Excellence Canada	Prince Albert	Conversion of Pulp Mill to Dissolving Pulp Mill	\$200.0	2011	2013
Commercial and Retail	City of Prince Albert	Prince Albert	New Green Energy Industrial Park	\$3.0	2010	2012
Infrastructure	Prince Albert Satalite Station	Prince Albert	Communication Upgrade	5.0	2012	2012
	City of Melfort	Melfort	Waterline-Storm Sewer Replacement Program	\$4.8	2011	2012
	City of Melfort	Melfort	Highway #6 Commercial	\$3.7	2011	2012
	City of Prince Albert	Prince Albert	Water Treatment Plant & Reservoirs Upgrade	\$24.0	2009	2012
	City of Prince Albert	Prince Albert	Road Utility Reconstruction - River St. W.	\$3.7	2011	2012
Institutional Health	Kelsey Trail Health Region	Tisdale	Newmarket Manor Long-Term Care Facility Expansion	\$18.4	2011	2013
	Town of Nipawin	Nipawin	New Assisted Living Facility	\$9.0	2012	2013
Institutional: Education	Red Earth First Nation	Red Earth First Nation	School Additions and Renovations	\$13.0	2012	2013
Institutional: Non-Health/ Education Projects	Saskatchewan Government Services	Prince Albert	McIntosh Mall Renovations	\$15.4	2003	2018
	Riverbend Institution	Prince Albert	Riverbend Institution Addition – 15 th St. W.	\$10.0	2011	2013
	Federal Procurement & Contracting Services	Prince Albert	Sask. Penitentiary Health Care Renovations and Expansion	\$10.0	2010	2013
	Saskatchewan Government Services	Prince Albert	Pine Grove Provincial Correctional Centre Addition	\$12.0	2011	2013



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Sector	Company name	Location	Project	Value in Millions	Project Schedule	
	Saskatchewan Government Services	Melfort	Norman Vickar Building Renovations	\$3.8	2011	2014
Power	Prince Albert Pulpmill/SaskPower	Prince Albert	Biomass Boiler & Power Turbine	\$10.0	2012	2013
	SaskPower	Tisdale	Tisdale Switching Station Control Building Facilities	\$2.7	2012	2012
	SaskPower	Nipawin	EB Campbell PCMS	\$2.9	2012	2012
	SaskPower	Nipawin	EB Campbell #8 Runner Refurbishment	\$11.2	2012	2012
Residential	Caleb Group	Tisdale	New Seniors Condominiums	\$15.0	2010	2012

Source: Enterprise Saskatchewan 2012 **1 – Term used in Enterprise Saskatchewan table, No project proposal necessarily filed, as of yet.



5.4.1.5 Housing

This Section presents information of the capacity, condition, and cost of housing in the SRSA. It also discusses trends in residential development. This information is important context for understanding how any influx of project-related workers, speculative in-migration, and/or Shore's labour accommodation plans may affect housing in the SRSA.

Housing Capacity and Characteristics

This Section discusses the capacity of the local housing market, i.e. the availability of housing, and key characteristics of the housing stock.

In the SRSA in 2006, there were a total of 26,560 occupied private dwellings (Statistics Canada 2007a). An occupied private dwelling is defined by Statistics Canada as a set of living quarters designed for or converted for human habitation in which a person or group of persons reside or could reside, and which is occupied by permanent, as opposed to temporary, residents. Approximately 69.4% of the occupied private dwellings in the SRSA were owner occupied. Ownership was highest in the rural municipalities sub-group, where approximately 93.8% of the dwellings were owned. Prince Albert had the highest proportion of rented private dwellings at approximately 39.9%.

The data for housing on reserves is incomplete, as much on-reserve housing is band-owned and thus is considered neither owned nor rented. Band housing is not reflected in the counts and analysis of private occupied dwellings data from Statistics Canada. However, other data sources indicate that there are 165 housing units on the Muskoday First Nation reserve, 229 on the James Smith 100 reserve and 66 on the Wahpeton 94A reserve. (Aboriginal Canada Portal 2003). Figure 5.4.1-19 provides further detail on the ownership status of occupied private dwellings in the SRSA.

One indicator of the adequacy of housing is the percentage of dwellings that have more than one person per room. In 2006, 1.7% of dwellings in the SRSA had more than one person per room, and this was slightly above the provincial average. Generally, less than 2% of dwellings in the urban and rural communities in the SRSA had more than one person per room (Figure 5.4.1-20). However, approximately 19.6% of dwellings on First Nation reserves had more than one person per room. This may indicate crowding on the reserves and that housing may be less adequate on reserve than elsewhere.

In July 2010, there were numerous houses for sale in the SRSA. Based on Multiple Listing Service (MLS) listings, there were 301 properties for sale in the City of Prince Albert, 78 properties for sale in Melfort, 49 for sale in Nipawin and 46 for sale in Tisdale (MLS 2010).

The housing stock in the region is quite old, with 84.4% being constructed prior to 1986. Figure 5.4.1-21 shows that housing stock is oldest in the villages, where 93.0% of dwellings

were built prior to 1986. This may be related to the declining population trend and aging population in the villages. The highest percentage of newer housing stock was found on the First Nation reserves, where 55.4% had been constructed since 1986.

In 2006, towns and cities within the SRSA reported a relatively low proportion of housing in need of major repair. Towns reported that 10.7% of dwellings were in need of major repair, Melfort reported 8.4% and Prince Albert 8.2%. Major repairs are considered to be those that result from defective plumbing, electrical wiring, or are structural in nature (walls, floors, etc.) (Statistics Canada 2007b). As shown in Figure 5.4.1-22, there were higher percentages of housing in need of major repair in the villages, rural municipalities, and First Nation reserves. On the reserves in the SRSA, 45.9% of dwellings were reported in need of major repair.

Housing Cost

The cost of housing varies throughout the region. In 2006, the average value of a private dwelling in the SRSA was \$86,246 (see Table 5.4.1-7). This is considerably less than the average dwelling value for the province as a whole for the same period, which was \$132,111. Within the region, housing is more expensive in larger centres. The average value of a private dwelling in Prince Albert in 2006 was \$121,816, and in Melfort it was \$101,364. For all villages, the average value was \$52,769.

Table 5.4.1-7: Average Value of Dwellings in the SRSA (2001 and 2006)

	Saskatchewan	SRSA Total	First Nation Reserves	Rural	Villages	Towns	Melfort	Prince Albert
2001 (\$)	93,065	61,956	n/a	81,312	41,293	54,230	86,491	99,464
2006 (\$)	132,111	86,246	n/a	118,009	52,769	75,650	101,364	121,816
% change	42.0	39.2	n/a	45.1	27.8	39.5	17.2	22.5

Source: Statistics Canada 2007a.

Across the region, housing values rose significantly between 2001 and 2006. For the SRSA as a whole, the value of private dwellings rose 39.2% during this time period. The largest increase within the SRSA was in rural municipalities, where there was a 45.1% increase in the value of private dwellings between 2001 and 2006. The increase was considerably less in the cities of Prince Albert and Melfort (22.5% and 17.2% respectively).

Housing generally appears to be affordable in the region. In response to a questionnaire sent to cities, towns, villages and rural municipalities represented on Shore's Diamond Development Advisory Committee (DDAC), almost all indicated there were vacant habitable



housing units available in the community (or a nearby urban centre in the case of rural municipalities), and most indicated that housing was generally affordable in their community relative to other communities in Saskatchewan. Further, according to a 2010 housing study conducted by the Northeast Regional Intersectoral Committee, housing prices and rent levels in the communities of Melfort, Nipawin, and Tisdale are considered affordable by most, especially in relation to the higher values in the larger urban centres of the province (Northeast RIC 2010).

Service providers working closely with vulnerable populations, however, have suggested that lower income households often face housing affordability issues (Saskatchewan Ministry of Social Services 2010a; Northeast RIC 2010). There is indication that in Melfort, Nipawin and Tisdale the social assistance shelter rate has not been sufficient to cover shelter costs and that rental rates are not affordable to low income single person households (Northeast RIC 2010).

Private Rental Housing

Data provided by the Strategic Policy Branch of the Saskatchewan Ministry of Social Services provides some information on the availability and cost of private rental housing in certain SRSA communities. Based on data compiled and provided by the Saskatchewan Ministry of Social Services, Prince Albert has 2,174 private rental units (including bachelor, one bedroom, two bedroom, and three bedroom apartments) and the average monthly rent is \$663 (see Table 5.4.1-8). Melfort has a total of 44 rental units available and the average monthly rent is \$443. Nipawin has a total of 102 rental units and the average monthly rent is \$450.

Table 5.4.1-8: Total Units, Vacancy Rates and Average Rents of Private Apartments in Prince Albert and Selected Saskatchewan Small Communities in the SRSA

		Prince Albert	Birch Hills	Carrot River	Kinistino	Melfort	Nipawin	Tisdale
Bachelor	Total Units	90	0	0	0	0	6	0
	Vacancy Rate (%)	2.2					0	
	Average Rent (\$)	452					377	
One Bedroom	Total Units	660	0	5	0	15	27	20
	Vacancy Rate (%)	1.5		0		0	0	0
	Average Rent (\$)	578		362		337	414	400
Two Bedroom	Total Units	1,196	4	27	3	26	65	64
	Vacancy Rate (%)	3.1	0	0	0	0	Unknown	1.6
	Average Rent (\$)	703	450	442	700	494	485	499
Three Bedroom	Total Units	229	0	0	1	3	4	5
	Vacancy Rate (%)	1.8			0	0	Unknown	0
	Average Rent (\$)	826			700	533	458	663
Total	Total Units	2,174	4	32	4	44	102	89



	Prince Albert	Birch Hills	Carrot River	Kinistino	Melfort	Nipawin	Tisdale
Vacancy Rate (%)	2.4	0	0	0	0	Unknown	1.1
Average Rent (\$)	663	450	430	700	443	459	486

Source: Saskatchewan Ministry of Social Services 2010b. Based on data compiled from Canada Mortgage and Housing Corporation (CMHC). *Rental Market Report, Fall 2009*. Saskatchewan Housing Corporation (SHC). *Saskatchewan Small Communities Rental Market Survey 2009*.

Note: Cells with no information signifies no response by landlords.

Public Housing

The Saskatchewan Housing Corporation and the Saskatchewan Ministry of Social Services provide a range of housing assistance programs to meet the needs of those people who require financial assistance in order to secure or maintain housing. The programs are targeted at families, seniors, people with disabilities, and others who have financial need (Government of Saskatchewan 2007a). “Social housing” refers to subsidized housing targeted to low-income households who would otherwise not be able to afford safe, secure shelter, and includes seniors’ housing. Affordable housing is private housing that meets the needs of modest-income households and is available at prices that approximate low-end market rents or home ownership costs.

As shown in Table 5.4.1-9, Prince Albert has 425 seniors’ units and Melfort has 167 seniors’ units, with vacancy rates of 2.1% and 3.0% respectively. The highest vacancy rate for affordable housing is in Melfort, with a vacancy rate of 8.3% based on a total of 24 units. In terms of affordable housing, Prince Albert has a higher number of vacant units at 8, but a lower vacancy rate of 2.6%. There appear to be very few family housing units available in larger SRSA communities. There are 7 units available in Prince Albert, representing a vacancy rate of 3.2%. There is one family housing unit available in Tisdale.

More information on rental apartments by housing authority in Prince Albert, Melfort, Nipawin and Tisdale can be found in Table 5.4.1-9. Information concerning the total number of family and seniors’ non-profit housing units in some smaller SRSA communities is provided in Table 5.4.1-10.

Table 5.4.1-9: Rental Apartments by Selected Housing Authority in the SRSA (March 2010)

		Housing Authority			
		Prince Albert	Melfort	Nipawin	Tisdale
Affordable Housing¹	Number of Units	306	24	8	16
	Vacant Units	8	2	0	1
	Vacancy Rate (%)	2.6	8.3	0	6.3
Social	Number of Units	425	167	146	135

Housing (Senior)	Vacant Units	9	5	1	3
	Vacancy Rate (%)	2.1	3	0.7	2.2
Social Housing (Family)	Number of Units	222	18	37	20
	Vacant Units	7	0	0	1
	Vacancy Rate (%)	3.2	0.0	0.0	5.0

Source: Saskatchewan Ministry of Social Services 2010b.

Table 5.4.1-10: Location and Type of Non-Profit Housing in the SRSA

Location	Family	Senior	Total
Birch Hills	6	38	44
Choceland	14	34	48
Codette	0	6	6
Kinistino	22	16	38
Love	1	0	1
Meath Park	1	0	1
Nipawin	45	147	192
Star City	6	14	20
Tisdale	36	136	172
Weldon	0	10	10
White Fox	0	4	4
Zenon Park	2	10	12

Source: Saskatchewan Housing Authority Central Region Office 2009.

Housing Development

Many of the communities in the SRSA are experiencing growth in housing development. This trend follows the growth in housing starts that is being experienced across Saskatchewan as a whole. In 2008, Saskatchewan experienced its strongest growth in housing starts in 25 years, with construction beginning on 6,828 housing units. Rural Saskatchewan saw significant growth, with a 78% increase in housing starts, while there was a 3% decrease in urban areas (Canada Mortgage and Housing Corporation (CMHC) 2009). A total of 10,203 housing units were sold in 2008 across the province, down from the 2007 record of 12,054 units (CMHC 2009).

Prince Albert in particular has experienced significant recent growth in development, including housing. After a low period in 2006 and a slight increase in 2007, significant growth in development began in 2008. In 2008, a total of 283 building permits, of which 210



were residential, were issued in Prince Albert, representing construction value of \$67 million (City of Prince Albert 2010a). However, 2010 was on track to be a record-setting year for development in Prince Albert. During the first two quarters of 2010, \$38.4 million in permits were issued (compared to \$36.4 million during the first two quarters of 2008). During this period in 2010, 170 building permits were issued, of which 128 were residential (Prince Albert Daily Herald 2010).

The City of Melfort has over 60 serviced lots for sale (Diamond Development Advisory Committee 2009).

Many of the smaller SRSA communities report they have new housing developments planned or underway. For example, the RM of Buckland has a planned 18 lot rural subdivision. The communities of Choiceland, White Fox and Meath Park have indicated new housing developments are planned or underway. The RM of Birch Hills has a 23 unit condominium development under construction. The Town of Kinistino has a new subdivision of 25 fully serviced large residential lots under development. Smeaton is opening a new 12 lot subdivision in 2010. While the RM of Willow Creek and the Village of Weirdale both indicate there are no new housing developments, there are some lots for sale in their respective communities. The RM of Nipawin indicated no new housing developments are currently planned or underway (Diamond Development Advisory Committee 2009).

Temporary Accommodation

Temporary accommodation typically refers to hotels, motels, inns, lodges, resorts and cottages. This information is relevant as the use and capacity of such services may be affected by a project's labour and worker accommodation strategies.

Such temporary accommodation can be found in many communities in the SRSA. There is greater capacity in the larger centres, such as Prince Albert, Nipawin, and Melfort. Melfort, for example, has three hotels with a cumulative capacity of about 142 rooms. Nipawin has eight hotels/motels with a capacity of about 223 rooms. Prince Albert has 11 hotels/ motels with a total capacity of approximately 714 rooms, in addition to several smaller bed and breakfast accommodations. Smaller hotels/motels can also be found in Birch Hills, Choiceland (two hotels with a total of 11 rooms), Gronlid (8 chalet units), Tisdale, White Fox (three cabin units), Zenon Park, and Love (one rental cabin). In addition, campgrounds are found throughout the region. A large modern hotel is currently being developed in Tisdale.

5.4.1.6 Transportation

This Section discusses transportation infrastructure, including ground transportation infrastructure such as highways and railways, and infrastructure that supports air transportation. It also discusses traffic patterns and traffic-related safety issues. This

information is important context for understanding the extent to which the movement of project-related labour and equipment may impact the use, capacity, maintenance and safety associated with regional transportation infrastructure.

Road Infrastructure

The Project site is accessible by a network of paved highways, a gravel grid road system, and an extensive network of forestry roads, passable to four-wheel drive and high clearance two-wheel drive vehicles all year round (P & E Mining 2010).

As shown in Figure 5.4.1-23, within the SRSA, Highways 3 and 55 both run east-west and intersect at Prince Albert, west of the proposed mine site. Located south of the proposed mine site, Highway 3 connects Tisdale, Star City, Melfort, Beatty, Kinistino, Weldon, Birch Hills, Muskoday First Nation and Prince Albert. Located north of the proposed mine site, Highway 55 connects Nipawin, White Fox, Love, Garrick, Choiceland, Snowden, Smeaton, Shipman, Foxford, Weirdale, Meath Park and Prince Albert. Located east of the proposed mine site and running north-south, Highway 6 connects Melfort to Gronlid, Fairy Glen and Choiceland. Highway 35 runs from Tisdale to White Fox.

These four highways surrounding the mine site (Highways 3, 55, 6, and 35) are paved, with one lane in each direction and are managed by the Saskatchewan Ministry of Highways and Infrastructure. Highway 302 to the southwest of the mine site and Highway 335 to the southeast (both again provincially managed highways) run east-west and connect to unpaved roads south of the mine site (Saskatchewan Ministry of Highways and Infrastructure 2007).

There is currently road access to the site via an access road that was developed by Shore during the exploration phase. The access road extends south approximately 26 km from Highway 55 at the hamlet of Shipman (near Smeaton).

In June, 2010, the Saskatchewan Ministry of Highways and Infrastructure announced its Five Year Capital Plan for highway construction projects in the province, outlining a \$250 million capital budget for highway improvements (Saskatchewan Ministry of Highways and Infrastructure 2010). It identified a range of upgrade and paving projects on the above-mentioned highways in the SRSA as follows:

- Highway 6 repaving north of Melfort to 6 km North of Gronlid (work in progress);
- Highway 6 repaving 6 km North of Gronlid to South of the North Saskatchewan River (Infrastructure Stimulus Fund);
- Highway 55 repaving from Nipawin to junction with Highway 35;
- Highway 55 repaving from junction with Highway 35 to 0.9 km southeast of Love;



- Highway 335 bridge replacement east of junction with Highway 35 over Leather River; and
- Highway 3 bridge painting Muskoday at km 14.50.

Traffic

The Saskatchewan Ministry of Highways and Infrastructure monitors and reports Average Annual Daily Traffic volumes (AADT) throughout the province. The Ministry determines short term count numbers using traffic counts taken over a 48-hour period and taking into account the traffic patterns identified throughout the province.

The AADT values for selected locations on highways in the SRSA are shown on Figure 5.4.3-23. Traffic volume is greater on Highway 3 than on other highways in the SRSA. Within SRSA boundaries, the AADT on Highway 3 ranges from 1,780 vehicles per day near Kinistino to 4,080 vehicles per day near Prince Albert. AADT volumes on Highway 55 range from 820 vehicles per day near Choiceland to 4,300 vehicles per day entering Prince Albert. On Highway 6, AADT volumes are lower, ranging from 220 to 940 vehicles per day, but increase greatly to 4,800 vehicles per day within Melfort city limits. Where Highway 302 ends, just west of the proposed mine site, the AADT is only 210 vehicles per day (Saskatchewan Ministry of Highways and Infrastructure 2007).

A new access road to the Project site is being considered to connect with Highway 55, south from Shipman. As noted, the AADT volume on Highway 55 at Choiceland is 820 vehicles per day, and the volume at nearby Smeaton is 1,050 vehicles per day.

Discussions with RCMP officials in the Nipawin Detachment, in whose jurisdiction the Project site falls, indicate that there are no congestion issues in the SRSA or problematic intersections or other areas of safety concern on the SRSA roadways. The Project site location is semi-isolated and accessed from arteries which are good paved roads (RCMP 2010a).

Rail

While there is no passenger rail service within the SRSA, there are freight rail lines. Branch lines of Canadian National Railway and Canadian Pacific Railway are located south of the Project site and south of the Saskatchewan River, and run east-west following the same route as Highway 3.

The Saskatchewan Shortline Railway Network is provincially regulated and includes two rail lines within the SRSA. The shortline railway provides a link between remote delivery points in order to transport grain and wood products but can carry other products as well. A section of the Carlton Trail Railway runs between Birch Hills and Prince Albert.



Torch River Rail is a 45 kilometre line between Nipawin and Choiceland and could provide a rail link for Shore to bring in materials, fuel and equipment via Choiceland from anywhere in North America, with a transfer from a mainline to Torch River rail at Nipawin (Saskatchewan Ministry of Highways and Infrastructure no date).

Airports

There are five airports located within the SRSA. There are regional airports located in Nipawin, Melfort and Prince Albert, a primary airport located in Tisdale, and a secondary airport located in Birch Hills. Table 5.4.1-11 outlines key characteristics of each airport in the SRSA.

Both Transwest Air and Pronto Airways fly to and from Prince Albert, connecting to communities outside of the SRSA, including Saskatoon. West Wind Aviation provides corporate air charter services between Prince Albert and northern mine sites in Saskatchewan. The province's international airports are located in Saskatoon and Regina.

Table 5.4.1-11: Characteristics of Airports in the SRSA

Airport Location	Airport Classification	Users	Runway Type	Runway Length (ft)	Runway Width (ft)	Lighting?	Surface Conditions	IFR?
Nipawin	Regional	Business, police, tourism, flight school, Medevac, EA, AA	Asphalt	2930	75	Yes	Good	Yes
			Turf/snow	2900	115			
Melfort	Regional	Business, Aerial spray, Police, Tourism, Freight, Medivac, EA, AA	Asphalt	3000	75	Yes	Good	Yes
Prince Albert	Regional	EA, AA	Asphalt	5000	150	Yes	Good	Yes
			Turf	2500	100			
Tisdale	Primary	EA, AA, Police, Tourism, General Aviation	Asphalt	3000	75	Yes	Good	Yes
			Turf	2100	200			
			Turf	1400	160			
Birch Hills	Secondary	EA, Police, Flying Club	Asphalt	2660	75	Yes		No
			Turf	1800	75			

Regional Classification: used for major transportation; critical aircraft are small jets; wide usage.

Primary Classification: used for general transportation; critical aircraft are single engine or light twin aircraft; moderate usage.

Secondary Classification: used for basic transportation; critical aircraft are single engine or light twin aircraft; some usage. **IFR:** Instrument Flight Rules.

AA: Air Ambulance.

EA: Executive Air.

Source: Saskatchewan Ministry of Highways and Infrastructure 2002.



Bus

Bus transportation is available throughout the SRSA. Passenger and freight services are available through the Saskatchewan Transportation Company and Greyhound. The following communities in the SRSA have scheduled bus services: Birch Hills, Choiceland, Codette, Kinistino, Meath Park, Melfort, Nipawin, Prince Albert, Smeaton, Star City, Tisdale, Weirdale and Weldon (Saskatchewan Transportation Company 2008; Greyhound 2009).

5.4.1.7 Utilities and Physical Community Infrastructure

This Section will examine physical municipal infrastructure and services available throughout the SRSA, specifically those relating to power, gas supply, communications, water, wastewater and solid waste. This information is important context for understanding the extent to which direct project requirements and project-related labour and in-migration may affect the capacity and service associated with utilities and infrastructure in the SRSA.

Power and Gas Supply

The Saskatchewan Power Corporation (SaskPower), a Crown corporation, is the primary provider of electricity generation, transmission and distribution services throughout the Province and the SRSA.

A 230 kilovolt (kV) power line runs approximately 10 km south of the Project site and a larger capacity 230 kV powerline is located approximately 15-20 km east of the Project site and connecting the grid to the Nipawin Hydroelectric and E.B. Campbell Hydroelectric stations. In addition, a SaskPower powerline connection from the main grid is available from the town of Smeaton. SaskPower is working on a transmission project to deliver increased power to the area of the Project site. This transmission/distribution line is considered a distinct ancillary project, subject to its own regulatory process.

SaskEnergy, a Crown corporation, is the Province's provider of natural gas distribution services and distributes natural gas to 92% of Saskatchewan communities (SaskEnergy no date).

Communications

SaskTel, a Crown corporation, has over 568,000 primary telephone connections throughout the province (Government of Saskatchewan 2008a). Telecommunications within the FaIC forest are currently available through a cell phone tower located approximately 5 km south of the Project area (P & E 2010). Most SRSA communities get cell phone coverage through several carriers, including Sasktel Mobility, Telus Mobility and Bell Mobility (Sasktel Mobility 2010; Telus Mobility 2010; Bell Mobility 2010).



SaskTel and the Saskatchewan Communications Network are partners in providing the CommunityNet service, linking all communities with schools, libraries, health facilities or government offices via broadband, high speed Internet (CommunityNet no date). All of the cities and towns and about one third of the villages within the SRSA have at least one CommunityNet service access point. None of the Aboriginal communities in the SRSA are connected to CommunityNet. YourLink Inc. is a private Internet service provider providing high speed Internet connectivity to nearly every community within the SRSA (YourLink Inc. no date).

Community Access Program (CAP) sites are sponsored by Industry Canada and aim to provide public computer and Internet access for each of the 12 Prince Albert Grand Council communities (CAP 2008). James Smith Cree Nation, Red Earth Cree Nation and Sturgeon Lake First Nation reserves are members of the Council and each has a CAP site. Muskoday First Nation's Youth Centre has a CAP site for public computer and Internet use (Industry Canada 2008).

CBC radio and television are broadcast throughout the province. CTV has four stations in the province, with one in Prince Albert serving northern Saskatchewan and the SRSA. Missinipi radio is available on the FM band throughout most of the province with the objectives of "preserving, protecting and enhancing the Aboriginal cultures and languages of northern and central Saskatchewan" (Missinipi Broadcasting Corporation 2009). There are eight local radio stations in the SRSA.

There are six weekly newspapers, one monthly and one daily newspaper published throughout the SRSA. Regional media coverage is outlined in Table 5.4.1-12.

Table 5.4.1-12: Media Coverage in the SRSA

Locations	Newspapers	Radio	Television
SRSA		CBC Radio One Missinipi Broadcasting Corporation CBC Radio 2 Première Chaîne - CBC French	CBC -TV CTV
Melfort	Melfort Journal Northeast Sun	CJVR - FM CKJH	
Nipawin	The Nipawin Journal	CJNE - FM CIOT-FM	
Prince Albert	Prince Albert Herald	CKBI - AM	
	Rural Routes	CHQX - FM	
	Prince Albert Shopper	CFMM - FM	
Smeaton	Smeaton and District News		
Tisdale	Tisdale Recorder		
Zenon Park		CKZP -FM	

Source: Radio Station World no date; Missinipi Broadcasting Corporation 2009; CTV 2009; Canadian Broadcasting Company (CBC) 2009.

Water and Wastewater

SaskWater, a Crown corporation supplying water and wastewater services throughout the Province, has a variety of models through which it provides water utility services (SaskWater no date).

The City of Prince Albert uses the North Saskatchewan River as its raw water source. It has both a water treatment plant and wastewater treatment plant. The former can treat up to about 37,854 cubic metres (m³, 10 million gallons) per day, and provides treated water to city residents and approximately 600 area farms (City of Prince Albert 2008b). In 2010, the City was undergoing a major construction project to improve its wastewater treatment plant. The design capacity of the plant is 44,415 m³/day, and is designed to treat domestic as opposed to industrial waste (Diamond Development Advisory Committee 2009).

The City of Melfort's water supply is from a SaskWater water treatment facility that is fed via a pipeline from the Saskatchewan River. Municipal officials have indicated there are no capacity issues on the City's water system. Wastewater treatment facilities are owned and operated by the City of Melfort. The wastewater is treated to standard, and the facility has had major upgrades in recent years (Diamond Development Advisory Committee 2009).



The Town of Nipawin's water is sourced from groundwater wells located south of the town, and wastewater is treated. Nipawin has a lagoon managed by SaskWater (Town of Nipawin 2010).

The Town of Tisdale's water is sourced from groundwater from the Tisdale Aquifer. According to the Town, the Aquifer has more than sufficient capacity to meet the Town's needs (Town of Tisdale 2009). Wastewater treatment processes in Tisdale consist of a lift station and a three compartment lagoon. The Town of Choiceland relies on town wells as its water source (Town of Choiceland 2009). The Town of Kinistino provides water through the Saskwater Melfort regional pipeline. Kinistino has a 10 acre two cell lagoon (Town of Kinistino 2010).

On the James Smith Cree Nation reserve, water is delivered by truck to cisterns on a weekly basis, and a sewage truck provides wastewater disposal services (Prince Albert Grand Council no date).

Solid Waste

Solid waste management varies throughout the SRSA and secondary source data on this subject is limited. Prince Albert is the only location in the SRSA that offers residential pickup of recyclables. Nipawin and Melfort offer recycling services through centralized drop-off depots.

Prince Albert's landfill is located north of the city limits, where non-recyclable waste is disposed of in an area of the landfill protected by an impermeable liner, preventing contaminated water from leaking into the groundwater system (City of Prince Albert 2008c).

Nipawin has a regional landfill that provides service to a total of approximately 8,800 people including those in Connaught, Alysham, Codette, Moose Range and Carrot River. The landfill is expected to be able to serve the population's needs for the next 60-80 years (Town of Nipawin 2009a). Nipawin residents are provided a weekly residential garbage pickup service.

Melfort, Birch Hills, Choiceland, and Kinistino offer residential waste collection on a weekly basis.

5.4.1.8 Health and Protective Services

This Section will examine the health and protective services that are provided in the SRSA, including health services provided through regional health authorities, ambulance service, police service, and fire protection services. This information provides important context for understanding the extent to which project-specific needs (i.e. emergency response, worker



health needs) and project-related in-migration may affect the utilization and capacity of such services.

Health Services

There are two regional health authorities located in the SRSA. The Kelsey Trail Regional Health Authority (KTRHA) covers the City of Melfort and its surrounding communities, and the Prince Albert Parkland Regional Health Authority (PAPHR) covers the City of Prince Albert and its surrounding communities.

Kelsey Trail Regional Health Authority

The KTRHA serves residents of 58 rural and urban communities across northeast Saskatchewan (Kelsey Trail Health Region 2010a). SRSA communities within the KTRHA service boundary include: Melfort, Nipawin, Tisdale, and surrounding areas including the Red Earth Cree Nation.

SRSA residents are served by hospitals in Melfort, Nipawin, and Tisdale and medical clinics in smaller communities. In Melfort, people can access hospital, emergency, long-term care, home care, mental health and addictions programs, rehabilitation and community health services. The Melfort Hospital has seven physicians and 31 beds with surgical services, outpatient clinic, lab/x-ray, 24-hour emergency service, and visiting specialist services (Kelsey Trail Health Region 2009a). The Nipawin Hospital has seven physicians and a 31 bed capacity (Kelsey Trail Health Region 2009b). Tisdale Hospital has four physicians and 20 beds (Kelsey Trail Health Region 2009b). Long-term care beds are available in Melfort (105 beds), Nipawin (96 beds) and Tisdale (approximately 73 beds). There are public health offices located in Melfort, Nipawin and Tisdale. In Smeaton, there is a health centre with scheduled clinic hours, and visits from Kelsey Trail service providers. There are primary Health Care Sites in Carrot River, Nipawin, and Tisdale, where physicians and nurse practitioners and other health professionals deliver health care services (Kelsey Trail Health Region 2010a).

The mental health and addictions services of the KTRHA include outpatient rehabilitation, long-term care and therapy. Outpatient addictions services are accessible in Melfort, Nipawin and Tisdale. Through a partnership with PAPHR, inpatient services and 24-hour emergency mental health referrals and consultations are available to the KTRHA region (Kelsey Trail Health Region 2010a).

The single largest challenge the region faces is recruitment and retention, particularly of physicians (Kelsey Trail Health Region 2010a). KTRHA lost several physicians in 2009-10, but also had significant recruitment success. There is now a heavy focus on recruitment efforts. There have been some interruptions in service due to physician resignations and general shortages. For example, an insufficient number of anaesthesiologists resources



resulted in the temporary discontinuance of emergency surgical services at Nipawin Hospital in December 2009, and a shortage of physicians skilled in obstetrics resulted in the temporary loss of the obstetrical program in Tisdale in January 2010. Many residents of the region experience difficulty accessing a family physician (Kelsey Trail Health Region 2010a). KTRHA representatives have indicated that Nipawin is a key community operating below ideal physician numbers, but that recruitment efforts there are proving successful (Kelsey Trail Health Region 2009a). As an example of efforts to address retention, the region was been working in partnership with the Town of Nipawin and other organizations to construct a duplex to provide rental accommodations for physicians and other health care professionals in that community (Kelsey Trail Health Region 2010a).

Prince Albert Parkland Regional Health Authority

The (PAPRHA) is located in central Saskatchewan and has a population of 78,000 (Prince Albert Parkland Health Region 2009a). SRSA communities that are serviced by the PAPRHA are: Rural Municipality of Kinistino, Kinistino, Weldon, Rural Municipality of Birch Hills, Birch Hills, Rural Municipality of Prince Albert, Prince Albert, Meath Park, Weirdale, Rural Municipality of Buckland, Muskoday First Nation, James Smith Cree Nation and Sturgeon Lake First Nation (Prince Albert Parkland Health Region 2009a).

Within the SRSA, the PAPRHA has long-term care and health centres located in Birch Hills, Kinistino, and Prince Albert. PAPRHA operates Victoria Hospital in Prince Albert. Victoria Hospital is one of the busiest regional acute care facilities in Saskatchewan and offers the broadest range of medical specialist services outside of Saskatoon and Regina (Prince Albert Parkland Health Region 2009a). There are 123 acute care beds and five operating theatres (Prince Albert Parkland Health Region 2009b).

PAPRHA offers outpatient addictions services in Prince Albert and Birch Hills and inpatient treatment and methadone in Prince Albert (Saskatchewan Ministry of Health 2009). The addictions services include assessment, counselling, treatment planning, referrals and education (Prince Albert Parkland Health Region 2008).

The Canadian Mental Health Association (CMHA) Saskatchewan Division has a branch office in Prince Albert. The branch office offers vocational, recreational and social programs for people living with mental illness. These programs focus on employment and living skills (Canadian Mental Health Association Saskatchewan Division no date).

In February 2009 the Government of Saskatchewan announced a \$152.8 million investment in 13 new long-term care facilities. Within the SRSA, Tisdale (Sasko Park Lodge) will get 33 new long-term care beds, and Prince Albert (Pineview Terrace Lodge) will get 50 new long-term care beds (Government of Saskatchewan 2009a).



The National Native Alcohol and Drug Abuse Program, a federal program which provides addictions services to Aboriginal people, lists treatment centres throughout the province. The Sakwatamo Lodge in Melfort has 20 beds and offers both drug and alcohol treatment (Health Canada 2008). There is also a James Smith Drug/Alcohol Abuse Program (First Nations Bands of Saskatchewan no date).

Health conditions in the KTRHA and PAPERHA are discussed in Section 5.4.1.10 (Community Well-Being and Quality of Life).

Ambulance Service

Road and air ambulance service is available at various locations within the SRSA. Road ambulance service is generally provided through the Province's health regions; some ambulance services are owned by the health regions, and others are contracted out to emergency service providers. Ambulance services are provided out of Prince Albert, Melfort, Nipawin and Tisdale. Of these, Nipawin is the closest to the Project site.

Parkland Ambulance Care is a privately owned ambulance service contracted to and servicing the Prince Albert Parkland Health Region. It operates out of two facilities in Prince Albert. It has a fleet of nine ambulances, two rover vehicles, a medivan, Mobile Response Unit, and over 60 employees. There are various levels of registered paramedics within the service (Parkland Ambulance Care 2010).

The ambulance service in Melfort has two full-time ambulances, one as-needed ambulance, and ten staff. It services a population of about 12,000 people, about 6,000 of which are in the City of Melfort and extending to cover an approximately 50 km (30 mile) radius around Melfort (Melfort Ambulance Service 2010). Service representatives indicate that 60 to 70 trips per month are made; utilization is typically lower in the summer months (July and August). A bigger call volume could be handled by the Melfort service, up to about 90 calls per month (Melfort Ambulance Service 2010).

Ambulance services in Nipawin are provided by North-East EMS, contracted to the health authority. Nipawin has three ambulances with two supervisor support units and 20 employees. They typically receive approximately 120-130 calls per months, and there are no current constraints or capacity issues with their service. The current service could absorb an increase in population and still provide appropriate service (North-East EMS 2010).

Tisdale Ambulance Care Ltd. is contracted to the health authority to provide ambulance service to Tisdale and the surrounding area. It has two ambulances staffed all the time, one additional ambulance staffed on an as-needed basis, and 12 employees -They provide about 60 responses a month. It has been indicated that the Tisdale service could absorb an increase in population in the communities it serves (Tisdale Ambulance Ltd. 2010).



Through the Kelsey Trail Regional Health Authority, trained volunteer First Responders provide service to 25 communities and areas in the region. First Responders help meet the challenge of providing prompt emergency medical services when there is a longer distance for ambulance services to travel in a response situation. Other First Responder groups that work with community departments are located in Tisdale and Nipawin (Kelsey Trail Health Region 2010a).

The Saskatchewan air ambulance service, Lifeguard, is administered by Saskatchewan Health and is based at the Saskatoon airport. The service transports remote patients to larger centres in Saskatchewan and also takes patients out of province for treatments not available in Saskatchewan. In 2007 the Province invested \$12 million in air ambulance services in order to meet increasing demand. The Saskatchewan air ambulance fleet is made up of three aircraft that, combined, make more than 1,300 trips annually (Government of Saskatchewan 2007b).

Police Service

Royal Canadian Mounted Police (RCMP) detachments located in Melfort, Nipawin, Prince Albert, and Tisdale provide police services throughout the SRSA. The Project site falls into the area covered by the Nipawin Detachment and would be serviced by a Community Detachment in Smeaton.

Within the SRSA, the RCMP also provides police service to Red Earth Cree Nation, with two members living on reserve. The host detachment responsible for the Red Earth Cree Nation is the Carrot River RCMP Detachment (RCMP 2010b).

Policing services are delivered on the Sturgeon Lake First Nation through an agreement involving the Band and the RCMP. There are six members located at a sub-office on the Sturgeon Lake First Nation reserve (RMCP 2010a).

The City of Melfort contracts with the RCMP for 7 municipal officers, who share the Melfort Detachment with 7 rural members (City of Melfort 2009a). The Melfort Detachment also provides services to James Smith Cree Nation.

The Nipawin RCMP Detachment, which covers the project site area, includes the Smeaton Community Detachment and has 11 members with a total of 18 employees (RCMP 2009a).

The Prince Albert RCMP Detachment has absorbed the former Birch Hills Community Detachment and has 21 regular staff and four civilian support staff. Muskoday has a dedicated member managed through a community tripartite agreement. A new detachment is planned for anticipated growth in the department area (RCMP 2009b).



There is one municipal police service in the SRSA, in Prince Albert. The Prince Albert Police Service employs 83 full time Police Officers, five Bylaw Special Constables and 28 civilian support staff. There is a Victims' Services component that has approximately 50 volunteers who work with police to provide referrals to victims of crime. There is an Aboriginal Resource Officer Program providing additional contact with Aboriginal members of the community and assisting the Victims' Services Unit. Prince Albert has two provincial jails, one young offenders facility and a federal penitentiary within its boundaries (Prince Albert Police Service no date).

Crime incidents rates for the SRSA are discussed in Section 5.4.1.10 (Community Well-Being and Quality of Life)

Fire Protection

Within the SRSA, professional fire protection services are located in Prince Albert. There are also volunteer firefighters associations active in the SRSA. Zones 9 and 10 of the Saskatchewan Volunteer Firefighters Association include the following communities within the SRSA: Birch Hills, Buckland, Kinistino, Melfort, Star City, White Fox, and Zenon Park. The Project site is located within the boundaries of Zone 10 (Saskatchewan Volunteer Firefighters Association 2009).

The Prince Albert Fire Department consists of 44 professional firefighters, including eight captains and four battalion chiefs as well as a Chief, two Deputy Chiefs and two Fire Prevention Officers. It provides fire, rescue and emergency procedures (City of Prince Albert 2009b). Its equipment includes three engines, a ladder truck, rescue boat, rescue truck, tanker and a Mobile Command. The Department responded to 1,058 incidents in 2007, 1,250 incidents in 2008, and 1,088 incidents in 2009 (Prince Albert Fire Department 2009). In 2009 the Fire Department's Emergency Response Plan was revised in preparation for a 'worst case scenario,' and the Fire Service Master Plan submitted to City Council included a recommendation for the construction of a second Fire Hall within the next five years, for which land has been allocated by the City (Prince Albert Fire Department 2009).

Nipawin has a paid fire chief and volunteer fire department.

The Melfort and District Fire Department has a full time Fire Chief and 20 volunteer firefighters, one ladder truck, one rescue truck, Jaws of Life and a water tank. The Department's services include: emergency medical response, fire prevention, firefighting, technical rescue, hazardous materials and disaster response.

The City of Melfort also has an Emergency Measures Organization (EMO) which establishes and manages a disaster plan to handle major emergencies that threaten health, safety and the welfare of citizens. The EMO committee includes members from the city, police, fire,



health, social services, transportation, communications and public relations. The City of Melfort Emergency Plan was created in order to respond effectively to major emergencies and not everyday occurrences. The Plan outlines the responsibilities of the various groups responding to major emergency and coordinates communication amongst these groups.

In 1986 a Mutual Aid Area was formed between the following communities:

- City of Melfort
- Town of Star City
- Town of Kinistino
- Village of Beatty
- RM of Flett's Springs
- RM of Willow Creek
- RM of Kinistino
- RM of Star City
- RM of Lake Lenore
- RM of Pleasantdale
- Village of Weldon
- Village of St. Brieux

The Agreement states that "each party to the agreement will assist any other party in the agreement in the event of disaster." The City of Melfort is the Emergency Response Centre for this mutual aid area (City of Melfort no date). All parties except the RM of Lake Lenore remain part of the Mutual Aid Area (City of Melfort 2009).

5.4.1.9 Community and Social Services

This Section discusses community-based services in the SRSA, including educational infrastructure/services, recreation services, and key social services. This information provides important context for understanding the extent to which project-related training programs may affect educational services, and the extent to which project-related workers moving to the area, as well as speculative in-migration, may affect the utilization and capacity of education and social services in general.

Education Services

Facilities for elementary, secondary and post secondary education are described below.

Elementary and Secondary Education

In addition to schools operated by First Nations, the SRSA overlaps with the following provincial school divisions:

- Saskatchewan Rivers School Division 119;
- Prince Albert Catholic School Division No.6;
- North East School Division 200; and



- Conseil des écoles francsaskoises.

The North East School Division includes 28 schools. Challenges that are faced by the school division include declining enrolments, closure of small schools, increasing numbers of teachers who are retiring, changing family structures, and transportation of students (The Early Years Partnership 2008). In the 2008-2009 school year, student enrolment in the Division was projected at 5,237 students, 85 fewer students than the previous year. Enrolment numbers have been declining since 2002, when 6,202 students were enrolled (Northeast Regional Needs Assessment 2009). Enrolment is projected at about 4,970 for September 2009 (North East School Division 2009).

The Saskatchewan Rivers School Division serves approximately 9,000 students in 33 schools, 19 of which are in the SRSA. From 2006 to 2008 the school division experienced a slight decline in enrolment and was expecting this trend to continue into 2010; however it was also hoped that potential oil and mining developments in the region could reverse the trend (Saskatchewan Rivers School Division 2008). In 2007 the Prince Charles School in Prince Albert was closed (Canadian Broadcasting Corporation (CBC) 2007) but the school division does not expect any other schools in the SRSA to be closed, and “can easily accommodate hundreds of additional students.” (Saskatchewan Rivers School Division 2009).

The Prince Albert Catholic School Division serves pre-kindergarten to grade 12 students at schools in and around the Prince Albert area. The school division offers English, French and Intensive French programs, as well as various alternative programs, including an alternative school for students with social difficulties and a behaviour management program (Prince Albert Catholic School Division 2009). None of the schools in the division are slated for closure (Prince Albert Catholic Schools 2009).

The Conseil des écoles francsaskoises (CEF) is the Saskatchewan Francophone school division and has a school in Prince Albert (Ecole Valois) and a school in Zenon Park (Ecole Notre-Dame-des-Vertus). In the 2009-2010 school year, the school in Zenon Park had 33 students enrolled from kindergarten to grade 12, and 6 teachers, and the school in Prince Albert had 117 students and 11 teachers (Ecole Valois 2009; Nortre-Dame-des-Vertus 2009).

The First Nations schools located within the SRSA are: the Angus Mirasty School supported by the Prince Albert Grand Council and located in Prince Albert, the Bernard Constant School located in on James Smith Cree Nation reserve, the Muskoday First Nation Community School located on Muskoday First Nation reserve (Federation of Saskatchewan Indian Nations no date). The Sturgeon Lake Central School is located on Sturgeon Lake First Nation reserve, Wahpeton School located on Wahpeton Dakota Nation reserve, and



Kiwaytinok Elementary School and John William Head Memorial Education Centre are located on the Red Earth Cree Nation reserve (Red Earth Cree Nation 2010).

Details of the elementary and secondary schools in the SRSA are provided in Table 5.4.1-13.

Table 5.4.1-13: Elementary and Secondary Schools in the SRSA (2009-2010)

Location	School	Number of Students	Number of Teachers	Pupil/Teacher Ratio
North East School Division				
Choceland	William Mason School K-12	152	11.5	13.1
Gronlid	Gronlid Central School K-12	76	7	12.2
White Fox	White Fox School K-9	97.5	7.5	15
Nipawin	Central Park Elementary Pre-K-3	253	15.35	17.1
	Wagner Elementary School 4-6	188	12.9	14.3
	L.P Miller Comprehensive 7-12	500	32.16	16.2
Melfort	Brunswick School K-6	199.5	12.77	17.7
	Maude Burke Community School Pre-K to 6	163.5	11.26	15.4
	Reynolds Central Schools Pre-K to 6	243	15.3	15.8
	Melfort & Unit Comprehensive Collegiate 7-12	623	38.45	14.56
Star City	Star City School K-12	129.5	10.44	13.2
Zenon Park	Zenon Park School (French)	63.5	6.55	10.5
Tisdale	Tisdale Elementary School	306	17.75	17
	Tisdale Middle & Secondary School	543	32.76	17.4
Saskatchewan Rivers School Division				
Meath Park	Meath Park School K-12	319	19	16.8
Birch Hills	Birch Hills School K-12	385	22.5	17.1
Kinistino	Kinistino School Pre-K to 12	288	18.5	15.6
Prince Albert	Arthur Pechey School K-8	238	14	16.8
	Carlton Comprehensive High School 9-12	2292	96	23.9
	East Central K-8	108	7.5	14.4
	Ecole Vickers School K-8	492	30	16.4
	John Diefenbaker School Pre-K to 8	348	23	15.1
	King George Community School Pre-K to 8	158	12.8	12.3
	Osborne School K-8	93	6	15.5
	Prince Albert Collegiate Institute 9-12	209	14.07	14.9
	Princess Margaret School Pre-K to 8	205	13.75	14.9
	Queen Mary Community School Pre-K to 8	363	24	15.1
	Red Wing School K-8	238	14.17	16.8
	Riversdale Pre-K to 8	353	24.5	14.4
	Vickers (French) K-8	465	28	16.6
	Vincent Massey Pre-K to 8	314	21.2	14.8
W.J. Berezowsky Pre-K 8	197	13.75	14.3	



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Location	School	Number of Students	Number of Teachers	Pupil/Teacher Ratio
	Wesmore 9-12	324	20.5	15.8
	West Central K-8	116	8	14.5
	Westview Pre-K to 8	220	16	13.8
	Won Ska Cultural School 9-12	104	3	34.7
Prince Albert Catholic School Division				
Prince Albert	Ecole St. Anne K-8	355	22	16.1
	St. Francis K-8	223	19	11.7
	Ecole Holy Cross K-9	345	20	17.3
	St. John Pre-K to 8	425	28	15.2
	Lucy Baker ages 12-16 alternative school	29	2	14.5
	St. Mary gr 9-12	1063	58	18.3
	St. Michael Pre-K to 8	190	20	9.5
	Rivier Academy gr 7 to12	165	14	11.8
	W.F.A Turgeon School K-8	183	14	13.1
First Nations Schools				
Prince Albert	Angus Mirasty School (ungraded)	30	3	10.0
Muskoday First Nation Reserve	Muskoday First Nation Community School Pre-K to 9	143	9	15.8
James Smith Cree Nation Reserve	Bernard Constant Community School Pre-K to 12	308	18	17.1
Red Earth Cree Nation Reserve	Kiwaytinok Elementary School K to 4	246	11	22.4
	John William Head Memorial Education Centre 5 to 12	250	22	11.4
Wahpeton Dakota Nation Reserve	Wahpeton School Pre-K to 8	108	16	6.8
Sturgeon Lake First Nation Reserve	Sturgeon Lake Central School Pre – K to 12	403	18	22.4
Conseil Ecoles des Fransaskoises				
Prince Albert	Ecole Valois Pre – K to 12	117	11	10.6
Zenon Park	Ecole Notre-Dame-des-Vertus K-12	33	6	5.5

Source: Angus Mirasty School 2010; Ecole Valois 2009; Ecole Nortre-Dame-des-Vertus 2009; Bernard Constant Community School 2009; L.P Miller Comprehensive School. 2009; North East School Division.2009; Prince Albert Catholic School Division. 2009; Red Earth Schools, 2010; Saskatchewan Rivers School Division 2009; Sturgeon Lake Central School 2010; and Wahpeton School 2012.



The Government of Saskatchewan, in partnership with provincial schools, offers the Saskatchewan Youth Apprenticeship (SYA) program to students in grades 10 through 12. The Program was designed to enhance student career development by providing awareness of the apprenticeship process, researching career pathways and providing hands-on experience with trades people. The following schools in the SRSA are enrolled in the SYA program: L.P. Miller Comprehensive High School in Nipawin, Melfort Comprehensive, Tisdale Middle and Secondary School, William Mason School in Choiceland, and Wesmore Community High School, Carlton Comprehensive School, Ecole Valois, Prince Albert Collegiate Institute and St. Mary's High School in Prince Albert (Saskatchewan Apprenticeship and Trade Commission 2009).

Designated trades involved in the program that are relevant to the mining industry include: Cook, Electrician, Heavy Duty Equipment Mechanic, Truck and Transport Mechanic, and Welder (Saskatchewan Apprenticeship and Trade Certification Commission no date).

The L.P Miller Comprehensive School also offers practical and applied arts courses including Machining, Electrical, Welding, Carpentry, and Automotive (L.P Miller Comprehensive School 2009).

Post-Secondary Education

In the Province of Saskatchewan the University of Regina, the First Nations University of Canada and the University of Saskatchewan in Saskatoon all offer post-secondary education. While there are no universities located within the SRSA, university courses may be accessed by SRSA students through university extension programs, at regional colleges and at the Saskatchewan Institute of Applied Science and Technology (SIAST) campus.

Saskatchewan Regional Colleges is a network of colleges located throughout the province. Cumberland College is part of Saskatchewan Regional Colleges and has campuses located within the SRSA in Nipawin, Melfort and Tisdale. The programs offered in each community are chosen as a result of a Regional Needs Assessment process. Total student enrolment in 2009-2010 was 1,993 students. This demonstrates an increase from 2008-2009 where the total enrolment was 1,654. Enrolment has been growing steadily since 2004-2005. Of the 2009-2010 total enrolment, the majority of students were enrolled in business and industry related programs (1,279 students) (Cumberland Regional College 2010).

Cumberland College offers credit programs delivered in association with SIAST, as well as distance education university courses in partnership with the University of Regina and the University of Saskatchewan. Technical programs and industry training offered at the College and applicable to the mining industry include: Applied Certificate in Welding, Primary Care Paramedic, Fire Line/Camp Cook program, Electrician program, Office Education, 1A Truck Driving, Heavy Equipment Operator, Power Engineering and Steam Engineering (Cumberland Regional College 2009).



SIAST has five campuses, including SIAST Woodland Campus in Prince Albert. SIAST has an enrolment of approximately 13,000 students and offers approximately 160 programs. SIAST offers on- and off-campus studies, as well as apprenticeships, basic education, co-operative education, and an Academic Partnership program. The Academic Partnership program, in partnership with Northlands Regional College in La Ronge, offers training in Underground Mining Raise Boring and Underground Mining Coring. Both of these courses are offered off-campus at northern mine sites (SIAST 2009).

Representatives from Cumberland Regional College indicated that there is a high demand for Adult Basic Education. Access to post-secondary programming is an issue for many people in the region, specifically Aboriginal students, as a high number do not have the necessary prerequisites, thus driving interest in Adult Basic Education. Capacity constraints faced by this institution include: financial sustainability, human resources and facility space (Cumberland Regional College 2010).

The Saskatchewan Indian Institute of Technologies (SIIT) has 9 campus locations throughout the province, and programs are offered both on- and off-reserve. Within the SRSA there is one campus, in Prince Albert. SIIT offers applied, certificate and diploma programs in the following fields: Health and Community Studies, Management Studies and Information Technology, Trades and Industrial, and Professional Development/Training. Within the Trades and Industrial program, students can study welding, heavy equipment operation, and process operating (SIIT 2009).

The Gabriel Dumont Institute of Native Studies and Applied Research (GDI) was incorporated to serve the educational and cultural needs of the Saskatchewan Métis and Non-Status Indian community. GDI offers a variety of accredited educational, vocational and skills training opportunities for the province's Métis in partnership with the University of Regina, the University of Saskatchewan, SIAST, the province's various regional colleges and the Métis Employment and Training of Saskatchewan Inc. Two university programs (first two years), Saskatchewan Urban Native Teacher Education Program and Bachelor of Arts, along with Practical Nursing, are offered in Prince Albert. A wide variety of adult upgrading opportunities and technical training programs are offered throughout the province (GDI 2009).

In February 2009 the Government of Saskatchewan announced that \$26.4 million would be invested in four post-secondary institutions. This investment includes renovations at the Prince Albert campus of SIAST to accommodate expanded training opportunities for electricians (Government of Saskatchewan 2009b).

Recreation

There are significant outdoor recreational opportunities in the FalC Provincial Forest immediately surrounding the Project site. Common recreational activities include cross-



country skiing, snowmobiling, horseback riding, canoeing, fishing, hiking, berry picking, camping, hunting and bird watching. Such local study area outdoor recreational resources are discussed in more detail in Section 5.4.3.8 (Outdoor Recreation)

There are also significant outdoor recreational resources and services in the SRSA, particularly within the southeast and east portions along the Saskatchewan River. These resources include various cottages, camps, cabins, lodges, campgrounds, beaches, marinas, outfitters, skiing areas and golf courses. Table 5.4.3-8 in Section 5.4.3.8 (Outdoor Recreation) provides further detail on outdoor recreation resources in SRSA communities.

SRSA communities have a range of recreational infrastructure and services typically commensurate with the size of each community. Larger centres, like Prince Albert and Melfort, have a wide range of recreational services. Prince Albert, for example, has over 35 parks and a wide variety of playgrounds, sports and recreational facilities. This includes arenas, climbing wall, curling, cross-country ski trails, down-hill skiing area, numerous outdoor fields and diamonds, and several multi-purpose recreational facilities (City of Prince Albert 2010b). Melfort has numerous parks and playgrounds, a multi-purpose pool/arena, outdoor rink and skateboard park, campgrounds and walking trails (City of Melfort 2010a).

Smaller communities within the SRSA (i.e., villages and hamlets) typically have a smaller range of recreational infrastructure due to smaller populations, but would typically have resources such as community halls, rinks, parks and playgrounds.

Social Services

The Saskatchewan Ministry of Social Services provides a range of services and programs for children and families, focusing on the areas of income support, child and family services, supports for persons with disabilities and affordable housing. The Ministry works with community members with the goal of helping them build better lives for themselves through economic independence, strong families and strong community organizations.

There are five regions within the Ministry, and the SRSA falls within the Northeast Region. Within the SRSA, there are service centre offices in Prince Albert, Melfort and Nipawin. The types of services offered include: child protection, foster care, housing programs, income assistance, youth services, seniors programs and community based organizations.

Discussions with representatives from the Nipawin service office indicated that their focus is the safety of children, and that their caseload consists of people living in poverty, many of whom have addictions issues and problems with the law. It is estimated that 80% of the children in care are Aboriginal. Common barriers to employment faced by clients are addictions, lack of transportation and lack of life skills (Saskatchewan Ministry of Social Services 2010a).



The agency currently struggles with retaining staff; it was noted that young people often come to do their practicum in the region after leaving school but then move away. Their caseload has declined since the mandate for service dropped the “prevention” role. It was noted that during Shore’s exploration phase in the region their department was busy, but has since leveled off. Agency representatives indicated that during that time, they had more referrals for child protection, likely due to more income which may have in turn lead to alcohol abuse in the region (Saskatchewan Ministry of Social Services 2010a).

Licensed child care centres and child care homes are located throughout the SRSA. A review of these services conducted by Shore via telephone interviews in 2009 and spring and summer of 2010 indicated that the majority of the centres had more demand than available day care spaces. This was especially true in Prince Albert where many child care centres have waiting lists of several years. Known child care facilities in SRSA communities are listed in Table 5.4.1-14. Persons caring for children in the child’s home or in the caregiver’s home do not require a license from Saskatchewan’s Early Learning and Child Care Program. As such, the table may not be a comprehensive list of all child care services in the SRSA.

Table 5.4.1-14: Child Care Facilities in the SRSA (2009-2010)

Community	Child Care Facilities
Birch Hills	1 Child Care Home
James Smith Cree Nation	Awasisak Ochi Daycare
Melfort	Kids World
	Melfort Day Care Co-op
	Melfort Day Care Co-operative 2 nd site
Muskoday First Nation	Muskoday Awasis Daycare
Nipawin	Nipawin Day Care Co-op
	Central Park Learning Centre
Prince Albert	7 Child Care Homes
	Blooms and Buds Inter-generational Child Care Centre
	Carlton Infant Centre Inc.
	Children’s Choice Child Development Coop
	Children’s Choice West
	Families Futures Inc.
	Humpty Dumpty Child Care Co-op
	P.A. Child Care Co-op (Kiddie’s Kingdom)
	Play and Learn Day Care Centre
	P.A.G.C. Learn and Grow Family Day Care Inc.
Prince Albert Family Church Inc.	

Community	Child Care Facilities
	Prince Albert Montessori Preschool Day Care/Kindergarten
	Small World Day Care Centre
	South Hill Child Co-op (Tiny Tot)
	St. Mary Daycare Inc.
	Wesmor Community High School Teen Facility
	West Flat Community Preschool
	Woodland Child Care Co-op
Red Earth Cree Nation	Awasisuk Centre
Sturgeon Lake First Nation	Sturgeon Lake First Nation Day Care
Tisdale	1 Child Care Home
	Recplex Day Care Centre Inc.
	Recplex Teen
	Tisdale Tiny Tornadoes
Wahpeton Dakota Nation	Wahpeton Day Care
Zenon Park	La Pouponniere Co-op Day Care Centre

Source: Saskatchewan Ministry of Education 2009; Red Earth Cree Nation 2010; James Smith Cree Nation 2009; Sturgeon Lake First Nation 2010; Prince Albert Grand Council Website 2012.

Note: List does not include unlicensed child care providers.

In May 2008, the Government of Saskatchewan announced 500 new child care spaces, at a cost of \$1.7 million, at child care centres across the province, including the Nipawin Day Care Co-Operative, Melfort Day Care Co-Operative and a licensed family child care home provider in the Town of Birch Hills (Government of Saskatchewan 2008b).

5.4.1.10 Community Well-Being and Quality of Life

This Section discusses conditions occurring at a community, family or individual level that may contribute to a person's overall sense of well-being. This recognizes that a community or family as a whole may experience certain aggregate conditions that affect the quality of life of its members. This information is important context for examining how changes in income, population, or other community conditions associated with the Project may affect well-being and quality of life for residents in the SRSA.

There is no standard methodology for assessing the well-being or quality of life for communities in Saskatchewan, and data that may serve as appropriate indicators can be challenging to access. For purposes of this assessment, well-being in communities in the SRSA will be characterized in terms of available information related to health conditions, community well-being index scores, the incidence of individuals with low incomes, and crime



rates. For Aboriginal communities, another indicator of well-being that is discussed is participation in traditional resource harvesting activities (i.e. hunting, trapping, fishing, gathering) and use and knowledge of Aboriginal languages.

Health Conditions

The health of a community and its members is affected by a complex number of factors. The determinants of health, as modeled by Health Canada, include income and social status, employment conditions, social environment and support, personal health practices and the physical environment. These social determinants can be considered alongside a wide range of indicators of physical health, such as: self-rated health, mortality (death), human function (disability measures), injury, disease rates and birth weights.

This Section presents a selection of indicators (Table 5.4.1-15) related to health status and conditions. Indicators are presented at the level of the two health regions that cover the communities in the SRSA: the KTRHA and the PAPERHA. Indicators have been chosen to reflect facets of health where there may be potential for direct or indirect effects associated with a new mining activity (i.e., injury, asthma and respiratory disease, access to services). Self-related health has also been included, as it is generally understood to be a strong indication of health status.

Table 5.4.1-15: Health Conditions Indicators

Indicator	Kelsey Trail	Prince Albert Parkland	Saskatchewan
Self-rated health (pop. aged 12+)			
Very good or excellent (%)	54.2	52.1	58.1
Good (%)	29.3	28.9	32.7
Fair or poor (%)	12.8	16.4	14.8
With Asthma (pop. aged 12+)	6.5 ¹	6.71	8.5
Injuries in the last 12 months (%)	11.9	13.6	14.4
Has regular medical doctor (%)	80.2	80.7	84.3
PPYL– Respiratory disease (excluding infectious and parasitic diseases) (rate/100,000 pop)	376.5	291.7	222.9
PPYL – Unintentional injuries (rate/100,000 pop.)	1376.5	1625.3	1028.0

Notes: ¹ wide variability; interpret with caution.

PPYL: Potential Year of Lost Life; a measure of premature death.

Source: Statistics Canada 2005: Saskatchewan Health 2006.



The KTRHA reports that the number of communicable diseases (diseases that can be spread throughout a population in various ways) reported between July 2009 and March 2010 was higher than usual due to the lab positive cases of H1N1 pandemic influenza in the region (Kelsey Trail Health Region 2010a). The PAPRHA monitors numerous communicable diseases within the region, and indicates there have been no lab confirmed cases of influenza in the region since 2002 (Prince Albert Parkland Health Region 2008).

Drug and alcohol use and addictions may be affected by increases in income and transient populations in an area. Addiction services in Saskatchewan are provided through the health regions. Addictions caseload data was provided by the KTRHA, and is presented in Table 5.4.1-16 below. In 2009, there was a total 635 addictions services cases, the largest proportion of which came through the Nipawin area. Addictions caseload data was requested from the PAPRHA, but had not been received at the time of writing.

Table 5.4.1-16: Addiction Services Caseload – Kelsey Trail Regional Health Authority (2009)

Community	Addiction Services – Number of Cases (2009)
Tisdale	78
Melfort	149
Nipawin	205
Hudson Bay	108
Cumberland House	95
Total	635

Source: Kelsey Trail Health Region 2010b.

Community Well-Being Index

Indian and Northern Affairs Canada (INAC) developed a community well-being (CWB) index derived from federal census data as a measure of overall well-being in Canadian communities. The CWB index combines data on income, education, labour force activity and housing conditions into a single number, or CWB score. The most recent scores are based on the 2006 federal census; they are calculated on the basis of census sub-divisions.

There is a wide range of CWB scores for communities in the SRSA. The score of First Nations reserves tend to be lower than non-reserve communities. The James Smith 100 reserve of the James Smith Cree Nation has a CWB score of 47; the Sturgeon Lake 101 reserve of the Sturgeon Lake First Nation has a score of 46; the Carrot River 29A reserve of the Red Earth Cree Nation has a score of 42; the Wahpeton Dakota Nation has a score of 49; and the Muskoday First Nation has a score of 66. No scores were available for the Cumberland 100A and Red Earth 29 reserves. In comparison, the CWB score for Prince Albert is 79, for Melfort is 78 and Nipawin is also 78. Looking at a range of selected villages



and rural municipalities in the SRSA, the Village of White Fox has a score of 73 and the village of Weldon has a score of 65. The RM of Flett's Springs has a score of 79 and the RM of Buckland has a score of 82. (INAC 2010b).

Low incomes

According to Statistics Canada criteria, 12.4% of the regional population is classified as having low after-tax income. The criteria are based on family size and area of residence, with the cut-off point being higher for larger families and for families living in larger communities (Statistics Canada 2008a). As shown in Figure 5.4.1-24, 12.4% of the SRSA population lived in households reporting low incomes. This is much higher than the provincial-wide proportion of 9.9%. The highest percentage of residents in households reporting low incomes occurred in Prince Albert (17.4%). Of sub-populations in the SRSA, the rural areas had the lowest proportion of people residing in households with low incomes (6.0%) followed closely by towns (6.2%). Data was not reported for reserves or off-reserve Aboriginal populations.

The proportion of females with low incomes was about 1.5 percentage points higher than for males for most segments of the population. The only exceptions were Prince Albert, where the proportion of females with low incomes was about 4 percentage points higher and towns, where a higher percentage of males reported low incomes.

Crime

Crime data indicates there is variability in crime rates across the SRSA. Tables 5.4.1-17, 5.4.1-18, 5.4.1-19, 5.4.1-20 provide further detail on crime incidence rates for certain areas within the SRSA for 2008 and 2009. At the time of writing, data had been received for most Rural Municipalities, some villages, some First Nations and the City of Prince Albert (through the Prince Albert Police Service).

Table 5.4.1-17: Crime Incidence Rates, Violations/1000 population – Aboriginal Reserves (2008 and 2009)

	Sturgeon Lake First Nation		James Smith First Nation		Muskoday First Nation	
Population	1116		708		553	
Violation Group	2008	2009	2008	2009	2008	2009
Traffic Collision - Non Fatal Injury	2.7	1.8	0.0	0.0	3.6	1.8
Traffic Collision - Reportable Property Damage	10.8	5.4	0.0	0.0	10.8	12.7
Traffic Offense - Impaired Operation Related Offenses	12.5	23.3	4.2	1.4	25.3	16.3
Drug Enforcement - Trafficking	0.0	0.9	0.0	0.0	0.0	1.8



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	Sturgeon Lake First Nation		James Smith First Nation		Muskoday First Nation	
Drug Enforcement - Possession	0.0	1.8	0.0	0.0	3.6	1.8
Crimes Against the Person (sexual offenses)	5.4	11.6	0.0	1.4	3.6	7.2
Crimes Against the Person (robbery, extortion, threats, etc.)	23.3	14.3	2.8	1.4	28.9	27.1
Crimes Against the Person (assaults, excluding sexual)	97.7	84.2	0.0	4.2	128.4	106.7
Theft under \$5000	52.0	51.1	0.0	0.0	45.2	32.5
Theft over \$5000	10.8	6.3	0.0	0.0	3.6	3.6
Mischief	150.5	148.7	1.4	7.1	121.2	139.2
Break and enter	48.4	40.3	0.0	0.0	28.9	36.2

Notes: Incident rates calculated based on raw crime incident data (Mayor's Reports) provided by RCMP and 2006 federal census population

Source: RCMP 2008 - 2009.

Table 5.4.1-18: Crime Incidence Rates, Violations/1000 population – City of Prince Albert (2008 and 2009)

	2008	2009
Population	34,138	
Violation Group		
Traffic Violations	34.9	28.4
Possess Drugs	2.7	1.6
Traffic Drugs	1.3	1.3
Sexual Assaults	2.3	2.3
Assaults	16.6	22.8
Crimes Against Property (incl. theft, B & E)	93.0	103.8

Notes: Incident rates calculated based on raw crime incident data provided by Prince Albert Police Service and 2006 federal census population.

Source: Prince Albert Police Service 2010.

Table 5.4.1-19: Crime Incidence Rates, Violations/1000 population – Villages (2008 and 2009)

Violation Group	Aylsham		Codette		Love		Weirdale		Meath Park		Smeaton		Whitefox	
	Population 92		221		55		83		179		183		348	
	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
Traffic Collision - Non Fatal Injury	0.0	0.0	0.0	9.0	0.0	18.2	0.0	0.0	0.0	0.0	0.0	10.9	0.0	2.9
Traffic Collision - Reportable Property Damage	0.0	0.0	0.0	0.0	36.4	0.0	0.0	0.0	0.0	0.0	98.4	87.4	2.9	2.9
Traffic Offense - Impaired Operation Related Offenses	0.0	0.0	0.0	27.1	0.0	18.2	0.0	0.0	0.0	0.0	27.3	54.6	14.4	2.9
Drug Enforcement - Trafficking	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Drug Enforcement - Possession	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	0.0	2.9
Crimes Against the Person (sexual offenses)	10.9	21.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.9	0.0	0.0
Crimes Against the Person (robbery, extortion, threats, etc.)	10.9	21.7	0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	8.6	5.7
Crimes Against the Person (Assaults, excluding sexual)	0.0	21.7	0.0	9.0	36.4	18.2	0.0	0.0	0.0	0.0	27.3	16.4	31.6	5.7
Theft under \$5000	10.9	65.2	31.7	4.5	0.0	18.2	0.0	0.0	0.0	0.0	27.3	49.2	14.4	25.9
Theft over \$5000	0.0	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	5.5	5.5	2.9	0.0
Mischief	10.9	32.6	36.2	18.1	54.5	54.5	0.0	0.0	0.0	16.8	43.7	60.1	40.2	17.2
Break and enter	32.6	0.0	18.1	18.1	0.0	0.0	0.0	0.0	0.0	0.0	21.9	54.6	5.7	5.7

Notes: Incident rates calculated based on raw crime incident data (Mayor's Reports) provided by RCMP and 2006 federal census population.

Source: RCMP 2008- 2009.

Table 5.4.1-20: Crime Incidence Rates, Violations/1000 population – Rural Municipalities (2008 and 2009)

Violation Group	RM Buckland		RM Torch River		RM Tisdale		RM Star City		RM Prince Albert		RM Nipawin		RM Kinistino		RM Garden River		RM Flett's Springs		RM Connaught		RM Birch Hills	
	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
Population	3429		1559		938		936		2918		1166		713		633		736		656		701	
Traffic Collision - Non Fatal Injury	5.5	2.9	0.6	1.9	0.0	1.1	0.0	0.0	8.2	6.9	4.3	0.0	0.0	0.0	1.6	1.4	0.0	0.0	0.0	0.0	5.7	5.7
Traffic Collision - Reportable Property Damage	17.5	17.8	17.3	14.8	1.1	2.1	0.0	0.0	16.1	21.9	18.0	9.4	0.0	0.0	7.9	9.5	0.0	2.7	0.0	0.0	10.0	14.3
Traffic Offense - Impaired Operation Related Offenses	19.2	10.5	6.4	7.1	0.0	2.1	0.0	1.1	19.9	15.1	6.0	7.7	0.0	0.0	3.2	4.7	0.0	2.7	0.0	0.0	12.8	10.0
Drug Enforcement - Trafficking	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Drug Enforcement - Possession	0.6	0.9	0.0	1.3	0.0	0.0	0.0	0.0	1.0	0.0	1.7	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	2.9
Crimes Against the Person (sexual offenses)	0.6	0.6	0.0	1.9	0.0	0.0	0.0	0.0	0.3	3.4	1.7	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	4.3
Crimes Against the Person (robbery, extortion, threats, etc.)	2.0	3.8	0.0	1.9	0.0	0.0	0.0	0.0	2.7	4.1	0.9	1.7	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	1.4
Crimes Against the Person (Assaults, excluding sexual)	8.5	6.4	4.5	2.6	0.0	0.0	0.0	0.0	14.4	14.1	3.4	1.7	0.0	0.0	0.0	7.9	0.0	0.0	0.0	0.0	0.0	2.9
Theft under \$5000	8.2	5.0	5.8	6.4	0.0	0.0	0.0	0.0	6.9	9.6	4.3	9.4	2.8	0.0	4.7	1.6	1.4	0.0	0.0	0.0	12.8	7.1
Theft over \$5000	2.3	0.9	1.3	2.6	0.0	0.0	0.0	0.0	2.4	1.7	0.9	0.9	0.0	0.0	0.0	3.2	1.4	0.0	0.0	0.0	1.4	2.9
Mischief	11.4	9.9	8.3	9.0	1.1	0.0	0.0	0.0	17.5	18.5	5.1	12.0	0.0	0.0	3.2	6.3	1.4	0.0	0.0	0.0	7.1	5.7
break and enter	6.7	5.0	3.8	7.1	2.1	0.0	0.0	0.0	8.6	9.3	4.3	2.6	0.0	0.0	3.2	6.3	1.4	0.0	0.0	0.0	2.9	8.6

Notes: Incident rates calculated based on raw crime incident data (Mayor's Reports) provided by RCMP and 2006 federal census population
Source: RCMP 2008- 2009.

Participation in Traditional Harvesting Activities

Some information on the number of Aboriginal people living on reserve who participated in traditional harvesting activities was collected as part of the 2001 census (Statistics Canada 2001). Data were available for the James Smith 100 reserve and the Sturgeon Lake 101 reserve but not the Muskoday First Nation or the Red Earth 29 or Carrot River 29A reserves. The information showed that 31% of adults on the James Smith 100 reserve and 27% of adults on the Sturgeon Lake 101 reserve hunted in the past 12 months, with all of them hunting for food. Similarly, 19% of adults on the James Smith 100 reserve fished, with 89% of these fishing for food. On the Sturgeon lake reserve, 39% of adults fished, with 85% fishing for food. Gathering of wild plants (berries, sweet grass, etc.) was reported by 36% of the adult population on the James Smith 100 reserve, and 69% of these were gathering plants for food. On the Sturgeon lake 101 reserve, 53% of adults gathered wild plants, primarily (81%) for food. Eight percent of adults on the Sturgeon Lake 101 reserve reported trapping in the previous 12 months but there was no equivalent information for the James Smith 100 reserve. The reported activity does not necessarily occur within the SRSA.

Use of Aboriginal Languages

Information on use of Aboriginal languages by Aboriginal people living on- and off-reserve was collected as part of the 2006 census (Statistics Canada 2008b). As shown in Figure 5.4.1-25, almost the entire population of the Carrot River 29A reserve reported either having knowledge of an Aboriginal language, speaking an Aboriginal language most often at home, and/or having an Aboriginal language as their mother tongue. Elsewhere in the SRSA, the percentages of Aboriginal people living on the Sturgeon Lake 101 reserve who had knowledge of an Aboriginal language was 33.2%, on the James Smith 100 reserve was 27.4%, on Wahpeton Dakota Nation reserve it was 16.6% and in Nipawin was 28.8%. These percentages are comparable to that for Saskatchewan as a whole (28.6%). In comparison, only 5.6% of people on the Muskoday First Nation had knowledge of an Aboriginal language. This proportion was lower than reported by Aboriginal people living in Melfort, Prince Albert or the RM of Buckland.

5.4.2 Traditional Land Use

This section summarizes the results of Traditional Land Use studies conducted for the Project, and research undertaken to review the historical record concerning the history of Aboriginal land use in the FalC region as well as work undertaken to uncover archaeological evidence demonstrating such use. It also describes a review of public information available concerning the same. Conclusions drawn from those research activities are set out, namely that the area has been used by Aboriginal people for many centuries. The assertion of traditional territory status in the area by several First Nations and Métis Regions with a connection to the area is noted, and engagement activities undertaken by Shore with these



Aboriginal parties are described, including arriving at Information Gathering Agreements (IGAs) or other agreements with all parties asserting traditional territory.

Available information with respect to parties asserting traditional territory status is provided, and results of studies of Traditional Land Use completed for the Project are presented where possible. The location of First Nations in the RSA are shown on Figure 5.4.1-1 (see Section 5.4.1, Socio-Economic). The following Aboriginal groups provided Traditional Land Use information through IGAs and other agreements:

- the three Bands of the James Smith Cree Nation (James Smith Cree Nation, Chakastaypasin Band of the Cree and Peter Chapman First Nation);
- Muskoday First Nation;
- Métis Nation — Saskatchewan Eastern Region II;
- Métis Nation — Saskatchewan Western Region II;
- Sturgeon Lake First Nation;
- Red Earth Cree Nation; and
- Wahpeton Dakota Nation.

5.4.2.1 Introduction

PSGs issued by the Saskatchewan Ministry of Environment (SMOE 2009) in November 2009, enumerated information to be included in the Environmental Impact Statement (EIS) including "current and historical use of lands and resources within the study area for traditional purposes by First Nations and Métis peoples" As well, the *Canadian Environmental Assessment Act* states that one of its purposes is "to promote communication and cooperation between responsible authorities and Aboriginal parties with respect to environmental assessment" [s. 4(1)(b.3)].

Because both provincial and federal environmental review processes examine impacts on the environment, including the socio-economic environment, considerable efforts, described below, have been underway to determine Traditional Land Use, so that the impact of the Project on it is understood, potential efforts to mitigate any adverse impacts can be explored and compensation considered where appropriate.

5.4.2.2 Assertion of Traditional Territories

First Nations and Métis Regions which have asserted the FaIC forest forms part of their traditional territories include: James Smith Cree Nation, Chakastaypasin Band of the Cree and Peter Chapman First Nation (James Smith Bands), Muskoday First Nation, Métis Nation — Saskatchewan Eastern Region II, Métis Nation — Saskatchewan Western Region II, Sturgeon Lake First Nation, Red Earth Cree Nation and Wahpeton Dakota Nation.



Reviews of current literature on the cultural history in the region indicate that the area was traditionally used by aboriginal people, and that the bands named above were in the region prior to the time of Treaty No. 6. The following provides an overview of these literature review reports which are also contained in Appendix 5.4.2-A and Appendix 5.4.5-A.

The report *Shore Gold Inc. Star-Orion South Diamond Project Heritage Resources Impact Mitigation* (Golder 2009; Appendix 6.4.7-A) indicates that, although it is unknown what the exact distribution/areas of travel of Aboriginal groups were as of 1750, the trading posts along the Saskatchewan River were established as important aggregating centres where several regional bands traveled to assemble annually or semi-annually for "intensive social interaction and religious ceremonies" including in the FalC area, going back several millennia. It is known from artifacts that the area was traversed by Aboriginal people for thousands of years. This included Northern Plains cultures, although over the last 2,000 years boreal forest adapted people were more prominent (Golder 2009).

The report indicates that the Project area was traveled by groups that traversed to and from the Saskatchewan River Valley and perhaps to aggregation centres, making stops ranging from a few hours to several days, over many millennia. The area was, as of 1750, likely less intensively occupied than is typical of the Saskatchewan River proper elsewhere in the region: "This suggests that Precontact peoples were traveling through the study area to the Saskatchewan River to collect raw lithic materials. As people were moving through the FalC Provincial Forest, they were stopping to camp and further reduce the raw material into blanks and tools. These stops may have ranged between a few hours to a few days..." (Golder 2009).

A detailed survey of historical documents related to the FalC forest area was completed by Western Heritage Services Inc (Western Heritage Services Inc 2007). The report titled *The Fort à la Corne Forest Area: A Survey of the Historical Documents* (within Appendix 5.4.2-A) also indicates that, prior to the treaties, the forest was traversed by Cree people from various places, as also indicated in the James Smith Cree Nation message on the Prince Albert Grand Council website, which states that FalC " became a gathering place of many different First Nations" (Prince Albert Grand Council no date).

An additional study, *Review of Publicly Available Traditional Land Use and Occupancy Information Pertaining to the Fort à La Corne Provincial Forest*. (Ecodynamics 2010) was conducted. The primary objective of the study was to identify, compile, review and summarize the existing traditional land use and occupancy information concerning the FalC forest and vicinity.

Sources of information for the review of Traditional Land Use included the Golder archaeological study, the Western Heritage Services Inc. survey of historical documents,



published and unpublished academic works, the draft FaIC Integrated Land Use Plan and related documents (SMOE, 2005) and government sources.

The review references the many millennia of use of the area by Aboriginal peoples, given its abundant water, game and plants used for food, materials and medicine, as well as its geographic location along the Saskatchewan River system, a key regional travel and trade route. Therefore, the area included gathering sites for ceremonies and meetings. It is also noted that the area is along the transition between different eco-regions and, for that reason as well, provided Aboriginal peoples of the area with access to a wide variety of plants and animals.

After the arrival of Europeans, Métis people also began to travel through, live on and engage in traditional activities in the area.

Near the time of Treaty No. 6, people of the James Smith band began to settle in the area, anticipating reserve creation. Others who traveled in the area settled on other reserves to the east, west and north.

Thus, the forest is the asserted "traditional territory" of various First Nations, as well as Métis people represented by Métis Nation — Saskatchewan regional organizations. Five First Nations, one of which (James Smith Cree Nation) includes three separate bands, and two Métis Regions have come forward to assert claims of traditional territory and to engage in consultation activity with the Crown.

The review of historical documents supports the assertion of the James Smith Cree Nation that the river in Township 48, Range 20 was a gathering spot for local aboriginal groups for at least the last 250 years, one of only three known on the Saskatchewan River between the Forks and The Pas. The area north of the river in the 'la Corne area' (as referenced by these studies) was well-used by the local Cree (Western Heritage 2007).

Historically, the Pegogama Cree were in the area. That band disappeared after the small pox epidemic of 1781-82, but survivors remained. Treaty No. 6, signed at Carlton House in 1875, formalized bands under named chiefs. "The Cree who had utilized the upper Saskatchewan were initially granted various reserves in the area: James Smith (IR# 100)... Cumberland (IR# 100A) at la Corne, Red Earth (IR# 29A). Muscoday [sic] (IR# 99) and Chekastaypaysim (later extinguished) and William Twatt (later Sturgeon Lake IR 101)" (Western Heritage 2007). The Wahpetan Dakota reserve was created after Treaty No. 6, in 1894.

The la Corne area was an important locale for the Cree. Eighteenth century trading groups met their families there on return from Hudson's Bay. FaIC was also an important camping site for the flotillas going down to the Bay in the spring, on both sides of the river. Cree



traditionally traveled through the forest between the Saskatchewan River and Torch River over a large area from Nipawin to Batoche and Candle Lake, camping in the woods without permanent settlements until the mid-1800s (Western Heritage 2007).

In anticipation of Treaty and land grant, by 1876 some Cree families were beginning to establish themselves south of the river at what is now the James Smith Cree Nation reserve (Western Heritage 2007), while others settled elsewhere in the region.

5.4.2.3 Information Gathering Agreements with First Nations and Métis Regions

Shore has been engaging Aboriginal people in the region for several years and approached the groups involved in 2008, i.e. those which had then identified themselves to the Crown as asserting traditional territory status in the Fort à la Corne forest, to invite them to participate in the EIA process through studies that would document their traditional knowledge and land uses (TK/TLU) in the area. To initiate these studies and to ensure that there was a common understanding of their intent, Shore arrived at Information Gathering Agreements (IGA) with Sturgeon Lake First Nation (February 12, 2010), Métis Nation — Saskatchewan Eastern Region II and Western Region II (March 31, 2010), Red Earth Cree Nation (May 12, 2010), the three James Smith Bands (August 18, 2010) and Muskoday First Nation (April 19, 2011). The assertion of traditional territory status by the Wahpeton Dakota Nation was brought to the attention of Shore in December, 2010. A Mutual Cooperation Agreement, which included a process respecting documentation of the details of traditional activities carried on by members of Wahpeton, was signed June 9, 2011.

The IGA are confidential contracts between Shore and the Aboriginal party concerned. All, however, were drafted and negotiated based upon the "Considerations and Templates For Ethical Research Practices" published by the First Nations Center at NAHO (National Aboriginal Health Organization), incorporating the First Nations Principles of OCAP (ownership, control, access and possession) enumerated therein. Therefore, all agreements adopt the same approach and include common principles: the aboriginal party concerned owns, controls, determines access to and retains possession of the information gathered concerning TK/TLU by its members on its asserted traditional territory.

All agreements are structured to specify:

- information on impacts of Shore's proposed activities on Traditional Land Use should be gathered for inclusion in this EIS for consideration by provincial and federal regulators and the public;
- development should occur in so far as possible consistent with respect for the beliefs, culture, traditions and practices of Aboriginal people and adverse impacts should be avoided or mitigated and accommodation for adverse impacts sought where possible;



- Shore should share historical, heritage and baseline environmental studies with the Aboriginal party concerned;
- collection of TK/TLU information by Aboriginal parties related to the FaIC region should be facilitated for present and future use by the party concerned and its members;
- individual privacy should be respected, and names of individual sources of information should not be published in the absence of the written consent of the individuals concerned;
- selection of the consultants and community coordinators to conduct the TK/TLU study is the prerogative of the Aboriginal party;
- Shore should be informed of cultural/spiritual sites or traditional uses which could be impacted by the Project. Other information gathered by the Aboriginal party concerned can be kept confidential at the option of that party;
- all information gathered is the property of the Aboriginal party, which controls access to it and possesses it, and can be used by Shore only as disclosed by the Aboriginal party to Shore and as agreed to between the parties;
- Shore will only disclose information relevant to the Project; and
- Shore bears the costs of the information gathering.

The agreements are written so that Aboriginal parties may collect a large body of information in the information gathering process, and receive reports from consultants concerning the same; however, the only information provided to Shore was that which pertains to current use and potential impacts of the Project on Traditional Land Use or cultural/spiritual sites. Information collected through the Traditional Land Use studies are summarized in the following sections for each group.

James Smith Cree Nation, Chayastaypasin Band of the Cree and Peter Chapman First Nation

In anticipation of Treaty and land grant, by 1876 some Cree families were beginning to establish themselves south of the Saskatchewan River at what is now the James Smith Cree Nation reserve. The people there are descendents of these people, and also descended from the Chekastaypaysim band, which was established on a reserve in the area but later extinguished by federal authorities in the 19th century, and from the Peter Chapman band.

The IGA was arrived at with the three James Smith bands jointly. They engaged Calliou Group as their consultant and their report, the *James Smith Cree Nation Project-Specific Traditional Land Use Study*, was completed on March 11, 2011. Calliou Group conducted seventeen interviews with James Smith Cree Nation members to document past and current use in the Project area and the FaIC forest. The study team documented TK/TLU

information including: hunting, trapping, fishing, gathering areas, cabins, camps, sacred sites and travel routes.

During interviews, fixed sites and areas are given a site or feature number, which corresponds to the notes taken throughout the interview by the study team. Typically the use of polygons in TL/TLU mapping, as opposed to point mapping, was employed in an effort to represent an individual's cumulative lifetime experience.

A summary of the findings from the *James Smith Cree Nation Project-Specific Traditional Land Use Study* (Calliou Group 2011), commissioned by James Smith Cree Nation for consideration in the regulatory review process for the Project, is as follows:

- Hunting — All study participants, with the exception of one, reported hunting within the FaIC forest; members reported hunting for big game (moose, elk and deer) as well as small game (squirrels, rabbits and chickens). Past and current hunting activities were reported throughout the FaIC, including within the LSA and RSA. Hunting areas that intersect the LSA and RSA can be found in Figure 4.1 in Appendix 5.4.2-B (Calliou Group 2011);
- Trapping — Study participants reported trapping in the FaIC forest for small furbearers including: beaver, coyote, squirrel, otter, marten, muskrat, lynx, mink, and rabbit. Most of the trapping activities were in the past. There is currently only a small amount of trapping activity in the FaIC because the price of furs is low. Trapping areas within the LSA and RSA can be found in Figure 4.2 in Appendix 5.4.2-B (Calliou Group 2011);
- Fishing — Many participants reported fishing in the Saskatchewan River within the LSA (see Figure 4.3 in Appendix 5.4.2-B) for walleye or pickerel, jackfish and goldeye. Most participants said they do not eat the fish from the Saskatchewan River. Fishing areas within the broader RSA are also found in Figure 4.3 and include brook trout, rainbow trout and perch in addition to walleye or pickerel, jackfish and goldeye (Calliou Group 2011);
- Gathering — Members pick medicines such as rat root and sweet grass, and berries including blueberries, low bush cranberries, high bush cranberries, raspberries, saskatoons and strawberries. Gathering areas in the LSA and the RSA are found in Figure 4.4 in Appendix 5.4.2-B. (Calliou Group 2011);
- Travel Routes — James Smith Cree Nation members travel throughout the FaIC forest to access hunting, trapping, fishing, gathering and other traditional use locales. In the past, the Saskatchewan River has been a very important travel and trade route with various trading posts being established near the River and the current location of the JSCN. Travel routes within the LSA and RSA can be found in Figure 4.5 in Appendix 5.4.2-B (Calliou Group 2011);

- Cabins, Camps and Sacred Sites — Study participants reported the former and current locations of several cabins and camps. Participants also identified sacred sites or burial sites. The specific sites mentioned in the study were the church north of the reserve on the north side of the river and Bingo Hill, which is within the LSA. Cabins, camps and sacred site located within the LSA and RSA can be found in Figure 4.6 in Appendix 5.4.2-B (Calliou Group 2011); and
- Other Traditional Environmental Knowledge — James Smith Cree Nation study participants report animal migration routes, mineral licks, breeding grounds as well as the activities of animals that are not typically harvested for subsistence purposes. Locales associated with this traditional environmental knowledge within the LSA and RSA are shown in Figure 4.7 in Appendix 5.4.2-B (Calliou Group 2011).

Métis Nation — Saskatchewan Eastern Region II and Métis Nation — Saskatchewan Western Region II

Métis people have resided in or traversed the region for over 200 years.

The March 31, 2010 Information Gathering Agreement was arrived at with the above two Métis Regions jointly. They engaged a consultant, International Bioresources Research Group (IBRG), who conducted community meetings and small informal meetings with elders.

That part of the TK/TLU information gathered on behalf of Métis Nation — Saskatchewan Eastern Region II and Western Region II (IBRG 2010a) made available to Shore for publication is reproduced in this EIS as Appendix 5.4.2-C.

It describes the methodology used, and indicates:

- hunting has taken place in the "entire forest" both historically and currently, not confined to the proposed Project site. Current game hunted includes deer, elk, moose, bear, grouse, rabbit, duck and geese. Historically, it was reported that caribou was also hunted, and "animals trapped in the past included moose, deer, beaver, muskrat, mink, otter, lynx, fox, rabbit, squirrel, grouse and geese" (IBRG 2010a);
- fishing occurs and has historically occurred for walleye, perch, jack, sucker, goldeye, whitefish and sturgeon, along the Saskatchewan River;
- there was no report of any Métis cabins, dwellings, and settlement ruins, burial sites, sacred places or ceremonial sites that were known to be potentially impacted by the Project. No historical or cultural sites were identified as potentially impacted by the Project;
- medicinal plants including sage, sweet grass, seneca root, birch bark, red willow, muskeg or Labrador tea, and mushrooms are collected in the area, some "inside the



affected area", which has been confirmed to refer to the terrestrial Local Study Area (LSA; IBRG 2010b);

- berries and edible plants (blueberry, choke cherry, saskatoon berry, cranberry, pincherry, strawberry and mushroom) are picked in the area, including some "within the affected area" (Local Study Area). In the past, raspberries, turnip and rose hips have also been gathered;
- no areas were identified as in need of special protection;
- logging activities by Métis people were also identified as ongoing throughout the forest. Any such activities would be as permitted through SMOE through timber supply licenses or personal use permits;
- exploration activities have required Métis people to change hunting locations and berry picking sites, relocating to other sites within the forest; and
- no land uses were identified in the LSA (IBRG 2010b). However, hunting and berry picking areas do occur in the area of the overburden and rock storage pile.

Sturgeon Lake First Nation

Treaty No. 6, signed at Carlton House in 1875, formalized the William Twatt band (now Sturgeon Lake First Nation) which had traditionally carried out activities in the region, at IR #101.

A report for release to Shore, authorized by the Board of Directors of Sturgeon Lake Developments Limited on behalf of the Chief and Council, *Ancestral Territory of Sturgeon Lake First Nation: A Preliminary Survey* is reproduced in this EIS as Appendix 5.4.2-D and was stated to "collaborate what the elders of the First Nation have advised us." (Sturgeon Lake First Nation 2010a)

The Sturgeon Lake First Nation report (Sturgeon Lake First Nation 2010b) was compiled from information provided by band members and elders under the guidance of a band resident coordinating its preparation. The report indicates that ancestors of members of the Sturgeon Lake band historically gathered seasonally in the FalC area, and other locations in the region. As well, the report indicates there was a network of families from the location of the present-day Sturgeon Lake reserve to the Red Earth reserve that jointly utilized "the entire area". After Treaty, many families continued to live at least seasonally in ancestral areas. Although the "pass system" enacted by Parliament inhibited free movement of First Nations people, many still traveled to traditional hunting, trapping and gathering areas, mainly in the Sturgeon Lake area northwest of Prince Albert, but a few "continued to use the Fort à la Corne area" for hunting, trapping and gathering berries. It is indicated that "with the development of grid roads and the availability of motorized vehicles in the 1950s and 1960s many families of Sturgeon Lake resumed the use of their ancestral territories in the Fort à la Corne area" (Sturgeon Lake First Nation 2010b).



The report indicates that while Sturgeon Lake First Nation families occasionally use the area generally, no specific sites used have been indicated, no spiritual or ceremonial sites or burial grounds are identified and no specific concerns related to the area of the proposed site have been raised.

The 2001 Census (Statistics Canada 2001) indicates that 27% of adults on the Sturgeon Lake reserve hunted in the preceding 12 months, all for food; 39% fished, 85% of those for food; 53% gathered wild plants, 81% of those for food; and 8% engaged in trapping. This information did not necessarily relate to the FaIC forest or the Project site, but would relate to the wider area, i.e. Sturgeon Lake First Nation's entire asserted traditional territory. (It is indicated in the report that most traditional activities occur closer to the location of the reserve, northwest of Prince Albert, given its close proximity to abundant lakes and forests.)

Red Earth Cree Nation

The Red Earth band adhered to Treaty No. 5 in 1876, at The Pas, and shortly afterwards IR #29 and #29A were established in Treaty No. 6 territory

A report, *Traditional Land Use and Occupancy Mapping (TLUOM) Project and Star-Orion South Diamond Project* was produced by the Red Earth Cree Nation and Hobbs and Associates (2010). The report and information associated with it is the property of Red Earth Cree Nation, which has authorized Shore to include sections 2 and 3 in this EIS (Appendix 5.4.2-E).

The report asserts that the proposed site of the Project in the FaIC forest is part of the traditional territory of Red Earth Cree Nation as being within a significant portion of the FaIC forest asserted to be Red Earth traditional territory (Hobbs and Associates 2010). The number of elders interviewed with knowledge of activities in the FaIC forest was relatively small (6) and the information may be supplemented if members come forward with more information in the future.

The specific activities identified were hunting for grouse, ducks and geese. These activities were identified to occur at eleven unique harvesting sites. As well, the area was traversed by members using the transportation routes through the forest. The small number of interviewed participants (six individuals) resulted in the TLUOM Cartographer/GIS Technician adopting a ten-kilometre radius around specific locations identified by phase one TLUOM respondents. This was an attempt to mitigate data collection inadequacies from the limited number of participants, and recognizes that traditional country food harvesting activities are not limited to specific locations, but are more commonly practised over more generalized areas (Hobbs and Associates 2010). There were no big game hunting or trapping activities identified, either current or in the past.



No spiritual, ceremonial, burial or other specific sites were identified and no specific concerns related to the proposed site of the Project were raised.

Muskoday First Nation

The Muskoday First Nation #99, formerly the John Smith First Nation, is composed of Cree and Saulteaux peoples. The band signed Treaty No. 6 at Carlton House in 1876.

SLR Consulting (Canada) and Dillon Consulting Limited were retained by Muskoday First Nation to assist in documenting TK/TLU information in the vicinity of the Project. The information was gathered by holding a traditional knowledge workshop and a validation meeting – an elders working group participated in the study by providing input into the workshop and validation meeting. TK/TLU was broken down into categories and a questionnaire for each category was developed. The questionnaire asked a series of questions for each site identified by a member of the working group. Responses were linked to locations on maps by having participants identify areas using either a: point, line or polygon. A total of four maps were created to display information gathered from the discussions with the elders.

The information that was shared during the TK/TLU session and discussion with Muskoday First Nation is intended to inform the EIS process for the proposed Project. A summary of the TK/TLU information taking place within the Local Study Area and Regional Study Area is as follows:

- Big Game — “Big game hunted by Muskoday First Nation members include: white tailed deer, elk and moose.” (SLR/Dillon Consulting 2011a). The most important areas identified to contain big game were the watercourses (rivers, streams and swamps). For big game territory refer to the map presented in Figure 2, *Big Game and Fur Bearers*, in Appendix 5.4.2-F;
- Fur Bearers — Traditionally Muskoday First Nation trapped: black bears, coyote, rabbit, red fox, gopher, squirrel, beaver, lynx, marten, mink, muskrat, otter, skunk, weasel and wolf. “The black bear, American beaver, coyote, mink, muskrat and wolf were identified as being of high importance to Muskoday First Nation” SLR/Dillon Consulting 2011a). Table 1 - *Furbearers Identified by Muskoday First Nation* provides a further breakdown of each species and Figure 2 - *Big Game and Fur Bearers* illustrates the geographic area where fur bearers are found. (See Appendix 5.4.2-F);
- Birds — “Some of the birds traditionally used include: geese, pelican, duck, swan, heron, partridge, pheasant, crane, and eagle. The most important species to Muskoday First Nation were geese, ducks, partridge, prairie chicken, grouse and eagle.” (SLR/Dillon Consulting 2011a). Refer to Table 2 - *Birds Identified for Traditional Uses Identified by Muskoday First Nation* for a complete listing and Figure 3 - *Birds and Fish* for an illustration of the geographic area of the birds identified in Appendix 5.4.2-F;

- Fish — “The elders identified several fish species of importance including whitefish, goldeye, jackfish, pickerel, sucker, sturgeon and burbot. Fish were caught for food or sport by throwing a line or nets into the river or lakes.” (SLR/Dillon Consulting 2011a) See listing in Table 3 - *Fish of Importance to Muskoday First Nation* and Figure 3 - *Birds and Fish* for fishing area along the Saskatchewan River system in Appendix 5.4.2-F;
- Plants: food, textiles, medicine and spiritual uses — The plants that were identified of importance for food include: highbush cranberry, blueberry, cranberry, gooseberry, raspberry, saskatoon, strawberry, chokecherry, mushroom and sugar maple. Historically, berries were an important part of the summer and fall food supplies, and berry-picking was a family event. Red willow and cord grass are used for craft and textiles. Some medicinal plants include: cranberry, blueberry, seneca root, wild peppermint, puffballs, chokecherry, wikase, rose, red willow, white poplar, sweet grass, cattail, colt’s foot and maple. These are used to treat a wide variety of ailments (SLR/Dillon Consulting 2011a). Details are provided in Table 4 - *Food Plants of Importance to Muskoday First Nation*, Table 5 - *Medicinal Plants of Importance to Muskoday First Nation* and Figure 4 – *Plants: Food, Medicine and Spiritual Uses* in Appendix 5.4.2-F;
- Spiritual Uses — Raspberry, chokecherry, sage, cedar, sweet grass, tobacco and bearberry were identified as plants that have special significant to the spiritual activities and community events such as feasts and sweat lodges. (SLR/Dillon Consulting 2011a); and
- Historical and Sacred sites — “Gathering sites for food collection became social events where a variety of cultural events occurred. Sites identified by the elders include: traditional gathering areas, hunt camps, memorial posts, grave sites, St. James Church, cultural camps, recreational areas (The Island), a pow wow camp and sweat lodge.” “Most of the sites identified are located on or very close to the Muskoday First Nation reserve.” (SLR/Dillon Consulting 2011a)

Wahpeton Dakota Nation

The Wahpeton Dakota Nation was not included in the numbered treaty process. The Wahpeton Indian Reserve 94A was created in 1894 and Wahpeton Indian Reserve 94B in 1917.

The June 19, 2011, Mutual Cooperation Agreement included funding for information gathering; the Wahpeton Dakota Nation engaged a consultant, Towagh Behr, currently of Integral Ecology Group Ltd. to conduct a traditional land use study for the Project. The study included twelve mapping interviews with Wahpeton Elders and knowledge holders, and one day of fieldwork to verify interview data. The final report focussed on past, current, and future traditional land use values such as subsistence values, habitation values, transportation values, cultural/spiritual values, trapping and commercial values, and indigenous landscape values. TLU information from maps and field sessions was digitized



into a GIS and randomized and buffered (Integral Ecology and Wahpeton Dakota Nation 2011). A map was included in the final report, and is provided in Appendix 5.2.4-G.

The TK/TLU interviews indicated that the FalC forest area is within Wahpeton Dakota Nation traditional territory and that the ancestors of the Wahpeton Dakota Nation have used and occupied this territory since time immemorial. The surrounding region including the FalC forest was known in the Dakota language as “Onamiciye Makoca” or “Gathering Place”. As land in “Onamiciye Makoca” became settled by people of European ancestry, Wahpeton Dakota Nation members became increasingly reliant on Crown land for the continuance of traditional land use activities. All twelve interview respondents carry out traditional resource harvesting and cultural/spiritual activities in the FalC forest (Integral Ecology and Wahpeton Dakota Nation 2011). The traditional land uses and values recorded during the traditional land use study interviews included:

- hunting areas;
- land and water transportation routes;
- habitation areas;
- berry picking areas;
- medicinal plant picking area;
- locations important to traditional stories; and
- spiritual sites.

The study report included a summary of TLU in the area, both ‘site-specific TLU values’ and ‘non-site-specific TUS values.’ Information was grouped in the following categories:

- Cultural/Spiritual Values – interviewees identified three site-specific cultural/spiritual values within the FalC area. One may overlap with the Local Study Area (Integral Ecology and Wahpeton Dakota Nation 2011);
- Habitation Values – interviewees mapped the location of ten historic or current cabins/camps within the FalC area (Integral Ecology and Wahpeton Dakota Nation 2011);
- Subsistence Values – interviewees described where they hunt elk, moose, bear, deer, and ducks; fish; harvest wood; pick Saskatoon berries, cranberries, raspberries, and blueberries; and gather medicinal plants. Thirty-eight sites or areas were mapped, and include past, current, and future potential areas of subsistence use. Interviewees noted that the FalC area is highly valued wildlife habitat. It is one of the only areas near the Wahpeton community that is not farmed. It is particularly valued for large game (Integral Ecology and Wahpeton Dakota Nation 2011);

- Transportation Values – interviewees mapped eight separate transportation values (trails and transportation corridors) totalling 137km in the FalC area. One was recorded in the field. Concerns about roadblocks and lack of access were noted as transportation to traditional use areas is of high importance (Integral Ecology and Wahpeton Dakota Nation 2011); and
- Indigenous Landscape Values – interviewees mapped three traditional Dakota place names in the FalC forest. They also felt that the interconnectedness and wholeness of the natural landscape of FalC was of high value (Integral Ecology and Wahpeton Dakota Nation 2011).

A map of Wahpeton Dakota Nation TK/TLU within the FalC forest is included in the final study report in Appendix 5.2.4-G.

5.4.3 Non Traditional Land and Resource Use

This chapter describes the baseline non-traditional land and resource uses in the area which will potentially be affected by the Project.

5.4.3.1 Introduction

Development of the Project will occur in an area that encompasses a number of land and resource uses. Areas with intersecting land and resource use interests and effects on land users, access and resources are identified and discussed in this section. The baseline characterization focuses on key non-traditional land and resource use indicators related to land use plans and policies, environmentally significant areas, industrial, commercial and recreational interests. These indicators can be used to assess the effects of the project on land and resource uses.

5.4.3.2 Information Sources and Methodology

Selection of study area boundaries and background information sources used for the non traditional land and resource use baseline study are described in this section.

Selection of Study Area Boundaries

Baseline information is categorized into a LSA and a SRSA. The LSA is consistent with the one defined for the terrestrial disciplines, and is located within FalC forest immediately north of the Saskatchewan River, and downstream of the convergence of the North and South Saskatchewan Rivers within townships 48, 49 and 50, range 19-20, west of the second meridian. The LSA encompasses a total area of 12,217 ha. The regional study area for this discipline is the same as the SRSA, that was used for the socio-economic baseline and is

comprised of the larger region (1,500,090 ha) that encompasses the FaIC, in addition to the following communities and rural municipalities (Figure 5.4.3-1):

- two cities (Prince Albert and Melfort);
- six towns (Nipawin, Choiceland, Tisdale, Kinistino, Star City, Birch Hills);
- 13 villages (Smeaton, Weirdale, Love, White Fox, Codette, Meath Park, Ridgedale, Albertville, Beatty, Aylsham, Weldon, Valparaiso, Zenon Park);
- people living on Reserves belonging to four First Nations (James Smith Cree Nation, Muskoday First Nation, Sturgeon Lake First Nation and Red Earth Cree Nation); and
- 12 rural municipalities (Tisdale (427), Star City (428), Flett's Springs (429), Connaught (457), Willow Creek (458), Kinistino (459), Birch Hills (460), Prince Albert (461), Nipawin (487), Torch River (488), Garden River (490) and Buckland (491).

Information Sources

Current information for each valued component was gathered through available published documents, literature, maps, and provincial and municipal government websites. The non-traditional land and resource use baseline report involved developing a profile of the current land uses including public and private land, the planning policies governing the use of these lands, presence of environmentally significant areas such as federal or provincial parks, industrial and commercial interests and related activities such as diamond and oil and gas exploration and power generation. Other land use activities in the LSA and SRSA include agriculture and grazing, forestry and aggregate extraction. Additionally, baseline information relating to outdoor recreational use of the land such as hunting, fishing, camping, hiking, all terrain vehicle (ATV) touring, cross country skiing and snowmobiling was compiled. Collectively, these resource use components are the valued components (VCs) for non-traditional land and resource use that encompass the range of land and resource use activities within the LSA and SRSA.

5.4.3.3 Land Use Planning Areas

The land within the LSA and SRSA is administered under various plans and policies by the Government of Saskatchewan and relevant municipalities in the LSA and SRSA.

The following is a discussion of land use planning instruments that are relevant to the Project because they apply to lands within the LSA and SRSA, and includes the following:

- draft FaIC Provincial Forest Integrated Forest Land Use Plan (IFLUP);
- draft Nisbet Integrated Forest Land Use Plan;
- relevant planning documents for the urban municipalities of Melfort, Tisdale and Prince Albert; and

- watershed source water protection plans and policies.

Draft FaIC Provincial Forest IFLUP (Local and Regional Study Area)

Provincial land use planning in the LSA and portions of the SRSA is guided by the Saskatchewan Ministry of Environment’s (SMOE) Draft FaIC Provincial Forest IFLUP (SMOE 2005). A final draft of this document is expected to be issued for comment in late 2010, and finalized thereafter (SMOE 2009a).

The intent of the plan is to provide guidance on permitted land uses within the planning area (Figure 5.4.3-2). Some of the land uses occurring within the FaIC are identified in the plan and include hunting, recreation, commercial, industrial and mining exploration.

The LSA falls within the plan’s designated Management, Sensitive and Protected Zones (Table 5.4.3-1). The LSA intersects 10,322 ha (84.5%) of the Management zone, 962 ha of the Protection Zone (7.9%), and 934 ha of the Sensitive Zone (7.6%). Acceptable land uses in the Management, Protected and Sensitive Zones are as follows (Figure 5.4.3-3):

Table 5.4.3-1: Draft FaIC IFLUP Designated Zones

Zone Type	Hectares (ha) in LSA	% in LSA
Management	10,321.8	84.5
Protected	961.8	7.9
Sensitive	934.1	7.6

- Management Zone: Allows for new land use opportunities to be conducted in a sustainable manner, provided that current guidelines, policies and regulations are followed. This zone also allows for traditional land and forest use to continue. With the exception of outfitting and game farm activities that are not considered acceptable uses with this zone, all other land and resource use activities are permitted to occur through existing legislation and policies of provincial government ministries;
- Protected Zone: This zone allows for maximum protection under current provincial legislation, the purpose of which is to identify areas with unique or environmentally sensitive features. Acceptable uses within the protected zone include non-commercial traditional uses, non-commercial forestry uses, trapping, hunting, mineral exploration (subject to approval), mining (subject to approval), and ecotourism. All other activities not listed as acceptable are deemed to be unacceptable, including commercial hunting and forestry; and
- Sensitive Zone: This zone is intended to maintain sustainable wildlife populations through the conservation of lands with important wildlife habitat. Acceptable uses include: forest harvesting and reforestation, ecotourism, hunting, trapping, snowmobiling,

hiking, non-commercial harvest of non-timber products, mineral exploration, mining (subject to review), sand and gravel development, organized recreational activities, cycling, haying and fire salvage. Unacceptable uses include: high frequency recreation (e.g., seasonal ATV), new cabin development or structures, buildings or developments, new livestock grazing permits, commercial harvesting of special forest products, planting of exotic/non-native species, linear development without an approved plan, fish stocking with exotic species, industrial leases (with exceptions for mining or other provincial interests), and commercial peat extraction.

Nisbet Integrated Forest Land Use Plan (Regional Study Area)

Another provincial plan intersecting the SRSA is the Draft Nisbet Integrated Forest Land Use Plan, developed to provide direction for land and resource management decisions in this forest. This plan applies to the 83,000 hectare Nisbet Integrated Forest located on the western section of the SRSA, north and west of the City of Prince Albert (SMOE 2008a) (Figure 5.4.3-2).

Municipal Plans and Policies (Local and Regional Study Area)

In addition to land use guidelines as described in the Government of Saskatchewan's land use policies, the LSA and SRSA are also subject to municipal plans and policies that provide broad land use policies for municipalities that fall within the study areas. The LSA falls within a small section of Torch River Rural Municipality No. 488. There are no municipal plans associated with this municipality. All other municipalities fall outside of the LSA, but within the SRSA.

SRSA urban and rural municipalities include (Figure 5.4.3-1):

- two cities (Prince Albert and Melfort);
- six towns (Nipawin, Choiceland, Tisdale, Kinistino, Star City, Birch Hills);
- 13 villages (Smeaton, Weirdale, Love, White Fox, Codette, Meath Park, Ridgedale, Albertville, Beatty, Aylsham, Weldon, Valparaiso, Zenon Park); and
- 12 rural municipalities (Tisdale (427), Star City (428), Flett's Springs (429), Connaught (457), Willow Creek (458), Kinistino (459), Birch Hills (460), Prince Albert (461), Nipawin (487), Torch River (488), Garden River (490) and Buckland (491)).

The following planning documents exist for the urban municipalities located within the SRSA:

- The City of Melfort Basic Planning Statement No. 96-08 (2009);
- The City of Prince Albert 'Plan Prince Albert. Official Community Plan (2008); and



- Town of Tisdale Bylaw No. 2/09 (2009).

Planning documents set the framework for developing future development within a given region. The City of Prince Albert's Official Community Plan calls for cooperation with industry in order to promote and foster the city's position as a supply and service center for the mining industry (The City of Prince Albert 2008). Similarly, the City of Melfort's planning statement advocates industry diversification as key to improving the local economy (City of Melfort 2009).

The SRSA is inclusive of communities belonging to four First Nations - James Smith Cree Nation, Muskoday First Nation, Red Earth Cree Nation, and Sturgeon Lake First Nation. The reserves associated with James Smith Cree Nation are located south of the Saskatchewan River, immediately outside the FaIC boundaries, whereas the Muskoday First Nation reserve is located approximately 20 km south east of the city of Prince Albert. The Sturgeon Lake First Nation reserve (No. 101) is located along the northwestern most boundary of the SRSA, and two Red Earth Cree Nation reserves, No. 29 and 29A, are east of Tobin Lake, along the Carrot River.

Watershed Source Water Protection Plans and Policies (Regional Study Area)

There are no watershed source water protection plans or policies specific to the LSA, nor are there plans to develop a protection plan for the Saskatchewan River east of the forks, (the confluence of the North Saskatchewan and South Saskatchewan rivers) (Saskatchewan Watershed Authority 2009a); however, the following three exist within the SRSA (Figure 5.4.3-4):

- North Saskatchewan River Watershed Source Water Protection Plan, covering the watershed areas surrounding Prince Albert to the east, north and west;
- South Saskatchewan River Watershed Source Water Protection Plan, covering the watershed areas south and southwest of Prince Albert and west of Birch Hills; and
- Carrot River Watershed Source Water Protection Plan, covering the watershed areas within the southeast portion of the SRSA. The Saskatchewan Watershed Authority is currently launching the Carrot River Watershed planning report that is expected to be completed at the end of 2010 (Saskatchewan Watershed Authority 2009b).

The SRSA falls within the East and North watershed planning areas within the North Saskatchewan River Watershed and the South Saskatchewan River Watershed, respectively (Saskatchewan Watershed Authority and North Saskatchewan River Basin Council 2008; Saskatchewan Watershed Authority and South Saskatchewan River Watershed Stewards Inc. 2007).



One-third of the population of the province of Saskatchewan obtains its drinking water from the Saskatchewan River. This water supply is managed through Source Water Protection Plans that were developed as a 'first barrier' in the protection of source water as a means of identifying threats and opportunities. The threats and opportunities were identified by the respective Watershed Advisory Committees. Objectives, recommendations and key actions were developed to address the threats and/or take advantage of opportunities. Objectives of the Watershed Source Water Protection Plans include: water conservation, stormwater discharge improvements, fish migration and habitat restoration, wetland conservation, maintenance of ground and surface water quality and supply, and natural habitat and ecosystems protection.

In 2009, a state of the Saskatchewan River Basin report (Partners for the Saskatchewan River Basin 2009) was prepared. The completed Saskatchewan River Basin report's objective is to provide high level information on the overall condition of the basin, including information on hydrogeology, water use and quality, biodiversity, climate change, urban development and vulnerabilities within the basin. The basin is divided into ten watersheds or sub-basins, including (from east to west): Saskatchewan River, North Saskatchewan River, South Saskatchewan River, Eagle Creek, Battle River, Sounding Creek, Vermillion River, Red Deer River, Bow River and Oldman River. The LSA falls within the Saskatchewan River Sub-basin, which expands 642 kilometres from the forks (North and South Saskatchewan River convergence) into Manitoba to join Lake Winnipeg. Three key issues identified within the Saskatchewan River Sub-basin that may have implications for water management within the LSA and SRSA include: the ecological integrity of the Saskatchewan River Delta, effects of river regulation, and nutrient and contaminant loading to Lake Winnipeg.

The Francois-Finlay Dam on the Saskatchewan River was completed by SaskPower in 1986 creating the Codette Lake reservoir to capture hydropower. The Francois-Finlay Dam and the Nipawin hydroelectric generating station are located 5 km upstream from the Town of Nipawin, within the SRSA. An additional station, the E.B Campbell generating station, is located on the east side of Tobin Lake and is located outside the SRSA. The Nipawin and E.B Campbell generating stations have a net generating capacity of 255 and 288 megawatts respectively (SaskPower 2009a). The Saskatchewan River is regulated and in turn affected by SaskPower's Nipawin and E.B. Campbell generating stations, the operation of which influences the level and flow of water within the downstream Saskatchewan River Delta. This subsequently contributes to the down-cutting of the downstream river channel as well as sediment, nutrient and contaminant-bound sediment loading of the water to downstream sources (Partners for the Saskatchewan River Basin 2009).

Another affect on the Saskatchewan River is upstream water consumption, which has lead to reduced flows in the river due to increased demands (Partners for the Saskatchewan River Basin 2009).



5.4.3.4 Environmentally Important Areas

Crown resources and park land are managed by SMOE, and relevant legislation, programs, and policies are put in place to ensure that Crown land is used in a way that respects environmental, social and economic values. Crown land that holds important environmental interest includes areas such as provincial, national and regional parks, ecological reserves and wildlife refuges, and Saskatchewan's Representative Areas Network (RAN).

Provincial and National Parks

There are no provincial or national parks in the LSA or SRSA.

Regional Parks

Two regional parks currently exist within the SRSA, Wapiti Valley Regional Park and Nipawin and District Regional Park (Figure 5.4.3-5).

Wapiti Valley Regional Park is located on the south shore of the Codette Lake Reservoir, 15 km north of the Hamlet of Gronlid. It was established in 1982 and offers year-round activities. The park's main attraction is its 25 acre downhill ski area with 8 slopes. As well as downhill skiing, the park offers cabin rentals, camping (ten serviced campsites), boating (two boat launches), fishing, cross country skiing, and snowmobiling (Saskatchewan Regional Parks 2009a).

Nipawin and District Regional Park is located on the banks of the river section of Tobin Lake, 3 km northwest of the Town of Nipawin. It offers year-round activities, including: hiking, camping (21 serviced campsites), golfing, fishing, downhill and cross country skiing, and snowmobiling (Saskatchewan Regional Parks 2009b).

Ecological Reserves and Wildlife Refuges

There are 30 wildlife refuges in Saskatchewan, none of which are located within the LSA (SMOE 1990). The Wildlife Refuges are intended to be areas for protecting, propagating, perpetuating, managing, controlling, regulating, and enhancing wildlife or its habitat (Government of Saskatchewan 1990).

There are two wildlife refuges in the SRSA. Drumheller Wildlife Refuge is located north of the Town of Choiceland and Campbell Wildlife Refuge is located southwest of the City of Melfort (Figure 5.4.3-5). The Drumheller Wildlife refuge consists of 55 acres of hay land willed to the Saskatchewan Fish and Wildlife Development Fund in 1994. The refuge has been used for wildlife depredation measures in the past (SMOE 2009b). The Campbell Wildlife Refuge, consisting of 27 acres of hay land and bush was established in 1991. Neither area was established to benefit any particular wildlife species (SMOE 2009b)



According to the 2008 Saskatchewan Hunters' and Trappers' Guide, hunting is prohibited in game preserves, wildlife refuges, migratory bird sanctuaries and other closed areas such as designated co-management areas (SMOE 2008b).

Representative Areas Network

Saskatchewan is divided into 11 diverse ecoregions based on its geology, soils, climate, plants and animals. A Representative Areas Network (RAN) consisting of a series of ecological reserves in each ecoregion is being established by the province.

A representative area is "a sample or piece of a particular landscape identified because of its important land-forms, wetlands, soils, plants, animal resources or cultural values" (SMOE 2009c). Land uses that are acceptable in these representative area ecological reserves vary and must align with the ecological objectives and be determined through consultation with stakeholders.

There is a proposed RAN site in the Boreal Transition Ecoregion within the FaIC. The area, located in the western portion of the SRSA, north of the Forks, contains a section of the Saskatchewan River system within the boreal forest. The proposed RAN intersects 2,834 ha of the SRSA, representing 0.2% of the total SRSA area (Figure 5.4.3-1). The proposed RAN site does not lie within the LSA. The proposed area contains two oxbow lakes and is considered the most northern nesting area for prairie falcons (SMOE 2005). The ecological reserves of Carrot River (south east of Tobin Lake), which is part of the Pasquia/Porcupine Area, as well as Seager Wheeler Lake ecological reserve (north of Tobin Lake) are the nearest established RAN sites, outside of the SRSA.

5.4.3.5 Disturbance

For the purposes of the Land and Resource Use baseline characterization, disturbance refers to the replacement of natural land cover⁶ with a human-modified landscape that may or may not be covered by infrastructure. Note that other disciplines may define disturbance differently. Table 5.4.3-2 presents the baseline area of each type of disturbance within the LSA.

Total baseline disturbance for the LSA is 3,618 ha, and includes disturbance from a number of sources. Clearcuts, in the form of recent and old harvesting, account for the most disturbance at 3,360 ha (27.5% of the LSA) with the remaining 254.7 ha (2.1% of the LSA) consisting of several sources, including a tower site, clearing, roadway and industrial clearing, a gravel pit, and well site (Table 5.4.3-2).

⁶ 'Natural' in this case refers to the original land cover prior to onset of industrial activities in the study area(s), or re-vegetated with regrowth mature enough to support forest harvesting and/or the ecosystem services available prior to the original disturbance.

Table 5.4.3-2: Baseline LSA Disturbance Areas

Source of Disturbance	Area (ha)	% of LSA
Road - 5 m	42.1	0.3
Road – 7 m	38.1	0.3
Road - 10 m	43.0	0.4
Road - 20 m	5.9	0.0
Open Site	12.9	0.1
Other Disturbance	87.5	0.7
Reclaimed Site	18.2	0.1
Clearing	1.6	0.0
Gravel Pit	0.4	0.0
Industrial	1.1	0.0
Roadway	1.8	0.0
Tower Site	2.0	0.0
Well Site	0.1	0.0
Recent Clearcuts	2562.5	21.0
Old Clearcuts	800.5	6.5
Total	3617.6	29.6

5.4.3.6 Access

Access includes linear features such as roads, all ATV trails and cut lines, as well as natural corridors (i.e., streams or barren uplands). Access often varies seasonally and is dependent on the mode of transport (e.g., truck, ATV, snowmobile, foot, or canoe). Disruption or changes to an access network may not prevent access but may inhibit movement.

Regionally, access to the FaIC is possible by a number of municipal paved highways such as Provincial Highway 6, which runs north/south, along the eastern portion of the FaIC. Provincial Highway 55, located to the north of the project area, connects Prince Albert with several towns directly north of the FaIC to the town of Nipawin. The Project area, and the rest of the FaIC is accessed by several sand roads, typically passable by four wheel drive and high clearance two-wheel drive vehicles all year round. Saskatchewan Highways and Transportation is not responsible for any roads within the FaIC, with the exception of Highway 6.



Shipman Trail, which leads directly to the LSA and the project site, is accessed via Highway 55, and Division Road is accessed from Highway 6 approximately 10 km north of the Saskatchewan River Crossing at (Figure 5.4.3-6). Linear access within the FaIC and consequently the LSA, is potentially used for a variety of reasons, including hunting and recreational, commercial, industrial or exploration activities.

During the 1990s, a road closure program was implemented to limit the number of unmaintained access routes within the FaIC. A partnership between the Saskatchewan government, James Smith Cree Nation, and a number of agencies was subsequently formed. Following this, a three year road closure program was developed, with a target of 100 road closures (SMOE 2005). A few designated roads were left open, including the Shipman Trail, which leads directly to the LSA.

Access within the LSA includes roads of varying width, spanning 5 m, 7 m, 10 m and 20 m (Table 5.4.3-3). The total length of existing access in the TLSA is 195 km, the majority of which are classified as 5 m roads, followed by 7 m roads, and 10 m roads.

Table 5.4.3-3: Baseline Linear Disturbance in the LSA

Source of Linear Disturbance	Length (km)
Road - 5 m	85.1
Road - 7 m	59.1
Road - 10 m	47.8
Road - 20 m	3.0
Total	195.0

5.4.3.7 Industrial and Commercial Land Uses

The land within the LSA and SRSA is subject to a number of industrial and commercial land uses, including diamond and oil and gas exploration, hydroelectric generation, aggregate extraction, forestry, and agriculture and grazing.

Exploration

In addition to Shore and its affiliates (Kensington Resources Ltd. and Newmont Mining Corporation), Forest Gate Resources Inc., and Great West Investments & Referrals have mineral exploration dispositions for kimberlites within the LSA (Table 5.4.3-4) (Figure 5.4.3-7) (Appendix 5.4.3-A). Shore holds the greatest number of dispositions (43), followed by its subsidiary Kensington Resources Ltd. and its JV partner Newmont Mining Corporation of Canada (22), Forest Gate Resources (5) and Great West Investments & Referrals Ltd (1).



Other companies within the FaIC that hold mineral exploration claims include Ipsco Inc., United Carina Resources Corp., Star Uranium Corporation, Bandera Gold Ltd., Ridgeback Global Resources Ltd., and various others (Saskatchewan Industry and Resources 2009b). In terms of oil and gas exploration, there are limited historic activities within the LSA and SRSA, however one seismic program is planned for late 2010. The Saskatchewan Industry and Resources Oil and Gas Information map identifies eleven (11) abandoned dry wells within the FaIC (Saskatchewan Industry and Resources 2009a).

Table 5.4.3-4: Mineral Dispositions within the LSA

Owners	No. of Dispositions	Status
Kensington Resources Ltd/Newmont Mining Corporation of Canada	22	Active
Shore Gold Inc.	43	Active
Forest Gate Resources	5	Active
Great West Investments and Referrals Ltd	1	Active

Source: Saskatchewan Industry and Resources 2010.

Power Generation

Saskatchewan's electrical power comes from a combination of the following sources: coal and natural gas (70%) and hydroelectric generating stations and wind turbines (30%). Coal and natural gas-fired power plants are located in Estevan, Coronach, Saskatoon, Swift Current, Landis, and Meadow Lake. Hydroelectric generating stations, including the Francois-Finlay Dam and Nipawin Power Station, are located along the Saskatchewan River downstream of the project site and within the SRSA (Natural Resources Canada (NRCAN) 2008; Saskatchewan SaskBiz 2009). SaskPower also co-owns 2 cogeneration power stations with ATCO Power. One of the facilities is located near Saskatoon and the other in the Alberta oil sands region, both of which are outside of the Regional Study Area (SaskPower 2009b).

Aggregate Resources

Provincial working guidelines direct exploration, extraction, and reclamation of sand, gravel and mineral resources on Crown Resource Land. A surface lease is used to authorize both long-term and large quantities of sand, gravel and mineral resource extraction. Surface leases are limited to a maximum of 65 hectares and a term of 5 years (SMOE 2005). Within the FaIC, large quantity sand and gravel extractions include a 50% holdback for allocation to Saskatchewan Highways and Transportation (SHT) or Rural Municipalities (RM).

Relevant to the LSA, the FaIC IFLUP sets out guidelines for reclamation activities, including: the implementation of access and reclamation plans as a condition of license approval, the



closure of access routes created by the operation upon cessation of operations, and adherence to provincial policies and guidelines governing sand and gravel activities.

Forestry

The LSA and a large portion of the SRSA are located in the boreal transition ecoregion as identified by the SMOE. The LSA is located within a portion of the FaIC forest, and the SRSA contains portions of the FaIC, Torch River and Nisbet provincial forests and small portions of the former Weyerhaeuser Prince Albert Forest Management Area (FMA) and the Weyerhaeuser Pasquia Porcupine FMA (Figure 5.4.3-8). The two Weyerhaeuser FMAs make up the majority of commercial forest area in the province; the gross area of the Prince Albert FMA is 3.3 million hectares (ha) and the Pasquia Porcupine FMA is almost 2 million ha. The total areas of the FaIC forest is 132,951 ha; Nisbet forest 83,479 ha; and Torch River 4,371 ha.

Within the central Saskatchewan region, there are a total of four island forests (i.e. forest surrounded by agricultural or other land) which are: FaIC, Nisbet, Canwood and the Torch River. These are notable for their location at the southernmost extreme of the boreal forest. FaIC is the largest of the island forests (Saskatchewan Research Council 2008). Timber harvesting is permitted within the island forests, and the total harvest allocation is distributed between 18 forest product permit holders and one term supply license holder. Forest product permits are issued on an annual basis, and operators are required to adhere to the stipulations contained in the Area Operating Plans (AOP) for the island forests. In lieu of a forest management plan being in place for the island forests, these AOPs provide guidelines for permit holders to operate in accordance with the Forest Resources Management Act and Regulations (Saskatchewan Research Council 2008).

The FaIC IFLUP sets out forest management strategies specific to the FaIC, including: harvest volumes, forest management, forest renewal, fire salvage, forest protection, environmental monitoring, access management, stream crossing, road closure, and all-terrain vehicles. Sustainable timber harvest in the FaIC is set at 84,100 m³/year (SMOE 2009d). Forestry activities are summarized in Table 5.4.3-5 below.

Table 5.4.3-5: Forestry Activities in the FaIC Forest

Year	Harvesting volume within the FaIC (m ³ /year)	Silviculture data within the FaIC (# of seedlings)
2009/2010	84,200 a	300,000 b
2008	74,464	547,905
2007	79,805	45,672
2006	63,133	426,248
2005	26,402	149,400

2004	16,543	0
2003	28,925	0
2002	43,197	0

Source: SMOE 2009d.

Note: a - allocated, actual harvest expected to be lower than allocated due to poor markets; b - planned planting, actual data unavailable.

There are several large commercial timber processing plants that currently rely or have historically relied on Saskatchewan’s provincial commercial forests. Table 5.4.3-6 provides a summary of the active and closed paper and pulp, oriented strand board and sawmills within the SRSA.

Table 5.4.3-6: Summary of Timber Processing Plants in the SRSA

Location	Operation	Company	Status	Year
Prince Albert	Sawmill	Carrier Forest Products	Active	N/A
	Sawmill	Wapawekka (partnership - Domtar and Woodlands Cree)	Closed	2006
	Pulp Mill	Domtar	Closed	2006

Sources: Carrier Forest Products Ltd. 2009; Domtar Corporation 2008; Government of Saskatchewan 2007b.

Agriculture and Grazing

Reference is made within the FaIC IFLUP that livestock grazing is present within permitted areas of the FaIC. Livestock grazing within the forest is authorized under the Forest Resources Management Act and Regulations, and is intended to complement the grazing on private and Crown land. There are currently five grazing permits within the FaIC forest, none of which intersect the LSA. Three are on the west fringe of the forest, one is on the north edge of the forest at Torch Trail, and one is south of the Saskatchewan River, west of James Smith Cree Nation (SMOE 2009b). A majority of the grazing permits located within the FaIC have long histories of obtaining annual grazing permits in the forest (SMOE 2005).

Mixed farming, which includes the growing of crops, feed and livestock is common throughout the province of Saskatchewan. Agricultural activities do not occur within the LSA and the portion of the SRSA that lies within the FaIC, as the forested cover is unable to support agricultural activities (SMOE 2010a). However, based on Statistics Canada 2009 Agriculture Community Profiles, substantial agricultural activities do exist in the rural municipalities that lie outside the FaIC and within the SRSA. Grain farming within the SRSA



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primarily includes spring wheat, barley, canola, alfalfa and oats. Cattle and pig farming make up most of the livestock and grazing activities. Table 5.4.3-7 summarizes the 2006 Agriculture Community Profiles within the SRSA. Note, however, that these statistics relate to activities outside of the LSA.

Table 5.4.3-7: 2006 Agriculture Community Profiles within the SRSA

Rural Municipality	No. Farms	Total Area of Farms (ha)	Average area of Farms (ha)	Land in Crops (ha)	Spring wheat (excluding durum)	Canola (rapeseed)	Barley	Alfalfa and alfalfa mixtures	Oats	All other tame hay and fodder crops	Dry field peas	Forage seed for seed	Total cattle and calves	Total pigs
Tisdale RM 427	172	85,370	496	69,381	-	22,724	6,084	2,685	6,118	-	3,863	-	4,605	n/a
Star City RM 428	222	81,392	367	65,973	-	21,483	7,928	3,655	4,352	-	2,421	-	8,236	n/a
Flett's Springs RM 429	175	84,432	482	72,706	22,792	23,108	12,565	3,471	5,140	-	-	-	12,457	n/a
Willow Creek RM 458	162	76,203	470	64,784	20,546	23,876	4,809	3,023	7,456	-	-	-	4,651	n/a
Connaught RM 457	161	82,134	510	72,722	20,394	22,385	4,819	-	7,774	-	-	4,573	3,018	n/a
Kinistino RM 459	186	78,515	422	63,924	-	19,081	9,573	3,686	5,127	-	1,694	-	6,900	614
Birch Hills RM 460	141	55,530	394	44,226	-	16,661	6,750	1,616	2,060	-	1,143	-	5,446	n/a
Prince Albert RM 461	352	108,681	309	74,930	22,335	19,599	9,725	9,005	4,428	-	-	-	14,378	n/a
Nipawin RM 487	268	85,842	320	61,903	-	17,219	5,470	6,736	8,192	-	3,525	-	8,012	128
Torch River RM 488	423	160,488	379	103,571	-	26,819	5,120	13,686	10,235	5,185	-	-	13,867	56
Garden River RM 490	133	52,600	395	35,883	11,716	11,507	4,297	2,927	-	-	1,837	-	5,579	0
Buckland RM 491	238	58,638	246	35,548	6,343	8,455	7,131	5,903	-	2,616	-	-	13,096	n/a
Total	2,633	1,009,825	399	765,551	104,126	232,917	84,271	56,393	60,882	7,801	14,483	4,573	100,245	798
Saskatchewan	44,329	26,002,605	587	14,960,103									3,363,235	1,388,886
Comparison	6%	4%		5%									3%	0.1%

Source: Statistics Canada 2008. 2006 Agriculture Community Profiles. Accessed February 9, 2009 from http://www26.statcan.ca:8080/AgrProfiles/cp06/PlaceSearch.action?request_locale=en.

Note: Crops (ha) = Crops in hectares.



The majority of the farms within the SRSA (~65%) are located in the rural municipalities of Torch River and Prince Albert. The total area of farmland in Torch River and Prince Albert is over 100,000 hectares each. The primary farming activities within the SRSA are lands in crops, with Canola making up the highest cultivated crop. The highest number of cattle and pigs are on farms in the RMs of Prince Albert, Torch River, Bucklands and Flett's Springs in the SRSA. The total number of farms within the SRSA is approximately 6% of the total in the province, with land in crops and total cattle farms making up 5% and 3%, respectively (Statistics Canada 2008).

5.4.3.8 Outdoor Recreation

The parks and outdoor recreation system within the FaIC and the SRSA serves its population in a number of ways, and both residents and non-residents are users of the recreation systems within the FaIC (SMOE 2010a).

Outdoor recreation within the FaIC, which includes the LSA, includes trails for hiking, biking, snowshoeing, cross-country skiing, horseback riding, canoeing, camping, birdwatching, snowmobiling as well as fishing, trapping, recreational water sports and limited hunting (Figure 5.4.3-9) Within the FaIC, there are three permitted ski trail systems that are maintained by the Melfort Ski Club: Gronlid, Tomlin and Brockington ski trails. There are also two snowmobile trails: one south of the Saskatchewan River, maintained by the Melfort Cross Country Ski Club, and one north of the Saskatchewan River, maintained by the Twin Lakes Trail Blazers (SMOE 2005).

Outdoor recreation within the SRSA, particularly within the southeast and east portions along the Saskatchewan River, includes various cottages, camps, cabins, lodges, campgrounds, beaches, marinas, outfitters and golf courses. Recreation activities within the SRSA include both winter and summer sports such as downhill and cross-country skiing, snowmobiling, snowshoeing, swimming, fishing, hunting, camping, golfing, etc. (Tourism Saskatchewan 2007a; 2007b; 2008-2009; 2009). Table 5.4.3-8 summarizes the outdoor recreation facilities, recreation outfitters and related activities within the SRSA. These are based entirely outside of the LSA.

Recreational use of the Saskatchewan River includes activities such as canoeing, swimming, sailing, and boating. The Saskatoon-Nipawin Canoe Route is a designated route along the portion of the Saskatchewan River that runs through the LSA and SRSA. It is a 335 kilometer/5 day canoe route that crosses both the LSA and SRSA, and is categorized as a safe route for intermediate paddlers (Saskatchewan Tourism, Parks, Culture and Sport 2010). The Saskatchewan River Forks provincial park, which is the site of the confluence of the North and South Saskatchewan Rivers, is located approximately 40 km east of the city of Prince Albert within the SRSA. The area, which features steep river banks, is also a popular destination for canoeists (Tourism Saskatchewan 2010).

Table 5.4.3-8: Outdoor Recreation Summary within the SRSA

Area	Name of Facility	Operating Period	Winter Activities	Summer Activities
Choceland	Kutawagan Outfitters	May – December		Hunting
	Forest Fringe Snowmobile Trail Association	Winter	300 km of snowmobile trails	
	Reedan Ranch	Open Year-Round	Snowmobiling, snowshoeing, cross-country skiing	Swimming, fishing, horseback riding, ATV and hiking trails (water activities in White Gull Creek)
Codette Lake			Ice fishing, snowmobiling	Swimming, fishing, boating, jet-skiing
Gronlid	The Outerbanks	Open Year-Round	Snowmobiling, cross-country skiing, sledding, ice fishing, snowshoeing.	ATV trails, biking and hiking trails, canoeing, fishing, swimming, boating, horseback riding, sailing, jet-skiing, skeet and clay pigeon shooting, hunting (water activities on Codette Lake)
	Wapiti Valley Regional Park and Four Seasons Campground	Open Year-Round	Cross-country and downhill skiing, snowboarding, snowshoeing, ice fishing, snowmobiling (cross-country skiing and snowmobiling occur in the LSA)	Fishing, hiking, canoeing, boating (water activities in Codette Lake)
Melfort	Melfort Golf and Country Club			18 hole golf course
	Melfort Campground	May – October		Camping
	Melfort Cross-Country Ski Club	Winter		20 km of cross-country ski trails
	Melfort and District Trailriders	Winter	150 km of snowmobile trails	
Nipawin	Trails End Outfitters	April - December		Hunting and fishing (water activities on Tobin Lake)



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Area	Name of Facility	Operating Period	Winter Activities	Summer Activities
	MacSwaney's Cabins and Lodge	Open Year-Round	Cabin rental, ice fishing, snowmobiling, cross-country skiing	Cabin rental, fishing, hiking, boating (water activities on Tobin Lake)
	Nipawin Evergreen Golf Course			18 hole golf course
	Nipawin Area Snowmobile Trails	Winter	280 km of snowmobile trails	
	Smits Beach Campground/Blue Winds Fish n' Tours	Open Year-Round	Ice fishing	Swimming, fishing (water activities on Codette Lake)
Prince Albert	Little Red River Nature Park	Open Year-Round	Cross-country and downhill skiing, snowboarding	Hiking and cycling trails, picnic area
	MacLennan River Campground	May – September		Camping, hiking, fishing
	Prince Albert Exhibition Good Sam RV Park	May – September		Camping
	Whispering Pines Campground	April – October		Camping
Tisdale	Tisdale Riverside Golf Course	Summer		9 hole golf course
Tobin Lake			Ice fishing, snowmobiling	Swimming, boating, canoeing, kayaking
	Saskatchewan River Hunting and Fishing Camps	Open Year-Round	Ice fishing	Hunting and fishing
	Scot's Landing Log Cabins and Marina	May – November		Condo/cabin rental, hunting, fishing, boating, bird watching, hiking, canoeing, swimming (water activities on Codette Lake and Tobin Lake).
	Silver Tip Outfitting	May – March	Cabin rental, ice fishing, snowmobiling	Cabin rental, fishing, boating, hiking, swimming (water activities on Tobin Lake)

Area	Name of Facility	Operating Period	Winter Activities	Summer Activities
	Tobin Lake Resort	Open Year-Round	Cabin rental, ice fishing, snowmobiling	Cabin rental, fishing, boating, hiking, swimming (water activities on Tobin Lake)
Torch River				Canoeing, fishing
White Fox	Torch Valley Country Retreat	Open Year-Round	Sleigh rides	ATV trails, biking and hiking trails, horseback riding, canoeing, boating, picnic area (water activities on Torch River)
	Torch River Ranch	May – October		ATV trails, Hiking trails, horseback riding, canoeing, swimming, fishing, boating (water activities on Torch River and/or Tobin Lake)

Sources: SMOE 2005; SMOE 2010a; SMOE 2010b Tourism Saskatchewan 2007a, 2007b, 2008-2009.

Codette and Tobin Lake, created by the damming of the Saskatchewan River, are popular destinations for water sport enthusiasts in the SRSA. Popular activities on Codette Lake include sea-dooing, sailing, boating and swimming (The Outerbanks 2010). Tourism based facilities on Tobin Lake, which partially intersects the SRSA, provide a number of water-based services, including marina and beach access, boat launches, and houseboat, boat and canoe rentals (Tobin Lake Resort 2010; Scot's Landing 2010).

Hunting

Hunting is permitted within the FaIC Wildlife Management Unit, which includes the spatial extent of the LSA; however, regulations are specific to the FaIC Forest Reserve (SMOE 2008b). White-tailed deer and black bear are among the two most populous animals within the LSA and SRSA that are listed in Saskatchewan's Big Game Regular Season hunt (SMOE 2007-2008). Table 5.4.3-9 presents a summary of hunting regulations within the FaIC Wildlife Management Unit. Hunting for moose and elk is by draw only (100 tags issued for each in 2009; SMOE 2009b). Moose and elk hunting occur across the FaIC, however hunting for these game animals along the Saskatchewan River and along access trails and roads is more common (Saskatchewan Wildlife 2009). The FaIC is a popular area for Elk hunting (SMOE 2009b). Regular hunting for upland game birds, including sharp-tailed grouse, ruffed grouse, hungarian partridge and spruce grouse, also occur in the FaIC.



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Outfitting is currently prohibited within the boundaries of the FaIC, due to its designation as a Wildlife Management Unit, and the small area of the island forest (SMOE 2010b). Outfitting occurs only on James Smith Cree Nation Land within the FaIC. No other commercial ventures operate in the FaIC.

Table 5.4.3-9: 2008 Hunting Regulations in the Fort a la Corne Wildlife Management Unit

Game Type	Species	Hunter Type	Season Dates	Bag Limit	
Game Birds	Hungarian Partridge	Saskatchewan Residents	September 15 – December 9	8 daily possession 24	
	Sharp-Tailed Grouse			3 daily possession 2 times daily limit	
	Ruffed Grouse			10 daily possession 2 times daily limit	
	Spruce Grouse			10 daily possession 2 times daily limit	
	Hungarian Partridge	Canadian and Non-Residents	September 15 – December 9	8 daily possession 20	
	Sharp-Tailed Grouse			3 daily possession 20	
	Ruffed Grouse			10 daily possession 20	
	Spruce Grouse			10 daily possession 20	
	Spring Snow Goose	All Hunters	All Hunters	April 1 – April 30	20 daily possession 60
	Sandhill Cranes	All Hunters	All Hunters	September 1 – December 16	5 daily, possession 10
	White Geese	20 daily possession 60			
	Dark Geese	Saskatchewan and Canadian Residents			8 daily possession 2 times daily limit
		Non-Residents			8 daily possession 2 times daily limit
	Ducks	All Hunters	All Hunters	All Hunters	8 daily possession 2 times daily limit
Coots	10 daily possession 2 times daily limit				



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Game Type	Species	Hunter Type	Season Dates	Bag Limit
	Snipe			10 daily possession 2 times daily limit
Big Game (Draw)	Moose	Saskatchewan Residents	Archery, Muzzleloader and Rifle September 29 – October 11 November 3 – November 15	One Moose, either sex
	Elk	Saskatchewan Residents	Archery, Muzzleloader and Rifle September 1 – September 20	One Elk, either sex
Big Game (Regular Season)	White-Tailed Deer	Saskatchewan Residents	Archery: September 1 – October 31 Muzzleloader: October 1 – October 31 Rifle: November 1 – December 6	One White-Tailed Deer, either sex
		Canadian Residents	Rifle: November 24 – November 29	One White-Tailed Deer, either sex
	Antlerless White-Tailed Deer	Saskatchewan Residents	Archery: September 1 – October 31 Muzzleloader: October 1 – October 31 Rifle: November 1 – December 6	One Antlerless White-Tailed Deer
	Antlerless Mule Deer	Saskatchewan Residents	Archery: September 1 – October 31 Muzzleloader: October 1 – October 31 Rifle: November 1 – December 6	Two Antlerless Mule Deer

Game Type	Species	Hunter Type	Season Dates	Bag Limit
	Mule Deer	Saskatchewan Residents	Archery: September 1 – October 31 Muzzleloader: October 1 – October 31 Rifle: November 1 – December 6	One Mule Deer, either sex
	Black Bear	All Hunters	Archery, Muzzleloader, shotgun and Rifle April 15 – June 30 and September 20 – October 14	One Black Bear, either sex

Source: SMOE 2008b.

Fishing

The province is divided into three zones for angling regulations, which are enforced through the Ministry of Environment. The LSA intersects the southern zone, and the SRSA intersects both the southern and central management zones. Within the FaIC forest there are no commercial fishing operations, and no issuance of domestic nets (SMOE 2009b). In addition, there is very limited recreational fishing within the FaIC forest due to accessibility and proximity to higher quality sport fishing areas (i.e., Codette Lake, Tobin Lake, and numerous fishing lakes to the north). Of the nine creek/ravines located in the LSA, only one species of sport fish, small bodied walleye, was located in the East Ravine. However, the presence of walleye was specific to the spawning season, and field staff accessing the area concluded that this creek is unable to support a viable sport fishery due to its size and the presence of several obstructions. The only other waterbody containing viable sport fish within the boundaries of LSA is the Saskatchewan River. The Saskatchewan River contains several species of fish, including some with sport fishing potential, including walleye, sauger, yellow perch, northern pike, cisco and lake sturgeon. Additionally, a species of fish, mooneye, has been known to occur in the Saskatchewan River in the past (CanNorth 2010).

Tobin Lake, the Saskatchewan River and other waterbodies in the SRSA provide good opportunities for fishing due to their easy accessibility by road (and are thus less expensive than fly-in waterbodies) and the presence of several sport fish. The Ministry of Environment estimates that half of the provincial fish harvest occurs in the central zone (SMOE 2006).

Trapping

Trappers from James Smith Cree Nation are exclusively licensed by SMOE within the FaIC forest north of the Saskatchewan River, and fall under FCA P-085 of the Northern Fur



Conservation Block. Within this specific FCA, there are 10 trapping zones with their respective assigned trappers.

The portion of the FaIC located north of the Saskatchewan River is classified as a Fur Conservation Area (FCA) and is regulated by the Ministry of Environment. FCA's were established as units of management whereby the fur harvest of a restricted number of trappers could be managed through an orderly trapline management system. The overall intent of establishing FCAs was to reduce conflicts and maintain forest traplines as commercial entities. Trapping within the FaIC north of the Saskatchewan River is a commercially driven enterprise (SMOE 2010a).

Each FCA is composed of a group of registered/licensed trappers, from which a representative council is chosen. Each FCA membership and elected council is responsible for their own administration, organization and operation.

Furbearers that are located and actively trapped in the FaIC north of the Saskatchewan River include bear, lynx, bobcat, beaver, weasel, martin, fisher, muskrat, otter, coyote, red fox, and squirrel. Trapping statistics for FCA P-085 are presented in Table 5.4.3-10. Currently, there are no cabins located within the LSA.

Within the last three years, there have been non-treaty management licenses issued for trapping timber wolves in the FaIC (SMOE 2010b).

The portion of FaIC south of the Saskatchewan River, and located immediately south and outside of the LSA boundary, is part of the South Saskatchewan Open Trapping Area. In this trapping area, there are no limits on the number of animals a trapper may harvest (SMOE 2005). However, a special trapping permit is required to trap within this area, and the number of issued permits is annually capped by the Ministry of Environment (SMOE 2010a).

The draft FaIC Land Use Plan notes that trapping is permitted within the FaIC Provincial Forest, including the LSA.



Table 5.4.3-10: Fur Conservation Area P-085 Trapping Statistics for 1999-2000 to 2008-2009

Year	Species											Total	
		Bear	Beaver	Fisher	Mink	Muskrat	Otter	Coyote	Fox-Red	Squirrel	Weasel		Lynx
1999-2000	Number		54			48	4						106
	Value		\$755.00			\$155.00	\$200.00						\$1,110.00
2000-2001	Number	3	88	1	4	6	1						103
	Value	\$543.21	\$1,424.00	25.00	\$48.00	\$8.00	\$70.00						\$2,118.21
2001-2002	Number		16										16
	Value		460.00										\$460.00
2002-2003	Number		58					24	11	36			129
	Value		1,137.38					\$1,397.76	\$397.32	\$31.68			\$2964.14
2003-2004	Number		12	1			1		1	53	3		71
	Value		\$263.64	\$43.38			\$167.10		\$23.37	\$57.77	\$8.58		\$563.84
2004-2005	Number		54	1		29	7	5	2	3		1	102
	Value		\$1,614.06	\$96.95		\$218.66	\$1,294.58	\$217.45	\$48.18	\$4.23		\$180.83	\$3,674.94
2006-2007	Number		5			71		6	3		4		89
	Value		\$111.85			\$321.63		\$337.98	\$68.85		\$33.32		\$873.63
2007-2008	Number		9			17							26
	Value		\$205.65			\$47.43							\$253.08
2008-2009	Number		28					1	1				31
	Value		\$431.20					\$25.14	\$37.81				\$623.02

Source: SMOE, 2009d



5.4.4 Human Health

This Section of the EIS provides a description of baseline exposures related to human health. These include environmental health and worker health exposures. Guidance from SMOE 2009 and Health Canada (2010) has been used to develop this Section.

5.4.4.1 Introduction

When evaluating human health, it is useful to start from a perspective of exposure. In this way, the assessment focuses on how the proposed Project may alter what agents people might be exposed to, and if exposure to those agents is likely to have any positive or negative effects. Exposure agents can be potential hazards, health risks or factors that benefit health.

The potential exposure agents to human health from mining developments are: noise, air quality, water quality (water resources), road traffic, wildlife (human interactions) and occupational health and safety hazards. Where exposure pathways occur, these agents have the most potential to effect changes in exposure for potentially affected populations.

The Human Health local study area (LSA) is the same as the LSA used by the bio-physical disciplines. The regional study area for this discipline is the same as the socio-economic regional study area (SRSA), see Section 5.4.1.

5.4.4.2 Information Sources and Methodology

There are no standard methods for assessing human health effects of projects in Canada. The model used for the Project has been adapted from guidance material outlined in the *Canadian Handbook on Health Impact Assessment* (Health Canada 2004). The methodology includes:

- reviewing environmental and social sections in the EIS to identify potential exposure agents and exposure pathways that correspond to concerns laid out in the Project Specific Guidelines;
- determining potentially affected populations in terms of the exposure agents identified; and
- determining the current levels of exposure in terms of the exposure agents identified.

Excluding occupational health and safety, the human health baseline is primarily based on the information provided in other sections within the EIS as follows:

- Section 5.2.4 – Air Quality;
- Section 5.2.5 – Noise;



- Section 5.2.7 – Groundwater Resources;
- Section 5.2.8 – Surface Water Quality;
- Section 5.3.2 – Vegetation and Plant Communities;
- Section 5.3.3 – Wildlife and Habitat;
- Section 5.4.1 – Social and Economic;
- Section 5.4.2 – Traditional Knowledge and Traditional Land Use;
- Section 5.4.3 – Non-Traditional Land and Resource Use; and
- Section 6.2.8 – Environmental Health.

Each of the above sections presents a more detailed assessment of potential effects of the proposed Project from a biophysical or social perspective.

5.4.4.3 Community Health

In the context of human health, the community health factors for discussion in this document are general health conditions and traffic. This subsection is based on the information presented in Section 5.4.1 (Social and Economic), which contains a detailed assessment of these baseline conditions from social and economic perspectives.

Health Conditions

There is no single measure of health and well-being published for the general population.

Self-related health is generally understood to be a strong indication of health status. People in the SRSA, covered by the Kelsey Trail Regional Health Authority and the Prince Albert Parkland Regional Health Authority, are less likely to rate themselves in very good or excellent health (~53%) when compared to the province overall (~58%), suggesting that health is perceived to be poorer in these areas than is average for the province.

Facets of health where there may be potential for direct or indirect effects associated with any mining activity potentially include: injury, and asthma and respiratory disease. People in the SRSA have experienced a rate of unintentional (accidental) injuries that is approximately 50% higher than the provincial average; however, the amount of total injuries (including unintentional and intentional, such as suicide or attempted suicide) is lower for the SRSA. Rates of respiratory disease are approximately 50% higher in the SRSA than in the province overall.

For further information, please refer to Section 5.4.1 (Social and Economic).



Traffic

The Project site location is semi-isolated and is surrounded by arteries which are good paved roads (RCMP 2010a). Discussions with RCMP indicate that there are no congestion issues in the SRSA or problematic intersections or other areas of safety concern on the SRSA roadways. Motor vehicle accident data were not collected as part of this study.

Traffic as an Exposure Agent

Traffic can be defined as an exposure agent when considered in terms of the potential for motor vehicle accidents. Motor vehicle accidents can involve vehicle occupants and/or pedestrians.

Potentially Exposed Populations

Road users on highways and roads that will be used by Project related traffic will constitute the potentially exposed population in terms of traffic. These include pedestrians and motor vehicle occupants on Highways 3, 2, 6, 55 and the access road leading from Highway 55 to the Project site.

Current Exposures

Current traffic volumes in the study area are understood to be moderate. The Average Annual Daily Traffic (AADT) volume on Highway 55 at Choiceland is 820 vehicles per day, and the AADT volume at Smeaton is 1,050 vehicles per day. Highest traffic volumes are on Highway 3 near Prince Albert at 4,080 vehicles per day and within the Melfort City limits (4,800 vehicles per day). These locations are likely to experience Project related traffic.

For further information, please refer to Section 5.4.1 (Social and Economic).

5.4.4.4 Environmental Health

In the context of human health, the environmental health factors for discussion in this document are air quality, country foods, drinking and recreational water quality and noise. These factors lie within Health Canada's scope of review of environmental assessments.

Air Quality

This subsection is based on the information presented in Section 5.2.4 (Air Quality and Meteorology), which presents a detailed assessment of the baseline conditions with respect to air quality from a biophysical perspective.



Air Quality as an Exposure Agent

Air quality is not an exposure agent in itself but the potential contaminants and emissions that are considered within the realm of air quality are exposure agents. For this project, the potential contaminants and emissions or potential air quality exposure agents are:

- particulate matter (TSP and PM₁₀);
- metal elements;
- sulphur dioxide;
- nitrogen oxides;
- ozone; and
- BTEX (benzene, toluene, ethylbenzene, xylene).

Potentially Exposed Populations

The Project is located in the FaIC provincial forest. This is a rural area away from residential and industrial areas. There are almost no local residences within 10 km of the proposed pit and relatively few residences within 20 km of the proposed pit (see Figure 5.2.7-10). For the purposes of the baseline study it is assumed that any persons in the vicinity of the project area could be potentially exposed. This population is limited to recreational users in the FaIC provincial forest adjacent to the project site.

Current Exposures

Current exposures measured at the Project site represent the maximum current exposure in the FaIC provincial forest. The current or background mean concentrations of potential exposure agents in the context of air quality are summarized in Table 5.4.4-1.

Table 5.4.4-1: Mean Background Concentrations for Air Quality Exposure Agents at the Project Site

Potential Exposure Agent Group	Potential Exposure Agent	Mean concentration
Particulate	Total Suspended Particulate	9.71 µg/m ³
	PM ₁₀	6.09 µg/m ³
Metal Elements	Aluminum (Al)	0.0778 µg/m ³
	Chromium (Cr)	0.0015 µg/m ³
	Copper (Cu)	0.0025 µg/m ³
	Lead (Pb)	0.0012 µg/m ³
	Titanium (Ti)	0.0012 µg/m ³
	Zinc (Zn)	0.0088 µg/m ³
Gaseous Elements	Sulphur Dioxide (SO ₂)	0.5 ppb
	Nitrogen Dioxide (NO ₂)	0.9 ppb
	Ozone (O ₃)	< 0.2 ppb
	BTEX (benzene, toluene, ethylbenzene, xylene).	< 0.2 ppb

The air quality measured at the Project site is typical of vegetated/forested rural areas. It can therefore be assumed that close to the project area, the general public is exposed to air quality that is typical of vegetated/forested rural areas; current exposures to air quality exposure agents are extremely low.

For further information, please refer to Section 5.2.4 (Air Quality and Meteorology).

Country Foods

This subsection is based on the information presented in Section 5.2.3 (Metal Leaching and Alkaline/Acid Rock Drainage Geochemistry), Section 5.3.2 (Vegetation and Plant Communities), Section 5.2.2 (Soils and Terrain) and Section 5.4.2 (Traditional Land Use), which presents the baseline conditions from a biophysical or social perspective.

Country Foods as an Exposure Agent

Country foods are not an exposure agent in themselves but the potential contaminants, including metal elements, which can accumulate in country foods are exposure agents. For mining projects with metallic ores and metal containing host rock, the potential contaminants in country foods are metal elements. This non-metal diamond mining Project with kimberlite host rock is likely set in an environment that is low in naturally occurring contaminants, when



compared to other natural environments (and peoples consuming country foods) in Saskatchewan and Canada. The naturally occurring contaminants (background concentrations) of metals in country foods in the FaLC are assumed to be very low to low and as such country foods are not a potential source of exposure agents for this Project.

Potentially Exposed Populations

Peoples using the FaLC provincial forest to collect country foods for consumption would constitute potentially exposed populations if exposure agents were present in country foods. The Métis TLU study (International Bioresources Research Group 2010) identified past and current hunting of animals and fowl, trapping of animals, fishing and collection of plants in their asserted traditional territories, which includes the FaLC. These form the country foods that they would consume. There is evidence that Sturgeon Lake families used the FaLC area to hunt, trap and gather berries. SLFN now access the area by vehicle so use of the area may have increased in the last decades.

Current Exposures

Plant tissue analyses were not conducted. Metal concentrations (and exposures) are assumed to be very low, and comparable to other similar natural environments (and peoples consuming country foods) in Saskatchewan and Canada.

Soils and water quality data relating to the human health risk assessment (HHRA) is reported in Section 6.2.8 (Environmental Health).

For further information, please refer to Section 5.2.3 (Metal Leaching and Alkaline/Acid Rock Drainage Geochemistry), Section 5.3.2 (Vegetation and Plant Communities), Section 5.2.2 (Soils and Terrain), Section 5.4.2 (Traditional Land Use) and Section 6.2.8 (Environmental Health).

Drinking and Recreational Water Quality

This subsection is based on the information presented in Section 5.4.1 (Social and Economic), Section 5.4.3 (Non-Traditional Land and Resource Use), Section 5.2.7 (Groundwater Resources) and Section 5.2.8 (Surface Water Quality), which present a detailed assessment of the baseline conditions with respect to drinking water sources from a social and biophysical perspective.

Drinking and Recreational Water Quality as an Exposure Agent

Drinking and recreational water quality is not an exposure agent itself but the potential contaminants, including metal elements, which can enter waterbodies used for consumption and recreational use, are exposure agents. The integrity of water resources for eventual use for drinking water is an important factor in assuring human health for the future; and is also considered here.



Potentially Exposed Populations

In terms of drinking water quality, hypothetical potential exposed populations could include those populations receiving water from drinking water treatment facilities and any consumers of directly sourced drinking water (e.g. from residential wells or on-site wells for workers) (Health Canada 2010) that are within the area of influence of the Project.

However, there are almost no local residences within 10 km of the proposed pit and relatively few residences within 20 km of the proposed pit. Most local residences rely on private wells for their water supplies.

There are eight known wells within 10 km of the Project site, 70 wells between 10 and 20 km of the Site and 390 wells between 20 and 30 km of the Project site (SRC 2006a). Almost all the wells were constructed to provide a domestic water supply. Most of these wells are completed at depths consistent with the surficial sand aquifer. The remaining wells appear to be completed in sand seams within the till.

There is currently no potable water well on site; workers are supplied with bottled water for consumption on site. A well was used for the exploration camp.

Populations receiving water from drinking water treatment facilities in the SRSA include:

- The City of Prince Albert and approximately 600 area farms (City of Prince Albert 2008d), from the Saskatchewan River;
- The City of Melfort and Town of Kinistino, from a pipeline from the Saskatchewan River (referred to as the Codette Lake water intake);
- The Town of Nipawin (from groundwater wells located south of the town);
- The Town of Tisdale (from Tisdale Aquifer); and
- The Town of Choiceland (from town wells).

On the James Smith Cree Nation reserve, water is delivered by truck to cisterns on a weekly basis (Prince Albert Grand Council no date). There are also some wells on the reserve, which indicates that some groundwater might be used for drinking water in this community.

In terms of recreational water quality, potential exposure could occur from intentional or accidental immersion in natural waters (e.g. wading, swimming, water skiing, rowing, canoe touring, fishing and sailing (Health Canada 2010). This is limited to the Saskatchewan River as there are few opportunities for recreational water activities in FaIC forest, including fishing. There is very limited recreational fishing within the FaIC forest due to accessibility and proximity to higher quality sport fishing areas (Section 5.4.3).



Recreational use of the Saskatchewan River includes activities such as canoeing, swimming, sailing, and boating. The Saskatoon-Nipawin Canoe Route is a designated route along the portion of the Saskatchewan River that runs through the SRSA. It is a 335 kilometer/5 day canoe route that crosses the SRSA, and is categorized as a safe route for intermediate paddlers (Saskatchewan Tourism, Parks, Culture and Sport 2010). The Saskatchewan River Forks Provincial Park, which is the site of the confluence of the North and South Saskatchewan Rivers, is located approximately 40 km east of the city of Prince Albert within the SRSA. The area, which features steep river banks, is also a popular destination for canoeists (Tourism Saskatchewan 2010).

Codette and Tobin Lakes, created by the damming of the Saskatchewan River, are popular destinations for water sport enthusiasts in the SRSA. Popular activities on Codette Lake include sea-dooing, sailing, boating and swimming (The Outerbanks 2010). Tourism based facilities on Tobin Lake, which partially intersects the SRSA, provide a number of water-based services, including marina and beach access, boat launches, and houseboat, boat and canoe rentals (Tobin Lake Resort 2010; Scot's Landing 2010).

Current Exposures

The water in the upper aquifer that is generally accessed for drinking water supplies is generally of relatively good chemical quality. Water from deeper aquifers is often hard and most residents who use deep wells for a drinking water source have treatment.

Aluminum and iron occasionally exceed Canadian drinking water guidelines in the Saskatchewan River, but the water otherwise meets guidelines. Water quality information is available for all waterworks in Saskatchewan (Government of Saskatchewan 2009). Drinking water is generally compliant with bacteriological and chemical quality in the SRSA (Government of Saskatchewan 2009). Exceptions are the naturally elevated levels of arsenic and uranium are encountered in some drinking water sources to the East of the FalC forest (e.g. White Fox) (Government of Saskatchewan 2009).

The main criterion of concern for recreational water quality is the levels of bacteria; no data were available for review at the time of preparation of this study.

For further information, please refer to in Section 5.4.1 (Social and Economic), Section 5.4.3 (Non-Traditional Land and Resource Use), Section 5.2.7 (Groundwater Resources) and Section 5.2.8 (Surface Water Quality).

Noise

This subsection is based on the information presented in Section 5.2.5 (Background Noise Assessment), which presents a detailed assessment of the baseline conditions with respect to noise from a biophysical perspective.



Noise as an Exposure Agent

Noise is a potential exposure agent for people in close proximity to the proposed Project. Noise in the context of this assessment is defined as 'unwanted sound', and which carries no useful information. Noise tends to interfere with the ability to receive and interpret useful sound. At certain levels, noise levels can damage hearing and can create annoyance and stress. Noise can also affect essential human activities including the ability to communicate, relax and sleep.

Potentially Exposed Populations

The Project is located in the FaIC provincial forest. This is a rural area away from residential and industrial areas. There are almost no local residences within 10 km of the proposed pit and relatively few residences within 20 km of the proposed pit (see Figure 6.2.6-6 in Section 6.2.6 (Geology and Hydrogeology)). For the purposes of the baseline study, it is assumed that any persons in the vicinity of the project area could be potentially exposed. This population is limited to recreational users in the FaIC provincial forest adjacent to the project site and the workers.

Current Exposures

In the Project area, daytime ambient noise levels are in the 22.4 to 46.9 dBA range with an equivalent sound pressure level $L_{eq,day}$ of 32.1 dBA. The nighttime levels are from 22.4 to 32.1 dBA and the equivalent sound pressure level $L_{eq,night}$ is 26.4 dBA. These are low sound levels typical for undisturbed, quiet areas. Therefore, it is determined that the general public close to the Project area, exposed to noise levels that are typical for rural areas away from major highways.

For further information, please refer to Section 5.2.5 (Background Noise Assessment).

5.4.4.5 First Nations Health

This subsection is based on the information presented in Section 5.4.1 (Social and Economic), which presents a detailed assessment of these baseline conditions from a social and economic perspective.

The community well-being (CWB) index (INAC 2010b) combines data on income, education, labour force activity and housing conditions into a single number or CWB score, from 0 to 100. The higher the score the higher the well-being of the community. There is a wide range of CWB scores for communities in the SRSA (Section 5.4.1).

First Nations communities in the SRSA have CWB scores between 42 and 66. These include The James Smith 100 reserve of the James Smith Cree Nation, the Sturgeon Lake 101 reserve of the Sturgeon Lake First Nation, the Carrot River 29A reserve of the Red Earth Cree Nation and the Muskoday First Nation. The Cumberland 100A and Red Earth 29



reserves are excluded from this list as no scores were available for these communities. For comparison, Non First Nations communities in the SRSA have CWB scores between 65 and 82.

For further information, please refer to Section 5.4.1 (Social and Economic).

5.4.4.6 Worker Health (Occupational Health and Safety)

For mining related projects in Saskatchewan, worker health is governed by the Mines Regulation under the OH&S Act 1993 and the OHS Regulation 1996.

Shore's Corporate Philosophy regarding OH&S is:

“By working together we can strive for excellence and eliminate work related injury and occupational illness at our workplace.”

The personal health and safety of each worker on site, either Shore or contractor employee, is of primary importance, and the prevention of occupationally induced injury and illness is paramount. It is our objective to operate a safe and injury-free Project. Shore is committed to compliance and adherence to the OH&S plan to ensure the safety of individuals, maintain the integrity of the Health and Safety Program and develop operational policies as needed during development.

Shore's Health and Safety Program begins with good attitudes towards injury and illness prevention by management, supervisors and employees alike. We believe that everyone is accountable for safety and that a positive attitude and awareness is key to a successful program. Only through teamwork can a successful Health and Safety Program be instituted and maintained. As such, responsibilities for Health and Safety are shared among all levels of employees, and that:

- Management accepts responsibility for leadership of the Health and Safety Program, for its effectiveness and improvement, and for providing the safety measures required to ensure a safe workplace; and
- Employees are responsible for genuine cooperation with all components of the Health and Safety Program, including compliance with all rules and regulations, and for practicing safety while performing all duties.

Shore's Health and Safety Program involves:

- providing the necessary personal protective equipment and tools with proper instruction for its use and care to ensure that all employees have adequate resources to conduct their work safely;

- training all employees in good health and safety practices;
- inspections to find and eliminate any unsafe working conditions, to control hazards, and to ensure full compliance with the health and safety rules and regulations;
- developing and enforcing safety rules and requiring compliance as a condition of employment; and
- investigating every accident, incident and near-miss promptly and thoroughly to find the root cause, and to correct the problem quickly to avoid reoccurrence.

5.4.5 Archaeology and Heritage Resources

Heritage resources include all of Saskatchewan's Historic and Precontact archaeological sites, architecturally significant structures, and paleontological resources. Because of public and Aboriginal interest in heritage resources, there are linkages to traditional land use, non-traditional land use, and socio-economics. Baseline studies for heritage resources included the collection of historical information for the project area and a field survey of the anticipated Project facility footprint. The overall objective of the heritage resources baseline study was to describe the heritage resources that exist within the project footprint.

This section is based on the Heritage Resources Baseline Archaeological Data report (Appendices 5.4.5-A and 5.4.5-B).

5.4.5.1 Methods

Data were collected to describe the cultural setting and heritage sensitivity of the Project area. This includes the review of literature and databases, as well as the data collected during Heritage Resources Impact Assessments (HRIA). Details of the methods are included in Appendix 5.4.5-A.

HRIAs associated with advanced kimberlite exploration in FalC Provincial Forest were initiated in 2004. This included work conducted by Golder in the FalC-JV property and Star Kimberlite (Golder 2005, 2006a to 2006b, 2007a to 2007f, and 2008a to 2008d), as well as work carried out by Western Heritage Services Inc. in areas associated with the exploration of the Star Kimberlite (Western Heritage Services Inc. 2005, 2006). HRIAs specifically related to the Star-Orion South facilities footprint began in 2008 under Permits No. 08-093, No. 08-094, and No. 10-208 (Golder 2009, 2010a, 2010b, 2010c). Between 2004 and 2010, 19 Archaeological Investigation Permits were issued in the project area (Table 5.4.5-1). The assessments employed a combination of pedestrian reconnaissance and subsurface testing procedures to identify heritage resources. As a result of these HRIAs, approximately 6,790 ha were examined and 11,773 shovel probes excavated. This included a complete assessment of the Project facilities footprint. A detailed summary of HRIAs carried out in the project area is included in Appendix 5.4.5-A. These HRIA reports were forwarded to the



Heritage Resources Branch for review and the associated clearance letters issued are provided in Appendix 5.4.5-C.

Table 5.4.5-1: Archaeological Investigation Permits Issued in the Star-Orion South Diamond Project Area

Permit No.	Permit Holder	Project Components
04-102	Golder Associates Ltd.	Kimberlite bodies, geological anomaly pads, various drill pads, water pits, mud pits, access road right-of-way
05-038	Golder Associates Ltd.	General landscape survey in Joint Venture Property, kimberlite bodies, project specific disturbances (i.e., drill pads, mud pits)
05-087	Western Heritage Services Inc.	Post-impact assessment of various drill pads
06-064	Golder Associates Ltd.	Orion and Star West bodies, drill pads, access road right-of-way
06-103	Western Heritage Services Inc.	Infrastructure access roads, various drill pads
07-053	Golder Associates Ltd.	Orion South shaft
07-245	Golder Associates Ltd.	Kimberlite Bodies 120 and 140/141, drill pad
07-259	Golder Associates Ltd.	Drill Pad SPF-29
07-292	Golder Associates Ltd.	East Ravine survey and LDD pads
07-305	Golder Associates Ltd.	Drill Pad SPF-29
07-341	Golder Associates Ltd.	Drill Pad SPF-85
08-092	Golder Associates Ltd.	LDD pad expansions in Kimberlite Bodies 118, 122, and 150
08-093	Golder Associates Ltd.	HRIA of Orion South Open Pit
08-094	Golder Associates Ltd.	HRIA of Star Diamond Project
08-139	Golder Associates Ltd.	Orion - Star water line
08-175	Golder Associates Ltd.	LDD Expansions (Star Body)
08-145	Golder Associates Ltd.	HRIM of Star Diamond Project
10-208	Golder Associates Ltd.	HRIA of Star-Orion South Diamond Project 2010 Facilities Footprint
10-237	Golder Associates Ltd.	HRIM of Star-Orion South Diamond Project 2010 Facilities Footprint



5.4.5.2 Results

As a result of these HRIAs, 108 heritage resources have been identified in the facilities footprint (Table 5.4.5-2). The sites are dominated by Precontact artifact finds (n=47) and scatters (n=57) consisting primarily of Swan River Chert debitage (stone flakes). These sites represent episodes of stone tool production or rejuvenation. Two of the sites are artifact/feature combination sites where evidence of hearth or boiling pit features were found in association with debitage scatters. This suggests more complex activities related to camping and food processing. Fifteen of the Precontact sites produced diagnostic projectile points ranging from Early Side-notched to non-distinct Late Side-notched points spanning approximately 7,500 to 200 years ago. The remaining two sites are historic feature/artifact scatter sites consisting of cabin features and refuse. These sites relate to more recent hunting or forestry activities carried out in the FalC Provincial Forest during the 20th Century. A detailed summary of heritage resources found in the project area is included in Appendix 5.4.5-A.



Table 5.4.5-2: Heritage Resources Identified in the Star-Orion South Facilities Footprint

Borden No.	Project Footprint	Type	Diagnostics	Heritage Potential Rating	Mitigation Measures	Post Mitigation Recommendation
FhNe 010	Orion South	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 011	Star Open Pit	Artifact Scatter	0	Moderate	Phase I to III Mitigation	No Further Concern
FhNe 012	Orion South	Historic	1926 five cent piece	Moderate	Phase I Mitigation	No Further Concern
FhNe 013	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 014	Star Open Pit	Artifact Scatter	0	Moderate	Phase I Mitigation	No Further Concern
FhNe 017	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 021	Star Open Pit	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 022	Orion South	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 023	Orion South	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 024	Overburden Storage	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 025	Overburden Storage	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 026	Overburden Storage	Artifact Scatter	0	Moderate	Phase I Mitigation	No Further Concern
FhNe 027	Overburden Storage	Artifact Scatter	2 Late Side-notched points	High	Phase I Mitigation	No Further Concern
FhNe 030	Overburden Storage	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 031	Overburden Storage	Artifact Scatter	0	Moderate	Phase I Mitigation	No Further Concern



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Borden No.	Project Footprint	Type	Diagnostics	Heritage Potential Rating	Mitigation Measures	Post Mitigation Recommendation
FhNe 032	Overburden Storage	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 033	Overburden Storage	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 034	Overburden Storage	Artifact Scatter	1 Late Side-notched point	Moderate	Phase I Mitigation	No Further Concern
FhNe 036	Overburden Storage	Artifact Scatter	0	High	Phase I Mitigation	No Further Concern
FhNe 044	Overburden Storage	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 045	Overburden Storage	Artifact Scatter	0	Moderate	Phase I Mitigation	No Further Concern
FhNe 046	Overburden Storage	Artifact Scatter	0	Moderate	Phase I Mitigation	No Further Concern
FhNe 047	Star Open Pit	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 049/104	Star Open Pit	Artifact Scatter	0	Moderate	Phase I Mitigation	No Further Concern
FhNe 050	Star Open Pit	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 053	Star Open Pit	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 057	Orion South	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 058	Orion South	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 059	Orion South	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 064	Duke Ravine Reservoir	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 065	Duke Ravine Reservoir	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern



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Borden No.	Project Footprint	Type	Diagnostics	Heritage Potential Rating	Mitigation Measures	Post Mitigation Recommendation
FhNe 073	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 074	Overburden Storage	Artifact Scatter	0	Moderate	Phase I Mitigation	No Further Concern
FhNe 075	Overburden Storage	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 076	Overburden Storage	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 077	Overburden Storage	Artifact Scatter	0	Moderate	Phase I Mitigation	No Further Concern
FhNe 078	Overburden Storage	Precontact/Historic Scatter	Post 1945	Low	Shovel Testing Mapping	No Further Concern
FhNe 079	Overburden Storage	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 080	Overburden Storage	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 081	Overburden Storage	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 082	Overburden Storage	Artifact Scatter	0	Moderate	Phase I and II Mitigation	No Further Concern
FhNe 083	Overburden Storage	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 086	Star Open Pit	Artifact Scatter	Hanna Point	Low	Mitigated by Western Heritage (2006)	No Further Concern
FhNe 087	Star Open Pit	Artifact Scatter	Pelican Lake	High	Phase I Mitigation	No Further Concern
FhNe 088	Star Open Pit	Artifact/Feature	Besant	High	Phase I to III Mitigation	No Further Concern
			Pelican Lake			
			Hanna			
FhNe 089	Star Open Pit	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 090	Star Open Pit	Artifact Scatter	Hanna	High	Phase I Mitigation	No Further Concern



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Borden No.	Project Footprint	Type	Diagnostics	Heritage Potential Rating	Mitigation Measures	Post Mitigation Recommendation
FhNe 091	Star Open Pit	Artifact/Feature	0	High	Phase I Mitigation	No Further Concern
FhNe 092	Orion South	Historic	Modern Refuse	Low	Shovel Testing Mapping	No Further Concern
FhNe 093	Star Open Pit	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 094	Star Open Pit	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 095	Star Open Pit	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 096	Star Open Pit	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 097	Star Open Pit	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 098	Star Open Pit	Artifact Scatter	Early Side-notched	High	Phase I and II Mitigation	No Further Concern
FhNe 099	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 102	Star Open Pit	Artifact Scatter	0	Moderate	Phase I Mitigation	No Further Concern
FhNe 103	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 105	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 110	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 111	Star Open Pit	Artifact Scatter	Hanna	Low	Shovel Testing Mapping	No Further Concern
FhNe 112	Star Open Pit	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 113	Star Open Pit	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern



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Borden No.	Project Footprint	Type	Diagnostics	Heritage Potential Rating	Mitigation Measures	Post Mitigation Recommendation
FhNe 114	Star Open Pit	Artifact Scatter	Early Side-notched	Low	Shovel Testing Mapping	No Further Concern
FhNe 115	Star Open Pit	Artifact Scatter	McKean	High	Phase I and II Mitigation	No Further Concern
FhNe 116	Star Open Pit	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 117	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 118	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 119	Star Open Pit	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 120	Star Open Pit	Artifact Scatter	0	Moderate	Phase I and II Mitigation	No Further Concern
FhNe 124	Star Open Pit	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 126	Plant	Artifact Scatter	0	Moderate	Phase I Mitigation	No Further Concern
FhNe 131	Orion South	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 132	Star Open Pit	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 135	Star Open Pit	Artifact Scatter	0	Moderate	Phase I Mitigation	No Further Concern
FhNe 136	Star Open Pit	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 137	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 138	Overburden Storage	Artifact Scatter	0	Moderate	Phase I and II Mitigation	No Further Concern
FhNe 139	Overburden Storage	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern



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Borden No.	Project Footprint	Type	Diagnostics	Heritage Potential Rating	Mitigation Measures	Post Mitigation Recommendation
FhNe 141	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 142	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 143	Overburden Storage	Artifact Scatter	0	Moderate	Phase I Mitigation	No Further Concern
FhNe 144	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 145	Star Open Pit	Artifact Find	Avonlea Point	Low	Shovel Testing Mapping	No Further Concern
FhNe 146	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 147	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 148	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 149	Star Open Pit	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 150	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 151	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 152	PKCF	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 153	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 154	Star Open Pit	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 155	Star Open Pit	Artifact Scatter	0	Moderate	Phase I Mitigation	No Further Concern



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Borden No.	Project Footprint	Type	Diagnostics	Heritage Potential Rating	Mitigation Measures	Post Mitigation Recommendation
FhNe 156	PKCF	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 157	CPKS	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 159	Overburden Storage	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 160	Overburden Storage	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 161	Overburden Storage	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 162	CPKS	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 163	Duke Ravine Reservoir	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 164	Overburden Storage	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNe 165	Overburden Storage	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNf 050	Overburden Storage	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNf 059	Overburden Storage	Artifact Scatter	0	High	Phase I Mitigation	No Further Concern
FhNf 062	Overburden Storage	Artifact Find	0	Low	Shovel Testing Mapping	No Further Concern
FhNf 063	Overburden Storage	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern
FhNf 064	Overburden Storage	Artifact Scatter	0	Low	Shovel Testing Mapping	No Further Concern