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**SKI STADIUM FUNCTIONAL PLANNING**  
**FINAL REPORT**  
**WHITEHORSE NORDIC CENTRE**  
SITE DEVELOPMENT FUNCTIONAL PLAN CONCEPTS



**whitehorse**  
**Nordic Centre**

**kobayashi+zedda**

August 2024



## EXECUTIVE SUMMARY

The Whitehorse Nordic Centre (WNC) has experienced significant growth, particularly over the last 5 years, and is feeling the effects of increased usage, additional need for space and resources, and general wear and tear on existing facilities. Though staff have been able to accommodate the increase in membership, it has stretched resources and triggered a desire to review current facilities and plan for future growth.

WNC has been presented with a wide range of development scenarios with the idea that these will be reviewed and used by WNC to chart a path forward in the next five to fifteen years. It is clear that the upgrades noted in Options #1 and #2 will provide necessary improvements to the user experience at the stadium and meet some of the concerns outlined by the City of Whitehorse. The key improvements are listed as follows:

### SHORT TERM UPGRADES (In Order of Implementation Economy & Efficiency)

1. New signage / flag poles and defined entry point welcoming visitors to the site from the Canada Games Centre (CGC) side of the stadium.
2. New landscaping and wood fence to define the edge along CGC parking area and screen existing ski school shipping containers, stored equipment, trailers, etc.
3. Consolidate unheated storage areas in central enlarged fenced compound with both covered and uncovered areas.
4. Renovation of race office building to be used as warm up area for child and adult programming based out of the stadium. To include a barrier-free washroom with water and septic pump-out tanks.
5. New Operations (Pisten Bully) building (250 sq.m.) connected to secure fenced storage yard described in #3 above. Located in area clear of buried storm water main line and near upgraded site entry / signage.
6. Increase width of culvert tunnel under Sumanik Drive from 6m to 12m to better accommodate race events.

### LONG TERM UPGRADES (In Order of Implementation Economy & Efficiency)

1. Develop new WNC Ski Chalet (750 sq.m.) (relocate from Mt. McIntyre Recreation Centre), New Operations (Pisten Bully) building (300 sq.m.) connected to secure fenced storage yard described in #3 above and located at Dog Lot Parking area. Connected with this is the relocation of ski school and waxing containers from current location next to CGC parking area to new consolidated location at Dog Trail parking lot. Existing Dog Trail parking area to be expanded to maximize usable site area in partnership with Kwanlin Dun First Nation (KDFN). The Stadium is expanded on the south side of Sumanik Drive by 100m and connected to the existing Stadium with two tunnels.

In this development scenario (represented by Option #4B), Sumanik Drive remains intact. However, a new 12m wide tunnel under the road is constructed and the existing tunnel is expanded from 6m to 12m in width to better connect the existing (north) stadium area to new facilities and expanded (south) stadium

area, accommodate race events, and provide easier in/out access to/from the existing stadium. This scenario includes the visual improvement noted in Option #1 (landscaping, signage, fencing) but it also proposes to expand the length of the CGC parking area by approximately 40m (90 additional parking stalls) by taking a portion of the existing stadium (north end) and dedicating it to much needed CGC parking. KDFN's Mt. McIntyre subdivision is better integrated with the new WNC facilities providing easier access for citizens.

New water, sanitary, and electrical infrastructure is provided to the site to service the new buildings and accommodate the needs of snow making equipment.

2. Develop new WNC Ski Chalet (750 sq.m.) (relocate from Mt. McIntyre Recreation Centre), New Operations (Pisten Bully) building (300 sq.m.) connected to secure fenced storage yard described in #3 above and located at Dog Lot Parking area. Connected to this is the relocation of Ski S'cool and waxing containers from current location next to CGC parking area to new consolidated location at Dog Trail parking lot. Existing parking area to be expanded to maximize usable site area in partnership with KDFN.

In this development scenario (represented by Option #4), Sumanik Drive is relocated to make way for an expanded stadium (approximately 40m longer). The existing tunnel is no longer required to connect existing stadium area to the new facilities. This scenario includes the visual improvements noted in Option #1 (landscaping, signage, fencing) but it also proposes to expand the length of the CGC parking area by approximately 40m (90 additional parking stalls) by taking a portion of the existing stadium (north end) and dedicating it to much needed CGC parking. KDFN's Mt. McIntyre subdivision is better integrated with the new WNC facilities providing easier access for citizens.

New water, sanitary, and electrical infrastructure would be provided to the site to service the new buildings and accommodate the needs of snow making equipment.

## DEVELOPMENT OPTION RECOMMENDATIONS

KZA recommends that WNC begin with the implementation of Option #1 in the short term (next 5 years) and work toward Option #4B in the long term (5 years and beyond). Development Option #1 provides a relatively low cost upgrade with significant visual and practical improvements to meet current needs at the Stadium without committing significant capital resources (+/- \$700,000) to new buildings or infrastructure. If the development timeline is delayed beyond 5 years, WNC may consider implementing the improvements noted in Option #2 but reconsider the location of the new Operations / Pisten Bully building from the originally proposed stadium area to the Dog Trail parking area with the idea that it would be the first phase of the implementation of Option #4B. It is important to note that the replacement of the Operations / Pisten Bully building is an urgent priority for WNC.

Development Option #4B takes a practical long-term view to the future consolidation of WNC facilities and equipment to better serve the growing needs of members without relocating Sumanik Drive or significantly altering the current stadium area or use. It provides a reasonable path forward that will likely garner broader support from the community and stakeholders.

The consolidation of buildings, storage, operations, and resources is one of the main goals of the functional planning process to ensure efficient future operations for WNC.

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# 1.0 INTRODUCTION

# 1.0 INTRODUCTION

The Whitehorse Nordic Centre (WNC) has experienced significant growth, particularly over the last 5 years, and is feeling the effects of increased usage, additional need for space and resources, and general wear and tear on existing facilities. Though staff have been able to accommodate the increase in membership, it has stretched resources and triggered a desire to review current facilities and plan for future growth. The report and master plan options prepared by Kobayashi + Zedda Architects (KZA) will help guide WNC in future decision-making processes and capital planning. Other problems also exist. These include the rather disjointed operation of the main chalet in relation to the stadium: skiers who rent equipment or want to use the Chalet (main WNC ski facility) for changing, waxing, and washrooms are faced with a steep hill (or walk down stairs and parking lot) to get to stadium/learning area. There is also an accessibility issue for those using sit ski, younger and more elderly skiers, or those with limited mobility. An expanded stadium and new or improved facilities would be able to accommodate more skiers at peak times and reduce user group conflicts (adult and racing programmes). It would also provide additional space for race courses and training to accommodate those with disabilities.

## 1.1

### PROJECT BACKGROUND

The WNC's ski stadium serves many purposes. It is a main venue for many races and events and is also extensively used for competitive and recreational ski programs. WNC membership has grown considerably (40%) in the past 3 years to well over 2,000 members. New programs, such as adult ski lessons are attracting approximately 300 participants each year. Kids programs have also grown considerably. The growth is putting pressure on the club and specifically on the stadium area. The stadium has become the main meeting point for both child and adult programming. The currently leased premises at the Mount McIntyre centre can no longer accommodate the growing number of participants while still leaving room for drop-in skiers and other related programming.

Equipment inventory has grown, including the purchase of a second grooming machine, new and bigger grooming snowmobiles and snow-making equipment. Current storage needs well exceed the capacity of existing facilities. In order to host invitational, regional and national events and grow sport tourism. WNC must address evolving standards related to racing and timing huts, waxing huts, availability of washroom facilities at the stadium, and water and power needs for snowmaking. Summer use by the City of Whitehorse and other key stakeholders is also a key consideration to be accommodated in the development of site master plan concepts.

Conceptual site development options will provide the framework for the future investments needed for the gradual development of the site.



## KZA DESIGN TEAM

The following design team led by Kobayashi + Zedda Architects (KZA) was retained by WNC to complete all tasks associated with the preparation of site development concepts, budget preparation, and next phase scope definition.

### **Kobayashi + Zedda Architects Ltd.**

Antonio Zedda, Architect AIBC, MNWTAA, Principal

Curtis Renning, Technologist/Designer

Alex Lopez de Leon, Technologist

**Greenwood Engineering Services** – Civil Engineer Adam Greenwood, P.Eng.

**Lees & Associates** – Landscape Architect Heidi Redman, CSLA

## WNC OWNER TEAM

WNC identified the following stakeholders which were contacted by KZA through interviews, site visits, a review of existing facilities, and working sessions:

Jean Paul Molgat, President WNC

Benjamin Poudou, Manager WNC

Jan Polivka, Operations Manager WNC

## WNC / STAKEHOLDERS / PARTICIPANTS

Claude Chabot, Past Executive Director

David Greer, Member

Grant Abbott, Member

Graham Nishikawa, Sport Coordinator and Head Coach Cross Country Yukon

Brian Horton, Programme Coordinator, Groomer, Race Volunteer

Matthias Purdon, President, Cross Country Yukon

Emily Jones, Member

Emilie Stewart Jones, Member

Jim Gilpin, Member

Alain Masson, Former Sport Coordinator and Head Coach, CCY

Landon Kulych, Manager, Recreation & Facility Services, City of Whitehorse

Daniel Beaudoin, Heritage & Land Resources, KDFN

## 2.0 PROJECT OBJECTIVES & TASKS

### 2.1 PROJECT OBJECTIVES & TASKS

To prepare conceptual site master plan options for Whitehorse Nordic Centre (WNC) including the following tasks:

- Collect site information, completed past reports, and other relevant drawing data. Confirm servicing infrastructure and nearby capacity to service the needs of site development.
- Consult with WNC, City of Whitehorse, Kwanlin Dun First Nation (KDFN), other key stakeholders, users and community members with a good understanding of day-to-day requirements to help define the functional and spatial requirements to be included in the site master plan options.
- Site visit and visual condition assessments.
- Prepare preliminary site concept and site development options that accommodate buildings, structures, future growth, etc. as identified in consultation with WNC and key stakeholders.
- Confirm preliminary site/building servicing requirements and responsibilities.
- Prepare a high level Class D project budget estimates.
- Finalize functional plan site options with a summary of each along with high level Class D budget to allow WNC to plan for future phased growth.

### KEY WHITEHORSE NORDIC CENTRE FACTS

#### 2.2

- Whitehorse Cross Country Ski Club (now the Whitehorse Nordic Centre) was founded in 1981
- Mission: "To operate facilities and hold events for the enjoyment of recreational and competitive cross-country skiing"
- Operate and maintain 95 km of groomed trails in heart of Whitehorse
- 40% increase in membership from 2020 to 2023 (+/-2,300 members)
- Trails accessible from 9:00am to 8:00pm for 6 months/year – Used off-season recreationally by cyclists, hikers, and runners.
- Main facilities consist of Ski Chalet in the Mt. McIntyre Recreation Centre, Wax Room, Ski Stadium and 3 warming huts. Ski Stadium and land on which buildings are located is leased from City of Whitehorse (Lots 1174 and 1266). Most of the Mt. McIntyre trail network is on Commissioner's Land: WNC has a separate Occupancy License for that use.
- Structured with a Board of Directors, two full-time and 15 part-time/seasonal staff.
- Hosted National Championships in 2010 and 2016
- Trails homologated for FIS-level racing in 2019

### OVERVIEW OF EXISTING CONDITIONS & KEY STADIUM USERS



## 2.3

## OVERVIEW OF EXISTING CONDITIONS

The existing WNC facilities include 95 km of groomed ski trails, the ski stadium (with a cleared area of roughly 1.35 ha), Pisten Bully Shed (135 sq.m.), Race Office (56 sq.m.), Timing Hut (50 sq.m.), Mt. McIntyre Ski Chalet (690 sq.m.), a grip wax room/shop/lounge area and a stand-alone hot waxing room (both located on the bottom floor of at the Mt. McIntyre Recreation Centre (MMRC) and commonly referred to as the "Chalet", stand-alone Waxing Room (10.3 sq.m.) - located in the Mt. McIntyre Recreation Centre (MMRC), and a number of containers, trailers and pieces of uncovered equipment. The Race Office and Jack Rabbit buildings are also part of the existing infrastructure. WNC also shares storage space with the City of Whitehorse in a storage building located adjacent the MMRC. Parking is predominantly located adjacent the MMRC but also includes a large parking area adjacent the Canada Games Centre, and what is commonly called the Dog Parking Lot located south of the Ski Stadium and accessed via Hamilton Boulevard. Snow making equipment is located on the eastern edge of the Ski Stadium and used to make snow early in the season in the stadium area.

A 450mm buried storm main right of way (running north-south) exists to the north of the Race Office and Jack Rabbit buildings and needs to remain clear of any future buildings or infrastructure. Buried and overhead electrical conduits / power lines serve existing light poles. The Ski Stadium dates to the 1970's and originally encompassed the site of the current CGC. It was constructed to accommodate sprint races and mass starts and finishes. It was relocated in 2005 in preparation for the Canada Winter Games in 2007. It is heavily used during the winter months with limited use by the City of Whitehorse, the public, and various user groups during the remainder of the year.

WNC owns all structures on the site, including the shipping containers (from 2010 Vancouver Olympics), the Race Office, Timing Hut, Jack Rabbit hut and various storage sheds. Access to shipping containers, race office, storage and timing booths to Cross Country Yukon (CCY) are provided as part of a lease.

WNC has managed to accommodate the significant growth, host national competitions, and expand its range of services and offerings to its membership. However, the organization realizes that planning is critical to the ongoing success of WNC to address a number of current issues. Below are a number of comments and concerns raised by stakeholders, staff, and members:

- **Insufficiently sized Ski Stadium.** In order to host invitational, regional and national events, the WNC must address evolving standards related to course size, racing and timing huts, waxing huts, availability of washroom facilities at the stadium, and water and power needs for snowmaking.
- **Width of ski tunnel passing under Sumanik Drive** (steel culvert) and connecting Ski Stadium to ski trails is insufficient for certain race events and overall site is becoming constrained.
- **Lack of warm-up and washroom facilities** for the kid's and adult ski training programmes which now operate out of the Ski Stadium. A lack of waxing facilities at stadium has been identified as a concern by stakeholders.
- **Insufficient operating and storage space for grooming equipment** in current equipment (pisten bully) garage. No plumbing or washrooms included in existing shed. Lack of storage and operational space for two Pisten Bully 100 machines.
- **No plumbing or washrooms included in existing grooming shed:** Lack of storage and operational space is one of the greatest constraints for WNC (2x PB 100 storage). Stadium is an ideal location for all storage and operations.

- **Lack of connectivity between the Ski Stadium and the Canada Games Centre / CGC parking area.** No real welcoming “entrance to stadium” from parking area. City of Whitehorse would like to see a more welcoming and landscaped edge between the Ski Stadium and the parking area and more opportunities to use the stadium during the non-ski season. Past reports have considered options for recreational use (Mount McIntyre Stadium – Summer Use Options Study, 2021).
- **Lacking a more meaningful connection with Kwanlin Dun First Nation** (as the key neighbour and landowner to the south of the Ski Stadium and Dog parking Lot). A desire by WNC to also better incorporate reconciliation in future planning and growth and create more opportunities for involvement and participation by KDFN.
- **A lack of onsite services (water and sanitary) infrastructure which makes the production of snow and support of ski program/lesson participants \ (washrooms) difficult.**
- **Resources and access points to WNC are spread apart making it more difficult to serve customer needs.** For example, members access the WNC site from three main locations: Ski Stadium via CGC parking area, Mt. McIntyre ski chalet (accessed from the upper Mt. McIntyre parking area via Sumanik Drive), and the Dog Parking Lot area (located south of the Ski Stadium and accessed via Hamilton Boulevard).
- Overall, the currently spread out nature of WNC facilities, equipment storage, and limited growth opportunities associated with the Mt. McIntyre Recreation facility make it more difficult to operate as membership grows. **Consolidation of buildings, storage, operations, and resources should be one of the goals of the functional plan concept options process to ensure future efficient operations.**

The WNC Ski Stadium, constructed for the Canada Winter Games in 2007, has hosted a number of national competition events (Haywood National Championships, for example in 2010). At the same time, the ski club received funding to purchase grooming and timing equipment.

The site is a relatively flat area of approximately 2.0 ha and bordered by Sumanik Drive to the south, CGC parking area to the North, Hamilton Boulevard to the east and WNC trails to the west. The Ski Stadium is accessed from four general directions:

- The CGC parking area to the north
- A large culvert tunnel that connects the stadium to Dog and other trails.
- An adventure trail that parallels Hamilton Boulevard and follows a mature stretch of trees to the east of the stadium that act as a natural buffer between Hamilton Boulevard, multi-use trail, and stadium.
- A ski trail that connects the stadium to the Chalet and upper trails to the west.

The terrain includes two constructed berms (“flagpole hill” and “play hill”) at the north and south ends of the stadium. A “sprint ramp” bench-cut ski trail crosses the slope above the flat stadium area and a “finish chute” is below the sprint ramp and accross from the Timing Hut. The stadium also includes bumps and roller features along the edges.

A number of “non-permanent” structures are located on the site all of which are owned by WNC and vary in condition. These include a Timing Hut located at the end of the finish chute, a Race Office building (located near the north entry to the site), sea cans, and a collection of covered and uncovered storage areas.

Refer to the following images of existing facilities:

1. View of Ski Stadium (looking South)



2. Interior of View Operations Building & Equipment Storage





3. Timing Hut



4. Race Officials Building





5. Ski Chalet (Mt. McIntyre Recreation Centre)



6. Existing Storage Snow Making Equipment at Ski Stadium





7. View of Ski Stadium from Canada Games Centre Parking Area



8. View of Race Officials Hut, Jack Rabbit Hut, Trailers, Equipment, & General Storage





9. Ski S'cool Storage and Wax Containers



10. PB 100 Grooming Equipment & Storage Shed



## 3.0 CURRENT STADIUM USES

### 3.1 WHITEHORSE NORDIC CENTRE - FALL/WINTER

The WNC's lease with the City of Whitehorse requires that the stadium and trails are shared use areas for the City and the WNC. WNC manages and grooms the ski stadium during the winter season and Cross Country Yukon (CCY), the sport governing body for cross country skiing, makes artificial snow in early winter with a portable generator using City water. WNC's Bunny and Jackrabbit programs and Ski School programs (most under 12 year old) and adult programmes now operate out of the Stadium area for skill development and games.

High performance skiing is largely under the CCY umbrella while WNC's operating mandate is both competitive and recreational. While the ski stadium had traditionally been used mainly for racing and high level training, the ski stadium has taken a more central place in the WNC's short and long-term planning. COVID-19 caused the Ski S'cool programme to move from the wax room to the stadium in order to limit congestion. This move turned out to be very successful. Hence the discussion around possibly insulating and reconfiguring the existing containers to improve their function on site. The Stadium has also become a key location for major events like the WNC's yearly Nordic Festival and for hosting sport tourism events like the 2025 Yukon Ski Marathon.

### 3.2

### CROSS COUNTRY YUKON - FALL/WINTER

Cross Country Yukon (CCY) is the sport governing body for cross-country skiing in Yukon and is associated with Nordiq Canada (the national governing body). The organization operates the Yukon Ski Team and the Squad Program and uses the ski stadium during the winter and shoulder season.

The stadium's large, flat area is well suited to games and technique drills, and the flat area, finish chute, ramp and berms combine to make an ideal short race route. WNC upgraded the stadium and shaped features to better train young skiers for balance and agility and provide a more entertaining course.

Younger Squad Programs are now starting and ending their practices at the stadium, instead of the wax room. Coaches and parents prefer the efficiency of this arrangement and WNC members appreciate the reduced traffic around the wax room in the early evening.

Squad Program training during the shoulder seasons operates out of the stadium. Running alternates with roller ski practice and is typically set up in the south end of the CGC parking lot next to the stadium.

CCY utilizes one of the sea cans for equipment storage and occasionally uses the Timing Hut and Race Office. It stores a trailer in the corner of the stadium storage area next to the CGC parking lot. CCY's snow making equipment is stored outside the race office along with other general storage. The snow guns facilitate an earlier start to the ski season and help meet Nordiq Canada requirements for national events. WNC has hosted two national cross-country ski championships and hopes to secure more high level events in the future, particularly with the recent homologation of key trails to International Ski Federation (FIS) standards.



### 3.3 CANADA GAMES CENTRE / CITY OF WHITEHORSE - SPRING/SUMMER

The City of Whitehorse utilizes the ski stadium during the summer months through its Recreation and Facility Services Department and provides recreational camps at the CGC during the summer season. Though not an ideal or maintained play surface, the summer camps access the site regularly as part of camp programs. The site is also utilized by the City for one-off events during the summer.

### 3.4 MOUNTAIN BIKING - SPRING/SUMMER

The focus of mountain biking activity in the Stadium and the surrounding areas and trails is the City's single track trail network interwoven with the WNC's Ski Trails and the Dirt n' Soul mountain bike skills park located upslope and across Sumanik Drive from the stadium. Mountain bike groups use the stadium for skills instruction with larger groups but mostly use the Dog Trail parking lot as their meeting point and more typically ventures onto the single track from there. Contagious Mountain Bike Club (CMBC) does not formally use the stadium and has been busy upgrading the bike park, dirt jumps, and pump track.

### 3.5 VELO NORTH CYCLING CLUB / MOUNTAIN BIKING - SPRING/SUMMER

Velo North hosts the annual "YXY Cross" race in the stadium each autumn. The stadium layout works well for cyclocross, with room for spectators and surrounding terrain features offering a variety of short ascents and descents. Velo North keeps its "fly over" structure with WNC's other storage items at the eastern edge of the stadium.

The mountain bike skills park is located above Sumanik Drive and the ski stadium. Some mountain bike organizations use the stadium for skills instruction but most are interested in the single track opportunities provided among the existing ski trails.

## 4.0 SKI STADIUM ISSUES & CONSTRAINTS

### 4.1 ISSUES & CONSTRAINTS

Though the Ski Stadium has served WNC well over the years, the growth in membership, aging or insufficient infrastructure, and evolving national standards have had an impact on the effectiveness of the stadium. These include the following:

- Insufficiently sized Ski Stadium. In order to host invitational, regional and national events, the WNC must address evolving standards related to course size, racing and timing huts, waxing huts, access to washroom facilities and water and power needs for snowmaking. The width of ski tunnel passing under Sumanik Drive and connecting the Ski Stadium to trails is insufficient for certain race events without having to use/cross Sumanik Drive. The stadium size (length) is too short to comfortably accommodate major/national events.
- Upgrade facilities (timing hut and race office) to better meet major/national race requirements, improve overall efficiency of operations, and accommodate child and adult programming.
- Lack of utilities to the site (electricity, water, and sanitary) to facilitate snow making, other user requirements, and accommodate future building expansion. The closest sewer and water mains are located near Hamilton Boulevard. Existing snow making equipment is serviced from an overland water line extending to the Stadium from the Mt. McIntyre Curling Rink. The water line is subject to freezing when the temperatures dip below -10 Celsius.
- Conflict between overhead power lines used for stadium lighting and snow making equipment, limiting areas able to receive snow and requiring regular shifting of equipment to avoid ice build-up on power lines.
- Consolidation of secure storage requirements that incorporate both covered and uncovered areas on site. Snow making equipment, for example, is stored next to the race office unsecured. Existing Piston Bully and other equipment require adequate storage and service space in expanded or new operations building. Equipment inventory has grown, including the purchase of a second grooming machine, new and bigger grooming snowmobiles and snow-making equipment. Current storage needs well exceed the capacity of existing facilities.
- Lack of sufficient warming area and washrooms for use by staff and members using the ski stadium as a base of operations (child and adult programming). Currently, only a portable toilet stall is available for use in the winter.
- High energy cost to heat shipping containers (used for storage and training) and existing buildings.
- Desire to modify the ski stadium course layout to better accommodate / host race major/national race events.



- Increase width of race tunnel to better connect stadium to existing trails and accommodate race routes connected to the Ski Stadium.
- Better connection between Ski Stadium and CGC parking area (landscaping and signage) and formal / welcoming entry to site. Consider improvements to better use/access site for summer programming where compatible. The existing shipping containers block views to /from the stadium and limit a visual connection between the CGC and stadium. The collection of containers, trailers, equipment, and buildings makes a poor first impression. No real welcoming “entrance to stadium” from parking area. City of Whitehorse would like to see a more welcoming and landscaped edge between the Ski Stadium and the parking area and more opportunities to use the stadium during the non-ski season.
- Lack of sufficient parking for youth programs using stadium after school when CGC parking area is in heavy use during winter months. City has also expressed desire for more parking and is concerned with increased use of stadium as a base of operations and the impact on CGC users.
- Resources and access points to WNC are spread apart making it more difficult to serve customer needs. For example, members access the WNC site from three main locations: Ski Stadium via CGC parking area, Mt. McIntyre ski chalet (accessed from the upper Mt. McIntyre parking area via Sumanik Drive), and the dog parking area (located south of the Ski Stadium and accessed via Hamilton Boulevard).
- The rather disjointed operation of the main chalet in relation to the stadium: skiers who rent equipment or want to use the Chalet for changing, waxing, and washrooms are faced with a steep hill (or walk down stairs and parking lot) to get to stadium/learning area.
- Accessibility issue for those using sit ski, younger and more elderly skiers, or those with limited mobility. An expanded stadium would be able to accommodate more skiers at peak times and reduce user group conflicts (adult and racing programmes). It would also provide additional space for race courses and training to accommodate those with disabilities.
- The race course and finish line do not accommodate spectator viewing.

## 5.0 FUNCTIONAL PLAN DEVELOPMENT OPTIONS

### 5.1 OVERVIEW

The KZA team conducted interviews with WNC staff, stakeholders, and athletes to better understand issues related to the Ski Stadium and WNC in general. The team also completed an onsite review of the stadium site and existing facilities to gain a better understanding of conditions of and issues. Though the scope of work was focused originally on the Ski Stadium area, it became apparent that there was a desire from stakeholders, through the consultation period, to consider a broader perspective. One that encompasses the stadium, Dog Trail parking area, Mt. McIntyre chalet, parking areas, and operation buildings. It was also clear that participants want to "think big", to not limit site development concepts to the stadium area or follow a conventional path toward short and long term solutions. A key stakeholder meeting took place in December 2023 and provided the necessary framework from which the KZA team began to consider development options.

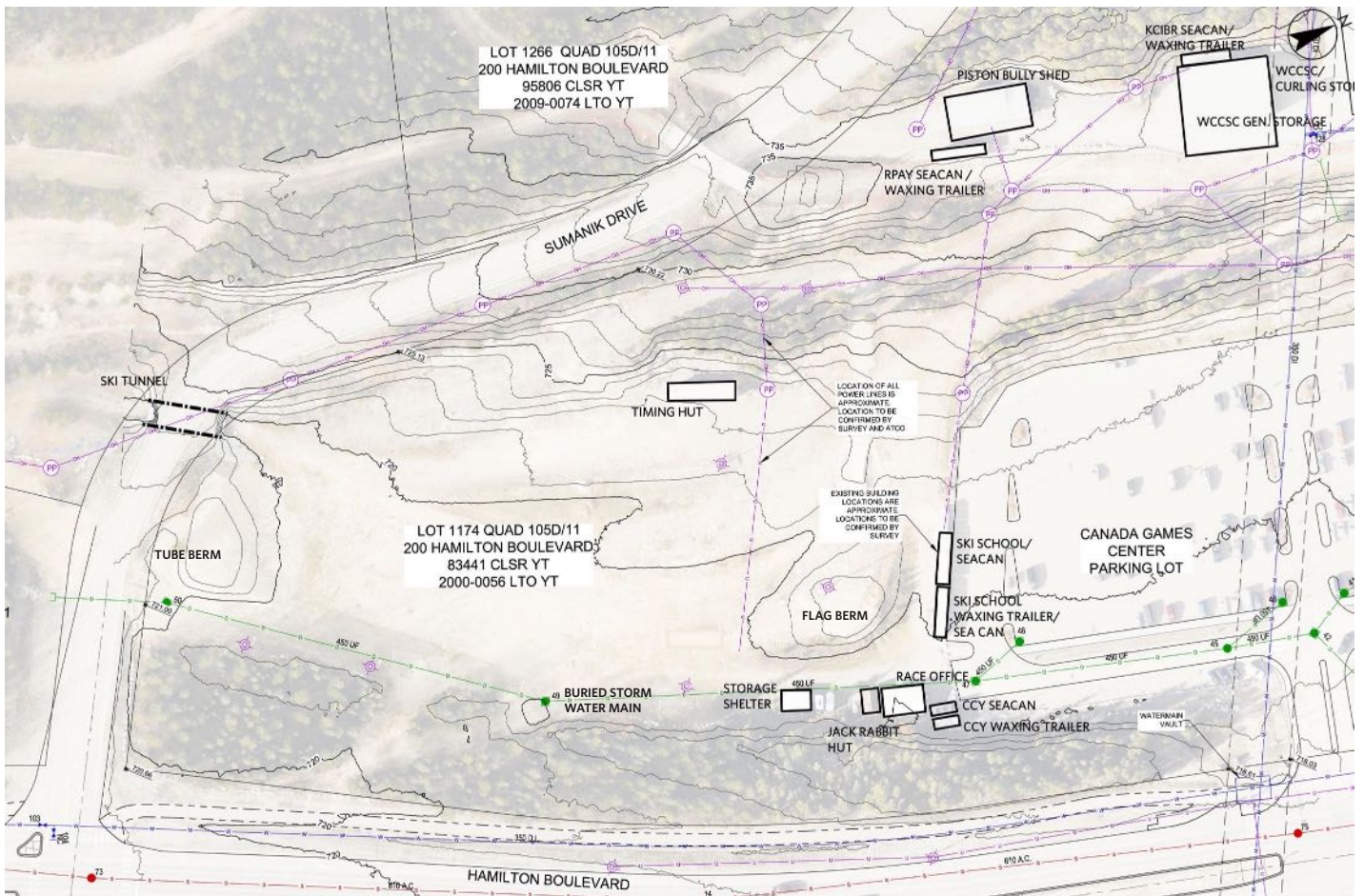
The development concepts were presented to stakeholders and further refined in April 2024. Additional concept variations were prepared and presented in June, 2024. Development options are divided into both short and long term scenarios. "Short term" refers to an implementation plan that takes place within the next 5 to 10 years. "Long term" scenarios encompass a time frame longer than 10 years (10-20 years).

The master plan development concepts are guided by the following principles:

1. **Consolidate buildings**, operations, and storage to enable a more efficient operating model and reflect current and future programming needs.
2. Consider options that expand physical boundaries of the ski stadium (particularly length) to better accommodate race competitions and more closely align with national governing body standards (NordiQ Canada).
3. Consider opportunities for a **Gateway Entry to the site** from CGC parking area and Dog Trail parking area. Include upgrades to better connect stadium to existing trail network (underpass).
4. **Consider site services (water, sanitary, storm, and electricity)** to meet needs of future buildings and site infrastructure (including snow making).
5. **Incorporate reconciliation opportunities with Kwanlin Dun First Nation** to better integrate connection to the Mt. McIntyre subdivision and encourage meaningful participation.
6. **Consider the needs of the City of Whitehorse / CGC** for additional parking, summer use of the stadium, and a more attractive edge / entry to the stadium area.

KZA initially prepared four development concept scenarios for review and consideration by WNC. They are described as follows:





**Figure 1.0** Ski Stadium - Map of Existing Buildings / Conditions

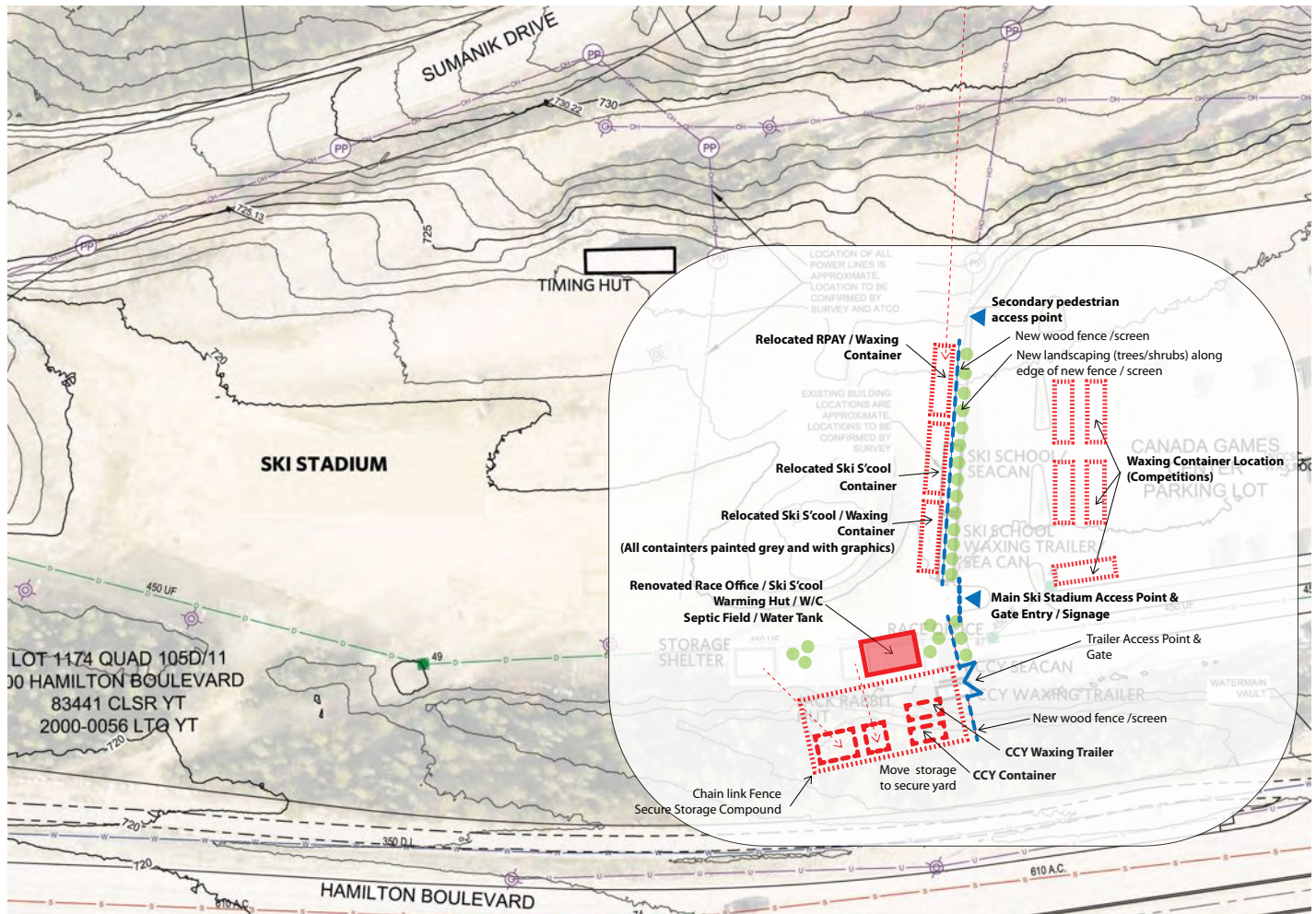
## 5.2

## SITE DEVELOPMENT OPTION #1 - MINOR STADIUM IMPROVEMENTS

Site Development Option #1 proposes limited and modest site upgrades and focuses on a better organized site, provides a welcoming entry / “gateway” to the site from the Canada Games Centre (CGC) parking area, new signage, flag poles, new bike parking, and a landscaped edge between the Ski Stadium and parking area to better screen the existing shipping containers. The option also proposes to renovate the race office building as a Ski School warming hut with washroom and a new secure fenced enclosure to locate equipment that sits unprotected (these include CCY container and waxing trailer, relocated storage structure, snow making equipment, and possibly the Jack Rabbit hut (if it is not removed entirely). Event based waxing trailers are to be accommodated temporarily in the CGC parking lot (during major races) to avoid congestion in the stadium area. Option #1 also proposes to relocate the Recreation and Parks Association Yukon (RPAY) trailer adjacent to the existing Ski School shipping containers. Under this scenario, no new services are recommended due to reduce capital costs. However, the renovation of the race office building would include both a pump out septic and water tank to accommodate two new toilet stalls for use by participants in the various ski

programmes and possibly summer uses (camps, etc.). This option could consider improving the condition of the site to encourage / accommodate additional summer uses (ie. a paved loop for roller skiing, etc. or a better drained and groomed centre area to host City-run summer camps).

**Time Frame:** 0 – 5 years



**Figure 2.0** Ski Stadium - Site Development Option #1

### 5.3

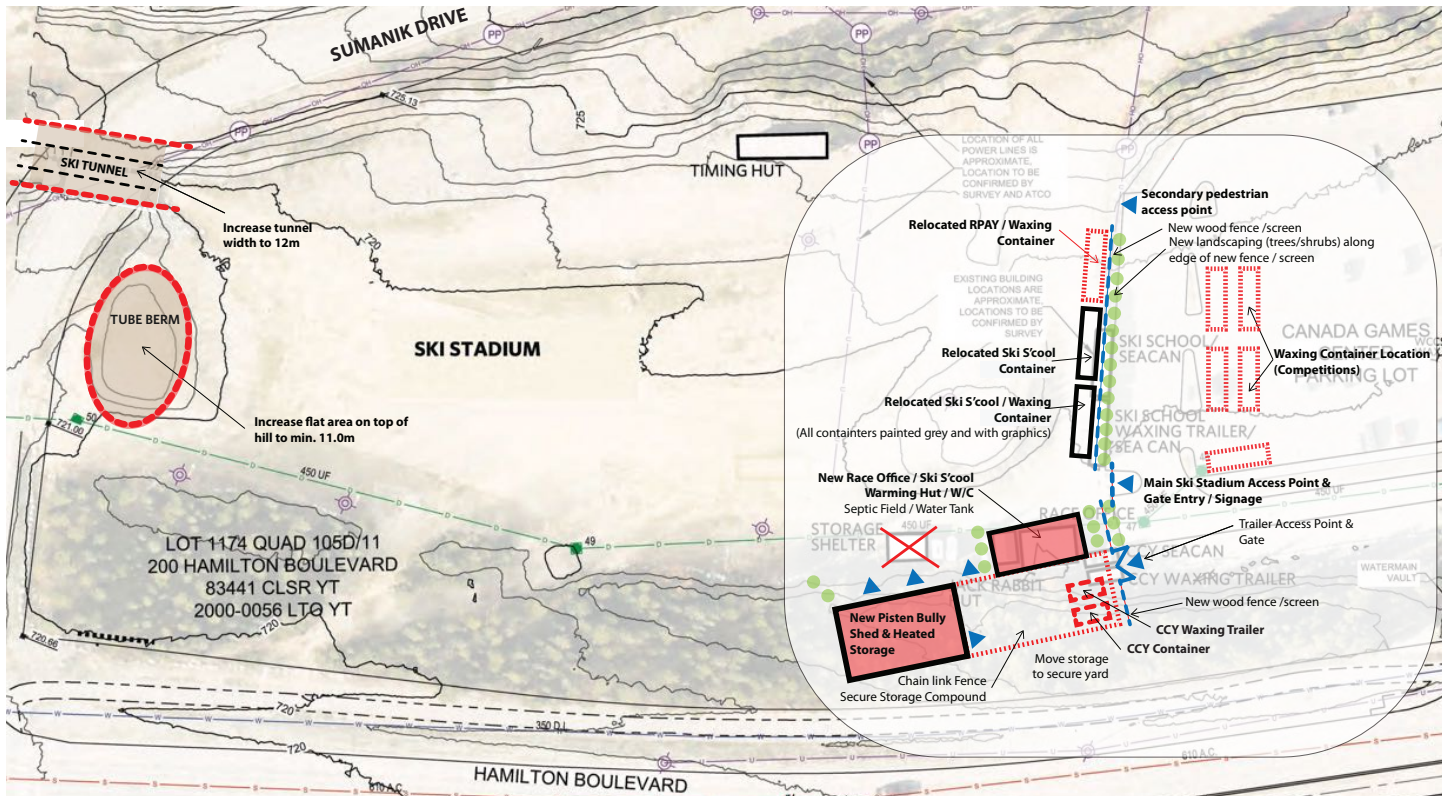
## SITE DEVELOPMENT OPTION #2 - SHORT TERM STADIUM IMPROVEMENTS - NEW PISTEN BULLY SHED, RACE, AND STADIUM IMPROVEMENTS

Development Option #2 includes the improvements outlined in Option #1 plus adding a new (properly sized) equipment / operations facility for the Pisten Bully(s) and other equipment located in the current operations building near the Mt. McIntyre Recreation Centre (and possibly also accommodate equipment stored in the City of Whitehorse warehouse). The option proposes to replace the existing race office building and Jack Rabbit hut with a new Race Office / Ski S'cool warming hut with washroom (and sanitary pump out capacity).



Option #2 also proposes to increase the width of the existing race tunnel to 12m and create a larger flat area atop the hill located at the south end of the stadium to better accommodate racers. Of note in proposing the location of new buildings is the proximity to the existing buried storm water pipe.

**Time Frame:** 0 – 5 years



**Figure 3.0** Ski Stadium - Site Development Option #2

## 5.4

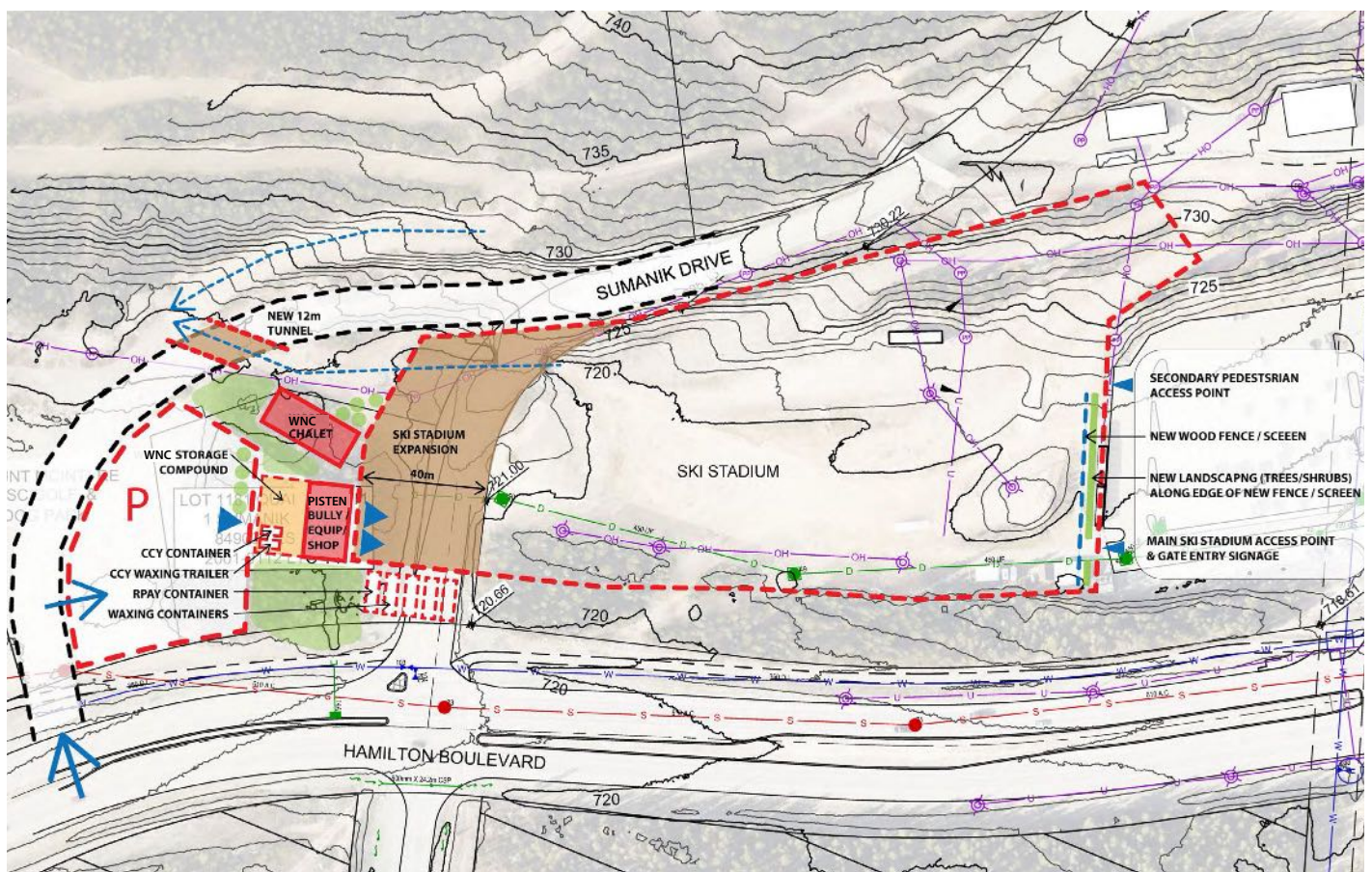
### SITE DEVELOPMENT OPTION #3 - LONG TERM STADIUM IMPROVEMENTS - EXPANDED STADIUM, NEW CONSOLIDATED OPERATIONS (PISTEN BULLY) BUILDING, WNC CHALET & PARKING AREA. SUMANIK DRIVE RELOCATED

Development Option #3 proposes bolder improvements to accommodate the future vision and growth of WNC. Portions of Option #1 are included in the proposed upgrades but limited to fencing, landscaping and entry signage. The option proposes the relocation of all WNC program and support spaces to part of the area currently occupied by the Dog Trail parking area and makes use of the treed area situated between the Dog parking lot and Sumanik Drive. This frees up existing spaces within and near the Mt. Mac Recreation Centre for City of Whitehorse programming needs. The bulk of the upgrades include the lengthening of the Ski Stadium



by approximately 40m (to the south to better meet Nordiq Canada standards) which are roughly 80m wide and 160m long to accommodate most ski events), reconfiguring the Sumanik Drive alignment further to the south (approximately at the same location as the current Dog Trail parking access point), building a new WNC Chalet, new Pisten Bully / Equipment / Storage building, a new 12m wide tunnel, and adjacent users/staff parking area. The new buildings are to be located within the forested area just south of Sumanik Drive, providing a treed setting for both buildings. The new buildings provide direct and easy to access route to trails at grade with parking nearby.

**Time Frame: 10+ years**



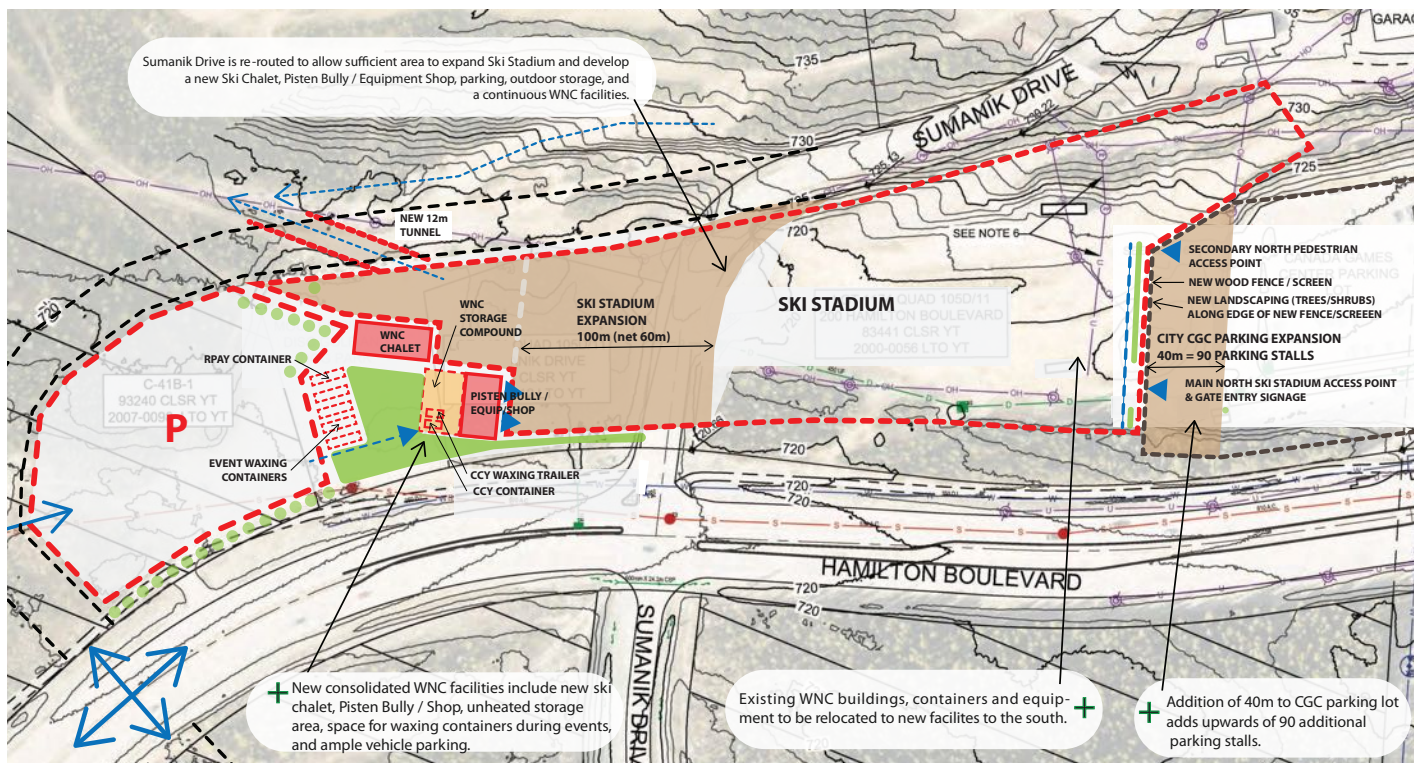
**Figure 4.0** Ski Stadium - Site Development Option #3

## 5.5 SITE DEVELOPMENT OPTION #4 - LONG TERM STADIUM IMPROVEMENTS - EXPANDED STADIUM, NEW CONSOLIDATED OPERATIONS (PISTEN BULLY) BUILDING, WNC CHALET & PARKING AREA. SUMANIK DRIVE RELOCATED.



Development Option #4 proposes more extensive improvements that accommodate the future vision and growth of WNC similar to Option #3 but with the goal of better integrating the KDFN community and lands. Portions of Option #1 are included in the proposed upgrades but are limited to fencing, landscaping and entry signage. Option #4 also proposes to extend the length of the Ski Stadium by approximately 60m overall while adding 40m of length to the existing CGC parking area to accommodate additional vehicle parking. The option proposes the relocation of all WNC program and support spaces to the area currently occupied by the Dog Trail parking area and makes use of the treed area situated between the Dog parking lot and Sumanik Drive. This frees up existing spaces within and near the Mt. Mac Recreation Centre for City use. The upgrades include relocating Sumanik Drive further to the south (and connecting with the KDFN McIntyre Subdivision) to create a new controlled intersection that potentially aligns with the proposed Valleyview South Subdivision, building a new WNC Chalet, new Pisten Bully / Equipment / Storage building, a new 12m wide tunnel, and a large adjacent member/staff parking area. The relocated buildings provide direct access to the trails at grade with parking nearby. The connection of the WNC to KDFN provides an opportunity for inclusion, reconciliation, and partnership.

**Time Frame:** 10+ years



**Figure 5.0** Ski Stadium - Site Development Option #4



After the second stakeholder engagement, a number of valuable comments were received as follows:

1. Consider a long term master plan development option that avoids or reduces the expense of relocation / reconfiguration of Sumanik Drive to achieve the vision and goals included in options #3 and #4.
2. In options #1 & #2, the containers used by teams for waxing during races should be shown located temporarily in the CGC parking area rather than within the stadium as currently shown.
3. The operations / equipment building should be considered one of the first buildings developed (in Phases #3 and #4) and relocated down at the stadium or nearby. It provides for better access to existing trails and easily accommodates all WNC equipment, provides suitable storage and servicing area, and access to water and sanitary servicing.
4. Consider an option that relocates the ski stadium and all related facilities in the existing MMRC parking area to avoid the Sumanik Drive relocation costs. Provides a large, central and level location to place the stadium thereby freeing up space in the current location to accommodate additional CGC parking, provide outdoor recreation areas (tennis and basketball courts, playfields, etc.).
5. Consider an option that relocates the ski stadium to the area currently occupied by the mountain bike skill park above the tennis courts and next to the City of Whitehorse water reservoir the Sumanik Road relocation costs.

The KZA team further modified Option #4 (creating a new #4B) based on review comments from WNC and other stakeholders who felt that one of the options should attempt to retain Sumanik Drive in its current location, build in the area to the south (forested drainage swale) that also includes the Dog Trail parking area. A second 12m wide tunnel would be constructed to allow for easy two way access between the existing stadium and a 60m wide stadium expansion to the south of Sumanik Drive. The rest of the concept remains as per Option #4 and is described below:

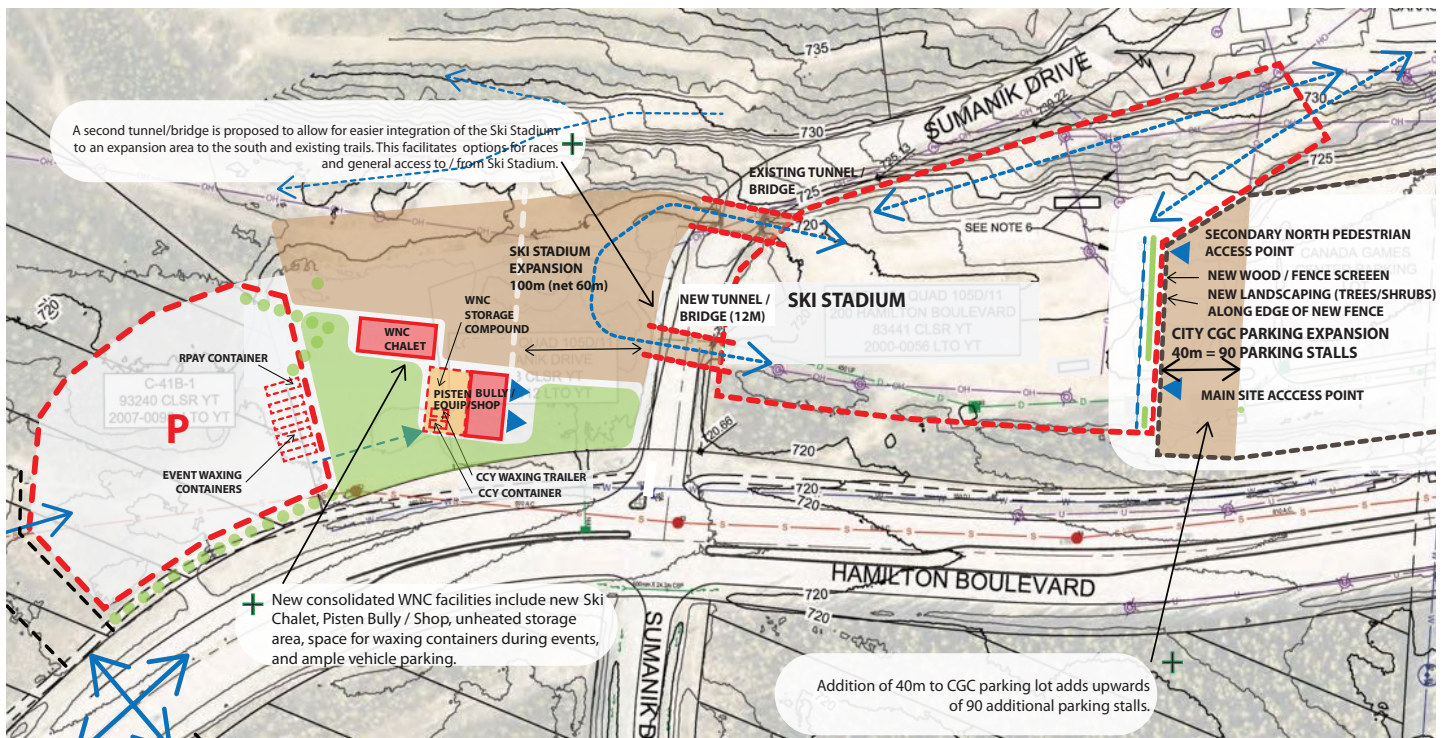
## 5.6 SITE DEVELOPMENT OPTION #4B - LONG TERM STADIUM IMPROVEMENTS - EXPANDED STADIUM, NEW CONSOLIDATED OPERATIONS (PISTEN BULLY) BUILDING, WNC CHALET & PARKING AREA. SUMANIK DRIVE REMAINS IN CURRENT CONFIGURATION

Development Option #4B proposes more extensive improvements that accommodate the future vision and growth of WNC similar to Option #4 but with the goal of better integrating the KDFN community and lands and keeping Sumanik Drive intact in its current location. Portions of Option #1 are included in the proposed upgrades but are limited to fencing, landscaping and entry signage. Option #4B proposes to extend the length of the Ski Stadium by approximately 100m overall while adding 40m of length to the existing CGC parking area to accommodate additional vehicle parking for the City / CGC. The option proposes the relocation of all WNC program and support spaces to

the area currently occupied by the Dog Trail parking area. This frees up existing spaces within and near the Mt. Mac Recreation Centre for City use. The upgrades include building a new WNC Chalet, new Pisten Bully / Equipment / Storage building, two new 12m wide tunnels, and a large adjacent member/staff parking area. The relocated buildings provide direct access to the trails at grade with parking nearby. The connection of the WNC to KDFN provides an opportunity for inclusion, reconciliation, and partnership.

New water, sanitary, and electrical infrastructure is provided to the site to service the new buildings and accommodate the need of snow making equipment.

**Time Frame:** 10+ years



**Figure 6.0** Ski Stadium - Site Development Option #4B

The KZA team also prepared two new options based on the comments received from stakeholders Option #5 (A & B) described as follows:



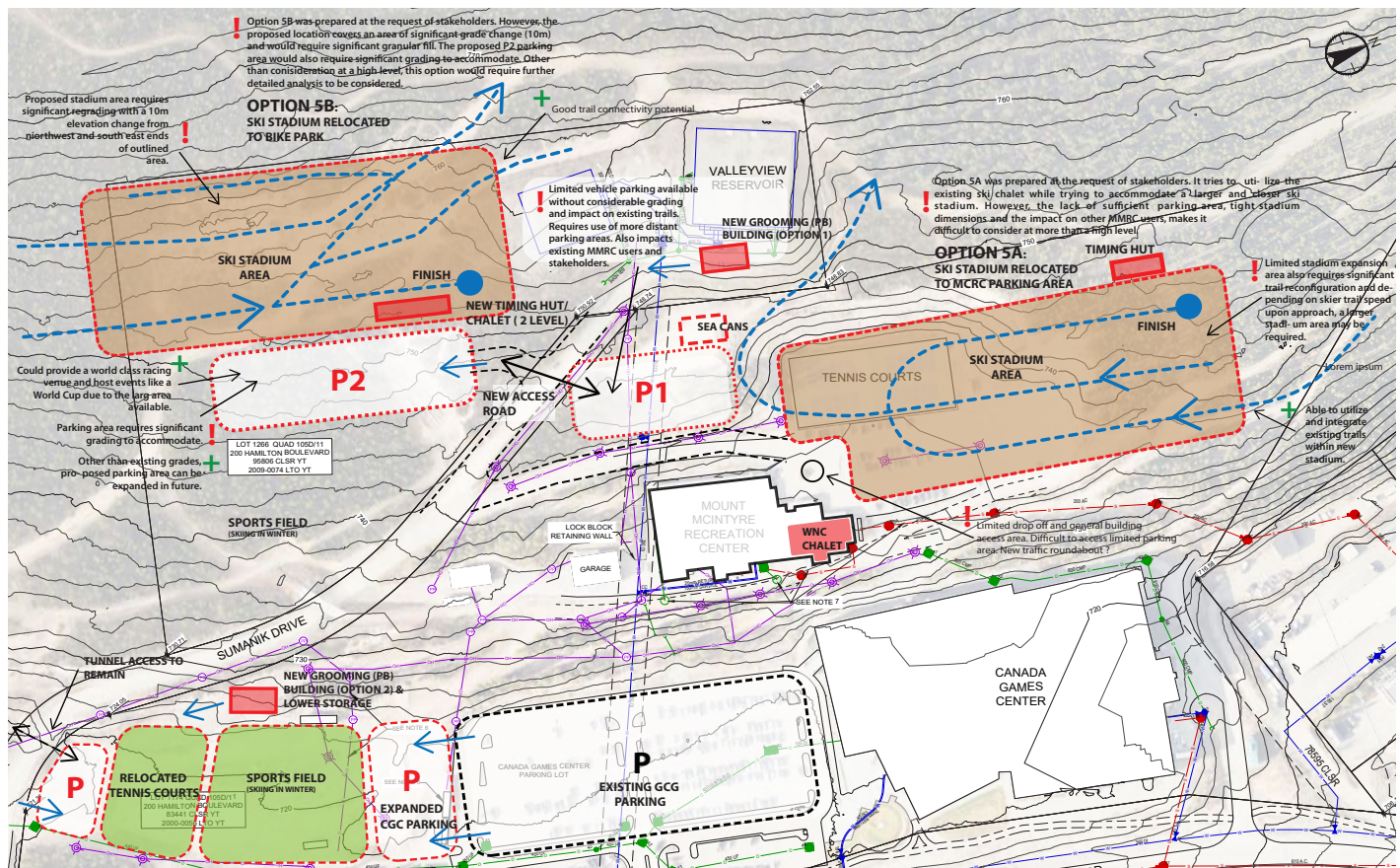
## 5.7 SITE DEVELOPMENT OPTION #5A/5B - LONG TERM STADIUM IMPROVEMENTS - RELOCATED STADIUM, NEW CONSOLIDATED OPERATIONS (PISTEN BULLY) BUILDING, WNC CHALET & NEW PARKING AREA.

Option variations included in #5 were born from the desire of some stakeholders to explore alternate locations to the existing Ski Stadium to avoid some of the current constraints and challenges addressed in part by Options #1 through #4.

Option #5A proposes the relocation of the Ski Stadium to the area currently occupied by the parking area and tennis courts adjacent the MMRC. The relatively flat area provides sufficient space for a new Ski Stadium and relatively good access to existing trails. However, it leaves little space for vehicle parking, service access, and requires the relocation of the tennis courts. It requires the construction of a new timing hut but maintains the use of the existing ski chalet in the MMRC.

Option #5B proposes to relocate the stadium at the location of the current bike skills park on a sloped site with sufficient area for a new Ski Stadium, parking and a new two-storey chalet and timing hut. It has good connection to existing trails and allows for future expansion. Drawbacks include the considerable site area, slope, and grading work required to make it useful. It also requires the modification of existing trails.

**Time Frame: +15 years**



**Figure 7.0 Ski Stadium - Site Development Option #5A/5B**

## 6.0 RECOMMENDATIONS

WNC has been presented with a wide range of development scenarios with the idea that these will be reviewed and used by WNC to chart a path forward in the next five to fifteen years. It is clear that the upgrades noted in Options #1 and #2 will provide necessary improvements to the user experience at the stadium and meet some of the concerns outlined by the City of Whitehorse. The key improvements are listed as follows:

### 6.1 SHORT TERM UPGRADES (In Order of Implementation Economy & Efficiency)

1. New signage / flag poles and defined entry point welcoming visitors to the site from the CGC side of the stadium.
2. New landscaping and wood fence to define the edge along CGC parking area and screen existing ski school shipping containers, stored equipment, trailers, etc.
3. Consolidate unheated storage areas in central enlarged fenced compound with both covered and uncovered areas.
4. Renovation of race office building to be used as warm up area for child and adult programming based out of the stadium. To include a barrier-free washroom with water and septic pump-out tanks.
5. New Operations (Pisten Bully) building (250 sq.m.) connected to secure fenced storage yard described in #3 above. Located in area clear of buried storm water main line and near upgraded site entry / signage.
6. Increase width of culvert tunnel under Sumanik Drive from 6m to 12m to better accommodate race events.
7. Increase flat area atop hill toward the south end of the stadium to provide min. 11m diameter of area.



## 6.2 LONG TERM UPGRADES (In Order of Implementation Economy & Efficiency)

1. Develop new WNC ski chalet (750 SM) (relocate from Mt. McIntyre Recreation Centre), New Operations (Pisten Bully) building (300 sm) connected to secure fenced storage yard described in #3 above and located at Dog Lot Parking area. Connected with this is the relocation of Ski S'cool and waxing containers from current location next to CGC parking area to new consolidated location at Dog Trail parking lot. Existing Dog Trail parking area to be expanded to maximize usable site area in partnership with KDFN. The stadium is expanded on the south side of Sumanik Drive by 100m and connected to the existing stadium with two tunnels.

In this development scenario (represented by Option #4B), Sumanik Drive remains intact. However, a new 12m wide tunnel under the road is constructed and the existing tunnel is expanded from 6m to 12m in width to better connect the existing (north) stadium area to new facilities and expanded (south) stadium area, accommodate race events, and provide easier in/out access to/from the existing stadium. This scenario includes the visual improvement noted in Option #1 (landscaping, signage, fencing) but it also proposes to expand the length of the CGC parking area by approximately 40m (90 additional parking stalls) by taking a portion of the existing stadium (north end) and dedicating it to much needed CGC parking. KDFN's Mt. McIntyre subdivision is better integrated with the new WNC facilities providing easier access for citizens.

New water, sanitary, and electrical infrastructure is provided to the site to service the new buildings and accommodate the need of snow making equipment.

2. Develop new WNC ski chalet (750 SM) (relocate from Mt. McIntyre Recreation Centre), New Operations (Pisten Bully) building (300 sm) connected to secure fenced storage yard described in #3 above and located at Dog Lot Parking area. Connected with this is the relocation of ski school and waxing containers from current location next to CGC parking area to new consolidated location at Dog Trail parking lot. Existing parking area to be expanded to maximize usable site area in partnership with KDFN.

In this development scenario (represented by Option #4), Sumanik Drive is relocated to make way for an expanded stadium (approximately 40m longer). The existing tunnel is no longer required to connect existing stadium area to the new facilities. This scenario includes the visual improvements noted in Option #1 (landscaping, signage, fencing) but it also proposes to expand the length of the CGC parking area by approximately 40m (90 additional parking stalls) by taking a portion of the existing stadium (north end) and dedicating it to much needed CGC parking. KDFN's Mt. McIntyre subdivision is better integrated with the new WNC facilities providing easier access for citizens.

New water, sanitary, and electrical infrastructure is provided to the site to service the new buildings and accommodate the need of snow making equipment.

## 6.3 DEVELOPMENT OPTION RECOMMENDATIONS

KZA recommends that WNC begin with the implementation of Option #1 in the short term (next 5 years) and work toward Option #4B in the long term (5 years and beyond). Development Option #1 provides relatively low cost upgrade with significant visual and practical improvements to meet current needs at the Stadium without committing significant capital resources to new buildings or infrastructure. If the development timeline is delayed beyond 5 years, WNC may consider implementing the improvements noted in Option #2 but reconsider the location of the new Operations / Pisten Bully building from the originally proposed stadium area to the Dog Trail parking area with the idea that it would be the first phase of the implementation of Option #4B. It is important to note that the replacement of the Operations / Pisten Bully building is an urgent priority for WNC.

Development Option #4B takes a practical long-term view to the future consolidation of WNC facilities and equipment to better serve the growing needs of members without relocating Sumanik Drive or significantly altering the current stadium area or use. It provides a reasonable path forward that will likely garner broader support from the community and stakeholders.

## 6.4 IMPLEMENTATION & NEXT STEPS

The development options presented by the KZA team and focused on the WNC Ski Stadium provide a range of upgrade and consolidation scenarios that could mean fundamental changes to the physical configuration of facilities and their location in relation to the existing ski stadium.

WNC will need to review carefully the presented options with stakeholders, members, and partners to best determine how to garner support for the implementation phase of the preferred options. KZA suggests the following process be followed:

1. Review development options and consider which are the most preferred in both the short and long term. Consult with stakeholders, members, and partners to determine the priority of improvements.
2. Prepare a timeline that maps out an itemized list of improvements contained in the options and prioritizes their implementation (both short and long-term).
3. Prepare a detailed Class D cost estimate for each item and consider bundling improvements as outlined in the recommended development options presented (Options #1 and #4B) to best package the work to secure funding.
4. Once the prioritized improvements have been packaged for presentation (outlining costs, scope, functional requirements, and timelines) determine the funding required to complete conceptual design and more detailed costing. Some of the improvements are relatively simple in nature but still require a higher level of resolution and costing to accurately define the scope of work.



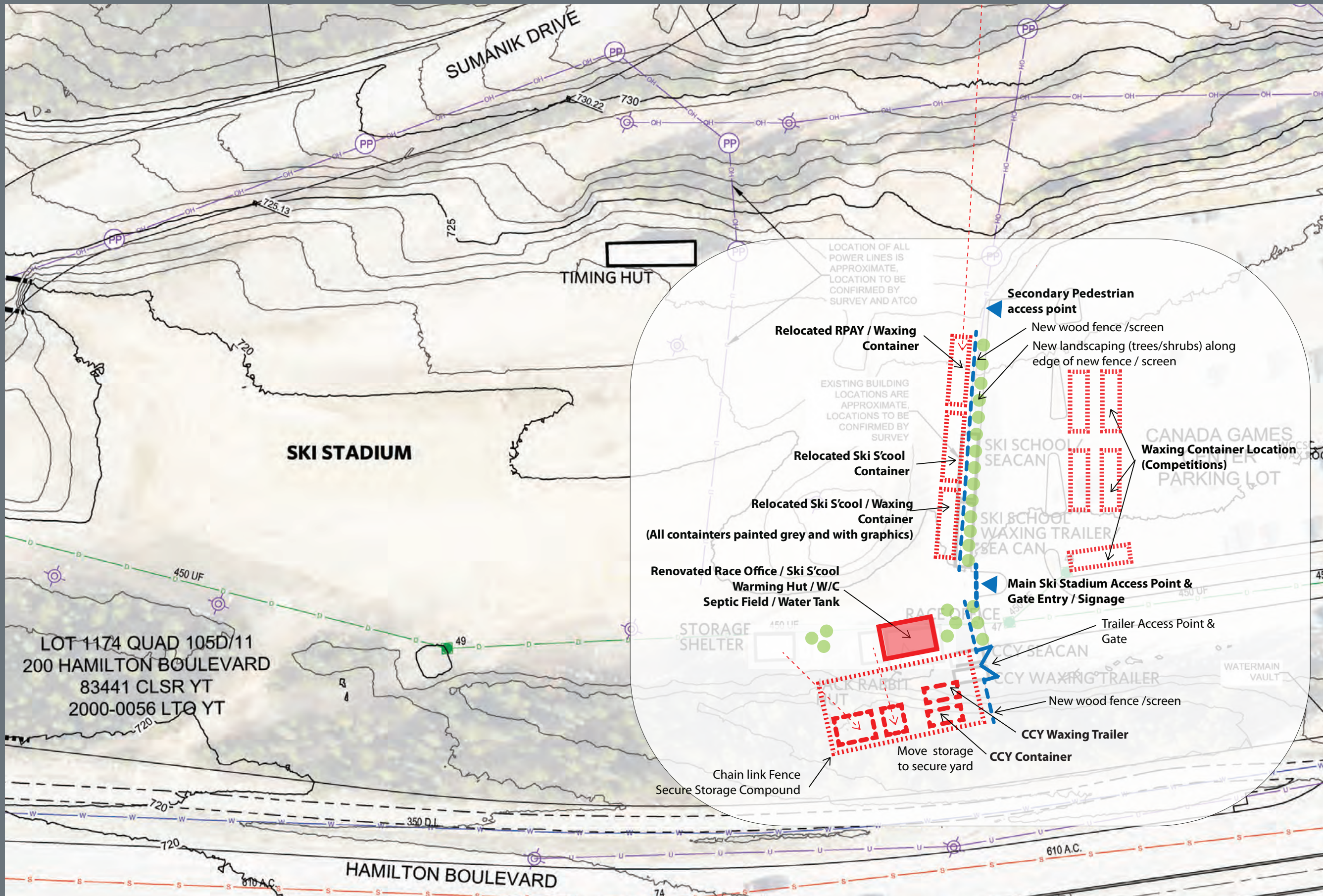


## 7.0 APPENDICES









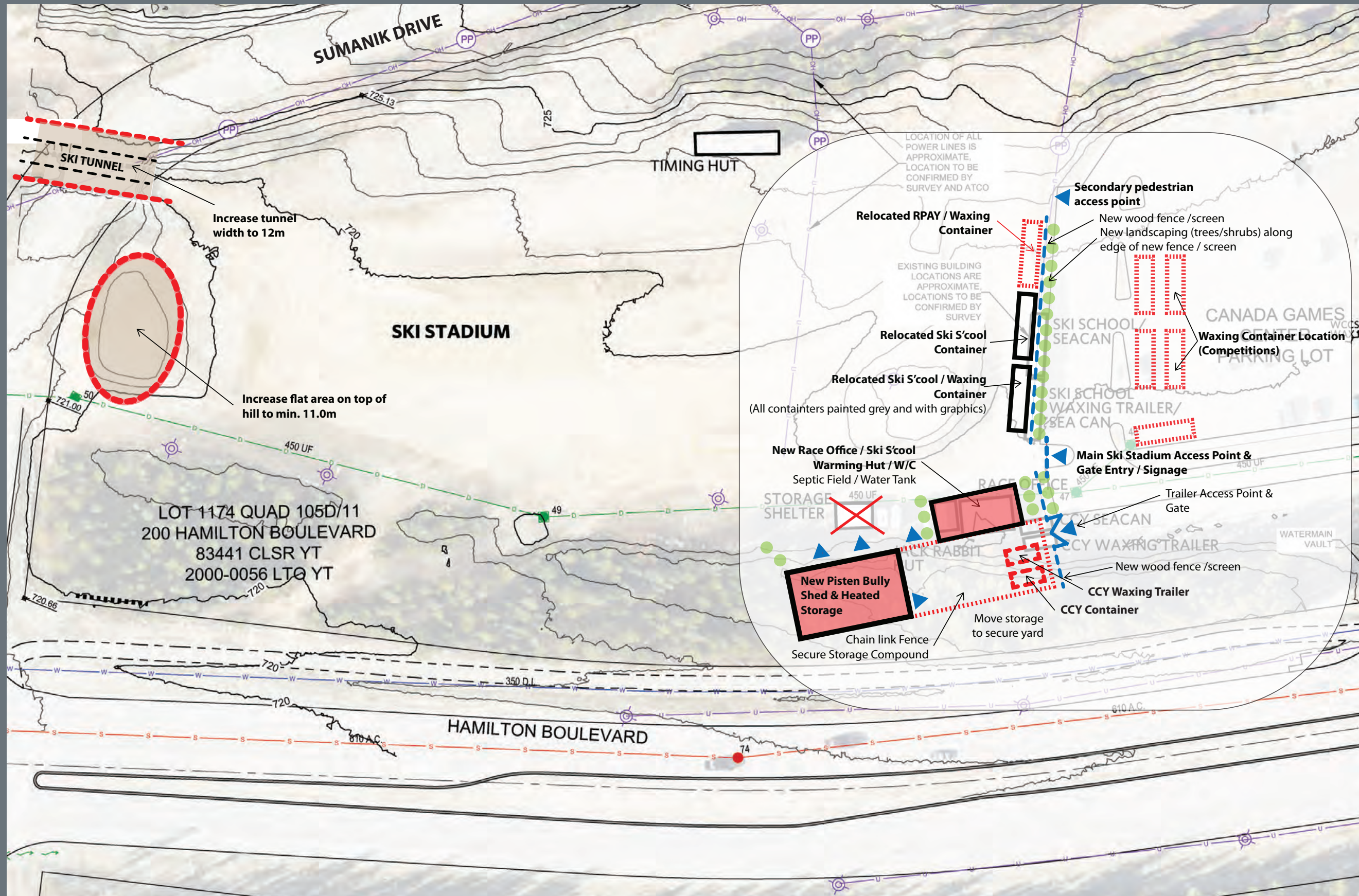
Site Development Option #1 proposes limited and modest site upgrades and focuses on a better organized site, provides a welcoming entry / "gateway" to the site from the Canada Games Centre (CGC) parking area, new signage, flag poles, new bike parking, and a landscaped edge between the Ski Stadium and parking area to better screen the existing shipping containers. The option also proposes to renovate the race office building as a Ski School warming hut with washroom and a new secure fenced enclosure to locate equipment that sits unprotected (these include CCY container and waxing trailer, relocated storage structure, snow making equipment, and possibly the Jack Rabbit hut (if it is not removed entirely)). Event based waxing trailers are to be accommodated temporarily in the CGC parking lot (during major races) to avoid congestion in the stadium area. Option #1 also proposes to relocate the RPAY trailer adjacent to the existing Ski School shipping containers. No new services are recommended due to prohibitive capital costs. However, the renovation of the race office building would include both a pump out septic and water tank to accommodate two new toilet stalls for use by students in the various ski programmes. This option could consider improving the condition of the site to encourage / accommodate additional summer uses (ie. a paved loop for roller skiing, etc. or a better drained and groomed centre area to host City-run summer camps).

**Time Frame:** 0 - 5 years



**kobayashi+zedda**





Development Option #2 includes the improvements outlined in Option #1 plus adding a new (properly sized) equipment / operations facility for the Pisten Bully(s) and other equipment located in the current operations building near the Mt. McIntyre Recreation Centre (and possibly also accommodate equipment stored in the City of Whitehorse warehouse). The option proposes to replace the existing race office building and Jack Rabbit hut with a new Race Office / Ski School warming hut with washroom.

Option #2 also proposes to increase the width of the existing race tunnel to 12m and create a larger flat area atop the hill located at the south end of the stadium to better accommodate racers. Of note in proposing the location of new buildings is the proximity to the existing buried storm water pipe.

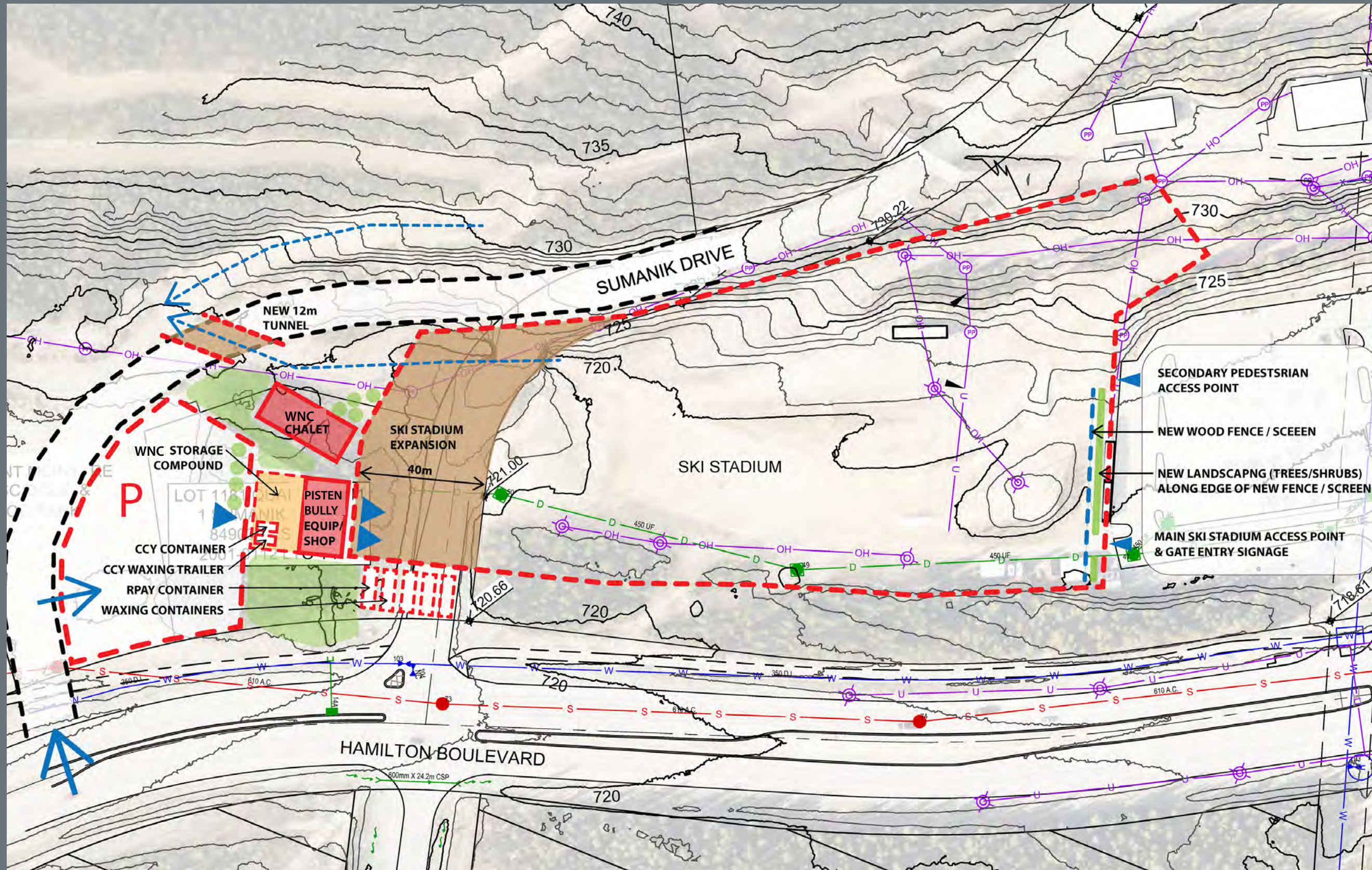
Time Frame: 0 - 5 years



kobayashi+zedda

## STADIUM SITE DEVELOPMENT OPTION #2





Development Option #3 Proposes bolder improvements to accommodate the future vision and growth of WNC. Portions of Option #1 are included in the proposed upgrades but limited to fencing, landscaping and entry signage. The option proposes the relocation of all WNC program and support spaces to the area currently occupied by the Dog Trail parking area. This frees up existing spaces within and near the Mt. Mac Recreation Centre for City of Whitehorse programming needs. The bulk of the upgrades include the lengthening of the Ski Stadium by approximately 40m (to the south to better meet Nordiq Canada standards which are roughly 80m wide and 160m long to accommodate most ski events), reconfiguring the Sumanik Drive alignment further to the south (approximately at the same location as the current Dog Trail parking access point), building a new WNC Chalet, new Pisten Bully / Equipment / Storage building, a new 12m wide tunnel, and adjacent users/staff parking area. The new buildings are to be located within the forested area just south of Sumanik Drive, providing a treed setting for both buildings. The new buildings provide direct and easy to access route to trails at grade with parking nearby.

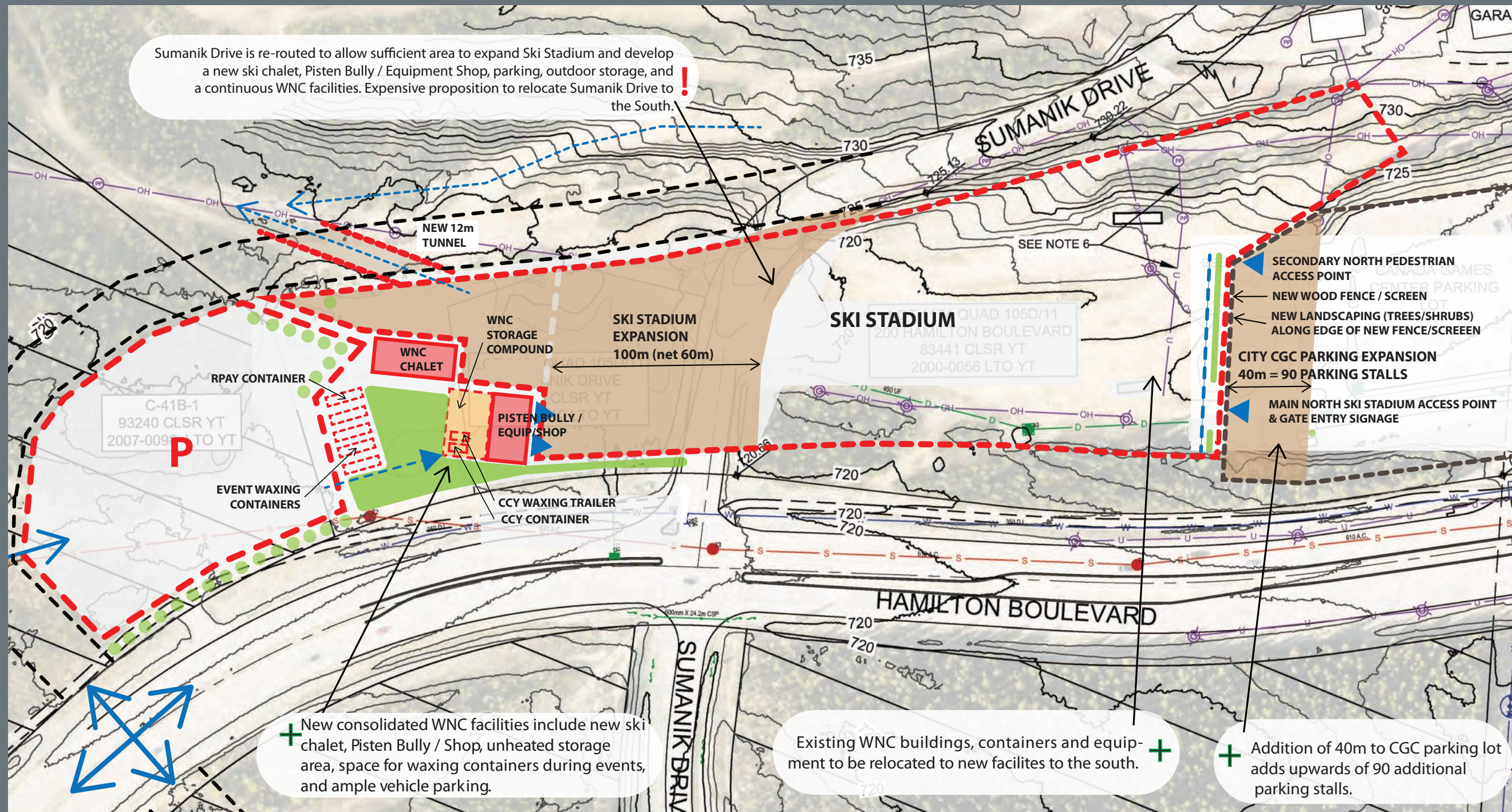
Time Frame: 10 + years



kobayashi+zedda

## STADIUM SITE DEVELOPMENT OPTION #3





Development Option #4 proposes more extensive improvements that accommodate the future vision and growth of WNC similar to Option #3 but with the goal of better integrating the KDFN community and lands. Portions of Option #1 are included in the proposed upgrades but are limited to fencing, landscaping and entry signage. Option #4 also proposes to extend the length of the Ski Stadium by approximately 60m overall while adding 40m of length to the existing CGC parking area to accommodate additional vehicle parking. The option proposes the relocation of all WNC program and support spaces to the area currently occupied by the Dog Trail parking area. This frees up existing spaces within and near the Mt. Mac Recreation Centre for City use. The upgrades include relocating Sumanik Drive further to the south (and connecting with the KDFN McIntyre Subdivision) to create a new controlled intersection that potentially aligns with the proposed Valleyview South Subdivision, building a new WNC Chalet, new Pisten Bully / Equipment / Storage building, a new 12m wide tunnel, and a large adjacent member/staff parking area. The relocated buildings provide direct access to the trails at grade with parking nearby. The connection of the WNC to KDFN provides an opportunity for inclusion, reconciliation, and partnership.

**Time Frame:** 10 + years



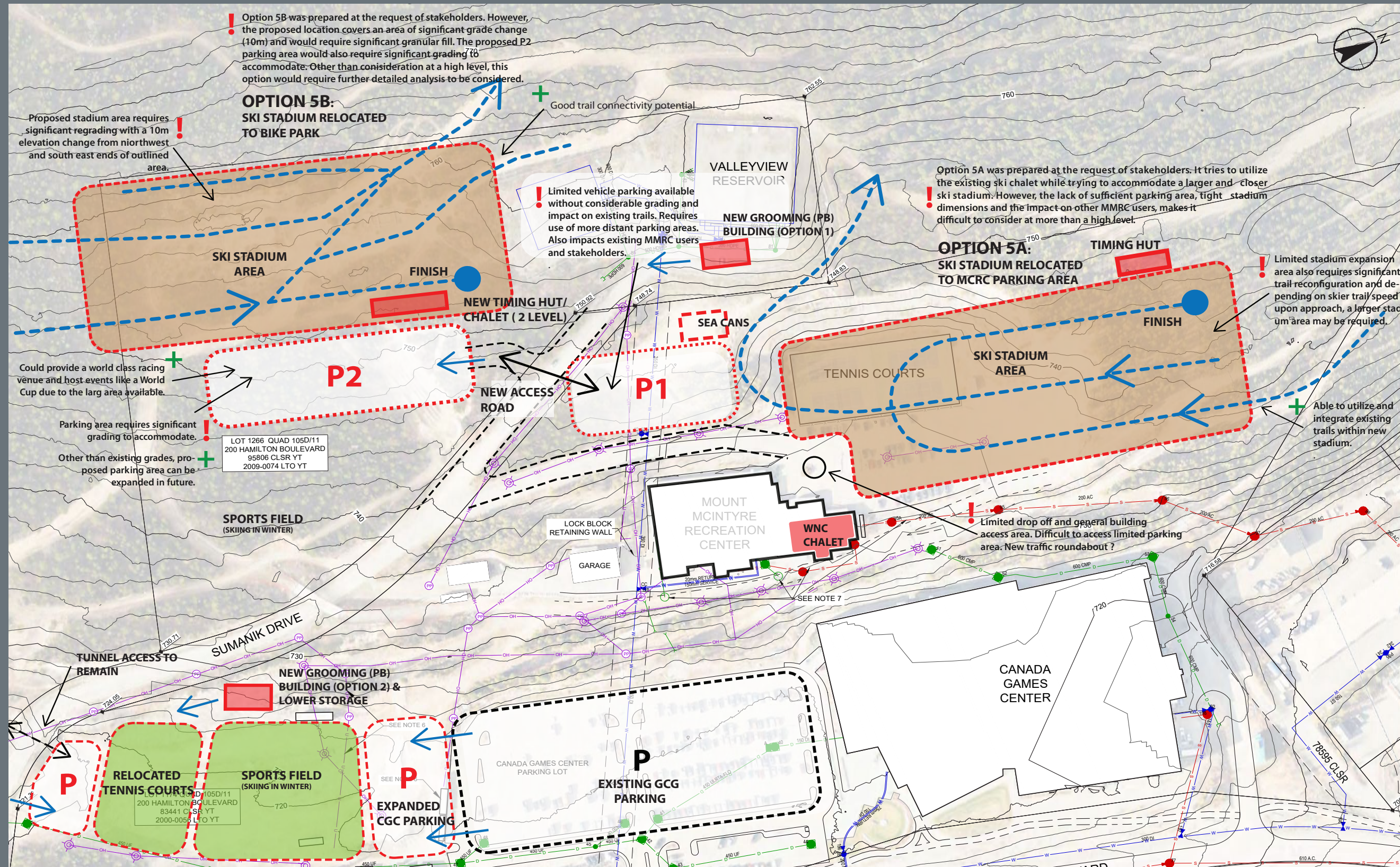
kobayashi+zedda

## STADIUM SITE DEVELOPMENT OPTION #4









Option variations included in Option #5 were borne from the desire of some stakeholders to explore alternate locations to the existing Ski Stadium to avoid some of the current constraints and challenges addressed in part by Options #1 through #4.

Option #5A proposes the relocation of the Ski Stadium to the area currently occupied by the parking area and tennis courts adjacent the MMRC. The relatively flat area provides sufficient space for a new Ski Stadium and relatively good access to existing trails. However, it leaves little space for vehicle parking, service access, and requires the relocation of the tennis courts. It requires the construction of a new timing hut but maintains the use of the existing ski chalet in the MMRC.

Option #5B proposes to relocate the stadium at the location of the current bike skills park on a sloped site with sufficient area for a new Ski Stadium, parking and a new two-storey chalet and timing hut. It has good connection to existing trails and allows for future expansion. Drawbacks include the considerable site area, slope, and grading work required to make it useful. It also requires the modification of existing trails.

Time Frame: 15+ years of either



kobayashi+zedda

## STADIUM SITE DEVELOPMENT OPTION #5A/5B