



## AGENDA

### Special Meeting of Council

Date: March 22, 2022, 6:00 p.m.  
Location: Council Chambers

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Pages

1. **CALL TO ORDER**

“On behalf of Council, I would like to acknowledge the traditional territories of the area’s Six First Nations.”

2. **APPROVAL OF AGENDA**

Recommendation:

**THAT the Agenda for March 22, 2022 Special Meeting of Council is approved as presented.**

3. **PUBLIC COMMENT**

When recognized by the presiding member during the Public Comment portion of any regular or special meeting of Council, and only after giving their names and addresses, persons from the audience may address Council on a matter for not more than **2 minutes**. When speaking during the Public Comment or Public Question Period, persons must address their remarks to the presiding member, use respectful language, not use offensive gestures or signs, and **only address current agenda items**. No person from the audience may address Council more than once during the Public Comment and Public Question Period.

4. **DELEGATIONS AND PETITION**

5. **REPORTS**

5.a. Thank you to Village Heights Advisory Committee Members  
*Mayor D. Funk*

Village Heights Advisory Committee Members:

Nathan Way

Brenda Hiebert

Jason Llewellyn

Henry Wiebe

5.b. Village Heights Master Plan

*Gerry Melenks, Planner and Will Bamsey P. eng, PMP - True Consulting via Zoom*

- *Village Heights Master Plan*
- *Village Heights Class 'D' Estimates*

**6. PUBLIC QUESTION PERIOD**

When recognized by the presiding member during the Public Comment portion of any regular or special meeting of Council, and only after giving their names and addresses, persons from the audience may address Council on a matter for not more than **2 minutes**. When speaking during the Public Comment or Public Question Period, persons must address their remarks to the presiding member, use respectful language, not use offensive gestures or signs, and **only address current agenda items**. No person from the audience may address Council more than once during the Public Comment and Public Question Period.

**7. ADJOURN**



# Village Heights Master Plan

March 2022





This report acknowledges that the Village of Burns Lake is located in the traditional, ancestral and unceded territory of the Carrier and Sekani people which includes the Lake Babine Nation and Ts'il Kaz Koh.

## Acknowledgements

### **Council**

Mayor – Dolores Funk  
Charlie Rensby  
Henry Wiebe  
Kevin White  
Kristy Bjarnason

### **Administration**

CAO – Cheryl Worthing  
Val Anderson

### **First Nations**

Ts'il Kaz Koh  
Lake Babine Nation

### **Advisory Working Group**

Brenda Hiebert  
Jason Llewellyn  
Amy Wainwright  
Nathan Way  
Councillor Henry Wiebe

### **Project Team**

Lead - TRUE Consulting  
Plan North Consulting

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# 1.0 Introduction

The Village of Burns Lake has embarked on a process to develop 35 ha (86 ac) of Village-owned land within an area referred to as 'Village Heights'. The Master Plan will inform future planning and design at a site-scale level for the benefit of Village Council, staff, developers, realtors, and others.

## What is a Master Plan?

The Village Heights Master Plan is a guiding document that identifies land use and development opportunities. This Master Plan had been developed with the guidance of Mayor and Council, staff, an Advisory Working Group, and the public. The concepts herein offer possible development scenarios based on housing needs, market demand, and infrastructure capabilities. It should be noted that this is a living document that should evolve as technical analysis and development progresses into the future.

The factors driving this Master Plan are largely tied to the strong demand for housing; need for more affordable housing options; limited supply of developable residential land; and the need to economically extend infrastructure through the subject lands to service future industrial development.

The Village Heights Master Plan is a long-range planning document with an expected lifespan of 30-50 years based on current residential land supply, proposed land uses, and population projections as set out in the *Official Community Plan (2017)*.

### Factors that influence development timing:

- Market demand
- Partnerships
- Approvals and permits
- Detailed infrastructure planning, design, and construction
- Grant funding

## Purpose of the Master Plan

The Master Plan will support the Village of Burns Lake in the following ways:

- ✧ It will provide detail and direction around the type of development the Village of Burns Lake would support/be willing to consider for the subject lands;

- ✧ It will provide further direction in terms of extending services through the subject lands to service other areas in the Village;
- ✧ It will provide guidance in terms of amending the *Official Community Plan*;
- ✧ It will provide direction in terms phasing development that is both logical and economical;
- ✧ It will serve as a marketing tool that can be available at the Village office and on the Village website;
- ✧ It can be shared with prospective developers, builders, and realtors;
- ✧ It can be used as a guide for joint decision-making (Regional District of Bulkley-Nechako) related to future development in the surrounding area; and
- ✧ It will inform future road development in and around the plan area, including connections to Highway 16 and potentially lands within the RDBN.

## The Process

The Master Plan process consisted of seven stages of planning and community engagement prior to being presented to Council. Each stage builds upon the previous one resulting in the culmination of the Village Heights Master Plan.

### Background Research and Planning

- Project initiation
- Compile and review applicable policy and bylaws
- Meet with administration to refine the workplan

### Stakeholder Consultation

- Establish and work alongside an Advisory Working Group
- Develop a list of key stakeholders
- Solicit feedback from various stakeholders (Ts'il Kaz Koh, Lake Babine Nation, MoTi, RDBN, developers, realtors, community groups, and business owners)

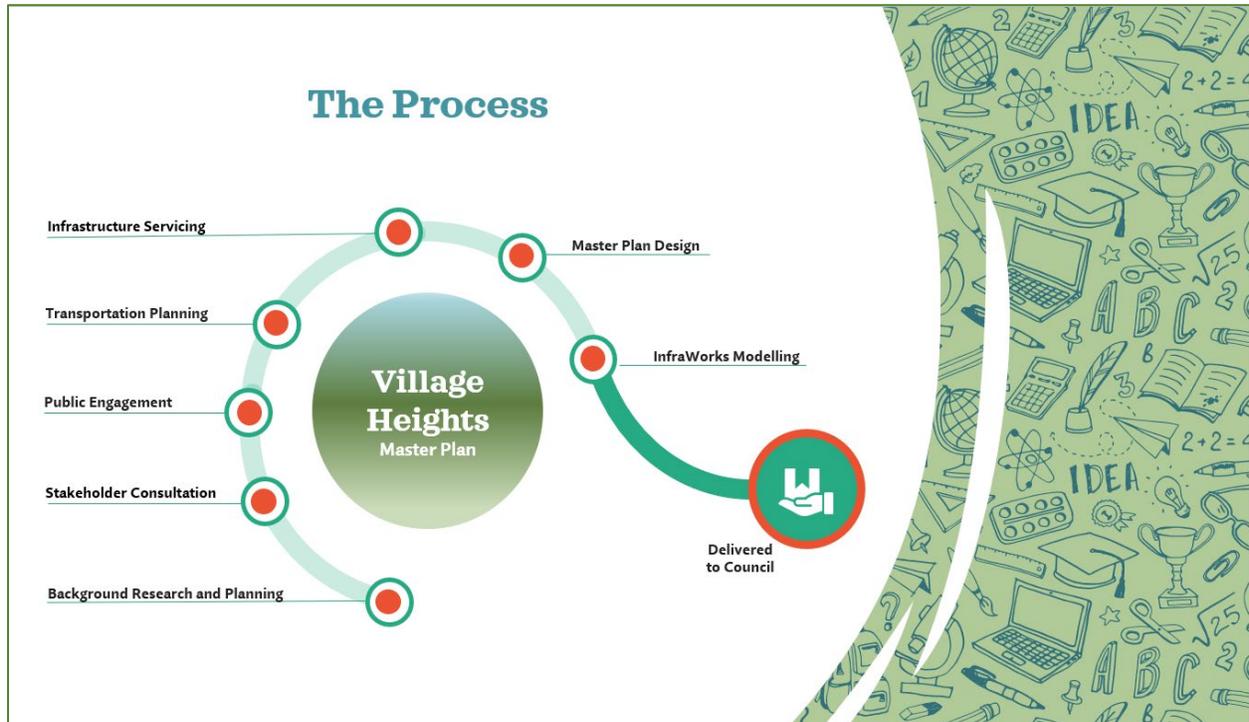
### Public Engagement

- Development website portal
- Create a social media presence
- Public Information Meeting
- Feedback Frames Engagement
- Open House
- Online Survey

### Transportation Planning

- Review existing road network (classifications, capacity, network connections)
- Solicit feedback from MoTi regarding intersection requirements (Highway 16)
- Develop roadway classifications, cross-sections, and key network connections

- Design future road network options (road, sidewalks, utilities, multi-use pathways, etc.) for consideration during public and stakeholder engagement
- Evaluate potential development phasing schemes
- Prepare Class 'D' cost estimates for the Village Heights road network



### Infrastructure Servicing

- Review of existing underground infrastructure (water, sewer, stormwater)
- Develop infrastructure servicing concepts for the plan area
- Evaluate potential development phasing schemes
- Determine general sizing requirements of all on-site infrastructure
- Prepare Class 'D' cost estimates for servicing Village Heights

### Master Plan Design

- Preparation of CAD drawings and mapping
- Preparation of draft master plans for public consideration
- Finalize mapping in consultation with Advisory Working Group, administration, and Council
- Preparation of a development phasing plan
- Finalize master plan design and prepare report for Council consideration

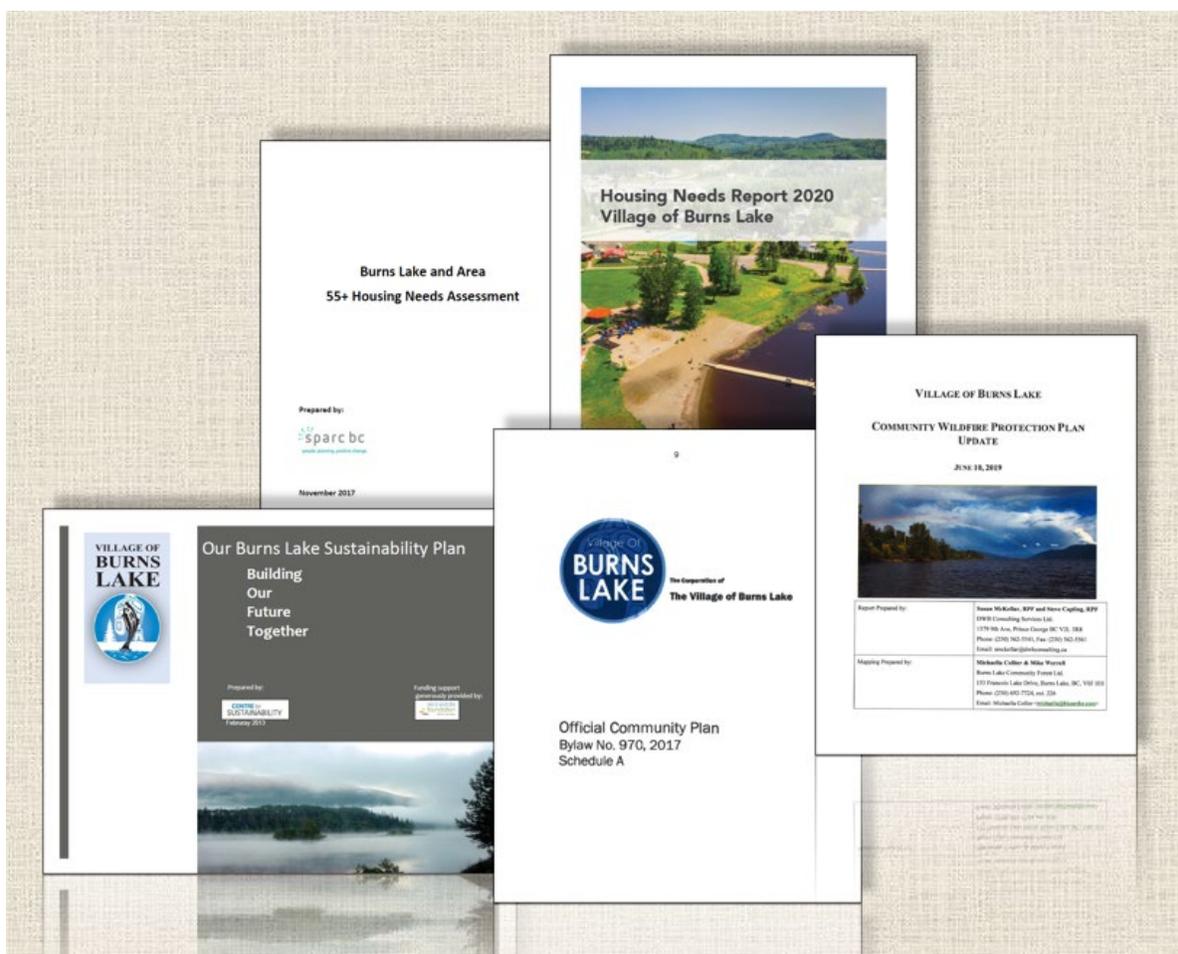
### InfraWorks Modelling

- Design/compile applicable building models based on future land use plan
- Design infrastructure and landscape models based on open space plan
- Prepare comprehensive conceptual model to aid in future decision making
- Prepare video showcasing InfraWorks model for Council and the public

## Background Documents

The Village Heights Master Plan has been guided by, and is in alignment with the following legislation, statutory documents, and strategic policy initiatives:

- ✧ Burns Lake Active Transportation Plan (2009)
- ✧ Burns Lake and Area 55+ Housing Needs Assessment (2017)
- ✧ Community Age-Friendly Assessment & Action Plan (2013)
- ✧ Community Wildfire Protection Plan (2019)
- ✧ Highway Commercial Preliminary Land Use Inventory (2021)
- ✧ Housing Needs Report – Village of Burns Lake (2020)
- ✧ Industrial Park Water & Sanitary Sewer Service Prelim. Design Brief (2021)
- ✧ Official Community Plan Bylaw No. 970 (2017)
- ✧ Our Burns Lake Sustainability Plan (2013)
- ✧ Sewage Treatment facility Condition and Operation Assessment (2019)
- ✧ Subdivision Servicing Bylaw 603 (1990)
- ✧ Water Treatment Plan Design Brief (2019)
- ✧ Zoning Bylaw 880 (2008)



## Regional and Local Context

The Village of Burns Lake is located in the Regional District of Bulkley-Nechako (RDBN) and is on the traditional, ancestral and unceded territories of the Carrier Sekani people. Included within the Village boundaries are the Ts'il Kaz Koh (Burns Lake Band) and Lake Babine Nation.

Burns Lake is a commercial centre for nearby communities and an industrial hub for logging, sawmills, mining, and agriculture. The Village provides services to approximately 7,000 people in neighbouring rural communities.

Being in the heart of the Lakes District, the Village of Burns Lake provides a range of tourism opportunities including hiking, fishing, boating, and snowmobiling. The area has also come to be known for its world class mountain biking up at Boer Mountain.



Map 1: Regional Context

## Site Context

The subject lands are made up of two parcels owned by the Village. The combined area totals 35 ha (86 ac). The lands are legally described as: District Lot 5345, Range 5, Coast District, Except the Most Southerly 15 Chains and Except Plan 4623; and Lot 1, District Lot 5345, Range 5, Coast District Plan 4381.

Village Heights (also known as Burns Lake Heights) takes its name from being the highest point in the Village at an elevation of 820 m (2,624 ft). The subject lands are topographically challenging with several areas exceeding slopes of 30% or higher. The undeveloped site is heavily treed with natural trails scattered throughout. The western boundary is delineated by a power line that run along the entire property line down to the highway.

Surrounding lands uses include single family dwellings and open space to the north; Highway 16 to the south; commercial and rural residential to the east; and a manufactured home park and vacant crown land to the west.

There is no direct road access to the subject lands, however the property can be accessed via Aspen Street to the north, 3<sup>rd</sup> Avenue to the west, and Highway 16 to the south.



Map 2: Study Area



Looking west toward  
Burns Lake



Looking south at the  
subject lands



Looking southwest  
from Aspen St.



Looking north along  
Aspen St.



Looking northeast  
along Hwy. 16

## Official Community Plan

The Official Community Plan (OCP) for Burns Lake was adopted in 2017 and sets out the community’s vision and future goals. The objectives and policies within provide a basis for decision-making on matters related to existing and future development within the village boundaries.

The OCP is a high-level municipal policy document that serves as a guide for elected officials and administration when making decisions on matters such as zoning applications, setting priorities for investment and spending, and infrastructure improvements. Key OCP objectives pertaining to the Village Heights Master Plan are highlighted below.

### Key OCP Objectives

Growth & Redevelopment	Housing	Commercial	Parks, Recreation & Open Space	Accommodating Seniors & Elders	Utility Services	Transportation
Ensure that new development occurs according to an appropriate standard established by bylaw	Facilitate the provision of a wide range of housing options that meets the needs of all residents of the Village of Burns Lake	Ensure that the existing commercial areas can accommodate the wide range of commercial uses necessary to facilitate the Village's function as the commercial centre for the Lakes District	Support a well-integrated and linked system of parks, trails and associated recreational facilities that serve a range of purposes, from active recreation to passive enjoyment, to conservation, to tourism development along Burns Lake	Facilitate the development of a diverse housing stock that meets the needs of seniors	Continue to expand and upgrade the Village's water system as required by demand	Ensure that Burns Lake maintains an efficient and effective road system
Ensure that services and infrastructure are extended in a logical and efficient manner that minimizes the cost of development on the general taxpayer and the business community	Accommodate housing in a manner that protects the character of existing residential areas and residents' quality of life, and minimize the negative impacts on the natural environment Provide housing in areas that are serviced with municipal infrastructure and do not unnecessarily extend services	Ensure that the downtown area remains vital and vibrant, as the heart of the community, and is the preferred location for future retail, commerce, civic and cultural services	Provide a level of parks, recreation and open spaces that can meet local community needs within the community's ability to pay	Develop recreation opportunities that offer exercise, and social opportunities that are appropriate for seniors	Promote and encourage the extensions of sanitary sewer service to all existing areas within Burns Lake  Control drainage, sediment, and erosion for new and existing development	Maintain a hierarchical road system to service users and to provide a high degree of safe mobility  Facilitate transit service, pedestrian movement, and the safe use of bicycles throughout the community

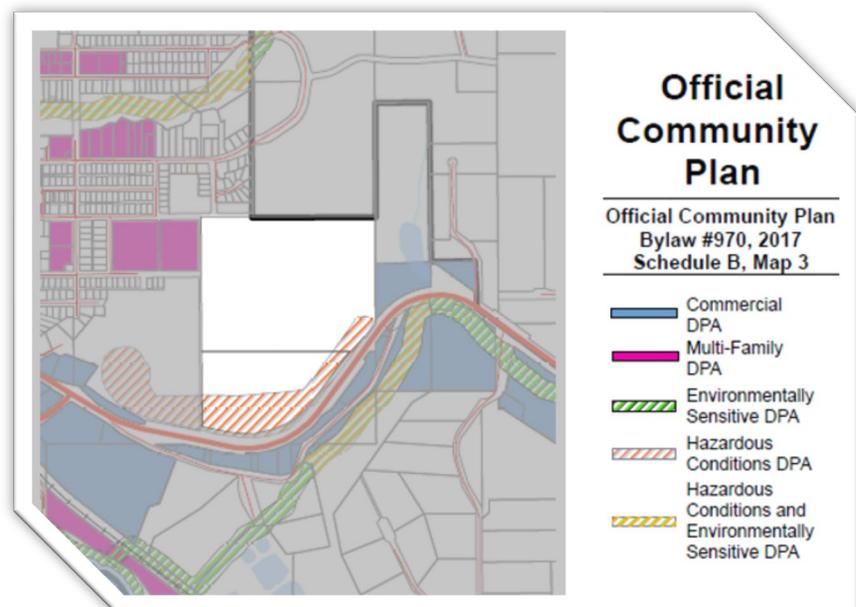
## Development Permit Areas

The OCP includes four Development Permit Areas (DPAs):

1. Environmentally Sensitive Development Permit Area
2. Hazardous Conditions Development Permit Area
3. Commercial Development Permit Area
4. Multi-Family Development Permit Area

Establishing Development Permit Areas allows the Village to control the design, form and character of a development or protect sensitive natural areas. Development within an area identified as a DPA requires an owner to obtain a development permit before subdividing land or constructing, adding to, or altering a building.

Portions of the plan area fall within the Hazardous Conditions Development Permit Area, which recognizes that areas with slopes 30% or greater could have the potential for erosion and landslides. Therefore, there may be a need for stabilization of steeply sloped lands and rehabilitation of lands that may be unstable or susceptible to erosion.



During the background research phase of the process, LiDAR data was collected for the subject lands and surrounding area. Recognizing that there were areas with slopes in excess of 30%, the LiDAR data was used to prepare a site-specific hazardous conditions map (see **Hazardous Conditions Plan**). The map provided direction in terms of designing the transportation network and determining where various land uses would be most appropriate (e.g., open space, residential, etc.).



Map 3: Hazardous Conditions

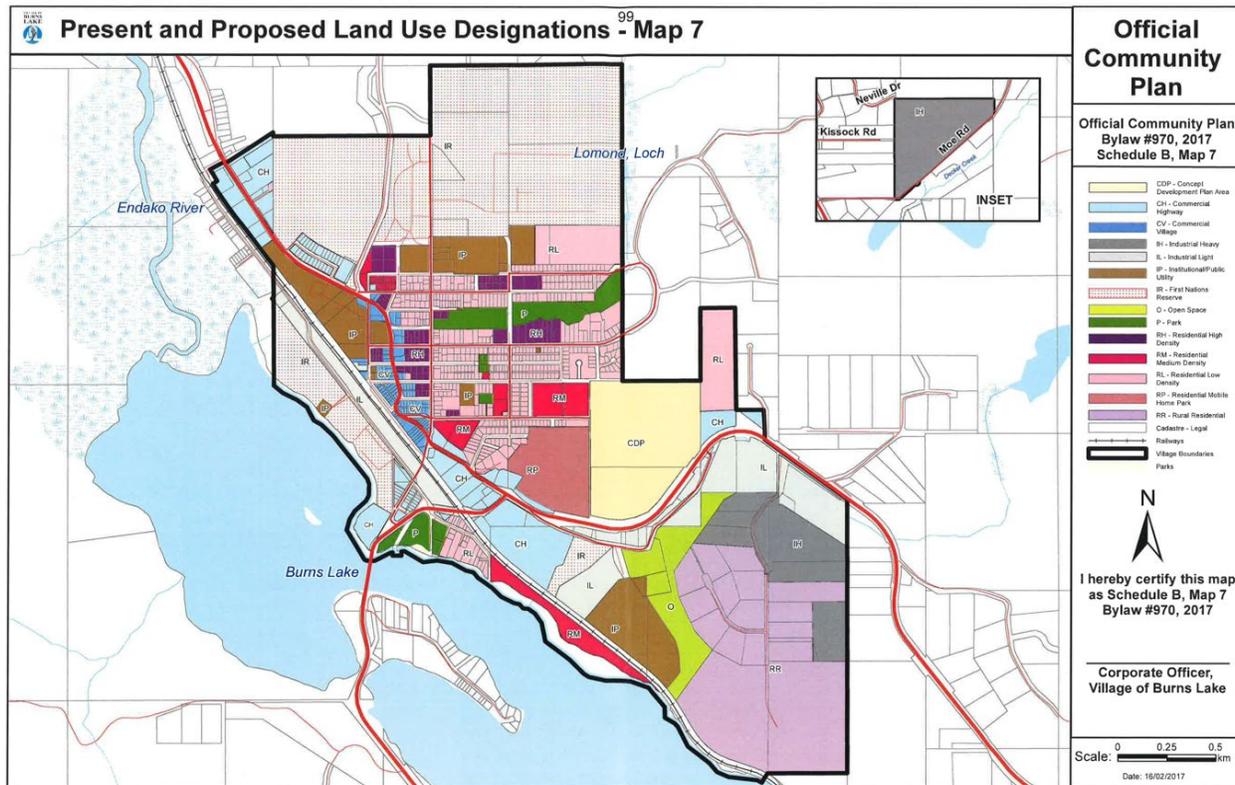
### Concept Development Plan Area Designation

Section 6.8 of the OCP designates the Village Heights area as 'Concept Development Plan Area.' The OCP recognized that the Village Heights area would accommodate the Village's long term land use needs and as such applied the CDPA designation. The CDPA functions as a 'placeholder,' in the sense that it does not allow development to proceed until such time as a study/assessment/plan is completed, in which to evaluate the area in relation to the community's long-term needs. Following that analysis, Council would then be able to determine what the most appropriate land use designation(s) should be (e.g., residential low density, commercial village, park, institutional).

Furthermore, the policies within the CDPA state that the Village will:

1. Work closely with adjacent landowners, government agencies, the public and other interested groups to identify the most appropriate land use for the area; and
2. Consider applying the appropriate zoning to the land at the time the Official Community Plan land use designation is amended.

The Village Heights Master Plan proposes land uses that can be used as the basis for Council amending the Official Community Plan and Zoning Bylaw, to allow development to proceed in accordance with the community’s long-term land use needs.

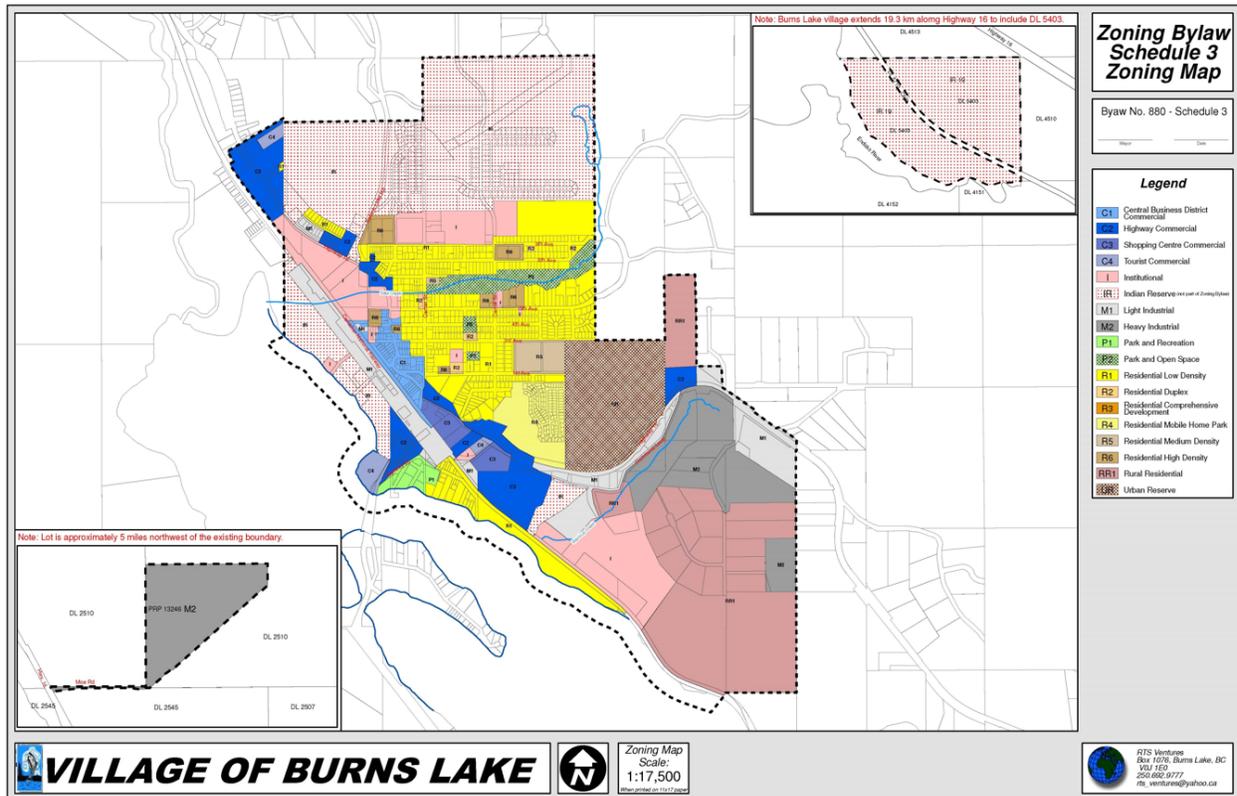


Map 4: Official Community Plan – Land Use Designations

## Zoning Bylaw

In addition to an OCP, a Zoning Bylaw is used by Council and administration to guide growth in an orderly manner to avoid conflicts between incompatible uses (zoning sets the rules through regulations). The Zoning Bylaw establishes the permitted use of land within a municipality as well as form, density, height, yard setbacks, lot coverage and lot size.

The Zoning Bylaw (2008) for Burns Lake divides the community into various land use zones (e.g., R1, R5, C2, M1, I, P1, and UR) each with their own set of regulations.



Map 5: Zoning Map

The entire Village Heights plan area is currently zoned Urban Reserve (UR) Zone. The purpose of this zone is to reserve the land for future urban development until such time as Council approves a specific urban zone(s). The intent of the Master Plan is to guide future zoning applications throughout Village Heights. This can be achieved on a phase-by-phase basis or by rezoning the entire property from the outset.

**Uses permitted within the Urban Reserve (UR) Zone include:**

- Agriculture
- Forestry
- Greenhouse and plant nursery
- Gravel processing
- Impact utility services, major and minor
- Kennel
- Single detached dwelling

Section 6.2.12 of the Zoning Bylaw states that prior to any rezoning of UR parcels to any other zone, Council will require a Concept Development Plan be prepared pursuant to the long-term policy direction of the OCP. The Master Plan addresses that requirement and provides Council with a *roadmap* in terms of future zoning.

## Housing Needs Report

The Village of Burns Lake completed a housing needs report in 2020 as required by the Province. The report looked at the current and future housing needs in the Village. Information within the report is meant to help inform future planning and decision making. The opportunities for action identified in the report were echoed during the public engagement stage of the master plan process.

### Housing Needs Report: Opportunities for Action

Increase the supply of housing for families	Increase the housing choices for seniors	Increase the diversity and mix of housing types	Continue to address the growing homelessness crisis	Explore strategies to address the critical shortage of rental housing
<ul style="list-style-type: none"> <li>- Need for more family housing (ownership and rental)</li> <li>- Expanded mix of entry-level ownership opportunities for families moving to the community for employment</li> <li>- Lack of short-term housing options available for those waiting for long term housing to become available</li> <li>- Hard to attract people to the community if the community is unable to offer the right type of housing</li> </ul>	<ul style="list-style-type: none"> <li>- Need for an expanded mix of seniors' housing choices</li> <li>- Need a mix of 1-bdrm and 2-bdrm units</li> <li>- Housing should be ground-oriented</li> <li>- Housing should be adaptable, accessible, and visitable</li> <li>- Housing should reflect the principles of universal design</li> <li>- Housing should be well integrated into existing neighborhoods and located near services &amp; amenities</li> </ul>	<ul style="list-style-type: none"> <li>- Significant proportion of the housing stock is larger single detached homes</li> <li>- Exploring housing types such as: coach houses, row houses, 4-plex, 6-plex units</li> <li>- Should experiment with different housing types and models</li> <li>- Consideration given to different types of mixed income and mixed tenure models</li> </ul>	<ul style="list-style-type: none"> <li>- Long term strategies and solutions are needed</li> <li>- Increase the supply of studio and one-bedroom units in the community</li> <li>- Work closely with local housing and service providers to ensure that appropriate wrap-around services and supports are in place</li> <li>- Develop culturally appropriate housing for Indigenous families and individuals experiencing homelessness</li> </ul>	<ul style="list-style-type: none"> <li>- 60% of the rental housing stock was built before 1980</li> <li>- Current regulatory and market context does not make these types of investments economically viable</li> <li>- Potential partnerships or other opportunities that could be considered with the right types of incentives</li> <li>- Investment decisions related to rehabilitation of the existing stock should be evaluated against investments in new supply</li> </ul>

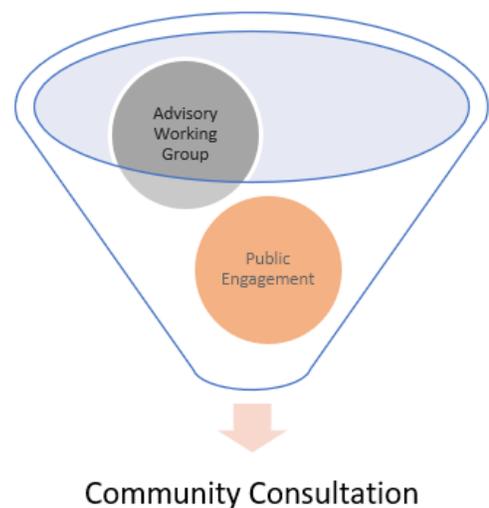
Source: *Housing Needs Report 2020 - Village of Burns Lake, SparcBC*

## 3.0 COMMUNITY CONSULTATION

The community consultation strategy for the Village Heights Master Plan included two key components: 1) an Advisory Working Group, and 2) public engagement. Both were used to help identify a vision, guiding principles and develop a forward-thinking land use plan for the Village Heights area.

### Advisory Working Group

Recognizing that stakeholder consultation would be an integral part to the master plan process, an Advisory Working Group (AWG) was assembled to assist in the development of the Village Heights Master Plan. The AWG was tasked with providing advice, feedback and support to the Project Team and Village Council over the course of the project. Five (5) meetings were held with the Project Team over as many months. The monthly meetings were held both in-person and virtually. In addition to the regular meetings, the Advisory Working Group were also involved in hosting a Public Information Meeting and Open House.



The initial two AWG meetings involved discussions around the *Official Community Plan, Zoning Bylaw* and *2020 Housing Needs Report*. In addition, the Project Team provided an overview of land use, transportation, servicing, and parks & open space considerations. A summary of what we heard at the public information meeting was shared with the working group.

During the 3<sup>rd</sup> AWG meeting, the Project Team presented the working group members with conceptual drawings for discussion. These included two road network plans, potential road cross sections, proposed water and sanitary mains, hazardous conditions assessment and two possible land use plans.

At the 4<sup>th</sup> meeting (December 7<sup>th</sup>) a more detailed set of master plan drawings were provided to the working group for review in advance of the meeting. In addition, draft survey questions were discussed prior to posting online following the open house later that day. The final AWG meeting was held on January 13<sup>th</sup> in which an open house debrief was held including a review of the online survey responses. Following the public engagement overview, the Advisory Working Group reached consensus on the preferred land use plan to be brought forward to Council for consideration.

## Public Engagement

A critical component in any planning process is public and key stakeholder engagement. Engaging the community gives the Project Team an opportunity to inform, consult, involve, and collaborate with community members at various stages throughout the planning process. In addition to regular meetings with Village staff, the following engagement opportunities were conducted as part of the master plan process:

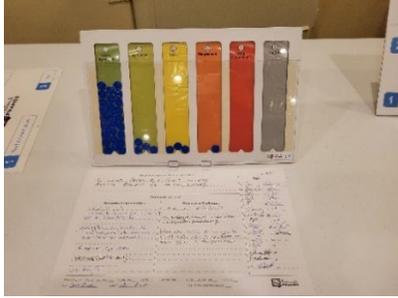
### Public Information Meeting (September 21, 2021)

- ✧ The public were invited to a public information meeting at the outset of the project.
- ✧ Approximately 35 people were in attendance.
- ✧ Background information was shared with participants and feedback solicited.
- ✧ Provided an opportunity for the community to be introduced to the Project Team.
- ✧ Neighbouring landowners discussed how the plan would impact their properties.



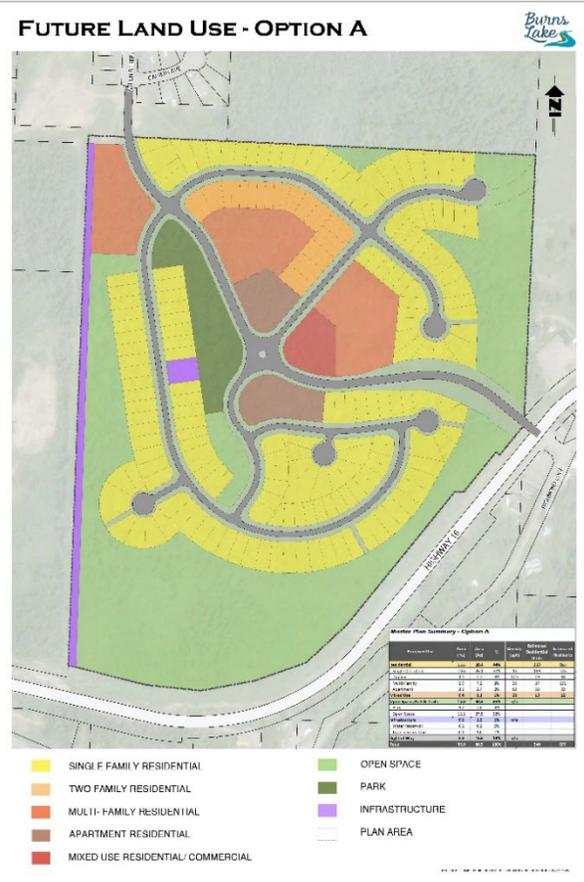
### Feedback Frames (September 21, 2021)

- ✧ A unique information gathering tool in which participants were asked to respond to a series of statements and then provide written comments pertaining to each statement.
- ✧ Questions touched on residential, commercial, and industrial development, pedestrian circulation, seniors housing needs, multi-family housing options, and open space preservation.
- ✧ The simple analog tool allowed for secret score voting.
- ✧ Solicited comments explored strengths & opportunities and concerns & weaknesses for each statement.
- ✧ A summary of the Feedback Frame responses can be found in **Appendix A**.



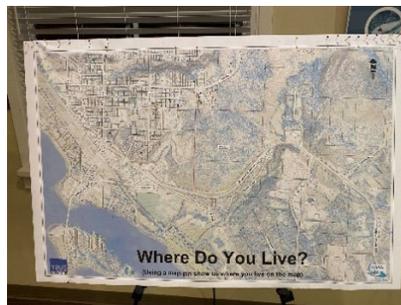
**Public Open House (December 7, 2021)**

- ✧ A public open house was held in December to present the draft master plans.
- ✧ Approximately 27 people were in attendance.
- ✧ Share with the attendees what we heard at the Public Information Meeting.
- ✧ Listen and collect feedback as to the proposed plans.
- ✧ Participants were accessed to consider two proposed land use plans.
- ✧ Respond to any questions, ideas, or comments.



## Online Survey (December 2021)

- ✧ A survey was posted online following the Open House seeking input on key topics from everyone in the Village and surrounding area.
- ✧ The online survey was open for just over 2 weeks from December 7 – 22, 2021, which included twenty-four multiple choice questions and two open-ended questions.
- ✧ In total, 128 completed the survey with a completion rate of approximately 81%.
- ✧ 59% of respondents identified themselves as Village residents; 34.1% as living within the RDBN; 3.2% living in Lake Babine Nation and Ts'il Kaz Koh; and 3.2% as Other.
- ✧ Majority of the respondents (93.8%) live in single family dwellings (i.e., single detached home, acreage, manufactured home), whereas 3.2% live in multi-family dwellings (i.e., duplex, 4-plex, rowhouse, apartment).
- ✧ 57% reside in a 1–2-person household; 32% in a 3–4-person household and 10.9% in a 5+ person household.
- ✧ Of the 95 respondents, 60% felt that the proposed land use plans would provide an adequate mix of uses to support affordable housing opportunities; whereas 7.4% said no; and 32.6% were not sure.
- ✧ In terms of the open pace, parks and trails proposed throughout the plan area 89.2% of the respondents felt the plans provided the right number of sidewalks, multi-use pathways and walking trails; whereas 10.8 did not.
- ✧ Participants were asked if the neighbourhood were to include neighbourhood commercial development, what form should it take. 83.5% preferred mixed-use commercial, which allows for commercial at ground level and residential above, whereas 16.5% preferred single storey commercial development.
- ✧ 79.5% of the respondents felt that the proposed master plans addressed their concerns regarding future growth in their community; whereas 20.5% did not.
- ✧ Overall, 30.3% of the respondents really liked the proposed master plans presented, whereas 2.2% did not. 48.3% liked most parts of the plans but had a few things they were not sure about, whereas 2.2% had more things they disliked about the plans than liked.
- ✧ Online survey results can be found in **Appendix B**.



## What We Heard

Below is a summary of what we heard during our public engagement program for the Village Heights Master Plan between September and December of 2021. The summary is broken down into six (6) themes; where possible we have consolidated these themes to capture general sentiments.

### RESIDENTIAL

- Include a mix of high density and single-family homes
- Larger lots for ranchettes
- Ensure a mix of residential uses
- More 2-bdrm homes
- Larger view lots overlooking Burns Lake
- Would like to see gated, maintained strata housing option
- Should be a mix of housing styles and sizes
- Consider larger lots along the perimeter overlooking Burns Lake

### SENIORS HOUSING

- An opportunity to provide affordable housing to people and seniors in need
- Accessible housing for seniors is needed
- One level duplexes and 4-plexes for seniors are ideal
- Large portion of VH should provide single level housing for mature adults/elders

### AFFORDABLE HOUSING

- Need apartment buildings
- Need a balanced mix of multi-family housing
- Smaller houses for people who work for min. wage
- Make sure there are rental units



## OPEN SPACES

- Accessible, accessible, accessible
- Walking paths or bike paths only
- Winter skating trail
- Access for foot traffic to downtown
- A mix for all users
- Allow for a bike trail connecting Rod Reid to Village Heights
- Walking trails only

## COMMERCIAL

- Neighbourhood commercial uses would be a step in the right direction
- We have local commercial uses downtown
- New opportunities for business are always great
- Commercial uses cause noise and garbage
- Localise these developments
- Financial service uses would be nice
- Limit commercial development to small businesses only

## ENVIRONMENT

- Wildlife/environment need to be protected
- No motorized bikes, ATVs, or snowmobiles
- Possible reduced access for ATV/sleds for those wanting to go toward Boer Mtn.
- All structures should be eco-friendly: solar, thermal, carbon neutral
- Develop a fire smart plan for the development
- Walking trails that exist should be included in development



## 4.0 MASTER PLAN

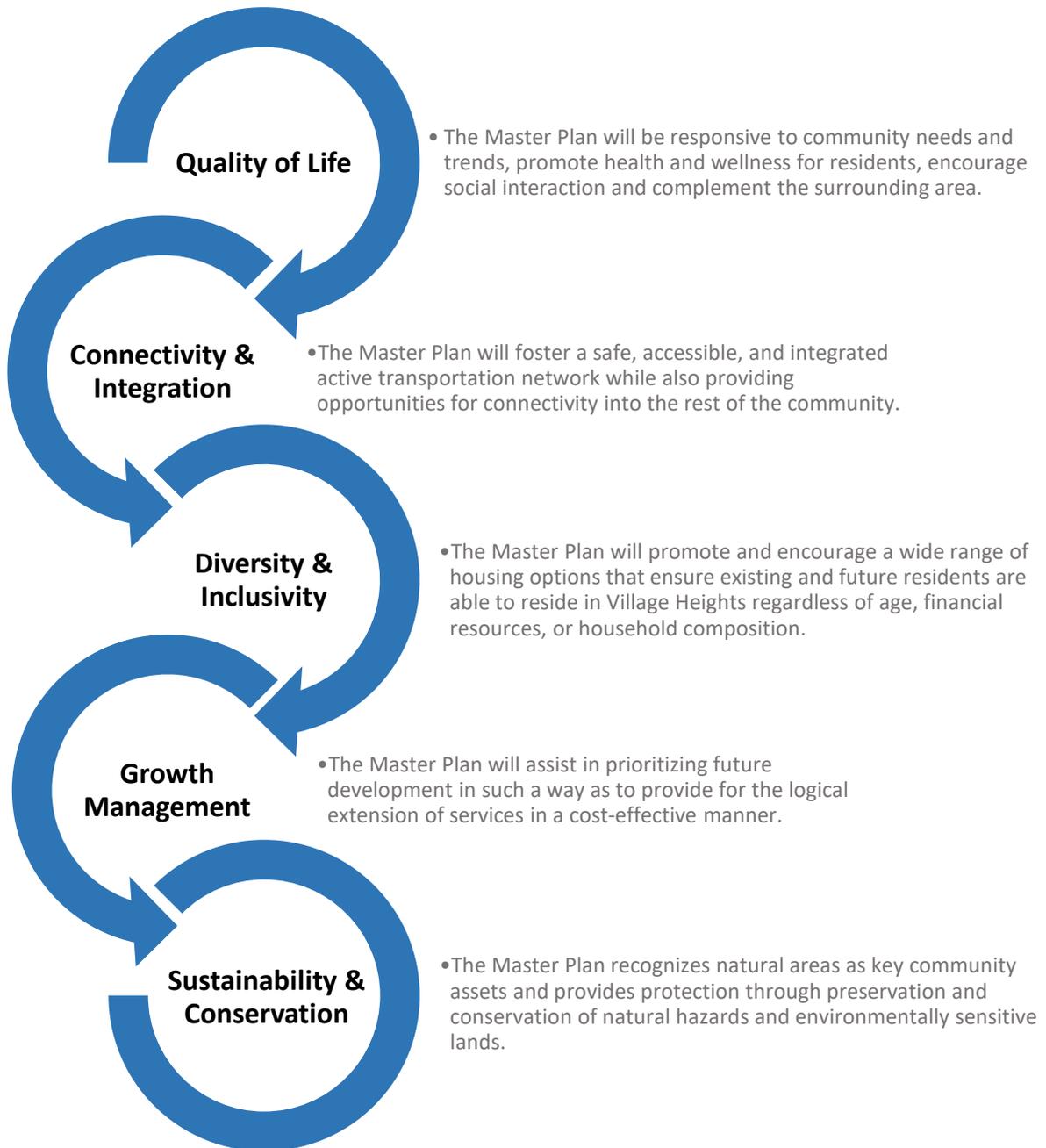
### Community Vision

Village Heights is an inclusive community that will provide a diversity and mix of housing types and tenures while recognizing and protecting the open spaces within for the benefit of future generations.

*“Our Legacy,  
Our Future”*



## Guiding Principles



## Proposed Land Uses

The Master Plan provides a long-term plan for the Village Heights area and illustrates where the Village would prefer to direct various land uses (residential, commercial, parks and open space, etc.) as the neighbourhood builds out. The proposed land uses were based on the 2008 Zoning Bylaw.

A set of recommended zones were developed to reflect the future proposed uses for the Master Plan area. Below is an explanation of each land use:

**Single Family Residential** Applies to lands that are intended for single detached dwellings with varying lot width and depth.

**Two-Family Residential** Applies to lands that are intended for low-density residential housing in the form of duplex and semi-detached dwellings.

**Multi-Family Residential** Applies to lands that are intended for medium-density multi-unit dwellings such as four-plexes, rowhouses, townhouses, congregate housing, and apartments. The maximum density permissible is 30 units per hectare.

**Apartment Residential** Applies to lands that are intended for high-density multi-unit dwellings such as apartments and congregate housing. The maximum density permissible is 60 dwelling units per hectare.

**Mixed-Use Commercial** Applies to lands that are adjacent to medium- to high-density residential uses. This use allows for a mix of small-scale commercial uses at grade with residential dwellings situated above.

**Park** Applies to lands that are suitable for small park spaces.

**Open Space** Applies to lands that demonstrate environmental sensitivities and should be preserved as open space.

**Infrastructure** Applies to lands that provide for institutional, cultural, or government uses (e.g., water reservoir).



# Open Space, Parks & Trails



- OPEN SPACE
- FUTURE PARK
- EXISTING TRAIL
- FUTURE TRAIL
- MULTI-USE PATHWAY
- SIDEWALK
- PLAN AREA

Map 7: Open Space, Parks, and Trails

The proposed land uses (see **Future Land Use Plan**) coincide with the zones set out in the Zoning Bylaw, as per the following table.

<b>Proposed Zoning</b>		
<b>Land Use</b>	<b>Zones</b>	<b>Permitted Uses</b>
<b>Single Family Residential</b>	<b>R1, R3</b>	<p><b>R1</b></p> <ul style="list-style-type: none"> <li>&gt; single detached dwelling</li> </ul> <p><b>R3</b></p> <ul style="list-style-type: none"> <li>&gt; semi-detached dwelling</li> <li>&gt; single detached dwelling</li> </ul>
<b>Two-Family Residential</b>	<b>R2</b>	<ul style="list-style-type: none"> <li>&gt; duplex</li> <li>&gt; semi-detached</li> </ul> <p>&gt; single detached dwelling</p>
<b>Multi-Family Residential</b>	<b>R5</b>	<ul style="list-style-type: none"> <li>&gt; apartment</li> <li>&gt; congregate housing</li> <li>&gt; duplex</li> <li>&gt; fourplex</li> </ul> <p>&gt; rowhouse</p> <ul style="list-style-type: none"> <li>&gt; semi-detached dwelling</li> <li>&gt; special needs housing</li> </ul>
<b>Apartment Residential</b>	<b>R6</b>	<ul style="list-style-type: none"> <li>&gt; apartment</li> <li>&gt; congregate housing</li> </ul> <p>&gt; rowhouse</p> <ul style="list-style-type: none"> <li>&gt; special needs housing</li> </ul>
<b>Mixed-Use Commercial</b>	<b>C1</b>	<ul style="list-style-type: none"> <li>&gt; amusement establishment, indoor</li> <li>&gt; assembly hall</li> <li>&gt; business support services</li> <li>&gt; care centre, minor</li> <li>&gt; catering food services</li> <li>&gt; commercial and trad school</li> <li>&gt; community hall</li> <li>&gt; contractor services, limited</li> <li>&gt; duplex, subject to sec. 9.1.11</li> <li>&gt; eating and drinking establishment</li> <li>&gt; equipment rentals</li> <li>&gt; famer's market</li> <li>&gt; financial services</li> <li>&gt; fleet services</li> <li>&gt; funeral services establishment</li> <li>&gt; gas bar</li> <li>&gt; government services</li> <li>&gt; hardward and home improvement store</li> </ul> <ul style="list-style-type: none"> <li>&gt; health services</li> <li>&gt; hotel</li> <li>&gt; household repair services</li> <li>&gt; licensee retail store</li> <li>&gt; liquor primary</li> <li>&gt; motel</li> <li>&gt; office</li> <li>&gt; personal service establishment</li> <li>&gt; private club</li> <li>&gt; public education services</li> <li>&gt; public library and cultural exhibits</li> <li>&gt; religious assembly</li> <li>&gt; retail store, convenience</li> <li>&gt; retail store, general</li> <li>&gt; secondhand store</li> <li>&gt; semi-detached dwelling subject to sec. 9.1.11</li> <li>&gt; single detached dwelling subject to sec. 9.1.11</li> <li>&gt; spectator entertainment establishment</li> </ul>
<b>Park</b>	<b>P1</b>	<ul style="list-style-type: none"> <li>&gt; amusement establishment, indoor and outdoor</li> <li>&gt; assembly hall</li> <li>&gt; cemetery</li> </ul> <p>&gt; public park</p> <ul style="list-style-type: none"> <li>&gt; wildlife interpretive centre</li> </ul>
<b>Open Space</b>	<b>P1</b>	<ul style="list-style-type: none"> <li>&gt; amusement establishment, indoor and outdoor</li> <li>&gt; assembly hall</li> <li>&gt; cemetery</li> </ul> <p>&gt; public park</p> <ul style="list-style-type: none"> <li>&gt; wildlife interpretive centre</li> </ul>
<b>Infrastructure</b>	<b>I</b>	<ul style="list-style-type: none"> <li>&gt; amusement establishment, outdoor</li> <li>&gt; assembly hall</li> <li>&gt; care center, major</li> <li>&gt; care centre, minor</li> <li>&gt; cemetery</li> <li>&gt; community hall</li> <li>&gt; congregate care housing</li> <li>&gt; fleet services</li> <li>&gt; funeral services</li> <li>&gt; government services</li> <li>&gt; greenhouse and plant nursery</li> </ul> <ul style="list-style-type: none"> <li>&gt; health services</li> <li>&gt; hospital</li> <li>&gt; impact utility service, major and minor</li> <li>&gt; participant recreation services, outdoor and indoor</li> <li>&gt; private club</li> <li>&gt; public education services</li> <li>&gt; public library and cultural exhibits</li> <li>&gt; religious assembly</li> <li>&gt; special needs housing</li> <li>&gt; spectator entertainment establishment</li> </ul>

## Single Family Residential



Complete communities provide housing that meets the needs of its diverse population. Variants in age, ability, and income amongst residents result in different housing requirements. The Master Plan aims to:

- Support a mix of housing types, sizes, and tenure as highlighted in the Burns Lake Housing Needs Report (2020);
- Allow for single detached homes on standard lots (15m – 22m);
- Support secondary suites within single detached dwellings as an accessory permitted use under the R1 regulations; and
- Accommodate estate style lots within the plan as bought forward during public engagement. These lots could be in the range of 30m - 45m in width and be permitted under the current R1 zoning.



## Two-Family Residential

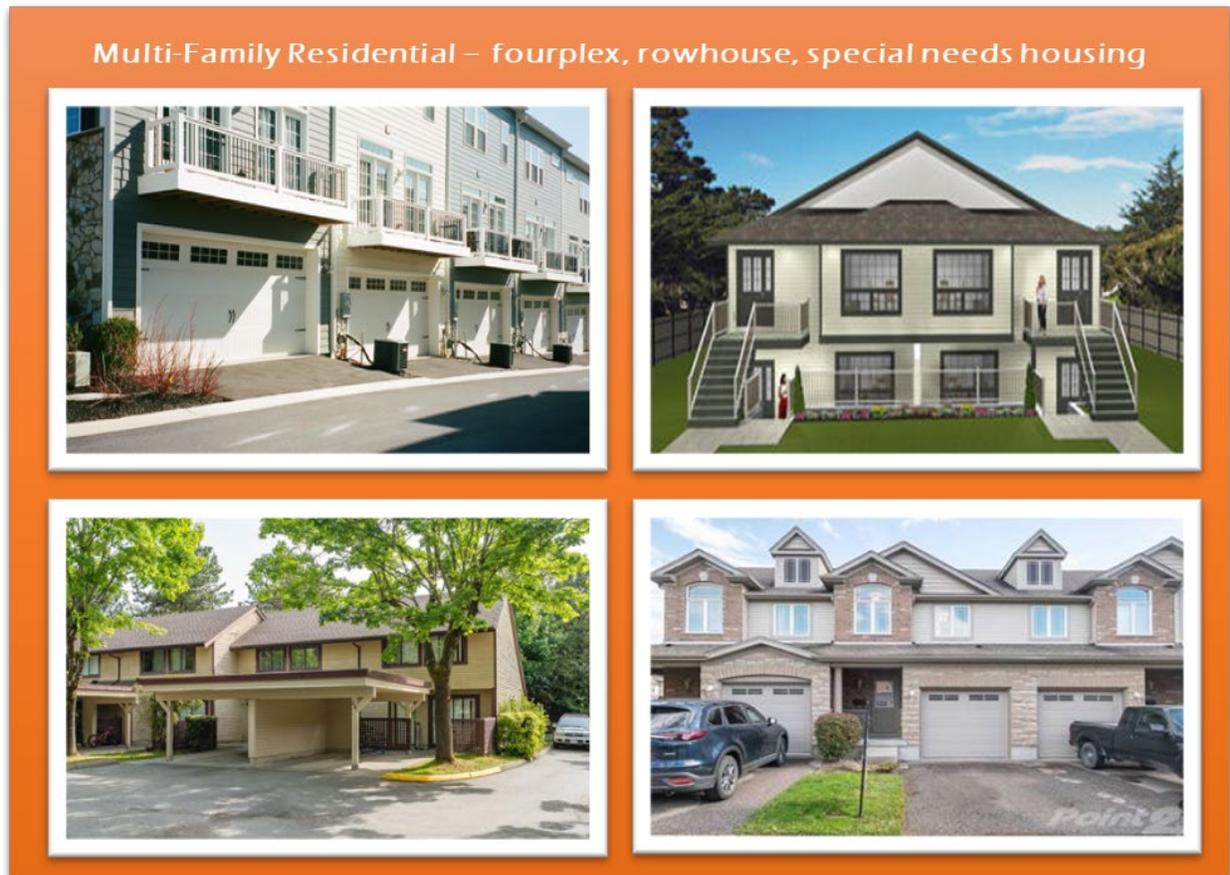


Two-family residential uses coincide with the R2 zone which provides for another form of low-density housing in the form of duplexes and semi-detached dwellings. These uses aim to:

- Offer a form of housing that can be more affordable than single detached dwellings;
- Provide an alternative form of low-density housing;
- Introduce a form of housing that may interest first-time homebuyers; and
- Adhere to the maximum density requirement of 17.6 units per hectare.



## Multi-Family Residential



Multi-family dwellings can help address the critical shortage of rental housing identified in the 2020 Housing Needs Report. The Master Plan provides several sites throughout that aim to:

- Offer a diverse mix of dwellings such as low-rise apartments, fourplexes, rowhouses, and townhouses;
- Provide locations in which to accommodate congregate housing and special needs housing for seniors and semi-independent persons;
- Encourage medium-density dwellings close to collector roads; and
- Allow for a maximum density of 30 dwelling units per hectare, per R5 zoning.



## Apartment Residential

### Apartment Residential – apartment, congregate & special needs housing



High-density residential dwellings offer a form of housing that can appeal to seniors, looking for more maintenance-free lifestyles, as well as those just looking for only 1- or 2-bedroom accommodations. The plan aims to:

- Provide for a higher density form of housing within the village core;
- Apartment residential uses would align with the R6 zoning and permit medium-rise apartments, congregate housing, rowhouse, and special needs housing; and
- Allow for high-density development with a maximum density of 60 units per hectare.

### Apartment Residential



## Commercial



A mixed-use commercial / residential node would provide a place for neighbours to connect, meet the daily retail and service needs of area residents and provide employment opportunities. The plan calls for:

- Creation of a vibrant mixed-use development in the Village Heights core;
- Encourages retail/commercial uses at ground level, with 1- to 2- bedroom residential units located on the second/third floor;
- Provide for neighbourhood commercial uses that would support the immediate area (e.g., convenience store, childcare, and personal service establishments); and
- Discourage uses more suited to the central business district and highway commercial corridor.



## Open Space, Parks, and Trails



Open space, parks, and trails are critical components of the Village Heights Master Plan. As Village Heights builds out over time it will be important to provide for a diversity of open space amenities. The Master Plan offers:

- Ensures the neighbourhood has a network of interconnected trails & sidewalks;
- A variety of pathways & off-road trails, recognizing existing trails;
- Establishes a neighbourhood park to meet the needs of future residents;
- Provides for pathways that are accessible for all ages and abilities;
- Allows for a future multi-use pedestrian connection to Highway 16;
- Protects areas with slopes exceeding 30%; and
- Plans for a future hiking/biking trail north to the Rod Reid Nature Trail.



## Mobility Network

Successful neighbourhoods provide transportation options that are accessible, safe, and reliable for residents to move in and out of their neighbourhood. The objective for this plan was to:

- Ensure there are opportunities to safely integrate vehicles, bicycles, and pedestrians.
- Create a multi-use corridor from Aspen Drive / 3<sup>rd</sup> Avenue through to the Village Heights core with the possibility of extending down to Highway 16.
- Design a road / pathway network that tries to achieve slopes less than 5%.
- Create pedestrian connectivity and safety by proposing universally accessible sidewalks throughout the plan area.



## Site Servicing

Proper servicing and infrastructure mean residents can move efficiently throughout their neighbourhood, have clean water to drink, appropriate sanitary services and stormwater management and the systems can function in times of emergency and high demand. Properly designed and constructed infrastructure are an integral part of neighbourhood planning.

- Ensure there is appropriate infrastructure capacity to meet the demands of new residents;
- Ensure growth pays for growth and that capital projects are realized;
- Design infrastructure that can provide services to the industrial lands south of Highway 16 as economically as possible; and
- Develop a phasing plan that best utilizes existing infrastructure before requiring new or upgrading infrastructure.



## Land Use Summary

The following table presents a breakdown of the various land uses proposed within Village Heights. In addition to the area and percentage calculations, the table includes a summary or estimated residential dwellings/units and projected population by land use. The estimates are based on applying maximum density counts found within the Zoning Bylaw (880).

At full build out, it is expected that Village Heights would reach a maximum population of 866 residents.

## Master Plan Summary

Proposed Use	Area (Ha)	Area (Ac)	%	Density (uph)	Estimated Residential Units	Estimated Residents
<b>Residential</b>	<b>15.5</b>	<b>38.2</b>	<b>44%</b>		<b>311</b>	<b>825</b>
Single Detached	10.9	26.8	31%	16	174	521
Duplex	1.0	2.6	3%	17.5	18	55
Multi-Family	3.2	7.9	9%	30	95	210
Apartment	0.4	1.0	1%	60	23	40
<b>Mixed Use</b>	<b>0.4</b>	<b>1.0</b>	<b>1%</b>	<b>60</b>	<b>24</b>	<b>41</b>
<b>Open Space, Park &amp; Trails</b>	<b>12.3</b>	<b>30.3</b>	<b>35%</b>	<b>n/a</b>		
Park	1.2	2.8	3%			
Open Space	11.1	27.5	32%			
<b>Infrastructure</b>	<b>0.5</b>	<b>1.2</b>	<b>1%</b>	<b>n/a</b>		
Water Reservoir	0.1	0.2	0%			
Transmission Line	0.4	1.0	1%			
<b>Right of Way</b>	<b>6.4</b>	<b>15.8</b>	<b>18%</b>	<b>n/a</b>		
<b>Total</b>	<b>35.0</b>	<b>86.5</b>	<b>100%</b>		<b>335</b>	<b>866</b>

## 5.0

# INFRASTRUCTURE AND SITE SERVICING

Future growth in Village Heights will necessitate new infrastructure as well as improvements and expansion of existing infrastructure of road, water infrastructure, sanitary sewer, and drainage. The following is an overview of the current state of infrastructure and the works required to accommodate future residents.

## Roads

As part of the Village Heights Master Plan exercise, the Project Team developed a high-level road network for the development (see **Mobility Network Plan**).

The conceptual road network was developed utilizing the Objectives and Policies identified in the *Village of Burns Lake Official Community Plan (2017)*, as well as information gathered throughout the engagement phases leading up to the preparation of the Master Plan.

In alignment with these documents, the proposed road network was developed in a way that:

- ✧ Ensures that Burns Lake maintains an efficient and effective road system;
- ✧ Maintains a hierarchical road system to service users and provide a high degree of safe mobility;
- ✧ Promotes accessibility to all areas of the community through enhanced facilities which facilitates pedestrian movement and the safe use of bicycles;
- ✧ Maintains and promotes alternative transportation options (cycling and walking) within the community to strategic locations through multi-use path networks and sidewalks;
- ✧ Provides enhanced gateways into the community through strategic integration with Aspen Street, 3<sup>rd</sup> Avenue and Highway 16; and
- ✧ Allows for opportunities to enhance the safety of road users through traffic calming at strategic locations.

As the total build out of the Village Heights development is proposed to be phased and consists of various land uses and potential traffic generators, the potential access points were reviewed, and connections were identified to provide:

- ✧ A clear gateway / entrance to the Village Heights development that would channel / direct traffic along the major roads network while reducing through traffic in residential neighborhoods (aids in wayfinding and traffic operations); and
- ✧ Highway access when the appropriate development phase is triggered.

# Mobility Network



- LOCAL ROAD
- COLLECTOR ROAD
- HIGHWAY
- MULTI-USE PATHWAY
- SIDEWALK
- POTENTIAL LOCAL ROAD
- PLAN AREA

Map 8: Mobility Network

Through a review of the existing Village road network, development site topography, potential road network concepts, and development phasing, the following access points were selected:

- ✧ A proposed connection to Aspen Street as part of Phase 1A to provide access to the development;
- ✧ A proposed connection to 3<sup>rd</sup> Avenue as part of Phase 1; and
- ✧ A proposed access to Highway 16 located at the existing Richmond Loop intersection as part of Phase 3 to provide additional access to the community.

It is understood that any proposed modification to the highway network due to the construction of the development, not including future background growth from the area, would fall under the responsibility of the developer.

In consultation with BC MoTI, any highway connection / modifications should adhere to the BC MoTI design guidelines. As the adjacent highway network is under the authority of the BC MoTI, any development occurring in proximity to the highway is required to be referred to the Ministry for review and acceptance.

### Proposed Road Cross Sections

In response to the public open house discussion and online survey, the proposed cross sections for collector and local roadways have been designed to an urban standard which includes curb and gutter, streetlights, sidewalks, and multi-use pathways.

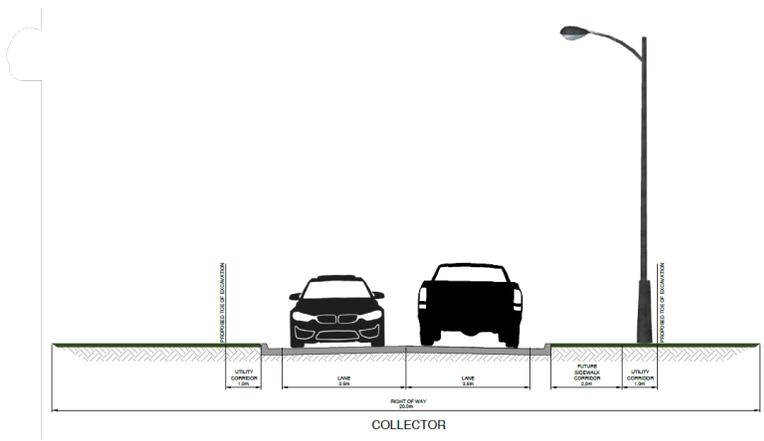
Road cross sections were developed for the Village Heights development outlining the proposed Collector and Local roads. To provide the facilities proposed, the road sections have been developed following current best practices to an Urban standard, allowing for better integration of such facilities as sidewalks, pathways, and street lighting.

The proposed Collector cross section includes:

- ✧ 3.5m Travel Lanes;
- ✧ 2.0m Sidewalk or 3.0m Multi-Use Path (where applicable); and
- ✧ Street Lighting.

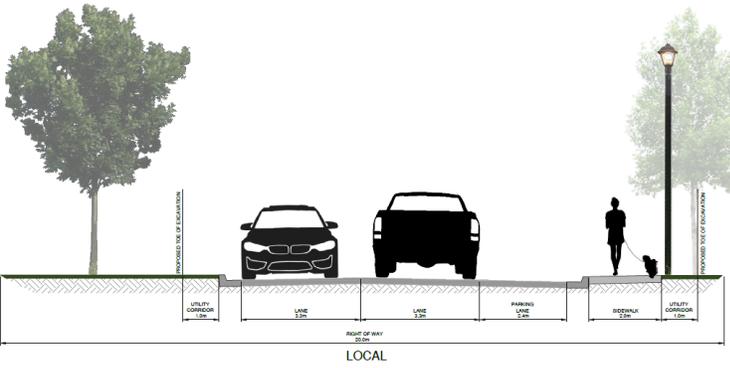
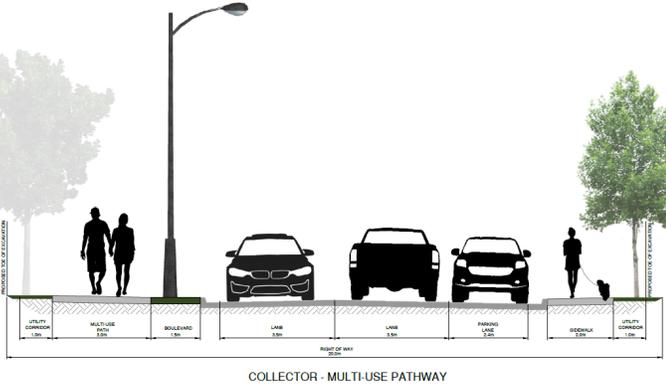
The proposed Local cross section includes:

- ✧ 3.3m Travel Lanes;
- ✧ 2.4m Parking Lane (where applicable);
- ✧ 2.0m Sidewalks or 3.0m Multi Use Path; and
- ✧ Street Lighting.



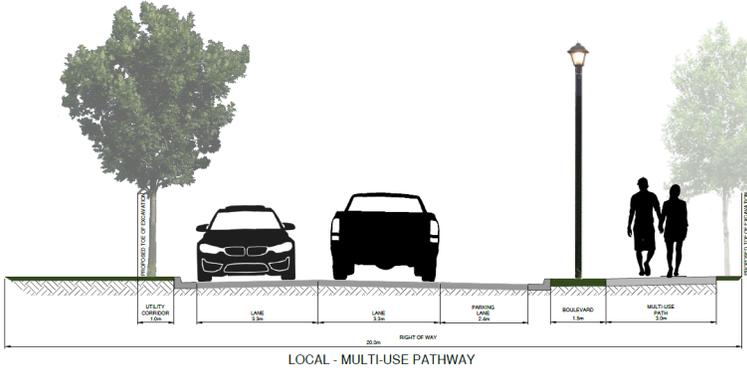
**Collector Road**

**Collector Road with Multi-Use Pathway**



**Local Road**

**Local Road with Multi-Use Pathway**



## Water Servicing

The Village Heights water distribution system (see **Subdivision Servicing Plan**) would be an expansion of the existing Water System - Pressure Zone B. Pressure Zone B is currently serviced by a on-demand booster pump system for both domestic flow and fire suppression purposes. The existing domestic water booster system would require upgrades to its pumping capacity prior to Phase 1C being developed (see **Development Phasing Plan**), and both the domestic and fire suppression pumped systems should be replaced with a water reservoir located in Village Heights prior to the development of Phase 2B. The location of the proposed water reservoir has been selected to take advantage of the height of land. Locating the reservoir at the greatest elevation in Village Heights reduces the need for an excessively tall water reservoir which otherwise would be needed to provide adequate water pressure to the Water System - Pressure Zone B users.

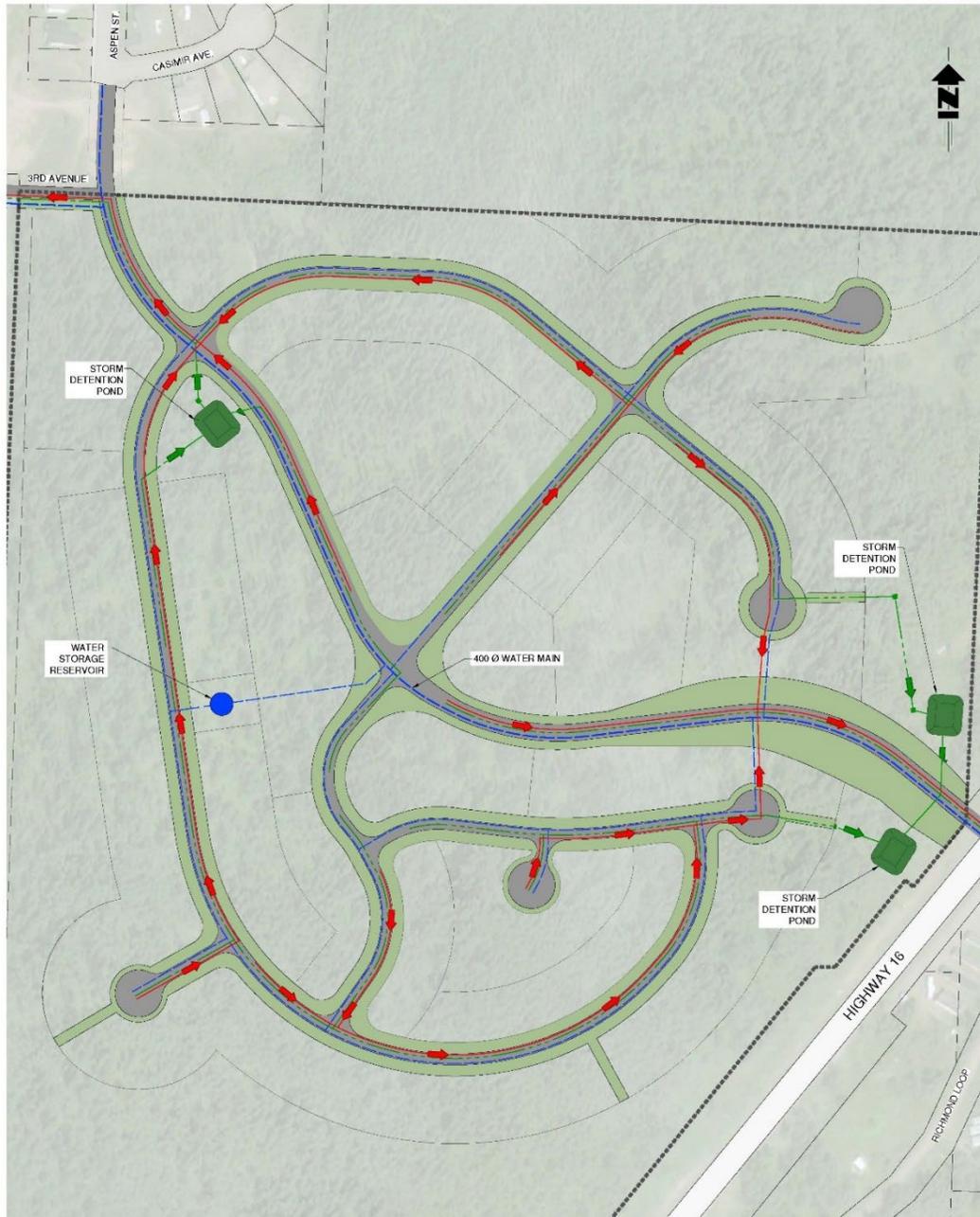
The construction cost estimate for the domestic water pump booster system upgrade is \$150,000 and the estimated construction cost of the water reservoir \$1,750,000. A detailed cost estimate for each phase of construction can be found in the Appendices. The water system distribution network in Village Heights has been planned to allow for future water supply to the industrial area of Burns Lake located to the southeast of Village Heights. The proposed pipe network will ensure maximum fire suppression flow is available to the industrial area should service be extended to that area in the future.

## Sanitary Servicing

The Village Heights sanitary sewer collection system (see **Subdivision Servicing Plan**) would be an expansion of the existing sanitary sewer collection system located to the northwest of Village Heights, as well as construction of a new sanitary sewer collection system located to the southeast. The Village Heights expansion of the existing sanitary sewer collection system would service the proposed Phase 1 and Phase 4 areas of Village Heights (see **Development Phasing Plan**).

Minor pipe up-sizing within the existing sanitary sewer collection system may be required as Village Heights Phase 1 is developed. The existing sanitary sewer collection system constraints that should be analysed as development takes place are located along Centre Street between 3<sup>rd</sup> and 1<sup>st</sup> Avenue, and from the intersection of Centre Street and Highway 16 to the Pioneer Lift Station. Village Heights phasing was partially planned to allow for Phase 1 to take advantage of the existing sanitary sewer collections system instead of having to construct new infrastructure between Village Heights and the Sewage Treatment Facility.

# Subdivision Servicing Plan



- |            |                              |                      |
|------------|------------------------------|----------------------|
| WATER MAIN | SANITARY MAIN (GRAVITY)      | STORM MAIN           |
| END CAP    | SANITARY MAIN (LOW PRESSURE) | FLOW DIRECTION ARROW |
|            | FLOW DIRECTION ARROW         | MANHOLE              |
|            | MANHOLE                      |                      |
|            | END CAP                      |                      |

Map 9: Subdivision Servicing

The new Village Heights sanitary sewer collections system would service the proposed Phase 2 and Phase 3 lands. To service Phases 2 and 3, sanitary sewer would need to be constructed from the intersection of Richmond Loop and Highway 16 to the sewage treatment facility located on Glans Drive. The works located outside of Village Heights have been planned to allow for future expansion of sanitary sewer service to the industrial area of Burns Lake which is located to the southeast of Village Heights.

The cost associated with the works located outside of Village Heights is \$700,000. A detailed cost estimate for each phase of construction can be found in **Appendix C**.

## Drainage

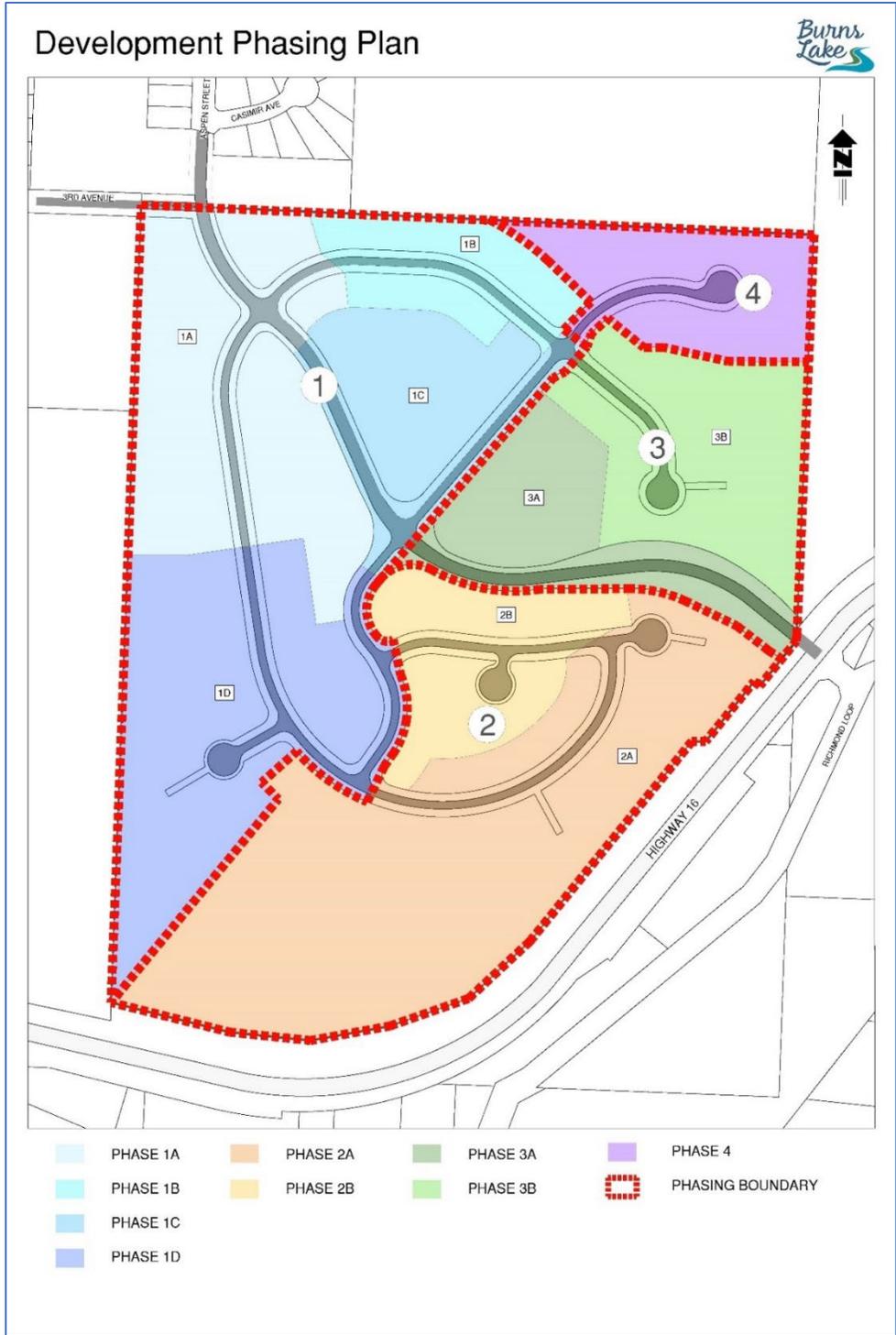
The Village Heights storm sewer system manages and directs storm water to the existing storm water collection system located northwest of Village Heights, as well as to the Ministry of Transportation and Infrastructure highway ditch system located to the southeast. Storm water is managed through the use of three storm water detention ponds located within the plan area (see **Subdivision Servicing Plan**). Village Heights Phase 1A and 1C (see **Development Phasing Plan**) collect storm water and convey it to the Village's existing storm water infrastructure located to the northeast. Phase 1B and 1D collect storm water and convey it to the southeast first by use of a temporary storm water pond, and then via a permanent storm water pond as development progresses. Phases 2, 3, and 4 collect and convey storm water to the Ministry of Transportation and Infrastructure highway ditch system located to the southeast.

The purpose of the storm water detention ponds is to ensure storm water is released from Village Heights following development, at the same rate it is currently being discharged to the environment. This reduces the chance of flooding and does not negatively impact the natural water drainage course.

## Phasing

A phasing plan details which elements will be built first and which later, which decisions should be made early, and which should be allowed to evolve in response to future opportunities. A phasing plan should be planned around the potential to deliver infrastructure. The proposed phasing plan:

- Provides staff with guidance on future OCP and Zoning Bylaw amendments;
- Establishes a sequencing of construction activities that takes into consideration existing infrastructure;
- Is mindful of the requirements of MoTi with respect to connecting the collector road to Highway 16; and
- Takes into consideration the need to extend services to the industrial lands south of Highway 16.



Map 10: Development Phasing Plan

### Cost Estimates

A break-down of the Class 'D' cost estimates by phase and sub-phase is included in **Appendix C**.

A successful Master Plan requires a strong linkage from the vision to guiding principles; guiding principles to a plan; and a plan to action. It is important that the Village implement the following actions in the years and decades to come. The following action items outline how the Village can take the Master Plan and make it a reality.

- ❖ The Village should use the Master Plan as the foundation for future development of the Village Heights area.
- ❖ The Village is encouraged to work with Developers, landowners, First Nation communities and all levels of government in developing Village Heights, through land sales, partnerships and/or grant funding.

### Residential

- ❖ Increase the diversity and mix of housing types.
- ❖ Offer medium- and high-density housing to help address a shortage in rental housing.
- ❖ Increase the housing choices for seniors (e.g., ground-oriented, 1-bedrooms and 2-bedroom units)
- ❖ Ensure seniors housing is integrated into the existing neighbourhood and located near services and amenities.

### Commercial

- ❖ Consider neighbourhood commercial uses within the core of Village Heights, to provide daily retail and service needs of area residents.
- ❖ The Village should explore mixed-use commercial development as a tool in offering more apartment style dwellings above retail stores.
- ❖ Limit commercial development within Village Heights recognizing that the central business district is where most of the retail and service commercial uses are to be located.

### Open Space

- ❖ The Village should create a pedestrian friendly environment with universally accessible sidewalks, multi-use pathways, streetlighting, and rest areas.

- ❖ The Village should develop the system of trails and pathways throughout the open space areas in the early phases of development.
- ❖ Promote connections to existing and future trail networks beyond the plan area.

### Transportation & Servicing

- ❖ The Village should implement the collector and local road network as set out in the Master Plan.
- ❖ Adhere to the development phasing plan recognizing it is the most cost-effective way to extend infrastructure into and throughout the plan area.
- ❖ Consider wildfire prevention and suppression in the design of subdivisions (e.g., road widths, turning radius for emergency vehicles, and access and egress points).

### Official Community Plan

- ❖ Amend the Official Community Plan by replacing the Concept Development Plan Area designation with the land uses proposed in the Master Plan.
- ❖ Amend *Development Permit Areas – Map 3* in the OCP to correspond with the Hazardous Conditions Plan.
- ❖ The Village should consider establishing a Wildfire Hazard Development Permit Area.

### Zoning Bylaw

- ❖ The Village should look to rezone the initial phase(s) of Village Heights, in keeping with the proposed Land Use Plan.

### Environmental Protection

- ❖ The Village should have consideration for FireSmart principles during each phase of development.
- ❖ Develop policies and practices for FireSmart maintenance of public spaces, such as parks and open spaces.

# Appendices

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## **Appendix A: Feedback Frame Results**

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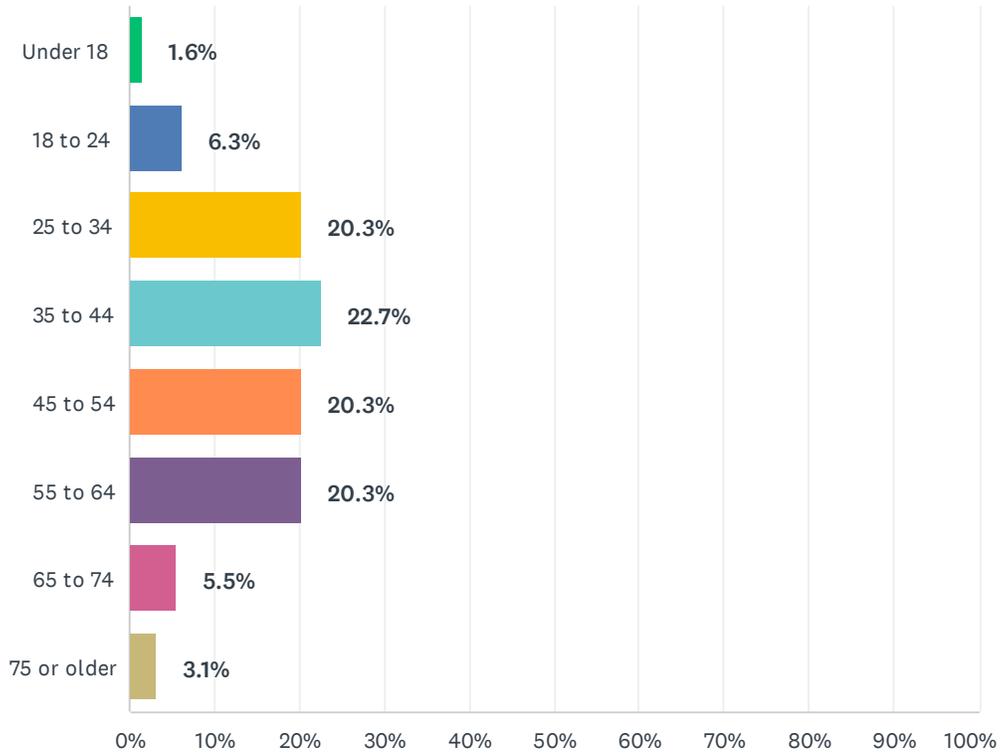
Feedback Frames Responses (September 21, 2021)		TOTAL						
Statement	Comments: Strengths & Opportunities	Comments: Concerns & Weaknesses	Strong Agreement	Agreement	Neutral	Disagreement	Strong Disagreement	Not Sure
The Village Heights Plan should include Neighbourhood Commercial uses (e.g. convenience store, salon/barber, bakery)	<ul style="list-style-type: none"> <li>-We have these services downtown</li> <li>-Downtown has limited accessibility, new buildings will improve this</li> <li>-It's time for Burns Lake to grow</li> <li>-This is a step in the right direction</li> <li>-New opportunities for business is always great</li> </ul>	<ul style="list-style-type: none"> <li>-We have enough downtown</li> <li>-Localize these developments</li> <li>-It causes noise and garbage</li> <li>-Don't draw commercial from downtown</li> <li>-Purchased home because it is away from commercial properties / nature in our backyard</li> <li>-Very poor location for commercial</li> <li>-Love the plan</li> <li>-No public water or septic in industrial site</li> </ul>	5	4	3	2	1	0
The Village Heights Plan should include Highway Commercial uses (e.g. Automotive repair, financial services, hotel, restaurant)	<ul style="list-style-type: none"> <li>-Financial services would be nice</li> <li>-Auto repair should stay close to Hwy.</li> <li>-Auto services and RV centre would be an asset</li> </ul>	<ul style="list-style-type: none"> <li>-Takes away from why people move to small town with lots of natural environs</li> <li>-Very poor location for commercial</li> <li>-Keep commercial in downtown core</li> </ul>	0	2	2	12	16	0
The Village Heights Plan should include Light Industrial uses (e.g. Contractor services, storage, car wash)	<ul style="list-style-type: none"> <li>-Great place for a car wash</li> <li>-Car wash needed</li> </ul>	<ul style="list-style-type: none"> <li>-Takes away from natural environment</li> <li>-Very poor location for commercial</li> <li>-Keep it mostly residential</li> <li>-The 'mess' associated with storage/contractor services is an eyesore</li> </ul>	1	4	4	6	20	0
Village of Burns Lake needs larger residential lots (e.g. +/- 30 m (100 ft) wide)	<ul style="list-style-type: none"> <li>-Community gardens should be part</li> <li>-Apartment buildings would be nice or maybe larger green space active transportation corridors</li> <li>-Larger lots for ranchettes</li> <li>-Large lots a nice step down for seniors not ready to downsize to seniors home but rural property too big</li> </ul>	<ul style="list-style-type: none"> <li>-Larger lots take away from natural environment and cause habitat fragmentation</li> <li>-The above concern makes no sense</li> </ul>	8	12	8	0	5	1
The Village Heights Plan should include Multi-Family housing (e.g. Townhouses, row houses, 2-3 storey apartments)	<ul style="list-style-type: none"> <li>-Yes and green space active transportation corridors connecting the community</li> <li>-Apartments only</li> <li>-Very hard for young families, singles to get a start</li> </ul>	<ul style="list-style-type: none"> <li>-Affordable housing</li> <li>-Should be a balanced mix</li> </ul>	12	14	5	1	1	1
There is a need for Seniors Housing within Village Heights. (Please provide examples of preferred housing types)	<ul style="list-style-type: none"> <li>-Make all buildings accessible. Universal design is not more expensive</li> <li>-Small houses also for people who work for min. wage</li> <li>-And professionals who don't want large houses (one level - rancher style)</li> <li>-2-bedroom</li> <li>-Duplex &amp; 4-plex 1-level</li> </ul>	<ul style="list-style-type: none"> <li>-Need to be one level/wheelchair accessible</li> <li>-Seniors' housing, Duplex, Tri-plex, etc.</li> <li>-Ground level housing</li> <li>-Gated, maintained, owned strata</li> <li>-4-plexes</li> </ul>	10	10	3	0	1	1
The Village Heights plan should include Multi-Use Pathways (e.g. walking / biking)	<ul style="list-style-type: none"> <li>-Asphalt path</li> <li>-Accessible, accessible, accessible</li> <li>-Walking trails, dog-friendly, this is beautiful property for nature walks</li> <li>-Agree with above comment totally</li> <li>-A mix for all users</li> <li>-Walking trails only</li> <li>-Winter skating trail</li> </ul>	<ul style="list-style-type: none"> <li>-Motorized ATV/Sleds</li> <li>-No motorized bikes, ATVs or snowmobiles - walking paths or bike paths only</li> <li>-Possible reduced access for ATV/sleds for those east of town going toward Boer Mtn</li> </ul>	10	4	3	1	0	0
Lands looking out over Burns Lake should be protected for all residents to enjoy	<ul style="list-style-type: none"> <li>-We have a ton of beautiful areas here</li> <li>-It is an opportunity to provide affordable housing to people and seniors in need as well as preserving natural spaces</li> <li>-Small houses for min... wage/low income</li> <li>-Areas overlooking BL could be developed into walking trails for all to enjoy (not housing)</li> <li>-There is a lot of natural land around the town</li> <li>-Within town limits should be developed for residents and controlled over-all growth to increase out tax base</li> <li>-Larger view lots overlooking BL</li> <li>-Larger lots than typical town lots</li> </ul>	<ul style="list-style-type: none"> <li>-What does 'protected' mean</li> <li>-Wildlife/environment need to be protected and address in any development plan</li> <li>-Large houses/lots taking green space that should be available to all</li> <li>-Could keep a green space trail and houses would still have view</li> </ul>	8	9	6	5	1	1

## **Appendix B: Online Survey Results**

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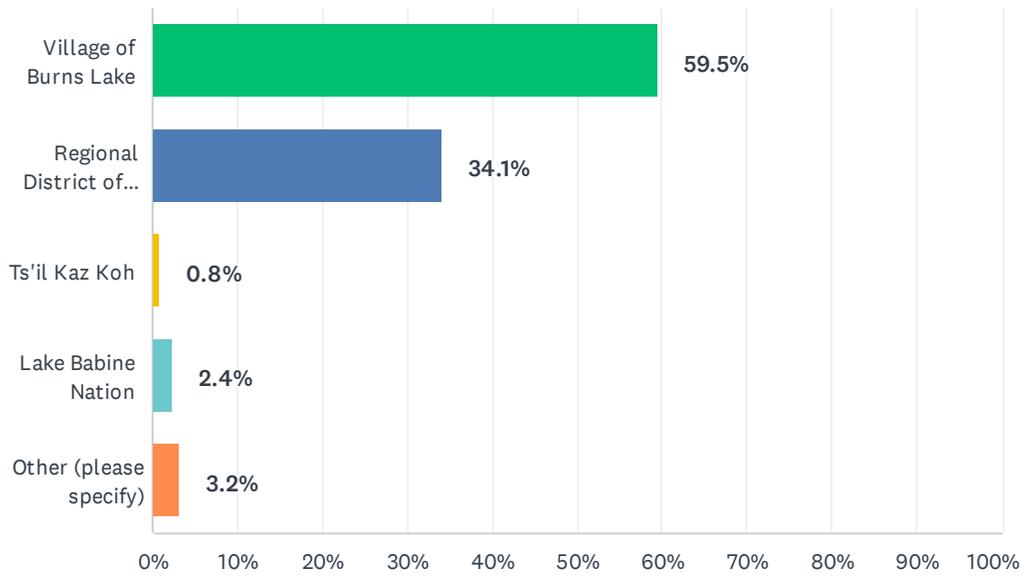
# What is your age?

Answered: 128 Skipped: 0



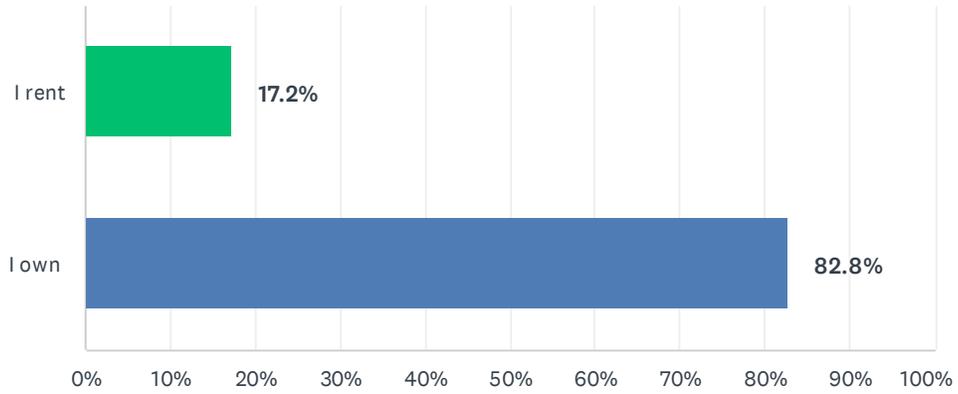
## Where do you live?

Answered: 126 Skipped: 2



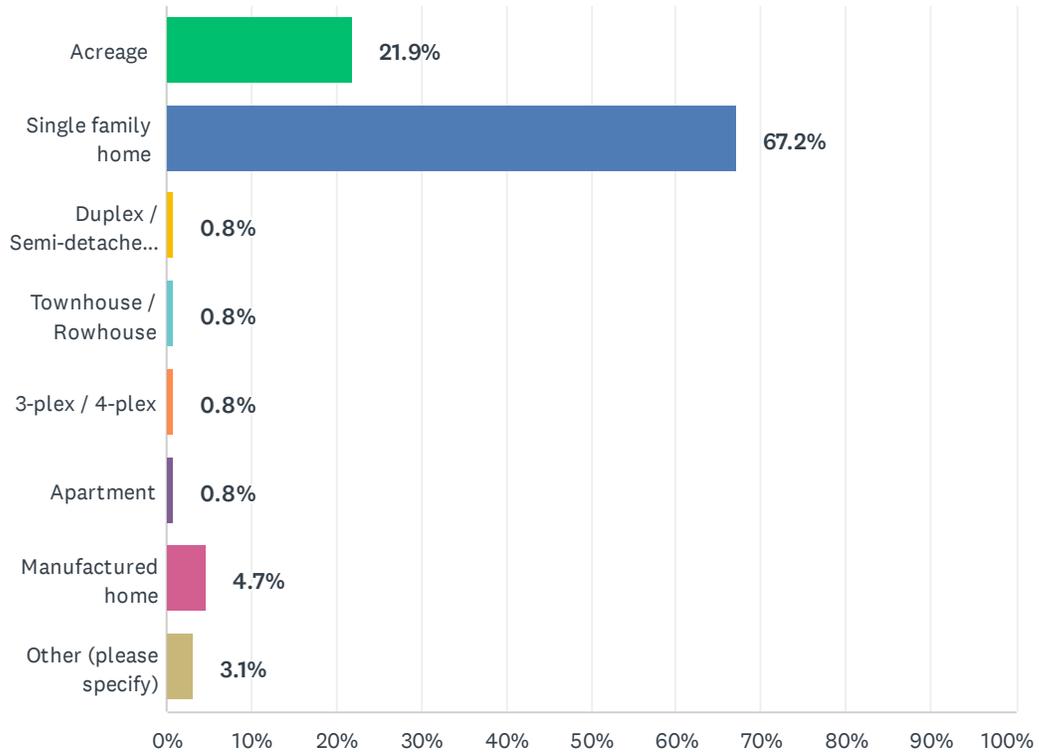
# Which of the following best describes your current living arrangement

Answered: 128 Skipped: 0



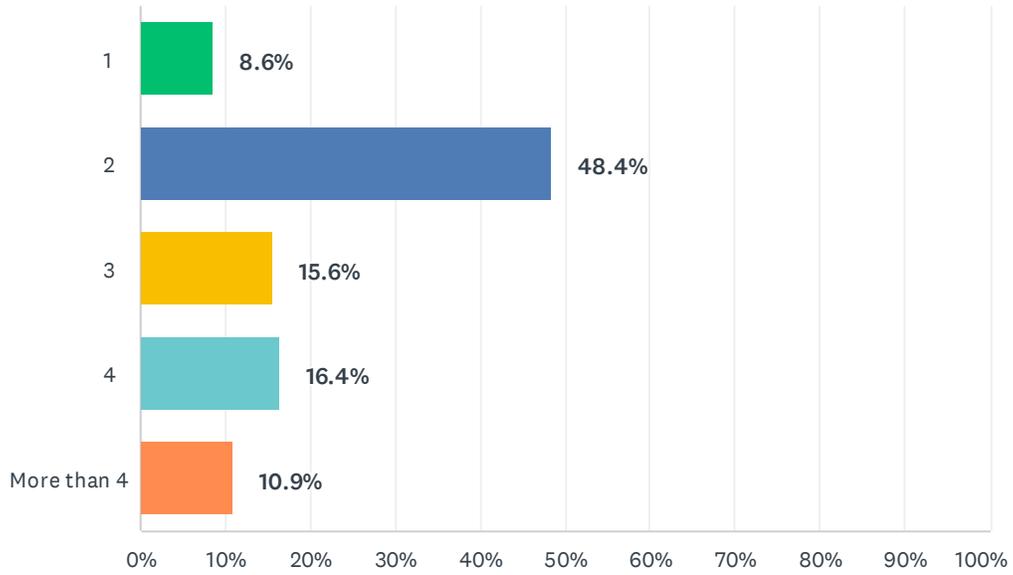
## In which type of housing do you currently live?

Answered: 128 Skipped: 0



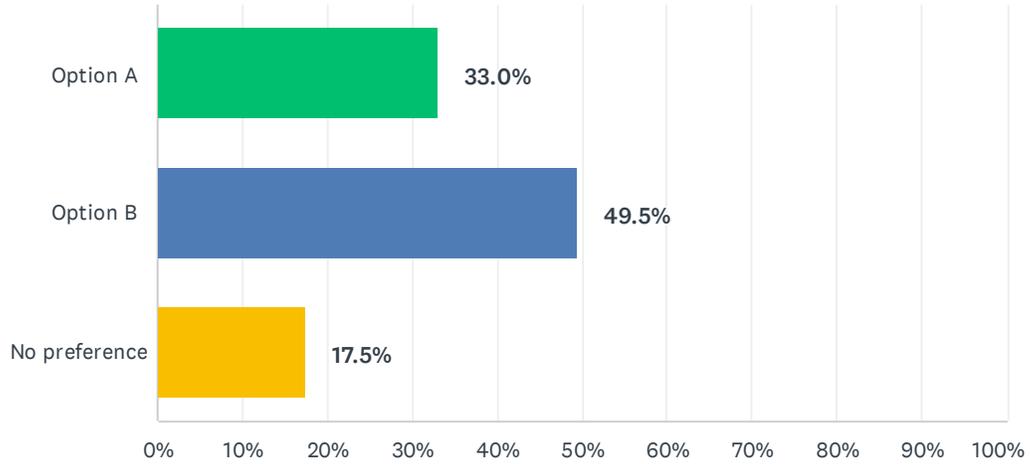
## How many people currently live in your household?

Answered: 128 Skipped: 0



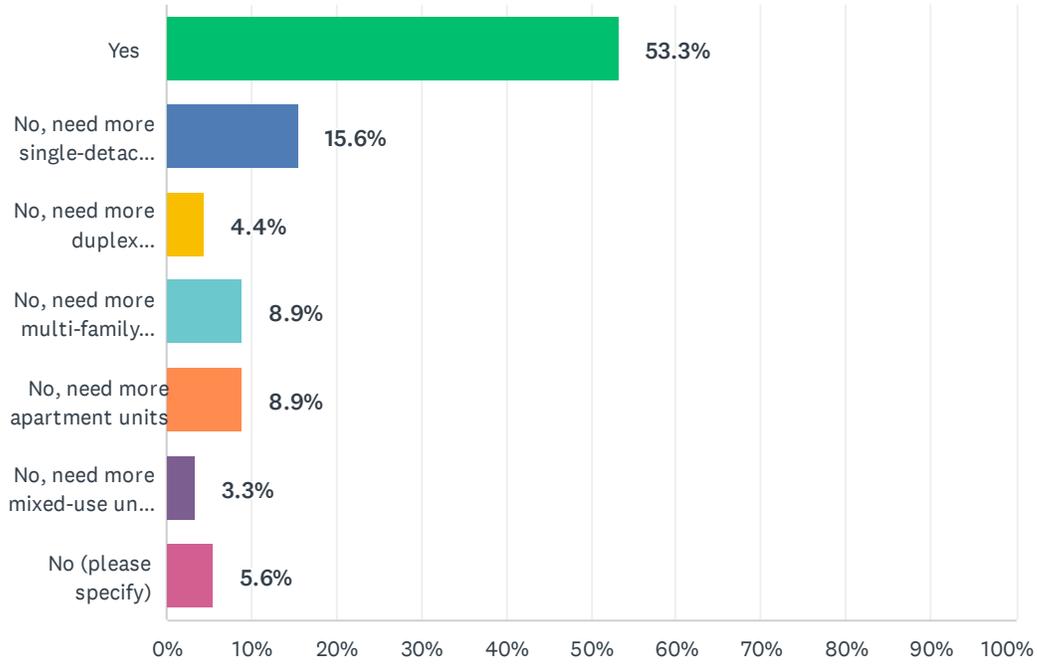
# Of the two proposed Future Land Use plans above, which do you prefer?

Answered: 97 Skipped: 31



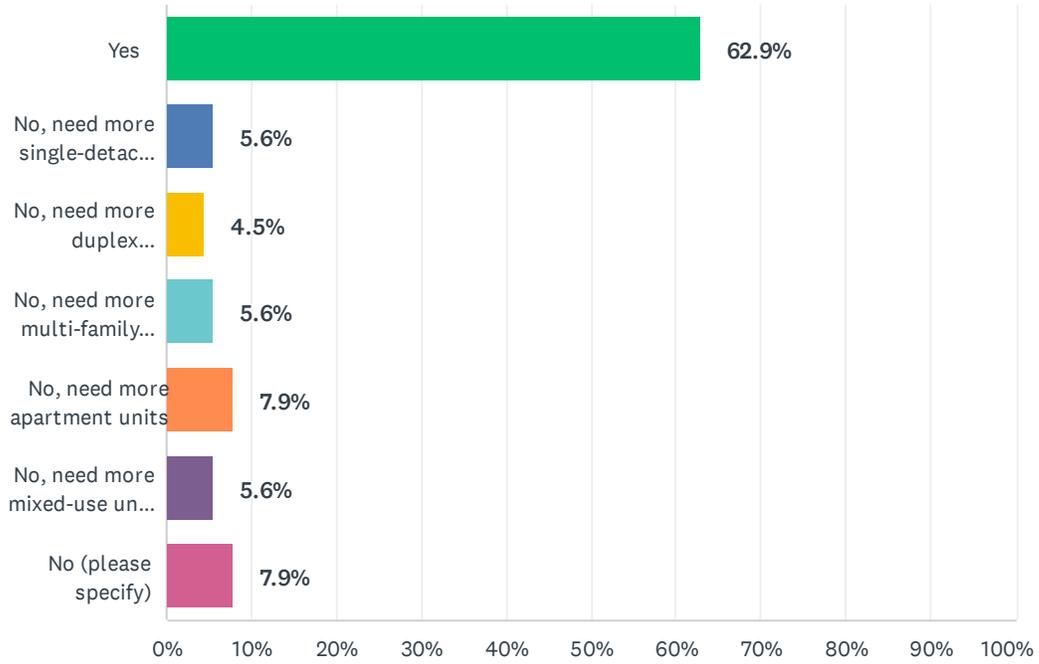
# Based on Option A above, do you feel that the proposed plan provides an adequate mix of housing types?

Answered: 90 Skipped: 38



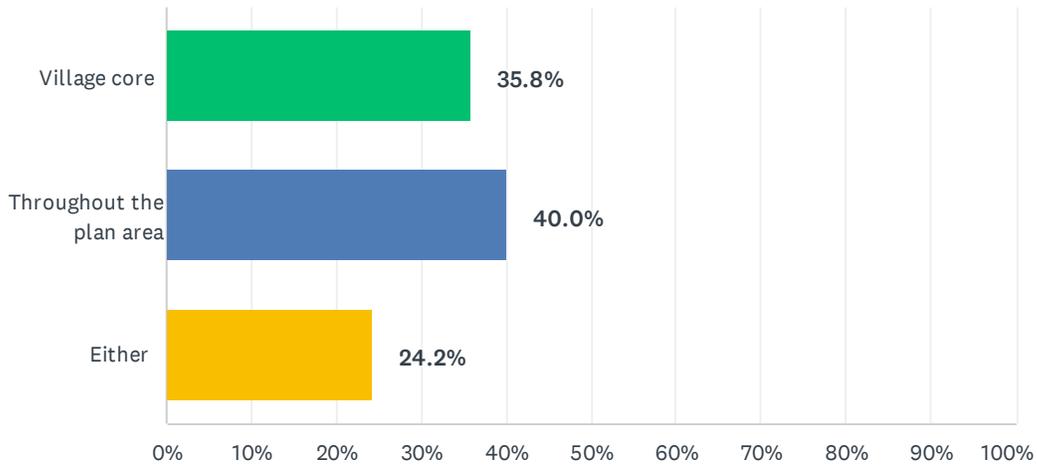
### Based on Option B above, do you feel that the proposed plan provides an adequate mix of housing types?

Answered: 89 Skipped: 39



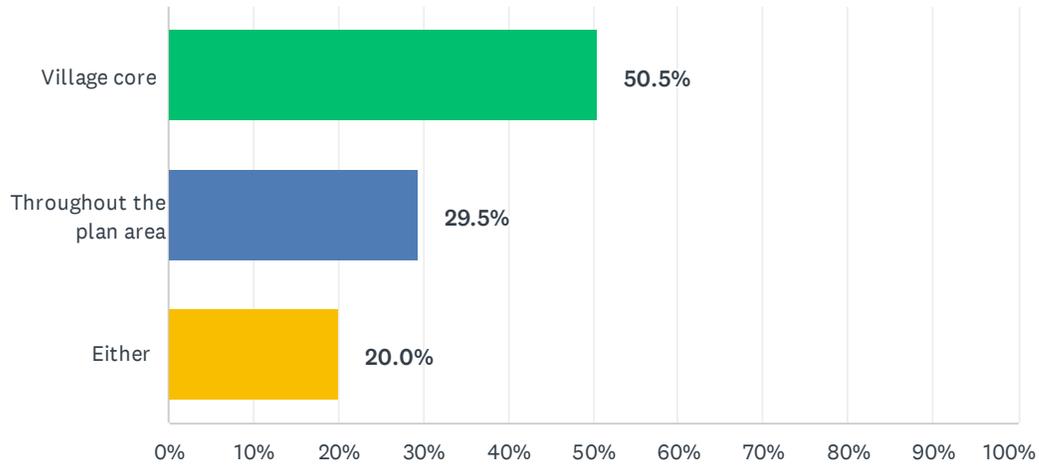
Do you prefer multi-family developments (i.e. townhouse, 4-plex) be located in the center of the plan area (village core) or spread throughout the plan area?

Answered: 95 Skipped: 33



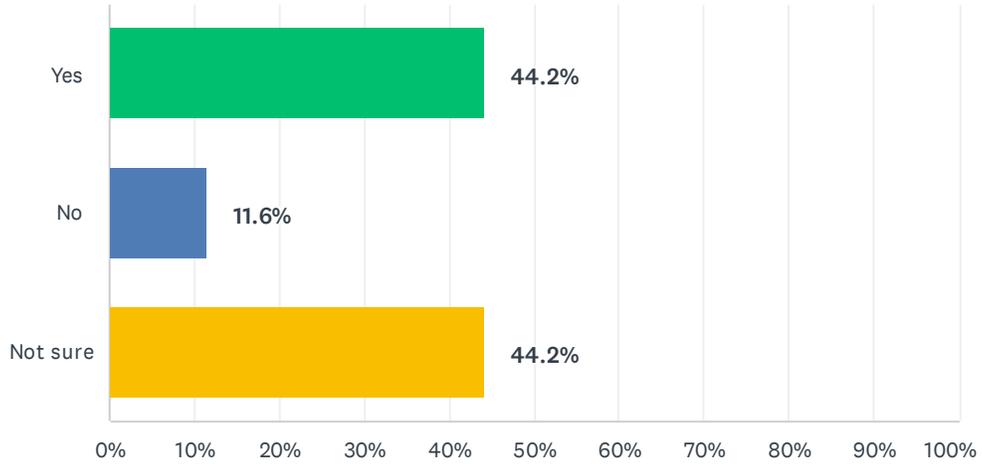
Do you prefer apartment developments be located near the center of the plan area (village core) or spread throughout the plan area?

Answered: 95 Skipped: 33



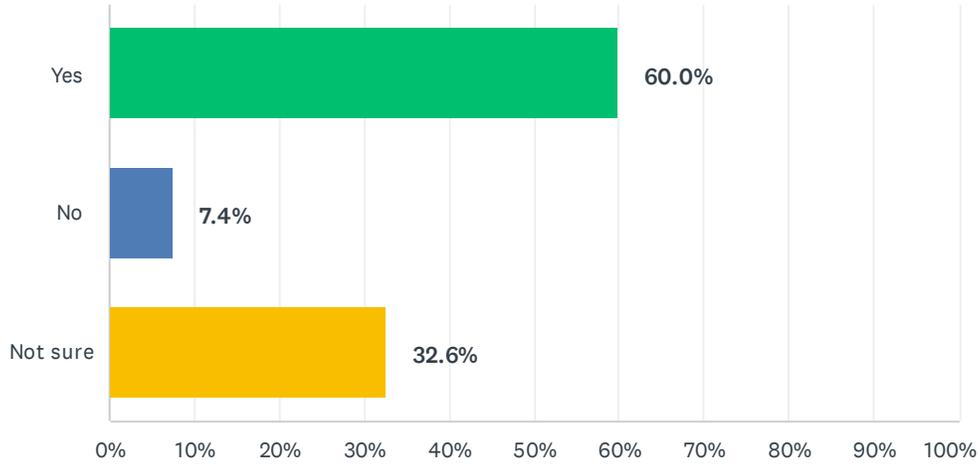
# Do you feel that the proposed plans will help increase the supply of housing for seniors?

Answered: 95 Skipped: 33



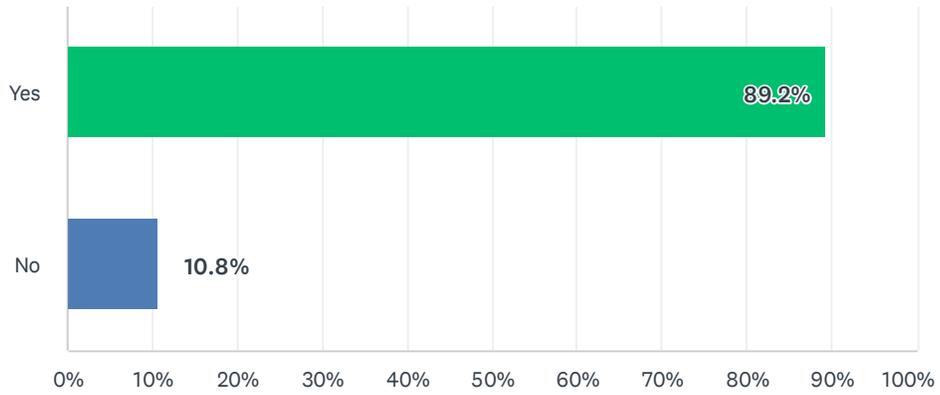
# Do you feel the proposed DRAFT Plans provide an adequate mix of uses to support affordable housing opportunities?

Answered: 95 Skipped: 33



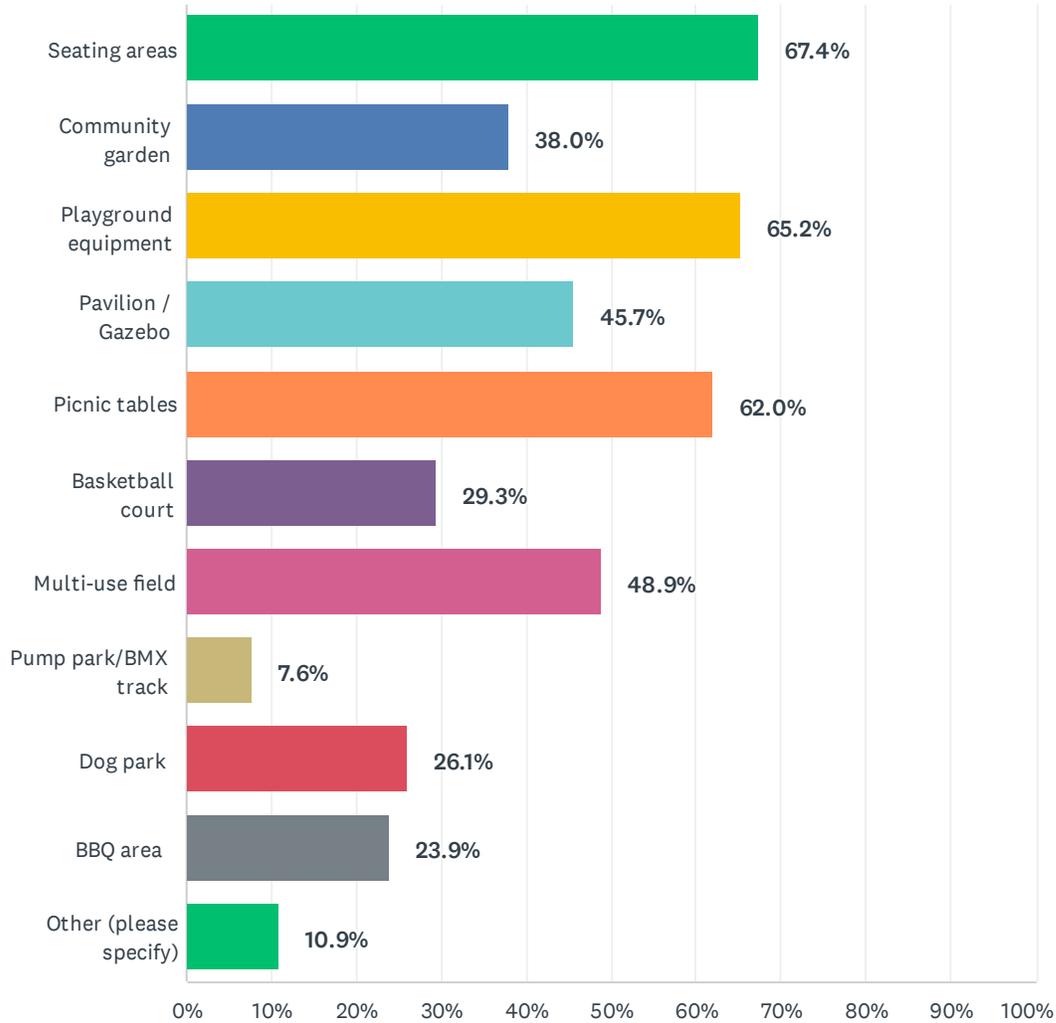
# Do you feel the Open Space, Parks & Trails plan provides for the right amount of sidewalks, multi-use pathways and walking trails?

Answered: 93 Skipped: 35



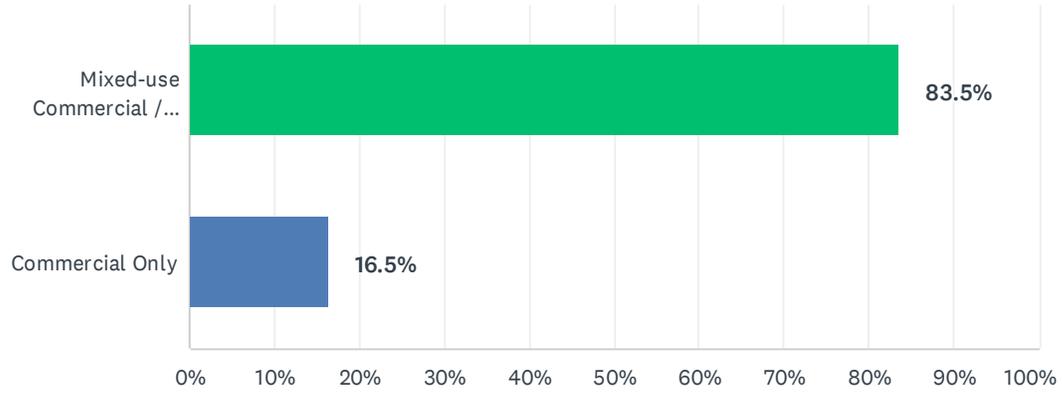
# What components should be included in the park space that would benefit the neighbourhood?

Answered: 92 Skipped: 36



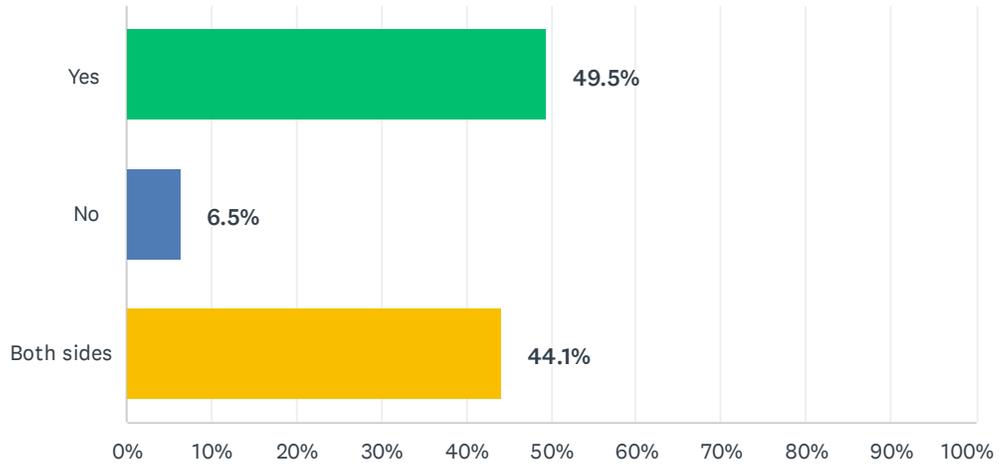
# If neighbourhood commercial development was included in Village Heights, what form should it take? (click on the image)

Answered: 91 Skipped: 37



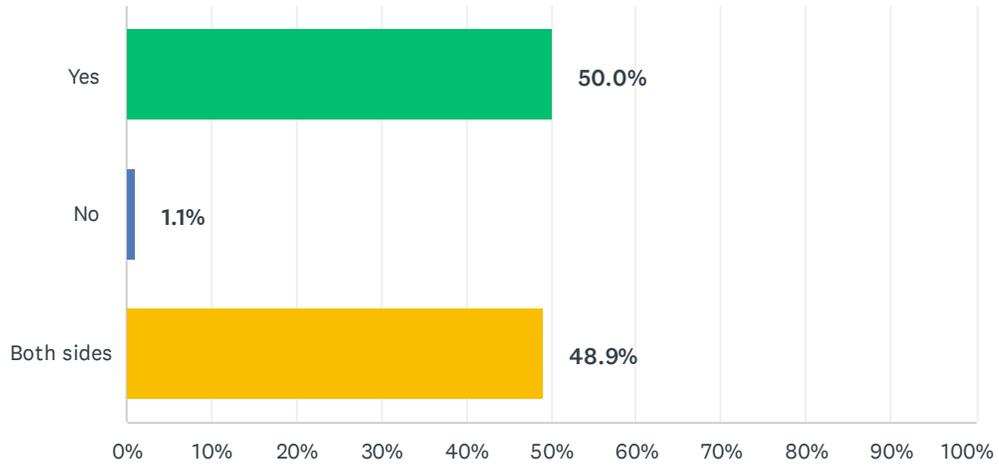
# Should local roads provide for a parking lane on one side?

Answered: 93 Skipped: 35



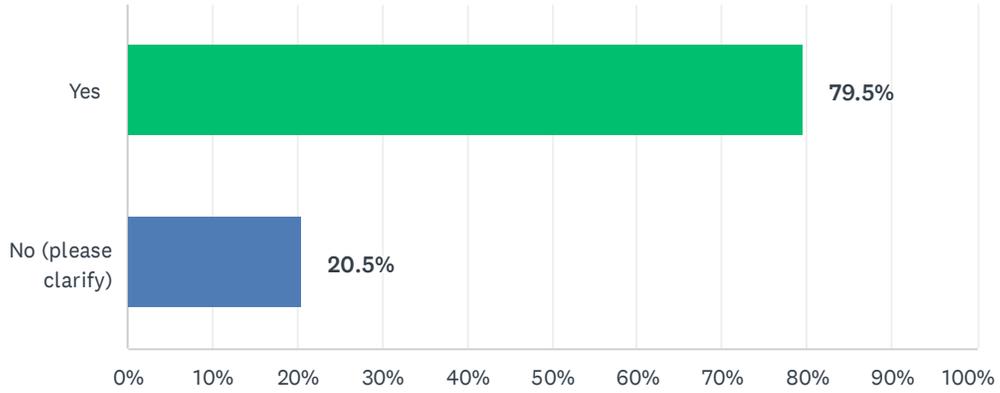
# Should local roads provide for a sidewalk on one side?

Answered: 94 Skipped: 34



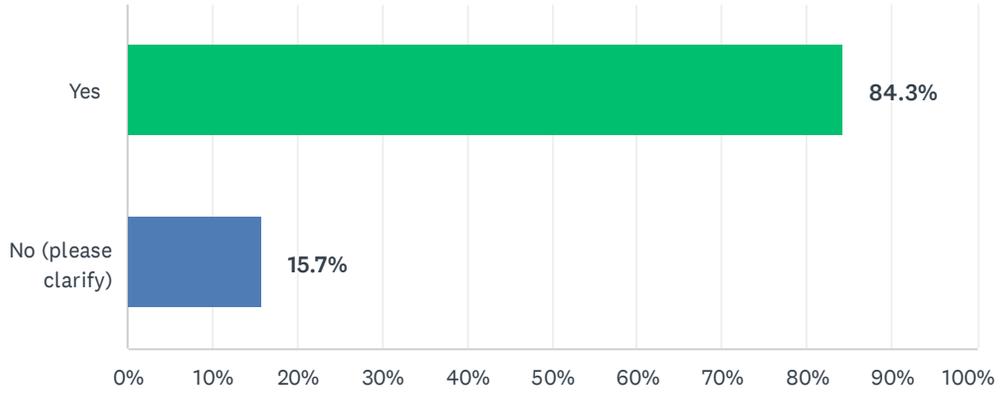
# Do you feel the DRAFT Plans acknowledges the concerns you may have regarding growth in your community?

Answered: 88 Skipped: 40



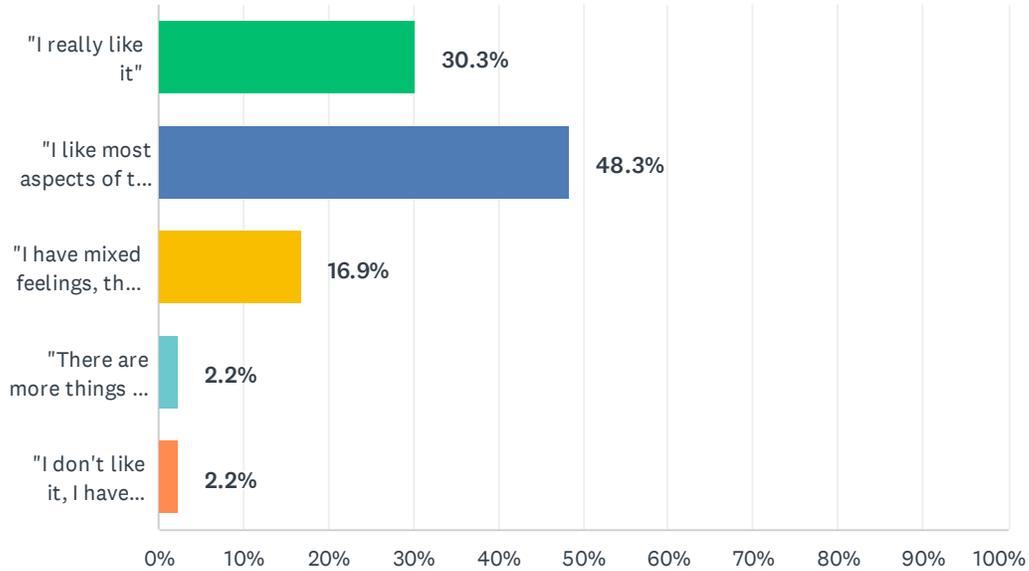
# Do you feel your preferred DRAFT Plan option will meet the needs of the Village of Burns Lake into the future?

Answered: 89 Skipped: 39



# Overall, which of these statements best reflects your feelings about the DRAFT Plans?

Answered: 89 Skipped: 39



## **Appendix C: Class 'D' Cost Estimates**

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Village Heights Master Plan  
 Village of Burns Lake  
 Class 'D' – Cost Estimate

Phase 1A	
Part A - General	\$ 170,000.00
Part B - Earthworks, Grading & Roadworks	\$ 647,521.00
Part C - Storm Drainage	\$ 386,500.00
Part D - Waterworks	\$ 763,125.00
Part E - Sanitary Sewer	\$ 628,375.00
Part F - Signage & Pavement Markings	\$ 28,500.00
Part G - Lighting & Utilities	\$ 143,800.00
<b>Subtotal Parts A, B, C, D, E, F and G</b>	<b>\$ 2,767,821.00</b>
Contingency (50%)	\$ 1,383,910.50
Engineering (15%)	\$ 415,173.15
<b>Total (Excluding GST)</b>	<b>\$ 4,566,904.65</b>

Phase 1B	
Part A - General	\$ 55,000.00
Part B - Earthworks, Grading & Roadworks	\$ 236,591.00
Part C - Storm Drainage	\$ 196,750.00
Part D - Waterworks	\$ 235,750.00
Part E - Sanitary Sewer	\$ 105,750.00
Part F - Signage & Pavement Markings	\$ 26,750.00
Part G - Lighting & Utilities	\$ 78,200.00
<b>Subtotal Parts A, B, C, D, E, F and G</b>	<b>\$ 934,791.00</b>
Contingency (50%)	\$ 467,395.50
Engineering (15%)	\$ 140,218.65
<b>Total (Excluding GST)</b>	<b>\$ 1,542,405.15</b>

Phase 1C	
Part A - General	\$ 92,500.00
Part B - Earthworks, Grading & Roadworks	\$ 738,400.00
Part C - Storm Drainage	\$ 274,000.00
Part D - Waterworks	\$ 393,250.00
Part E - Sanitary Sewer	\$ 68,500.00
Part F - Signage & Pavement Markings	\$ 28,500.00
Part G - Lighting & Utilities	\$ 69,800.00
<b>Subtotal Parts A, B, C, D, E, F and G</b>	<b>\$ 1,664,950.00</b>
Contingency (50%)	\$ 832,475.00
Engineering (15%)	\$ 249,742.50
<b>Total (Excluding GST)</b>	<b>\$ 2,747,167.50</b>

Phase 1D	
Part A - General	\$ 110,000.00
Part B - Earthworks, Grading & Roadworks	\$ 720,614.00
Part C - Storm Drainage	\$ 387,250.00
Part D - Waterworks	\$ 497,750.00
Part E - Sanitary Sewer	\$ 220,250.00
Part F - Signage & Pavement Markings	\$ 32,000.00
Part G - Lighting & Utilities	\$ 167,400.00
Subtotal Parts A, B, C, D, E, F and G	\$ 2,135,264.00
Contingency (50%)	\$ 1,067,632.00
Engineering (15%)	\$ 320,289.60
<b>Total (Excluding GST)</b>	<b>\$ 3,523,185.60</b>



Village Heights Master Plan  
 Village of Burns Lake  
**Class 'D' – Cost Estimate**

Phase 2A	
Part A - General	\$ 230,000.00
Part B - Earthworks, Grading & Roadworks	\$ 553,204.50
Part C - Storm Drainage	\$ 649,750.00
Part D - Waterworks	\$ 569,500.00
Part E - Sanitary Sewer	\$ 1,520,375.00
Part F - Signage & Pavement Markings	\$ 28,500.00
Part G - Lighting & Utilities	\$ 117,700.00
Subtotal Parts A, B, C, D, E, F and G	\$ 3,669,029.50
Contingency (50%)	\$ 1,834,514.75
Engineering (15%)	\$ 550,354.43
<b>Total (Excluding GST)</b>	<b>\$ 6,053,898.68</b>

Phase 2B	
Part A - General	\$ 170,000.00
Part B - Earthworks, Grading & Roadworks	\$ 296,680.00
Part C - Storm Drainage	\$ 188,750.00
Part D - Waterworks	\$ 1,917,000.00
Part E - Sanitary Sewer	\$ 82,125.00
Part F - Signage & Pavement Markings	\$ 28,500.00
Part G - Lighting & Utilities	\$ 69,800.00
Subtotal Parts A, B, C, D, E, F and G	\$ 2,752,855.00
Contingency (50%)	\$ 1,376,427.50
Engineering (15%)	\$ 412,928.25
<b>Total (Excluding GST)</b>	<b>\$ 4,542,210.75</b>



Village Heights Master Plan  
 Village of Burns Lake  
 Class 'D' – Cost Estimate

Phase 3A	
Part A - General	\$ 3,245,000.00
Part B - Earthworks, Grading & Roadworks	\$ 1,462,468.00
Part C - Storm Drainage	\$ 200,250.00
Part D - Waterworks	\$ 342,250.00
Part E - Sanitary Sewer	\$ 62,750.00
Part F - Signage & Pavement Markings	\$ 28,500.00
Part G - Lighting & Utilities	\$ 118,300.00
<b>Subtotal Parts A, B, C, D, E, F and G</b>	<b>\$ 5,459,518.00</b>
Contingency (50%)	\$ 2,729,759.00
Engineering (15%)	\$ 818,927.70
<b>Total (Excluding GST)</b>	<b>\$ 9,008,204.70</b>

Phase 3B	
Part A - General	\$ 82,500.00
Part B - Earthworks, Grading & Roadworks	\$ 223,375.00
Part C - Storm Drainage	\$ 602,250.00
Part D - Waterworks	\$ 307,125.00
Part E - Sanitary Sewer	\$ 139,625.00
Part F - Signage & Pavement Markings	\$ 28,500.00
Part G - Lighting & Utilities	\$ 69,800.00
<b>Subtotal Parts A, B, C, D, E, F and G</b>	<b>\$ 1,453,175.00</b>
Contingency (50%)	\$ 726,587.50
Engineering (15%)	\$ 217,976.25
<b>Total (Excluding GST)</b>	<b>\$ 2,397,738.75</b>

Phase 4	
Part A - General	\$ 50,000.00
Part B - Earthworks, Grading & Roadworks	\$ 414,117.00
Part C - Storm Drainage	\$ 95,250.00
Part D - Waterworks	\$ 118,000.00
Part E - Sanitary Sewer	\$ 66,000.00
Part F - Signage & Pavement Markings	\$ 28,500.00
Part G - Lighting & Utilities	\$ 69,800.00
<b>Subtotal Parts A, B, C, D, E, F and G</b>	<b>\$ 841,667.00</b>
Contingency (50%)	\$ 420,833.50
Engineering (15%)	\$ 126,250.05
<b>Total (Excluding GST)</b>	<b>\$ 1,388,750.55</b>

Phase 1	
Part A - General	\$ 427,500.00
Part B - Earthworks, Grading & Roadworks	\$ 2,343,126.00
Part C - Storm Drainage	\$ 1,244,500.00
Part D - Waterworks	\$ 1,889,875.00
Part E - Sanitary Sewer	\$ 1,022,875.00
Part F - Signage & Pavement Markings	\$ 115,750.00
Part G - Lighting & Utilities	\$ 459,200.00
	\$ -
<b>Subtotal Parts A, B, C, D, E, F and G</b>	<b>\$ 7,502,826.00</b>
Contingency (50%)	\$ 3,751,413.00
Engineering (15%)	\$ 1,125,423.90
	\$ -
<b>Total (Excluding GST)</b>	<b>\$ 12,379,662.90</b>



Village Heights Master Plan  
Village of Burns Lake  
**Class 'D' – Cost Estimate**

Phase 2	
Part A - General	\$ 400,000.00
Part B - Earthworks, Grading & Roadworks	\$ 849,884.50
Part C - Storm Drainage	\$ 838,500.00
Part D - Waterworks	\$ 2,486,500.00
Part E - Sanitary Sewer	\$ 1,602,500.00
Part F - Signage & Pavement Markings	\$ 57,000.00
Part G - Lighting & Utilities	\$ 187,500.00
	\$ -
<b>Subtotal Parts A, B, C, D, E, F and G</b>	<b>\$ 6,421,884.50</b>
Contingency (50%)	\$ 3,210,942.25
Engineering (15%)	\$ 963,282.68
	\$ -
<b>Total (Excluding GST)</b>	<b>\$ 10,596,109.43</b>

Phase 3	
Part A - General	\$ 3,327,500.00
Part B - Earthworks, Grading & Roadworks	\$ 1,685,843.00
Part C - Storm Drainage	\$ 802,500.00
Part D - Waterworks	\$ 649,375.00
Part E - Sanitary Sewer	\$ 202,375.00
Part F - Signage & Pavement Markings	\$ 57,000.00
Part G - Lighting & Utilities	\$ 188,100.00
	\$ -
<b>Subtotal Parts A, B, C, D, E, F and G</b>	<b>\$ 6,912,693.00</b>
Contingency (50%)	\$ 3,456,346.50
Engineering (15%)	\$ 1,036,903.95
	\$ -
<b>Total (Excluding GST)</b>	<b>\$ 11,405,943.45</b>



Village Heights Master Plan  
Village of Burns Lake  
**Class 'D' – Cost Estimate**

Phase 4	
Part A - General	\$ 50,000.00
Part B - Earthworks, Grading & Roadworks	\$ 414,117.00
Part C - Storm Drainage	\$ 95,250.00
Part D - Waterworks	\$ 118,000.00
Part E - Sanitary Sewer	\$ 66,000.00
Part F - Signage & Pavement Markings	\$ 28,500.00
Part G - Lighting & Utilities	\$ 69,800.00
	\$ -
<b>Subtotal Parts A, B, C, D, E, F and G</b>	<b>\$ 841,667.00</b>
Contingency (50%)	\$ 420,833.50
Engineering (15%)	\$ 126,250.05
	\$ -
<b>Total (Excluding GST)</b>	<b>\$ 1,388,750.55</b>

Phases 1 - 4	
<b>Part A - General</b>	\$ 4,205,000.00
<b>Part B - Earthworks, Grading &amp; Roadworks</b>	\$ 5,292,970.50
<b>Part C - Storm Drainage</b>	\$ 2,980,750.00
<b>Part D - Waterworks</b>	\$ 5,143,750.00
<b>Part E - Sanitary Sewer</b>	\$ 2,893,750.00
<b>Part F - Signage &amp; Pavement Markings</b>	\$ 258,250.00
<b>Part G - Lighting &amp; Utilities</b>	\$ 904,600.00
	\$ -
<b>Subtotal Parts A, B, C, D, E, F and G</b>	\$ 21,679,070.50
<b>Contingency (50%)</b>	\$ 10,839,535.25
<b>Engineering (15%)</b>	\$ 3,251,860.58
	\$ -
<b>Total (Excluding GST)</b>	\$ 35,770,466.33



Village Heights Master Plan  
 Village of Burns Lake  
**Class 'D' – Cost Estimate**





# Village Heights Master Plan

Class 'D' Cost Estimates

March 2022





**Burns Lake - Village Heights Development  
Phase 1A  
Class D - Cost Estimate**

ITEM NO.	DESCRIPTION	UNIT OF MEASURE	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>Part A - General</b>					
1.1	Traffic Control	LS			\$20,000.00
1.2	Environmental Protection	LS			\$10,000.00
1.3	Contractor Mobilization and De-mobilization	LS			\$125,000.00
1.4	Temporary Facilities	LS			\$15,000.00
<b>Subtotal Part A - General</b>					<b>\$170,000.00</b>
<b>Part B - Earthworks, Grading &amp; Roadworks</b>					
<b>B1.0 Removals</b>					
1.1	Clear and grub - Limits of Construction	m <sup>2</sup>	8727	\$3.00	\$26,181.00
1.2	Stripping (300mm Depth) - Limits of Excavation	m <sup>2</sup>	8727	\$5.00	\$43,635.00
<b>B2.0 Earthworks and Grading, Roadworks</b>					
2.1	Common Excavation - On Site Re-Use	m <sup>3</sup>	2272	\$15.00	\$34,080.00
2.2	Common Excavation - Off Site Disposal	m <sup>3</sup>	4844	\$15.00	\$72,660.00
2.3	Sub-grade preparation	m <sup>2</sup>	3475	\$5.00	\$17,375.00
2.4	Supply and place 75mm minus granular sub-base	m <sup>2</sup>	3475	\$25.00	\$86,875.00
2.5	Supply and place 19mm minus granular base	m <sup>2</sup>	3475	\$15.00	\$52,125.00
2.6	Supply and place Hot-Mix Asphalt Pavement	m <sup>2</sup>	3475	\$32.00	\$111,200.00
2.7	Supply and place 75mm minus granular sub-base	m <sup>2</sup>	312	\$25.00	\$7,800.00
2.8	Supply and place 19mm minus granular base	m <sup>2</sup>	312	\$15.00	\$4,680.00
2.9	Supply and place Hot-Mix Asphalt Pavement - 50mm thickness (1 Lift)	m <sup>2</sup>	312	\$20.00	\$6,240.00
2.10	Concrete Sidewalk - 2.0m width - machine placed monolithic curb, gutter & sidewalk	l.m.	302	\$300.00	\$90,600.00
2.11	Concrete Barrier Curb & Gutter - machine placed. Includes wheelchair ramps and driveway crossings	l.m.	818	\$115.00	\$94,070.00
<b>Subtotal Part B - Removals, Earthworks and Grading, Roadworks</b>					<b>\$647,521.00</b>
<b>Part C - Storm Drainage</b>					
<b>C1.0 Supply and install stormwater infrastructure</b>					
1.1	Supply and install manhole base, lid, slab, cover and frame	ea	9	\$7,500.00	\$67,500.00
1.2	Supply and install stormwater main	l.m.	600	\$375.00	\$225,000.00
1.3	Supply and install stormwater catchbasin	ea	8	\$5,000.00	\$40,000.00
1.4	Storm Sewer Service Connection	ea	26	\$2,000.00	\$52,000.00
1.5	Drainage Tie-In to existing stormmain or manhole	ea	1	\$2,000.00	\$2,000.00
<b>Subtotal Part C - Stormwater Drainage</b>					<b>\$386,500.00</b>

ITEM NO.	DESCRIPTION	UNIT OF MEASURE	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>Part D - Waterworks</b>					
<b>D1.0</b>	<b>Supply and install water infrastructure</b>				
1.1	Supply and install water main - 400mm dia	l.m.	440	\$650.00	\$286,000.00
1.2	Supply and install water main - 200mm dia	l.m.	405	\$325.00	\$131,625.00
1.3	Gate Valve - 400mm	ea	4	\$10,000.00	\$40,000.00
1.4	Gate Valve - 200mm	ea	5	\$3,500.00	\$17,500.00
1.5	Cross - 400 x 400 x 200 x 200	ea	1	\$5,000.00	\$5,000.00
1.6	Tee - 400 x 400 x 200	ea	3	\$4,000.00	\$12,000.00
1.7	Pipe Fittings	ea	4	\$3,000.00	\$12,000.00
1.8	Fire hydrant assembly	ea	6	\$16,500.00	\$99,000.00
1.9	Waterworks Tie-In	ea	3	\$5,000.00	\$15,000.00
1.10	Water service connection - 150mm dia	ea	1	\$7,500.00	\$7,500.00
1.11	Water service connection - 25mm dia	ea	25	\$5,500.00	\$137,500.00
<b>Subtotal Part D - Waterworks</b>					<b>\$763,125.00</b>
<b>Part E - Sanitary Sewer</b>					
<b>E1.0</b>	<b>Supply and install sanitary sewer infrastructure</b>				
1.1	Supply and install sanitary sewer pipe - 200mm dia	l.m.	815	\$225.00	\$183,375.00
1.2	Supply and install manhole base, lid, slab, cover and frame	ea	11	\$8,000.00	\$88,000.00
1.3	Supply and install sanitary sewer service	ea	26	\$2,000.00	\$52,000.00
1.4	Construct earthworks on 3rd Ave to allow for sanitary sewer installation	LS			\$305,000.00
<b>Subtotal Part E - Sanitary Sewer</b>					<b>\$628,375.00</b>
<b>Part F - Signage &amp; Paint Markings</b>					
<b>F1.0</b>	<b>Supply and Install Traffic Signage</b>				
1.1	Permanent Traffic Control Signs c/w telespar post and concrete base	ea	10	\$350.00	\$3,500.00
<b>F2.0</b>	<b>Supply and Install Pavement Markings</b>				
2.1	Longitudinal Lane Markings	LS	1	\$15,000.00	\$15,000.00
2.2	MMA Road Markings (Series 400)	LS	1	\$10,000.00	\$10,000.00
<b>Subtotal Part F - Signage and Pavement Markings</b>					<b>\$28,500.00</b>
<b>Part G - Lighting &amp; Utilities</b>					
<b>G1.0</b>	<b>Supply and Install Lighting Infrastructure</b>				
1.1	Supply and install Base, Pole, Luminare	ea	10	\$6,000.00	\$60,000.00
1.2	Supply and install 50mm PVC Duct	l.m.	480	\$60.00	\$28,800.00
1.3	Electrical Tie In (Provisional)	ea	1	\$10,000.00	\$10,000.00

ITEM NO.	DESCRIPTION	UNIT OF MEASURE.	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>G2.0</b>	<b>3rd Party Utility</b>				
2.1	BC Hydro Civil Works	LS	1	\$30,000.00	\$30,000.00
2.2	CONTRACTOR - Civil Works	LS	1	\$15,000.00	\$15,000.00
<b>Subtotal Part G - Lighting &amp; Utilities</b>					<b>\$143,800.00</b>

**Summary**

Subtotal Parts A - General	<b>\$170,000.00</b>
Subtotal Parts B - Earthworks, Grading & Roadworks	<b>\$647,521.00</b>
Subtotal Parts C - Storm Drainage	<b>\$386,500.00</b>
Subtotal Parts D - Waterworks	<b>\$763,125.00</b>
Subtotal Parts E - Sanitary Sewer	<b>\$628,375.00</b>
Subtotal Parts F - Signage & Pavement Markings	<b>\$28,500.00</b>
Subtotal Parts G - Lighting & Utilities	<b>\$143,800.00</b>
Subtotal Parts A, B, C, D, E, F and G	<b>\$2,767,821.00</b>
Contingency (50%)	<b>\$1,383,910.50</b>
Engineering (15%)	<b>\$415,173.15</b>
<b>Total (Excluding GST)</b>	<b>\$4,566,904.65</b>



*Prepared by: William Bamsey, P.Eng.*



**Burns Lake - Village Heights Development  
Phase 1B  
Class D - Cost Estimate**

ITEM NO.	DESCRIPTION	UNIT OF MEASURE.	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>Part A - General</b>					
1.1	Traffic Control	LS			\$5,000.00
1.2	Environmental Protection	LS			\$5,000.00
1.3	Contractor Mobilization and De-mobilization	LS			\$40,000.00
1.4	Temporary Facilities	LS			\$5,000.00
<b>Subtotal Part A - General</b>					<b>\$55,000.00</b>
<b>Part B - Earthworks, Grading &amp; Roadworks</b>					
<b>B1.0 Removals</b>					
1.1	Clear and grub - Limits of Construction	m <sup>2</sup>	3069	\$3.00	\$9,207.00
1.2	Stripping (300mm Depth) - Limits of Excavation	m <sup>2</sup>	3069	\$5.00	\$15,345.00
<b>B2.0 Earthworks and Grading, Roadworks</b>					
2.1	Common Excavation - On Site Re-Use	m <sup>3</sup>	354	\$15.00	\$5,310.00
2.2	Import Fill	m <sup>3</sup>	88	\$15.00	\$1,320.00
2.3	Sub-grade preparation	m <sup>2</sup>	1327	\$5.00	\$6,635.00
2.4	Supply and place 75mm minus granular sub-base	m <sup>2</sup>	1327	\$25.00	\$33,175.00
2.5	Supply and place 19mm minus granular base	m <sup>2</sup>	1327	\$15.00	\$19,905.00
2.6	Supply and place Hot-Mix Asphalt Pavement	m <sup>2</sup>	1327	\$32.00	\$42,464.00
2.7	Concrete Sidewalk - 2.0m width - machine placed monolithic curb, gutter & sidewalk	l.m.	190	\$300.00	\$57,000.00
2.8	Concrete Barrier Curb & Gutter - machine placed. Includes wheelchair ramps and driveway crossings	l.m.	402	\$115.00	\$46,230.00
<b>Subtotal Part B - Removals, Earthworks and Grading, Roadworks</b>					<b>\$236,591.00</b>
<b>Part C - Storm Drainage</b>					
<b>C1.0 Supply and install stormwater infrastructure</b>					
1.1	Supply and install manhole base, lid, slab, cover and frame	ea	3	\$7,500.00	\$22,500.00
1.2	Supply and install stormwater main	l.m.	230	\$375.00	\$86,250.00
1.3	Supply and install stormwater catchbasin	ea	6	\$5,000.00	\$30,000.00
1.4	Storm Sewer Service Connection	ea	19	\$2,000.00	\$38,000.00
1.5	Construct temporary storm pond system	LS			\$20,000.00
<b>Subtotal Part C - Stormwater Drainage</b>					<b>\$196,750.00</b>

ITEM NO.	DESCRIPTION	UNIT OF MEASURE	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>Part D - Waterworks</b>					
<b>D1.0</b>	<b>Supply and install water infrastructure</b>				
1.1	Supply and install water main - 200mm dia	l.m.	230	\$325.00	\$74,750.00
1.2	Gate Valve - 200mm	ea	3	\$3,500.00	\$10,500.00
1.3	Cross - 200 x 200 x 200 x 200	ea	1	\$4,000.00	\$4,000.00
1.4	Pipe Fittings	ea	2	\$2,000.00	\$4,000.00
1.5	Fire hydrant assembly	ea	2	\$16,500.00	\$33,000.00
1.6	Waterworks Tie-In	ea	1	\$5,000.00	\$5,000.00
1.7	Water service connection - 25mm dia	ea	19	\$5,500.00	\$104,500.00
<b>Subtotal Part D - Waterworks</b>					<b>\$235,750.00</b>
<b>Part E - Sanitary Sewer</b>					
<b>E1.0</b>	<b>Supply and install sanitary sewer infrastructure</b>				
1.1	Supply and install sanitary sewer pipe - 200mm dia	l.m.	230	\$225.00	\$51,750.00
1.2	Supply and install manhole base, lid, slab, cover and frame	ea	2	\$8,000.00	\$16,000.00
1.3	Supply and install sanitary sewer service	ea	19	\$2,000.00	\$38,000.00
<b>Subtotal Part E - Sanitary Sewer</b>					<b>\$105,750.00</b>
<b>Part F - Signage &amp; Paint Markings</b>					
<b>F1.0</b>	<b>Supply and Install Traffic Signage</b>				
1.1	Permanent Traffic Control Signs c/w telespar post and concrete	ea	5	\$350.00	\$1,750.00
<b>F2.0</b>	<b>Supply and Install Pavement Markings</b>				
2.1	Longitudinal Lane Markings	LS	1	\$15,000.00	\$15,000.00
2.2	MMA Road Markings (Series 400)	LS	1	\$10,000.00	\$10,000.00
<b>Subtotal Part F - Signage and Pavement Markings</b>					<b>\$26,750.00</b>
<b>Part G - Lighting &amp; Utilities</b>					
<b>G1.0</b>	<b>Supply and Install Lighting Infrastructure</b>				
1.1	Supply and install Base, Pole, Luminare	ea	5	\$6,000.00	\$30,000.00
1.2	Supply and install 50mm PVC Duct	l.m.	220	\$60.00	\$13,200.00
1.3	Electrical Tie In (Provisional)	ea	1	\$10,000.00	\$10,000.00
<b>G2.0</b>	<b>3rd Party Utility</b>				
2.1	BC Hydro Civil Works	LS	1	\$15,000.00	\$15,000.00
2.2	CONTRACTOR - Civil Works	LS	1	\$10,000.00	\$10,000.00
<b>Subtotal Part G - Lighting &amp; Utilities</b>					<b>\$78,200.00</b>

**Summary**

<b>Subtotal Parts A - General</b>	<b>\$55,000.00</b>
<b>Subtotal Parts B - Earthworks, Grading &amp; Roadworks</b>	<b>\$236,591.00</b>
<b>Subtotal Parts C - Storm Drainage</b>	<b>\$196,750.00</b>
<b>Subtotal Parts D - Waterworks</b>	<b>\$235,750.00</b>
<b>Subtotal Parts E - Sanitary Sewer</b>	<b>\$105,750.00</b>
<b>Subtotal Parts F - Signage &amp; Pavement Markings</b>	<b>\$26,750.00</b>
<b>Subtotal Parts G - Lighting &amp; Utilities</b>	<b>\$78,200.00</b>
<b>Subtotal Parts A, B, C, D, E, F and G</b>	<b>\$934,791.00</b>
<b>Contingency (50%)</b>	<b>\$467,395.50</b>
<b>Engineering (15%)</b>	<b>\$140,218.65</b>
<b>Total (Excluding GST)</b>	<b>\$1,542,405.15</b>



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*Prepared by: William Bamsey, P.Eng.*



**Burns Lake - Village Heights Development  
Phase 1C  
Class D - Cost Estimate**

ITEM NO.	DESCRIPTION	UNIT OF MEASURE.	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>Part A - General</b>					
1.1	Traffic Control	LS			\$5,000.00
1.2	Environmental Protection	LS			\$5,000.00
1.3	Contractor Mobilization and De-mobilization	LS			\$75,000.00
1.4	Temporary Facilities	LS			\$7,500.00
<b>Subtotal Part A - General</b>					<b>\$92,500.00</b>
<b>Part B - Earthworks, Grading &amp; Roadworks</b>					
<b>B1.0 Removals</b>					
1.1	Clear and grub - Limits of Construction	m <sup>2</sup>	9795	\$3.00	\$29,385.00
1.2	Stripping (300mm Depth) - Limits of Excavation	m <sup>2</sup>	9795	\$5.00	\$48,975.00
<b>B2.0 Earthworks and Grading, Roadworks</b>					
2.1	Common Excavation - On Site Re-Use	m <sup>3</sup>	2317	\$15.00	\$34,755.00
2.2	Import Fill	m <sup>3</sup>	4488	\$15.00	\$67,320.00
2.3	Sub-grade preparation	m <sup>2</sup>	4160	\$5.00	\$20,800.00
2.4	Supply and place 75mm minus granular sub-base	m <sup>2</sup>	4160	\$25.00	\$104,000.00
2.5	Supply and place 19mm minus granular base	m <sup>2</sup>	4160	\$15.00	\$62,400.00
2.6	Supply and place Hot-Mix Asphalt Pavement	m <sup>2</sup>	4160	\$32.00	\$133,120.00
2.7	Supply and place 75mm minus granular sub-base	m <sup>2</sup>	424	\$25.00	\$10,600.00
2.8	Supply and place 19mm minus granular base	m <sup>2</sup>	424	\$15.00	\$6,360.00
2.9	Supply and place Hot-Mix Asphalt Pavement - 50mm thickness (1 Lift)	m <sup>2</sup>	424	\$20.00	\$8,480.00
2.10	Concrete Sidewalk - 2.0m width - machine placed monolithic curb, gutter & sidewalk	l.m.	375	\$300.00	\$112,500.00
2.11	Concrete Barrier Curb & Gutter - machine placed. Includes wheelchair ramps and driveway crossings	l.m.	867	\$115.00	\$99,705.00
<b>Subtotal Part B - Removals, Earthworks and Grading, Roadworks</b>					<b>\$738,400.00</b>
<b>Part C - Storm Drainage</b>					
<b>C1.0 Supply and install stormwater infrastructure</b>					
1.1	Supply and install manhole base, lid, slab, cover and frame	ea	3	\$7,500.00	\$22,500.00
1.2	Supply and install stormwater main	l.m.	180	\$375.00	\$67,500.00

ITEM NO.	DESCRIPTION	UNIT OF MEASURE.	EST. QUANT.	UNIT PRICE	TOTAL PRICE
1.3	Supply and install stormwater catchbasin	ea	6	\$5,000.00	\$30,000.00
1.4	Storm Sewer Service Connection	ea	2	\$2,000.00	\$4,000.00
1.5	Construct storm detention pond system	LS			\$150,000.00
<b>Subtotal Part C - Stormwater Drainage</b>					<b>\$274,000.00</b>
<b>Part D - Waterworks</b>					
<b>D1.0</b>	<b>Supply and install water infrastructure</b>				
1.1	Supply and install water main - 400mm dia	l.m.	235	\$650.00	\$152,750.00
1.2	Gate Valve - 400mm	ea	1	\$10,000.00	\$10,000.00
1.3	Gate Valve - 200mm	ea	2	\$3,500.00	\$7,000.00
1.4	Cross - 400 x 400 x 200 x 200	ea	1	\$5,000.00	\$5,000.00
1.5	Tee - 400 x 400 x 200	ea	1	\$4,000.00	\$4,000.00
1.6	Pipe Fittings	ea	2	\$3,000.00	\$6,000.00
1.7	Fire hydrant assembly	ea	2	\$16,500.00	\$33,000.00
1.8	Waterworks Tie-In	ea	1	\$5,000.00	\$5,000.00
1.9	Water service connection - 150mm dia	ea	2	\$7,500.00	\$15,000.00
1.10	Water service connection - 25mm dia	ea	1	\$5,500.00	\$5,500.00
1.11	Construct upgrades to Booster B water system	LS			\$150,000.00
<b>Subtotal Part D - Waterworks</b>					<b>\$393,250.00</b>
<b>Part E - Sanitary Sewer</b>					
<b>E1.0</b>	<b>Supply and install sanitary sewer infrastructure</b>				
1.1	Supply and install sanitary sewer pipe - 200mm dia	l.m.	180	\$225.00	\$40,500.00
1.2	Supply and install manhole base, lid, slab, cover and frame	ea	3	\$8,000.00	\$24,000.00
1.3	Supply and install sanitary sewer service	ea	2	\$2,000.00	\$4,000.00
<b>Subtotal Part E - Sanitary Sewer</b>					<b>\$68,500.00</b>
<b>Part F - Signage &amp; Paint Markings</b>					
<b>F1.0</b>	<b>Supply and Install Traffic Signage</b>				
1.1	Permanent Traffic Control Signs c/w telespar post and concrete base	ea	10	\$350.00	\$3,500.00
<b>F2.0</b>	<b>Supply and Install Pavement Markings</b>				
2.1	Longitudinal Lane Markings	LS	1	\$15,000.00	\$15,000.00
2.2	MMA Road Markings (Series 400)	LS	1	\$10,000.00	\$10,000.00
<b>Subtotal Part F - Signage and Pavement Markings</b>					<b>\$28,500.00</b>
<b>Part G - Lighting &amp; Utilities</b>					
<b>G1.0</b>	<b>Supply and Install Lighting Infrastructure</b>				
1.1	Supply and install Base, Pole, Luminare	ea	4	\$6,000.00	\$24,000.00
1.2	Supply and install 50mm PVC Duct	l.m.	180	\$60.00	\$10,800.00
1.3	Electrical Tie In (Provisional)	ea	1	\$10,000.00	\$10,000.00

ITEM NO.	DESCRIPTION	UNIT OF MEASURE.	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>G2.0</b>	<b>3rd Party Utility</b>				
2.1	BC Hydro Civil Works	LS	1	\$15,000.00	\$15,000.00
2.2	CONTRACTOR - Civil Works	LS	1	\$10,000.00	\$10,000.00
<b>Subtotal Part G - Lighting &amp; Utilities</b>					<b>\$69,800.00</b>

**Summary**

Subtotal Parts A - General	<u>\$92,500.00</u>
Subtotal Parts B - Earthworks, Grading & Roadworks	<u>\$738,400.00</u>
Subtotal Parts C - Storm Drainage	<u>\$274,000.00</u>
Subtotal Parts D - Waterworks	<u>\$393,250.00</u>
Subtotal Parts E - Sanitary Sewer	<u>\$68,500.00</u>
Subtotal Parts F - Signage & Pavement Markings	<u>\$28,500.00</u>
Subtotal Parts G - Lighting & Utilities	<u>\$69,800.00</u>
 Subtotal Parts A, B, C, D, E, F and G	 <u>\$1,664,950.00</u>
Contingency (50%)	<u>\$832,475.00</u>
Engineering (15%)	<u>\$249,742.50</u>
 Total (Excluding GST)	 <u><u>\$2,747,167.50</u></u>



Prepared by: William Bamsey, P.Eng.



**Burns Lake - Village Heights Development  
Phase 1D  
Class D - Cost Estimate**

ITEM NO.	DESCRIPTION	UNIT OF MEASURE	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>Part A - General</b>					
1.1	Traffic Control	LS			\$5,000.00
1.2	Environmental Protection	LS			\$5,000.00
1.3	Contractor Mobilization and De-mobilization	LS			\$90,000.00
1.4	Temporary Facilities	LS			\$10,000.00
<b>Subtotal Part A - General</b>					<b>\$110,000.00</b>
<b>Part B - Earthworks, Grading &amp; Roadworks</b>					
<b>B1.0 Removals</b>					
1.1	Clear and grub - Limits of Construction	m <sup>2</sup>	10054	\$3.00	\$30,162.00
1.2	Stripping (300mm Depth) - Limits of Excavation	m <sup>2</sup>	10054	\$5.00	\$50,270.00
<b>B2.0 Earthworks and Grading, Roadworks</b>					
2.1	Common Excavation - On Site Re-Use	m <sup>3</sup>	1454	\$15.00	\$21,810.00
2.2	Common Excavation - Off Site Disposal	m <sup>3</sup>	3893	\$15.00	\$58,395.00
2.3	Sub-grade preparation	m <sup>2</sup>	4156	\$5.00	\$20,780.00
2.4	Supply and place 75mm minus granular sub-base	m <sup>2</sup>	4156	\$25.00	\$103,900.00
2.5	Supply and place 19mm minus granular base	m <sup>2</sup>	4156	\$15.00	\$62,340.00
2.6	Supply and place Hot-Mix Asphalt Pavement	m <sup>2</sup>	4156	\$32.00	\$132,992.00
2.7	Supply and place 75mm minus granular sub-base	m <sup>2</sup>	380	\$25.00	\$9,500.00
2.8	Supply and place 19mm minus granular base	m <sup>2</sup>	380	\$15.00	\$5,700.00
2.9	Supply and place Hot-Mix Asphalt Pavement - 50mm thickness (1 Lift)	m <sup>2</sup>	380	\$20.00	\$7,600.00
2.10	Concrete Sidewalk - 2.0m width - machine placed monolithic curb, gutter & sidewalk	l.m.	321	\$300.00	\$96,300.00
2.11	Concrete Barrier Curb & Gutter - machine placed. Includes wheelchair ramps and driveway crossings	l.m.	1051	\$115.00	\$120,865.00
<b>Subtotal Part B - Removals, Earthworks and Grading, Roadworks</b>					<b>\$720,614.00</b>
<b>Part C - Storm Drainage</b>					
<b>C1.0 Supply and install stormwater infrastructure</b>					
1.1	Supply and install manhole base, lid, slab, cover and frame	ea	7	\$7,500.00	\$52,500.00

ITEM NO.	DESCRIPTION	UNIT OF MEASURE.	EST. QUANT.	UNIT PRICE	TOTAL PRICE
1.2	Supply and install stormwater main	l.m.	530	\$375.00	\$198,750.00
1.3	Supply and install stormwater catchbasin	ea	12	\$5,000.00	\$60,000.00
1.4	Storm Sewer Service Connection	ea	28	\$2,000.00	\$56,000.00
1.5	Construct Temporary Storm pond system	LS			\$20,000.00
<b>Subtotal Part C - Stormwater Drainage</b>					<b>\$387,250.00</b>

**Part D - Waterworks**

<b>D1.0 Supply and install water infrastructure</b>					
1.1	Supply and install water main - 200mm dia	l.m.	550	\$325.00	\$178,750.00
1.2	Gate Valve - 200mm	ea	7	\$3,500.00	\$24,500.00
1.3	Pipe Fittings	ea	8	\$3,000.00	\$24,000.00
1.4	Fire hydrant assembly	ea	6	\$16,500.00	\$99,000.00
1.5	Waterworks Tie-In	ea	2	\$5,000.00	\$10,000.00
1.6	Water service connection - 200mm dia	ea	1	\$7,500.00	\$7,500.00
1.7	Water service connection - 25mm dia	ea	28	\$5,500.00	\$154,000.00
<b>Subtotal Part D - Waterworks</b>					<b>\$497,750.00</b>

**Part E - Sanitary Sewer**

<b>E1.0 Supply and install sanitary sewer infrastructure</b>					
1.1	Supply and install sanitary sewer pipe - 200mm dia	l.m.	410	\$225.00	\$92,250.00
1.2	Supply and install manhole base, lid, slab, cover and frame	ea	9	\$8,000.00	\$72,000.00
1.3	Supply and install sanitary sewer service	ea	28	\$2,000.00	\$56,000.00
<b>Subtotal Part E - Sanitary Sewer</b>					<b>\$220,250.00</b>

**Part F - Signage & Paint Markings**

<b>F1.0 Supply and Install Traffic Signage</b>					
1.1	Permanent Traffic Control Signs c/w telespar post and concrete base	ea	20	\$350.00	\$7,000.00
<b>F2.0 Supply and Install Pavement Markings</b>					
2.1	Longitudinal Lane Markings	LS	1	\$15,000.00	\$15,000.00
2.2	MMA Road Markings (Series 400)	LS	1	\$10,000.00	\$10,000.00
<b>Subtotal Part F - Signage and Pavement Markings</b>					<b>\$32,000.00</b>

**Part G - Lighting & Utilities**

<b>G1.0 Supply and Install Lighting Infrastructure</b>					
1.1	Supply and install Base, Pole, Luminaire	ea	12	\$6,000.00	\$72,000.00
1.2	Supply and install 50mm PVC Duct	l.m.	590	\$60.00	\$35,400.00
1.3	Electrical Tie In (Provisional)	ea	1	\$10,000.00	\$10,000.00

ITEM NO.	DESCRIPTION	UNIT OF MEASURE.	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>G2.0</b>	<b>3rd Party Utility</b>				
2.1	BC Hydro Civil Works	LS	1	\$35,000.00	\$35,000.00
2.2	CONTRACTOR - Civil Works	LS	1	\$15,000.00	\$15,000.00
<b>Subtotal Part G - Lighting &amp; Utilities</b>					<b>\$167,400.00</b>

**Summary**

Subtotal Parts A - General	<u>\$110,000.00</u>
Subtotal Parts B - Earthworks, Grading & Roadworks	<u>\$720,614.00</u>
Subtotal Parts C - Storm Drainage	<u>\$387,250.00</u>
Subtotal Parts D - Waterworks	<u>\$497,750.00</u>
Subtotal Parts E - Sanitary Sewer	<u>\$220,250.00</u>
Subtotal Parts F - Signage & Pavement Markings	<u>\$32,000.00</u>
Subtotal Parts G - Lighting & Utilities	<u>\$167,400.00</u>
 Subtotal Parts A, B, C, D, E, F and G	 <u>\$2,135,264.00</u>
Contingency (50%)	<u>\$1,067,632.00</u>
Engineering (15%)	<u>\$320,289.60</u>
 Total (Excluding GST)	 <u><u>\$3,523,185.60</u></u>



Prepared by: William Bamsey, P.Eng.



**Burns Lake - Village Heights Development  
Phase 2A  
Class D - Cost Estimate**

ITEM NO.	DESCRIPTION	UNIT OF MEASURE.	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>Part A - General</b>					
1.1	Traffic Control	LS			\$20,000.00
1.2	Environmental Protection	LS			\$25,000.00
1.3	Contractor Mobilization and De-mobilization	LS			\$165,000.00
1.4	Temporary Facilities	LS			\$20,000.00
<b>Subtotal Part A - General</b>					<b>\$230,000.00</b>
<b>Part B - Earthworks, Grading &amp; Roadworks</b>					
<b>B1.0 Removals</b>					
1.1	Clear and grub - Limits of Construction	m <sup>2</sup>	7067	\$3.00	\$21,201.00
1.2	Stripping (300mm Depth) - Limits of Excavation	m <sup>2</sup>	7067	\$5.00	\$35,335.00
<b>B2.0 Earthworks and Grading, Roadworks</b>					
2.1	Common Excavation - On Site Re-Use	m <sup>3</sup>	971.9	\$15.00	\$14,578.50
2.2	Import Fill	m <sup>3</sup>	4697	\$15.00	\$70,455.00
2.3	Sub-grade preparation	m <sup>2</sup>	2835	\$5.00	\$14,175.00
2.4	Supply and place 75mm minus granular sub-base	m <sup>2</sup>	2835	\$25.00	\$70,875.00
2.5	Supply and place 19mm minus granular base	m <sup>2</sup>	2835	\$15.00	\$42,525.00
2.6	Supply and place Hot-Mix Asphalt Pavement	m <sup>2</sup>	2835	\$32.00	\$90,720.00
2.7	Concrete Sidewalk - 2.0m width - machine placed monolithic curb, gutter & sidewalk	l.m.	370	\$300.00	\$111,000.00
2.8	Concrete Barrier Curb & Gutter - machine placed. Includes wheelchair ramps and driveway crossings	l.m.	716	\$115.00	\$82,340.00
<b>Subtotal Part B - Removals, Earthworks and Grading, Roadworks</b>					<b>\$553,204.50</b>
<b>Part C - Storm Drainage</b>					
<b>C1.0 Supply and install stormwater infrastructure</b>					
1.1	Supply and install manhole base, lid, slab, cover and frame	ea	9	\$7,500.00	\$67,500.00
1.2	Supply and install stormwater main	l.m.	510	\$375.00	\$191,250.00
1.3	Supply and install stormwater catchbasin	ea	11	\$5,000.00	\$55,000.00
1.4	Storm Sewer Service Connection	ea	43	\$2,000.00	\$86,000.00
1.5	Construct storm detention pond system	LS			\$250,000.00
<b>Subtotal Part C - Stormwater Drainage</b>					<b>\$649,750.00</b>

ITEM NO.	DESCRIPTION	UNIT OF MEASURE	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>Part D - Waterworks</b>					
<b>D1.0</b>	<b>Supply and install water infrastructure</b>				
1.1	Supply and install water main - 200mm dia	l.m.	620	\$325.00	\$201,500.00
1.2	Gate Valve - 200mm	ea	4	\$3,500.00	\$14,000.00
1.3	Pipe Fittings	ea	10	\$3,000.00	\$30,000.00
1.4	Fire hydrant assembly	ea	5	\$16,500.00	\$82,500.00
1.5	Waterworks Tie-In	ea	1	\$5,000.00	\$5,000.00
1.6	Water service connection - 25mm dia	ea	43	\$5,500.00	\$236,500.00
<b>Subtotal Part D - Waterworks</b>					<b><u>\$569,500.00</u></b>
<b>Part E - Sanitary Sewer</b>					
<b>E1.0</b>	<b>Supply and install sanitary sewer infrastructure</b>				
1.1	Supply and install sanitary sewer pipe - 250mm dia	l.m.	1675	\$225.00	\$376,875.00
1.2	Supply and install manhole base, lid, slab, cover and frame	ea	22	\$8,000.00	\$176,000.00
1.3	Supply and install sanitary sewer service	ea	43	\$2,000.00	\$86,000.00
1.4	Construct Highway Crossing	l.m.	25	\$5,500.00	\$137,500.00
1.5	Wardrup Creek Crossing	l.m.	80	\$550.00	\$44,000.00
1.6	Tie to existing lagoon treatment system and construct headworks	LS			\$250,000.00
1.7	Construct road improvements on Richmond Loop and Glans Drive following pipe installation	LS			\$450,000.00
<b>Subtotal Part E - Sanitary Sewer</b>					<b><u>\$1,520,375.00</u></b>
<b>Part F - Signage &amp; Paint Markings</b>					
<b>F1.0</b>	<b>Supply and Install Traffic Signage</b>				
1.1	Permanent Traffic Control Signs c/w telespar post and concrete base	ea	10	\$350.00	\$3,500.00
<b>F2.0</b>	<b>Supply and Install Pavement Markings</b>				
2.1	Longitudinal Lane Markings	LS	1	\$15,000.00	\$15,000.00
2.2	MMA Road Markings (Series 400)	LS	1	\$10,000.00	\$10,000.00
<b>Subtotal Part F - Signage and Pavement Markings</b>					<b><u>\$28,500.00</u></b>
<b>Part G - Lighting &amp; Utilities</b>					
<b>G1.0</b>	<b>Supply and Install Lighting Infrastructure</b>				
1.1	Supply and install Base, Pole, Luminaire	ea	8	\$6,000.00	\$48,000.00
1.2	Supply and install 50mm PVC Duct	l.m.	370	\$60.00	\$22,200.00
1.3	Electrical Tie In (Provisional)	ea	1	\$10,000.00	\$10,000.00
<b>G2.0</b>	<b>3rd Party Utility</b>				
2.1	BC Hydro Civil Works	LS	1	\$25,000.00	\$25,000.00
2.2	CONTRACTOR - Civil Works	LS	1	\$12,500.00	\$12,500.00
<b>Subtotal Part G - Lighting &amp; Utilities</b>					<b><u>\$117,700.00</u></b>

ITEM NO.	DESCRIPTION	UNIT OF MEASURE.	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b><u>Summary</u></b>					
	Subtotal Parts A - General				<u>\$230,000.00</u>
	Subtotal Parts B - Earthworks, Grading & Roadworks				<u>\$553,204.50</u>
	Subtotal Parts C - Storm Drainage				<u>\$649,750.00</u>
	Subtotal Parts D - Waterworks				<u>\$569,500.00</u>
	Subtotal Parts E - Sanitary Sewer				<u>\$1,520,375.00</u>
	Subtotal Parts F - Signage & Pavement Markings				<u>\$28,500.00</u>
	Subtotal Parts G - Lighting & Utilities				<u>\$117,700.00</u>
	Subtotal Parts A, B, C, D, E, F and G				<u>\$3,669,029.50</u>
	Contingency (50%)				<u>\$1,834,514.75</u>
	Engineering (15%)				<u>\$550,354.43</u>
	<b>Total (Excluding GST)</b>				<u><u>\$6,053,898.68</u></u>



Prepared by: William Bamsey, P.Eng.



**Burns Lake - Village Heights Development  
Phase 2B  
Class D - Cost Estimate**

ITEM NO.	DESCRIPTION	UNIT OF MEASURE.	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>Part A - General</b>					
1.1	Traffic Control	LS			\$25,000.00
1.2	Environmental Protection	LS			\$5,000.00
1.3	Contractor Mobilization and De-mobilization	LS			\$125,000.00
1.4	Temporary Facilities	LS			\$15,000.00
<b>Subtotal Part A - General</b>					<b>\$170,000.00</b>
<b>Part B - Earthworks, Grading &amp; Roadworks</b>					
<b>B1.0 Removals</b>					
1.1	Clear and grub - Limits of Construction	m <sup>2</sup>	3840	\$3.00	\$11,520.00
1.2	Stripping (300mm Depth) - Limits of Excavation	m <sup>2</sup>	3840	\$5.00	\$19,200.00
<b>B2.0 Earthworks and Grading, Roadworks</b>					
2.1	Common Excavation - On Site Re-Use	m <sup>3</sup>	1073	\$15.00	\$16,095.00
2.2	Import Fill	m <sup>3</sup>	13	\$15.00	\$195.00
2.3	Sub-grade preparation	m <sup>2</sup>	1875	\$5.00	\$9,375.00
2.4	Supply and place 75mm minus granular sub-base	m <sup>2</sup>	1875	\$25.00	\$46,875.00
2.5	Supply and place 19mm minus granular base	m <sup>2</sup>	1875	\$15.00	\$28,125.00
2.6	Supply and place Hot-Mix Asphalt Pavement	m <sup>2</sup>	1875	\$32.00	\$60,000.00
2.7	Concrete Sidewalk - 2.0m width - machine placed monolithic curb, gutter & sidewalk	l.m.	185	\$300.00	\$55,500.00
2.8	Concrete Barrier Curb & Gutter - machine placed. Includes wheelchair ramps and driveway crossings	l.m.	433	\$115.00	\$49,795.00
<b>Subtotal Part B - Removals, Earthworks and Grading, Roadworks</b>					<b>\$296,680.00</b>
<b>Part C - Storm Drainage</b>					
<b>C1.0 Supply and install stormwater infrastructure</b>					
1.1	Supply and install manhole base, lid, slab, cover and frame	ea	4	\$7,500.00	\$30,000.00
1.2	Supply and install stormwater main	l.m.	210	\$375.00	\$78,750.00
1.3	Supply and install stormwater catchbasin	ea	6	\$5,000.00	\$30,000.00
1.4	Storm Sewer Service Connection	ea	24	\$2,000.00	\$48,000.00
1.5	Drainage Tie-In to existing stormmain or manhole	ea	1	\$2,000.00	\$2,000.00
<b>Subtotal Part C - Stormwater Drainage</b>					<b>\$188,750.00</b>

ITEM NO.	DESCRIPTION	UNIT OF MEASURE.	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>Part D - Waterworks</b>					
<b>D1.0</b>	<b>Supply and install water infrastructure</b>				
1.1	Fire hydrant assembly	ea	2	\$16,500.00	\$33,000.00
1.2	Water service connection - 150mm dia	ea	1	\$7,500.00	\$7,500.00
1.3	Water service connection - 25mm dia	ea	23	\$5,500.00	\$126,500.00
1.4	Water reservoir construction and connection to distribution system	ls			\$1,750,000.00
<b>Subtotal Part D - Waterworks</b>					<b>\$1,917,000.00</b>
<b>Part E - Sanitary Sewer</b>					
<b>E1.0</b>	<b>Supply and install sanitary sewer infrastructure</b>				
1.1	Supply and install sanitary sewer pipe - 200mm dia	l.m.	125	\$225.00	\$28,125.00
1.2	Supply and install manhole base, lid, slab, cover and frame	ea	3	\$8,000.00	\$24,000.00
1.3	Supply and install sanitary sewer service	ea	15	\$2,000.00	\$30,000.00
<b>Subtotal Part E - Sanitary Sewer</b>					<b>\$82,125.00</b>
<b>Part F - Signage &amp; Paint Markings</b>					
<b>F1.0</b>	<b>Supply and Install Traffic Signage</b>				
1.1	Permanent Traffic Control Signs c/w telespar post and concrete base	ea	10	\$350.00	\$3,500.00
<b>F2.0</b>	<b>Supply and Install Pavement Markings</b>				
2.1	Longitudinal Lane Markings	LS	1	\$15,000.00	\$15,000.00
2.2	MMA Road Markings (Series 400)	LS	1	\$10,000.00	\$10,000.00
<b>Subtotal Part F - Signage and Pavement Markings</b>					<b>\$28,500.00</b>
<b>Part G - Lighting &amp; Utilities</b>					
<b>G1.0</b>	<b>Supply and Install Lighting Infrastructure</b>				
1.1	Supply and install Base, Pole, Luminare	ea	4	\$6,000.00	\$24,000.00
1.2	Supply and install 50mm PVC Duct	l.m.	180	\$60.00	\$10,800.00
1.3	Electrical Tie In (Provisional)	ea	1	\$10,000.00	\$10,000.00
<b>G2.0</b>	<b>3rd Party Utility</b>				
2.1	BC Hydro Civil Works	LS	1	\$15,000.00	\$15,000.00
2.2	CONTRACTOR - Civil Works	LS	1	\$10,000.00	\$10,000.00
<b>Subtotal Part G - Lighting &amp; Utilities</b>					<b>\$69,800.00</b>

**Summary**

<b>Subtotal Parts A - General</b>	<b>\$170,000.00</b>
<b>Subtotal Parts B - Earthworks, Grading &amp; Roadworks</b>	<b>\$296,680.00</b>
<b>Subtotal Parts C - Storm Drainage</b>	<b>\$188,750.00</b>
<b>Subtotal Parts D - Waterworks</b>	<b>\$1,917,000.00</b>
<b>Subtotal Parts E - Sanitary Sewer</b>	<b>\$82,125.00</b>
<b>Subtotal Parts F - Signage &amp; Pavement Markings</b>	<b>\$28,500.00</b>
<b>Subtotal Parts G - Lighting &amp; Utilities</b>	<b>\$69,800.00</b>
<b>Subtotal Parts A, B, C, D, E, F and G</b>	<b>\$2,752,855.00</b>
<b>Contingency (50%)</b>	<b>\$1,376,427.50</b>
<b>Engineering (15%)</b>	<b>\$412,928.25</b>
<b>Total (Excluding GST)</b>	<b>\$4,542,210.75</b>



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*Prepared by: William Bamsey, P.Eng.*



**Burns Lake - Village Heights Development  
Phase 3A  
Class D - Cost Estimate**

ITEM NO.	DESCRIPTION	UNIT OF MEASURE	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>Part A - General</b>					
1.1	Traffic Control	LS			\$150,000.00
1.2	Environmental Protection	LS			\$25,000.00
1.3	Contractor Mobilization and De-mobilization	LS			\$200,000.00
1.4	Temporary Facilities	LS			\$20,000.00
1.5	BC MoTI Highway Connection	LS			\$3,000,000.00
<b>Subtotal Part A - General</b>					<b>\$3,245,000.00</b>
<b>Part B - Earthworks, Grading &amp; Roadworks</b>					
<b>B1.0 Removals</b>					
1.1	Clear and grub - Limits of Construction	m <sup>2</sup>	11165	\$3.00	\$33,495.00
1.2	Stripping (300mm Depth) - Limits of Excavation	m <sup>2</sup>	11165	\$5.00	\$55,825.00
<b>B2.0 Earthworks and Grading, Roadworks</b>					
2.1	Common Excavation - On Site Re-Use	m <sup>3</sup>	1478	\$15.00	\$22,170.00
2.2	Common Excavation - Off Site Disposal	m <sup>3</sup>	27730	\$15.00	\$415,950.00
2.3	Common Excavation - Type 'A' Rock	m <sup>3</sup>	9244	\$60.00	\$554,640.00
2.4	Sub-grade preparation	m <sup>2</sup>	3559	\$5.00	\$17,795.00
2.5	Supply and place 75mm minus granular sub-base	m <sup>2</sup>	3559	\$25.00	\$88,975.00
2.6	Supply and place 19mm minus granular base	m <sup>2</sup>	3559	\$15.00	\$53,385.00
2.7	Supply and place Hot-Mix Asphalt Pavement	m <sup>2</sup>	3559	\$32.00	\$113,888.00
2.8	Concrete Sidewalk - 2.0m width - machine placed monolithic curb, gutter & sidewalk	l.m.	85	\$300.00	\$25,500.00
2.9	Concrete Barrier Curb & Gutter - machine placed. Includes wheelchair ramps and driveway crossings	l.m.	703	\$115.00	\$80,845.00
<b>Subtotal Part B - Removals, Earthworks and Grading, Roadworks</b>					<b>\$1,462,468.00</b>
<b>Part C - Storm Drainage</b>					
<b>C1.0 Supply and install stormwater infrastructure</b>					
1.1	Supply and install manhole base, lid, slab, cover and frame	ea	4	\$7,500.00	\$30,000.00
1.2	Supply and install stormwater main	l.m.	310	\$375.00	\$116,250.00
1.3	Supply and install stormwater catchbasin	ea	10	\$5,000.00	\$50,000.00
1.4	Storm Sewer Service Connection	ea	2	\$2,000.00	\$4,000.00
<b>Subtotal Part C - Stormwater Drainage</b>					<b>\$200,250.00</b>

ITEM NO.	DESCRIPTION	UNIT OF MEASURE.	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>Part D - Waterworks</b>					
<b>D1.0</b>	<b>Supply and install water infrastructure</b>				
1.1	Supply and install water main - 400mm dia	l.m.	385	\$650.00	\$250,250.00
1.3	Gate Valve - 400mm	ea	1	\$10,000.00	\$10,000.00
1.4	Gate Valve - 200mm	ea	2	\$3,500.00	\$7,000.00
1.5	Cross - 400 x 400 x 200 x 200	ea	1	\$5,000.00	\$5,000.00
1.7	Pipe Fittings	ea	4	\$3,000.00	\$12,000.00
1.8	Fire hydrant assembly	ea	2	\$16,500.00	\$33,000.00
1.9	Waterworks Tie-In	ea	2	\$5,000.00	\$10,000.00
1.10	Water service connection - 150mm dia	ea	2	\$7,500.00	\$15,000.00
<b>Subtotal Part D - Waterworks</b>					<b><u>\$342,250.00</u></b>
<b>Part E - Sanitary Sewer</b>					
<b>E1.0</b>	<b>Supply and install sanitary sewer infrastructure</b>				
1.1	Supply and install sanitary sewer pipe - 200mm dia	l.m.	190	\$225.00	\$42,750.00
1.2	Supply and install manhole base, lid, slab, cover and frame	ea	2	\$8,000.00	\$16,000.00
1.3	Supply and install sanitary sewer service	ea	2	\$2,000.00	\$4,000.00
<b>Subtotal Part E - Sanitary Sewer</b>					<b><u>\$62,750.00</u></b>
<b>Part F - Signage &amp; Paint Markings</b>					
<b>F1.0</b>	<b>Supply and Install Traffic Signage</b>				
1.1	Permanent Traffic Control Signs c/w telespar post and concrete base	ea	10	\$350.00	\$3,500.00
<b>F2.0</b>	<b>Supply and Install Pavement Markings</b>				
2.1	Longitudinal Lane Markings	LS	1	\$15,000.00	\$15,000.00
2.2	MMA Road Markings (Series 400)	LS	1	\$10,000.00	\$10,000.00
<b>Subtotal Part F - Signage and Pavement Markings</b>					<b><u>\$28,500.00</u></b>
<b>Part G - Lighting &amp; Utilities</b>					
<b>G1.0</b>	<b>Supply and Install Lighting Infrastructure</b>				
1.1	Supply and install Base, Pole, Luminare	ea	8	\$6,000.00	\$48,000.00
1.2	Supply and install 50mm PVC Duct	l.m.	380	\$60.00	\$22,800.00
1.3	Electrical Tie In (Provisional)	ea	1	\$10,000.00	\$10,000.00
<b>G2.0</b>	<b>3rd Party Utility</b>				
2.1	BC Hydro Civil Works	LS	1	\$25,000.00	\$25,000.00
2.2	CONTRACTOR - Civil Works	LS	1	\$12,500.00	\$12,500.00
<b>Subtotal Part G - Lighting &amp; Utilities</b>					<b><u>\$118,300.00</u></b>

**Summary**

<b>Subtotal Parts A - General</b>	<b>\$3,245,000.00</b>
<b>Subtotal Parts B - Earthworks, Grading &amp; Roadworks</b>	<b>\$1,462,468.00</b>
<b>Subtotal Parts C - Storm Drainage</b>	<b>\$200,250.00</b>
<b>Subtotal Parts D - Waterworks</b>	<b>\$342,250.00</b>
<b>Subtotal Parts E - Sanitary Sewer</b>	<b>\$62,750.00</b>
<b>Subtotal Parts F - Signage &amp; Pavement Markings</b>	<b>\$28,500.00</b>
<b>Subtotal Parts G - Lighting &amp; Utilities</b>	<b>\$118,300.00</b>
<b>Subtotal Parts A, B, C, D, E, F and G</b>	<b>\$5,459,518.00</b>
<b>Contingency (50%)</b>	<b>\$2,729,759.00</b>
<b>Engineering (15%)</b>	<b>\$818,927.70</b>
<b>Total (Excluding GST)</b>	<b>\$9,008,204.70</b>



Prepared by: \_\_\_\_\_, P.Eng.



**Burns Lake - Village Heights Development  
Phase 3B  
Class D - Cost Estimate**

ITEM NO.	DESCRIPTION	UNIT OF MEASURE.	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>Part A - General</b>					
1.1	Traffic Control	LS			\$10,000.00
1.2	Environmental Protection	LS			\$5,000.00
1.3	Contractor Mobilization and De-mobilization	LS			\$60,000.00
1.4	Temporary Facilities	LS			\$7,500.00
<b>Subtotal Part A - General</b>					<b>\$82,500.00</b>
<b>Part B - Earthworks, Grading &amp; Roadworks</b>					
<b>B1.0 Removals</b>					
1.1	Clear and grub - Limits of Construction	m <sup>2</sup>	2758	\$3.00	\$8,274.00
1.2	Stripping (300mm Depth) - Limits of Excavation	m <sup>2</sup>	2758	\$5.00	\$13,790.00
<b>B2.0 Earthworks and Grading, Roadworks</b>					
2.1	Common Excavation - On Site Re-Use	m <sup>3</sup>	404	\$15.00	\$6,060.00
2.2	Import Fill	m <sup>3</sup>	4	\$15.00	\$60.00
2.3	Sub-grade preparation	m <sup>2</sup>	1508	\$5.00	\$7,540.00
2.4	Supply and place 75mm minus granular sub-base	m <sup>2</sup>	1508	\$25.00	\$37,700.00
2.5	Supply and place 19mm minus granular base	m <sup>2</sup>	1508	\$15.00	\$22,620.00
2.6	Supply and place Hot-Mix Asphalt Pavement	m <sup>2</sup>	1508	\$32.00	\$48,256.00
2.7	Concrete Sidewalk - 2.0m width - machine placed monolithic curb, gutter & sidewalk	l.m.	139	\$300.00	\$41,700.00
2.8	Concrete Barrier Curb & Gutter - machine placed. Includes wheelchair ramps and driveway crossings	l.m.	325	\$115.00	\$37,375.00
<b>Subtotal Part B - Removals, Earthworks and Grading, Roadworks</b>					<b>\$223,375.00</b>
<b>Part C - Storm Drainage</b>					
<b>C1.0 Supply and install stormwater infrastructure</b>					
1.1	Supply and install manhole base, lid, slab, cover and frame	ea	8	\$7,500.00	\$60,000.00
1.2	Supply and install stormwater main	l.m.	550	\$375.00	\$206,250.00
1.3	Supply and install stormwater catchbasin	ea	4	\$5,000.00	\$20,000.00
1.4	Storm Sewer Service Connection	ea	33	\$2,000.00	\$66,000.00
1.5	Construct storm detention pond system	LS			\$250,000.00
<b>Subtotal Part C - Stormwater Drainage</b>					<b>\$602,250.00</b>

ITEM NO.	DESCRIPTION	UNIT OF MEASURE.	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>Part D - Waterworks</b>					
<b>D1.0</b>	<b>Supply and install water infrastructure</b>				
1.1	Supply and install water main - 200mm dia	l.m.	225	\$325.00	\$73,125.00
1.2	Gate Valve - 200mm	ea	1	\$3,500.00	\$3,500.00
1.3	Pipe Fittings	ea	2	\$3,000.00	\$6,000.00
1.4	Fire hydrant assembly	ea	2	\$16,500.00	\$33,000.00
1.5	Waterworks Tie-In	ea	2	\$5,000.00	\$10,000.00
1.6	Water service connection - 25mm dia	ea	33	\$5,500.00	\$181,500.00
<b>Subtotal Part D - Waterworks</b>					<b><u>\$307,125.00</u></b>
<b>Part E - Sanitary Sewer</b>					
<b>E1.0</b>	<b>Supply and install sanitary sewer infrastructure</b>				
1.1	Supply and install sanitary sewer pipe - 200mm dia	l.m.	185	\$225.00	\$41,625.00
1.2	Supply and install manhole base, lid, slab, cover and frame	ea	4	\$8,000.00	\$32,000.00
1.3	Supply and install sanitary sewer service	ea	33	\$2,000.00	\$66,000.00
<b>Subtotal Part E - Sanitary Sewer</b>					<b><u>\$139,625.00</u></b>
<b>Part F - Signage &amp; Paint Markings</b>					
<b>F1.0</b>	<b>Supply and Install Traffic Signage</b>				
1.1	Permanent Traffic Control Signs c/w telespar post and concrete base	ea	10	\$350.00	\$3,500.00
<b>F2.0</b>	<b>Supply and Install Pavement Markings</b>				
2.1	Longitudinal Lane Markings	LS	1	\$15,000.00	\$15,000.00
2.2	MMA Road Markings (Series 400)	LS	1	\$10,000.00	\$10,000.00
<b>Subtotal Part F - Signage and Pavement Markings</b>					<b><u>\$28,500.00</u></b>
<b>Part G - Lighting &amp; Utilities</b>					
<b>G1.0</b>	<b>Supply and Install Lighting Infrastructure</b>				
1.1	Supply and install Base, Pole, Luminaire	ea	4	\$6,000.00	\$24,000.00
1.2	Supply and install 50mm PVC Duct	l.m.	180	\$60.00	\$10,800.00
1.3	Electrical Tie In (Provisional)	ea	1	\$10,000.00	\$10,000.00
<b>G2.0</b>	<b>3rd Party Utility</b>				
2.1	BC Hydro Civil Works	LS	1	\$15,000.00	\$15,000.00
2.2	CONTRACTOR - Civil Works	LS	1	\$10,000.00	\$10,000.00
<b>Subtotal Part G - Lighting &amp; Utilities</b>					<b><u>\$69,800.00</u></b>

**Summary**

Subtotal Parts A - General	<u>\$82,500.00</u>
Subtotal Parts B - Earthworks, Grading & Roadworks	<u>\$223,375.00</u>
Subtotal Parts C - Storm Drainage	<u>\$602,250.00</u>
Subtotal Parts D - Waterworks	<u>\$307,125.00</u>
Subtotal Parts E - Sanitary Sewer	<u>\$139,625.00</u>
Subtotal Parts F - Signage & Pavement Markings	<u>\$28,500.00</u>
Subtotal Parts G - Lighting & Utilities	<u>\$69,800.00</u>
Subtotal Parts A, B, C, D, E, F and G	<u>\$1,453,175.00</u>
Contingency (50%)	<u>\$726,587.50</u>
Engineering (15%)	<u>\$217,976.25</u>
Total (Excluding GST)	<u>\$2,397,738.75</u>



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*Prepared by: William Bamsey, P.Eng.*



**Burns Lake - Village Heights Development  
Phase 4  
Class D - Cost Estimate**

ITEM NO.	DESCRIPTION	UNIT OF MEASURE	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>Part A - General</b>					
1.1	Traffic Control	LS			\$5,000.00
1.2	Environmental Protection	LS			\$5,000.00
1.3	Contractor Mobilization and De-mobilization	LS			\$35,000.00
1.4	Temporary Facilities	LS			\$5,000.00
<b>Subtotal Part A - General</b>					<b>\$50,000.00</b>
<b>Part B - Earthworks, Grading &amp; Roadworks</b>					
<b>B1.0 Removals</b>					
1.1	Clear and grub - Limits of Construction	m <sup>2</sup>	4252	\$3.00	\$12,756.00
1.2	Stripping (300mm Depth) - Limits of Excavation	m <sup>2</sup>	4252	\$5.00	\$21,260.00
<b>B2.0 Earthworks and Grading, Roadworks</b>					
2.1	Common Excavation - On Site Re-Use	m <sup>3</sup>	62	\$15.00	\$930.00
2.2	Common Excavation - Off Site Disposal	m <sup>3</sup>	12103	\$15.00	\$181,545.00
2.3	Sub-grade preparation	m <sup>2</sup>	1513	\$5.00	\$7,565.00
2.4	Supply and place 75mm minus granular sub-base	m <sup>2</sup>	1513	\$25.00	\$37,825.00
2.5	Supply and place 19mm minus granular base	m <sup>2</sup>	1513	\$15.00	\$22,695.00
2.6	Supply and place Hot-Mix Asphalt Pavement	m <sup>2</sup>	1513	\$32.00	\$48,416.00
2.7	Concrete Sidewalk - 2.0m width - machine placed monolithic curb, gutter & sidewalk	l.m.	142	\$300.00	\$42,600.00
2.8	Concrete Barrier Curb & Gutter - machine placed. Includes wheelchair ramps and driveway crossings	l.m.	335	\$115.00	\$38,525.00
<b>Subtotal Part B - Removals, Earthworks and Grading, Roadworks</b>					<b>\$414,117.00</b>
<b>Part C - Storm Drainage</b>					
<b>C1.0 Supply and install stormwater infrastructure</b>					
1.1	Supply and install manhole base, lid, slab, cover and frame	ea	2	\$7,500.00	\$15,000.00
1.2	Supply and install stormwater main	l.m.	70	\$375.00	\$26,250.00
1.3	Supply and install stormwater catchbasin	ea	4	\$5,000.00	\$20,000.00
1.4	Storm Sewer Service Connection	ea	7	\$2,000.00	\$14,000.00
1.5	Construct small surface storm water outlet	LS			\$20,000.00
<b>Subtotal Part C - Stormwater Drainage</b>					<b>\$95,250.00</b>

ITEM NO.	DESCRIPTION	UNIT OF MEASURE.	EST. QUANT.	UNIT PRICE	TOTAL PRICE
<b>Part D - Waterworks</b>					
<b>D1.0</b>	<b>Supply and install water infrastructure</b>				
1.1	Supply and install water main - 200mm dia	l.m.	160	\$325.00	\$52,000.00
1.2	Pipe Fittings	ea	2	\$3,000.00	\$6,000.00
1.3	Fire hydrant assembly	ea	1	\$16,500.00	\$16,500.00
1.4	Waterworks Tie-In	ea	1	\$5,000.00	\$5,000.00
1.5	Water service connection - 25mm dia	ea	7	\$5,500.00	\$38,500.00
<b>Subtotal Part D - Waterworks</b>					<b><u>\$118,000.00</u></b>
<b>Part E - Sanitary Sewer</b>					
<b>E1.0</b>	<b>Supply and install sanitary sewer infrastructure</b>				
1.1	Supply and install sanitary sewer pipe - 200mm dia	l.m.	95	\$225.00	\$21,375.00
1.2	Supply and install low pressure sanitary sewer pipe - 100mm dia	l.m.	65	\$225.00	\$14,625.00
1.3	Supply and install manhole base, lid, slab, cover and frame	ea	2	\$8,000.00	\$16,000.00
1.4	Supply and install sanitary sewer service	ea	7	\$2,000.00	\$14,000.00
<b>Subtotal Part E - Sanitary Sewer</b>					<b><u>\$66,000.00</u></b>
<b>Part F - Signage &amp; Paint Markings</b>					
<b>F1.0</b>	<b>Supply and Install Traffic Signage</b>				
1.1	Permanent Traffic Control Signs c/w telespar post and concrete base	ea	10	\$350.00	\$3,500.00
<b>F2.0</b>	<b>Supply and Install Pavement Markings</b>				
2.1	Longitudinal Lane Markings	LS	1	\$15,000.00	\$15,000.00
2.2	MMA Road Markings (Series 400)	LS	1	\$10,000.00	\$10,000.00
<b>Subtotal Part F - Signage and Pavement Markings</b>					<b><u>\$28,500.00</u></b>
<b>Part G - Lighting &amp; Utilities</b>					
<b>G1.0</b>	<b>Supply and Install Lighting Infrastructure</b>				
1.1	Supply and install Base, Pole, Luminaire	ea	4	\$6,000.00	\$24,000.00
1.2	Supply and install 50mm PVC Duct	l.m.	180	\$60.00	\$10,800.00
1.3	Electrical Tie In (Provisional)	ea	1	\$10,000.00	\$10,000.00
<b>G2.0</b>	<b>3rd Party Utility</b>				
2.1	BC Hydro Civil Works	LS	1	\$15,000.00	\$15,000.00
2.2	CONTRACTOR - Civil Works	LS	1	\$10,000.00	\$10,000.00
<b>Subtotal Part G - Lighting &amp; Utilities</b>					<b><u>\$69,800.00</u></b>

**Summary**

<b>Subtotal Parts A - General</b>	<b>\$50,000.00</b>
<b>Subtotal Parts B - Earthworks, Grading &amp; Roadworks</b>	<b>\$414,117.00</b>
<b>Subtotal Parts C - Storm Drainage</b>	<b>\$95,250.00</b>
<b>Subtotal Parts D - Waterworks</b>	<b>\$118,000.00</b>
<b>Subtotal Parts E - Sanitary Sewer</b>	<b>\$66,000.00</b>
<b>Subtotal Parts F - Signage &amp; Pavement Markings</b>	<b>\$28,500.00</b>
<b>Subtotal Parts G - Lighting &amp; Utilities</b>	<b>\$69,800.00</b>
<b>Subtotal Parts A, B, C, D, E, F and G</b>	<b>\$841,667.00</b>
<b>Contingency (50%)</b>	<b>\$420,833.50</b>
<b>Engineering (15%)</b>	<b>\$126,250.05</b>
<b>Total (Excluding GST)</b>	<b>\$1,388,750.55</b>



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*Prepared by: William Bamsey, P.Eng.*

