Yukon Government

5th + Rogers (Block 338)

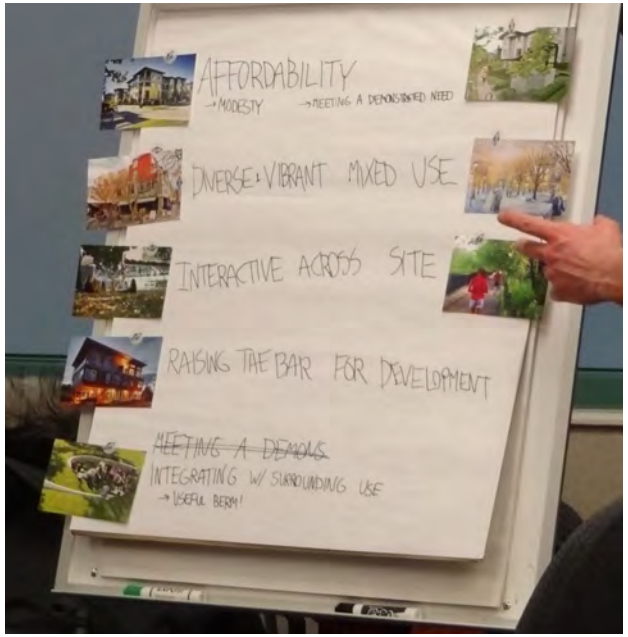
Master Plan

Background I Site Analysis I Vision & Engagement Process I Planning & Engineering Studies I Final Master Plan I Implementation

September 29, 2016

Stantec

table of contents



4 Planning & Engineering Studies

4.1 Site Transportation Analysis
4.2 Public Infrastructure / Servicing
4.3 Sustainability Strategies
4.4 Market Analysis

5 Master Plan

5.1 Key Elements
5.2 Parcel Statistics
5.3 Parking Count
5.4 Site Constraints
5.5 Phasing Plan
5.6 Pedestrian Network
5.7 Vehicular Network
5.7 Green Space
5.8 Sun and Shadow Studies
5.9 Site Context
5.10 Trails and Recreation
5.11 Site Section

6 Implementation

6.1 Disposition Options
6.2 Next Steps

Appendices

A Transportation Analysis Memo (Aug 25, 2016)
B Land Residual Analysis

Aerial view of downtown Whitehorse in 1959, looking southwest. Yukon Archives, Rolf and Margaret Hougen Fonds, 2009/81, #769.

Background

1

The 5th and Rogers site is within the traditional territory of the Kwanlin Dun First Nation and Ta'an Kwach'an Council. Traditionally the Whitehorse area, especially the area around the Whitehorse Rapids, was an important fishing site until construction of the dams at Marsh Lake and Whitehorse. At the end of the 19th century, Whitehorse had changed for First Nations people from hunter-gatherer encampments to a developing settlement with an economy focused on resource extraction. The development of Whitehorse not only accommodated the need for the White Pass and Yukon Route's depot and rail yards, but also the encroachment of a small community. As a result, First Nations people were forced to adapt to these sudden changes.

Although many continued to live seasonally on the land, people came into Whitehorse to trade furs and get supplies from a variety of merchants. The beginning of the 20th century also saw a number of First Nations men working as longshoremen and deckhands for the riverboats (Ned Boss, Frank Slim and George Dawson) as well as for the railroad (Billy Lebarge). First Nations people primarily camped on the Whitehorse riverfront, while others constructed cabins on the townsite. Billy and Jenny Lebarge had a cabin and outbuildings located west of the White Pass and Yukon Railway Yard limits near the escarpment. Whitehorse Billy and his family also lived in the same area. Many First Nations people maintained residences in Whitehorse at this time, but also had traditional hunting and fishing camps out on the land.

Settler interest in the current 5th and Rogers site (Block 338 consolidation) began in 1899 when the new Whitehorse town site was surveyed by the Department of the Interior. The project site was once part of a much larger holding of the White Pass & Yukon Railway (WP&YR), known as "Lot 19", which was used by the White Pass & Yukon Railway as a railyard when construction of the railway finished in 1900. The portion of Lot 19 that is now the 5th and Rogers site was on the northern perimeter of a WP&YR switching and re-fueling area known as the "Wye" (a railway term used to describe a 'Y'-shaped section of track where rail cars and locomotives could be turned around).

Many early residents of the area set up squatter's houses along the WP&YR lands – by 1959, nearly one-third of the downtown population were squatters. In terms of industrial activity, the site remained largely dormant until 1940 when World War II broke out, heralding the years of WP&YR's peak operations in the 1940s and 50s. From 1942-1945, a number of structures (such as barracks) were built within Lot 19 by the U.S. Military. In the slower years following the war, rail operations ceased around the Wye. In 1953 a substantial slope failure occurred, covering much of the site in silt and partially burying a number of buildings adjacent to the escarpment.

By 1963, many of the structures in this area had been dismantled or relocated; squatters either moved voluntarily, were offered monetary incentives, or were cleared out by the territorial government. After the site was cleared, a number of heavily-used trails began to develop, which are in still in use.

Ongoing efforts to limit use along the top of the escarpment and prevent further erosion have resulted in a relative stabilization of the escarpment above the 5th and Rogers site. Together with berms to mitigate the remaining geohazard, this area has been deemed safe to develop by other consultants.

1.1 BACKGROUND & CONTEXT

The 2.48 ha parcel at 5th and Rogers is an undeveloped and underutilized site located in Downtown South Whitehorse. The future development of this site will be informed by the planning context and work that has been completed to date. This master plan for 5th & Rogers provides a context specific framework that builds upon the Whitehorse Official Community Plan and the vision set out by the City's 2011 Downtown South Neighbourhood Charrette & Master Plan, which provided for the development of up to 700 additional residential units in the downtown south area. The guiding principles from this previous work have been acknowledged and have informed the project process and design.

- Enrich the Urban Fabric
- Maximize Natural Space
- Enhance Connectivity
- Create a Distinct Neighbourhood Character

1.2 REPORTS CONSULTED

Previous studies and documents consulted and that have informed this plan include the following:

Planning

- City of Whitehorse 2010 Official Community Plan (amended), June 2013
- Downtown South Master Plan, July 2011
- Downtown South Neighbourhood Charrette Background Document, May 2011
- Zoning Bylaw 2012-20
- City of Whitehorse Downtown Development Incentives Assessment, June 2015
- CMHC Northern Housing Report, 2015
- "Ours to Build On" Housing Action Plan for Yukon 2015-2025, 2015

Engineering & Infrastructure

- Geohazard Risk Study Whitehorse Escarpment, EBA Engineering Consultants, October 2002
- City of Whitehorse 2003 Water and Sewer Study, Stantec, January 2004
- Downtown South Terrain Stability Assessments, Tetra Tech EBA, April 2012
- Downtown South Water and Sewer Servicing Review and Assessment, Tech-Con Engineering Services, August 2012
- Hawkins Street Slope Stability Assessment Report, Tetra Tech EBA, May 2014
- Desktop Geotechnical Evaluation, Block 338 - Issued for Review, Tetra Tech EBA, January 2016

Transportation

- 2002 City-Wide Transportation Study, UMA Engineering, July 2004
- Whitehorse Downtown Parking Management Plan, Boulevard Transportation Group, May 2011
- Whitehorse Transportation Demand Management Plan, Boulevard Transportation Group, March 2014

Environmental

- Hoge - Jeckell Street Lots Phase 1 Environmental Site Assessment, Laberge Environmental Services, July 2014

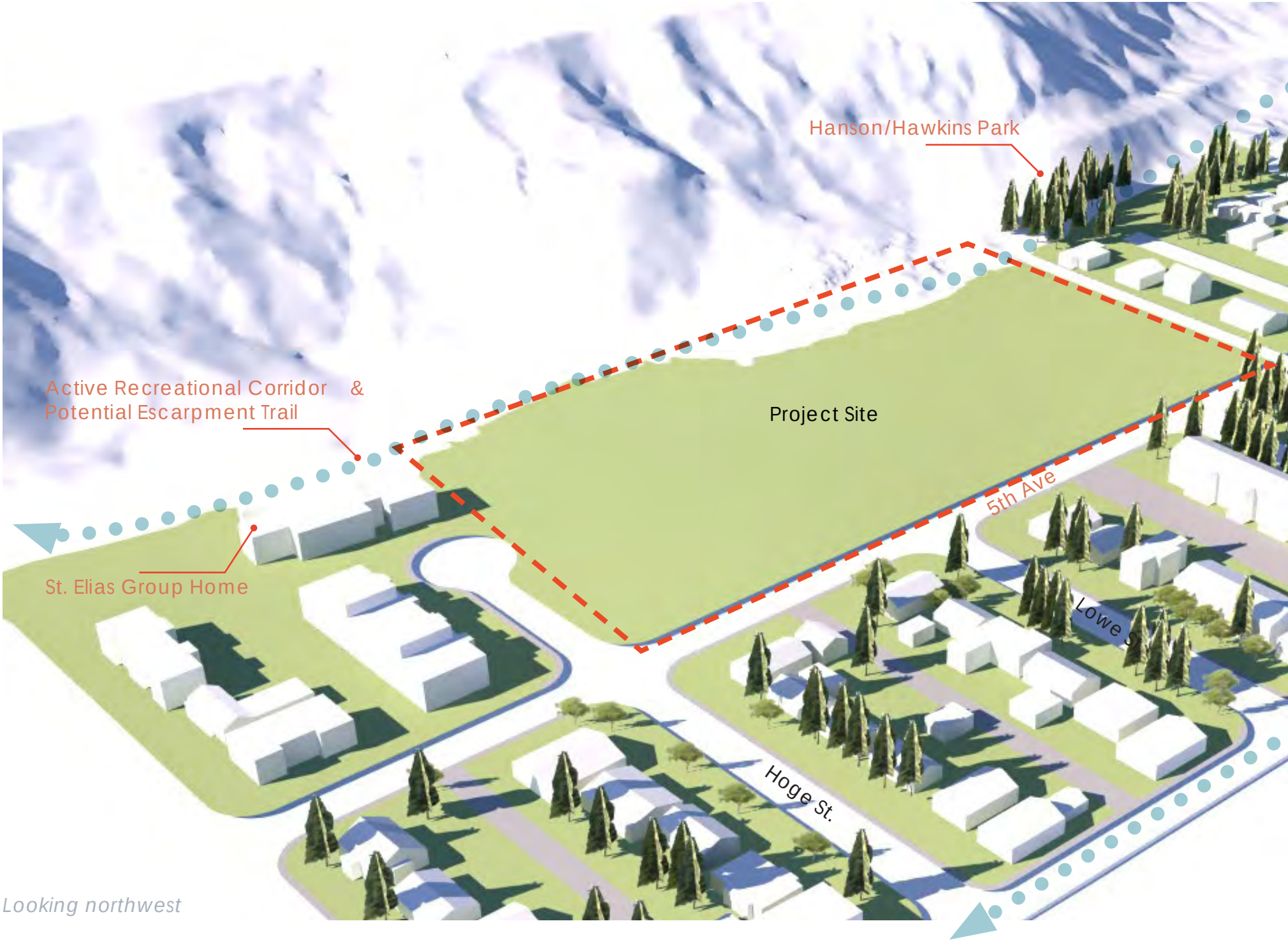
Sustainability

- City of Whitehorse Integrated Community Sustainability Plan, September 2007
- City of Whitehorse Sustainability Plan, 2015-2050
- Whitehorse Community Energy Project – Community Energy System Feasibility Study Report, 2013

Commerce

- Community Economic Development Strategy 2015 to 2020 Work Plan, May 2015
- Yukon Real Estate Survey Third Quarter, 2015
- Yukon Economic Outlook, October 2015
- Downtown Development Incentives Assessment
- 2015 CMHC Northern Housing Market Outlook

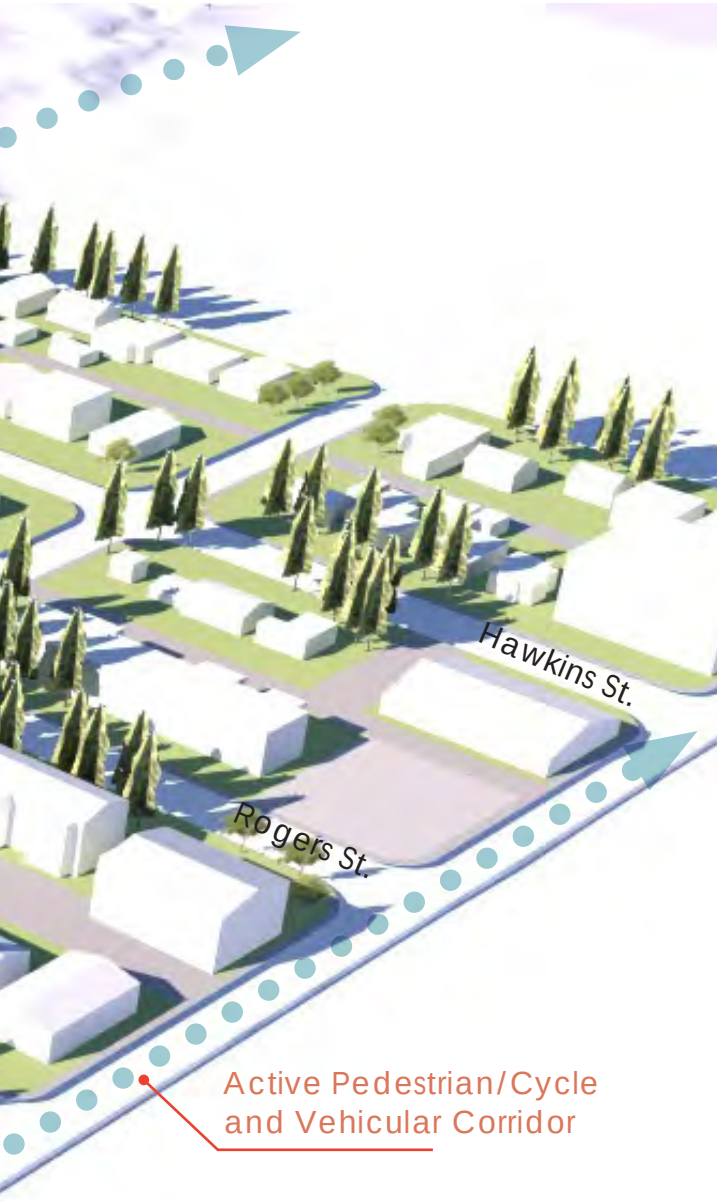
5th and Rogers site during the winter.



Looking northwest

2

Site Analysis



2.1 CURRENT CONDITIONS ASSESSMENT

2.1.1 PHYSICAL SITE CONTEXT

Block 338 is a brownfield site. Brownfields are defined as abandoned, vacant, derelict or underutilized commercial, industrial or institutional property where past actions have resulted in actual or perceived contamination and where there is active potential for redevelopment. Trees were harvested from this area in the early 1900s for fuel for the sternwheelers traveling the Yukon River. The area continued to be used by the White Pass and Yukon Railway Company as a rail yard and later residential squatters settled. The vegetation, that has grown on the site since the squatters were moved off in the 1960s, is low shrubs and scattered coniferous trees. This vegetation would require clearing prior to development.

Municipal Utilities (Water, Sewer, Storm)

A 350mm diameter water main, 350mm diameter sanitary sewer, and 300/350mm diameter storm sewer run below 5th Avenue adjacent to the 5th and Rogers site. The impacts of the proposed increase in density was assessed in detail in the "Downtown South Water and Sewer Servicing Review and Assessment", completed by Tech-Con Engineering Services in August 2012 (herein referred to as the 2012 Servicing Assessment). The anticipated density of the proposed site (300 units * 2.5 persons/unit * 500 L/person/day = 4.4 L/s Average Day Demand) is in line with the assumed increase in the servicing assessment.

The 2012 Servicing Assessment found that the existing water and sewer mains provide adequate capacity for the proposed infill development at 5th and Rogers. Should the 5th and Rogers site be divided into larger multi-family parcels, it will be relatively inexpensive for a developer to extend services from the existing main to the site. The only major upgrade that would be required is the addition of hydrants along 5th Avenue to meet the maximum 90 m spacing.

Storm water runoff is currently controlled by curb and gutter, which then feeds to buried storm mains. Low Impact Development (LID) storm water management practices – such as rock pits, bioswales, and rain gardens – should be incorporated in the eventual development of this parcel to minimize additional runoff generated and to reduce the impacts on the existing storm system.

Electrical and Communications Utilities

ATCO Electric Yukon has a 12.5 kV main feeder – which supplies power to half of Downtown – that runs up the alley between Lowe Street and Hoge Street and then continues along the rear of the site, as well as 7 kV service and secondary lines that continue from the alley between Rogers Street and Lowe Street to the escarpment. Northwestel's cable and telephone lines share ATCO's overhead poles in this area.

ATCO has indicated that there is currently no plan to relocate or bury these lines. If it is desired to move this main feeder underground, as was done for the St. Elias group home, it will take a minimum of one year and all costs would be paid for by the developer.

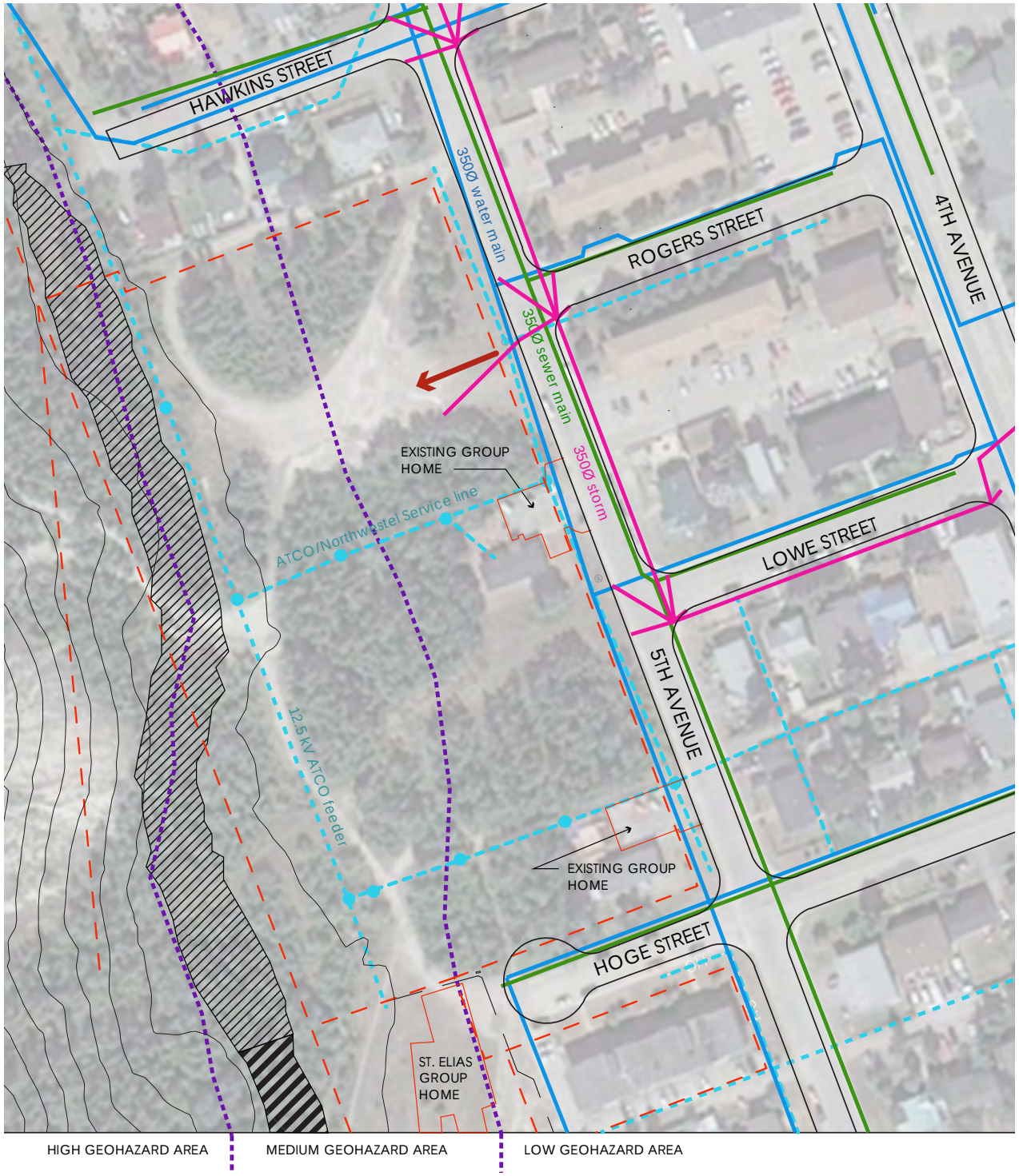
Transportation

The existing road network consists of local lateral roads feeding onto 4th and 5th Avenues. Roads are curbed and paved, with sidewalk on one side. The current non-motorized multi-use escarpment trail system ends at Hawkins Street. There are on-street bike lanes along 4th Avenue. City of Whitehorse Transit has stops along 4th Avenue for Route 4 (Porter Creek - Crestview), and City staff have indicated that school buses also use 4th Avenue.

A detailed Transportation Impact Assessment has been performed, and indicates that the existing transportation network is sufficient to accommodate the proposed development. As this site will be one of the densest neighborhoods in Whitehorse, it is especially important to consider active transportation modes and road safety. Examples of possible upgrades include: adding corner bulbs at pedestrian crossings at Rogers Street and Hoge Street along 5th Avenue, raised crosswalks, bike path connections to 4th Avenue, modified traffic signage along 5th Avenue, or new traffic controls along 4th Avenue. It is anticipated that streetscaping/roadway reconstruction will follow the same model as the

6th Avenue reconstruction project that is currently underway.

Other opportunities include orienting the site to minimize internal vehicular traffic/circulation space to promote active modes. Parking will need to be oriented to minimize circulation space, footprint and impact to sight lines.



LEGEND

- PROPERTY LINE
- OVERHEAD POWER / COMMUNICATIONS
- STORM SEWER
- SEWER MAIN
- WATER LINE
- CONTOURS
- PROPOSED BERM
- EXISTING BERM
- GEOHAZARD AREA BOUNDARIES
- CURRENT VEHICULAR SITE ACCESS

2.1.2 GEOTECHNICAL REPORT REVIEW

A desktop geotechnical evaluation, slope assessment, and detailed berm design for the 5th and Rogers site has been completed by Tetra Tech EBA. Multi-storey developments, with or without underground parking garages, will require a detailed geotechnical investigation.

The soil conditions on the project site generally consist of 2-3 m of sand and gravel that is underlain by a thick silt layer. Closer to the escarpment a surficial layer of silt is encountered, which was deposited by previous slope failures in this area. No permafrost or bedrock were encountered.

Groundwater is expected to seasonally fluctuate from 3-5 m below ground surface. This relatively shallow groundwater will impact the cost and feasibility of underground parking structures, which are typically buried around 3-5 m below grade. Underground parking garages in this area would likely require dewatering during construction and additional design elements related to waterproofing and subdrainage.

As the project site is located along a section of the escarpment with Moderate to High Geohazard risk due to slope instability, construction of a containment berm along the back of the site is required before any development occurs in the Moderate or High Geohazard zones. The berm will control and reduce the consequence of mudslides and deposition from high sediment flows. The area west of the berm will become an "escarpment protection area".

The berm will be approximately 5 m high and 20 m wide, and will incorporate a multi-use trail (the continuation of the escarpment trail system) along its crest. The berm will be highest at the south end (near the St. Elias Group Home) and will be lowest at the north end where it links up to the existing topography. A connection to the existing trail and park between Hanson Street & Hawkins Street will be provided, as well as an access point for maintenance vehicles from the cul-de-sac at Hawkins Street. Tetra Tech EBA has estimated the construction cost for the berm at $750,000 (Class D, +/- 50%)

Due to the configuration of the escarpment, the berm will intrude somewhat on the Northwest corner of the land parcel, reducing the amount of developable land. Any development on the site should be set back at least 1.0 m from the toe of the berm. Tetra Tech EBA has confirmed that parking structures may be built into the berm, or a down-slope retaining wall constructed, to maximize the use of this space.

2.1.3 ESA Review

The report "Hoge – Jeckell Street Lots, Whitehorse, Yukon – Phase I Environmental Site Assessment" by Laberge Environmental Services (issued July 23, 2014) was provided by Yukon Government. This Phase I Environmental Site Assessment (ESA) incorporated the review of documents and air photos, interviews with residents, and site visits to determine Areas of Potential Concern on the 5th and Rogers site and an adjacent parcel that is now occupied by the St. Elias Group Home.

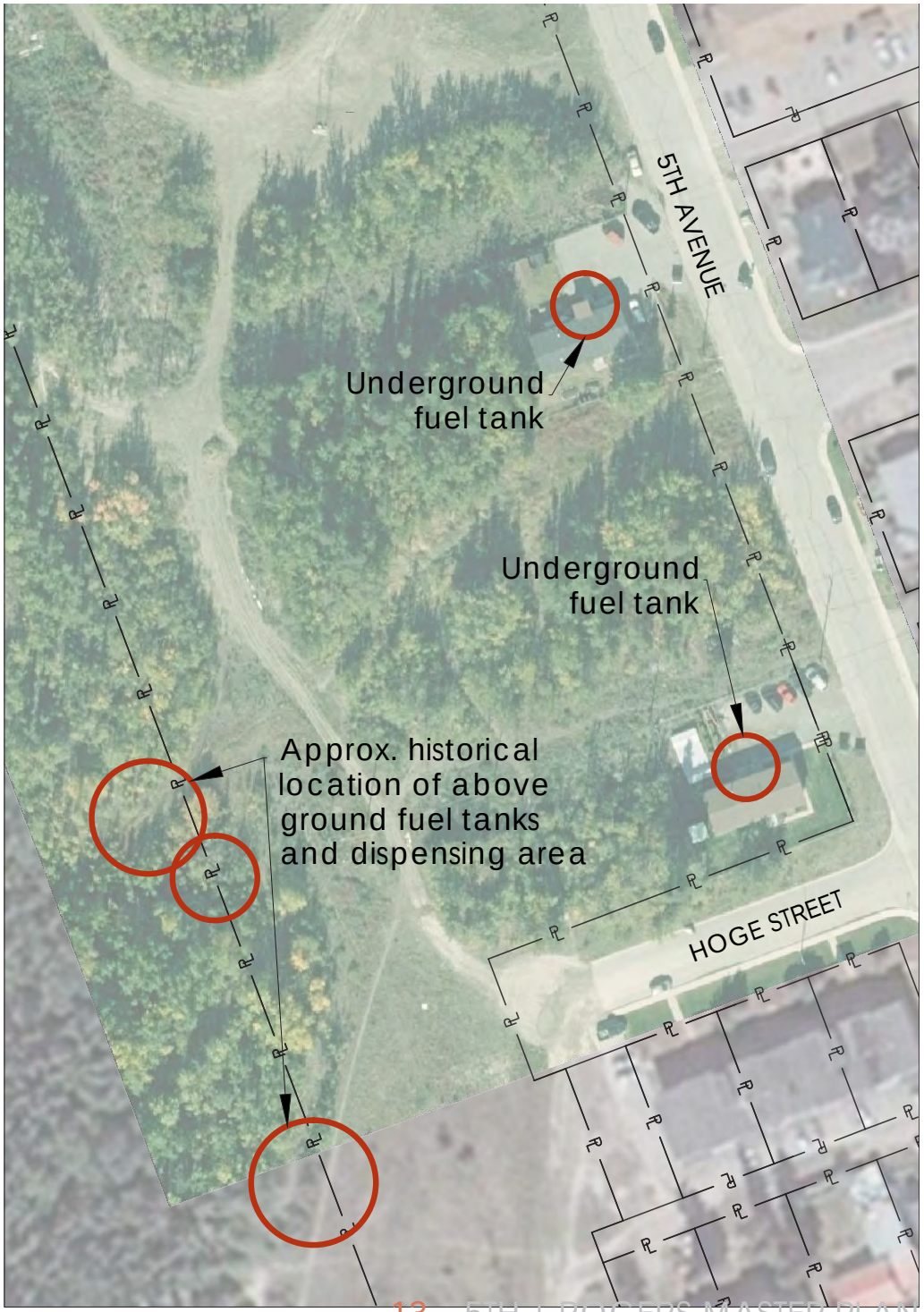
The Phase I ESA identified that petroleum hydrocarbons are the Contaminants of Concern on the site, originating primarily from this site's historical use as a railway siding and fuel handling/storage area for the White Pass & Yukon Railway. Two 10,000 gal above-ground fuel storage tanks were located on the southwest corner of the site, near the current property line, during the years of WP&YR's peak operations in the 1940s and 50s.

There are also two underground heating oil storage tanks, one at each of the group homes that are currently located on the site. It is anticipated that these tanks will be removed and any contamination remediated when the group homes are relocated by Yukon Government.

The Phase I ESA indicated that while there was no surface evidence of hydrocarbon contamination, significant slope failures could have buried historical contamination from rail operations under a 1-3 m layer of sand/silt. A Phase II ESA of the site is currently underway to characterize and delineate the contaminants that are suspected to be present. Preliminary results indicate that the north end of the site is non-contaminated, with possible contamination concentrated toward the south of the site. Should this assessment determine that sizable areas of the site require remediation, there will be an impact on the cost and timeline of developing this parcel.

For the purposes of this planning study, the Steering Committee has advised that the site should be considered clean, as remediation work will be undertaken by Yukon Government.

A Phase II ESA is currently underway, and the Yukon Government Site Assessment and Remediation Unit is in the process of taking over management of remediation efforts.



Existing housing in Hawkins Street alley to the north of the project site.

St. Elias Group Home, to the south.

2.1.4 EXISTING AND ADJACENT USES

The study of the adjacent uses around the 5th and Rogers site has informed the overall master plan. It takes into account heights of existing buildings and proposes complementary uses, while at the same time considering the higher density development envisioned for this area in the OCP.

Aside from overhead electrical infrastructure, the only existing developments on the site are the two youth group homes, located to the south and middle of the east side of the site. Yukon Government, Health & Social Services has indicated that these buildings are at the end of their lifespan and that relocation of these two group homes outside of Downtown is their highest-priority capital project. Therefore, planning for the site can proceed under the assumption that these group homes will be relocated off-site in the near future. Health & Social Services indicated that there are also a number of group homes and transition facilities (both adult and youth) in the surrounding area that they intend to relocate to provide more effective program delivery and avoid concentrating these facilities in this area of Downtown.

A number of single-detached residences are located immediately across the site to the North and East. Any development of the site should incorporate a “transition” in terms of building height to this lower density. The adjacent housing stock is older and will likely be re-developed in the near future; consistent with other downtown redevelopments, density will likely increase.

Any commercial uses in the master plan will take into account the neighbourhood scale and will be limited to small-scale retail units or live - work studios.

The vision to create a residential hub at 5th and Rogers supports the goals of the Whitehorse OCP to create a walkable residential community located within a 5-10 minute walk to the downtown core.

2.1.5 WINTER CLIMATE

The local climate and site conditions play a significant role on building orientation and design. The most important consideration for northern climates are access to winter sun, heat retention and protection from winter winds. Passive strategy decisions, from building orientation down to material choices, can greatly improve energy efficiency, reduce energy usage and operational costs, and create a more sustainable development.

Climate-appropriate passive strategies that work with existing site conditions include:

- Maximize south facing façades
- Capture solar gains with south facing glazing
- Place outdoor spaces towards the south to maximize solar gain
- Minimize north facing glazing
- Use dark coloured building cladding to maximize solar gain
- Steep roofs for capturing solar gain in the winter
- Efficient building shape with minimal surface area to reduce heat loss
- Triple glazing to reduce heat loss
- Shelter buildings from prevailing winds from the south without casting further shadows by using low vegetation

Use building placement to block winds and create pleasant south-facing seating areas.
(from City of Edmonton's Winter Design Guidelines)

"Snow patio" at coffee shop in Edmonton, AB.

2.1.6 SITE PLANNING CONTEXT

Current CM1 zoning allows "a compatible mix of low intensity commercial and residential uses". The key development regulations are summarized as follows:

- Height allowance from 15 to 25 m as per Appendix C: Downtown Heights *(approximately 4-6 storeys)*
- Retail services less than 500 m^2
- Maximum floor area ratio is 5.4
- Maximum site coverage is 90%
- Minimum front yard is 0.0 m
- Minimum side yard is 0.0 m, except on a corner lot no structure shall be constructed within a sight triangle
- Minimum rear yard is 0.0 m
- For portions of buildings greater than 10 m in height, upper floors are required to be set back at least 2.0 m from property lines

Zoning

CM1- Mixed Use Commercial 1
(To provide a zone for a compatible mix of low intensity commercial and residential uses for the transitional area around the periphery of the downtown commercial core)

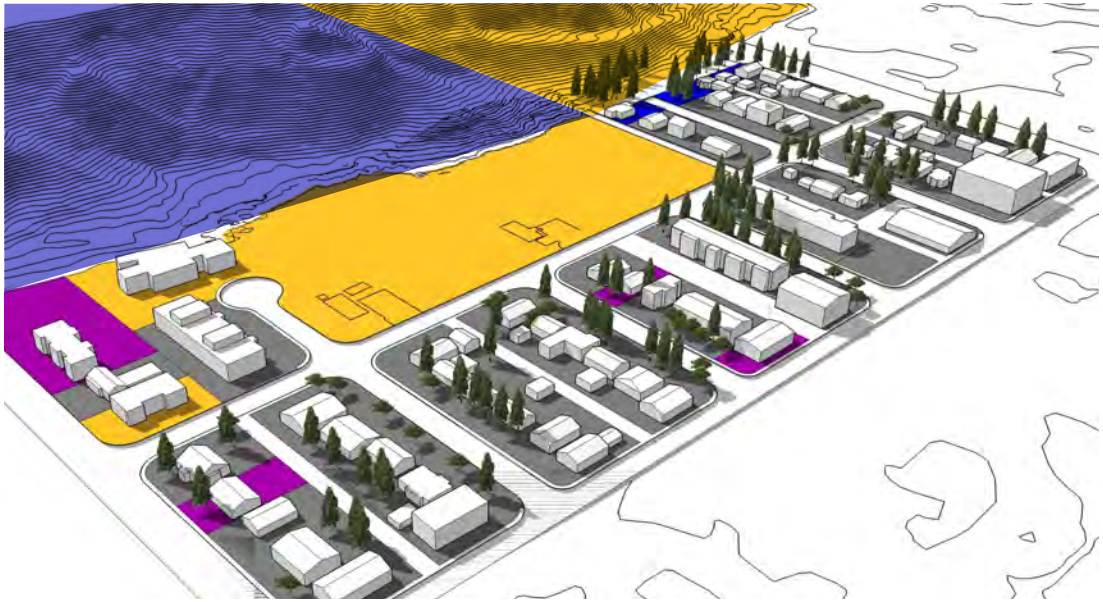
CM2 - Mixed Use Commercial 2
(To provide a zone for a mix of low intensity commercial and residential uses for the transitional area around the periphery of the downtown commercial core)

PE - Environmental Protection
(To provide a zone for the protection and preservation of environmentally sensitive areas, wildlife habitat and other significant natural areas)

Land Use

There are currently two youth group homes located on the 5th & Rogers site; Health and Social Services has indicated that these are a priority to be relocated. The St.Elias Group Home is located directly South of the site. The Official Community Plan's vision is for the site to become a residential hub that will provide denser housing options for both market and non-market housing. The current surrounding land use is predominantly low density single-detached residential.

- Residential
- Institutional
- Group Homes - Pending Relocation
- Mixed Use / Commercial
- Undeveloped



Land Ownership

The site is owned by the Yukon Government. Portions of the escarpment are owned by the City of Whitehorse and the Yukon Government.

- Private
- Yukon Government
- Yukon Housing Corporation
- City of Whitehorse

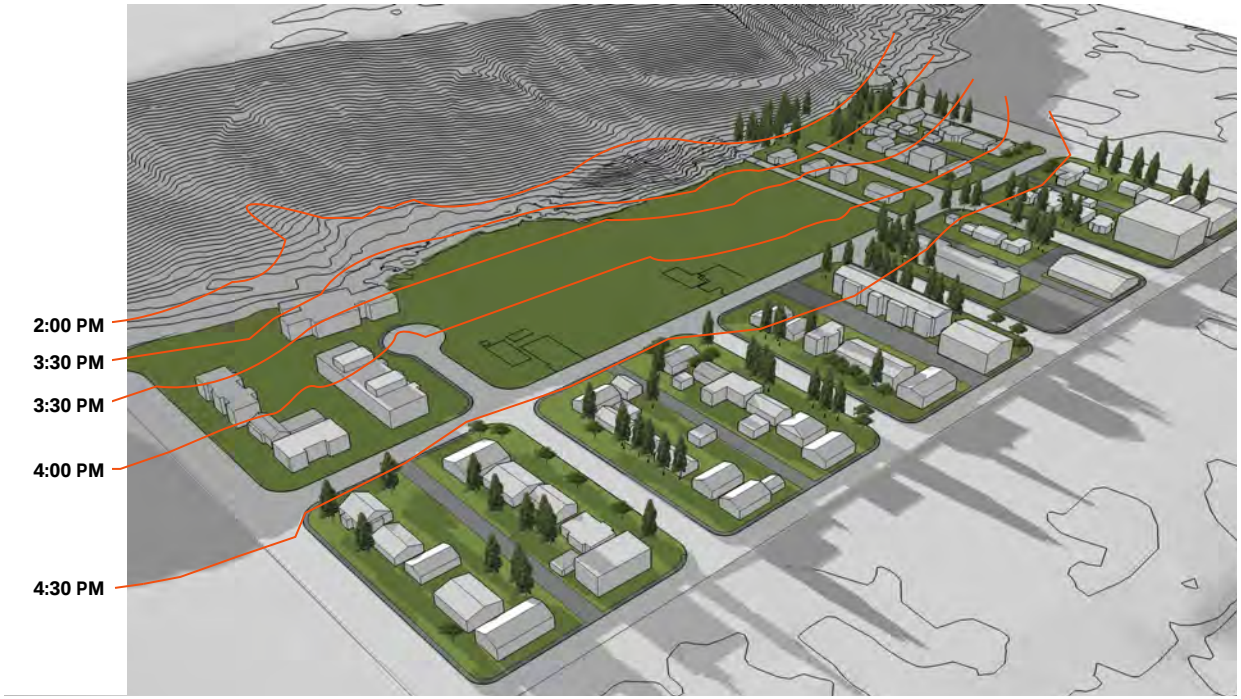
2.1.7 SUN & SHADOW STUDY (BARE SITE)

The escarpment stands approximately 60 m higher than the project site. The height and adjacency results in shadowing primarily in the afternoons.

Shadow studies taken on the equinox, and the winter and summer solstices show the extent of shading created by the escarpment. The height of future development on the site should consider that shadowing is unavoidable from the west escarpment and as a result locating taller buildings towards the west edge of the site will have little negative impact on the site and surrounding area. Taller buildings located to the west edge will cast shadows towards the escarpment and the recreational berm in the mornings and any shadows created in the afternoon coincide with the shadow from the escarpment.

As suggested in the passive strategies in Section 2.1.5, outdoor recreational spaces should have southern exposure to capture solar gains and also consider the shadowing effect of the escarpment to the west.

The site will primarily be in shade during the winter months due to low sun angles and decreased sunlight hours.



March 21 shadow extent line 2PM to 4:30 PM

March 21 at 9AM

March 21 at 12 noon

March 21 at 4 PM

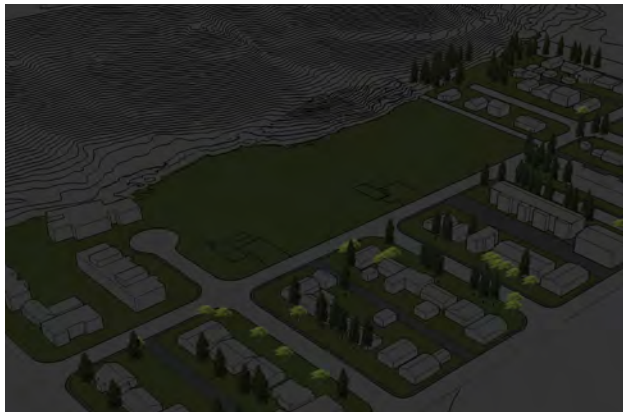
June 21 at 9AM

June 21 at 4 PM

June 21 at 7 PM

December 21 at 10AM

December 21 at 12 noon



December 21 at 3 PM

2.1.8 PARKING CONCEPTS

Based on input from the Steering Committee, the City's minimum parking requirement will be applied to the site (for residential, 1 parking stall for every 2 units, plus an additional guest stall for every 7 units; commercial requirements apply for commercial space).

Should 300 units be developed, this results in a minimum of 192 stalls. As a reference, the area required for 150 stalls of parking including drive aisles is equal to approximately one third of the project site area. Placing all parking requirements in one area is contrary to the project vision of a pedestrian-friendly environment. Therefore, strategies to decentralize and integrate parking have been used.

It is assumed that underground parking is not economically feasible (though it is technically feasible) and that parking will be provided through a mixture of different surface strategies including:

- Surface parking zones (uncovered)
- Surface parking zones (covered)
- Stalls tucked under lifted building
- Woonerf Streets with on-street parking

A Woonerf is a shared street concept that combines pedestrian, cars, parking and bikes together. It is a strategy that calms traffic and creates a streetscape that promotes pedestrian focused streets. Introducing Woonerfs as internal streets within the development will allow for greater permeability and connections for pedestrians, bikes and cars.

Using a variety of parking strategies to distribute parking is critical in designing a pedestrian-focused environment. Large swaths of uncovered parking areas should be avoided. Large dedicated parking areas should be hidden from view by "capping" the area (providing a cover over the top, whether it is a portion of a building, or an open area with amenity space) and placing vegetation, land forms or building up against the walls.

The master plan concept meets all parking requirements on site, and within each parcel. Street parking located outside the site or along the internal street does not count towards the requirements.

For reference, the street frontage for the project site along 5th Avenue is able to accommodate approximately 23 parallel parking stalls along the west edge. Angled parking is not recommended as it is not compatible with "complete streets". This additional parking would accommodate visitors to the development, or users of potential commercial space.

Entry to covered surface parking.

Woonerf - Shared street with pedestrians, bikes and cars.


Existing angled parking along Main Street.


Parking under a lifted building.

3

Engagement Process & Vision

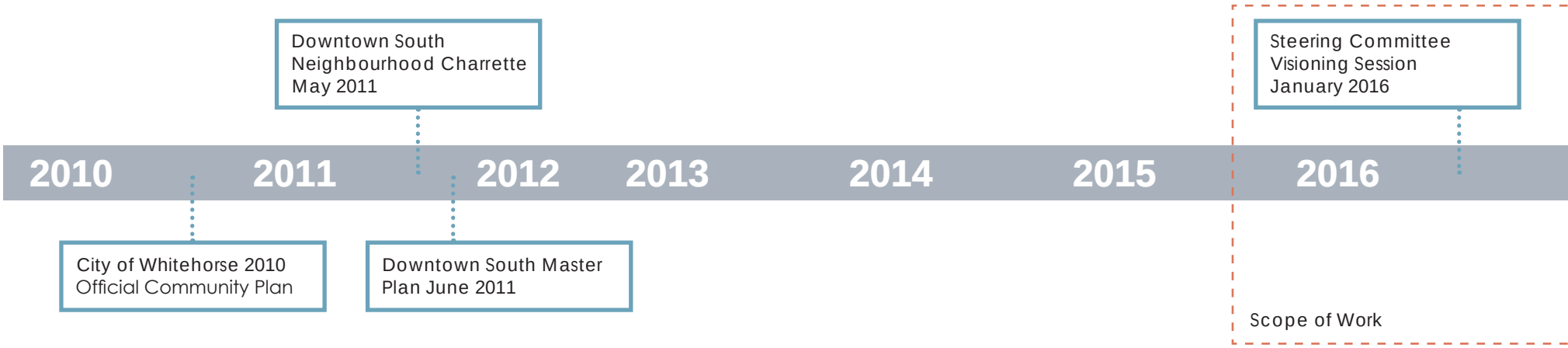
3.1 ENGAGEMENT APPROACH

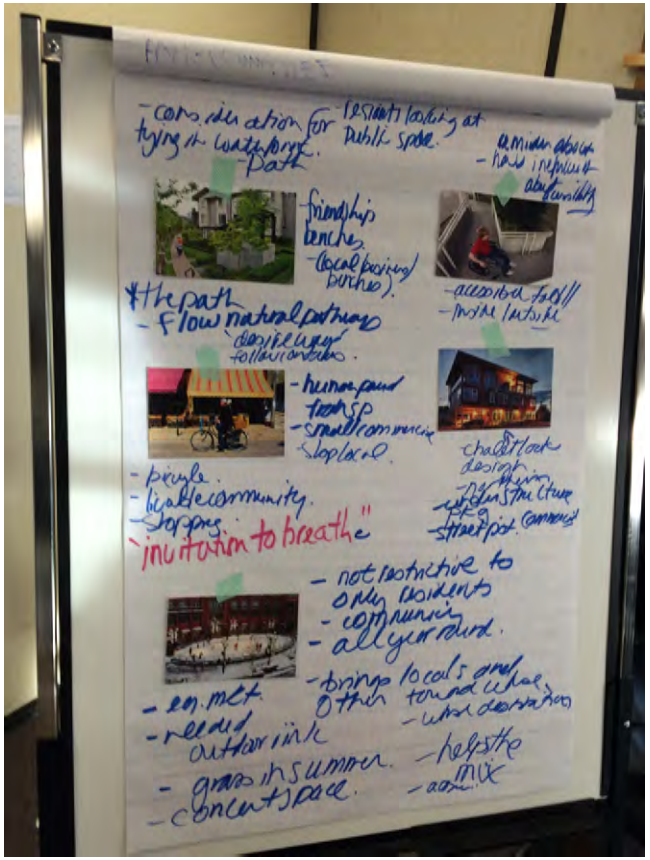
At this point in the master planning exercise, public and stakeholder engagement is limited. The planning is guided by the Downtown South Master Plan and the City's OCP. Given that this site could potentially be developed as the densest area in Whitehorse, engagement with key stakeholders was important for the Stantec Team to ensure we considered and reported their considerations and desires to the Steering Committee.

The Steering Committee identified 5 stakeholder groups that Stantec then held consultation sessions with in January 2016:

- Developers
- Downtown Residents Association
- Yukon Housing Action Plan Committee
- Kwanlin Dun First Nation
- Ta'an Kwäch'än Council

In addition to these stakeholders, Stantec consulted with the City of Whitehorse and Yukon Government Health and Social Services. Building on the input from the Steering Committee, the consulting team used the same process to engage with the stakeholders: identification of design and development considerations followed by a visioning session using the flashcards depicting a variety of images.





Stakeholder Meetings
February 2016

Steering Committee
Ideas Workshop
March 2016

2017

5th & Rogers Master Plan
July 2016

Possible Site
Development

3.2
STEERING COMMITTEE VISIONING SESSION

A visioning exercise was completed with the steering committee to develop the driving principles for 5th and Rogers. Flashcards containing imagery suggesting design ideas and concepts were used to help generate and communicate the group's vision. During the session the Steering Committee was asked to pick images from the deck that best communicate their vision for the future of the site. Each group then presented a summary of their conclusions and reasons behind their choices. The outcomes have helped to formulate the project vision. Below are the results from the visioning exercise held during the initial meeting on January 11, 2016.

There were nine key individuals participating in the session:

- Kevin Fisher, Yukon Government – Land Management Branch
- Matt King, Yukon Housing Corp.
- Chris Milner, Yukon Housing Corp.
- Mike Ellis, City of Whitehorse
- Rick Karp, Whitehorse Chamber of Commerce
- Colin McDowell, Yukon Government – Land Management Branch
- Helmer Hermanson, Vimy Heritage Housing Society
- Johanna Smith, Yukon Government – Land Management Branch
- Tracey Andersen, Yukon Government (Minutes)

The session was led by Stantec:

- Lesley Cabott, Senior Planner
- Tyler Heal, Civil Consultant
- Anthea Ho, Architect AIBC

Group A Key Themes:
(Matt King, Helmer Hermanson, Johanna Smith, Mike Ellis)

- Local – Neighbourhood Focused Commerce
- Diversity in Housing
- Shared Gathering Spaces
- Berm as Amenity
- Pedestrian Friendly Streetscapes

Group B Key Themes:
(Kevin Fisher, Chris Milner, Rick Karp, Tracey Andersen)

- Affordability
- Diverse and Vibrant Mixed Use
- Interactive Across Site
- Raising the Bar for Development
- Integrate Berm with Site

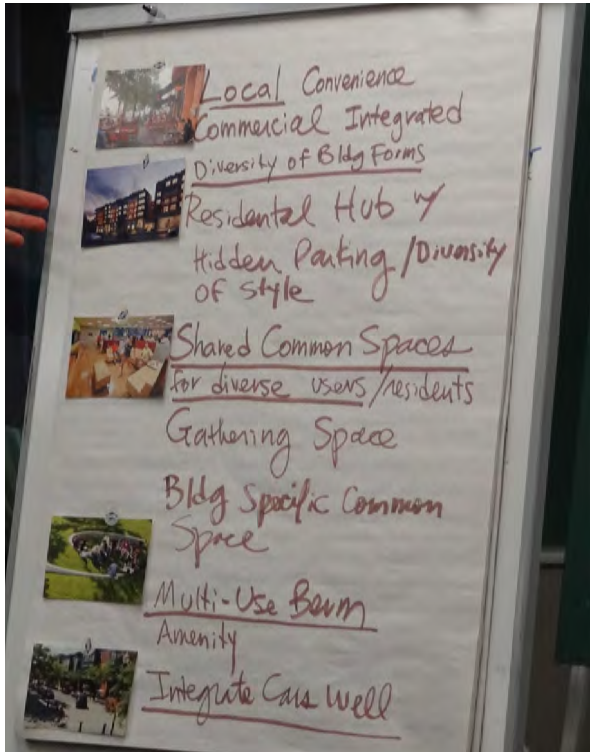
The following topics were also discussed with the Steering Committee and identified as key components for the project. They are as follows:

Project Stakeholders

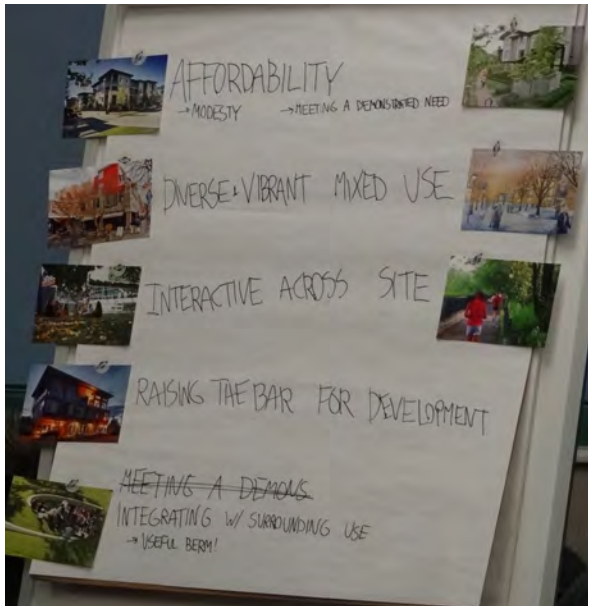
- Residents (including Downtown Residents Assoc.)
- Developers (including Contractors Assoc. and Real Estate Assoc.)
- Kwanlin Dun First Nation
- Ta'an Kwach'an Council
- Housing Action Plan Steering Committee & Grey Mountain Housing Society
- Health and Social Services (including existing and planned nearby developments)

Other clarifications and targets made by the Steering Committee that will inform the master plan include:

- Development will target 60% Market Housing and 40% Non-Market/Affordable Housing within any given building
- Non-Market Housing / Social Housing definitions were provided by Yukon Housing:
  "Affordable housing is housing that costs less than 30% of the before-tax total household income. For market or non-market renters, housing costs include rent and utilities. For homeowners, housing costs are comprised of mortgage payments, property taxes, utilities and insurance."
- 1 parking stall for every 2 residential units
- Accommodate 300 residential units
- Residential focus
- No office buildings
- Small neighbourhood commerce
- Deviate from cul-de-sac road access
- Pedestrian trail to connect to Millennium Trail
- Berm to integrate trail
- Incorporate existing public art piece

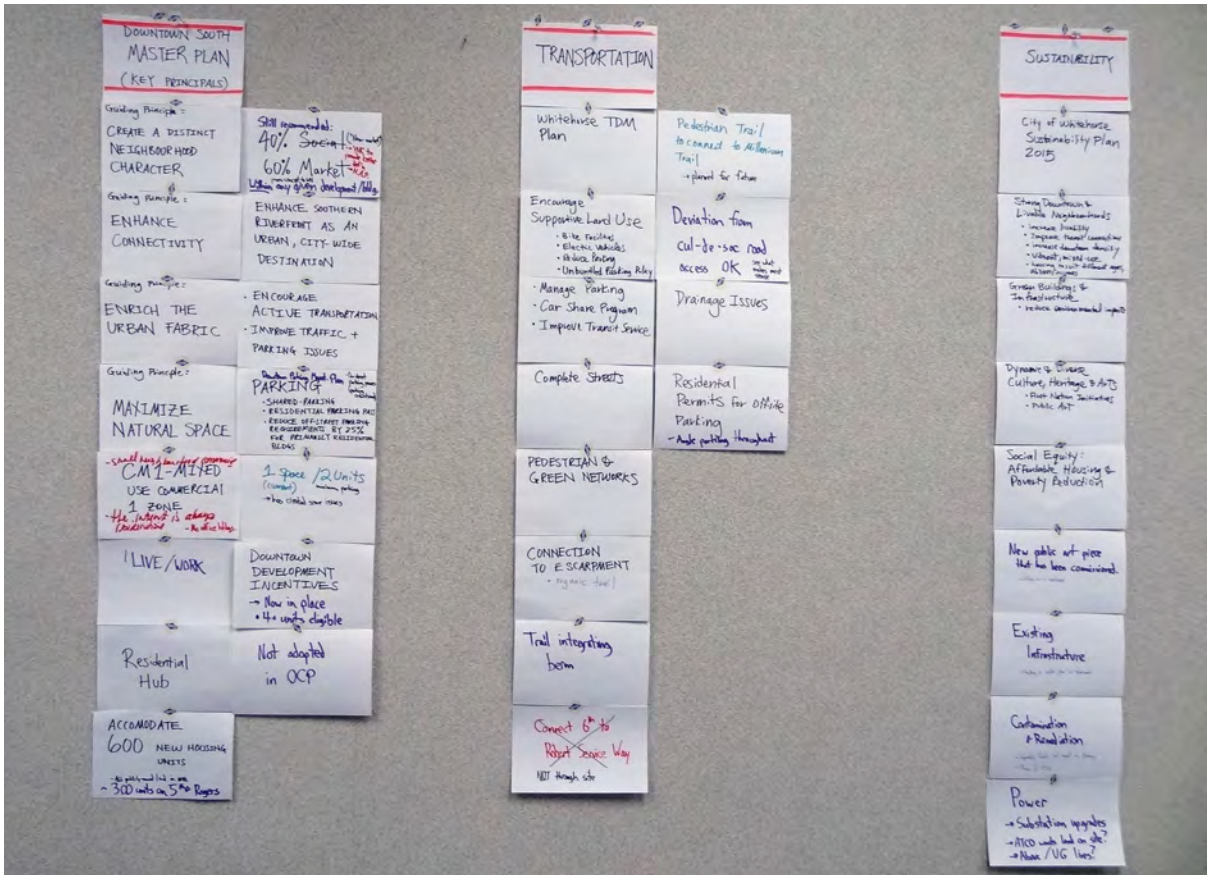


Group A Visioning Poster



Group B Visioning Poster

Flashcard Session



Clarifications and project targets

3.3 STAKEHOLDER MEETINGS SUMMARY

The design considerations were themed under 3 categories:

- Key Principles
- Transportation
- Sustainability

Stakeholder sessions were held with:

- Developers
- Downtown Residents Association
- Yukon Housing Action Plan Committee
- Kwanlin Dun First Nation
- Ta'an Kwäch'än Council
- City of Whitehorse
- Yukon Government, Health & Social Services

The following is a summary of the key themes.

Key Principles

- Create a distinct neighbourhood character
- Enhance connectivity
- Enrich the urban fabric
- Maximize natural space
- Small neighbourhood commercial (e.g. coffee shop/restaurant)
- Do not compete with downtown commercial core
- Live – work spaces
- Residential hub
- 300 units
- Local preference for local developers
- Support the local economy
- Super Green energy standards
- Communal space e.g. community markets and gathering places
- 3 pillars of Housing Action Plan (HAP)
  - housing with services
  - rental housing
  - home ownership
- Affordable housing
- Mix of housing
- Don't mix market and non-market
- Do not ghettoize this area
- Significant incentives needed to make a business case for private developers (e.g. land free)
- Not a preferred location for private development – waterfront preferred
- Housing terms (e.g. social, affordable, nonmarket) need to be agreed to and consistent
- Social housing demand needs to be determined
- Drainage from escarpment
- Shared park and recreation facilities

Transportation

- Encourage active transportation
- Improve traffic and parking issues
- Alternative transportation infrastructure need throughout downtown – better connections
- Use residential parking permits
- Survey on-street parking – day and night
- Not necessary to carry on the grid and cul-de-sacs into the site
- Look at car share program
- Improve transit
- Support:
  - Bike facilities
  - Electric vehicles
  - Reduced parking
  - Unbundle parking
- Developers want one parking stall per unit
- Complete streets
- Pedestrian and green networks
- Connect to riverfront on Millennium Trail
- Connect to escarpment and escarpment trail/berm

Sustainability

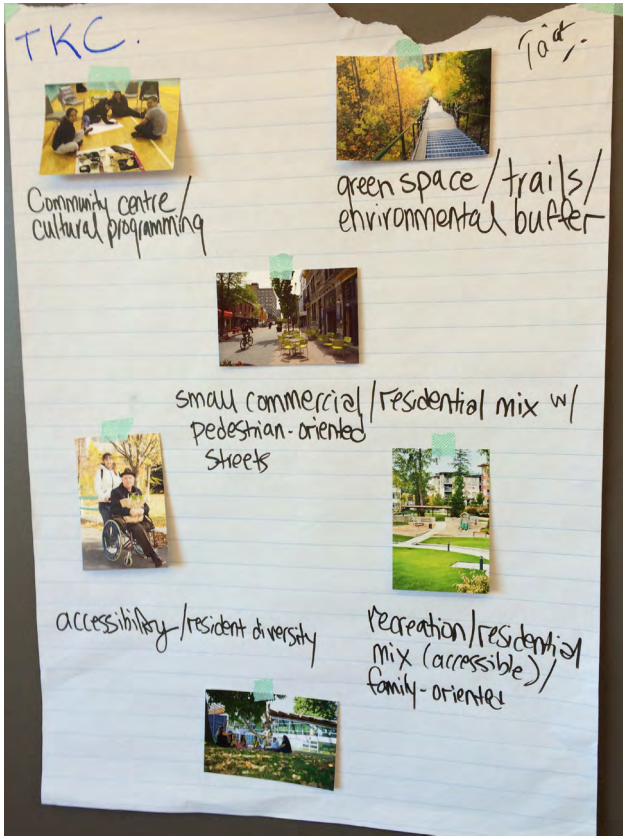
- Social equity –affordable housing and poverty reduction
- Recognize Ta'an and Kwanlin Dun people lived in the area
- Include Southern Tutchone cultural interpretation along escarpment trail
- District energy pilot project with EMR
- Link a solar bank on top of escarpment to development
- Light the trail – multi use

Developers

- They do not support mixing social housing and market housing.
- They prefer one large piece out to the private market with strict design guidelines (do not subdivide)
- If market housing, then high-end Super Green – however they think this would be better closer to the waterfront
- One of the principles should be local
- Need to determine what the need is for social housing

Health and Social Services (HSS) - Group Homes

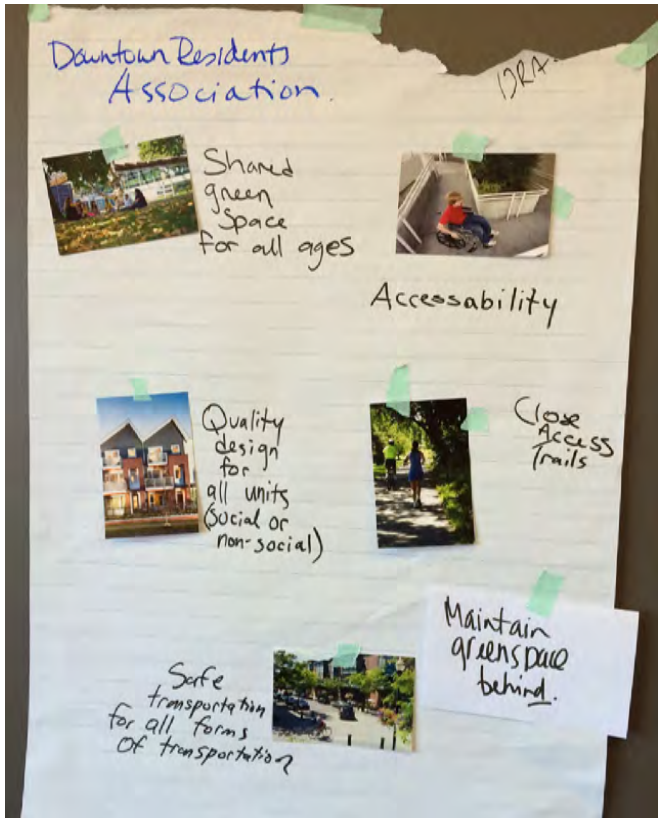
- HSS indicated that the two youth group homes are physically obsolete and are a priority for relocation outside of Downtown
- Would like to reduce concentration of group homes / transition homes in this area
- Including parks, shared outdoor space is a good fit with their programming
- Don't mix youth and adult uses/programming

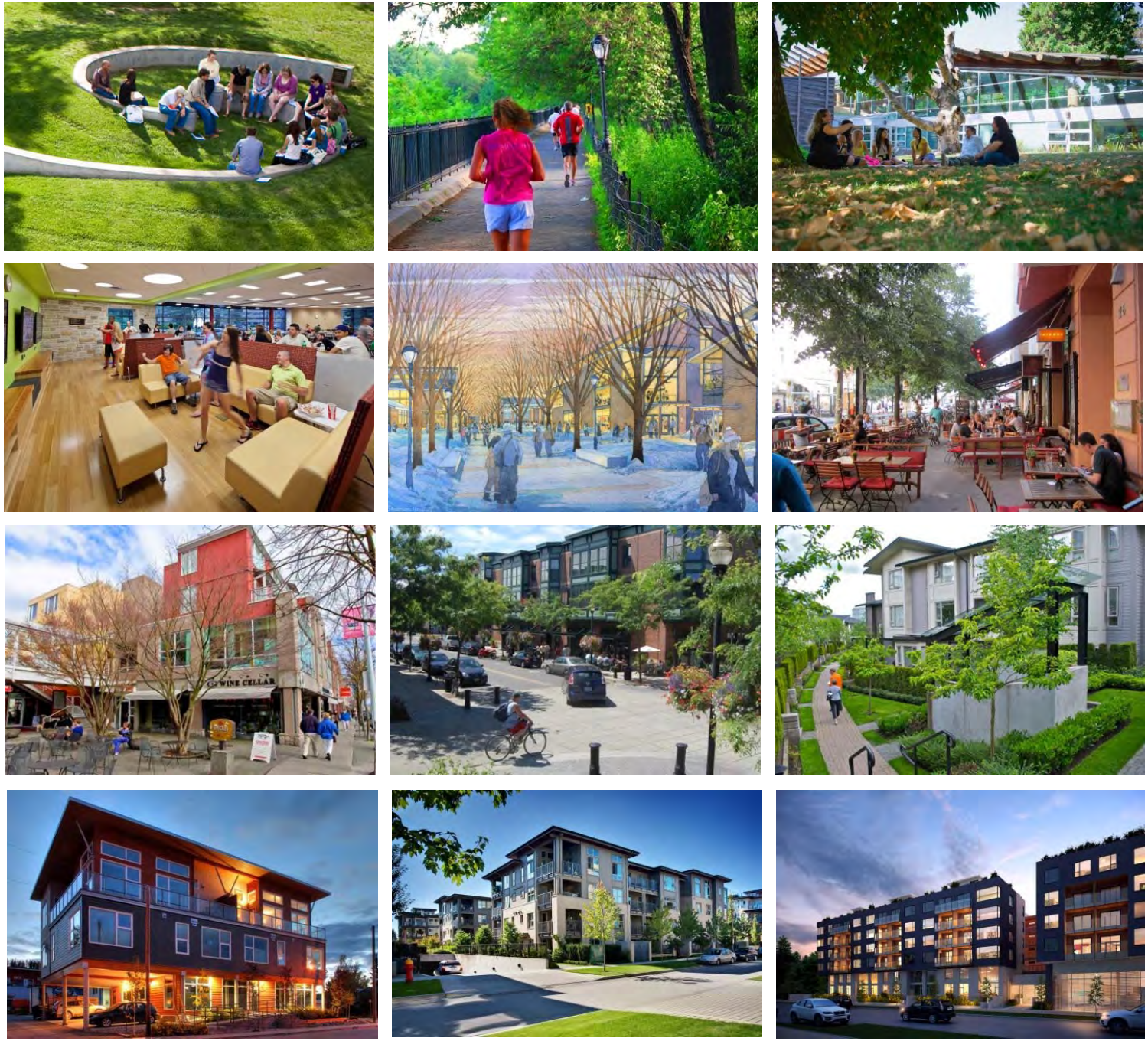


Vision

The stakeholders' vision for the site is consistent amongst the stakeholders and with the Steering Committee.

- Develop the area as a 'warm and friendly place'
- Create a green neighbourhood
- Density with character
- Maximize the feeling of community
- Community spaces – for the whole community not just the residents
- Accessibility and diversity
- Human scale, local shops/commercial
- Pathways and connections





Flashcards chosen by the Steering Committee that helped form the key project principles for 5th and Rogers.

3.4
PROJECT VISION

The results from the visioning session are distilled into four key themes that act as the project guiding principles:

Connectivity with Nature

The development will provide a strong recreational link between the escarpment and the city. It will capitalize on opportunities in integrating the berm and surrounding landscaping to create an amenity for the development. The focus will be on creating pedestrian friendly spaces, cars will integrate well on the site but will not be the focal point of the development.

Leadership in Development

Development at 5th and Rogers will thrive for design excellence and act as a showcase for leading edge sustainable design practices and urban experience, while still meeting a demonstrated need.

Spaces for Community Building

The development will foster the diversity of residents and provide opportunities to cultivate community in the form of shared common spaces and recreational areas.

Mixed-Use with a Local Focus

5th and Rogers is a residential hub with mixed-use commercial that focuses on local needs. The development mix will foster local diversity and economy through diverse housing options. It will provide a vibrant mixed –use edge that is locally focused to encourage a vibrant atmosphere and activity. Proposed building forms will reflect the scale and the eclectic style prevalent in local building forms and architecture.

3.5
STEERING COMMITTEE IDEAS WORKSHOP

At the Ideas Workshop held on March 15, 2016, the Steering Committee worked with the Stantec team to develop 3 conceptual options for the 5th and Rogers site, incorporating site constraints and the project vision.

The Steering Committee provided feedback on these concepts, which were combined into a final master plan.

3.5.1 ASSUMPTIONS

The following assumptions were provided during the Ideas Workshop:

- Planning work should generally consider the site as "clean" for residential development (remediation will be undertaken by Yukon Government)
- A phased development strategy should be considered, where the non-contaminated areas in the low geohazard zone along 5th Ave are developed first
- An option should be developed that incorporates Vimy Heritage Housing on the site (75 units of not-for-profit seniors housing)
- Target up to 300 units, with final number and split between Market/Non-Market to be determined by Market Analysis
- Master plan should indicate best use of the site at this point in time

3.5.2 PROCESS

A "gaming" exercise was held where Steering Committee members placed various blocks and pieces of paper on large-scale plans to explore various schemes for how the site could be configured.

4

Planning & Engineering Studies

4.1
SITE TRANSPORTATION ANALYSIS

A detailed site transportation analysis was conducted as a part of the 5th and Rogers master planning exercise. The memorandum that summarizes this work and includes detailed output from traffic modeling work (Synchro and Sidra) is attached in **Appendix A**. As this site will be one of the densest neighborhoods in downtown Whitehorse, the transportation analysis addressed active transportation modes and road safety measures.

4.1.1 TRAFFIC IMPACT ASSESSMENT

A traffic impact assessment (TIA) was conducted to determine the impact of the proposed development on surrounding intersections and to verify possible access concepts.

Based on previous work completed by the City of Whitehorse, the transportation mode split was assumed to be 15% walk, 6% bike, 15% bus, 50% drive (single occupancy), and 12% drive (shared occupancy). The external vehicle trips expected to be generated at full build-out are summarized below; a conservative value of 300 units was used (243 units are currently proposed).

- AM Peak: 63 out, 29 in
- PM Peak: 51 out, 70 in
- Daily traffic: 421 out & in

The additional traffic generated by the development of another 450 units in the surrounding area, as indicated in the Downtown South Master Plan, was also taken into account.

Traffic counts were conducted at four intersections in March 2016 to provide baseline data, supplemented by information for five additional intersections provided by the City of Whitehorse.

The TIA analyzed vehicular and pedestrian traffic and compared current conditions with the full build-out horizon at the following eight intersections:

- Hawkins St / 4th Ave & 5th Ave
- Rogers St / 5th Ave
- Lowe St / 5th Ave
- Hoge St / 4th Ave & 5th Ave
- Robert Service Way / 2nd Ave & 4th Ave

A capacity analysis was completed at the study intersections in order to determine whether the Level of Service (LOS) and the delays remain at an acceptable level once they are subjected to the design traffic volumes. The results show that no capacity issues or significant delays are expected at any of the study intersections.

The offset of entrances from the existing road network does not pose a hazard and will help with traffic calming in this area.

4.1.2 PEDESTRIAN & TRANSIT NETWORK

The pedestrian system in the vicinity of the proposed development appears to include a well-connected sidewalk system, and infrastructure that accommodates all travel modes. With the already well-establish sidewalk system and the available bike lanes along 4th Avenue, it is anticipated that active-modes of travel in the downtown area in the vicinity of the proposed development will be encouraged.

Several transit routes currently operate in the vicinity of the proposed development (Route 1, 2, 3, and 5 along 2nd Ave, and Route 4 along 4th Ave). The availability of these routes in such close proximity to the proposed development is expected to encourage transit use, minimize parking requirements and reduce vehicle use.

Example of a shared street

4.1.3 CONCLUSION

At full build out of the proposed development, all intersections still operate with a significant amount of remaining capacity and minimal delays. No roadway improvements would be required at the study intersections upon full build-out of the proposed development.

With an increase in pedestrian traffic along 5th Avenue, potential measures that can be implemented to maintain pedestrian safety includes:

- A sidewalk along the west side of 5th Avenue to provide access to the development and also to provide safer pedestrian access to the escarpment trail at the end of Hawkins Street.
- Curb extensions / "bulb outs" can be used to widen the sidewalk at intersections and pedestrian crossings to reduce the crossing distance for pedestrians, increase their visibility to approaching vehicles, and narrow the vehicular travel lanes to encourage slower speeds.
- Speed humps and other potential traffic calming measures can be placed on the road to ensure vehicle travel speeds are reduced.
- A "shared streets" approach (where all road users are equally accommodated) can be applied to all streets to calm traffic and provide a more welcoming environment for pedestrians.

Roundabout
Signalized Intersection
Unsignalized Intersection
Study Intersections

Proposed Development

1 Development Exit
2 Development Entrance
Access Locations

4.2
PUBLIC INFRASTRUCTURE / SERVICING

4.2.1 WATER, SEWER, STORM

Water, sewer and storm services can be extended from the mains along 5th Avenue. These utilities can be conveniently located underneath the internal street in the middle of the site, where they can service developments on both sides. Fire hydrants should be strategically located during detailed design to provide ease of connection for firefighting, given the high density of the site.

Storm water will be largely managed on site, with a combination of infiltration areas, permeable planting, and bio-retention. Any overflow will be directed to the storm system along 5th Avenue.

Utilities must be design and constructed in accordance with the City of Whitehorse's *Servicing Standards Manual.* This proposed servicing strategy is acceptable to the City of Whitehorse and was reviewed with the Engineering Services Department.

4.2.2 ELECTRICAL & COMMUNICATIONS

ATCO Electric Yukon's main downtown feeder currently runs overhead along the back of the site, and 3 smaller feeds run overhead across the site. These will need to be relocated prior to development occurring; this work can occur in phases as needed to suit development. Northwestel's communications infrastructure is also along these overhead poles and would be moved underground at the same time.

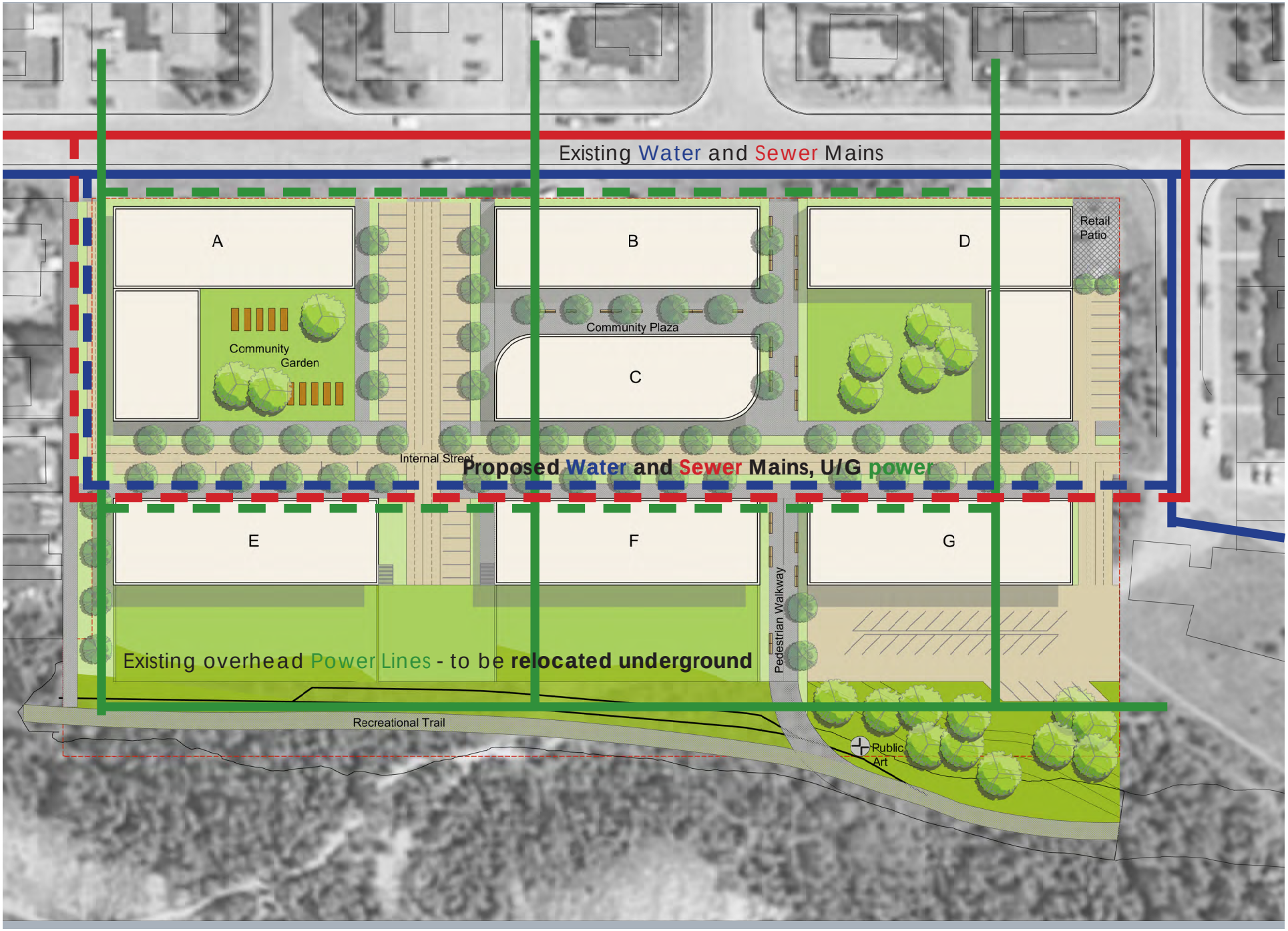
ATCO has developed a conceptual plan and ballpark estimate for electrical servicing for the site. This includes relocation of the overhead feeder lines underground and installation of underground lines for the development. ATCO requires a minimum of one year to complete the work. Electrical and communications infrastructure can be provided by underground services (as is done in all new development in the City of Whitehorse) located along 5th Avenue and along the internal street. Street lighting along 5th Avenue can be fed from the underground services. ATCO has confirmed that this proposed servicing strategy is acceptable.

4.2.3 ROADWAYS AND PATHS

The City of Whitehorse has indicated that they anticipate redevelopment of 5th Avenue in a similar manner to 6th Avenue, with curb bulbouts and other pedestrian-friendly traffic calming measures. For the internal street, the City expressed a preference to see more elements of a "shared street" integrated in the final design. All roadways and paths will need to be designed and constructed to the standards of the City of Whitehorse's *Servicing Standards Manual.*

The City of Whitehorse Fire Department was consulted in the preparation of this plan. They indicated that while the National Building Code only requires firefighting access along one side of the building, they prefer to have access around as many sides as is reasonable - especially for parcels with seniors' housing, where rescues from upper floors may be required. The internal street and pedestrian greenways can be designed to help facilitate firefighting / emergency access while still maintaining the desired "look and feel". Emergency access to the rear of parcels "E" and "F" will be through a ramp to the top of parking cap on the north side of the site, which can be incorporated with the trail connection at this point.

Two entrances and exits are provided to reduce the amount of distance traveled across the site. As well, the entrance along Hoge Street allows for commercial loading.


Existing Water and Sewer Mains
A
B
C
D
Retail Patio
Community Garden
Community Plaza
Internal Street
Proposed Water and Sewer Mains, U/G power
E
F
G
Pedestrian Walkway
Existing overhead Power Lines - to be relocated underground
Recreational Trail
Public Art

4.3
SUSTAINABILITY STRATEGIES

The 5th and Rogers site seeks to exemplify good urban design incorporating pragmatic approaches to sustainability. By its location and planned density alone, the project supports the City of Whitehorse's Sustainability Plan, however, additional site strategies can be used to further sustainability of the development.

4.3.1 ENERGY

While the project site is not large enough to support a district energy system on its own, there are several options that may be feasible at the site which would align with Yukon's Biomass Strategy and the City of Whitehorse's Sustainability Plan to reduce greenhouse gas emissions from buildings within the 5th and Rogers site. In addition to buildings at the project site meeting the City of Whitehorse's ambitious energy performance targets, additional energy savings can be achieved through neighbourhood-scale approaches.

One option that is immediately available at the site is to share energy systems between buildings within the same or adjacent parcels. As parcels at 5th and Rogers can accommodate multiple residential buildings, a biomass heating system could be shared between buildings if they have the same strata or organizational ownership. This would be an opportunity to optimize biomass wood-fuel technology's GHG reduction potential while lowering maintenance and capital costs, and to minimize the regulatory burden associated with operating an energy utility providing services across property lines. This has the added benefit of making the developments district-energy ready, as building heating system would be provided by central air heating with electric baseboard back-up perimeter heat. Should a large district energy system be implemented in the City of Whitehorse in the future, buildings at 5th and Rogers may be connected. Biomass heating systems are becoming common in Yukon and Alaska as well as central and northern British Columbia for schools, hospitals, and commercial buildings, as well as single-detached homes. While its use in multi-family buildings is not yet common, it is expected that Yukon's Biomass Strategy will encourage more similar systems.

A 2013 study completed for Yukon Energy Corporation indicated high feasibility for a wood-fueled biomass system with electricity generation that would connect buildings in the Lewes & Hospital Road areas with the downtown core in Whitehorse. A preliminary design by FVB Energy Inc. showed the extent of the proposed system at roughly 2 blocks from the project site. The development being proposed at 5th and Rogers will likely have a high enough thermal heating load to warrant a connection to this proposed district energy system. Depending on Yukon Energy and the City of Whitehorse's appetite to bring this system to reality, development at 5th and Rogers may one day be connected a district energy system that further supports the sustainability plans for the City. A nearby example of a biomass district energy system can be found in Dawson City, where Phase 1 of a biomass boiler using wood chips currently serves 7 buildings within the city. This system in Dawson City contributes to an annual reduction of 800 tonnes of carbon while saving an estimated $1200/week in heating costs.

Dawson City, YT district heating biomass plant

4.3.2 WATER AND STORMWATER

Water is an important issue for the City of Whitehorse. Aside from reducing water consumption through use of low-flow fixtures within buildings on this site, rainwater may be collected for toilet flushing or irrigation of on-site community gardens and landscaping. Another strategy is to ensure the site has a comprehensive stormwater management strategy. Stormwater flows from impervious surfaces and any runoff from the recreational berm can be graded towards a bioswale or rock pit where infiltration can take place. The bioswale may be located in the center of the site, creating a community amenity feature and enhancing the character of the neighbourhood. Good design guidance for green stormwater systems in the North is provided by the Municipality of Anchorage's *Low Impact Development Design Guidance Manual*.

4.3.3 LOCAL FOOD PRODUCTION

To support a sense of community, shared garden plots may be centralized or spread out through the site. Although the growing season is short in Whitehorse, community gardens provide a focal point around which neighbourly relationships can be built through a shared interest in healthy, locally grown foods. Details on what this could look like can be found in Yukon Government's *Local Food Strategy 2016-2021*.

Example of bioswale integrated in boulevard space

Whitehorse downtown community garden

Green roof in Dawson City, YT

Permeable planting in Yellowknife, NT

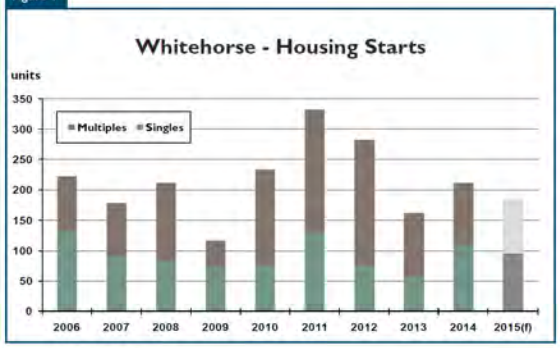
4.4
MARKET ANALYSIS

The market analysis has synthesized the best available housing and economic development information from the Downtown South Master Plan, statistics from the Northern Housing Report (CMHC), the City of Whitehorse Downtown Development Incentives Assessment, the 2015-2025 Housing Action Plan For Yukon, the Yukon Real Estate Survey—Yukon Bureau of Statistics, and the Yukon Economic Outlook, which was prepared by the Yukon Government Department of Economic Development, interviews of local real estate professionals, and a survey of the local Multiple Listing Service database.

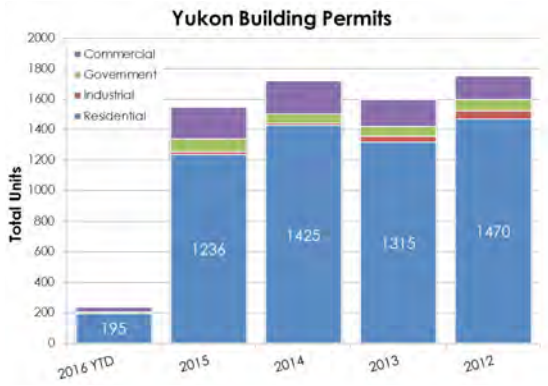
4.4.1 HOUSING

While the outlook for the Canadian housing sector is one of general stability, there are global and domestic risks to consider that could result in added pressure on housing markets, supply imbalances and the ability of households to service their debt (CMHC, 2016). For Whitehorse, the recent recession and low commodity prices related to resource extraction have made significant impacts on the local housing market. The decline in annual residential transactions since 2013, a decline in home pricing, and a slowdown in housing starts from the year prior provide a case that the Whitehorse housing market is in the contraction stage of the real estate cycle.

Figure 1

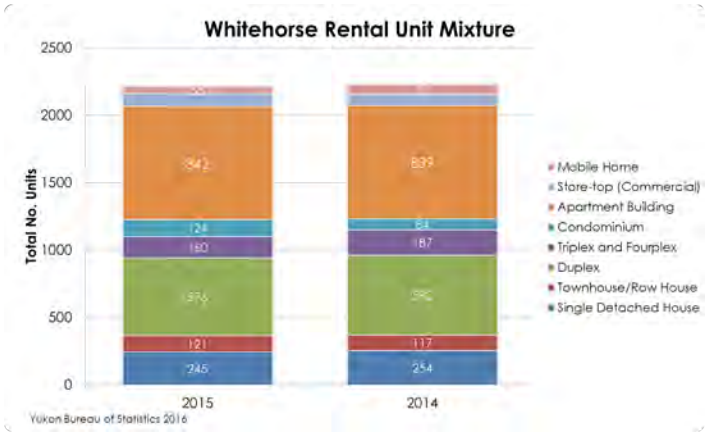


Source: CMHC, CMHC Forecast (f)



This is more evident by the number of building permits for the entire Yukon Territory. The Yukon Bureau of Statistics reports that as of April 2016 a total number of 238 building permits were issued, of which 195 are attributed to new housing starts. If the pace continues, 2016 could be the worst year for housing starts since 2006. This is also evidenced in the very low number of real estate transactions recorded since the beginning of the year, with only 53 transactions recorded to-date in 2016.

Whitehorse alone has held a steady pace of over 400 residential transactions since 2006. The economic situation in the Yukon is becoming more pronounced in the 2016 statistics, and without the pace of sales increasing—Whitehorse is expected to have its worst year in real estate since the Yukon Bureau of Statistics and the CMHC Forecast started gathering this information in 2006.



The May 2016 Yukon Economic Outlook published by the Yukon Government Department of Economic Development provides a brighter forecast for 2016 and 2017:

- The forecast for real GDP in 2016 is for growth of 2.8%. Growth in 2016 is primarily related to an expected increase in mineral production at the Minto mine with the beginning of stripping of the Minto North pit.
- Modest population growth is expected, with gains of 0.7% in 2016.
- The number of employed and the size of the labour force are both expected to increase slightly to 19,500 and 20,900, respectively. The unemployment rate in 2016 is expected to rise to 6.6%.
- Retail sales are expected to post modest growth in 2016.
- Early indications are that 2016 will be a positive year for Yukon tourism.
- Building permit value is expected to be up slightly from the 2015 level.
- Following deflation in 2015, the Whitehorse CPI is expected to grow by 2.0% in 2016.

For 2017:

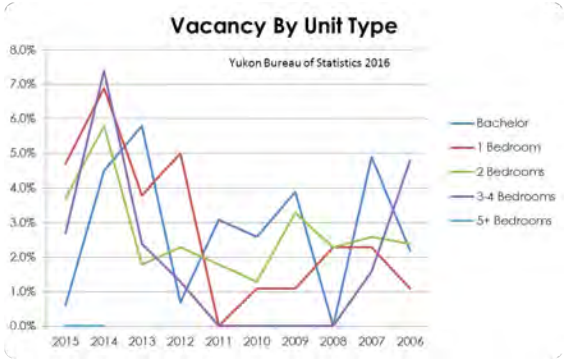
- Early expectations for 2017 are for Yukon's real GDP to fall by 5.7%. Lower year-over-year mineral production, associated with the expected shutdown of the Minto mine, is the primary contributor to the contraction.
- Population growth of 0.3%.
- Employment and the labour force are expected to post modest gains, with employment increasing to over 19,600 and the labour force increasing to almost 21,000. The unemployment rate in 2017 is expected to fall slightly to 6.3%.
- Retail sales are expected to grow to over $700 million.
- A modest increase in building permit value is expected, growing to about $125 million.
- Growth in the Whitehorse CPI is expected to be just under 2.0%.

2016 will be an important year for Whitehorse and the Yukon Territory as a whole. Continued stagnation in the number of real estate transactions and building permit activity could indicate tougher housing times over the next several years. Making up lost ground during the second half of 2016 could indicate a stable market, and the slowdown previously discussed in the indicators could be attributable to the lack of supply in the marketplace or another anomaly. Notwithstanding, the numbers are low based on historical trends, and as far as responsible development is concerned, it's a high risk environment based on the most recent data and the lack of real estate transactions in the marketplace.

As was mentioned previously, housing stock is important to examine, to see if the there is a gap in supply and demand that can be attributed to low real estate sales in the marketplace for 2016. A recent MLS search produced 16 active single-detached, apartment, triplex, townhouse, and four-plex listings, which range in value from $235,000 to $779,000, and have an average list price of $407,000. At the current rate of sales in Whitehorse for 2016, the marketplace has less than a three month supply of finished inventory (existing and new). Housing markets are generally defined as balanced with a six-month supply of inventory, which indicates that Whitehorse is undersupplied with finished inventory for sale.

The supply of rental housing in Whitehorse is a strong contributor to the overall health of the housing market. The above chart indicates the rental housing stock in Whitehorse, and the mixture between single-detached housing, townhomes, duplexes, triplexes and four-plexes, condominiums, apartments, store-top commercial housing, and mobile homes. In total, there are 2,218 rental units in the marketplace.

The Whitehorse rental market is primarily dominated by apartment units and duplexes. Overall, with the data provided by the Yukon Bureau of Statistics, the blended overall vacancy in the rental mix at 3.4% is a strong indication that the rental market is healthy. Markets are considered healthy when the vacancy is less than five percent. As is evidenced in the above graph, the vacancy rate for all rental units from 2006



to 2013 trended between 1.3% and 3.1%. In 2014 the vacancy spiked to an all-time high of 6.4%, and has moderated back to a current rate of 3.4%.

Vacancy by category was trended from data collected on Whitehorse's largest contributor, apartments, and was segregated by specific unit type within the multifamily category (bachelor units, 1-bedroom units, 2-bedroom units, 3-4 bedroom units, and 5+ bedrooms) to look for noticeable supply and demand trends.

Historically, almost every unit type since 2006 has experienced a time where there was no vacancy. While individual unit type vacancies rose in 2013 and 2014 to levels between 5 and 7.5%, they have since declined to levels that are considered very healthy. Some would opine that continued vacancy that fluctuates between 0 and 5% is an indication of undersupply, and that the market could use more multi-family housing stock. Continued rent growth is another consideration to gauge the overall health of the multi-family sector before making a conclusion.

The data collected from the Yukon Bureau of Statistics indicates a strong rent growth since 2009, even during a time when vacancy was high during 2013 and 2014. This is another indication that the market is healthy and that a lack of supply will continue to drive rents upward until other options are developed in the marketplace. The median rent for all unit types in the marketplace is reported as $1,000 per month. The minimum rent in the marketplace represents a $750 bachelor unit.

From review of the available housing information it is challenging to separate the market rental units from the subsidized units owned by the Yukon Government. Additionally, we investigated the senior housing market, and little information is available that tracks this demographic in the marketplace. The only piece of statistical information we could locate is through the permitting process, and the data indicates that only limited number of permits were issued in the last five-years. We conducted numerous interviews with local members of the real estate community and the following items were noted concerning senior housing from Mary Cameron and the Yukon Housing Corporation:

> *The Yukon Housing Corporation develops and operates senior social housing as a key emphasis to their program. There are approximately 241 senior housing units in Whitehorse. The seniors that have fixed-incomes fall into the social housing category. The demand for new units is high, and the current vacancy rate is zero percent. In fact, there is currently a wait list of 30 people to be welcomed into a project. The turnover rate is very low, but some months can be as high as two people per month. Rental rates for social senior housing can be as low as $32 per month (including utilities based on notice of assessment), but the average range for social senior housing is $400-$600 per month. There have only been 88 new units built in the last two years.*

The Yukon Housing Corporation currently has no capital projects planned in 2016 and 2017 for senior housing. Ms. Cameron noted that there is a strong need for access to the Whitehorse downtown core to have seniors accessible to their friends, the bus system, volunteers, and other forms of transportation. Ms. Cameron noted that while the Yukon Bureau of Statistics rate for seniors is decreasing, most think that an in migration of new families to the Yukon that have brought their senior parents has increased the number of seniors in the area.

Before presenting recommendations on the highest and best use for the 5th and Rogers site, we will discuss further the land supply in the Whitehorse marketplace and the commercial development market as it relates to prospective uses for the site.

4.4.2 COMMERCIAL

Again, quantifying the amount of commercial space in Whitehorse is a challenging assignment, as there has been no historical data tracking by Yukon Government or any other real estate agency that we are aware of (total square feet, vacancy, etc.). As such, we performed numerous interviews with local real estate owners, developers, and mangers to get a pulse on the commercial market. Specifically, Kevin Benson, President at the Hougen Group of Companies, and Denny Kobayashi, President of the NVD Real Estate Division were interviewed at length given their presence in the local marketplace.

The current market vacancy is estimated between 6 to 7%, and market rates are trending downward. Market rates currently trend from $7 to $28 per square foot on a triple net basis ($25 to $36 per square foot on a gross lease basis), and the rates are largely dictated by location and the condition of the space. Mr. Benson noted that rates have effectively dropped by 10-20% over the past couple of years due to an oversupply of space and a decrease in demand. The drop is less evident in the effective lease rate, but is notable in the concessions being offered and once the lease rate is normalized to account for the concessions. Mr. Benson believed that the vacancy rate is climbing and only getting worse in the marketplace, and in the next couple of years he could see the rate reaching nearly 15%. Mr. Benson opined that any development of commercial space that is done by the government or government related agencies will be met with great resistance from the commercial landlords in Whitehorse due to the deteriorating market for commercial lease space.

Data compiled from the Q4 2015 Yukon Real Estate Survey identifies that commercial sales are a small fraction in relation to the rest of the real estate market. The Yukon Bureau of Statistics notes a total of 83 commercial transactions from 2011 to 2015, with transaction volume being relatively stable year-over-year during the five-year recorded time period. Notably, commercial sales volume (total dollars) for 2015 dropped 43% from the volumes in 2014, and the average value per individual transaction dropped in price 51% from 2015 to 2014. The trend for 2016 is not much better, and average permit values are down 81% from 2015.

While the numbers for year-to-date commercial transactions in Whitehorse are bleak, several indications from local appraisers indicated that the service commercial retail market (retailers that provide basic goods to residents) is very good, and the rents for this type of older commercial space typically range between $18 and $25 per square foot.

While the commercial outlook is somewhat uncertain given the lack of information to analyze, there are some certainties that can be discussed. Commercial sales volume (total dollars), average transaction value, and the number of transactions have dropped significantly since 2015. The evidence from the available data and a majority of the interviews in the marketplace suggest that the economic times are having an impact on the commercial sector. The owners of commercial property have suggested an oversupply of commercial space. If economic conditions improve, the commercial market will rebound much slower because of oversupply issues, which means a there is a long road ahead for the commercial sector, possibly three-to-five years before some sense of equilibrium/normalcy is reached.

4.4.3 DEVELOPMENT LAND

The Yukon Government and the City of Whitehorse's development of the Whistle Bend project has been a continued success. 2016 year-to-date, the Yukon Government has reported 53 lot sales in Whistle Bend, with a median lot price of $124,362. Due to limited substitutable options in the marketplace, Whistle Bend continues to have strong absorption.

According to Marlene Jennings from the Yukon Government Land Development Division, Phase 3 of Whistle Bend is ready for construction with the following phasing program:

- Phase A — 29 Townhouses, with services for a continuing care facility. Tendering in spring 2016, construction to commence in summer 2016, with lottery in fall 2016.
- Phase B — Bioswale. Tendering in spring 2016 with construction commencing in summer 2016.
- Phase C — 20 Townhouses, 55 single-family homes, and 4 multi-family units. Tendering in fall 2016, construction to commence in 2016-2017, with lottery in fall 2017.
- Phase D/E — Multi-family units, and 33 commercial lots. Construction to commence in summer 2017, with lottery in fall 2018.
- Yukon Government is initiating design for Phase 4, subject to change due to demand (179 lots/303 units).

In addition to Phase 3 of Whistle Bend, currently there are 52 lots available in Phases 1 & 2, as a combination of single-detached, duplex, and multi-family housing.

Based on Whistle Bend's supply, recent lot sales, and the recent home sale indications presented in the beginning of the report. There is more than three years of supply of shovel-ready available land to be developed. The lottery system and the lack of supply (limited competition) have contributed to lots selling at a fast pace.

The question to answer is: will an introduction of a new product closer to the downtown core be received by consumers with a similar level of desire, and if so, will the introduction cause an oversupply that ultimately results in sending a shockwave through the Whitehorse housing market?

4.4.4 CONCLUSION AND RECOMMENDATIONS

While the Whitehorse real estate market is viewed as being in the contraction stage of the real estate cycle, there are some very positive indications that it could quickly move into the expansion stage of the cycle with economic conditions improving, and some job growth. Adding more housing stock to the existing supply could negatively impact the overall health of the market, and put market situation into further imbalance. The relative size of the Whitehorse housing market will allow for a quick rebound, and with the multi-family market at relative equilibrium (or slightly undersupplied), the opportunity to bring new product to the marketplace is in the near future. Planning and engineering should be completed for any potential housing starts during the contraction stage of the real estate cycle, so that when market conditions improve a shovel-ready project can break ground immediately to meet the needs of the community. It is our opinion that the market could accommodate phased multi-family development on the 5th and Rogers site with an annual addition of 30-40 units based on current and foreseeable market conditions.

Additionally, the information gathered on senior housing provides insight that there is a possible major undersupply of housing to meet this demographic as well. To mitigate development risk, and possibly boost multi-family absorption, it would be prudent to acknowledge a level of senior housing in the phased development of the 5th & Rogers site (10-15 units at a time in addition to the 30-40 units mentioned previously).

Although there is an additional cost of construction for buildings over 4 storeys, with the requirement to move to different types of structures (mass timber, steel, or concrete), the additional density helps

to pay back this additional cost. Indeed, in the meetings held as a part of the City's 2011 planning process for this area, a number of developers indicated that they would only be interested in developing in this area if they would be allowed to go above 4 storeys.

Only a very patient developer that is willing to subsidize their commercial space to obtain lease-up would likely consider commercial development on the 5th and Rogers site. From the information gathered in the report, it is our estimate that the commercial market will lag any type of rebound the residential market makes, and it could be three-to-five years before some sense of equilibrium/normalcy is reached.

The supply and demand of single-family lots was researched, it is clear that Whistle Bend has momentum as an established project, and it will be hard to compete with in such a small market. While Whistle Bend is different in many aspects, and the 5th and Rogers site is maximized by densely configuring housing (vertical multi-family and condominium development), it will be critical to develop a different product with amenities, so that potential buyers evaluate all of the substitutable options in the marketplace before making a housing decision.

The market analysis is an important step in analyzing the highest and best use and what type of housing is developed by the Yukon Government, and also analyzes the appropriate mix of residential, institutional, group homes, and commercial mixed-use development. The building block for what the project should be based on economically starts with the market information gathered. The insight provided gives the City of Whitehorse and the Yukon Government a solid understanding of what the market would suggest for responsible development of the project, and what will be successful.

MARKET REFERENCES

For more in-depth information, the reader is referred to the following:

- Yukon Economic Outlook May, 2016. Department of Economic Development, Yukon Government. http://economics.gov.yk.ca/Files/2016/YukonEconomicOutlook_May2016.pdf
- Northern Housing Report 2015. CMHC. http://www.cmhcschl.gc.ca/odpub/esub/65446/65446_2015_A01.pdf?fr=1456331518178
- Yukon Real Estate Survey. Fourth Quarter 2015. Yukon Bureau of Statistics. http://www.eco.gov.yk.ca/stats/pdf/real_estate_q415.pdf
- Yukon Rent Survey - survey of multi-unit apartment buildings; includes quarterly median rent and vacancy rates by community/subdivision. http://www.eco.gov.yk.ca/stats/stats_princ.html#rent
- Monthly Statistical Review - contains a summary of real estate and rent surveys as well as building permit data. http:// www.eco.gov.yk.ca/stats/monthlyreview.html
- Annual Statistical Review - contains a 10-year historical summary of real estate and rent surveys as well as building permit data. http://www.eco.gov.yk.ca/stats/annualreview.html

6

Implementation

6.1
DISPOSITION OPTIONS

To inform the decision-making process, a Land Residual Analysis was performed for 5th and Rogers, the detailed results of which are available in **Appendix B**. In the provided spreadsheet financial models, a land value indication is extracted by deducting the present value of the concluded costs and entrepreneurial incentive items from the present value of the cash flow that the 5th and Rogers development would generate.

By omitting only the acquisition cost for the land component to the model, we can extract a value indication for the land at the noted cost levels. The land residual model accounts for the holding period of absorbing the existing 6 multi-family parcels under foreseeable market conditions. This methodology is the most precise way of valuing the land.

Assumptions and Inputs

Costs to develop the horizontal infrastructure on the site were determined using a repository of historical Whitehorse construction costs. These were determined as follows:

- Site preparation: $172,000
- Internal streets and services: $2,085,000 (including water, sewer, storm, electrical, comms, asphalt, sidewalks, and streetlighting)
- Geohazard berm: $1,050,000
- Trail & park development: $95,000
- Relocation of ATCO lines: $500,000

As previous instructed, it was assumed that any costs associated with remediation of contamination or relocation of HSS group homes would be funded separately by YG.

To determine the value of the land, records of multi-family land sales going back to 2012 were reviewed. These records indicate an average of $26,000 / developable unit has been paid for multi-family land in Whitehorse. A local developer was also consulted, who noted that they would typically pay $25,000 / unit for land in a multi-family development of this scale.

Other financial inputs are summarized on the attached spreadsheets.

The following parcels were analyzed:

Parcel	Units	Parking	Gross Area (SF)
A	30	19	37,500
B/C	30	19	37,500
D	25 + retail	16 + 3	31,250 + 4,000 retail
E	46	30	57,500
F	56	36	70,000
G	56	36	70,000
Total	243	159	303,750 + 4,000 retail

We have assumed that lots sell over a 10-year period: the land will be developed (in Year 0), then the front 3 parcels sold (over the next 5 years), then the berm and power lines work will be completed (in Year 5), then the rear 3 parcel sold (over the next 5 years). We have assumed that each land parcel will be sold for $26,000/unit allowed to be built on it.

Development Scenarios

We used this model to test two different scenarios:

1) Whole parcel is given to a private developer, who then develops the land

The costs estimated for completion of the development indicate that the development venture under a market development scenario is not considered feasible. By the time enough profit is added to the equation to entice a developer to build and hold the project for 10-years during the sellout, there is a negative land residual - this indicates that the increased cost associated with the site (berm, power lines) makes the development of the site non-feasible for a private developer.

2) Yukon Government develops land and then sells individual parcels to private builders (similar scenario to Whistle Bend)

This alternative model suggests that if the Yukon Government were to incur the same cost of development (without expecting a profit and incurring minimal expense during the sellout of the

6.2
NEXT STEPS

project), that a feasible development project under the cost estimated is possible. A positive land residual occurs in this scenario.

The difference between these two scenarios is due to the fact that developers would need to make a profit as well as recover their holding costs. In addition, transaction costs are higher for a private developer.

Recommendations

Based on the outcomes of this analysis, we recommend the following for disposition, given that Scenario 2 shows that this development is cost-recoverable under the inputs and assumptions:

- **Structure:** 6 fee simple lots (per phasing plan), with internal street as right-of-way, park on southwest side is set aside as Public Use Land (PULD) upon subdivision
- **Method:** Request for Proposals (RFP)
- **Infrastructure development:** Yukon Government improves the land with key infrastructure (internal street, water & sewer main, electrical) prior to disposition

After feedback on this draft Master Plan is received from the Steering Committee, we will integrate the comments and issue a Final Master Plan.

The City of Whitehorse has noted that they would like to refine the zoning for this area once a preferred land disposition plan is selected.

It is recommended that a set of Design Guidelines be developed for 5th and Rogers to guide the development of buildings on the site.

As this is a relatively untested type of development in Whitehorse, it may be worthwhile for Yukon Government to issue an Expression of Interest in the short-term to determine what potential developers may be interested in the site, and how they would prefer to see the land disposed of.

5th + Rogers (Block 338)

Master Plan

Stantec