



Nichols
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Leduc 50-Year Growth Study: Population and Employment Projections – Updated

Submitted to:

City of Leduc

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1. Introduction

The City of Leduc (the City) is looking to better understand how Leduc has grown, how it will grow into the future, and what the City can do to shape this growth. To this end, the City has retained Nichols Applied Management (Nichols) to develop population and employment projections as a first step for a growth study contracted to ISL Engineering and Land Services and Nichols. The growth study will inform future planning and development initiatives in the City.

Nichols previously prepared population and employment projections to the City in 2019; however, two major events have since transpired throughout the first quarter of 2020, including:

- the COVID-19 pandemic which has triggered a worldwide economic downturn; and
- the contraction of the oil and gas sector caused by a combination of market access issues, an oil price war between Saudi Arabia and Russia, and reduced demand for energy products due to the ongoing pandemic.

Additionally, the manifestation of growth at the Edmonton International Airport (EIA) has deviated from plans previously described in the Aerotropolis Viability Study (MXD Development Strategists 2015), upon which previous growth forecasts for the City were based.

The changing economic environment along with the reality of development at the EIA has resulted in a request from the City for updated projections. This report is intended to provide an overview of our updated methods and key findings of three population and employment projection scenarios for the City to 2070.

2. Growth Methodology

2.1 Overview

Population growth in communities generally consists of two core components:

- the natural rate of population growth, reflective of the fertility and mortality rates of the population; and
- in- or out-migration driven by the prevailing local/regional/provincial economic conditions and the associated demand for labour in the community.

Nichols has developed a growth model that incorporates both the natural rate of population growth as well as a detailed labour market that reflects the relative labour demand and supply in the City driving in- or out-migration. This labour market is tied to overall economic conditions in the region and province overall and community-specific family structures are used to estimate in- or out-migration associated with labour market changes.

Using the above-described methodology, the Study Team has developed three projection scenarios (baseline, low, and high) for population and employment in the City from 2020 to 2070. A detailed description of the assumptions and results of each scenario are provided in the following section.

2.2 Key Considerations

In the first quarter of 2020 we have seen two major economic events that are expected to have substantial impacts on the Alberta economy, including:

- the COVID-19 pandemic which has triggered a worldwide economic downturn; and
- the contraction of the oil and gas sector caused by a combination of market access issues, an oil price war between Saudi Arabia and Russia, and reduced demand for energy products due to the ongoing pandemic.

Both of these events have significant impacts on several key variables of community population growth such as the unemployment rate and job availability. Recent labour force data from Statistics Canada has shown an increase in unemployment in the province in the first four months of 2020 (Table 2-1).

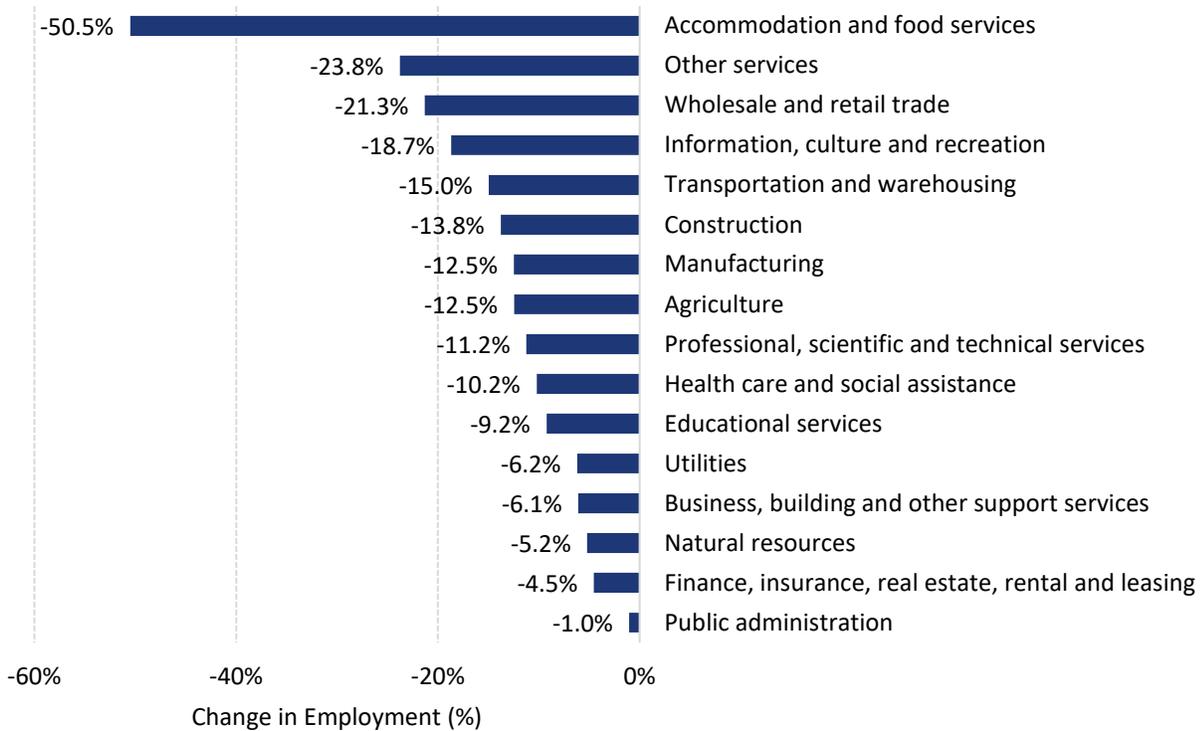
Table 2-1 Alberta Unemployment Rates January – April 2020

Month (2020)	Unemployment Rate (%)		
	Alberta	Edmonton CMA	Calgary CMA
January	7.3	8.2	7.2
February	7.2	7.8	7.4
March	8.7	7.9	8.6
April	13.4	10.0	10.8

Source: Statistics Canada 2020a, 2020b, 2020c.

Employment has been impacted across all sectors in Alberta, but the largest impacts are being felt by service industries such as accommodation and food services, retail trade, and other services (Figure 2-1).

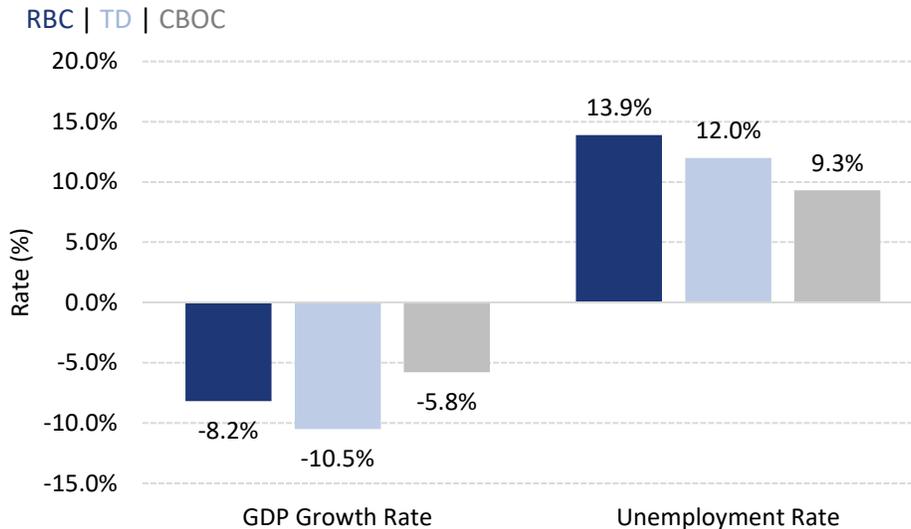
Figure 2-1 Alberta Employment Change by Industry (%) – January to April 2020



Source: Statistics Canada 2020a, 2020b, 2020c.

The extent of these impacts throughout the remainder of 2020 and beyond remains to be seen. Several forecasts have suggested that the province will experience economic contraction over 2020, resulting in negative growth in GDP and a spike in unemployment. As compared to 2019, where GDP growth was an estimated 0.3% and the provincial unemployment rate was approximately 6.9% (RBC Economics 2020), forecasts from RBC Economics, TD Economics, and the Conference Board of Canada (CBOC) suggest that Alberta’s GDP growth in 2020 could be as low as -10.5%, with the unemployment rate as high as 13.9% over the year (Figure 2-2). The Canadian Mortgage and Housing Corporation (CMHC) has provided a relatively grim forecast, suggesting that home prices could fall by 9% to 18% over the next year as a result of the COVID-19 pandemic (Canadian Mortgage Trends 2020a). Alternatively, Stephen Poloz, the current Bank of Canada Governor, remains optimistic and expects a sharp upturn in economic production once public health measures are eased (Canadian Mortgage Trends 2020b).

Figure 2-2 Alberta GDP Growth Rate and Unemployment Rate Forecasts – 2020



Source: RBC Economics 2020; TD Economics 2020; Conference Board of Canada 2020a.

Indeed, energy-related sectors have suffered from a particularly rough start to 2020. The oil and gas industry has dealt with major economic impacts caused by an oil price war between Saudi Arabia and Russia, as well as reduced demand for energy products due to the COVID-19 pandemic. These events have had substantial short-term impacts on the oil and gas industry. Namely, both West Texas Intermediate (WTI) and Western Canadian Select (WCS) oil futures contracts for May 2020 hit negative prices for the first time in history. Prices have since rebounded slightly, but the industry is expected to struggle at least through the remainder of 2020 as major capital investment is being pulled and the country’s drilling forecast is expected to hit a 49-year record low (Global News 2020).

The CBOC has released additional city-specific forecasts for 13 major Census Metropolitan Areas (CMAs) in Canada to 2024. The Edmonton CMA forecast, which includes the City of Leduc, is depicted below in Figure 2-3. Like the province, Edmonton’s economy is expected to contract in 2020 with GDP growth of -5.6% and an unemployment rate of approximately 11.1%. Sectors that are expected to experience the biggest contractions throughout 2020 include:

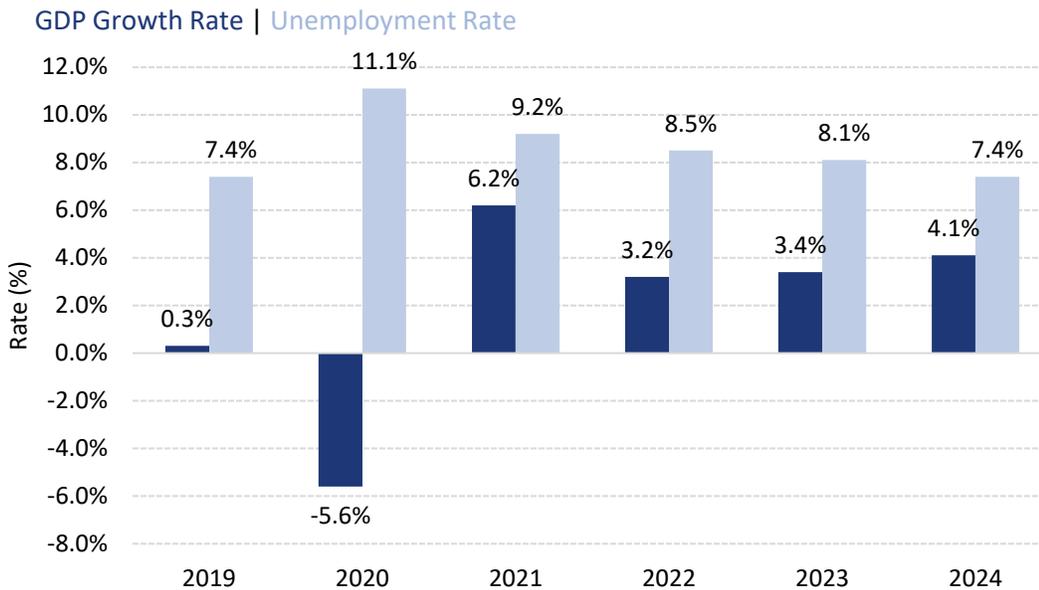
- retail;
- arts and entertainment;
- accommodation and food services;
- construction; and
- industries directly tied to the energy sector (e.g. oil and gas, manufacturing, and professional services).

Conversely, public service sectors are expected to experience very little output loss. Health care services are anticipated to grow throughout 2020 by over 3% due to additional labour needs during the COVID-19 pandemic (CBOC 2020b).

In 2021 and beyond, the effects of the economic contractions in 2020 are anticipated to abate. It is expected that GDP will rebound in 2021, growing by over 6%, before returning to more typical growth rates between 2022 and

2024 (Figure 2-3). Similarly, the unemployment rate is expected to decline annually from 2021 to 2024 as the economic impacts of 2020 lessen.

Figure 2-3 Edmonton CMA GDP Growth Rate and Unemployment Rate Forecast – 2019-2024

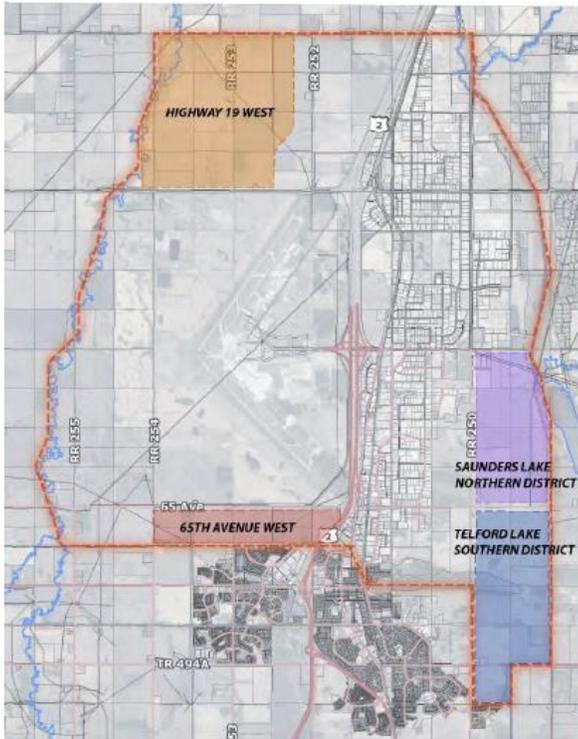


Source: Conference Board of Canada 2020b.

The long-term impacts of recent short-term shocks to oil and gas remain to be seen. Major energy projects such as an LNG Canada export terminal and the Trans Mountain pipeline expansion will experience short-term setbacks due to the current economic environment, but the projects are expected to maintain long-term viability as outlooks for both natural gas and oil remain relatively stable (CBC 2020).

In addition to the COVID-19 pandemic and the variety of risks currently facing the energy sector, the City of Leduc is also facing a great deal of uncertainty around competing growth near the EIA. The Aerotropolis Viability Study (MXD Development Strategists 2015) was used to support assumptions surrounding growth near the EIA in Nichols' original growth forecasting. Original Aerotropolis growth was described across four priority areas: Highway 19 West (Leduc County), Saunders Lake Northern District (Leduc County), Telford Lake Southern District (City of Leduc), and 65th Avenue West (City of Leduc) (Figure 2-4). The development path was proposed to occur between 2020 and 2050, with Aerotropolis lands becoming home to “economic clusters” including life sciences, agribusiness, transportation, energy, advanced manufacturing, aerospace and aviation, education, and ICT. It was suggested that the Aerotropolis could create over 35,000 direct jobs, as well as over 27,000 indirect and induced jobs at full buildout.

Figure 2-4 Aerotropolis Buildout Areas



Source: MXD Development Strategists 2015.

Since the publication of the Aerotropolis Viability Study, it has become increasingly apparent that development near the EIA is following a different path than that outlined in the Aerotropolis study (personal communication with City of Leduc representatives 2020). Instead of growth in the major economic sectors identified in the study, most of the growth that has taken place near the EIA has been retail-related, such as the Premium Outlet Collection Shopping Centre and Costco. Additionally, Remington Lands owned by the City of Edmonton located directly east of the Highway 19 Aerotropolis area are currently being developed as the Discovery Business Park (Remington Corp 2019), including a combination of light industrial and urban commercial development. As such, it is expected that development near the EIA is more likely to include a combination of light industrial and commercial (primarily retail) development as opposed to the diverse, dense, campus-style development outlined in the Aerotropolis study.

Overall, the City is facing several short- and long-term impacts that could push the City onto a different growth path than previously expected or perhaps alter the nature of growth itself. For example:

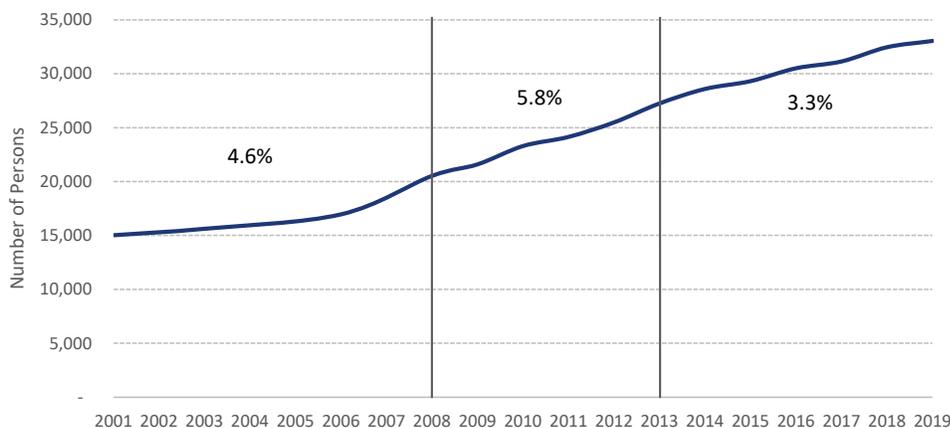
- The negative impact of the COVID-19 pandemic is expected to be relatively short-lived but the shifts towards working remotely and remote service delivery may persist and alter the way employment lands are used over time.
- The current challenges faced by the energy sector may resolve in the medium-term as market access issues relent (e.g. completion of TransMountain); however, the behaviour of OPEC and Russia is uncertain and an American presidential candidate has vowed to limit pipeline development from Alberta.
- Ongoing development near the EIA will undoubtedly shape the demand for various commercial development in the City over the long-term (personal communication with City of Leduc representatives 2020).

3. Historical Growth in the City of Leduc

In an effort to provide context for the results and to support key assumptions relied upon in the projections, the balance of this section provides a cursory overview of historical population and employment growth in the City of Leduc.

Between 2001 and 2019, the City of Leduc’s population has grown from approximately 15,030 to 33,032. The compound annual growth rate (CAGR) over this period has fluctuated (Figure 3-1), ranging from a high in the 2001 to 2008 period to a low of 3.3% in the 2013 to 2019 period, with the overall CAGR equalling approximately 4.47%.

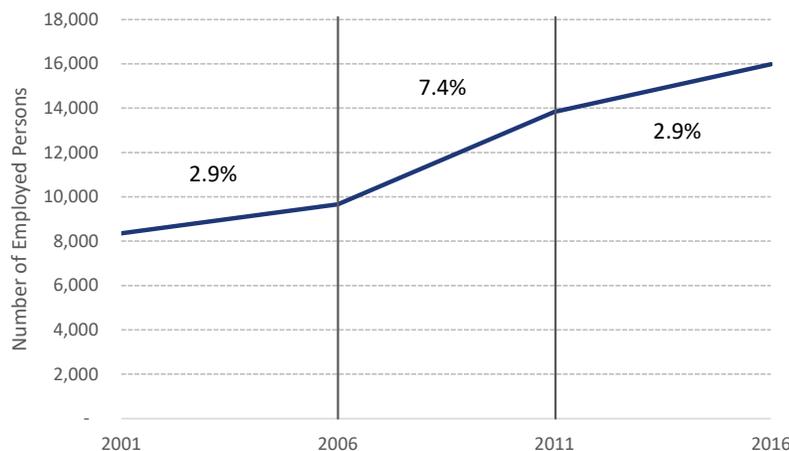
Figure 3-1 City of Leduc Historical Population Growth



Source: City of Leduc Municipal and Federal Censuses.

Similarly, the CAGR of employed persons in the City has fluctuated in the past, peaking between 2006 and 2011 at 7.4%, and with a CAGR between 2001 and 2016 of approximately 4.4%. (Figure 3-2).

Figure 3-2 City of Leduc Historical Employment Growth



Source: Federal Censuses

4. Projections

Given the profound events described in preceding sections of this report as well as the uncertainty associated with the recovery from these events, Nichols has prepared multiple scenarios to depict growth in the City of Leduc through to 2070. The assumptions relied upon to generate these scenarios reflect the key considerations outlined in section 2.2 and historical conditions outlined in section 3. It should be noted that the previously held assumption of the Aerotropolis concept as a driving force behind a specific type and magnitude of employment growth in and around the City of Leduc has been discarded.

At the time of this writing, the recovery from COVID and the health of the energy sector are evolving rapidly. As such, material changes to the scenarios may be appropriate as additional information comes forward.

4.1 Baseline Scenario

4.1.1 Baseline Scenario Assumptions

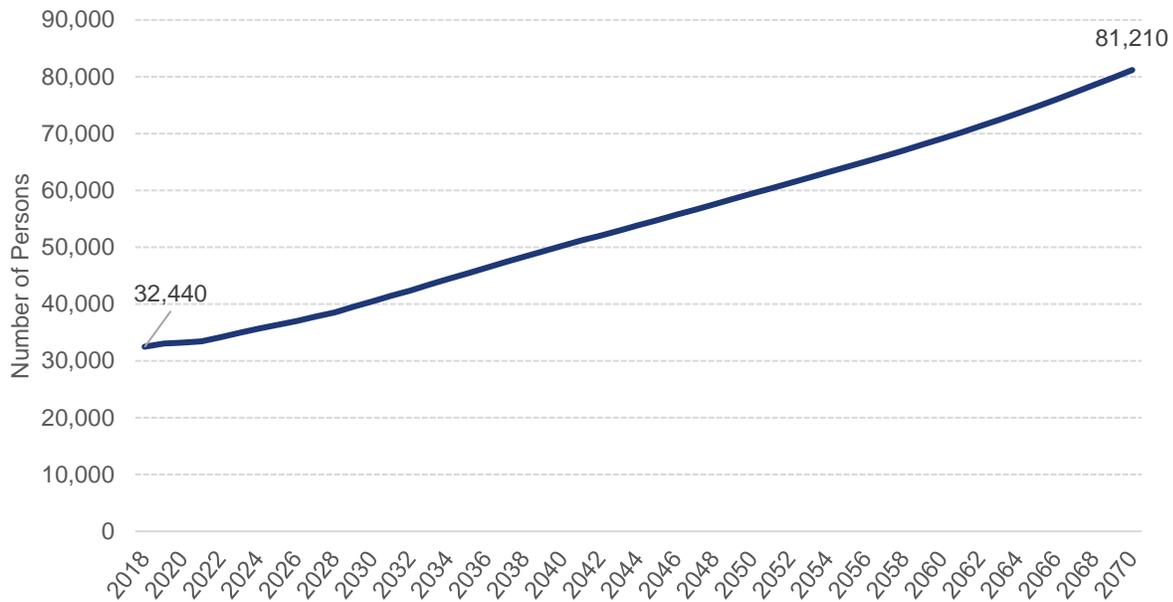
The major economic changes that have occurred in the first quarter in 2020 and are expected to remain at least in the short-term. Accordingly, the Study Team has conducted population and employment calculations under a set of “status-quo” assumptions that explicitly account for the COVID-19 pandemic and recent impacts to the oil and gas industry in the short-term, including:

- Fertility and mortality rates based on the historical distribution of rates in the City between 2001 and 2017.
- Unemployment in the City’s labour force rising to 11% in 2020 to reflect the COVID-19 pandemic and decline in the energy sector, with a gradual decline to a “full employment” rate of 6% over a 10-year period. This assumption is generally in line with the CBOC’s recent forecast for the Edmonton CMA (CBOC 2020b).
- Job growth in the City’s labour force contracting in 2020 to depict the widespread job losses resulting from the COVID-19 pandemic and decline of the energy industry. Several current forecasts are anticipating some economic recovery starting in 2021 (e.g. CBOC 2020a, National Bank of Canada 2020). As such, employment recovery will be modelled starting in 2021, with existing residents regaining employment throughout the year. By 2022 job growth in the City’s labour force will return to a normalized average annual growth rate of 2.9% until 2030, a rate that is consistent with historical growth in the City of Leduc outside of peak (2006-2011) years and higher than recent employment growth in the Edmonton Metropolitan Region (about 1% between 2015-2019; Statistics Canada 2020d). After 2030, the growth rate is assumed to converge to the forecasted rate for the region of 1.6% (Government of Alberta 2016).

4.1.2 Baseline Scenario Results

Based on both natural population growth and in-migration driven by the labour market, it is expected that the population of the City will increase to an estimated 81,210 (Figure 4-1), slightly lower than the original baseline estimate of 86,560.

Figure 4-1 Population Projection in the City of Leduc (2018-2070) – Baseline Scenario



The estimated compound annual growth rate for the entire period (2018-2070) is approximately 1.8%. As noted earlier, the baseline scenario assumes a high unemployment rate and negative growth in jobs within the City’s labour force in 2020 due to the COVID-19 pandemic and the decline in the energy sector, before recovery beginning in 2021. The resulting total employment in the City is expected to grow to approximately 44,970 by 2070 (Table 4-1).

Table 4-1 Population and Employment Projections (2020-2070) – Baseline Scenario

Year	Population	Total Employment
2020	33,210	16,870
2025	36,350	19,380
2030	40,470	22,340
2035	45,380	25,270
2040	50,250	27,900
2045	54,770	30,240
2050	59,430	32,740
2055	64,130	35,440
2060	69,130	38,370
2065	74,770	41,540
2070	81,210	44,970

4.2 Low Scenario

4.2.1 Low Scenario Assumptions

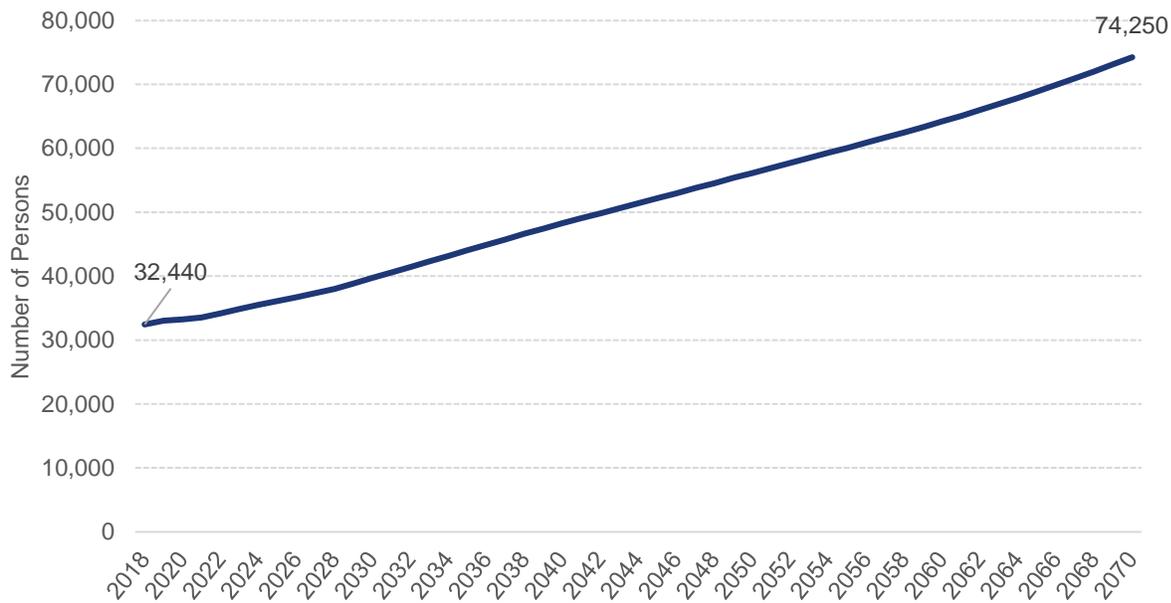
The Study Team has conducted population and employment calculations under a set of “low scenario” assumptions that include the same assumptions as the baseline scenario, along with the following adjustments:

- Following the recovery from COVID-19, the energy sector experiences relatively lower growth over the 50-year period as compared to the baseline scenario due to the long-term impacts associated with the economic events of 2020, coupled with ongoing market-access issues faced by the sector.
- Reduced growth in the energy sector spills over to other sectors of the economy (e.g. manufacturing), resulting in slightly reduced employment growth in non-energy related sectors of the City’s labour force (growth at a rate of 2.8% until 2030 after which job growth converges to a rate of 1.5%).

4.2.2 Low Scenario Results

Based on both natural population growth and in-migration driven by the labour market, it is expected that the population of the City will increase to an estimated 74,250 in the low scenario, approximately 9% lower than the baseline scenario (Figure 4-2).

Figure 4-2 Population Projection in the City of Leduc (2018-2070) – Low Scenario



The estimated compound annual growth rate for the entire period (2018-2070) is approximately 1.6%. The resulting total employment in the City is expected to grow to approximately 41,220 by 2070 (Table 4-2).

Table 4-2 Population and Employment Projections (2020-2070) – Low Scenario

Year	Population	Total Employment
2020	33,210	16,870
2025	36,120	19,270
2030	39,730	21,970
2035	44,050	24,600
2040	48,260	26,880
2045	52,180	28,880
2050	56,150	31,000
2055	60,070	33,290
2060	64,210	35,740
2065	68,890	38,380
2070	74,250	41,220

4.3 High Scenario

4.3.1 High Scenario Assumptions

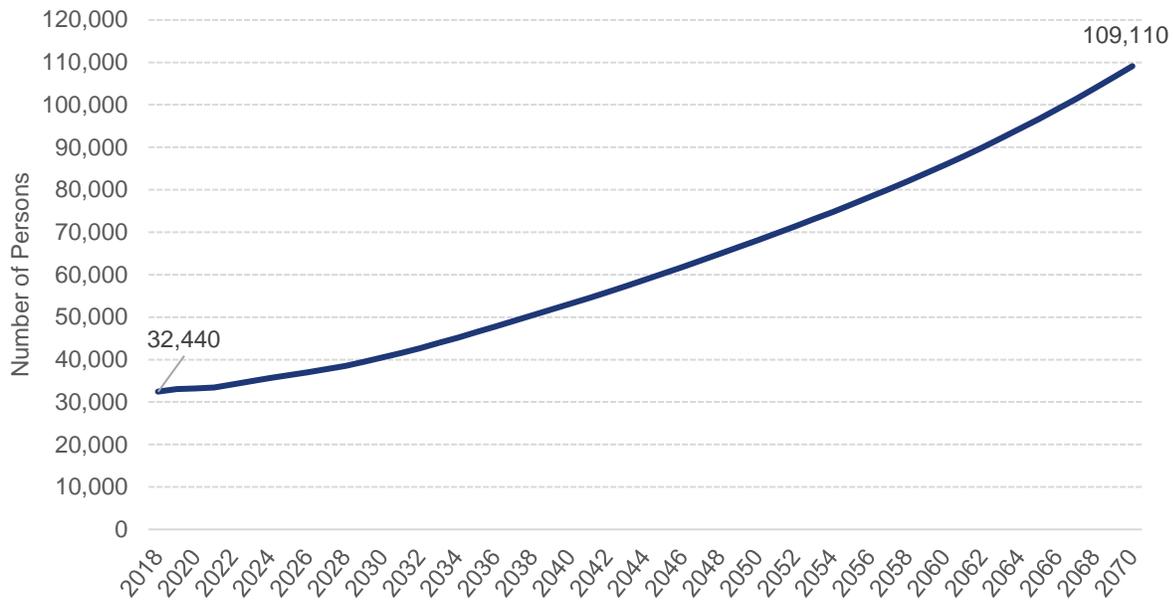
The Study Team has conducted population and employment calculations under a set of “high scenario” assumptions that include the same assumptions as the baseline scenario, along with the following adjustments:

- Following the recovery from the events of 2020, job growth in the City’s labour force will return to a normalized average annual growth rate of 2.9% until 2035. After 2035, the growth rate is assumed to converge to the long-term rate of 2.4%, higher than the forecasted rate for the region of 1.6% (Government of Alberta 2016).

4.3.2 High Scenario Results

Based on both natural population growth and in-migration driven by the labour market, it is expected that the population of the City will increase to an estimated 109,110 in the high scenario, substantially higher (34%) than the baseline scenario (Figure 4-3).

Figure 4-3 Population Projection in the City of Leduc (2018-2070) – High Scenario



The estimated compound annual growth rate for the entire period (2018-2070) is approximately 2.4%. The resulting total employment in the City is expected to grow to approximately 59,740 by 2070 (Table 4-2).

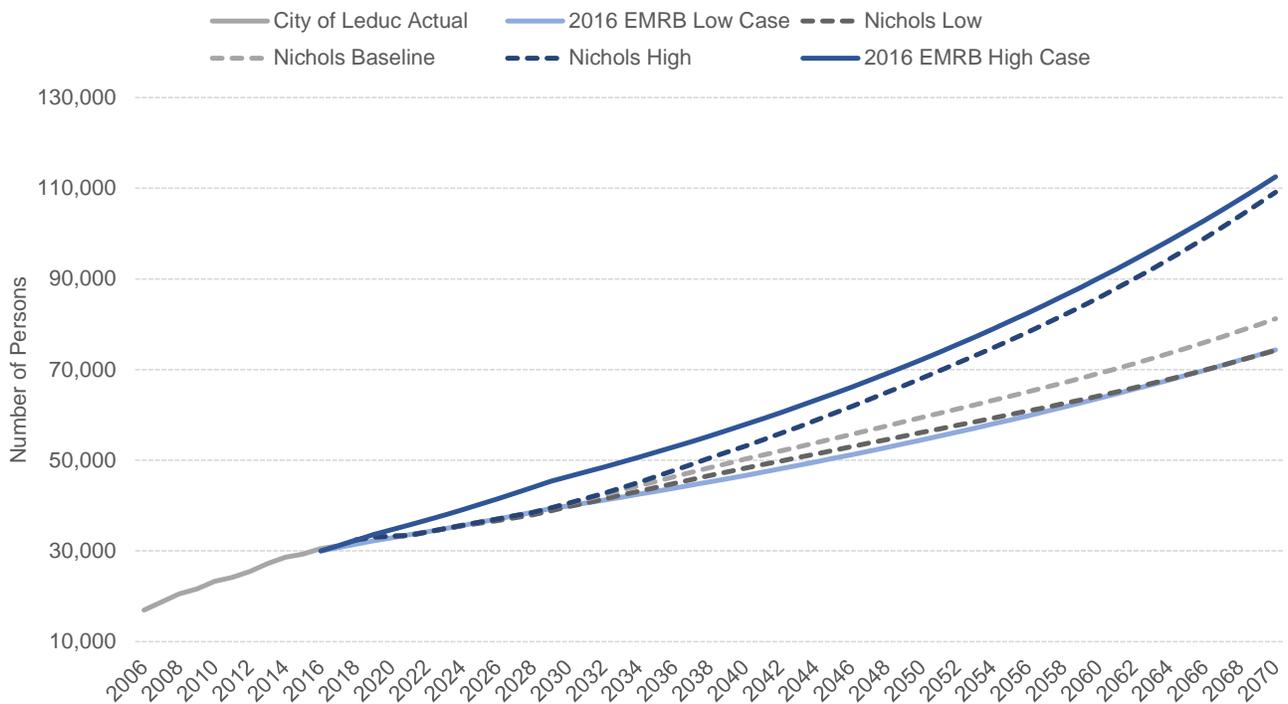
Table 4-3 Population and Employment Projections (2020-2070) – High Scenario

Year	Population	Total Employment
2020	33,210	16,870
2025	36,360	19,380
2030	40,520	22,360
2035	46,470	25,800
2040	53,130	29,330
2045	60,300	33,020
2050	68,110	37,180
2055	76,520	41,860
2060	85,870	47,130
2065	96,660	53,060
2070	109,110	59,740

5. Projection Comparisons

The Edmonton Metropolitan Region Board (EMRB), formerly known as the Capital Region Board (CRB), developed population projections for each of its member municipalities. Compared to the projections published by the EMRB (updated by Nichols in 2016 to reflect 2016 census data and extended to 2070), the three scenarios presented in this report fall between the EMRB's low and high projections (Figure 5-1). While the Nichols scenarios depict slightly different growth paths than those presented by the EMRB, both Nichols low and high scenarios are relatively in line with the EMRB low and high scenarios. It is important to note that the EMRB projections are based on dated information and have not been adjusted to account for the recent economic environment.

Figure 5-1 City of Leduc Population Projection Comparisons to 2070



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