



*plan*cumberland  
PLANNING ANALYSIS

# *plan*cumberland

PLANNING ANALYSIS

prepared by

**UPLAND**

for



AUGUST, 2017

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# 1 INTRODUCTION



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## 1.1 About this Report

In 2016, the Municipality of the County of Cumberland started the process of reviewing and updating its Municipal Planning Strategy (MPS) and Land Use By-law (LUB). The Municipality's current planning documents were adopted in 1993. They have been amended periodically since then, but have not been comprehensively reviewed. At the same time, the Town of Springhill dissolved in 2015 and the Town of Parrsboro dissolved in 2016. The areas formerly governed by the Towns became part of the Municipality, and their planning documents are currently still used to regulate development in those areas.

The objectives of the plan review process are to bring together three sets of planning documents into one; to update these documents to address current issues, such as climate change and aging populations; to encourage investment in the county; and to make regulations clearer and easier to understand.

This comprehensive plan review is a multi-step process that will take over a year. One of the first steps was for the project team to conduct a detailed analysis of the existing conditions in Cumberland. This analysis will help inform discussion topics for public consultation. It also identifies issues and challenges that need to be addressed by planning policy, as well as provides spatial information (*i.e.* mapping) that will help guide where different zones are placed when the MPS and LUB are written. This report is the result of that analysis.

While this report is long in terms of the number of pages, it is relatively light in text. It is also set up so that each section is generally independent; *i.e.* if your time is short you can jump from section to section to find the information important to you, without having to read the whole report. However, we certainly do encourage you to read the whole report.

## 1.2 Area Profile

Cumberland County is located in the north-central portion of Nova Scotia, bordering New Brunswick. It is the second largest county in Nova Scotia. Its borders include the Municipality of Cumberland, the Town of Amherst, and the Town of Oxford.

The Towns are their own separate municipalities, and are not included in this plan review. However, residents of the Municipality of Cumberland do often work in the Towns or use their services, and *vice versa*. As such, this planning analysis does occasionally include data about the Towns, where that data will help inform planning in the Municipality.

The Municipality had a population of 21,363 in the 2011 census. This grows to 31,353 when the Towns are included. Larger communities include Springhill, Parrsboro, and Pugwash. Smaller communities provide local services throughout Cumberland's large area. These include communities such as River Hebert, Advocate, Joggins, Tidnish, Wallace, and Wentworth.

Cumberland has an extensive coastline, bordering the Bay of Fundy to the south and the Northumberland Strait to the north. This has resulted in a high concentration of seasonal cottage development in Cumberland, especially along the warm waters of Northumberland. There is also a winter-season cottage area centred on the Wentworth Valley and the skiing it offers.

Cumberland is rich in natural resources, and many of its industries depend on these resources. There is a long history of mining and mineral extraction in Cumberland, including coal, salt, and sandstone. Cumberland features some of Nova Scotia's best agricultural soils. Although many types of farms operate in the county, it is particularly known for its blueberry harvests.

As the only land link between Nova Scotia and the rest of the continent, Cumberland hosts important transportation and utility links, including Highway 104, a railway line, a pipeline, and electricity interconnections.



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## 1.3 Analysis Themes

This analysis is broken down into sections based on themes. These are:

### ENVIRONMENT

A look at natural features, such as the geology of Cumberland. This section also explores some of the risks present from the natural environment (*e.g.* flooding and erosion), as well as threats to the natural environment (*e.g.* poor water quality).

### HISTORY AND CULTURE

A brief history of Cumberland County, along with mapping of registered heritage properties and information on the Joggins Fossil Cliffs UNESCO World Heritage Site.

### SOCIOECONOMICS

Analysis of the demographics and economy of Cumberland County. These data, mostly from Statistics Canada census information, paint a picture of Cumberland's residents, where they work, their health, and their housing.

### LAND USE

How is land in Cumberland used now? This series of maps looks at things like where agriculture is currently happening in the county; where are parks and protected areas; and where services, such as schools and hospitals, are located.

### CURRENT ZONING

Among the three current sets of planning documents (Municipality of Cumberland, Parrsboro, and Springhill) there are 27 land use designations and 48 zones. This series of maps provides a record of where these zones are applied.

### INFRASTRUCTURE

A look at existing infrastructure in the Municipality, including sewer and water systems.

### OTHER REPORTS

Over the years the Municipality and former Towns have produced a number of reports and studies that link with planning. This section provides a brief overview of some of these reports.

## 2 ENVIRONMENT



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## 2.1 Environment Introduction

Cumberland features a diverse natural environment. Its distinct geological formations, varied topography, and two different coastlines provide the conditions for a wide range of ecosystems and landscapes.

The natural environment is, in many ways, responsible for the Cumberland County of today. The location of natural harbours, minerals, timber resources, good soil, drinking water, animal habitat, and hills and valleys all shaped where our ancestors founded communities, and how those communities have developed over the years.

The environment will continue to impact how our communities develop in the years to come. Challenges, such as flooding and erosion, limit the areas where new development should go. They may also put existing communities at risk, and require adaptations to avoid such risks in the future.

Over the years, we have also begun to understand how our communities impact the natural environment, and the benefits of developing in ways that minimize those impacts. Issues, such as degraded lake water quality from human development activity, require our attention as we decide how our communities will look in the future.

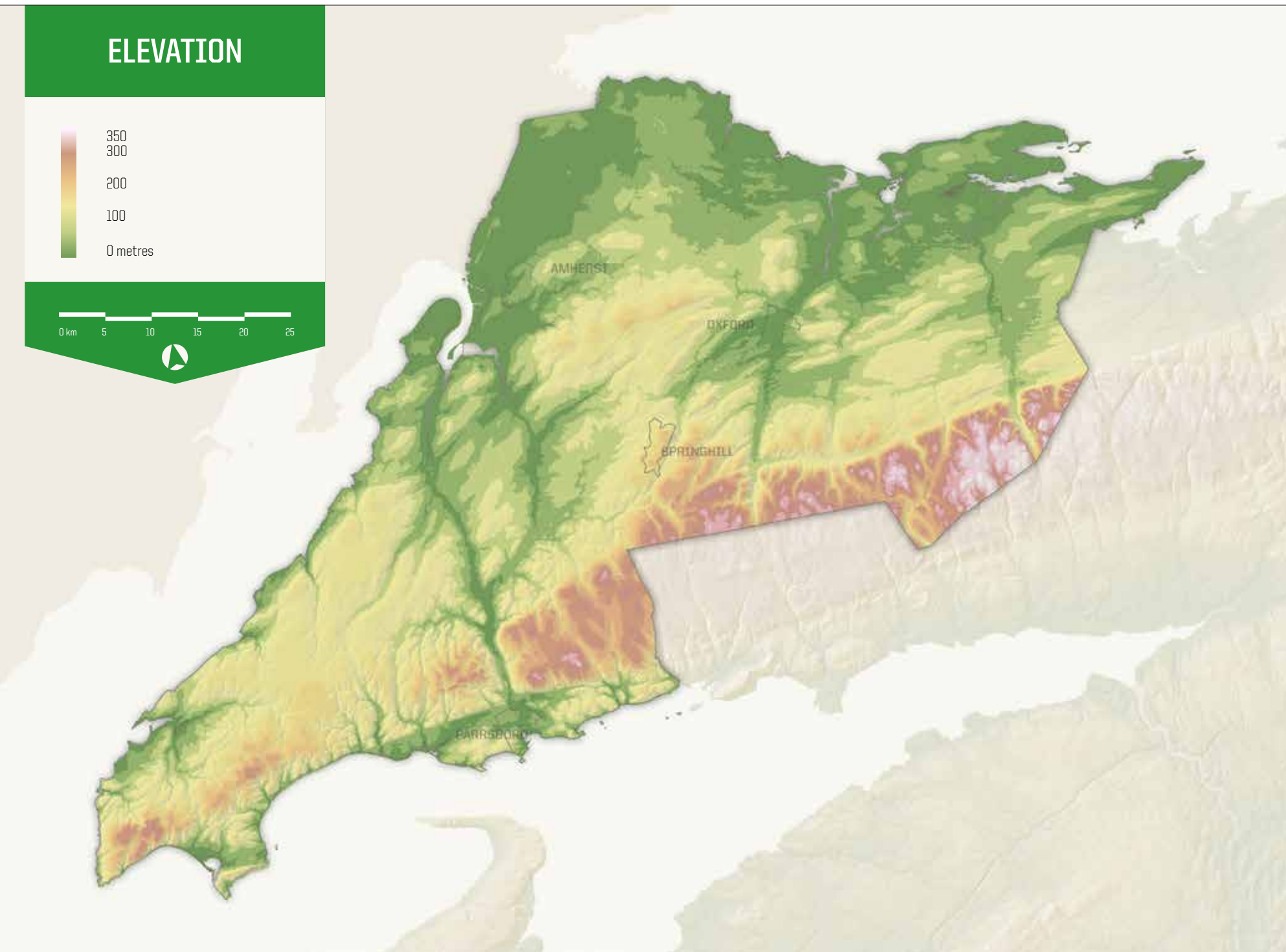
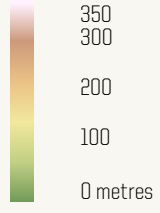
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## 2.2 Elevation

Cumberland County is characterized by a varied topography. Elevations range from a low of 0 metres (sea level) in areas like the Tantramar Marshes, up to 355 metres at Higgins Mountain in the Cobequid Mountains. This range of elevations affects many of the qualities of Cumberland, from the location of different watersheds and ecosystems, to where roads and communities are located, to the areas most at risk of damage from sea level rise and storm surge. If you look closely at the maps on the following pages, you can see the impact elevation has on these qualities and more.

The main elevation feature of note in Cumberland is the Cobequid Mountains. These mountains—geologically part of the Appalachian Range—run all the way from Cape Chignecto to Pictou County. They present a major natural barrier that separates Cumberland from the rest of Nova Scotia.

# ELEVATION



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## 2.3 Slope

Slope measures the steepness of land. For example, a slope of 20 percent is equal to the land rising 1 metre for every 5 horizontal metres. A slope of 1 metre up for every 1 metre horizontal would be 100 percent, or a 45 degree angle.

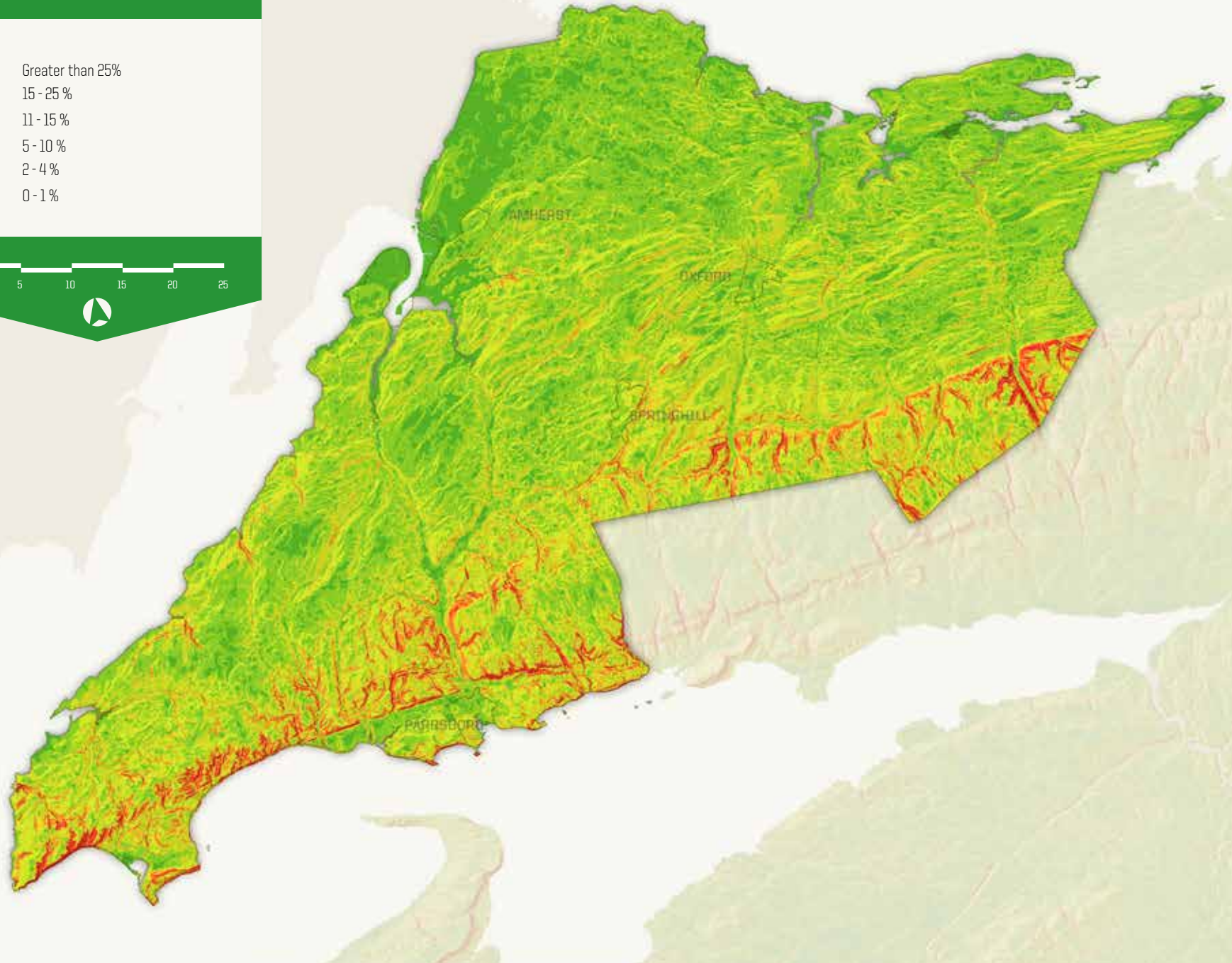
The slope of land is an important consideration for many reasons. It affects water drainage, the stability of land, agricultural soil erosion, and the accessibility and suitability of land for roads and other development. For example:

- Slopes under 1 percent do not drain well;
- Slopes under 4 percent seem flat to the human eye, and are usable for all kinds of activity and development;
- Most jurisdictions will not permit roads with slopes greater than 10 percent, though 8 percent or lower is preferred;
- Development on slopes greater than 10 percent becomes expensive because foundations and utility connections become complicated;
- Trails designed to be wheelchair accessible must not have slopes greater than 5 percent. Steeper sections are permitted if they are short and have a flat rest area at the top and bottom;
- The average person will be uncomfortable climbing slopes greater than 20 to 25 percent.

# SLOPE

- Greater than 25%
- 15 - 25 %
- 11 - 15 %
- 5 - 10 %
- 2 - 4 %
- 0 - 1 %

0 km 5 10 15 20 25



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## 2.4 Ecodistricts

The Nova Scotia Department of Natural Resources (DNR) has produced an ecological land classification analysis of the province. This approach uses factors like geology, soils, and climate to group areas into “ecodistricts”. The information provided by this analysis paints a high-level picture of the different environments that exist in Cumberland. The county is home to six different ecodistricts:

The **Cumberland Marshes Ecodistrict** is the smallest ecodistrict in Nova Scotia. It covers the low-lying terrain along the New Brunswick border. The climate here includes strong winds and cool temperatures. Over half of the ecodistrict is peat lands or bogs. The remaining lands are typically poorly-drained silty clay loams, resulting from the dyke system constructed by early Acadian settlers. There is very little forest cover in this district.

The **Northumberland Lowlands Ecodistrict** borders the Northumberland Strait. Elevations are low, and rarely exceed 50 metres. This district is the second driest in the province, after the Annapolis Valley. The geology in this district is sedimentary, such as sandstones and gypsum. This makes the district vulnerable to erosion and karst topography (sinkholes and caves). Soils are imperfectly drained. Coniferous softwood trees, such as black and red spruce, dominate the forests of this district.

The **Cumberland Hills Ecodistrict** covers the hills between the Northumberland Lowlands and the Cobequid Mountains. The climate is cooler and wetter than the lowlands. The geology of this district is sedimentary. Soils are typically coarse, sandy, and well-drained. Forests in this district are typically a mixture of tolerant hardwoods and softwoods. Some areas that were previously disturbed by fire are populated by stands of jack pine.

The **Chignecto Ridges Ecodistrict** derives its name from the ridges created by folded sandstones, siltstones, and shales. Elevations are low, and rarely exceed 120 metres. The underlying geology of this district is sedimentary, and includes coal seams and the famous Joggins fossils. Many areas of this district show exposed bedrock. Where soils are present, they are typically shallow and imperfectly-drained. Trees are a mix of softwoods and tolerant hardwoods, such as maple and birch. Areas that were previously disturbed by fire are populated by stands of jack pine.

The **Parrsboro Shore Ecodistrict** follows the north shore of the Minas Basin. The climate is cool and foggy. The topography of this district is varied due to its underlying geology, which varies between erodable sandstones and erosion-resistant basalt. This creates a series of steep ravines and hills mixed with low-lying, flat plains. Soils also vary, with finer, imperfectly-drained soils on the lowlands and sandy loams on the slopes. Forests are a mix of tolerant softwood and hardwood species.

The **Cobequid Hills Ecodistrict** covers the Cobequid Mountains. On an annual average, this district is relatively dry. However, it actually receives the most snow of any district on mainland Nova Scotia. The geology of this district is generally igneous or metamorphic and is resistant to erosion. Soils are typically shallow, gravelly, and well-drained. Portions of this district support pure stands of hardwood trees.

# ECODISTRICTS



25

Cumberland  
Marshes

Northumberland  
Lowlands

Cumberland  
Hills

Cobequid  
Hills

Chignecto  
Ridges

Cobequid  
Hills

Cumberland  
Hills

Parrsboro  
Shore

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## 2.5 Water Systems

Cumberland County can be divided into seven different primary watersheds; four of which empty into the Bay of Fundy/ Minas Basin and three that empty into the Northumberland Strait.

The **Missaguash Watershed** is a low lying marshland that makes up most of the Tantramar Marshlands. It empties slowly into the Bay of Fundy. It is about 4,000 hectares in size (within the county).

The **Kelley/Maccan/Hebert Watershed** occupies over a quarter of the entire county and empties into the Cumberland Basin before filtering into the Bay of Fundy. It is about 128,000 hectares in size and includes Kelley River, Maccan River, and River Hebert. It also includes several large and important lakes, such as Harrison Lake (near Maccan), Blair Lake (near Nappan), and Newville Lake (near Halfway River).

The **Parrsboro Watershed** empties into the Bay of Fundy and is about 86,000 hectares. It includes Apple River, Farrells River in Parrsboro, and Moose River.

The **Economy Watershed** only partially covers various areas of Cumberland County. The watershed empties into the Bay of Fundy and is approximately 78,000 hectares in size (total), however, only 12,000 hectares fall within Cumberland.

The **Tidnish/Shinimicas Watershed** is also a relatively low-lying watershed that empties into the Northumberland Strait. The watershed is about 48,000 hectares in size and includes Tidnish River and Shinimicas River. It also includes large lakes, such as Round Lake and Long Lake.

The **Philip/ Wallace Watershed** is the largest watershed in Cumberland at 148,000 hectares. The watershed empties into the Northumberland Strait and is drained by River Philip, Pugwash River and Wallace River. It also includes Big Lake and Lake Killarney,

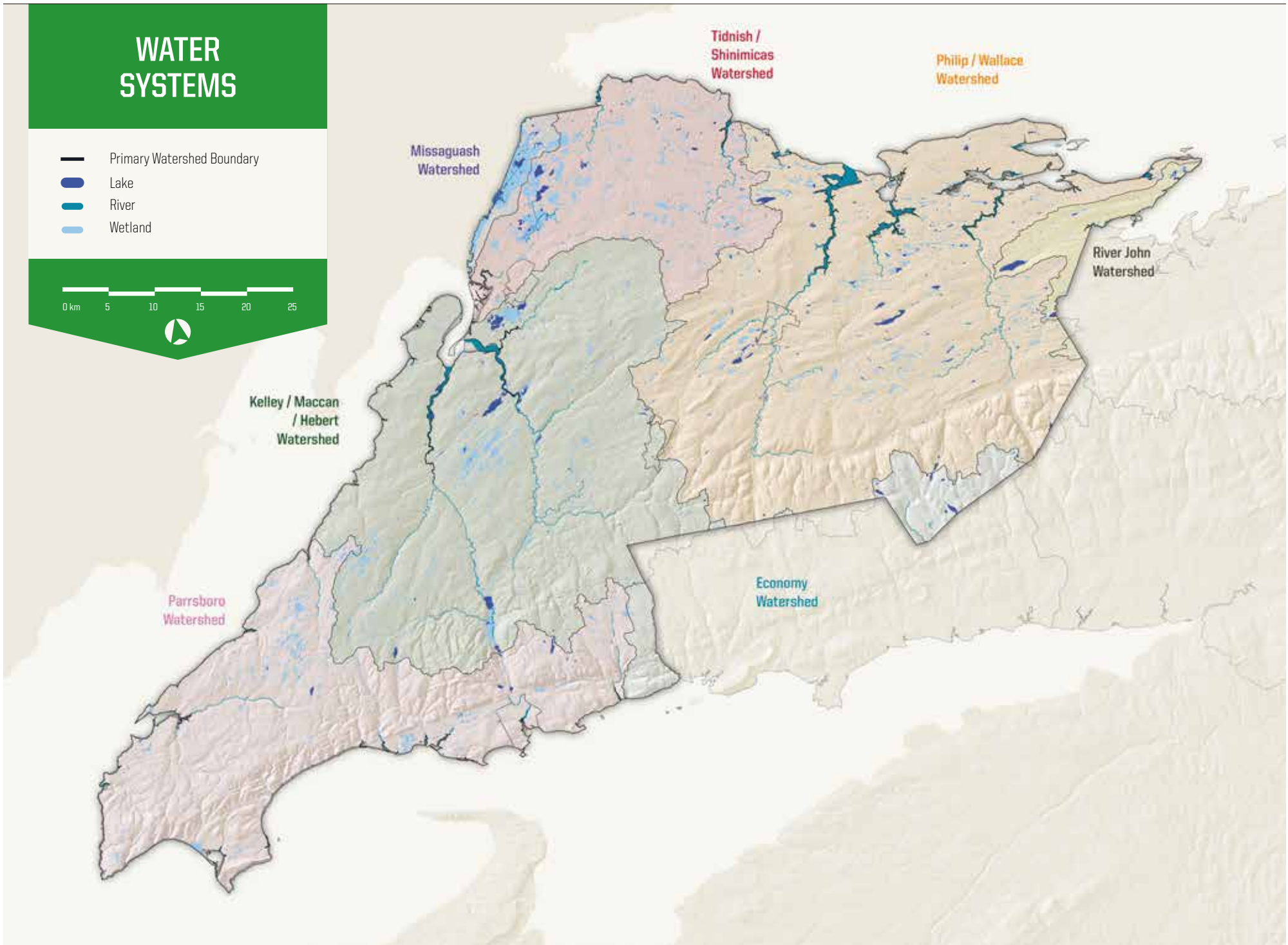
Finally, the **River John Watershed** is another large watershed that only partially covers Cumberland. It is almost 110,000 hectares in size; however, only 8,600 hectares are within Cumberland. The watershed empties into the Northumberland Strait and includes important lakes such as Angevine Lake and Mattatall Lake.

Water is a vital resource for any municipality. In Cumberland this is especially true, with an incredibly long coastline that borders both the Northumberland Strait and the Bay of Fundy. Its varied topography has created well drained areas in the Cobequid Mountains and low-lying areas along the Northumberland Strait. Indeed, almost 6 percent of Cumberland County is covered by water in some form or another. Most notably, Cumberland features almost 18,000 hectares of wetland areas (over 4 percent of the entire landmass).

# WATER SYSTEMS

- Primary Watershed Boundary
- Lake
- River
- Wetland

0 km 5 10 15 20 25



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## 2.6 Lake Water Quality

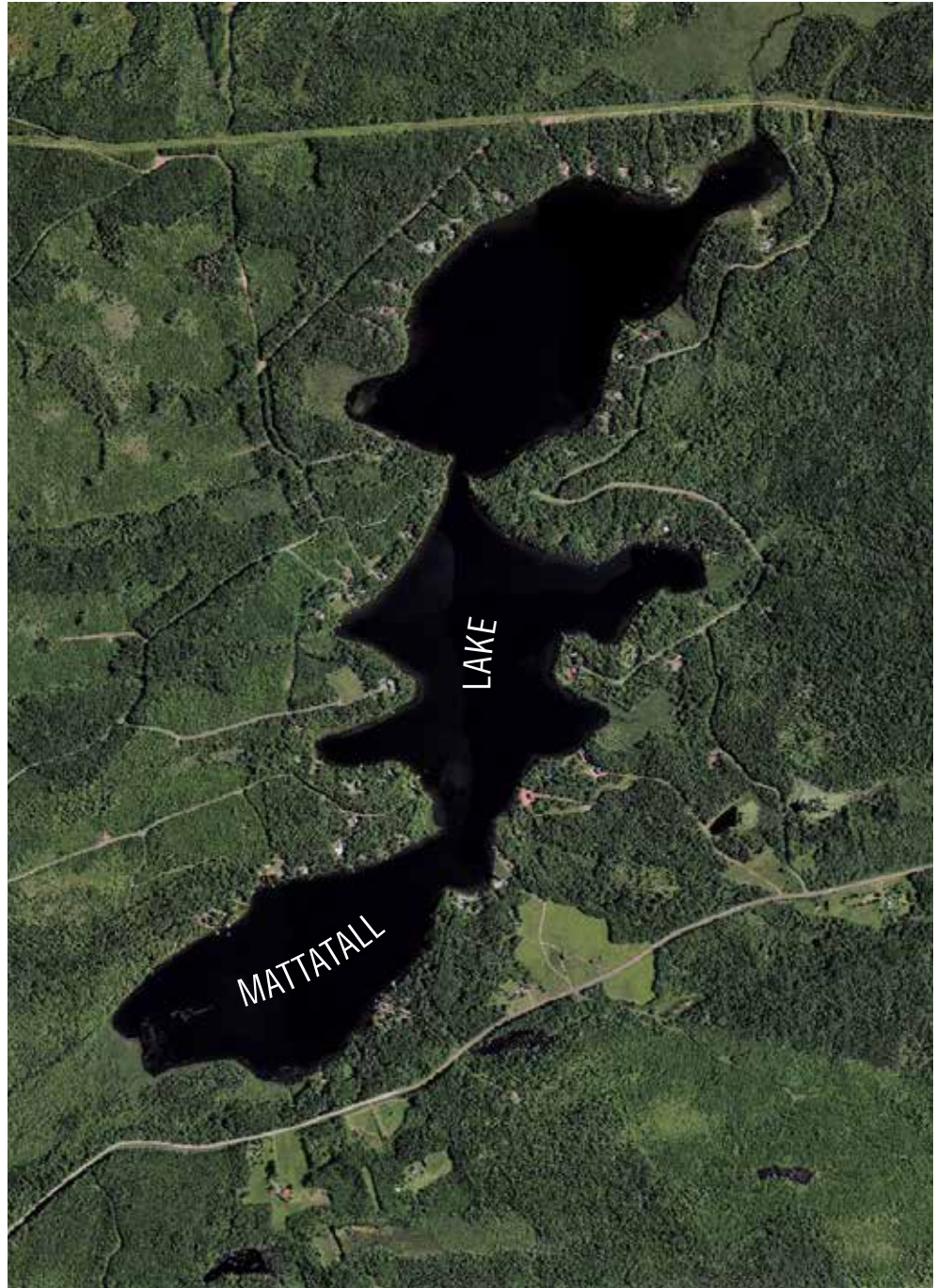
Cumberland County features at least 81 named lakes. All of them are likely affected to some degree by human activities, such as logging, agriculture, recreational and cottage use, industrial operations, and runoff from roads or other developed property. In some cases lakes have the natural buffering capacity to accommodate human activities with little change to water quality or the natural environment of the lake. In other cases the lake is especially sensitive (small, shallow, certain geologies, *etc.*) or the scale of human activity is so large that the lake water quality is impacted.

Changes to water quality can result from a variety of factors, such as pollution, higher or lower nutrient levels, higher or lower salinity (salt levels), warmer or cooler temperatures, higher or lower pH (acidity), more or less oxygen in the water, or the introduction of new plant and animal species. These changes can affect the clarity, smell, and taste of water; the amount of plant growth; the toxicity of water; algae growth; and the types of fish and other animals that can survive in that lake.

Sometimes changes to water quality can be seen as positive for one reason, but negative for others. For example, the accidental introduction of zebra mussels in lakes in Ontario has made the lakes much clearer, which could be positive for recreational water use. At the same time, the mussels can clog infrastructure and boats, and the changes to the water have killed off many fish species.

Cumberland has some history of lake water quality concerns, in particular in Blair Lake and Mattatal Lake. Blair Lake is located in Upper Nappan, adjacent to Highway 104. It is relatively shallow, with a maximum depth of 4.6 metres. The lake was studied in the 1980s, and then again by Nova Scotia Environment (NSE) in 2004. The NSE report finds that the lake is eutrophic (nutrient-rich). This is likely the natural state of the lake, but it may be worsening over time. The NSE data does show that salts have increased in the lake over time, a trend which is also indicated in anecdotal reports of well water quality in the immediate area.

Mattatall Lake is located east of Wentworth, on the border with Colchester County. Over the past decade, residents and cottage owners on the lake have noticed algae blooms. According to resident accounts, the blooms have increased in intensity over the years to the point that, in 2014, the bloom covered the whole lake from June until the lake froze over in January. Researchers at Dalhousie University are currently exploring possible causes for the blooms.



## 2.7 Coastal Risk Analysis

Cumberland County features over 850 kilometres of coastline with a number of coastal communities and their associated infrastructure. These coastal areas are subject to varying levels of coastal flooding from extreme water levels (EWLs) during storms, which has implications for which areas are safe for development, and which areas should be avoided. Worst-case flooding occurs when the storm surge occurs at the same time as high-tide, thus pushing water levels higher.

In addition to the effects on water levels from storms and tides, Nova Scotia is experiencing a relative rise in average sea levels. This is happening both because the physical landmass of Nova Scotia is slowly sinking, and because global water levels are getting higher as a result of climate change. Because human development and infrastructure often lasts for decades or longer, it is prudent to not just plan for coastal flooding under today's conditions, but also for future conditions that include the effects of relative sea level rise. As a result, planning for extreme water levels (EWL) considers the following:

$$EWL = storm\ surge + high\ tide + relative\ sea\ level\ rise$$

CBCL Limited, an engineering firm, has identified two distinct coastal areas in Cumberland when it comes to extreme water levels. These areas differ in the range of tides they experience, and in their exposure to storm surge. They are the Northumberland Coast and the Bay of Fundy. Table 1, below, shows estimates of extreme water levels (relative to chart datum) for these two areas at different intensities of storm (return period) and with intermediate sea level rise projections factored in for future years. The map on the facing page shows a calculation of areas that could be inundated by an extreme water level of 4.5 metres.

Table 1: Estimated Coastal Extreme Water Levels (Relative to Chart Datum) in Cumberland County

LOCATION	Return Period	Water Levels [m]			Total Extreme Water Levels [m] in the year...			
		High Tide	Storm Surge	+/-	2017	2025	2055	2100
Northumberland Coast	1	2	0.9	0.1	2.9	3.0	3.7	3.9
	10		1.1	0.1	3.1	3.2	3.9	4.1
	25		1.3	0.1	3.3	3.4	4.1	4.3
	50		1.4	0.1	3.4	3.5	4.2	4.4
	100		1.5	0.1	3.5	3.6	4.3	4.5
Bay of Fundy	1	13	0.5	0.2	13.5	13.6	14.3	14.6
	10		0.9	0.2	13.9	14.0	14.7	15.0
	25		0.9	0.2	13.9	14.0	14.7	15.0
	50		1.0	0.2	14.0	14.2	14.8	15.1
	100		1.1	0.2	14.1	14.3	14.9	15.2

# SEA LEVEL RISE & STORM SURGE (NORTHUMBERLAND COAST)

■ 4.5 metre Extreme Water Level

Map is for illustration only and should not be used for legal or decision-making purposes.



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## 2.8 River and Inland Flooding

Flooding is a natural part of a river's yearly cycle. This process has many benefits, such as recharging groundwater, depositing nutrient-rich soils, and providing spawning grounds for fish and other wildlife. Valuable agricultural land is often found in areas prone to flooding due to the fertile soils dumped by the flooding. However, the natural process of flooding can cause problems for human developments. Buildings and infrastructure that are built within floodplains can be damaged by floods. From a planning perspective, it is prudent to identify areas where flooding occurs, and avoid putting people and development in harm's way. The other reason to avoid development in flood areas is that things that reduce the ability of the land to absorb water, such as tree clearing and paving, can lead to increased flooding elsewhere.

Cumberland has many rivers and streams, as shown on Page 13. Given the number of rivers and streams in Cumberland, there is surprisingly little existing development along riverbanks. However, there are a few key communities, such as Oxford, Oxford Junction, Tidnish Bridge, Parrsboro, Maccan, and River Hebert, where development has occurred in close proximity to a river.

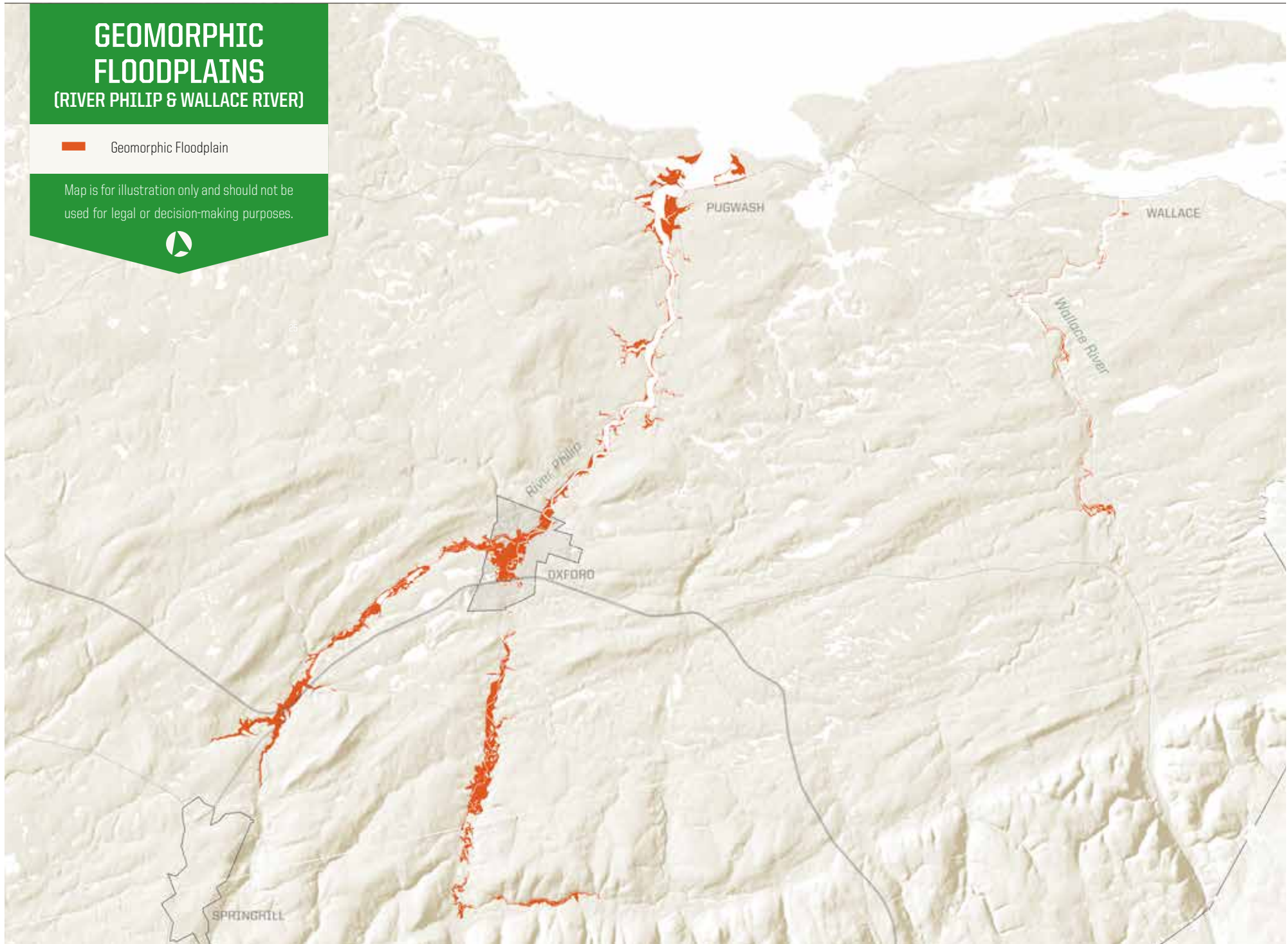
Tim Webster, of the Applied Geomatics Research Group (AGRG), conducted a high-level review of inland flooding in Cumberland as part of this analysis. His review notes that while there has been some river flow data collected in Cumberland in the past, much of this data was over too short of a time period to be used in flood modelling. The one real-time flow monitor currently in place in Cumberland is located at Kelley's River. Without sufficient river flow data it is very challenging to develop models for accurate floodplain delineation, such as those that would be used to define legal floodplains for flood insurance purposes (*e.g.* 1 in 100-year floodplain).

An alternative approach to floodplain delineation, described by Webster, is to determine the "geomorphic floodplain". Over years of flooding (and its associated erosion and deposition) a river will create a low-relief area adjacent to the river channel. This physical feature can be "seen" with high-resolution mapping techniques, such as lidar. This approach does not provide any indication of how often a location will flood, but it does identify areas where flooding has occurred in the past. The map on the facing page shows an example of geomorphic floodplains that have identified on the River Philip and Wallace River.

# GEOMORPHIC FLOODPLAINS (RIVER PHILIP & WALLACE RIVER)

Geomorphologic Floodplain

Map is for illustration only and should not be used for legal or decision-making purposes.



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## 2.9 Environment Summary

Cumberland's diverse natural environment is one of its defining features and most valuable assets. The varied geology and topography and many water bodies create distinct "ecodistricts" that support a variety of habitats, provide a wealth of natural resources, and present an abundance of scenic vistas. This diversity supports many different primary industries, such as agriculture and mining, as well as recreational and tourism opportunities.

At the same time, Cumberland's natural environment presents risks. Residents are accustomed to erosion and storm surge along the coast, particularly along the Northumberland Strait, as well as inland flooding from rivers. As climate change continues to occur, these events are expected to get stronger and more frequent. Planning policies and regulations should take a forward-looking view, and minimize the amount of development in areas that are currently at risk, or will become at risk in the future. In some areas, development has already occurred, and decisions will need to be made between hardening that development against impacts or abandoning certain developments and retreating to areas where the risk is lower.

In planning for the future it is also important to consider our impact on the environment. Two high-profile cases are Blair Lake and Mattatall Lake, where in recent years residents have raised concerns about worsening water quality. Planning policies and regulations should do what they can to regulate development in a manner that prevents similar situations on other water bodies, and perhaps even contributes to a betterment of water quality on those two lakes.



# 3 HISTORY & CULTURE



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### 3.1 A Brief History

The earliest known residents of the area we now call Cumberland were the Mi'Kmaq. The lands of Cumberland, along with adjacent lands in New Brunswick, are the traditional Mi'Kmaq district of Sikniqt, roughly translated as “drainage area”.

In 1605 the Acadians established the first European settlement in Nova Scotia at Port Royal (Annapolis Royal) in what is now Annapolis County. Over the following decades the Acadian presence in Nova Scotia expanded, and by 1672 the Acadians had settled the Tantramar area of Cumberland, which they named Beaubassin. The Acadians brought with them land-reclamation techniques, and created large areas of fertile land in Beaubassin by building a system of dykes to shut out the sea. In 1710, the British laid siege to Port Royal and were ultimately successful in its capture, leading to British primacy in the area. In 1750 the British established Fort Lawrence, and from there engaged in the Battle of Beauséjour and deportation of the Acadians in 1755.

With the 1800s came industrialization. Cumberland's abundant natural resources positioned the region to fuel this trend. Shipyards, mills, and factories sprung up to turn these resources into finished goods and ship them to the world. Stone from the Wallace quarries graced prominent buildings, such as Province House in Halifax. In the 1870s, coal mining began on an industrial scale in Springhill. The prosperity of the industrial age can still be seen in the grand Victorian and Edwardian homes of industrialists, standing in areas such as Amherst's Victoria Street and Main Street in Parrsboro.

The 20th century brought with it the two World Wars. The population of Cumberland County boomed in the post-war years. However, as manufacturing in Canada consolidated in the mid-1900s, this trend reversed and Cumberland entered a period of population decline that persists today. The construction of the Trans-Canada Highway, in the 1950s, changed transportation patterns through Cumberland County and drew most new development and investment to communities along its route. In 1957 the first Pugwash Conference was held at the Thinkers' Lodge in Pugwash, spawning a movement on international security and nuclear disarmament. The Pugwash Conferences were awarded the 1995 Nobel Peace Prize. In 1958, Springhill experienced the third major mine disaster in its history. The disaster killed 75 miners, and led to the closure of the mines.

Cumberland County was established in 1759 and incorporated in 1879. The Township of Parrsborough was established in 1786, with a smaller area incorporated as the Town of Parrsboro in 1889. Springhill was founded in 1790 and incorporated as a Town in 1889.

In the past few years, many incorporated communities in Nova Scotia have faced uncertainty over their long-term future. Aging infrastructure and declining tax revenues challenged the financial sustainability of these communities. Residents of these communities also recognized the values and cultures they share with their neighbours. As such, some Towns in Nova Scotia took the step of dissolving as incorporated governments and combined with the surrounding municipal government. This includes Springhill, which dissolved in April of 2015, and Parrsboro, which dissolved November of 2016.

Today, the residents of Cumberland County, including those in the former Towns, are working together towards a future that is economically, environmentally, demographically, and culturally sustainable.

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### 3.2 Mi'Kmaq

The lands of Cumberland, along with adjacent lands in New Brunswick, are the traditional Mi'Kmaq district of Sikniqt. The coast of the Bay of Fundy, in particular, plays a special role in Mi'Kmaq history and culture. Many of the features in and along the Bay of Fundy have their origins ascribed to Kluskap (Glooscap), the legendary cultural hero of the Mi'Kmaq people. Three stone columns standing on the shore of Cape Chignecto are said to be three sisters, turned to stone after playing a prank on Kluskap. Partridge Island, south of Parrsboro, was the mythic home of Kluskap's grandmother; twice a day as the tide comes in, air bubbles escaping from pores in basaltic rock give the appearance that the water is boiling in the "grandmother's cooking pot". Other areas, such as Advocate Harbour, Cape d'Or, and Isle Haute all figure in various Mi'Kmaq legends. These areas also played important day-to-day roles for the Mi'Kmaq. Partridge Island, for example, is an important source of the sacred gemstone, amethyst. Cape d'Or supplied hard, dense minerals, such as chert, that were essential for tool making.

Within the boundaries of Cumberland County is one Indian reserve, Franklin Manor 22. The 212.5 hectare reserve is located north of Parrsboro. The reserve is uninhabited and almost completely wooded. Administration of the reserve is split between Pictou Landing First Nation and Paq'tnkek First Nation.

Many locations in Cumberland County have been identified as Mi'Kmaq archaeological sites. However, the locations of such sites are considered secure data under the *Special Places Protection Act* and are not shared for public consumption.

# MI'KMAW PLACE NAMES



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### 3.3 Registered Heritage

The Municipality of Cumberland is rich with heritage. Some of this heritage is reflected in its buildings, some of which are formally registered as heritage properties. The Municipality of Cumberland is home to 7 properties registered on a federal level, 18 provincially-registered properties, and 38 properties registered on a municipal level. These properties cover a range of building types, including houses, churches, one-room school houses, lighthouses, forts, and more. The Joggins Fossil Cliffs are unique in that they are the one property in the Municipality of Cumberland where the registration is related to the natural landscape rather than a building or human cultural landscape. In this case the cliffs are registered provincially under the *Special Places Act*.

Municipal heritage protection in Nova Scotia is carried out under the framework of the *Heritage Properties Act*. Once a property has been registered as a heritage property it cannot be demolished or have its exterior substantially changed without approval from Council. Cumberland's Heritage Properties By-law establishes a Heritage Advisory Committee to advise Council on heritage matters, including new registrations and applications to demolish or alter an existing heritage property.

Heritage properties in Nova Scotia are eligible for grant programs from the Province. Currently, these programs are:

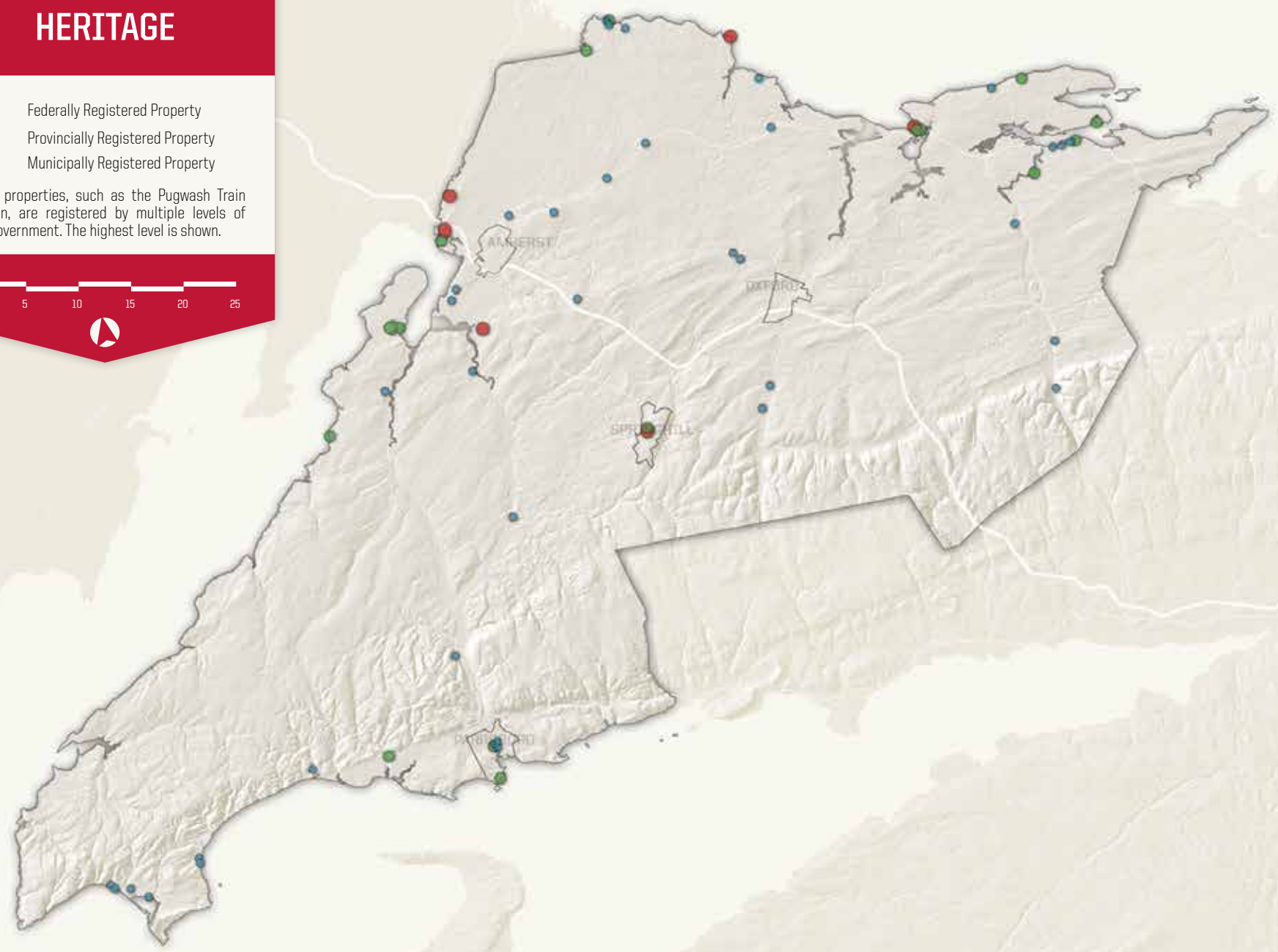
- Conservation Advice Grant. Covers 50 percent (up to \$3,000) of the cost of hiring a professional to advise on exterior conservation and structural integrity of registered heritage properties.
- Conservation Work Grant. Covers up to 50 percent of the cost of exterior conservation work for eligible heritage properties. Eligible properties are registered provincial heritage properties (up to \$10,000) and registered municipal heritage properties used either as a place of worship or for a registered not-for-profit association (up to \$7,500).
- Provincial Sales Tax Rebate. Refunds the provincial portion of sales tax on building materials used on the exterior of registered heritage buildings.

Some municipalities in Nova Scotia provide additional support through municipal heritage grants programs. However, Cumberland does not currently have such a program.

# REGISTERED HERITAGE

- Federally Registered Property
- Provincially Registered Property
- Municipally Registered Property

Some properties, such as the Pugwash Train Station, are registered by multiple levels of government. The highest level is shown.



### 3.4 Joggins Fossil Cliffs



The fossil cliffs of Joggins were inscribed as a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site in 2008. The UNESCO World Heritage program, “seeks to encourage the identification, preservation, and protection of cultural and natural history around the world considered to be of outstanding value to humanity.” As of 2016, there are only 1052 World Heritage Sites in the whole world; 18 of them are in Canada and 3 of them are in Nova Scotia (including Joggins).

Joggins’ UNESCO World Heritage designation was based on representing outstanding universal value as an example of a major stage in Earth’s history. Specifically, Joggins is the most complete known fossil record of the “Coal Age” from the carboniferous period of Earth’s history. The fossil record at Joggins includes forests and early reptiles and amphibians; some of the earliest animal life on land.

The area of Joggins designated as a World Heritage Site extends 500 metres seaward from the top of the cliffs. The current Joggins Secondary Municipal Planning Strategy includes protection in the form of a 20 metre buffer zone landward from the top of the cliffs. The current buffer zone controls grading and excavation, prohibits the construction of permanent or temporary structures, and prohibits the storage of scrap or salvage materials. These protections should be continued in order to remain consistent with the Joggins Fossil Cliff Management Plan.

# JOGGINS UNESCO HERITAGE SITE

- 500 metre UNESCO zone
- 20 metre MPS land buffer

0 km 1 2 3



# 4 SOCIOECONOMICS



## 4.1 Census Subdivisions

Statistics Canada divides the country into smaller areas of land for the purpose of reporting census information. For example, Nova Scotia is broken into many “census divisions”. One such division is the Cumberland Census Division, which covers all of Cumberland County (including Amherst and Oxford). The Cumberland Census Division is further broken down into “census subdivisions”, as shown below. Census subdivisions are broken down to even finer levels of detail; however, data for many census products are not often available to the public on this level.



## 4.2 Demographics

Like many counties in Nova Scotia, Cumberland County is facing demographic challenges. Over the past five census periods, the county as a whole has consistently lost population. Deaths have outpaced births, and the county has seen net out-migration to other areas of Nova Scotia, and to other Canadian provinces. On a positive note, the number of immigrants from other countries has outweighed emigration to other countries by around 50 people.

The one area of Cumberland County that saw population growth in the last census was the Town of Oxford, with 39 new residents. This is consistent with the trend in Nova Scotia of residents shifting to population centres (areas with more than 1,000 people). In 2006, Cumberland County's population was split almost exactly between rural areas and population centres; in 2011 this had shifted to 48.8 percent rural and 51.2 in population centres.

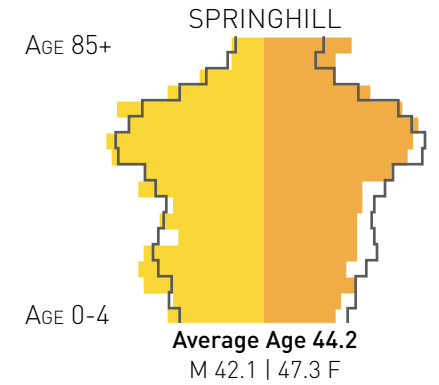
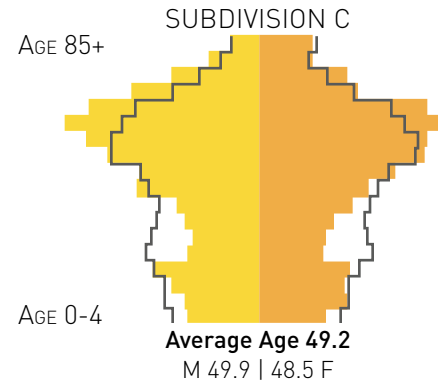
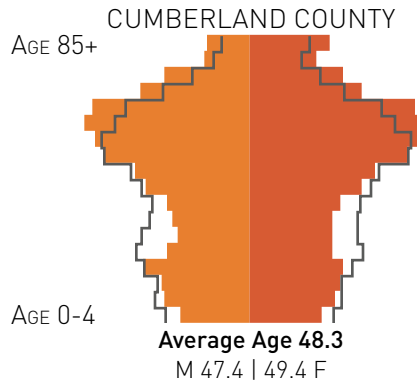
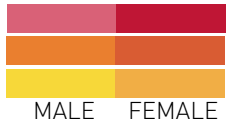
Of particular concern is the age distribution of Cumberland County's population. As the population pyramids to the right show, the county's population is heavily weighted to older generations. The average age in Cumberland County is almost five years older than in Nova Scotia as a whole. In all communities the generation aged 20 to 34 is under-represented compared to the rest of Nova Scotia, which itself is under-represented when compared to Canada as a whole. In many communities, the generation aged 0 to 9 is also under-represented. Unless trends are reversed, Cumberland County could face a significant population crash in the next 20 to 40 years.

Table 2: Population, 1996 to 2016 Censuses

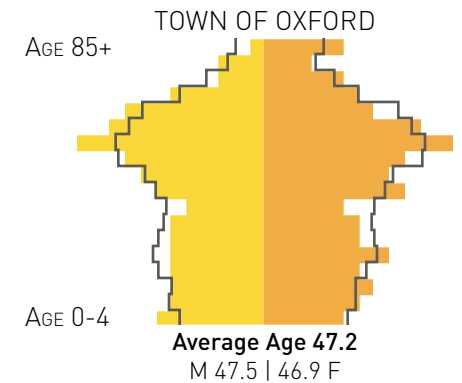
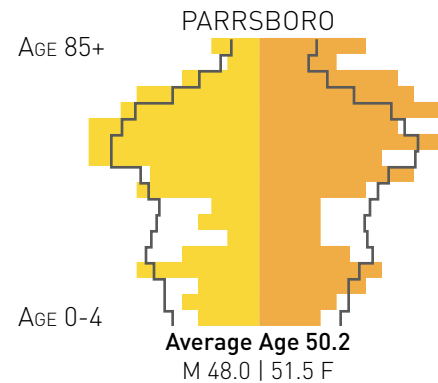
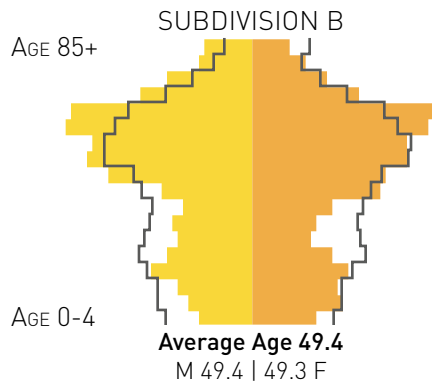
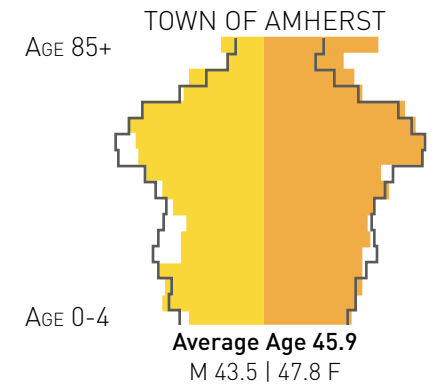
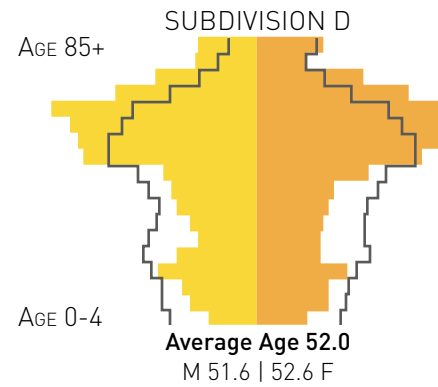
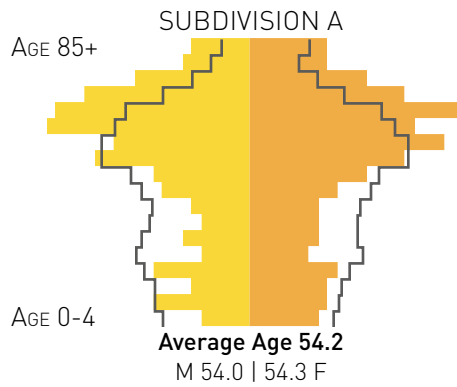
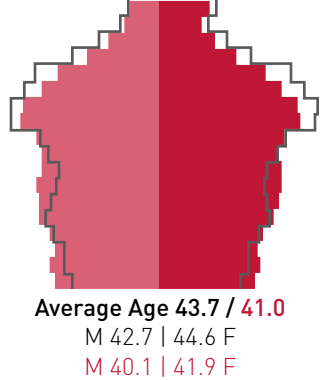
	1996	2001	2006	2011	2016	Population Trends Between Census Periods*
Nova Scotia	909,282	908,007	913,462	921,727	923,598	
Cumberland County	33,804	32,605	32,046	31,353	30,005	
Subdivision A	2,699	2,471	2,261	2,141	1,915	
Subdivision B	4,215	4,015	3,781	3,580	3,470	
Subdivision C	5,412	5,216	5,525	5,325	5,268	
Subdivision D	4,647	4,481	4,454	4,266	4,155	
Parrsboro	1,617	1,529	1,401	1,305	1,205	
Springhill	4,193	4,091	3,941	3,868	3,389	
Town of Amherst	9,669	9,470	9,505	9,717	9,413	
Town of Oxford	1,352	1,332	1,178	1,151	1,190	

\*The vertical scale is different for each geography; images should not be used to compare between geographies

**Fig. 1: Population Pyramids, 2016**  
Five-year age cohorts



NOVA SCOTIA (LINE) / CANADA

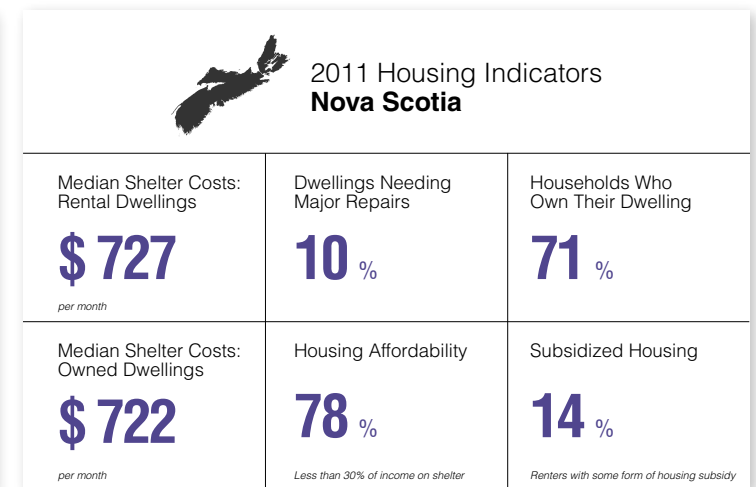
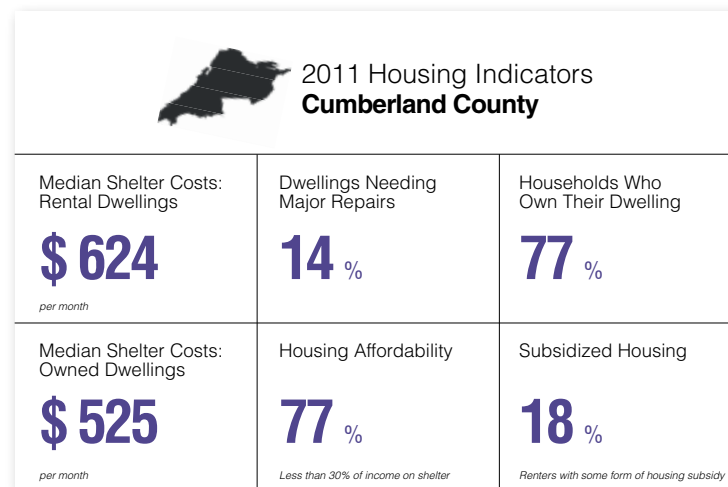


Source: Statistics Canada  
Census Community Profiles

### 4.3 Housing

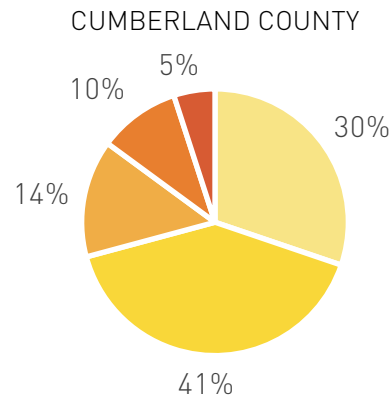
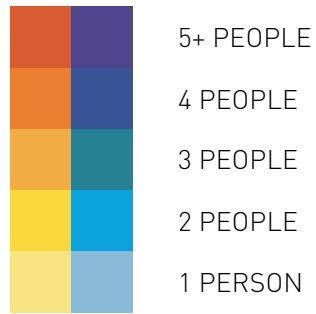
Household sizes vary to some degree throughout Cumberland County, with people who live alone tending to favour the more urban areas. However, the trend across the county is that household sizes are shrinking. From 1996 to 2006 the average household size in Cumberland County has shrunk from 2.5 people, to 2.1 people. Many of the urbanized areas in Cumberland feature large, older homes that could be converted to multiple units to accommodate the smaller household sizes of today.

Shelter costs include rent/mortgage, property taxes, condominium fees, and utilities. Cumberland County has lower median shelter costs than Nova Scotia as a whole, but is not actually more affordable when average local income levels are taken into consideration. The lower cost of shelter could be an attractive quality for people in other areas of Nova Scotia or Canada who are considering life in Cumberland. This is especially true for retirees with a fixed income or people working in industries where income levels stay similar from one jurisdiction to the next.

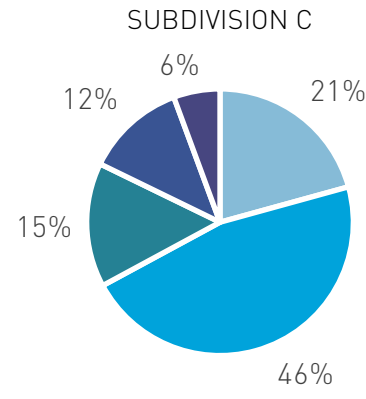


Source: Statistics Canada, National Household Survey

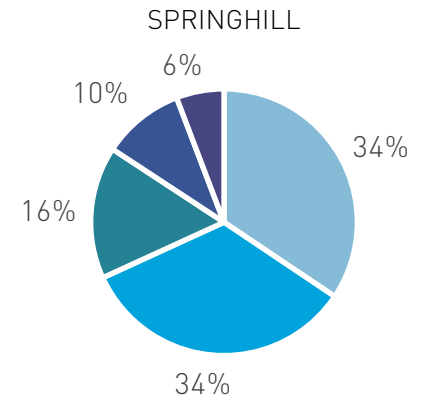
Fig. 2: Household Size, 2011



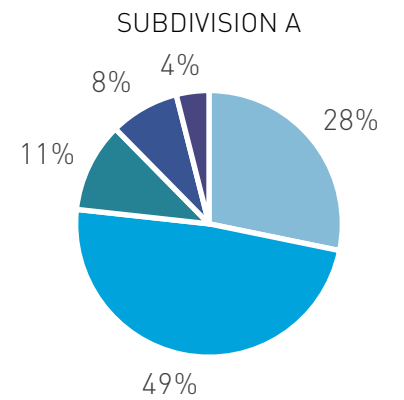
Average Persons per Household: 2.2



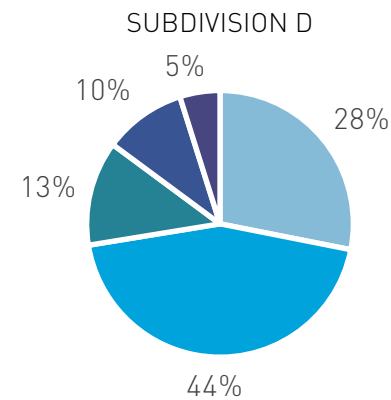
Average Persons per Household: 2.4



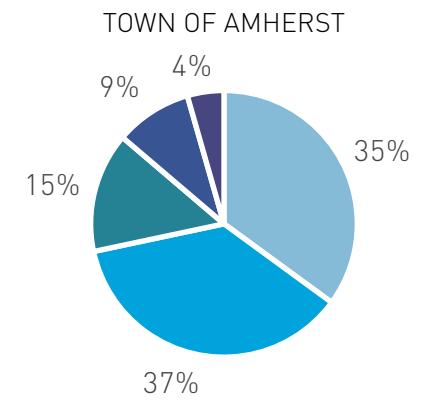
Average Persons per Household: 2.2



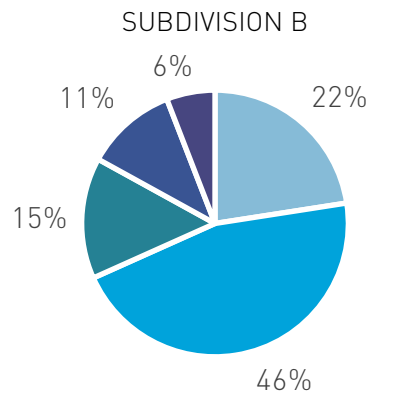
Average Persons per Household: 2.1



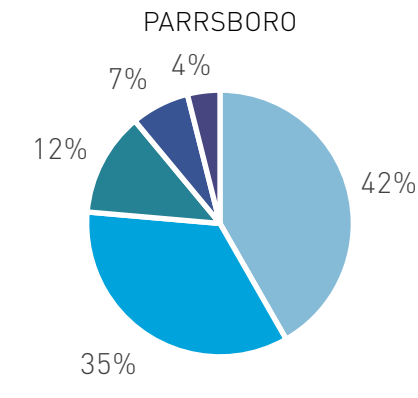
Average Persons per Household: 2.2



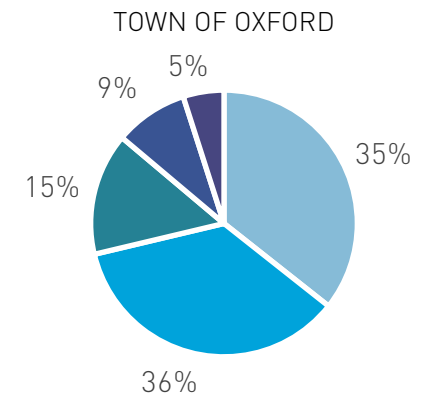
Average Persons per Household: 2.1



Average Persons per Household: 2.3



Average Persons per Household: 2.0



Average Persons per Household: 2.1

Source: Statistics Canada  
Census Community Profiles

The existing housing stock in Cumberland County is primarily single-detached dwellings, especially in the rural areas. People looking for different housing options will currently find some degree of success in Oxford, Springhill, and Parrsboro. Amherst stands alone in its diversity of housing options. Outside of these areas, apartments, semis, and row houses make up a very small proportion of the available dwellings. Apartment buildings in Cumberland County are generally smaller in size, with no apartment buildings over five storeys in height.

With the aging population and smaller household sizes there may be an imbalance in the available housing stock and the types of housing residents desire. For example, in Parrsboro, there are 265 single-person households, but only 55 apartment units. Many people living alone do want a detached home; however, those looking for a smaller, more manageable apartment do not necessarily have access to that option.

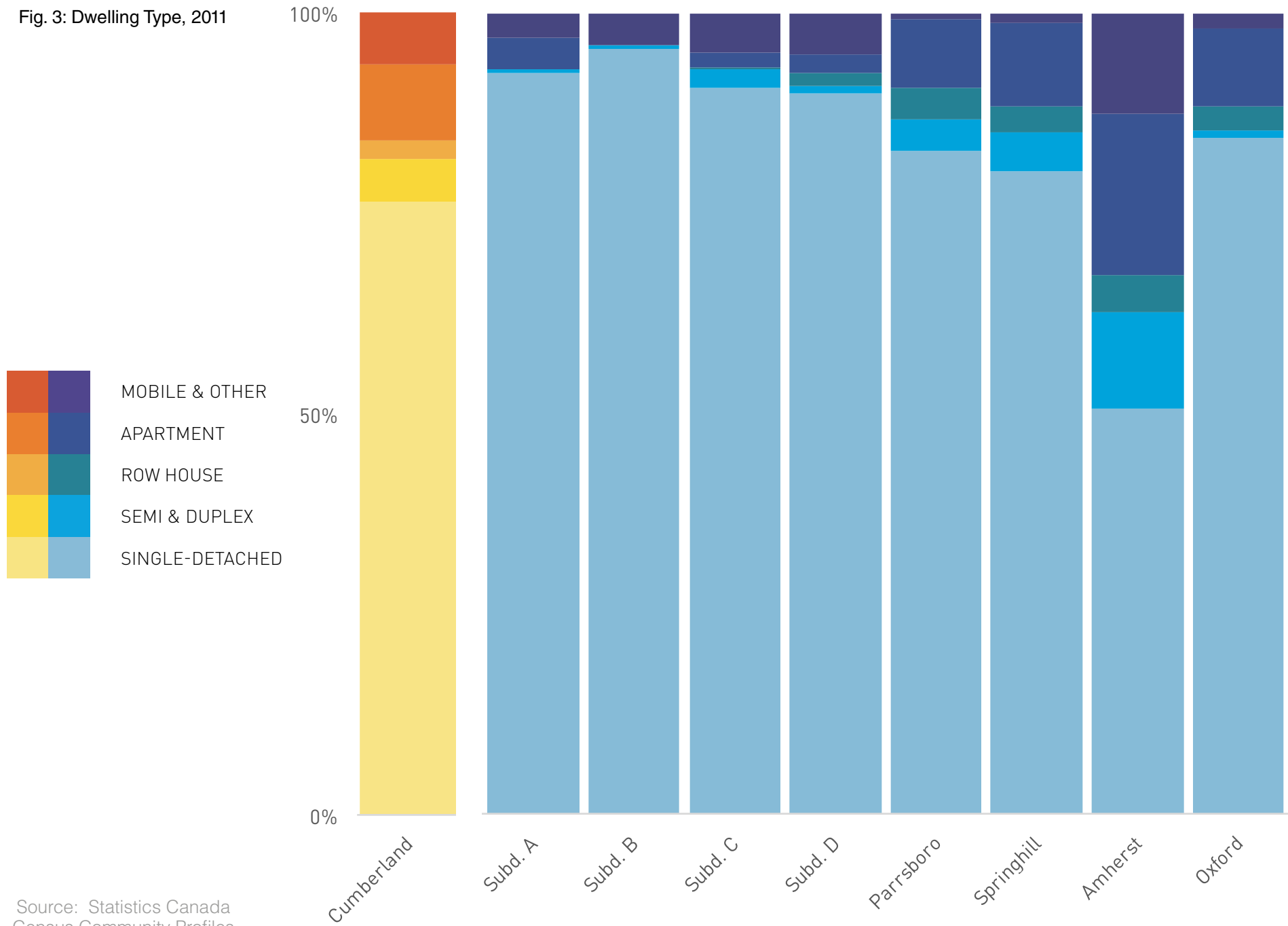
Compared to Nova Scotia, Cumberland County has a lower proportion of dwellings occupied by usual residents, particularly in Subdivisions C and D. This likely represents the number of holiday homes in these areas—especially along the shore—and underscores the importance of second homes to Cumberland’s tax base.

Table 3: Dwelling Counts, 2016

	Dwellings Occupied by Usual Residents*	Total Private Dwellings*	% Usual Residents
Nova Scotia	401,990	458,568	88%
Cumberland County	13,614	18,445	74%
Subdivision A	906	1,389	65%
Subdivision B	1,524	1,876	81%
Subdivision C	2,321	4,003	58%
Subdivision D	1,861	3,380	55%
Parrsboro	609	773	79%
Springhill	1,493	1,682	89%
Town of Amherst	4,372	4,745	92%
Town of Oxford	528	597	88%

\*These counts are of winterized, private dwellings (*i.e.* not collective dwellings). The difference between the two columns is that the second includes unoccupied dwellings and dwellings occupied by temporary residents (*e.g.* second homes).

Fig. 3: Dwelling Type, 2011



Source: Statistics Canada  
Census Community Profiles



#### 4.4 Economy & Labour

Compared to Nova Scotia as a whole, Cumberland faces some economic challenges. In particular, Cumberland has a low workforce participation rate. This figure measures the percentage of people over the age of 15 who are in the workforce, whether they are employed or unemployed. This may be reflective of the high proportion of senior citizens in Cumberland.

Those who do participate in the workforce in Cumberland also face higher unemployment than the Nova Scotia average, though today (in 2017) the unemployment rate in Cumberland is likely lower than 2011 data shows. Median household incomes in Cumberland are lower than the Nova Scotia average; however, this may be somewhat offset by the lower cost of shelter in Cumberland.

The chart on the following page illustrates employment numbers and the contribution to provincial GDP for different industries in Cumberland. The number of jobs an industry provides does not always correlate with how that industry benefits the provincial economy. For example, mining, quarrying, and oil and gas is Cumberland's fourth largest industry in terms of the provincial economy, but is near to the bottom in terms of providing employment. Manufacturing is particularly important to Cumberland County; compared to the rest of Nova Scotia, Cumberland has double the proportion of manufacturing jobs.

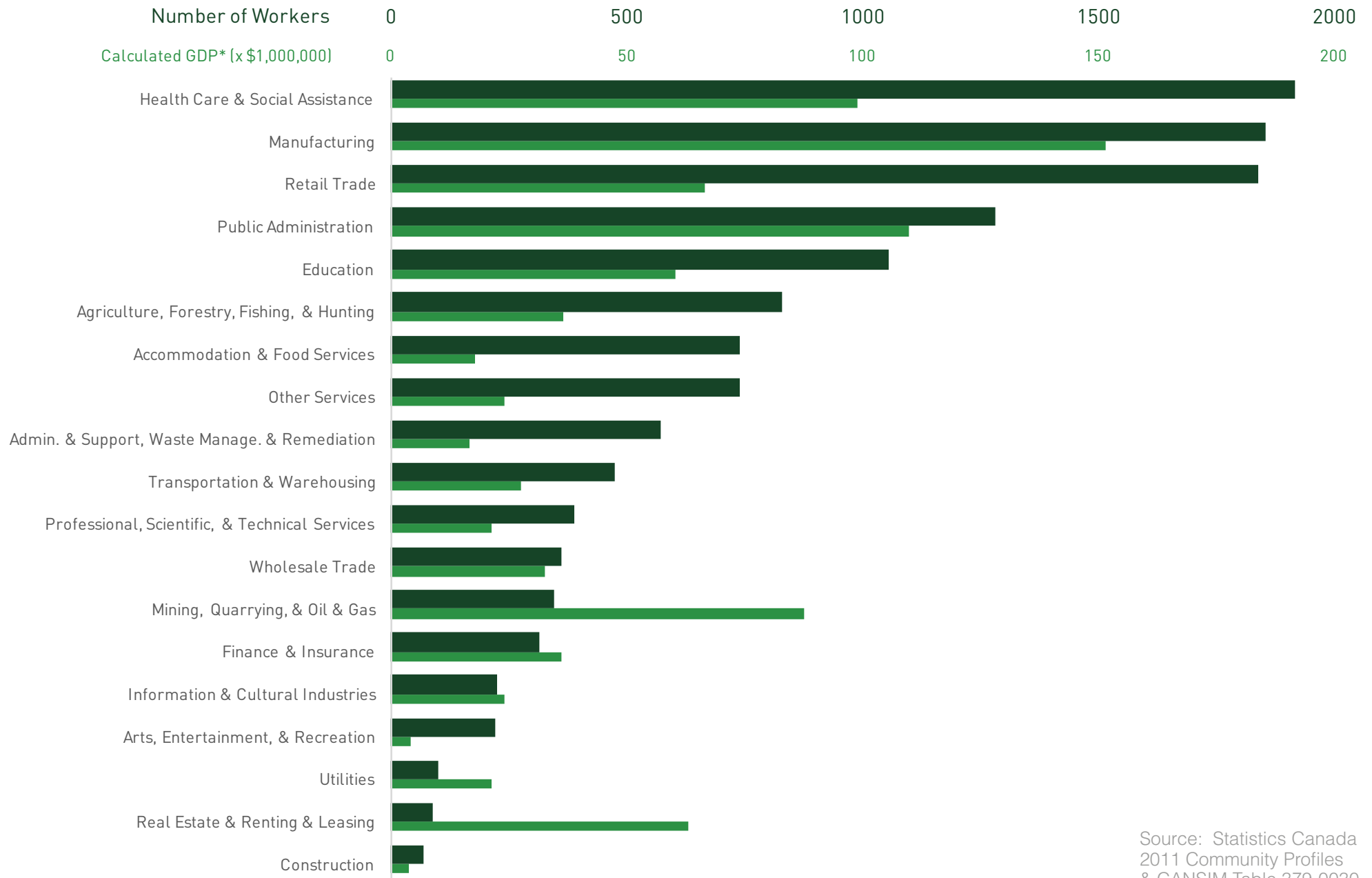
Cumberland is home to a handful of large (100+ employees) employers, such as the hospitals, Oxford Frozen Foods, and Ropak in Springhill. However, the very large majority of business establishments in Cumberland County are small businesses; of the 1640 establishments with a known number of employees, 1604 of them (98 percent) have fewer than 50 employees. It will be important for the new MPS and LUB to support these small businesses.

 <b>2011 Economic Indicators Cumberland County</b>			 <b>2011 Economic Indicators Nova Scotia</b>		
Median Total Household Income <b>\$43,385</b> <small>per year</small>	Workforce Participation <b>55.1 %</b> <small>population aged 15+ in workforce</small>	Unemployment <b>11.4 %</b>	Median Total Household Income <b>\$53,606</b> <small>per year</small>	Workforce Participation <b>63.1 %</b> <small>population aged 15+ in workforce</small>	Unemployment <b>10.0 %</b>
Self-employment <b>7.3 %</b>	Work from Home <b>6.3 %</b>	No Fixed Workplace <b>8.9 %</b>	Self-employment <b>8.5 %</b>	Work from Home <b>5.9 %</b>	No Fixed Workplace <b>12.2 %</b>

Source: Statistics Canada, National Household Survey

**Fig. 4: Employment & GDP by Industry**  
Cumberland County

\* GDP data are only available on a provincial scale. The chart values are calculated by using the number of workers to scale Nova Scotia GDP to Cumberland. This methodology depends on the assumption that the GDP produced per worker in Cumberland is the same as the Nova Scotia average. As such, these data should be viewed with caution.



Source: Statistics Canada  
2011 Community Profiles  
& CANSIM Table 379-0030

Cumberland County is one of the major agricultural regions in Nova Scotia, with 18 percent of the total farm area (the highest in the province) and 7 percent of the province's gross farm receipts (by dollar value) in 2011. Cumberland is second only to Kings County in terms of the number of farms.

Census Subdivision B is the heart of Cumberland agriculture, both in terms of land area and dollar value, but all areas of Cumberland engage in some degree of agricultural activity.

In recent years the number of small farms (in both area and dollar value) in Cumberland has been increasing, along with a minor decline in farms on the larger end of the scale. The types of farms in Cumberland have also been shifting. With the closure of local abattoirs and a shift to centralized animal processing, much of Nova Scotia has seen a decline in meat production; Cumberland is no exception. While 'Other animal production' has increased since 2001, this has been mainly in the form of horse stables. The large majority of farms in the category of 'Fruit and Tree Nut Farming' are growing blueberries.

Table 4: Farms by Type in Cumberland County

	2001	2006	2011	2016	Change 2001 to 2016	
Cattle Ranching and Farming	127	110	59	76	-	+ 
Hog and Pig Farming	6	5	2	3	-	+ 
Poultry and Egg Production	1	6	3	6	-	+ 
Sheep and Goat Farming	8	7	11	4	-	+ 
Other Animal Production	20	38	42	45	-	+ 
Oilseed and Grain Farming	2	1	0	2	-	+
Vegetable and Melon Farming	8	7	7	9	-	+
Fruit and Tree Nut Farming	278	319	328	299	-	+ 
Greenhouse, Nursery, and Floriculture	10	14	12	11	-	+
Other Crop Farming	79	46	98	79	-	+

Source: Statistics Canada, Census of Agriculture

Fig. 5: Farms by Total Size  
Cumberland County

Source: Statistics Canada  
Census of Agriculture

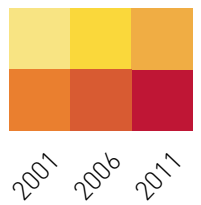
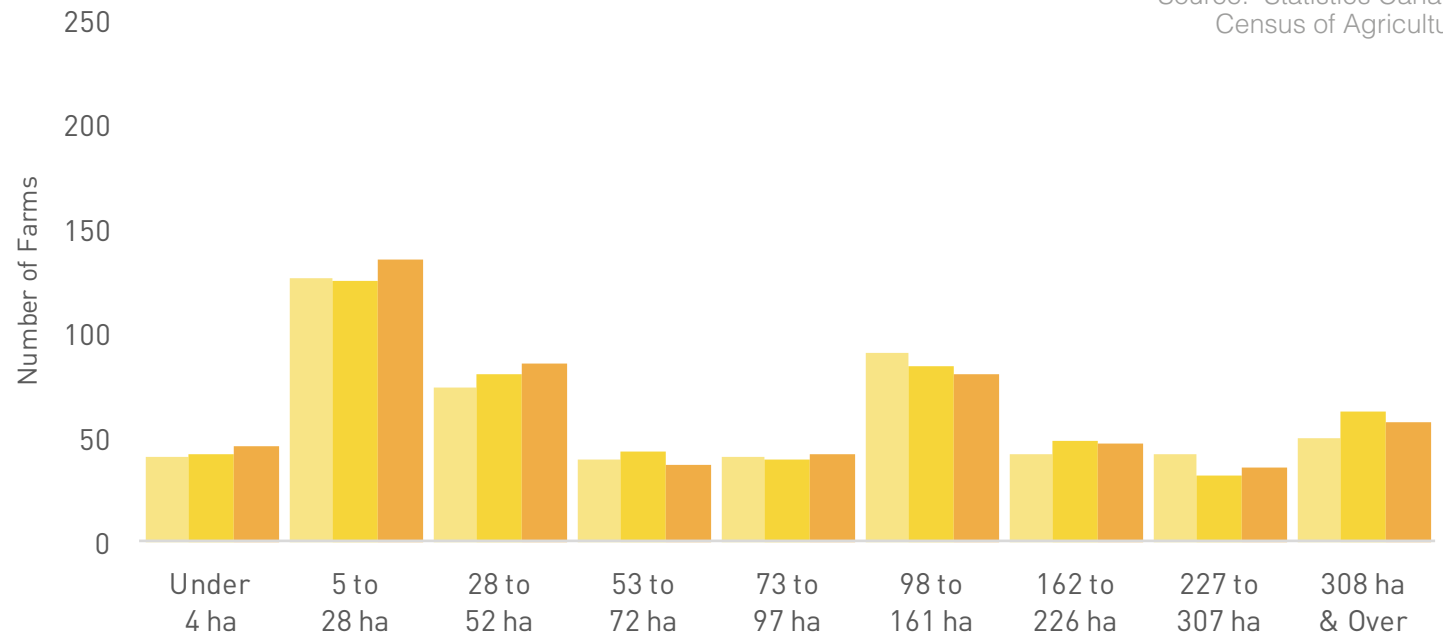
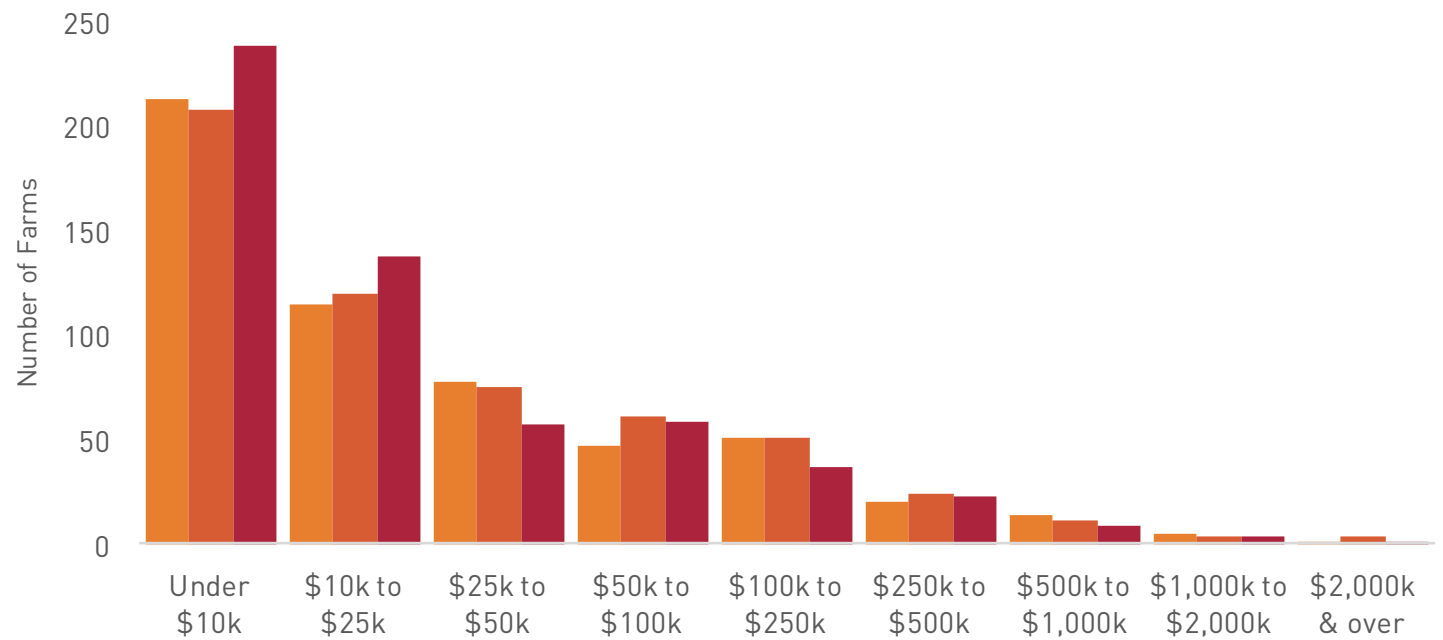


Fig. 6: Farms by Gross Receipts  
Cumberland County



## 4.5 Health & Wellness

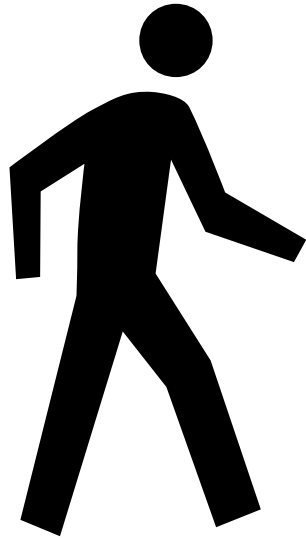
The Canadian Community Health Survey gives an indication of health across Canada. It relies on self-reported data—as opposed to medical records—so should be viewed with some caution; however, it provides a general comparison among communities.

This survey suggests that Cumberland County is facing challenges in relation to health. In fact, of all health regions in Nova Scotia, Cumberland had the lowest perceived overall health, and was second lowest for perceived mental health. The factors that shape how we perceive our personal health are diverse and complex, and many are beyond the scope of what a municipal plan can achieve.

However, we do know that the way we design our communities does have some impact on health. Communities where homes are close to jobs and services make it easier to walk or cycle instead of drive. Access to sidewalks, trails, and open spaces also provides opportunities for physical activity. Easy access to community gathering spaces, such as parks, farmers' markets, and community halls, helps to reduce feelings of isolation that can impact our quality of mental health. The quality of housing, and access to meaningful employment are other health factors that a municipal plan can help shape.

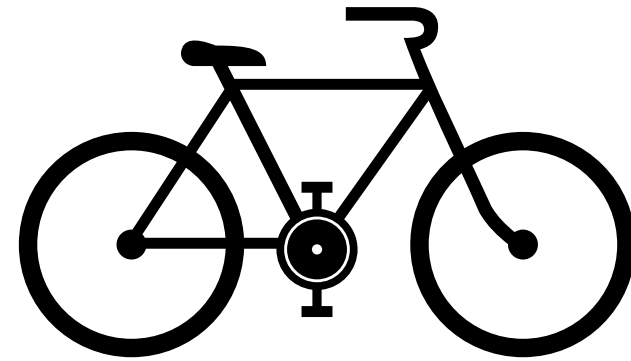


Source: Statistics Canada, Canadian Community Health Survey



**7%**

of commuters in  
Cumberland County  
walk to work



**0.25%**

of commuters in  
Cumberland County  
cycle to work

Source: Statistics Canada, 2011 National Household Survey

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## 4.6 Socioeconomic Summary

The number one challenge for planning in Cumberland is demographics. The population in Cumberland is in a long-term trend of decline, especially in the rural areas. In the next 20 to 40 years the generation of residents currently aged 50+ will grow old and die. This generation is a large segment of Cumberland's population; unless retention, in-migration, and births increase, Cumberland's population will shrink even faster than it has in recent history.

The trend of aging and decline has implications in terms of development. A shrinking population means that Cumberland likely has enough housing units to accommodate its population for the foreseeable future. However, with an aging population, the *type* and *location* of housing in Cumberland may not match up well with what residents want and need. Planning policies that enable smaller housing units, closer to services, should be considered. Without large growth in population, Cumberland is unlikely to see development in the form of new, large subdivisions. Instead, development will likely follow recent patterns of a few new units per year in existing communities.

How the plan responds to demographic trends can be flexible and will need to vary from area to area in a community as large as Cumberland. In some areas of Cumberland decline is likely inevitable. The sensible approach in these situations is to manage this decline gracefully, and to focus infrastructure and services on providing a dignified lifestyle for remaining residents.

Other areas of Cumberland have natural advantages that, if promoted and encouraged, could help reverse the population trend. Planning policies that encourage and support home businesses and small businesses can help reinforce the core of Cumberland's economy and provide an alternative to leaving for work elsewhere. Guiding new development to communities with existing infrastructure and services can create a positive loop where new services become viable, which in turn draws more residents. Protecting and promoting Cumberland's agricultural lands and industry can help support existing workers, but also capitalize on potential residents who are interested in hobby farming, homesteading and, "getting back to the land."



# 5 LAND USE



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## 5.1 Introduction

Cumberland County has an area of 4,271 square kilometres, the second largest county in Nova Scotia. This land base supports a wide range of uses, including human settlement, forestry, power generation, agriculture, mining, recreation, and wild or semi-wild areas. The maps on the following pages give a high-level idea of how land in Cumberland is used. These existing land use patterns will help inform how planning policies and regulations are used to guide future land use patterns.

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## 5.2 Residential Settlement

Residential dwellings are relatively dispersed throughout Cumberland County. About half of residents live in the various towns and villages, including Amherst, Springhill, Oxford, Parrsboro and Pugwash. Smaller concentrations of homes can also be found in Tidnish, Joggins, River Hebert, Advocate Harbour, and Wallace.

The remaining rural residences are distributed along transportation corridors and both coastlines.

There is a high concentration of seasonal residences along Highway 366 and the Northumberland Strait. In particular, there are large clusters of cottages and cabins in East Linden and the Heather Beach area. There are also several seasonal residences in the Wentworth Valley, Sutherland Lake (on the Colchester border near Londonderry) and along the Minas Basin/Bay of Fundy coastline.

# POPULATION DISTRIBUTION

 Residential Property

0 km 5 10 15 20 25



# SEASONAL RESIDENCES

Seasonal Residences



---

### 5.3 Agriculture

Agricultural land is land devoted to the rearing of livestock and production of crops to produce food for humans. Cumberland is home to a variety of agricultural activities, from fruit farming, tree nut farming, cattle ranching, and animal production.

Cumberland has the largest amount of arable land of any county in Nova Scotia. Canada Lands Inventory (CLI) agriculture capability maps shows the potential of a specific area for agricultural activities, indicating the classes according to the Soil Capability Classification of Agriculture. Class 2 soils have moderate limitations that restrict the range of crops or require moderate conservation practices; these are the best soils available in Nova Scotia. Class 3 soils have moderately severe limitations that restrict the range of crops or require special conservation practices. Class 4 soils have severe limitations that restrict the range of crops or require special conservation practices. Generally, agriculture is not viable on soils in Classes 5-7.

Land most suitable for agricultural production (Classes 2, 3 and 4) cover over half of Cumberland, or 55 percent of the entire municipality. In fact, Cumberland has 30 percent of the province's Class 2 soils, 11 percent of Class 3 and 18 percent of Class 4.

Despite having over 235,000 hectares of arable land, it is estimated that only about 40,000 hectares are actively farmed. These estimates are based on air photo interpretation in 2004. These 40,000 hectares of farmland are about 9 percent of the entire municipal land area. The map to the right shows where existing agricultural farmland is relative to arable land in Cumberland.

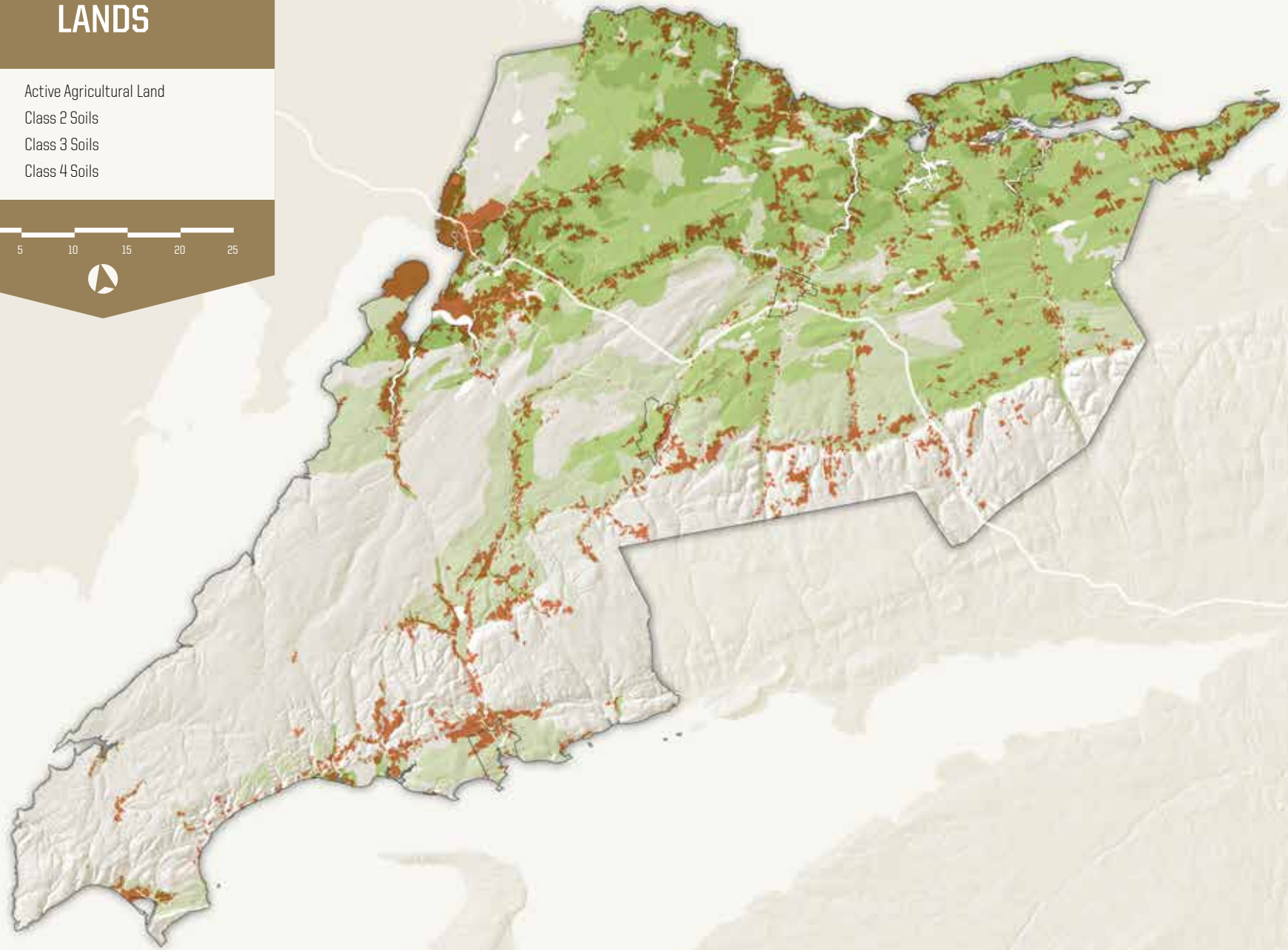
About 2 percent of Cumberland's good agricultural soils are under urban development; the second lowest of any county in Nova Scotia. The provincial average is 5.4 percent.

In 2010, Cumberland farms reported a total of approximately \$40.9 million in farm receipts which accounted for 6.88 percent of all farm receipts reported in Nova Scotia. In the same year, farms in Cumberland reported a total business operating expense of approximately \$38.2 million.

# AGRICULTURAL LANDS

- Active Agricultural Land
- Class 2 Soils
- Class 3 Soils
- Class 4 Soils

0 km 5 10 15 20 25



## 5.4 Protected Areas

Over 62,000 hectares of land in Cumberland are protected, or are pending protection - almost 13 percent of the municipality. These protected areas include wilderness areas, nature reserves, national wildlife areas, and land trusts or conservation easements. Each of these designations has varying levels of restrictions and land uses:

**Wilderness areas** are provincially-significant protected areas, which are designated under Nova Scotia's *Wilderness Areas Protection Act*. Wilderness areas protect typical examples of Nova Scotia's natural landscapes, our native biological diversity, and outstanding natural features. They are used for scientific research, education and a variety of recreation and nature-tourism related activities such as hiking, canoeing, sea kayaking, sport fishing and hunting.

**Nature reserves** are areas selected to preserve and protect, in perpetuity, special natural ecosystems, plant and animal species, features, and natural processes. Scientific research and education are the primary uses of nature reserves and recreation is generally restricted. Birding, canoeing, hiking, nature photography, and other types of non-consumptive, low-impact activities are generally permitted as long as natural features and species are not disturbed.

**National Wildlife Areas** are nationally protected areas created and managed for the purposes of wildlife conservation, research, and interpretation.

Finally, **land trusts and conservation easements** are privately owned lands that, in cooperation with the Province, have become protected at the request of the owner. Quite often, these are lands that have been acquired by the Nature Conservancy of Canada, the Nova Scotia Nature Trust, or other environmental organizations.

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### Wilderness Areas:



#### Raven Head Wilderness Area (5,655.42 ha)

- protects 44 km of undeveloped coast between Apple Head and Two Rivers;
- features fossil-bearing cliffs, sheltered coves, salt marshes and coastal forest;
- habitat for the endangered mainland moose and other sensitive species; and
- opportunities for hiking, camping and hunting, and geological research / interpretation with the Joggins Fossil Institute.



#### Kelley River Wilderness Area (21,012.16 ha)

- straddles Kelley River and Atkinson Brook;
- one of the largest wilderness areas in Nova Scotia;
- features mature forests that are home to several species at risk;
- opportunities for canoeing, fishing, camping, and hiking;
- hunting is permitted, except it is restricted to only long-bow hunting where the wilderness area overlaps with Chignecto Game Sanctuary.



**Economy River Wilderness Area (682.59 ha existing + 2,107.07 ha pending)**

- located in the heart of the Cobequid Mountains;
- 682.59 hectares of the area is within the Municipality of Cumberland, however, there are plans to add an additional 2,107.07 hectares in the near future;
- home to sensitive lichens and at-risk-species, including the moose and fisher;
- opportunities for camping and hiking along the Kenomee Canyon Trail.



**Portapique River Wilderness Area (2,060.34 ha existing + 974.86 ha pending)**

- located along the narrow canyon of the Portapique River and its tributaries;
- features exposed granite bedrock and cool, moist ravines that are home to old-growth hemlock;
- Portapique River is home to the rare blacknose dace and Atlantic salmon.



**Chignecto Isthmus Wilderness Area (963.27 ha existing + 6,877.83 ha pending)**

- located along a land bridge, which is Nova Scotia's most important ecological connection to the rest of the continent;
- features bogs, fens, and upland coniferous and mixed-wood forests;
- plans are in progress to add almost 7,000 more hectares of land to the area.



**Chase Lake Wilderness Area (876.23 ha pending)**

- mixed mature forests with hardwood, spruce and fir near Oxford;
- home to a great blue heron nesting colony;
- legal protection subject to addressing petroleum exploration rights.



**Douglas Meadow Brook Wilderness Area (598.61 ha pending)**

- features rare tracts of undisturbed forest, including hemlock and black ash;
- habitat for provincially endangered mainland moose;
- opportunities for hiking and other trail development;
- legal protection subject to addressing petroleum exploration rights.



**Wentworth Valley Wilderness Area (1,898.69 ha pending)**

- large undisturbed forested area dominated by mature-old hardwood located in the Wentworth Valley;
- habitat for provincially endangered mainland moose;
- popular destination for cross country skiing and hiking via Ski Wentworth;
- legal protection subject to addressing mineral exploration rights.

**Polly Brook Wilderness Area (1,196.27 ha)**

- located near Springill;
- designated at the end of 2015.

## Nature Reserves:



### Fossil Coast Nature Reserve (277.33 ha)

- overlaps with part of the Joggins Fossil Cliffs UNESCO World Heritage Site;
- extends protection landward along 8 km of coastal cliffs, near Boss Point;
- features a mix of coastal forest types and extensive mud flats that are shaped by the high Fundy tides;
- opportunities for hiking and geological research / interpretation.



### Diligent River Nature Reserve (112.39 ha)

- protects a biologically productive site, with mature conifer forest and about 1.5 km of shoreline along the tidal portion of Diligent River;
- includes expansive estuarine flats and salt marsh;
- provides important habitat for shorebirds.
- opportunities for coastal walking, sea kayaking, and bird watching.



### Slade Lake Brook Nature Reserve (24.62 ha pending)

- a small ecological “hot spot” outside of Oxford;
- consists of a small forest patch and karst features such as sink holes and vernal pools;
- home to several rare plant species and is a refuge for eastern white cedar, a listed species-at-risk in Nova Scotia.



### Angevine Lake Nature Reserve (270.78 ha)

- an ecological hot spot in the Northumberland Strait Plain natural landscape.
- provides habitat for many rare plant species, including round-lobed hepatica and endangered ram's head lady's slipper.
- includes about 1,200 metres of lakeshore on Angevine Lake, among the longest stretches of protected lakefront in this part of Nova Scotia.

### Harrison Woods Nature Reserve (93.97 ha)

- located near the confluence of Maccan River and River Herbert;
- protects a remnant patch of intact, mixed forest, including stands of yellow birch, white ash and other hardwoods.
- previously identified as “Flat Iron Nature Reserve”.

### Steepbank Brook Nature Reserve (203.07 ha pending)

- small patch of mixed forest near Oxford;
- habitat to vulnerable eastern white cedar and a variety of small wetland types.

### Docherty's Brook Nature Reserve (12.00 ha)

- located near Pugwash in a remnant patch of eastern white cedar forest, which is a listed species-at-risk in Nova Scotia;
- includes a shrub fen and mixed conifer forest.

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## National Wildlife Areas:



### John Lusby Marsh National Wildlife Area (589.37 ha)

- located 5 kilometers southwest of Amherst at the head of the Bay of Fundy;
- includes John Lusby Salt Marsh - the largest section of this wetland type remaining in the Bay of Fundy ecosystem;
- represents about 12 percent of the remaining Bay of Fundy saltmarshes; and
- habitat for Canada Goose, Black Duck, Green-winged Teal, American Wigeon, Northern Pintail, Greater Yellowlegs, Lesser Yellowlegs, Short-billed Dowitcher, Willet, and the rare European Ruff.



### Chignecto National Wildlife Area (409.61 ha)

- home to a wide diversity of habitats due to the area's karst geology;
- habitat for a total of 228 bird species and breeding grounds for more than 100 species;
- overlaps with the Amherst Point Migratory Bird Sanctuary; and
- habitat for the Masked Shrew, Northern Flying Squirrel, Star-nosed Mole, Red Fox, Snowshoe Hare and Woodchuck.



### Wallace Bay National Wildlife Area (675.14 ha)

- located at the upper limit of Wallace Harbour;
- provides habitat for many species of birds and other wildlife;
- important for migrant and nesting waterfowl, including Green-winged Teal, Black Duck, Northern Pintail, Blue-winged Teal, Northern Shoveler, American Wigeon, Ring-necked Duck and Hooded Merganser.

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## Land Trusts and Easements



### Brothers Islands Conservation Lands (10.25 ha)

- The Brothers are two steep-sided, basalt islands in the Bay of Fundy near Parrsboro;
- owned by the Nova Scotia Nature Trust;
- feature an coastal old-growth hardwood forest and rare plants, including purple trillium and Canada yew; and
- nesting grounds for bald eagles, common eiders, black guillemots, and gulls.



### Pugwash River Estuary Conservation Lands (420.28 ha)

- a mixture of forest and marsh that borders some of the most sought-after oceanfront property in Nova Scotia;
- shelters habitat for waterfowl ranging from Canada geese to green-winged teals;
- the largest estuary along the Northumberland Strait; and
- owned and protected by the Nature Conservancy of Canada and the Seagull Foundation.

### Spencer's Island Conservation Lands (9.36 ha)

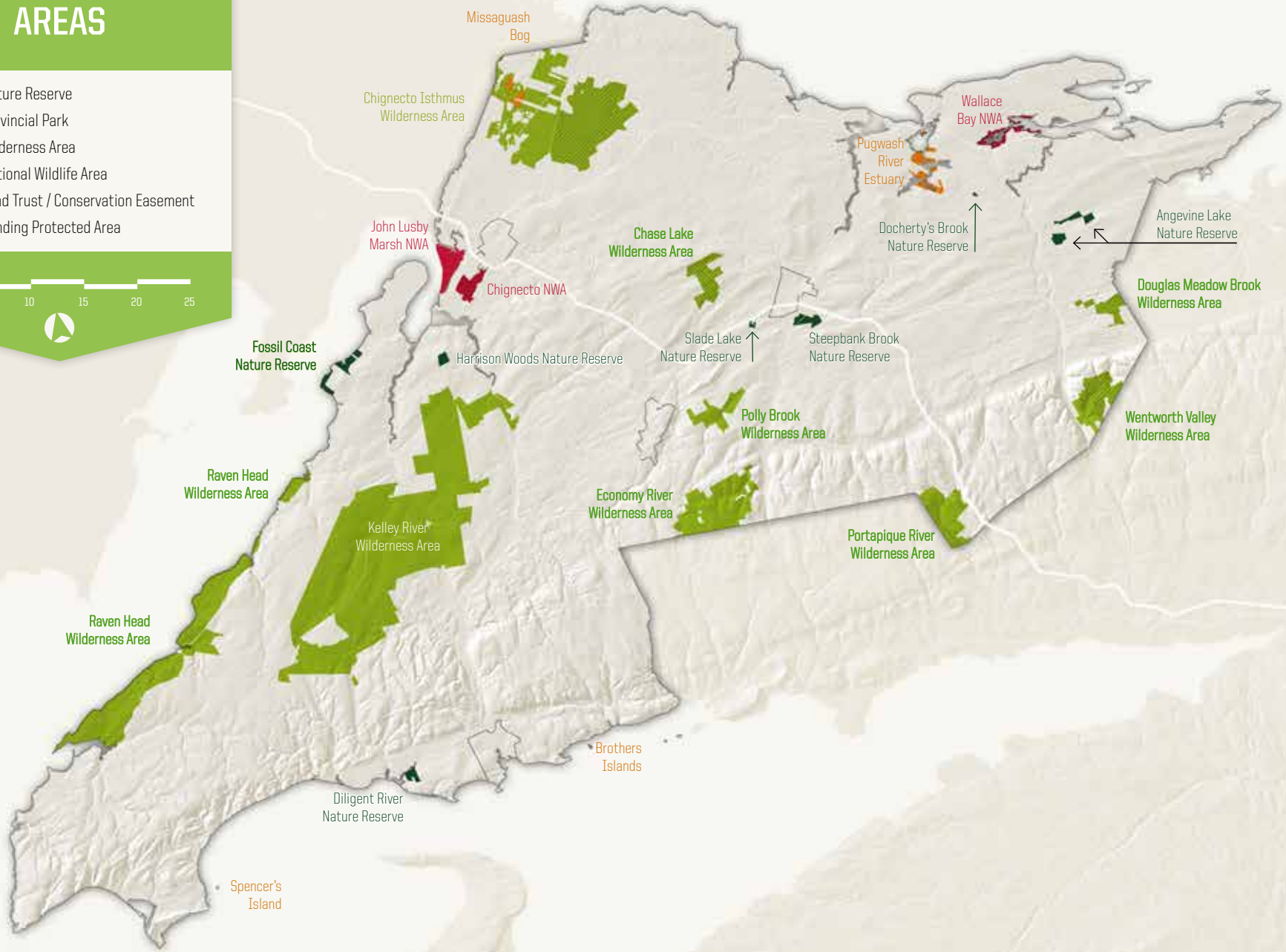
- small island located near Cape d'Or; and
- owned and protected by the Nature Conservancy of Canada.

### Missaguash Bog Conservation Lands (185.93 ha)

- located along the Chignecto Isthmus land bridge; and
- owned and protected by the Nature Conservancy of Canada.

# PROTECTED AREAS

- Nature Reserve
- Provincial Park
- Wilderness Area
- National Wildlife Area
- Land Trust / Conservation Easement
- Pending Protected Area



## 5.5 Parks and Recreation Facilities

The Municipality of the County of Cumberland offers a wide variety of recreation facilities and parks throughout the municipality, including the Dr. Carson & Marion Murray Community Centre, Springhill Lions Park, the Parrsboro Lions Recreation Centre, and the Pugwash Waterfront. There are also a handful of sports fields, arenas and curling rinks throughout the municipality. Finally, there are four privately-owned golf courses in Cumberland, including Amherst Golf Course, Northumberland Links, Fox Harb'r Resort, and Parrsboro Golf Club.

### Provincial Parks:

Provincial parks are operated by the Nova Scotia Department of Natural Resources, and protect a wide range of heritage values and opportunities for outdoor recreation, nature-based education, and tourism. There are ten provincial parks in Cumberland:

#### Cape Chignecto Provincial Park (5,955.32 ha)

- features 180 metre high sea cliffs;
- protects 29 km of pristine coastline, deep valleys, sheltered coves, rare plants, and old-growth forests; and
- over 40 km of wilderness trails and walk-in campsites.

#### Shinimicas Provincial Park (6.95 ha)

- small picnic park; and
- located along the banks of the Shinimicas River, just a kilometre east of Shinimicas Bridge.

#### Tidnish Dock Provincial Park (9.32 ha)

- located near Tidnish Cross Roads;
- marks the eastern end of the historic Chignecto Marine Transport Railway; and
- a section of the old railbed has been converted into a 3.7 km trail and a 66 metre suspension bridge.

#### Amherst Shore Provincial Park (255.20 ha)

- an attractive setting for camping, walking, swimming or beachcombing; and
- offers some of the warmest swimming north of the Carolinas.

#### Northport Beach Provincial Park (11.10 ha)

- red sand beach with warm water and a gentle tide.

#### Heather Beach Provincial Park (6.74 ha)

- small, seasonally supervised beach.

#### Gulf Shore Provincial Park (9.78 ha)

- popular beach with warm water and a picnic area overlooking the Strait.

#### Fox Harbour Provincial Park (59.77 ha)

- features a sandy beach with warm water on the shore of Fox Harbour.

#### Blue Sea Provincial Park (202.02 ha)

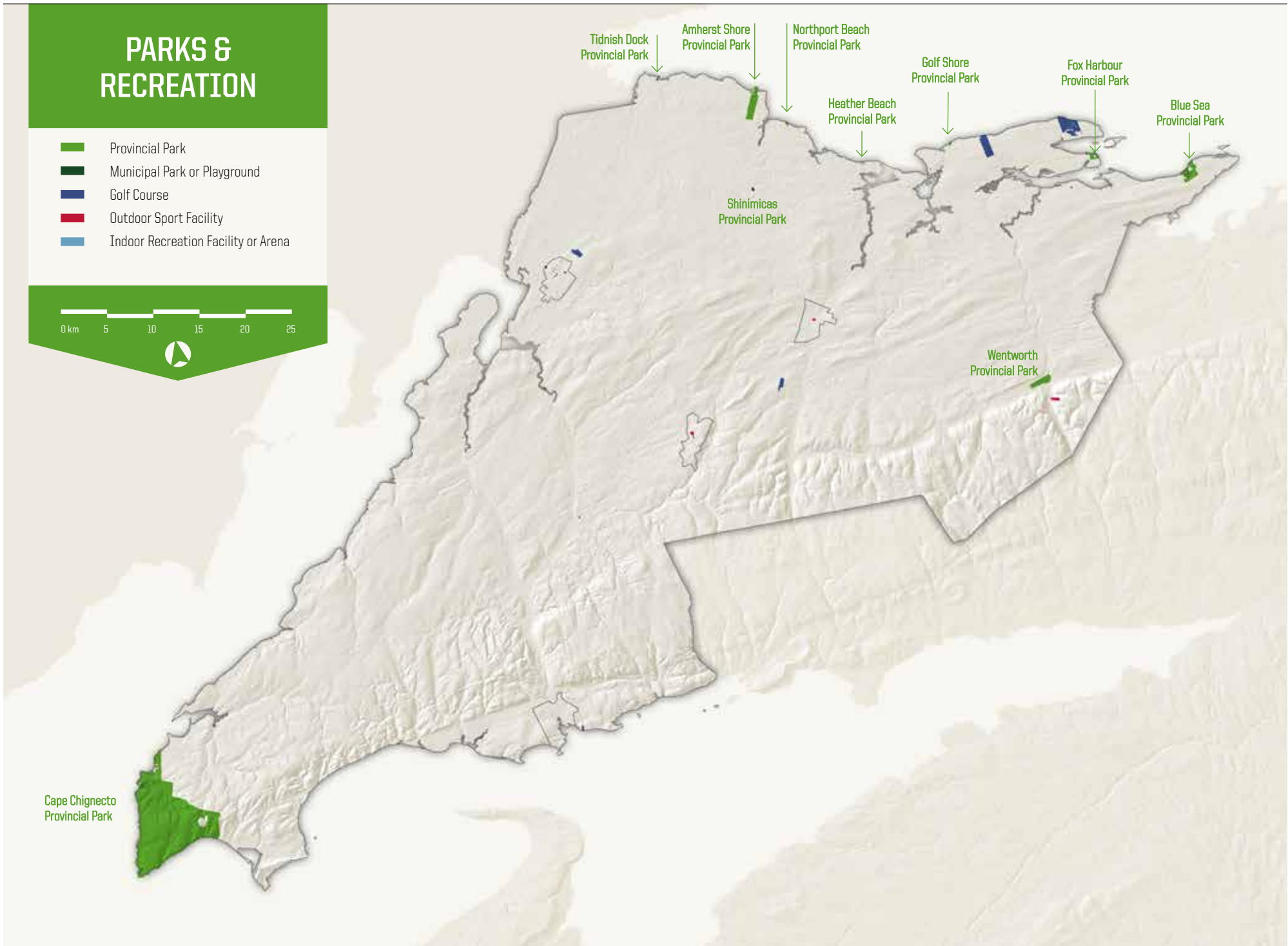
- features a beach and dune system on the Northumberland Strait.

#### Wentworth Provincial Park (143.3 ha)

- offers scenic views of the Wallace River and hardwood forests; and
- Hiking trails offer connections into Cobequid Mountain - a popular birdwatching location.

# PARKS & RECREATION

- Provincial Park
- Municipal Park or Playground
- Golf Course
- Outdoor Sport Facility
- Indoor Recreation Facility or Arena



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## 5.6 Institutional Facilities

### Schools

Public schools in Cumberland are part of the Chignecto-Central Regional School Board (CCRSB). There are seventeen schools in Cumberland, which together make up the Chignecto Family of Schools. These 17 schools include nine elementary schools, one junior high school, four high schools and three consolidated schools (Primary - Grade 12).

In 2016, there were 3,857 students enrolled in a CCRSB school. Although enrolment has declined over the past decade, the Board's projections indicate the enrolment outlook for the next ten years looks relatively stable.

### Emergency Facilities

The Cumberland Health Authority operates five different health centres and hospitals across the municipality. The Cumberland Regional Health Care Centre is located in Upper Nappan just on the outskirts of Amherst, Nova Scotia and is the largest facility in the municipality, offering a wide range of services and programs. Smaller facilities are also located in Pugwash, Springhill, Advocate and Parrsboro.

There are five RCMP detachments located throughout Cumberland, including the two within the Towns of Amherst and Oxford. The other three are located in Springhill, Parrsboro and Pugwash.

There are over a dozen staffed and volunteer fire departments throughout Cumberland.

### Cultural Facilities

Cumberland Public Libraries operates seven branches across the municipality, including one in Advocate Harbour, Amherst, Oxford, Parrsboro, Pugwash, River Hebert, and Springhill. The organization also offers a "borrow by mail" service for residents in more remote locations.

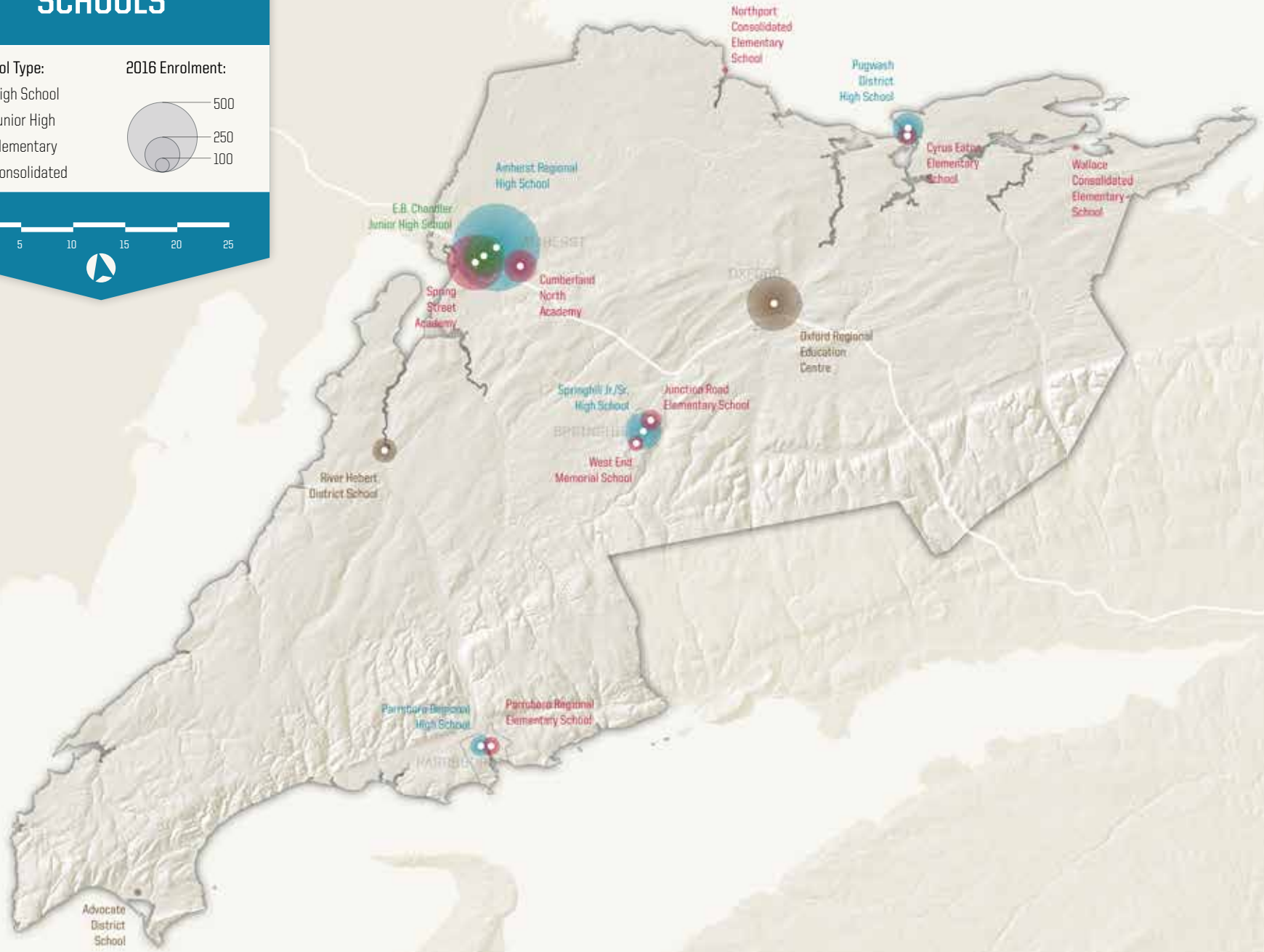
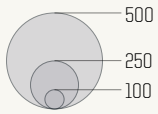
A large amount of museums and interpretive centres are scattered throughout Cumberland, including the Joggins Fossil Cliffs Interpretive Centre, the Anne Murray Centre, the Fundy Geological Museum, and the Springhill Miners' Museum, among many others.

# SCHOOLS

School Type:

- High School
- Junior High
- Elementary
- Consolidated

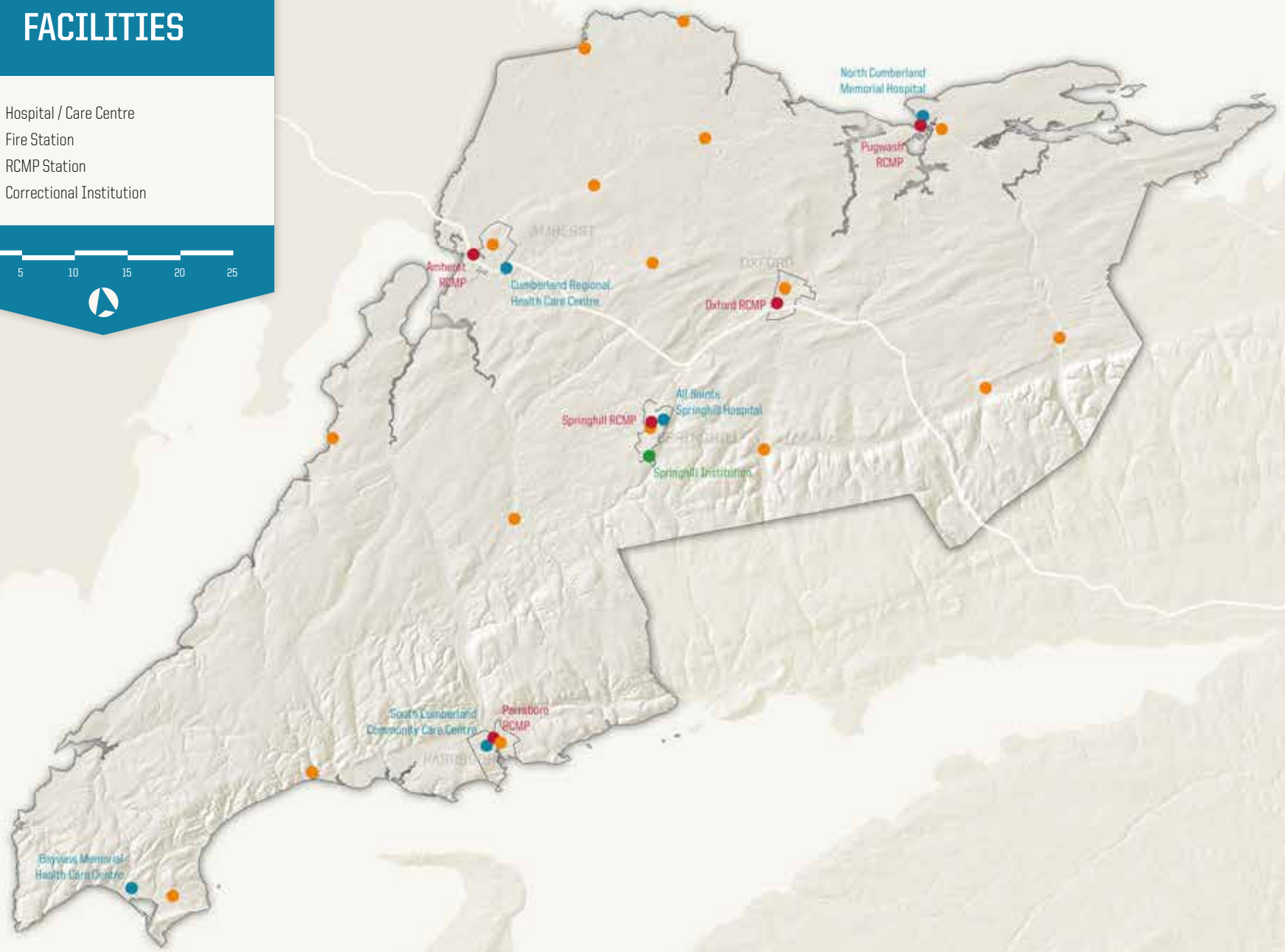
2016 Enrolment:



# EMERGENCY FACILITIES

- Hospital / Care Centre
- Fire Station
- RCMP Station
- Correctional Institution

0 km 5 10 15 20 25



# CULTURAL FACILITIES

- Library Branch
- Theatre
- Museum or Interpretive Centre

0 km 5 10 15 20 25



# 6 CURRENT ZONING



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## 6.1 Current Zoning

Planning in Cumberland is currently regulated by three Land Use By-laws (LUB): Cumberland, Springhill, and Parrsboro. The latter two specifically regulate development in the areas covering the former Towns of Springhill and Parrsboro.

The Cumberland LUB contains within it zoning specific to Joggins, the Central Planning Area (surrounding Amherst), and Pugwash. Lands outside these areas are essentially unplanned; the General (G) Zone, which covers almost all of these lands, permits all uses. The exceptions are areas surrounding municipal drinking water supplies, and restrictions on the location of large-scale wind turbines.

Zones are not the same from planning area to planning area; *e.g.* the Industrial Zone in Pugwash does not have the same permitted uses and lot requirements as the Industrial Zone in Springhill. There are, however, often similarities between zones in different planning areas. For example, the Community Commercial Zone in Joggins and the Village Commercial Zone in Pugwash only differ by a few permitted uses. As this project proceeds, there is a possibility of reducing the number of zones and streamline development in the municipality by harmonizing these similar zones.

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## 6.2 Cumberland Planning Areas

The map to the right highlights the specific planning areas, which are shown in detail on the following pages. The areas outside these planning areas are typically zoned General, which permits all uses.

There are some common zones in Cumberland that are used across the planning areas, as well as within the general rural area. They are:

### **Utility (U) Zone**

Permits utility uses.

### **Restricted (R) Zone**

An overlay zone (*i.e.* applies on top of other zoning) that prohibits large-scale wind turbines. It is generally applied to protected areas, water bodies, beaches, game sanctuaries, aboriginal reserve lands, and other sensitive areas.

### **Cemetery (CEM) Zone**

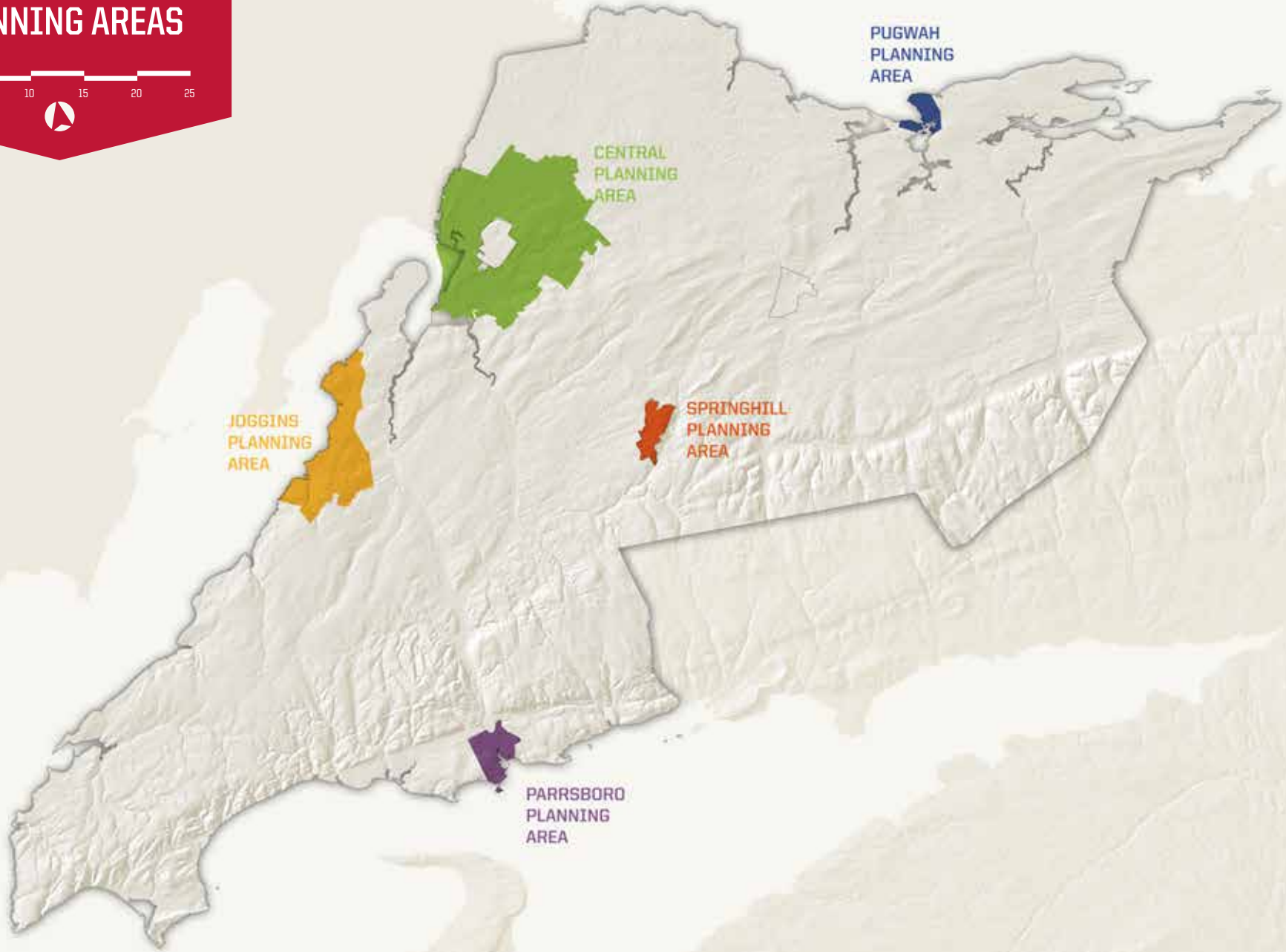
Permits cemeteries.

### **Municipal Water Supply Zones**

Cumberland currently has three protected municipal water supplies: North Tyndal, McElmon Brook, and MacAloney Lake. The municipal water supply zones restrict uses to those that do not risk contaminating drinking water supplies. Each water supply has tiered zoning, with tighter restrictions closer to the water supply; *e.g.* North Tyndal Zone 1 is more restrictive than North Tyndal Zone 2.

# CUMBERLAND PLANNING AREAS

0 km 5 10 15 20 25



JOGGINS  
PLANNING  
AREA

CENTRAL  
PLANNING  
AREA

SPRINGHILL  
PLANNING  
AREA

PARRSBORO  
PLANNING  
AREA

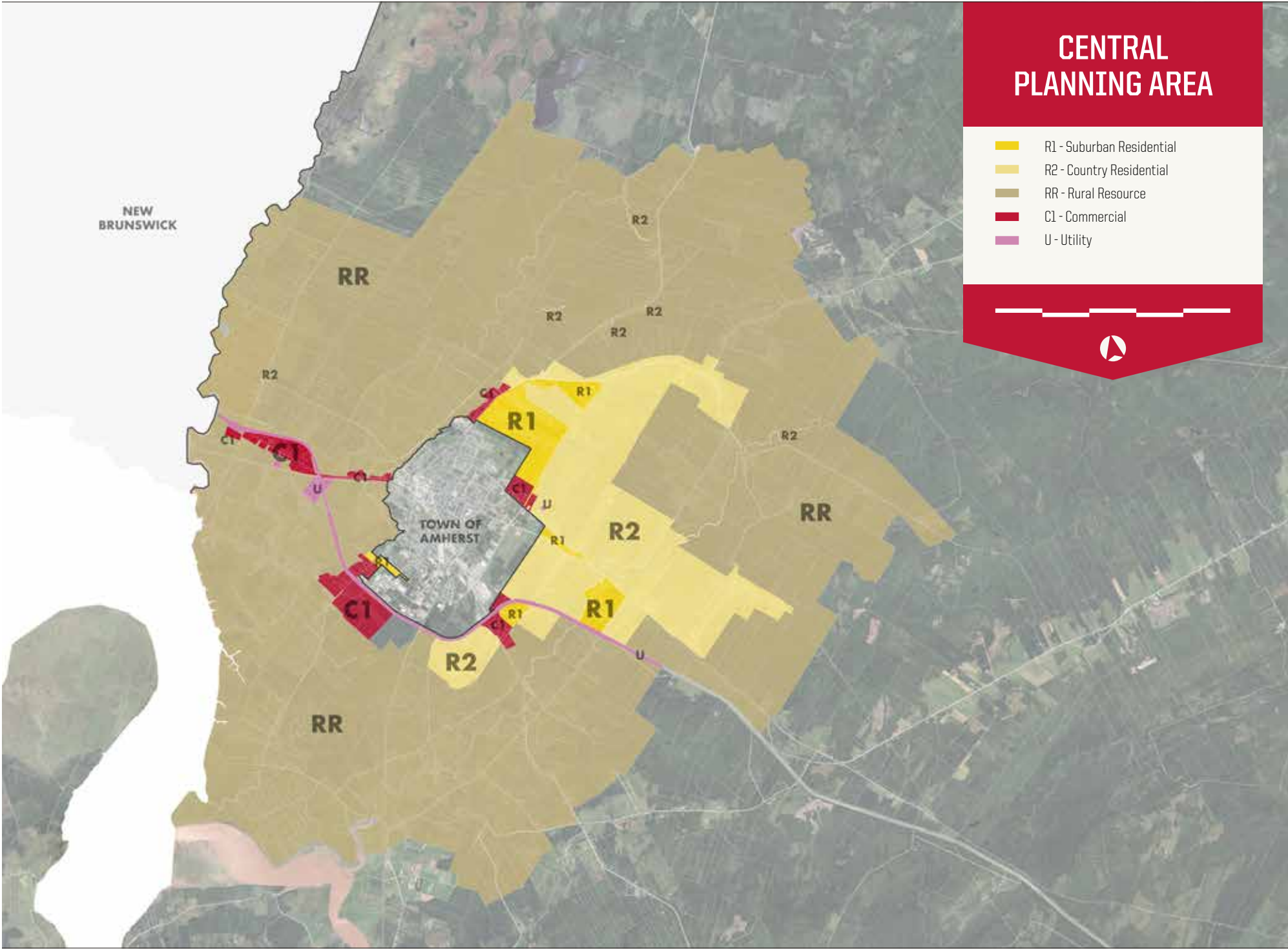
PUGWAH  
PLANNING  
AREA

## 6.3 Central Planning Area

Suburban Residential	Country Residential	Rural Resource	Commercial
Apartment buildings Churches and church halls Day care operations Double dwellings Group and special care homes Home occupations Parks and open space Single detached dwellings Tourist homes	Apartment buildings Churches and church halls Commercial and light industrial (by DA) Day care operations Double dwellings Existing agriculture Group and homes for special care Home occupations Parks and open spaces Residential livestock Schools Single detached dwellings Tourist homes	Aggregate quarries Agricultural operations Apartment buildings C1 zone uses Churches and church halls Commercial and light industrial (by DA) Day care operations Double dwellings Forestry uses Group and special care homes Parks and open spaces Schools Single detached dwellings Tourist homes Large scale wind turbines	Automotive repair Banks Campgrounds Equipment rental Existing and ancillary residential Existing forestry Existing agriculture Financial institutions Funeral homes Garden centres Gas stations and auto service Hotels and motels Indoor storage Kennels Institutional uses Light industrial uses Medical clinics and offices Offices Religious institutions Restaurants (incl. drive-through) Retail Service shops

# CENTRAL PLANNING AREA

- R1 - Suburban Residential
- R2 - Country Residential
- RR - Rural Resource
- C1 - Commercial
- U - Utility



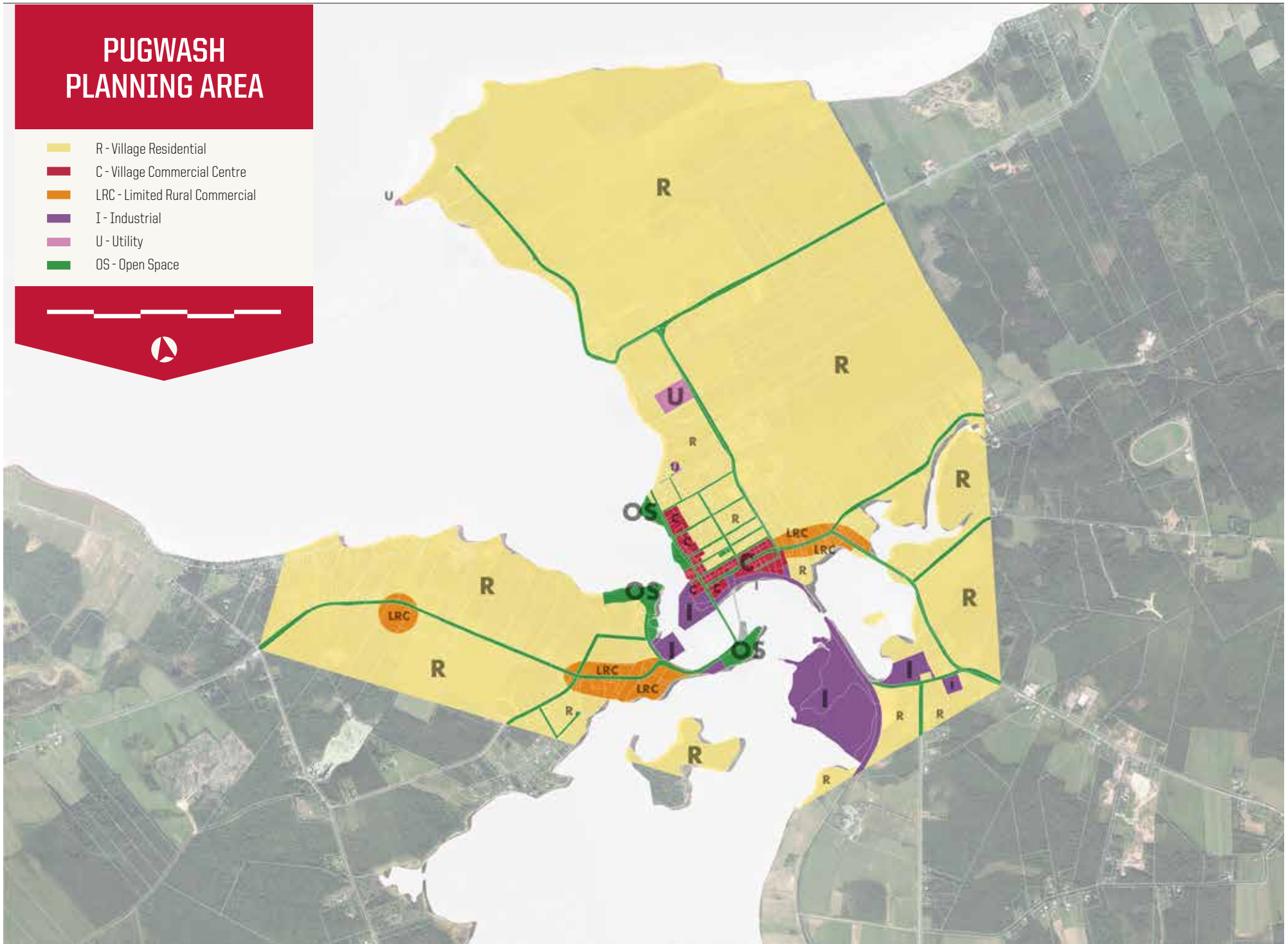
## 6.4 Pugwash Planning Area

Village Residential	Open Space	Village Commercial Centre	Limited Rural Commercial
Accessory dwelling units Agricultural operations Cemeteries Churches and church halls Converted dwellings Day care operations Double dwellings Emergency services Government offices and facilities Group and special care homes Health care uses Historic sites Home occupations Institutional uses Interpretative centres Libraries and museums Multiple dwellings Parks and open space Public buildings Residential livestock operations Schools Single detached dwellings Tourist homes Veterinarians, pet daycare, and pet grooming	Convenience uses for visitors Historic sites Institutional, interpretative, and educational uses Low impact nonmotorized recreational uses Marinas Markets Onshore components for marine uses Outdoor educational uses Parks, playgrounds, and open spaces Pavilions Walkways and boardwalks	Auto service stations Banks and financial institutions Craft / antique / artisan / bakery shops Drycleaners and laundromats Funeral homes Hotels and motels Inns and hostels Institutional uses Mixed commercial-residential uses Offices Personal service Photo studios Printing establishments Private clubs and fraternal organizations Religious institutions Residential uses, existing or new Restaurants Retail uses Schools Taxi and bus stations Veterinarians, pet daycare, and pet grooming Village Residential Zone uses	Auto repair and service Campgrounds and RV parks Craft / antique / artisan / bakery shops Equipment rental and service Farmers / flea markets Indoor storage Marinas Museums and art galleries Nurseries / garden centres Offices Produce transshipment Recycling facilities Restaurants (sit down) Veterinarians, pet daycare, and pet grooming Village Residential Zone uses Visitor accommodations and conveniences

Industrial
Fishing and marine related uses Manufacturing, assembly, and service uses Marina, port, and docking Mining, marine, and extractive uses On-shore components of marine uses Processing, storage, and shipping uses Services industries and recycling depots

# PUGWASH PLANNING AREA

- R - Village Residential
- C - Village Commercial Centre
- LRC - Limited Rural Commercial
- I - Industrial
- U - Utility
- OS - Open Space

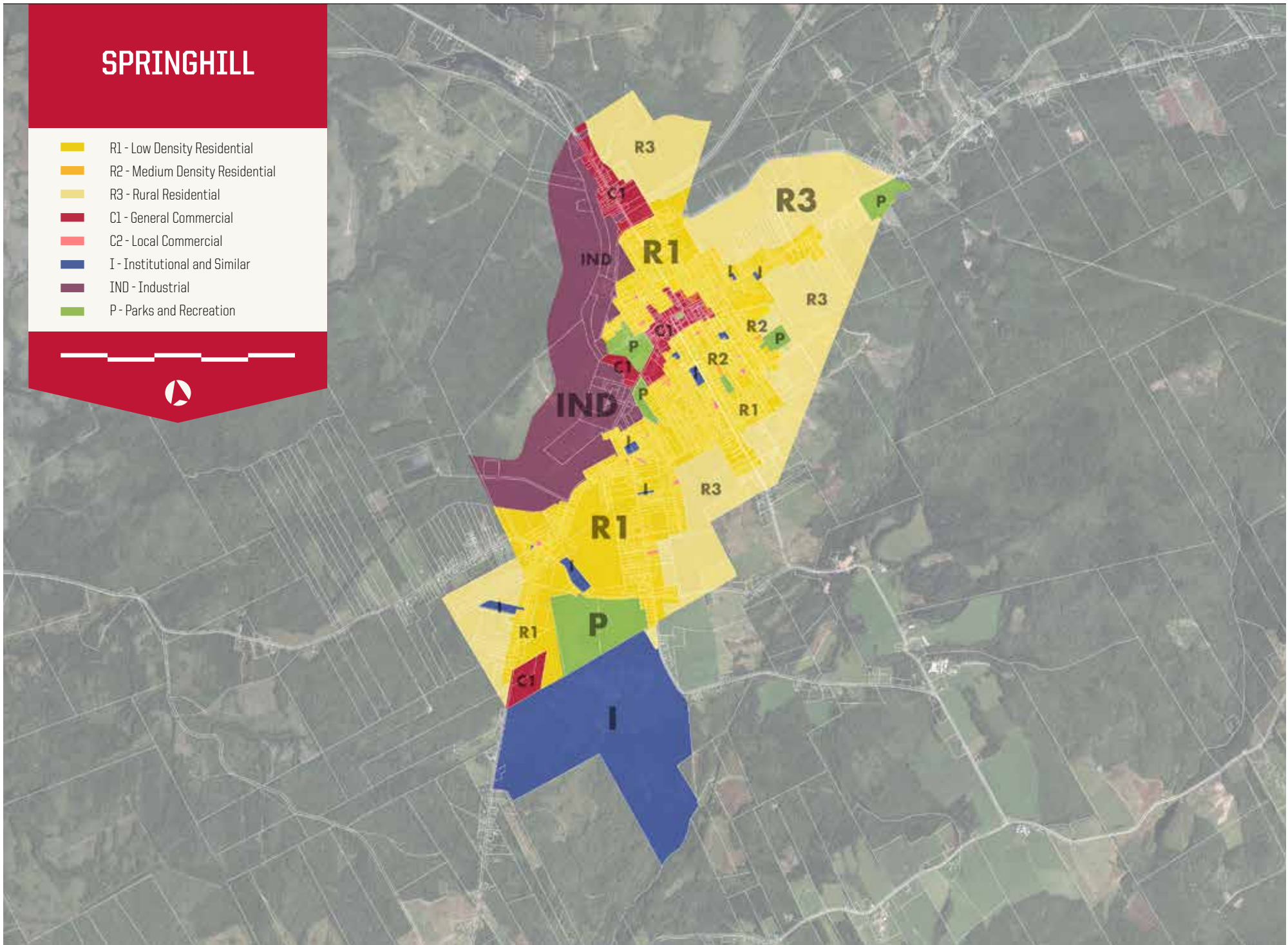


## 6.5 Springhill

Low Density Residential	Medium Density Residential	Rural Residential	General Commercial
Bed & breakfast establishments Boarding and rooming houses Converted dwellings Double dwellings Existing commercial properties Existing industrial properties Group care facilities Mobile homes and mini homes Residential day care centres Senior citizen dwellings Single detached dwellings Triple dwellings	Apartment dwellings Low Density Residential Zone uses Townhouse Dwellings	Agriculture and forestry uses Bed & breakfast establishments Boarding and rooming houses Converted dwelling Double dwellings Existing autobody shop Group care facilities Kennels Mobile homes Recreational uses Residential uses accessory to agriculture Single detached dwellings Triple dwellings	Accessory apartments Auto sales and service Banks and financial institutions Churches Commercial recreation centres Custom workshop Drive-in and take out restaurants Existing mobile homes Funeral homes Hotels, motels, inns Institutional uses, except penitentiaries Medical offices Medium Density Residential Zone uses Offices Parking lots and structures Personal service Private clubs Restaurants, lounges, beverage rooms, cabarets Retail stores Schools Service industries Service shops Shopping centres Taxi and bus stations
Local Commercial	Institutional and Similar	Industrial	Parks and Recreation
Accessory apartments Custom workshops Low Density Residential Zone uses Offices Personal service Retail stores Service shops	Churches Commercial community centre Group care facilities Institutional uses Non-residential day care centres Parks and Recreation Zone uses Private clubs Schools	Airfields and related structures Auto uses Boat and marine supplies and sales Breweries Building supply, including bulk store Commercial recreation centres Hotels, motels, inns Manufacturing, industrial, assembly, and warehousing operations, excluding scrap yards Offices Recreational uses, excluding golf Service industries Utilities	Cemeteries Institutional uses, except penitentiaries Recreational uses

# SPRINGHILL

- R1 - Low Density Residential
- R2 - Medium Density Residential
- R3 - Rural Residential
- C1 - General Commercial
- C2 - Local Commercial
- I - Institutional and Similar
- IND - Industrial
- P - Parks and Recreation

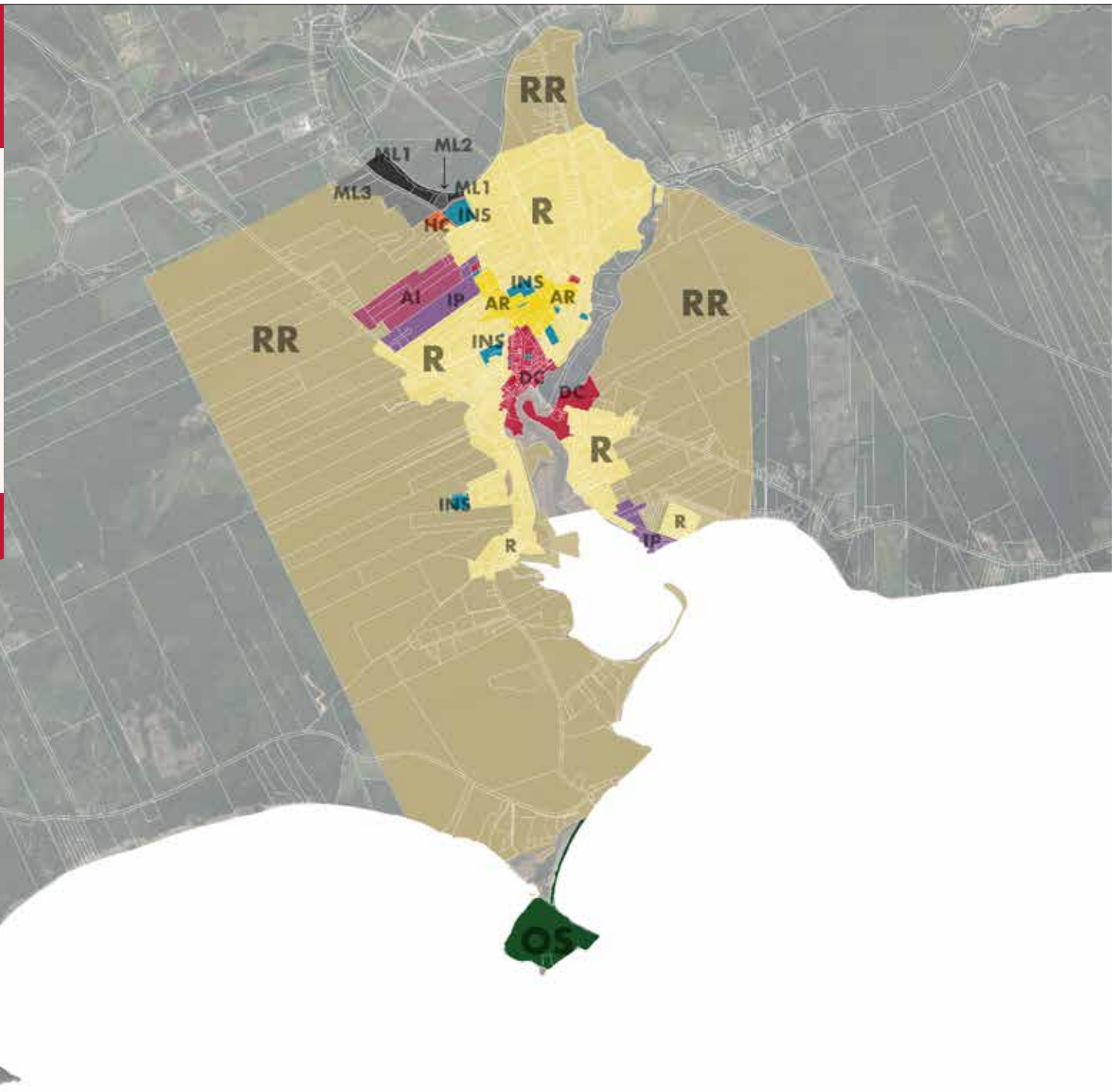


## 6.6 Parrsboro

General Residential*	Rural Residential	Downtown Commercial	Highway Commercial
<p>Agriculture (by DA)            Apartment buildings (&lt; 4 units)            Bed &amp; breakfast establishments            Boarding houses            Converted dwellings            Double dwellings            Existing electrical business            Existing tourist cabins            Garden suite (by DA)            Group home (by DA)            Home occupations            Mini homes            Parks, open spaces, and public trails            Residential with more than 3 units (by DA)            Residential day care centres            Restaurant in B&amp;B (by DA)            Single detached dwellings            Townhouses (&lt;4 units)</p> <p>*The Architectural Residential Zone permits the same uses but has specific architectural controls</p>	<p>Agriculture uses, excluding intensive livestock            Bed and breakfast establishments            Double dwellings            Garden suite (by DA)            Home occupations            Industrial use (by DA)            Kennels            Parks, open spaces, and public trails            Residential day care centres            Restaurant in a B&amp;B (by DA)            Single detached dwellings</p>	<p>Auto sales, rental, and service            Banks and financial institutions            Cabarets            Commercial recreation centres            Commercial schools            Community centres            Existing gas stations            Existing industrial            Funeral homes            Garden and nursery sales and supplies            Ground floor residential on Main St. (by DA)            Hotels and motels            Institutional uses            Light manufacturing            Lounges and beverage rooms            Medical clinics            New or renovated commercial buildings (by DA)            Offices            Outdoor retail display            Parking lots and structures            Photo studios            Printing establish            Private clubs            Religious institutes            Residential uses            Restaurants, drive-thru or take-out            Retail stores            Self storage facilities            Service shops            Taxi and bus</p>	<p>Animal hospitals and vets            Auto sales, rental, and service            Cabarets            Commercial recreation centres            Commercial schools            Community centres            Display courts            Funeral homes            Garden and nursery sales and supplies            Gas stations            Hotels and motels            Light manufacturing            Lounges and beverage rooms            Outdoor retail display            Printing establishments            Private clubs            Restaurants, drive-thru or takeout            Retail stores            Self storage facilities            Taxi, bus, train stations</p>
Institutional	Industrial Park	Agricultural Industrial	Open Space
<p>Community centres            Funeral homes            Group care facilities            Health care facilities and clinics            Libraries, museums, and art galleries            Long term care facilities            Non-residential day care centres            Nursing homes            Open Space Zone uses            Public buildings            Public utilities            Recreational uses            Religious institutions            Schools</p>	<p>Accessory retail and office            Any auto use, except salvage yards            Any manufacturing, industrial, warehousing, or assembly operation, excluding obnoxious uses            Boat and marine supplies and sales            Building supply, including bulk storage            Recycling collection and storage            Restaurants, including drive-thru</p>	<p>Agricultural uses, except intensive livestock            Industrial Park Zone uses</p>	<p>Accessory buildings (incl. canteens)            Cemeteries            Existing dwelling            Pavilions, band shells            Public and private parks, playgrounds, and trails            Sports fields</p>

# PARRSBORO

- AR - Architectural Residential
- R - General Residential
- RR - Rural Residential
- DC - Downtown Commercial
- HC - Highway Commercial
- INS - Institutional
- IP - Industrial Park
- AI - Agricultural Industrial
- OS - Open Space
- ML1 - MacAloney's Lake Zone 1
- ML2 - MacAloney's Lake Zone 2
- ML3 - MacAloney's Lake Zone 3

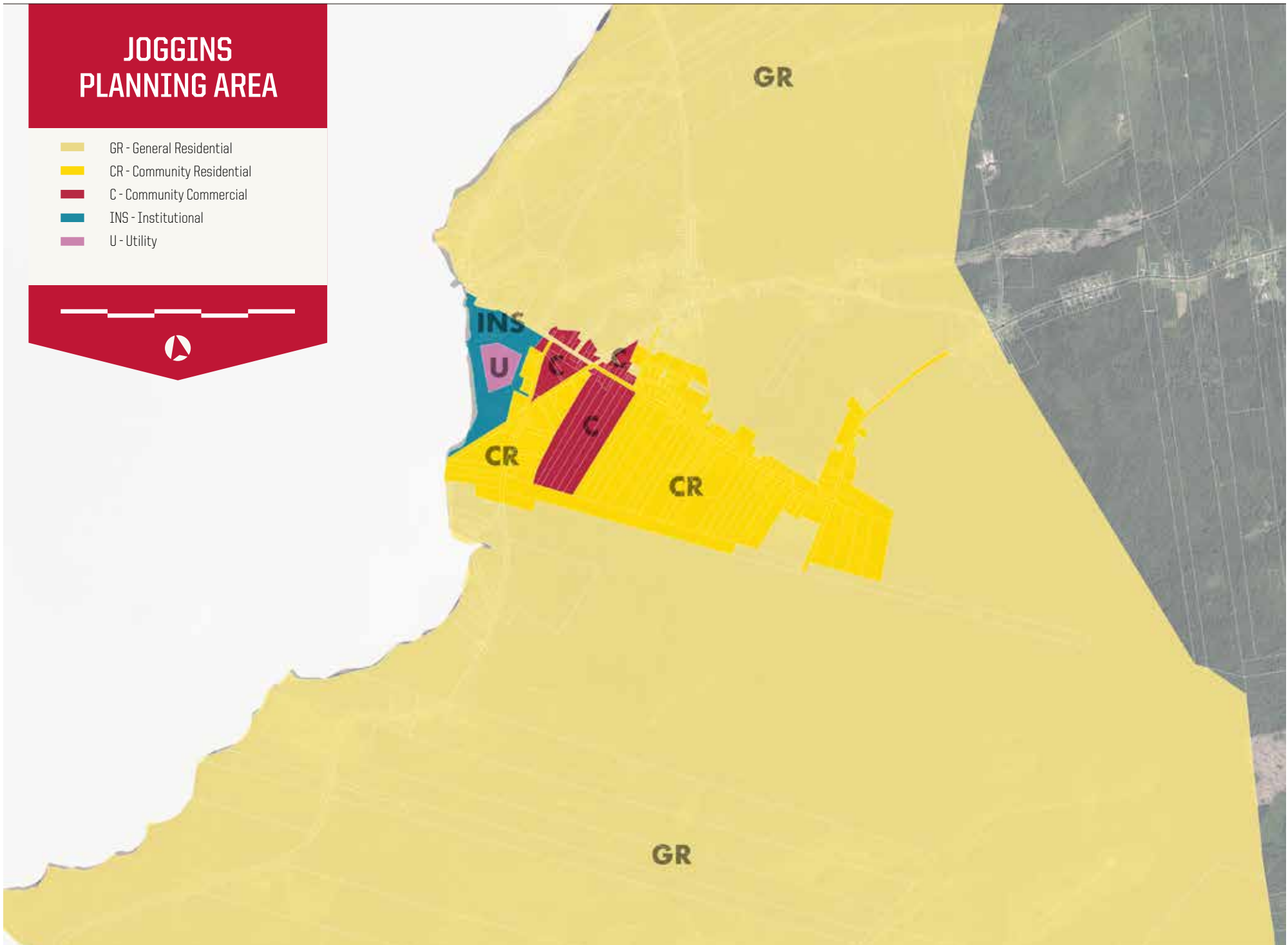


## 6.7 Joggins Planning Area

General Residential	Community Residential	Community Commercial	Institutional
<p>Agricultural operations            Churches and church halls            Converted dwellings            Day care operations            Double dwellings            Group and special care homes            Home occupations            Parks and open space            Residential livestock operations            Schools            Single detached dwellings            Tourist commercial uses            Tourist homes            Large scale wind turbines</p>	<p>Churches and church halls            Converted dwellings            Day care operations            Double dwellings            Group and special care homes            Home occupations            Multiple dwellings            Parks and open space            Schools            Single detached dwellings            Tourist homes</p>	<p>Banks and financial institutes            Craft shops and studios            Drycleaners and laundromats            Funeral homes            Hotels and motels            Institutional uses            Medical clinics and offices            Mixed commercial-residential            Offices            Personal service            Photo studios            Printing establishments            Private clubs and fraternal organizations            Public buildings            Recycling depots            Religious institutions            Restaurants            Retail uses            Schools            Service stations            Taxi and bus stations            Veterinary clinics</p>	<p>Churches and church halls            Emergency services            Government offices and facilities            Interpretative centres            Libraries and museums            Parks and open spaces            Public buildings            Schools</p>

# JOGGINS PLANNING AREA

- GR - General Residential
- CR - Community Residential
- C - Community Commercial
- INS - Institutional
- U - Utility



# 7 INFRASTRUCTURE & UTILITIES



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## 7.1 Roads and Sidewalks

The vast majority of roads in the municipality are owned and maintained by the Province. However, in Nova Scotia, Towns are typically responsible for roads within their boundaries. With the dissolution of Parrsboro and Springhill, the roads in these (former) Towns were transferred to the Municipality of Cumberland and represent a much expanded scope of infrastructure responsibility for the Municipality. There are approximately 38 kilometres of road in Springhill, and 30 kilometres of road in Parrsboro.

Prior to 1995, new subdivision roads in (non-Town) municipalities in Nova Scotia became the property and maintenance responsibility of the Province. Servicing adjustments in 1995 changed this arrangement so that all new subdivision roads would become the property and maintenance responsibility of municipalities. The Municipality of Cumberland only has two short segments of subdivision road under its ownership at this time. However, it is possible that new subdivisions could create new municipal roads in the future. These potential roads could represent a financial challenge for the Municipality if they are developed in far-flung areas where maintenance needs (ploughing, resurfacing, *etc.*) are far from the Municipality's equipment depots. The new Plan and Land Use By-law should consider controls on where new subdivision roads can be developed in order to limit this burden.

The former Town areas also include sidewalks, typically in the areas around the downtowns. Springhill has 10.66 kilometres of concrete, asphalt, and brick sidewalk. These sidewalks range widely in width and physical condition. Parrsboro has approximately 4.2 kilometres of sidewalk, including some wooden sidewalk. The Village of Pugwash also has approximately 500 metres of sidewalk.

## 7.2 Drinking Water

A source of safe, clean drinking water is one of the most fundamental needs of any community. Many residents in Cumberland County are serviced by private, on-site wells. In addition, there are currently five public drinking water supplies within the Municipality's boundaries. One of those, McElmon Brook, services the Town of Oxford. The North Tyndal system primarily services the Town of Amherst; however, extensions of the system service Maccan and Nappan in the Municipality of Cumberland. In addition to these public systems, there is one registered private system servicing the Biggs Drive subdivision northeast of Amherst.

The North Tyndal, McElmon Brook, and MacAloney Lake (Parrsboro) wellfields currently have special zoning to prevent the development of land uses that could potentially contaminate the water supply. The areas closest to the wellheads are typically the most risky in terms of contamination, while the long-term recharge areas around the wells are lower risk due to the time it takes for any contaminants to reach the wells from these areas. These varying levels of risk are currently reflected in "tiered" zoning, where the areas of highest risk have the most restrictive requirements for development.

The Pugwash water system is, at the time of this report, currently under construction. As part of the process of developing this water utility, the Municipality is currently developing a "source water protection plan". This document will outline various protection methods for the water source and will delineate recommended zoning for the recharge area around the wells. The timing for developing this document is such that any recommended wellfield protection zones should be accommodated in the updated Municipal Planning Strategy and Land Use By-law.

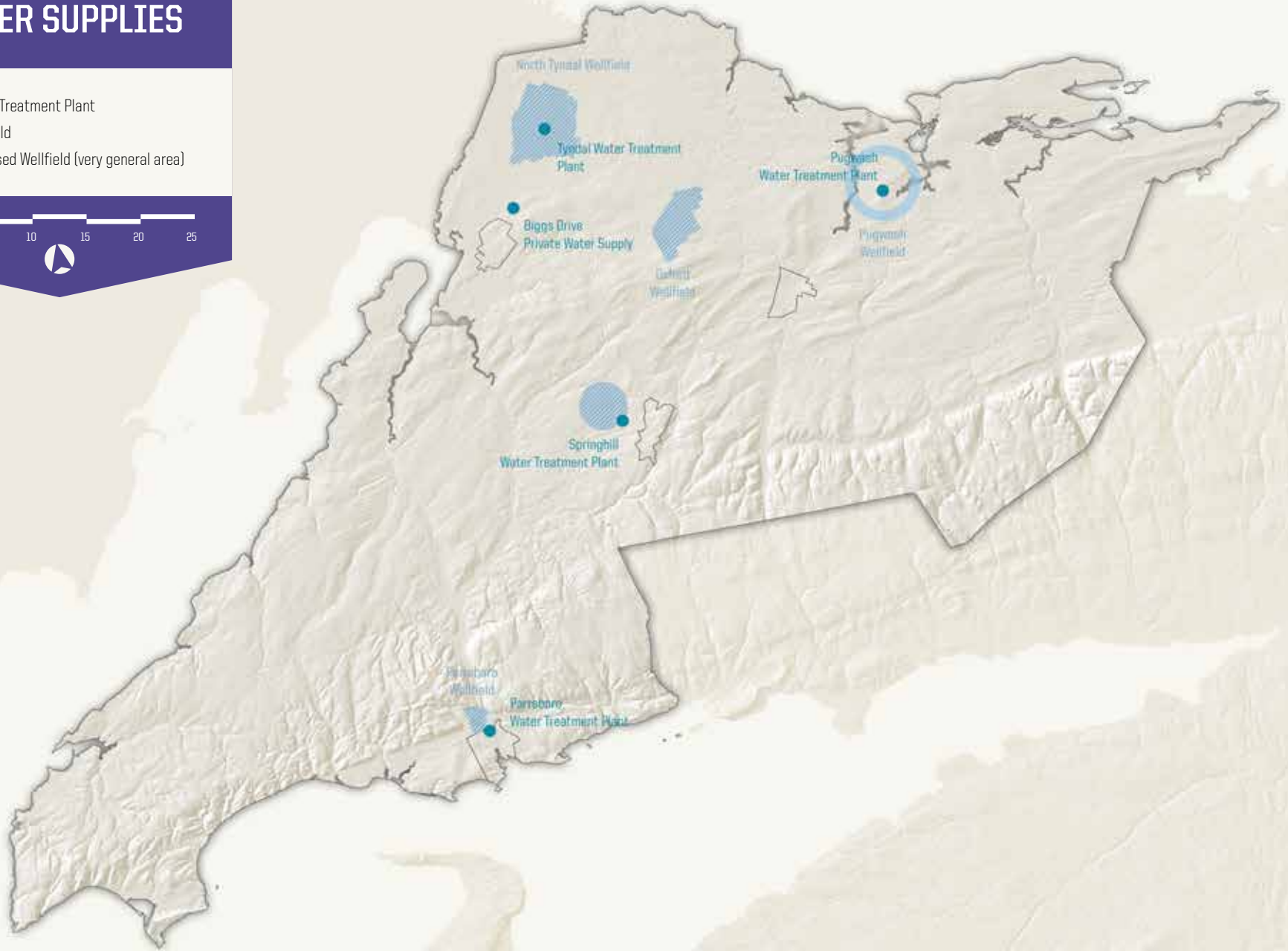
A review by CBCL Consulting Engineers Ltd. suggests there is available capacity in the Pugwash and Parrsboro systems to grow the population with access to public drinking water. The Maccan and Nappan system has capacity for approximately 100 new residents between the two communities; however, the well system is controlled by the Town of Amherst and any increase in water demand would need to be approved through agreement with the Town. Detailed information on the Springhill water system is unavailable at this time, so it is unclear whether there is room for expansion on the system. However, the operators of the Springhill system indicate that there are no concerns supplying current demand.

Table 5: Drinking Water Supplies

	Install Year	Water Source	Design Capacity (UGPD)	Estimated Population Served	Average Daily Flow (USGPD)	Potential Population Growth
Biggs Drive	-	Drilled Well	-	40	2,100	-
Maccan	2015	North Tyndal Wellfield	18,600	360	15,900	-
Nappan	2001	North Tyndal Wellfield	-	640	28,150	-
Pugwash	2018	Pugwash Wellfield	191,000	750	-	250
Parrsboro	-	Parrsboro Wellfield	260,000	1,200	198,000	200
Springhill	-	Leamington Brook	-	-	-	-

# PUBLIC DRINKING WATER SUPPLIES

- Water Treatment Plant
- ▨ Wellfield
- ▭ Proposed Wellfield (very general area)



### 7.3 Wastewater Treatment

Many residents in Cumberland address their wastewater through the use of on-site septic systems or holding tanks. However, there are also 10 central wastewater collector systems connected to wastewater treatment plants. The treatment plants in the Municipality of Cumberland come in three types:

- Faculative lagoons with wetland. Heavy solids will settle in the lagoon and be treated by microorganisms, while the effluent will flow through the wetland for “polishing”. These systems are simple to operate and require little energy, but they do require a large area of land and the settled sludge occasionally needs to be removed.
- Aerated lagoons. These are similar to faculative lagoons, except oxygen is mechanically pumped into the lagoon, which increases the biological activity of the microorganisms. This means the lagoon can be smaller and less sludge will accumulate, but more energy is required for facility operation.
- Sequencing batch reactors. These systems treat wastewater in “batches”. Effluent is drawn into a tank until it is full, treated all at once, and then discharged all at once. These systems offer more control over the process of treatment, but are more complicated and expensive to operate than lagoons.

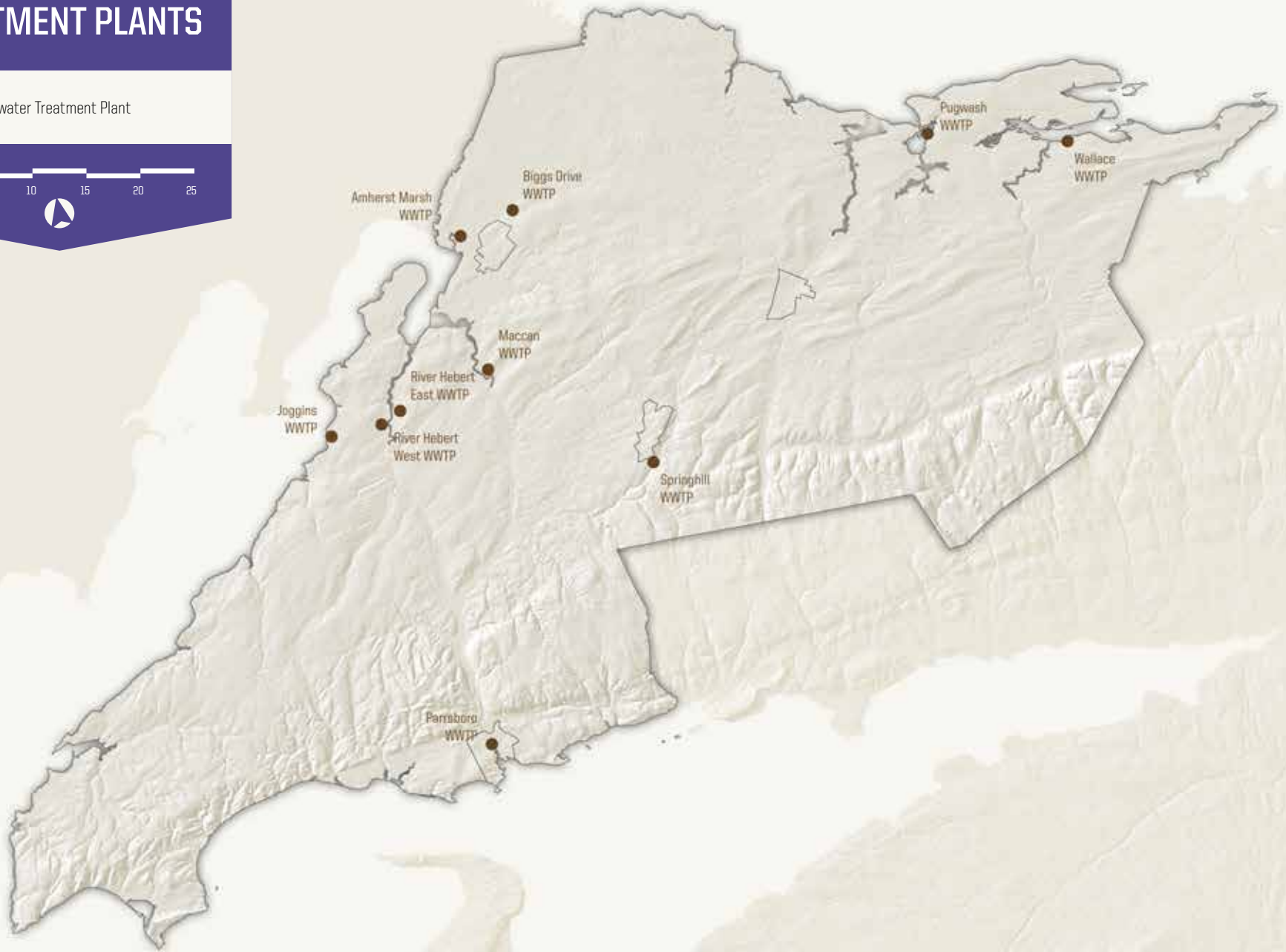
The wastewater systems in the Municipality of Cumberland vary widely in age. Each system—with the exception of Biggs Drive—has been designed with the capacity for population growth. However, CBCL Consulting Engineers Ltd. reports that the Wallace and Maccan systems do require some upgrades and repairs to the collection and treatment systems before any significant growth should be considered. Detailed information on the current flow rates in the Springhill system is unavailable at this time, so the exact amount of potential population growth that can be accommodated by this system is currently unknown.

Table 6: Wastewater Treatment Plants

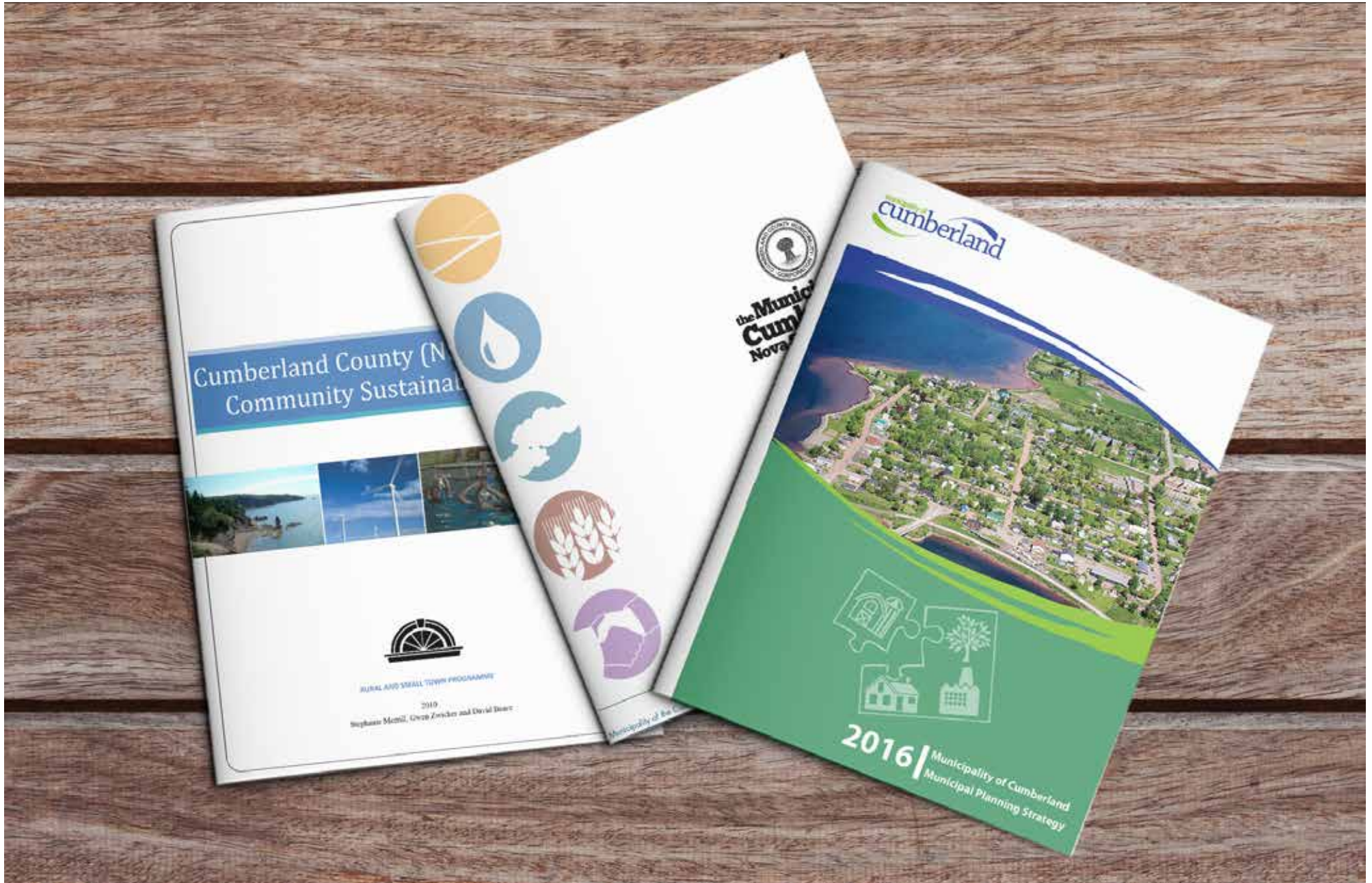
	Install Year	Design Capacity (UGPD)	Estimated Population Served	Average Daily Flow (USGPD)	Additional Capacity Available (USGPD)	Potential Population Growth
Amherst Marsh	1988	70,000	146	24,900	45,100	264
Biggs Drive	1976	10,000	35	5,500	-	-
Joggins	1982	84,000	396	52,300	31,700	240
Maccan	2014	45,000	148	31,100	-	-
Pugwash	1967	500,000	964	145,000	355,000	2,360
River Hebert East	2005	30,000	230	20,700	9,300	103
River Hebert West	2005	100,000	460	72,300	27,700	176
Wallace	1978	42,000	328	19,900	-	-
Parrsboro	2018	184,920	1,305	119,070	65,850	722
Springhill	1995	1,080,000	-	-	-	-

# WASTEWATER TREATMENT PLANTS

● Wastewater Treatment Plant



# 8 OTHER REPORTS



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## 8.1 Other Reports

The Plan Cumberland project does not stand on its own. Over the years, the Municipality of Cumberland and the former Towns have produced various reports that include analyses or implications related to planning. This body of work provides a foundation for moving forward with a new Plan and Land Use By-law. These reports are briefly summarized below.

## 8.2 Cumberland MPS and LUB

The current Cumberland Municipal Planning Strategy and Land Use By-law were approved in 1993 and have been amended periodically since then. Some of the major amendments focused on creating secondary plans for Pugwash, Joggins, and the Central Planning Area (around Amherst). Including the secondary planning areas, the current Planning Strategy and Land Use By-law cover 17 land use designations and 27 zones. Planning restrictions are light outside of the secondary planning areas. They generally regulate activities in water supply areas, wind turbines, salvage yards, and setbacks from water bodies. The secondary planning areas get more specific, including zoning different areas for specific types of uses.

## 8.3 Parrsboro MPS and LUB

Prior to its dissolution, the Town of Parrsboro had its own Municipal Planning Strategy and Land Use By-law. These were adopted in 2007 and are currently still in force for the area of the former Town. They include 5 land use designations and 13 zones. These planning documents focus commercial activity to the downtown area, along Main Street. A portion of the downtown residential area has architectural requirements that require new buildings to be similar to existing houses in terms of exterior features, proportions, and cladding.

## 8.4 Springhill MPS and LUB

Prior to its dissolution, the Town of Springhill had its own Municipal Planning Strategy and Land Use By-law. These were adopted in 1992 and are currently still in force for the area of the former Town. They included 5 land use designations and 8 zones. These planning documents cluster commercial lands along the north end of Junction Road, as well as along Main Street. Due to the community's coal mining history, a large portion of the community's lands are zoned for industrial uses.

## 8.5 ICSP

In 2009 and 2010 all municipalities in Nova Scotia produced an Integrated Community Sustainability Plan (ICSP). Cumberland's ICSP established a vision statement for the county:

*“Cumberland County is a forward-thinking municipality offering a vibrant, safe and healthy rural quality of life for all ages. Our natural beauty and assets appeal to a global audience and are the foundation for our economy and culture. Our communities collaborate to provide quality and accessible services, and positive and creative leadership toward the sustainability of the whole municipality.”*

It also established eight sustainability priorities, such as climate change, water quality, and addressing demographic changes.

The ICSP includes a list of actions, some of which relate directly to land use planning. For example, the ICSP recommends limiting development in areas at risk of future sea level rise, and also recommends focusing new development in hamlets or, “focus areas” instead of sprawling.

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## 8.6 Environmental Framework

The Municipality, in 2011, commissioned an Environmental Planning Framework. This report provides a long list of recommendations for linking land use planning to environmental considerations, both to protect development from the environment and to protect the environment from development. The report calls for strong consideration of the natural landscape (geology, watersheds, wetlands, etc.) in planning for communities in Cumberland.

Specific recommended policy actions include:

- Specifically zoning Restricted Areas, such as wilderness areas, rather than leaving them in a general zone, as is currently the practice.
- Consider Species at Risk habitat and wetlands in zoning and development proposal evaluations.
- Review setback requirements for development around watercourses.
- Require stormwater management plans for new subdivisions, and encourage the use of “low impact design methods” for stormwater management.
- Control development around Blair and Half Moon Lakes to improve water quality.
- Continue to protect water supplies.
- Use site plan approval along the coast, and discourage coastline hardening (e.g. armour rock).
- Delineate floodplains.
- Concentrate development in specific areas, rather than permitting sprawl.
- Protect valuable agricultural soils with a specific Agriculture Zone.
- Consider geotechnical studies for development in areas at high risk of mine subsidence.
- Explore establishing wastewater management districts for areas with failing septic systems.

## 8.7 Regional Energy Strategy

The Cumberland Regional Energy Strategy sets out goals of establishing the county as a community that encourages the development and use of renewable energy, and of increasing awareness and implementation of energy efficiency and conservation programs. Of special interest in Cumberland is the potential provided by geothermal energy in Springhill's flooded former mines. The Renewable Energy Plan provides a high level evaluation of this resource.

The Renewable Energy Plan also explores the potential for a number of more traditional renewable energy sources in Cumberland. It notes that most of Cumberland is suitable for wind energy development, that the County is at the heart of a future tidal energy industry in Nova Scotia, and that the amount of sun Cumberland receives makes it one of the best places in Nova Scotia for solar energy development.

## 8.8 Active Transportation Workshop Report

In 2012 the Ecology Action Centre hosted an active transportation workshop in Cumberland. The workshop was attended by residents, municipal politicians and staff, as well as representatives from provincial departments. The notes from the workshop identify existing active transportation assets within Cumberland and then identify active transportation priorities for the future.

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### **8.9 Municipal Climate Change Action Plan (MCCAP)**

The Municipal Climate Change Action Plan identifies areas and infrastructure vulnerable to the effects of climate change, and provides a high-level approach for taking action on these vulnerabilities. Areas identified as particularly vulnerable include Advocate Harbour, the Northumberland Straight area, and the Tantramar Marshes. The Action Plan notes these coastal areas are at risk of flooding, and sometimes erosion, from sea level rise and more intense storms. They also host important infrastructure (Advocate, Tantramar) or a high concentration of development (Northumberland).

Points of action include updating the Municipality's land use planning documents, hardening or relocating existing infrastructure, and locating new infrastructure in areas of lower vulnerability.

### **8.10 Recreation and Physical Activity Strategic Plan**

The Cumberland Recreation and Physical Activity Strategic Plan, developed in 2009, notes the importance of physical activity and its contribution to good health. This Strategic Plan sets out a specific action plan to increase physical activity. Many of these actions are related to programming, funding, education, and sports facilities. However, there are some actions that tie into land use planning, such as amending the Subdivision By-law to provide more park/activity area in new developments; and improving access to paths, walkways, sidewalks, and trails.

### **8.11 Community Economic Development Strategy**

The Community Economic Development Strategy for Amherst and Cumberland was produced in 2014. It includes high-level goals and actions for economic development in the county. Related to land use planning, it suggests a need for more industrial park capacity and for support for the retail sector through investments in making downtowns more beautiful.

### **8.12 Pugwash & Area Master Plan**

The Pugwash and Area Master Plan was produced in 2010. The planning process involved extensive consultation with community members. Through this community consultation process four priorities emerged:

1. Infrastructure
2. Communication and collaboration
3. Multi-purpose centre
4. Tourism

The infrastructure priority is most directly related to land use planning. Actions include building/expanding the water and sewer systems, providing more parking, and providing better access to sidewalks.

### **8.13 Pugwash Waterfront Plan**

The Pugwash Waterfront Plan, produced in 2015, is a concept physical plan for improvements to the Pugwash waterfront and nearby areas. It focuses on infrastructure improvements, such as a better streetscape on Water and Durham Streets, a developed marina, and investments in Eaton Park.

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