

# **Accommodating Future Residential Demand in Whitehorse**

August 2021

Background Report

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## Introduction

Housing provision over the next 20 years is a key topic for the Official Community Plan (OCP) review. The first step is understanding how much housing will be needed in Whitehorse based on population projections. In 2019 the Yukon Bureau of Statistics (YBS) released revised and updated population projections for both the Yukon and Whitehorse. It has four scenarios: Low, Medium and High Growth generated via demographic projections, as well as a Preferred Projection which combines the Medium Growth scenario with an additional set of information including economic growth. *Note: these projections are based on pre-COVID-19 information. At this time, there is no information on how COVID-19 will impact Yukon's population projections.*

Using the Yukon Bureau of Statistics' projections for average household sizes for Whitehorse (Appendix A), population growth can be translated into housing unit demand. The anticipated population of Whitehorse in 2040 based on the Preferred Projection is 40,700 people, resulting in at least 5,000 new housing units needed over the next 20 years (Appendix A). However, there are additional factors that will add to the housing demand, including:

1. **Housing lag** - There was a lag of about 200 units from 2012, which is the shortfall between units needed based on population growth versus units actually built based on housing completions data from CMHC.
2. **Unoccupied unit rate** - Based on Census 2016 data, it is assumed that 4.9% of all housing units would remain unoccupied for a number of reasons. This comes out to be around 250 units. This number is not to be confused with "vacancy rate" which refers to the available rental units in the City of Whitehorse.
3. **Contingency** – Given the high population growth rates observed in the past three years, an additional 25% contingency has been assumed between 2020 and 2030 to account for unexpected fluctuations in housing demand, which accounts an additional 700 housing units.

These additional factors increase the housing unit demand to approximately 6,150 units to accommodate growth to 2040. However, there are many housing units already underway to help fulfill this need.

Whistle Bend has not exhausted its capacity for accommodating residential units. It is estimated that the existing neighbourhood and if Future Areas A, B and C are completed, the neighbourhood could accommodate 2,700 additional housing units.

In addition to Whistle Bend, if the City continues to densify at the current rate (i.e., status quo densification) it is expected that approximately 1,550 new units will be built in existing neighbourhoods over the next 20 years.

Therefore, we are not looking to accommodate 6,150 new units. After factoring in the demand that can be met through future Whistle Bend development and status quo densification (i.e., 4,250 units), we are looking to accommodate an additional 1,900 units between now and 2040.

This paper studies the options for meeting this expected housing demand over the next 20 years.

# 1.0 Issue Identification

## 1.1 Issue Statement

The issue explored through this paper is where the City of Whitehorse should locate the additional housing that will be required based on population growth anticipated between now and 2040.

Housing provision for the next 20 years will be a key topic in the 2020 OCP. The first step is understanding how much housing will be needed.

Across Canada, the average number of people living together in a home has been steadily decreasing. The average household size in Canada is currently 2.4 persons per household, down from 2.9 in 1981. Yukon, including Whitehorse, has experienced a nearly identical decline. From a housing perspective, this means that even if the population does not grow, more dwelling units are now required because today’s families are smaller than in the past.

However, the population of the City of Whitehorse is growing. Over the past decade (2011 -2020), Whitehorse has grown by approximately 500 residents per year<sup>1</sup>, and 215 homes per year. The Yukon Bureau of Statistics maintains population projections for both the Yukon and Whitehorse, and current predictions anticipate continued growth at a similar rate. The projections consist of four scenarios: Low, Medium and High Growth, as well as a “Preferred Projection”, which combines the Medium Growth scenario with an additional set of information including economic considerations.

Although reliability of the projections will decrease with time and population projections cannot be known with firm certainty, the “Preferred Projection” is the best available information to use when planning for the entire lifespan of the upcoming OCP. As shown below, the Yukon Bureau of Statistics’ “Preferred Projection” expects the population of Whitehorse to continue to grow from the current 29,523 residents to 40,700 by 2040: an increase of approximately 11,200 people (or 38%) over 20 years.

Using average household size for Whitehorse (based on YBS projections), population growth can be translated into housing unit demand. The summary, using rounded numbers is:

<b>Scenario</b>	<b>Population in 2040</b>	<b>Units needed by 2040</b>
Low	35,000	2,500
Preferred	40,700	5,000
High	45,500	7,000

This means that the supply of housing in Whitehorse will need to increase by approximately 5,000 dwellings over 20 years (i.e., about 250 homes per year) to accommodate these additional residents. This does not account for supply lag, contingencies, and vacancies, which takes this number up to 6,150 units or approximately 300 homes per year to 2040.

Some of these new units can certainly be built in existing neighbourhoods. A preliminary estimate shows that Whistle Bend, when complete, could accommodate 1,300 more dwellings in addition to what exists in that neighbourhood today. This does not include a potential Whistle Bend expansion (i.e., Future

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<sup>1</sup> Yukon Bureau of Statistics

Areas A, B and C) that was studied by the City and Government of Yukon (YG), which could accommodate approximately 1,400 more units, bringing the total up to 2,700 additional units in Whistle Bend alone.

Other neighbourhoods have not yet been fully developed in the sense that their existing zoning allows for a greater number of dwellings or units than has been taken advantage of by property owners at this time.

The City's current direction is to pursue a compact development pattern. If densification continues at the current (i.e., status quo) rate, it is expected that approximately 1,550 units will be built in existing neighbourhoods over the next 20 years. This densification is likely to be in the form of secondary suites, redevelopment of older properties, etc. This number could be increased if the City chose to pursue new development in existing neighbourhoods and increased the allowable density under the Zoning Bylaw. Minimum densities can also be applied through the Zoning Bylaw to ensure new dwellings come in the form of denser dwelling types.

Therefore, the need is not for 6,150 new units. After factoring in the demand that can be met through future Whistle Bend development and status quo densification (i.e. 4,250 units), we are looking to accommodate an additional 1,900 units between now and 2040.

In order to meet this demand for approximately 1,900 new housing units over 20 years, the City of Whitehorse will have to determine the timing and priority of (a) increasing and incentivizing housing units in existing areas of the city; and (b) developing a new neighbourhood.

The guiding decisions that are made now about how to accommodate this growth will determine what type of community we have in the future.

## 1.2 What We've Heard

Phase 2 of the OCP Review<sup>2</sup>, "Explore New Concepts" was focused on seeking public input on topics not covered by recent City of Whitehorse planning processes. The public engagement strategy included online and in-person opportunities for the public to speak to City staff and provide their feedback on these concepts. In total, 679 people provided feedback during Phase 2.

Through the Phase 1 public engagement, participants indicated strong overall support for densification, notably Downtown. Phase 2 built upon this input, the following shows public response for questions related to residential development:

***Q: We heard you say that you prefer increased density over increased sprawl. Where should we consider allowing denser housing development? (check all that apply)***

Near neighbourhood cores (e.g. grocery store)	67%
Along transit routes/busier streets	57%
On existing lots (change zoning)	51%

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<sup>2</sup> There are 4 phases in total: Phase 1 – Awareness Building; Phase 2 – Explore New Concepts; Phase 3 – Create the Plan; Phase 4 – Adopt the Plan. Phase 3 is currently underway.

None, focus on building new urban subdivisions	25%
On green space lots within neighbourhoods (infill)	17%
Other	15%

Notable responses under the “other” category included densifying Downtown, infilling areas that are not greenspace (e.g. parking areas, unused buildings), remediating and developing contaminated sites, and allowing more housing units on existing lots.

***Q: We heard you say that although sprawl is less preferable to densification, developing new areas should be considered. Where should the next major urban area be?***

South of Copper Ridge	49%
North of Long Lake	29%
None, focus on densifying existing developed areas	23%
South of Porter Creek, Porter Creek “D”	21%

The public could also suggest other locations. Notable responses included the Tank Farm, near Yukon College, the airport (by relocating it), and First Nation settlement parcels. There was a notable number of responses that opposed or had concerns with developing some of these areas (e.g. North of Long Lake and Porter Creek “D”).

***Q: We heard you say that although urban residential areas should be the priority, we should still examine growth options in country residential areas. What options should we consider for housing in country residential areas? (check all the apply)***

More housing in existing areas (e.g. smaller dwellings)	50%
New country residential neighbourhoods	44%
Expanding existing neighbourhoods into green spaces	20%
None of these	13%

The public could also suggest other ideas. Notable ideas included subdividing lots, smaller country residential lot sizes, and additional dwellings on each lot. A number of residents voiced concerns or opposition to new housing in existing country-residential areas and expanding into nearby greenspaces.

***Q: We heard you say that your strongest support for increased density is in the Downtown areas. What changes should we explore in Downtown to increase density? (check all that apply)***

Other zoning/regulation changes	65%
Increased building height allowances	46%
More financial incentives	41%
None of these	9%

Notable responses in the “other ideas” category included building on vacant/derelict lots through incentives or punitive measures, affordable housing options, removing parking requirements, exploring tiny homes or small unit sizes, density bonuses, more mixed-use zoning, and expanded residential options in Marwell. A number of respondents voiced concerns over building height increases, while others suggest modest height increases to respond to the low-lying nature of Downtown.

### 1.3 Existing City of Whitehorse Strategies and Plans

When determining the approach to residential development that is set out in the new OCP it will be important to consider the City’s existing strategies and plans which already provide direction on this topic.

In 2020 Mayor and Council released a new Strategic Priorities document that identified five areas to focus for the next year of their mandate. These priorities are directly relevant to the issue discussed in this paper and should be considered as part of decision making criteria:

<b>City of Whitehorse Strategic Priority</b>	<b>Relevance to the issue of accommodating residential demand</b>
<p><b>Environmental Stewardship</b> Continuously striving to minimize the City’s impact on the environment. Prioritizing investments that allow us to consume less energy and create fewer greenhouse gases.</p>	<p>Decisions around location of additional housing units and neighbourhood design (i.e., densification vs. sprawl) have significant environmental impacts.</p>
<p><b>Transportation</b> As the city grows, it is crucial to review and potentially adjust current transportation routes. Modes of transportation are changing and traffic impacts of developing neighbourhoods are noticeable.</p>	<p>Decisions around where and how to accommodate the demand for housing have a significant impact on transportation options available to residents and the transportation system itself.</p>
<p><b>Infrastructure Renewal</b> The City plans on taking full advantage of the federal funding programs to move several infrastructure projects forward.</p>	<p>Decisions around new and expanded infrastructure to service new growth are an essential consideration for the City. The City should consider the lifecycle replacement cost of new infrastructure.</p>
<p><b>Public Safety</b> The thread of a wildland fire is at the top of mind for fire services in the City and significant planning is underway.</p>	<p>Decisions around where and how to accommodate the demand for housing can either increase or decrease the threat of wildland fire.</p>
<p><b>Housing</b> Continue to provide opportunities for housing development, continue to work with partners to help residents attain housing.</p>	<p>Decisions around where and how to accommodate residential demand have an impact on the availability and affordability of housing.</p>

With respect to long range planning, in 2008 Whitehorse City Council adopted the Strategic Sustainability Plan (SSP) to solidify the City's commitment to sustainability. The SSP was the foundational document that informed the 2010 OCP, which took this more sustainable direction and expanded upon it.

Green space has long been treasured by the City of Whitehorse and its residents as a unique and valuable community asset. However, historical development patterns (that emerged in part to protect easy access to green space) have created a vehicle dependent municipality that is spread out over a large area, with a limited population and tax base to support itself.

The 2010 OCP introduced several new policies that were meant to guide new development in a different direction. These included the introduction of an urban containment boundary and greater emphasis on the need for more compact, denser forms of development.

Since 2010, the City's approach to residential development has been generally guided by the following OCP policies:

*5.1.3 The City shall promote a city-wide compact development pattern to ensure existing infrastructure is used most efficiently; development is oriented towards transit and active transportation; large wilderness spaces outside of urban areas are preserved for as long as possible, and as a mitigating and adaptive strategy to confront climate change.*

*10.7.1 All new residential growth is encouraged to occur within the Urban Containment Boundary, as shown on Map 5. Future development shall be directed in as compact a manner as feasible, given already established land use patterns.*

To demonstrate the effect of this OCP direction, between 2012 and 2019, 36% of all new units were located in Whistle Bend and 30% were built downtown.

Following the adoption of the 2010 OCP, the City of Whitehorse continued to move in this direction with other policy and planning work. There are a number of more detailed City plans and strategies that emerged from the 2010 OCP and support the idea of shifting to more compact forms of development. At the same time, the visions and goals of these strategies would be further supported through increased densification. The strongest mutual connections are contained in:

- Transportation Demand Management Plan (2014)
- Sustainability Plan (2015)
- Community Economic Development Strategy (2015)
- Hazard Identification and Risk Analysis (2018)
- Downtown Plan (2018)
- Bicycle Network Plan (2018)
- Transit Master Plan (2018)

For example, this mutual reinforcement is evident in the Transportation Demand Management Plan which imagines Whitehorse as a *“highly mobile community where people are accommodated on a well-connected and maintained street network; increasingly residents choose to walk, bicycle, use transit, and carpool because of the range of safe, comfortable, and convenient alternatives to vehicle travel.”* This vision of increased choice with respect to transportation will help to make more compact forms of



development functional and enjoyable for residents and, at the same time, alternative modes of transportation (biking, walking, public transit, carpooling) are more viable in denser neighbourhoods that are close to places of work, schools and other amenities.

There are also projects currently underway within the City, such as climate change planning and wildfire risk reduction, that both support and would benefit from increased densification.

When viewed collectively, the framework of plans and strategies provides a foundation that shows the City's current direction on the topic of residential development. This can be further strengthened and built upon in the new OCP.

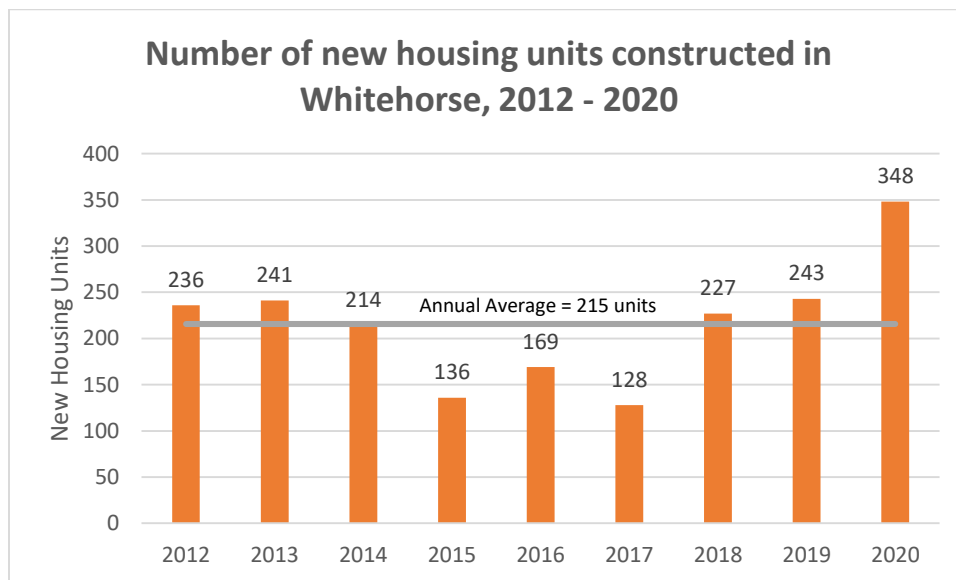
### 1.4 Past Approach to Residential Development in Whitehorse

The City of Whitehorse OCP was last reviewed in 2010. At this time the population of Whitehorse was around 20,461. As of December 2019 the city's population has reached 29,703, an increase of approximately 45% over nine years.

Historically, development patterns in Whitehorse have produced a relatively low density, vehicle dependent city with a limited population and tax base to support itself.

The 2010 OCP introduced several new policies that were meant to accommodate the needs of a growing population through more compact, denser forms of development.

Approximately 2,000 new dwellings were built in Whitehorse<sup>3</sup> between 2012 and 2020. The figure below shows, on average, 215 units have been constructed per year during this time period.



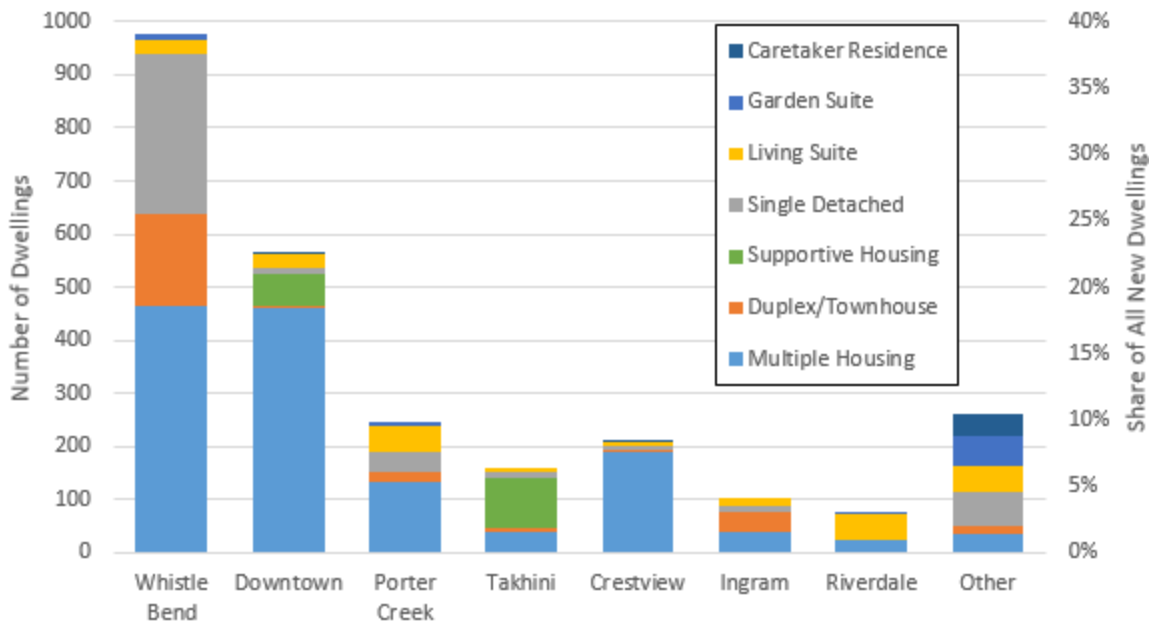
The figure below shows the location and type of new housing units permitted<sup>4</sup> in Whitehorse, between 2012 and 2020. This shows that during this time period, 38% of all new housing units have been built in

<sup>3</sup> Based on Annual Housing Completions as reported by CMHC

<sup>4</sup> Based on approved Development Permits

Whistle Bend and 22% have been built Downtown. There has also been a strong shift towards multiple/apartment housing which represents over half of all new building between 2012 and 2020.

## New Dwellings permitted by Neighbourhood and Type 2012-2020



Over the past decade and guided by these new OCP policies, the City has responded to the housing demand generated by a growing population in four main ways:

### (1) Whistle Bend

Through a partnership with YG, the City of Whitehorse planned and developed Whistle Bend, the City’s newest residential neighbourhood. The 2010 OCP identified Whistle Bend as the next area for a major new residential development, with eight phases that were anticipated to provide for a significant amount of the housing that would be needed over the plan’s twenty-year time frame.

Whistle Bend represents a new approach to neighbourhood design for the City of Whitehorse because of the emphasis on integrated land use planning and the creation of a ‘complete’ community. When fully developed, the neighbourhood will include a diverse mix of housing types and densities, shared greenspace, opportunities for alternative modes of transportation, and commercial areas including a central town square. This will enable residents and visitors to live, work and play without relying exclusively on vehicles for transportation.

Whistle Bend is envisioned as a neighbourhood for approximately 8,000 residents, or 3,500 units. Large portions of the neighbourhood do not have building permits as of 2020, resulting in remaining capacity

to accommodate approximately 1,300 units in the future<sup>5</sup>. Whistle Bend expansion (i.e., Future Area “A”, “B” and “C”) could accommodate approximately 1,400 additional units, bringing this number up to about 2,700 (approximately 35% of the total housing demand for 2040).

## **(2) Densification, especially Downtown**

The 2010 OCP supported additional housing development and densification, especially in the downtown area, and the City has begun to implement this direction.

With respect to Downtown, first the maximum building height was increased from 20 metres and 4 storeys to 25 metres with no limit to the number of storeys. Then, the zoning bylaw for Old Town was amended to change multiple housing from a conditional use to a principal use and an increase to the maximum number of units allowed from 1-2 up to 4 per lot. The Development Incentives Policy and similar programs from the Yukon Housing Corporation are important contributors to the increased density Downtown.

The City has also made a number of zoning modifications to increase density throughout the City. For example, modifications to the Residential Single Detached (RS) zone (i.e., meant for single detached housing on serviced urban lots with a variety of housing forms and related residential uses) to (a) lower the minimum lot size and width to make properties smaller and more affordable; and (b) allowing up to 3 units to make it easier to develop suites in most residences. This is just one example of many city-wide zoning modifications that have been undertaken to pursue greater overall density throughout the entire City.

## **(3) Infill/New Development**

In the City of Whitehorse, infill development is known as the process of developing vacant or under-used parcels of land within existing urban areas that are already largely developed. Infill initiatives undertaken by the City of Whitehorse have typically focused on developing new parcels of land in existing neighbourhoods, but the term can also refer to redevelopment of existing properties to intensify their use. The 2010 OCP called on the City to explore possibilities for infill. The plan went so far as to identify undeveloped publicly owned land in existing neighbourhoods that had good potential to be serviced for residential use.

Since then the City has undertaken work to advance these infill projects. The planning work has been completed for infill projects in the Range Point, Downtown South and Hillcrest neighbourhoods.

In 2011, 19 new lots were released in Crestview and Porter Creek. In 2017, the City of Whitehorse, in partnership with YG, began a joint infill land development project that has in 7 Whitehorse neighbourhoods<sup>6</sup>.

## **(4) Future Development Areas**

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<sup>5</sup> This is an estimate that includes several assumptions.

<sup>6</sup> Hidden Valley, Porter Creek, Logan, Granger, Cowley Creek, Mary Lake, and Arkell

In addition to Whistle Bend, the 2010 OCP also identified the following areas for potential future residential development: (a) the Porter Creek “D” extension; (b) the area north of Long Lake and east of the Yukon River; and (c) south of Copper Ridge.

From 2004 to 2012 the City looked at the Porter Creek “D” area to determine its potential feasibility for residential development. While it is clear from the OCP engagement so far that both local First Nations and the majority of the public do not want to see development in Porter Creek “D”, it should be noted that allowing residential use in this area could add approximately 750 units to the housing supply in Whitehorse. Additionally, building a road through this area to connect Mountainview Drive to the Alaska Highway could alleviate traffic issues on Mountain View Drive and ease pressure on Whitehorse’s transportation system overall.

A Council decision in January 2013 confirmed that further investigation of this project would be delayed until after Whistle Bend Phase 7 was developed. For these reasons, development in Porter Creek “D” is not included as a potential solution for how to meet future residential demand..

In 2016 the City commissioned pre-feasibility analysis of the two remaining future development areas, both of which were located outside the Urban Containment Boundary, to examine their viability for new residential development. Both areas show potential for compact residential development and the capacity to accommodate more housing units than the 2,250 needed over the next 20 years. A low density scheme would yield approximately 7,140 units in the area south of Copper Ridge and 8,620 for the area north of Long Lake. Each location has unique considerations that would make development relatively difficult, for example investment in another bridge across the Yukon River is a necessary precursor to development in the area north of Long Lake while the presence of near surface bedrock in the area south of Copper increases development cost and servicing complexity. These considerations are explored more fully in the Options section of this paper.

## 1.5 Looking Ahead

Broadly speaking, the City of Whitehorse will have to determine the timing and priority of (a) increasing and incentivizing housing units in existing areas of the city (i.e., densification and new development); and (b) developing a new neighbourhood.

There are several other opportunities that should also be considered when deciding where the City of Whitehorse should locate the additional housing that will be required over the next 20 years:

### **Tank Farm**

Master planning for the Tank Farm residential development is scheduled to begin in 2021. A very conservative estimate shows that this private land development project could produce approximately 1,200 new housing units. This number could increase to 1,400 if adjacent Ta’an Kwäch’än Council (TKC) and Kwanlin Dün First Nation (KDFN) owned pieces of land are included in the development. If realized, the central location and size of this potential neighbourhood will be significant for Whitehorse. This would be the first private sector led, large scale land development project in Whitehorse and the City would not have control over project timelines.

## **Ta'an Kwäch'än Council (TKC) and Kwanlin Dün First Nation**

There is also enormous potential for First Nation land development in Whitehorse. Both KDFN and TKC have significant land holdings within the City of Whitehorse boundaries and both governments have expressed interest in developing some of this property for residential use by both citizens/beneficiaries and the general public. KDFN's Chief and Council recently approved a Community Lands Plan (known as the "C" Lands Plan) that sets out a framework to guide the planning and development of their Community Lands, including the 24km<sup>2</sup> of settlement land located within the City of Whitehorse. KDFN staff are currently working on a 5-year development plan that shows "C" Lands Plan priority areas for development. For example, KDFN and YG are working together on a project to develop KDFN's C-15 parcel (approximately 14.8 ha) and an adjacent YG owned parcel (approximately 3.3 ha), both in the Range Point neighbourhood. While the project is still in preliminary stages, a conservative estimate that assumes 15 units/ha (i.e., a low density roughly equivalent to a neighbourhood of single family homes) shows this land could yield approximately 270 units of housing.

If developed, these lands alone could accommodate residential demand in Whitehorse for the next 20 years. If this direction were embraced by the City, the OCP could include policies that strongly support First Nations Land Development within the UCB.

## **5th and Rogers**

YG has indicated renewed interest in developing the downtown 5th and Rogers parcel of land. While much smaller in size (approximately 2.5 hectares, although approximately 0.5 ha would have to be used to satisfy geotechnical requirements of the site) this is a centrally located property with potential for residential development. A conservative estimate that assumes 50 units/ha (i.e., a higher density roughly equivalent to several multi-unit residential buildings) shows this land could yield approximately 100 units of housing.

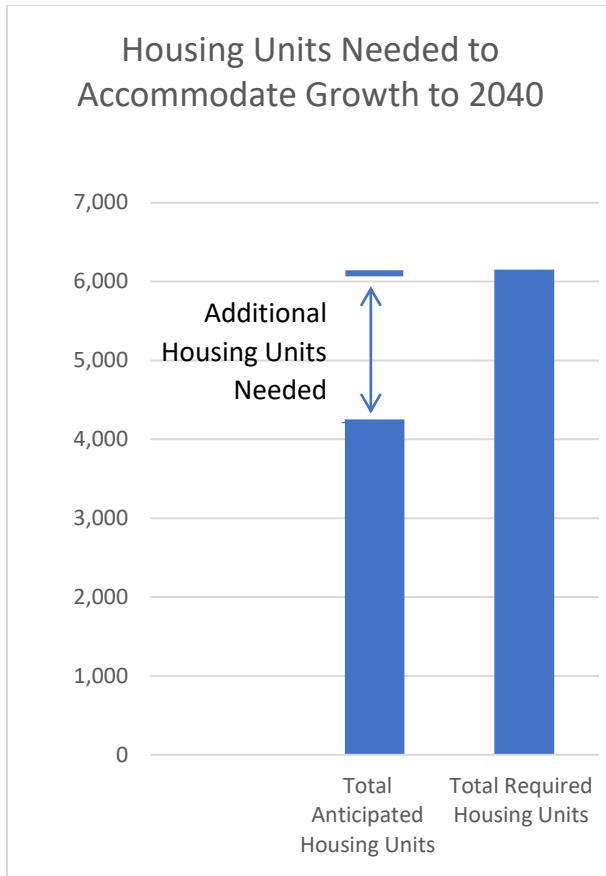
It should be noted that there is a degree of uncertainty and risk attached to all of these projects because they involve multiple parties and do not fall solely under the control of the City.

## **Housing Development Incentives Policy**

Lastly, the Housing Development Incentives Policy is a tool that can be used to support the private development of new housing units in existing neighbourhoods. For example, this policy has been designed to encourage property owners to make full use of the allowable density for their lots.

### **1.6 Summary of Housing Needs and Existing and Planned Housing Units**

As summarized in the tables below, Whitehorse requires an additional 6,150 housing units to accommodate population growth to 2040, including housing lag, unoccupied units and a contingency. Within existing neighbourhoods and planning policies, there are capacity for approximated 4,250 housing units. This results in a shortfall of approximately 1,900 housing units. This shortfall only becomes apparent sometime after 2030 once the Whistle Bend and Future Area are built out.



**Table 1: Housing Unit Needed to Accommodate Growth to 2040**

Base Units Needed	5,000
Supply Lag	200
25% Contingency (2020-2030)	700
4.9% Unoccupied Unit Rate	250
<b>Total Required Housing Units<sup>1</sup></b>	<b>6,150</b>

**Table 2: Housing Units Anticipated to 2040**

Whistle Bend (Phases 1-7), including Heiland parcel <sup>2</sup>	1,300
Whistle Bend (Future Areas A, B, & C) <sup>2</sup>	1,400
Densification (Downtown) <sup>2</sup>	1,100
Densification (Outside of Downtown) <sup>2</sup>	480
<b>Total Anticipated Housing Units<sup>1</sup></b>	<b>4,250</b>

Notes:

1. Totals may not add up due to rounding
2. Estimate based on current data

## 2.0 The Case for Density

As the population of urbanized areas continues to increase, one of the biggest issues facing cities and towns is the question of how and where to grow.

Locating homes close to school, work and other amenities can make walking or cycling a viable mode of transportation and encourage the population density required to spur business opportunities and support public transit systems. As cities and towns come face to face with the realities of climate change, rising costs, limited resources and increased risk of wild fires and other natural disasters, this issue is being contemplated by municipal governments across North America.

### City Priorities and Important Considerations

As mentioned earlier, Council's five strategic priorities are directly relevant to the issue discussed in this paper:

- Environmental Stewardship
- Transportation

- Infrastructure Renewal
- Public Safety
- Housing

While dense, compact development patterns is an urban planning best practice and there are many arguments in favor of densification, the 2010 OCP emphasized more compact forms of development for the following Whitehorse-specific reasons (based on public input):

- To more efficiently use the City’s existing infrastructure.
- To encourage a greater orientation towards transit and other forms of active transportation.
- To preserve large wilderness spaces outside of urban areas for as long as possible.
- As a strategy to mitigate and adapt to climate change.

Lastly, feedback received through the OCP public engagement so far has strongly indicated that Whitehorse residents (a) want enhanced commercial and other types of services in their neighbourhoods; and (b) prefer the idea of densification (especially Downtown) over sprawl. This public engagement also reinforced that Whitehorse residents value greenspaces and would like to see these areas protected and preserved.

- Enhanced Neighbourhood Services
- Preference for densification over sprawl

The relationship between these ten major priorities/important considerations and densification is discussed in more detail below.

## 2.1 Environmental Stewardship

Decisions around where new neighbourhoods are located and how they are designed have significant environmental impacts.

### **Wilderness Spaces**

Keeping green space vital is highly valued as part of the vision for the City of Whitehorse and its residents. In this context, green space refers to the more expansive areas of wilderness near the City’s outer limits as opposed to the small undeveloped areas that are close to and within residential neighbourhoods.

These wild, open spaces provide various economic, social and environmental services including wildlife habitat, recreation, aesthetic and First Nations’ heritage and cultural values. Preserving undeveloped areas with First Nations’ archaeological, cultural and ecological significance is an important aspect of reconciliation.

In addition, new development tends to disrupt far more open space than just the area that is urbanized. As such, the 2010 OCP reserved 65% of land within the City boundary for green space. Reducing sprawl through compact development that is strategically located near existing infrastructure, services and amenities helps to preserve the vast wilderness areas beloved by Whitehorse residents.

As the population of Whitehorse grows, concentrating on densification of existing neighbourhoods *before* consuming additional land in currently undeveloped areas will preserve our community's pristine wilderness spaces for as long as possible.

## Climate Change

Most cities in Canada are experiencing the effects of climate change. Unexpected events such as wildfire, flooding, increased freeze-thaw cycles and snow removal can lead to major disruptions in City operations and budgets as well as increased risk to life and property. Responding to climate change requires the two pronged approach of introducing both mitigative and adaptive actions and the decision of where to accommodate 6,500 new homes over the next 20 years will have an impact on both.

Cities have an opportunity to support climate change mitigation (i.e., those actions meant to limit the magnitude or rate of long-term global warming through reduction in greenhouse gas emission) with choices around neighbourhood location and design. Building higher density neighbourhoods is a more effective way to mitigate climate change. Generally, higher concentrations of people and economic activities generate demand that can reduce energy use and associated emissions. For example, more homes and businesses that are closer together can encourage walking, cycling and the use of public transit in place of private vehicles. This is an important measure in Whitehorse where the majority of greenhouse gas emissions come from road transportation<sup>7</sup>.

Dense, compact neighbourhoods reduce the need for energy intensive services such as snow ploughing, street cleaning and water pumping. They also contribute to shortened transit routes. The City's fleet vehicles and equipment are responsible for 25% of corporate GHG emissions, transit buses are responsible for 18%<sup>8</sup>.

In the context of residential growth, building out the City's existing neighbourhoods before developing a new residential area will reduce climate risks to City budgets and infrastructure while simultaneously supporting a lower-carbon community.

## 2.2 Efficient use of existing City infrastructure

Sprawl is expensive. The construction and infrastructure work that must be undertaken to serve a residential area (roads, water, sewer, and other 'shallow utilities' such as cable and telephone) requires significant capital investment. Conceptual design estimates show that the initial capital investment for a new residential neighbourhood in the area north of Long Lake is approximately \$658 million while a new neighbourhood in the area south of Copper Ridge would require approximately \$551 million (this includes on and off site costs). These numbers are in 2016 dollars.

The additional infrastructure that is required for a new residential area must be built, owned, maintained and – costlier still – eventually replaced by the City of Whitehorse. For this reason, the lifecycle cost of all new assets should be seriously considered before they are acquired by the City. The

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<sup>7</sup> Government of Yukon's Our Clean Future: A Yukon strategy for climate change, energy and a green economy. November 2019.

<sup>8</sup> City of Whitehorse 2019 Corporate GHG Inventory



eventual replacement of even the City's existing infrastructure represents a serious financial risk as the source of funds for these capital replacements is not clear.

Operational costs during build-out of a new neighbourhood should also be considered, as services (for example, transit, pump/lift stations, pipes, street lights, garbage pick-up and snow clearing) must be provided as soon as one house in a neighbourhood is occupied even though the property tax base is not yet in place. These costs include the purchase of additional garbage trucks, snow removal equipment, new parks maintenance equipment, new fire halls and fire trucks, etc.

The City of Whitehorse is a lean organization that strives to keep property taxes low while also maintaining a high level of service in all areas of civic operations. It is imperative to apply this lens to the topic of residential development, as the approach to accommodating growth presents many opportunities for efficiency.

Densification is a more efficient use of land and existing municipal infrastructure. Put simply, 15 units/ha is a conventional low-density neighbourhood of single family detached housing. Double the density and only half the land is required to generate the same unit yield and accommodate the same population growth.

Densification of existing neighbourhoods *before* expanding into undeveloped areas is a strategy to make full use of the City's existing residential infrastructure. This is an important point to consider before making the decision to construct a new residential neighbourhood. While increasing the number of homes in existing neighbourhoods also requires upgrades to civic infrastructure and expanded City operations, the costs are order of magnitudes less by comparison.

The demand for sprawling developments in the City of Whitehorse continues to exist but the cumulative effects of this type of development pattern comes at ever increasing costs, both financial and otherwise.

## 2.3 Transportation

Transportation is a crucial consideration for growing cities. More people residing within City limits means more care and consideration must be given to how these people will get where they need to go (for example: work, home, extracurricular activities, etc.) each day in an efficient, equitable and enjoyable way.

Planning best practices support dense, compact development patterns in part because they are more environmentally responsible, especially when it comes to transportation. Providing a range of transportation choices and the walkable neighbourhoods that support them can help improve air quality and reduce greenhouse gas emissions. In Yukon, greenhouse gas emissions mostly come from transportation and heating; vehicular transportation is responsible for over half of the territory's greenhouse gas emissions.

Dense, compact neighbourhoods are also more equitable because they give people greater choice for how to get around. When homes, offices, stores, recreational facilities, etc. are near transit stations and close to each other, it is more convenient to walk, bicycle or take transit. In addition, more densely populated neighbourhoods would make Whitehorse's transit system more viable.

More options around mode of transportation makes it easier to incorporate physical activity into daily routines, reduces transportation costs, and gives more freedom and mobility to low-income individuals, senior citizens, disabled persons, and others who cannot or choose not to drive a vehicle. Individuals who prefer the advantages of non-vehicular modes of transportation (for example, the obvious health and financial benefits) have been afforded limited choice by the automobile dependent designs of most Canadian municipalities.

Greater densification should encourage and enable those who prefer (i.e., are willing/able to use) transit and active transportation. There are many Whitehorse residents who would rather use public transit, bike or walk, but find their preferred mode of transportation unsafe or inconvenient. Enabling those residents who do not wish to drive in the first place to travel via other modes will free up parking and road space for those who rely on private vehicles for their transportation needs.

## 2.4 Public Safety

The threat of a wildland fire is at the top of mind for fire services in both YG and the City. Significant planning is underway to address public education and specific initiatives such as preventative prescribed burns, fire line/break, encouraging fire-smart activities, risk assessments, and risk reduction/implementation planning.

In 2017 the City of Whitehorse undertook a Hazard Identification and Risk Analysis study (HIRA) that showed the types of emergencies that would be the most likely and highest risk hazards for the City of Whitehorse.

Although many emergencies are unpredictable, much can be done to prevent and mitigate their effects as well as to strengthen the response capacity of communities at risk. Land use planning and neighbourhood location and layout has huge potential for risk reduction when it comes to mitigation and response to natural disasters.

For example, urban-interface fires were one of the top hazards for Whitehorse identified through the HIRA and are a potential risk to life and property. The City of Whitehorse is located within and surrounded by boreal forest. The risk of forest fire is high due to a history of fire suppression and relatively little harvest over the past century. The likely effects of climate change exacerbate this risk.

Response to urban-interface wildfire is significantly more effective at protecting life and property in areas with more compact forms of residential development.

For neighbourhood layout to be an effective method of wildfire risk mitigation and response, it needs to be based on solid understanding of where and how to locate and arrange new homes, in particular housing density and spacing. Research shows that neighbourhoods with lower housing density or small, isolated clusters of development have the highest predicted wild fire risk<sup>9</sup>. Additionally, building a new neighbourhood that results in an increase to the wildland urban interface (i.e., the zone of transition between undeveloped land and human development) will result in increased risk, which is shared between the City and homeowners.

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<sup>9</sup> [Land Use Planning and Wildfire: Development Policies Influence Future Probability of Housing Loss](#), 2013

## 2.5 Housing

Whitehorse residents have indicated that a top concern is the ongoing affordability of housing. Densification of existing residential areas could enable more affordable and therefore, attainable, forms of home ownership. For example, allowing secondary suites which can help to make home ownership more financially feasible while also increasing the stock of much needed rental housing.

Choice is also an important aspect of housing affordability, especially as it relates to dwelling type. In general, denser, more compact forms of housing such as duplexes, town houses, mobile homes and condos offer different market options as an alternative to the single family home and are generally available at a lower price. Taking the steps to densify our neighbourhoods and bring more of these compact dwelling types into the housing supply will provide greater choice and better meet the diverse housing needs of Whitehorse residents.

Another aspect of housing choice that Whitehorse residents would likely prefer is an ability to choose which neighbourhood to live in. Decisions about where and how to accommodate residential growth in the future will impact that choice. Options include facilitating new development and up-zoning in existing historic neighbourhoods, ongoing expansion of Whistle Bend or development of new neighbourhoods. Choosing to increase the number of housing units through up-zoning and infill will make new homes available in existing neighbourhoods. The City has made repeated commitments in recent years that support expansion of Whistle Bend, where build-out of current and future phases could supply a significant portion of residential land for housing supply if Council continues to support that direction. Alternatively, a decision could be made to develop a new neighbourhood similar to Whistle Bend.

### **Preference for densification over sprawl**

Through the OCP public engagement so far, Whitehorse residents have indicated that they prefer dense, compact developments (with a focus on locating these developments Downtown) over sprawl.

The feedback received indicated that housing affordability is a top concern, and that the public sees smaller, more compact/energy efficient forms of housing as a way to mitigate rising housing costs. Densification of existing residential areas would help to enable this by creating smaller lots and more opportunities for duplexes, townhouses and multi-unit residential buildings.

Whitehorse residents also prefer dense, compact development patterns that do not encroach on wilderness spaces, in order to protect these relatively pristine areas.

## 2.6 Enhanced Neighbourhood Services

Most Cities encounter some public resistance as they work to become denser. It is natural that there may be some resistance to this type of change and caution of this nature is valid. Density must be done in a way that makes communities more functional and enjoyable, in a way that improves and enhances livability for its residents. This is the difference between cramming people in and creating great neighbourhoods.

As they densify, neighbourhoods must include high quality design with carefully considered relationships between built form and private/public space. There should be a diversity of housing choice with options to rent and to own as well as a variety of different dwelling types with adequate and creative storage that can accommodate our northern lifestyles. Amenities such as parks, green spaces, civic facilities and other public spaces must increase along with population.

In 2008 the City of Whitehorse adopted the term *Density with Dignity* to describe its philosophy around compact residential development. To implement this concept, the City introduced Comprehensive Development Zones into the Zoning Bylaw in 2008. This zone is a tool to allow the City to ensure new neighbourhood housing developments are built in a way that produces high quality design within the urban form and streetscape. As neighbourhoods in Whitehorse densify, there is a strategy in place to increase services and amenities along with population and design standards that will produce an environment that are dignified and livable for all.

In line with these ideas, Whitehorse residents have told us through the OCP public engagement to date that they want more commercial services within walking distance of their homes. This includes stores, restaurants, transit, childcare facilities, recreational facilities and other professional services such as doctors, accountants or lawyers offices.

Businesses will only open in areas with a population base that can support them. Neighbourhood densification would improve the viability of these types of services. At the same time, having more business and other neighbourhood amenities located in residential areas will make densification more livable and enjoyable.

## 3.0 Options

This section presents two distinct options for how to accommodate the additional 1,900 new units of housing that will be required in Whitehorse based on population growth anticipated between now and 2040 and cannot be accommodated in the neighbourhoods outline in this report.

Section 2.0 earlier in the paper outlined ten major priorities/important considerations for the City<sup>10</sup>. The options below will be compared based on these ten criteria.

### **Option 1: Densify within the current UCB**

Under Option 1, these additional 1,900 units would be accommodated by:

#### **1. Increasing the number of housing units in existing neighbourhoods within the current UCB.**

This would be done by:

- a) Increasing the allowable density under the Zoning Bylaw (i.e., “up-zoning”) in certain key areas throughout the city. For greater certainty, this could also include applying a minimum density. The following criteria were applied to determine which areas in the city would be appropriate for up-zoning:
  - Streets along a bus route
  - Higher traffic streets
  - Streets with high potential for redevelopment
  - Streets with rear lanes (easier to accommodate parking, suites are more feasible); and
- b) Finding additional areas for new development within existing neighbourhoods.

#### **2. Relying on multiple new land developments that fall within the current UCB.** Many of these potential projects have a higher degree of risk attached to them because they are inter-governmental or private sector projects that are not entirely within the control of the City. Many have been discussed for a number of years but not been built to date. New land development projects inside the UCB include:

- a) KDFN’s intent to develop settlement lands within the UCB;
- b) TKC’s intent to develop settlement lands within the UCB;
- c) The Tank Farm area between Hillcrest and Valleyview; and
- d) The 5<sup>th</sup> and Rogers parcel downtown.

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<sup>10</sup> These include: Environmental Stewardship; Encourage transit and active transportation; Public Safety; Housing Availability; Efficient use of City infrastructure; Preserve large wilderness spaces; Mitigate/adapt to climate change; Enhanced neighbourhood services; and Public preference for densification over sprawl.

**Option 2: Expand the UCB and build a new residential neighbourhood in the area south of Copper Ridge**

In the interest of greater certainty over continued land development, the City could expand its UCB boundary. Such an initiative would require a major financial commitment from YG, and would have several additional drawbacks such as the reduction of wilderness areas, and the significant cost of expanding and maintaining City infrastructure.

As mentioned earlier, pre-feasibility studies were completed to look at two major potential UCB expansion areas: (1) the area north of Long Lake; and (2) the area south of Copper Ridge. In general, both have significant challenges for development but hold the potential to supply government-developed lots for a long time. Neither area is feasible to develop on a one-phase-at-a-time, low-investment basis. For both areas, a choice must be made to either start down a path towards this major development, or not start at all.

28% of the land in the area south of Copper Ridge belongs to KDFN, compared to 55% in the area north of Long Lake. For both areas, it will not be financially viable to develop a new neighbourhood if the project does not include these significant parcels of First Nation land. Therefore, strong partnerships will be needed between the City of Whitehorse and KDFN for either of these two land development projects to be successful.

The studies show that the area north of Long Lake has relatively pristine nature and high wildlife values that suggest that development is best focused in other areas of the city. This approach was also supported through public engagement during the OCP Phase 2 engagement.

For these reasons, this paper looks at the area south of Copper Ridge as the next area where the City of Whitehorse should locate a new residential neighbourhood.

A summary of each area is shown in the table below:

<b>Area</b>	<b>Southern UCB area (i.e., south of Copper Ridge)</b>	<b>Northeast UCB area (i.e., north of Long Lake)</b>
Developable land; % of which has constraints	743 ha; 39%	898 ha; 36%
Units (@ low density) / 200 unit Phases	7,140 (16,000 people) / 29 phases	8,620 (19,000 people) / 34 phases
Costs (2016, +/- 30%)	\$545 M	\$661 M
FN land as a % of study area	28% (KDFN - 27%, TKC – 0.5%)	49% (KDFN - 44%, TKC – 5%)
Current use	Trails used by Copper Ridge-area residents, Squatters Road residences	Highly valued orienteering area

Development constraints	Existing quarries, Lobird sewage lagoons, near-surface bedrock, some permafrost	Near surface bedrock, 200ha pre-grading required
Notable wildlife / Species at Risk Act (SARA)-listed species	2 SARA-listed bird species	Generally good wildlife movement throughout; 4 SARA-listed species; Southern Lakes Caribou (endangered) winter area overlaps some of the area; Croucher Creek contains salmon.

Each of the UCB expansion areas have significant challenges to development and more information is needed prior to proceeding with any design work in either area. At first appearance, both areas seem to have reasonable potential for development. However, there is significant additional information required to confirm and proceed with a design concept. Additional studies include test well monitoring, geotechnical testing (boreholes and drilling), citywide traffic and infrastructure planning, refined ecosystem mapping, long term wildlife and habitat assessments, and a heritage assessment.

Both areas will require major upgrades to city-wide infrastructure systems, including Livingstone lagoons, Selkirk aquifer wells, sanitary and water trunk mains, and road systems. In addition, the Northeast UCB area (i.e., north of Long Lake) would require an additional vehicle bridge, which would provide an alternative emergency access to the hospital. It is not however expected that this bridge would alleviate any of the existing traffic within Riverdale. The 2017 Northeast Urban Containment Boundary Study also contemplated the addition of a pedestrian bridge. The two bridges were costed at \$28,000,000 and \$4,680,000, respectfully (2016 dollars).

### 3.1 Option Analysis

**This table below shows in more detail how each of the two options described above would accommodate the required 1,900 new units of housing.**

The table also shows (a) the degree of risk related to the initiative, based on the project’s certainty and the level of control/ownership the City holds over timelines (it is important to note that this does not account for political risk); and (b) the financial cost of the project that the City would bear, this includes consideration of both initial capital costs and additional maintenance costs over time.

It is obvious that both options have the potential to provide significantly more housing units than what is needed over the next 20 years.

<b>Option 1: Densify within the current UCB</b>		
	<b>Risk</b>	<b>Cost</b>
250 – 750 units through new development of City-owned land in existing neighbourhoods	LOW to <b>MEDIUM</b>	LOW
200 – 850 units in existing neighbourhoods by increasing allowable density under Zoning Bylaw	LOW to <b>MEDIUM</b>	LOW
750 – 1,500 units through FN development of settlement lands	<b>MEDIUM</b>	LOW
1,200 – 1,400 units at the Tank Farm	<b>MEDIUM</b>	LOW
150 -350 units at 5 <sup>th</sup> and Rogers	LOW	LOW
<b>Total: 2,550 – 4,850 units</b>	<b>LOW to MEDIUM</b>	<b>LOW</b>

<b>Option 2: Expand the UCB and build a new residential neighbourhood in the area south of Copper Ridge</b>		
	<b>Risk</b>	<b>Cost</b>
7,140 units in the area south of Copper Ridge	<b>MEDIUM</b>	<b>HIGH</b>
<b>Total: 7,140 units</b>	<b>MEDIUM</b>	<b>HIGH</b>



The two options above have been compared based on whether they will advance the City priorities/important considerations described in Section 2.0 of this paper:

		<b>Option 1: Densify within the current UCB</b>	<b>Option 2: Expand the UCB and build a new residential neighbourhood in the area south of Copper Ridge</b>
Environmental Stewardship		✓	
Encourage transit and active transportation		✓	
Public Safety (i.e., protect against wildfires)		✓	
Housing	Availability	✓	✓
	Choice	✓	
Efficient use of City infrastructure		✓	
Preserve large wilderness spaces		✓	
Mitigate/Adapt to Climate Change		✓	
Provide enhanced neighbourhood services		✓	
Support resident's preference for densification over sprawl		✓	

## 3.2 Recommendation

The issue at hand is where to locate the additional 1,900 units of housing that will be required in Whitehorse based on population growth anticipated between now and 2040. The analysis above shows that it would be feasible to accommodate these housing units using land within the existing UCB, for the most part within existing residential neighbourhoods.

As shown earlier, the initiatives listed under Option 1 could provide between 2,550 and 4,850 new housing units. Option 2 could provide over 7,000 new units. It is important to note that both options have the potential to provide more units than the 1,900 units that will be needed over the next twenty years, which accounts for additional factors and contingencies that may affect future demand.

When analyzed based on risk, Option 1 is marginally lower risk because the success for some of the actions under Option 1 is not entirely within the control of the City. Option 2 is slightly higher risk, because 28% of the land that would be needed for a new neighbourhood south of Copper Ridge belongs to KDFN. The success of this initiative relies on the willingness of KDFN to develop this parcel for residential use and they have indicated that they would prefer to focus their land development efforts on the parcels listed under Option 1.

Under Option 1, the City has the ability to pursue the lower risk initiatives, while also taking steps to decrease the risk of other initiatives. For example, First Nations land development projects would likely be more successful and/or produce more housing units if the City provided strong support for these initiatives. Similarly, applying a minimum density could ensure that up-zoning efforts are more likely to produce higher density development. This tool could also help the City achieve its goals in private land development projects such as the Tank Farm.

When examined based on cost, the financial costs to the City (and by association, tax payers) for Option 2 are exponentially higher than Option 1.

When analyzed based on criteria drawn from the City's priorities/important considerations, **Option 1: Densify within the current UCB** is the logical choice on almost all accounts.

The analysis indicates that a new neighbourhood would not be needed until at least 2040.

However, there is a considerable delay between the start of planning for a new neighbourhood and the day residents begin to move in. Planning for Whistle Bend started in 2006 and residents began to occupy the neighbourhood in 2011 (i.e., 5 years between planning and occupancy). At the scale being contemplated in Option 2, and because this area may be more difficult to develop due to near surface bedrock, a conservative estimate shows that the time between planning and occupancy for this new neighbourhood is likely 10-12 years.

Therefore, the question at hand is also a matter of timing. Will a new residential neighbourhood be needed in Whitehorse at some point in the future, and if so when should the planning for this development begin?

***The recommendation is for staff to focus on crafting OCP policies that support Option 1 (Densify within the current UCB) but also designate the area south of Copper Ridge as a future residential planning area in the OCP. These policies would also have the City monitor YBS' population projections annually. In five years (or earlier, if population growth in Whitehorse exceeds YBS' Preferred Projections), this direction should be reviewed along with updated population projections to determine whether initial planning for a new neighbourhood south of Copper Ridge should begin.***

## Appendix A: Projections for Annual Population and Household Growth, 2020-2040

<b>Year</b>	<b>Population<sup>11</sup></b>	<b>Average Household Size<sup>12</sup></b>	<b>Total Households<sup>13</sup></b>
2020	29,525	2.40	12,300
2021	30,225	2.40	12,600
2022	30,900	2.39	12,900
2023	31,525	2.39	13,200
2024	32,125	2.39	13,475
2025	32,625	2.38	13,700
2026	33,150	2.38	13,925
2027	33,725	2.37	14,200
2028	34,300	2.37	14,475
2029	34,900	2.37	14,750
2030	35,425	2.37	14,975
2031	35,925	2.37	15,175
2032	36,500	2.37	15,425
2033	37,025	2.36	15,675
2034	37,550	2.36	15,900
2035	38,050	2.36	16,125
2036	38,550	2.36	16,350
2037	39,100	2.36	16,600
2038	39,650	2.35	16,850
2039	40,175	2.35	17,075
2040	40,725	2.35	17,325

<sup>11</sup> Values rounded to the nearest 25, Yukon Bureau of Statistics

<sup>12</sup> Yukon Bureau of Statistics

<sup>13</sup> values rounded to the nearest 25, does not include housing lag, unoccupied units, or contingency