

2 Introduction

2.1 Project Definition

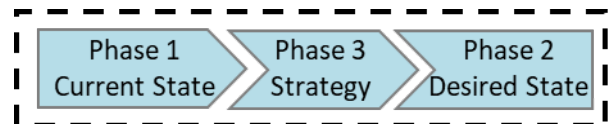
Advancing a robust, diversified economy in northern Alberta is highly dependent on having the necessary infrastructure in place to access markets, reduce cost of service delivery, and enhance the quality of life. Realizing this, with the support of Alberta Economic Development and Trade (EDT), the Northern Alberta Development Council (NADC), the Northeast Alberta Information HUB Ltd. (Alberta HUB), and the four other Regional Economic Development Alliances (REDAs) partnered to undertake this Northern Alberta Broadband Preparedness project. The study is to quantitatively evaluate the options available to enhance broadband infrastructure within the NADC region. The overall purpose is to document:

1. Current Broadband availability throughout the region (Current State).
2. Where each community would like to be in 3-, 5-, and 10-years (Desired State).
3. Potential benefits that might be realized once the availability of world-class broadband infrastructure became available (Benefits Assessment).
4. The options available to communities and sub-regional areas interested in enhancing the availability of broadband infrastructure within their environs (Opportunities, Options, and Strategy); and
5. The potential financials associated with the more do-it-yourself options (Business Cases).

Parts 1, 2, and 3 were completed and the results were released in draft form. Each focused on the entire northern Alberta study region and the NADC area – the NADC area encompassing 60% of the Alberta landmass. To facilitate a greater focus on the opportunities, options, and illustrative financials within each region, Parts 4 and 5 were combined and undertaken separately for the regions covered by each REDA and the NADC. The results for the Alberta HUB region are documented in this report.

2.2 Project Purpose

From a strategic perspective, the purpose of *Northern Alberta Broadband Preparedness Project* is to complete both the current (Phase 1) and desired (Phase 2) state for each community and the region as a whole, as well as identify the potential options available to bridge any gaps. The options of most interest are then used to develop a strategy (Phase 3) with which the Desired State can be achieved. In support of the proposed strategy, preliminary financials will then be developed. In summary, the steps are:



1. Establish the current state for each municipality, county, municipal district (MD), First Nation community, and Métis Settlement within the northern Alberta study area;
2. Establish the desired state for each of the above entities.
3. Using gap analysis, identify the options and opportunities available to realize the desired state, estimate the related capital requirements, and use the results to inform the development of a regional broadband strategy; and
4. Based on the agreed upon strategy, if applicable, develop a preliminary business case.¹⁰

2.3 Project Leadership and Study Partners

The *Northern Alberta Broadband Preparedness Project* is being led by the Northeast Alberta Information HUB (Alberta HUB), one of five Regional Economic Development Alliances (REDAs) in northern Alberta. REDAs are autonomous non-profit organizations comprised of member communities and regional

¹⁰ Project contract between the Northeast Alberta Information HUB Ltd. and Taylor Warwick Consulting Limited; 2016-08-12.

stakeholders that work together to foster business development and prosperity in a defined geographic area.¹¹

Funding for this study is provided by Alberta Economic Development and Trade (EDT), the Northern Alberta Development Council (NADC), and the five northern Alberta REDAs: Alberta HUB, Grizzly Regional Economic Alliance Society (GROWTH Alberta), Lesser Slave Lake Economic Alliance (LSLEA), Peace Region Economic Development Alliance (PREDA), and Regional Economic Development Initiative for Northwest Alberta (REDI).

The study is inclusive of all municipalities, First Nations, and Métis Settlements within the area encompassed by the NADC and the five REDAs. Chief Administrative Officers and their staff (information technology, planning and development, and economic development officers); First Nation and Métis Settlement administrators and managers; and Internet Service Providers (ISPs) were the primary contributors of information and data to this report. Other stakeholders contributing to the understanding of the 'current state' included elected officials, primary and post-secondary educational institutions, Alberta Health Services, local Chambers of Commerce and Community Futures, business leaders and owners, and industry associations and organizations.

The collection of information, data, and general research took place primarily between October 2016 and March 2017. Attempts were made to contact all communities and ISPs within the study's scope to provide input for the study. Despite efforts by Taylor Warwick, the NADC, and the REDAs, input from some communities and ISPs was not forthcoming. Another challenge was keeping abreast of changes within the communities and ISPs and refreshing the study's databases, analyses, and this report as required. As such, the contents of this report should be viewed as a 'snapshot' in time, and the reader is reminded that a variety of changes may have occurred since this report was written.

The NADC, along with Alberta HUB, GROWTH Alberta, LSLEA, PREDA, and REDI, focuses on advancing a robust, diversified economy in northern Alberta. Achieving continued economic growth in northern Alberta is highly dependent on having the necessary infrastructure to access global markets as well as providing connectivity for its residents.

2.4 Northern Alberta Study Area

2.4.1 Geographic Borders

The northern Alberta study area is inclusive of the NADC region and the REDA regions (members and non-members of a REDA). The study area is outlined in blue in Figure 15. The NADC region also shares this blue boundary; however, the boundaries and members of Alberta HUB and GROWTH Alberta extend beyond the NADC region, and a red line serves as the demarcation line.

The NADC's geographic borders extend north to Alberta's border with the Northwest Territories and east and west to Alberta's borders with Saskatchewan and British Columbia. It reaches south as far as the southern boundaries of the Municipal District (MD) of Greenview, Woodlands County, MD of Lesser Slave River, Athabasca County, Lac La Biche County, County of St. Paul, the Métis Settlements of Buffalo Lake, Kikino, and Fishing Lake, and the First Nations of Whitefish, Saddle Lake and Frog Lake.¹² The unlabelled, burgundy-shaded areas in Figure 15 are the Athabasca and Wood Buffalo regions located in the northeastern portion of the NADC.

¹¹ <http://communityeconomicdevelopment.alberta.ca/regional-economic-development-alliances-redas/>; Alberta Economic Development and Trade; 2017-08-08.

¹² NADC; *NADC Area Profile: An Economic Description of the Region*; 2016-05.

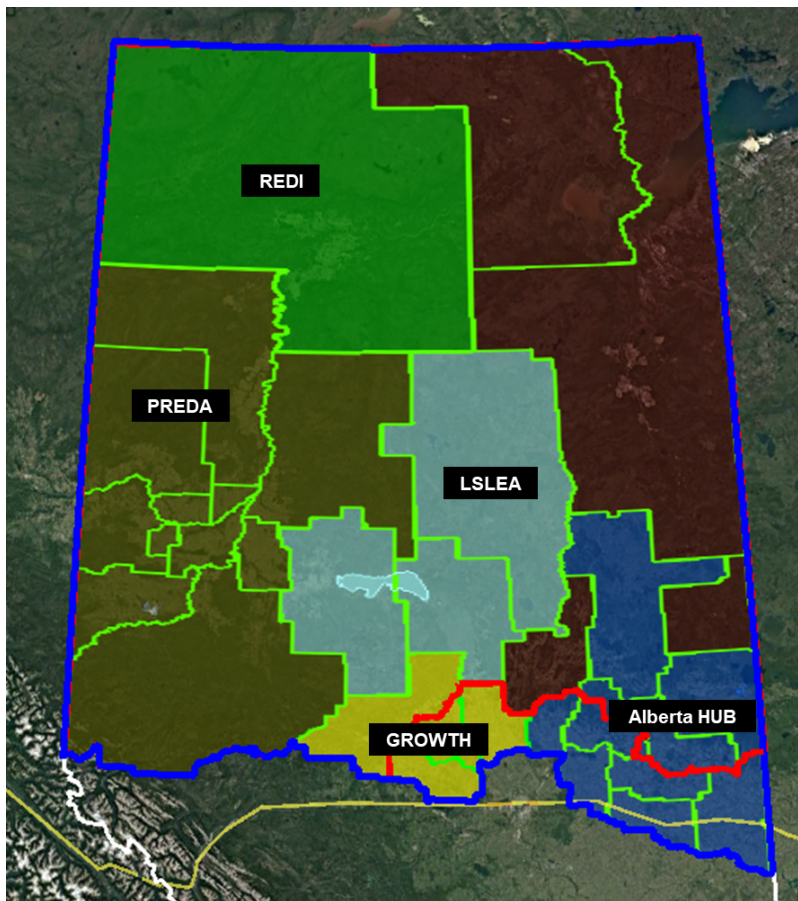


Figure 15 – Northern Alberta study area.

2.4.2 REDA Membership and Grouping of Communities

Most northern Alberta communities are a member of a REDA. There are exceptions and for the purposes of this study, those communities that geographically fall within a REDA but are not a member of the REDA are listed and grouped with member communities of that REDA. This is done to facilitate Phase 3 of this project – broadband opportunities, options, and strategy development at community and regional levels. Specifically, financially viable and operationally sustainable community or regional fibre-based network builds often require partnering with neighbouring communities to increase scale and efficiency. Communities that are not a member of a REDA are identified in each of the REDA-specific sections of this report. The reader is advised to refer to these sections for further information. Also, REDA membership can change over time.

2.4.3 Community Composition, Natural Resources, and Features¹³

There are 32 municipal districts and counties, 2 cities, 35 towns, 23 villages, 24 summer villages, 154 hamlets, 33 First Nations and 8 Métis settlements with a total of 456,811 people in the study area. Approximately 41.9% are urban dwellers while 58.1% live in rural communities. Of the 58.1%, approximately 7.5% live on First Nations reserves or Métis Settlements.

¹³ NADC; NADC Area Profile: An Economic Description of the Region; 2016-05.

The study area is home to approximately 21,006 businesses (with employees).¹⁴ Approximately 56% of these businesses are engaged in one of five industry sectors: construction; other services (except public administration); retail trade; professional, scientific, and technical services; and transportation and warehousing. The 'other services' sector comprises establishments that have not been classified in any of the other 19 North American Industry Classification System (NAICS) industry sectors. For example, businesses that repair and maintain motor vehicles and other machinery or provide personal care services fall into this category.

The study area's natural resources of oil, natural gas, agricultural land, and forests are the basis for industry output in the study area. Nichols Applied Management estimated the NADC region (the NADC region can be used as a proxy for the northern Alberta study area giving its footprint is very similar) contributes approximately 17% to 19% of Alberta's total gross national product (GDP).¹⁵ Mining and oil and gas extraction sector is the largest contributor. Other key industry sectors include (1) construction and (2) agriculture, forestry, fishing, and hunting.

A diverse natural landscape characterizes the study area, with five of Alberta's six land classification regions present. Although predominately Boreal Forest, there are pockets of Canadian Shield in its northeast corner and Rocky Mountains in its southwest corner. Its lower southwest has Foothills while its southeast corner and pockets in the west are classified as Parkland. The main boreal forest includes closely spaced evergreen and deciduous trees, as well as shade-tolerant shrubs, which create line-of-sight issues for fixed wireless and mobility service providers. The small portion of Canadian Shield in the Fort Chipewyan area consists of a very thin soil layer on top of the bedrock (granite). This dictates aerial broadband deployments.

¹⁴ Calculations based on data provided by Michael Parkatti, Senior Director. Economic Information & Analytics, Alberta Economic Development and Trade; *Request - Alberta Businesses Counts by Industry*; Message to Doris Regula; 13 February 2017. E-mail.

¹⁵ *Contribution of the NADC Region to the Alberta and Canadian Economies*; Nichols Applied Management; 2012-06.