

CHIEF JIM KOE PARK PRE-DESIGN REPORT

Town of Inuvik
February, 2020
19-026



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1. Introduction

1.1 Overview

The intent of this report is to outline principle information pertinent to the further development of the Chief Jim Koe Park, as well as provide studies for the direction of the development of this site.

Currently the project budget is \$400,000.00 however the project program requires approximately \$1.5million in construction. As such, TAG has developed an approach to both construction and design of the project that has facilitated with providing the 1.5million program for the 400K budget.

At the November 2019 council meeting, Council approved for TAG to pursue an approach that included hiring a project manager and coordinating with the Aroua College trades program. In essence, rather than starting with a design, TAG is exploring the limitations of the construction process and budget to establish the design parameters & constraints. These include:

- The capacity & time available from the Aurara college trades program
- The cost of servicing the building- the south east corner of the site is considerably less expensive than the North west corner.
- Foundation approach

At the conclusion of this review, TAG has a preliminary design that meets both the intent to create a signature building & also an economical means of actually delivering the project.

The Town of Inuvik will also be asked to approve the recommended approach, including site selection and foundation types, to move forward with the design of the park and buildings.

1.2 Project Team

Client	Town of Inuvik Kecil Joseph, Development Officer kjoseph@inuvik.ca 867-777-8614
TAG	Taylor Architecture Group– Consultants Simon Taylor, Principal simon@tagyk.com 867-920-2728
TAG	Kelly Caughlin, Intern Architect (Day-to-day Contact) kelly@tagyk.com 867-920-2728
AC	Aurora College Raymond Savard, Program Head Raymond.Savard@auroracollege.nt 867-777-7817

2.0- Project Overview

2.1. The Requirements for the project:

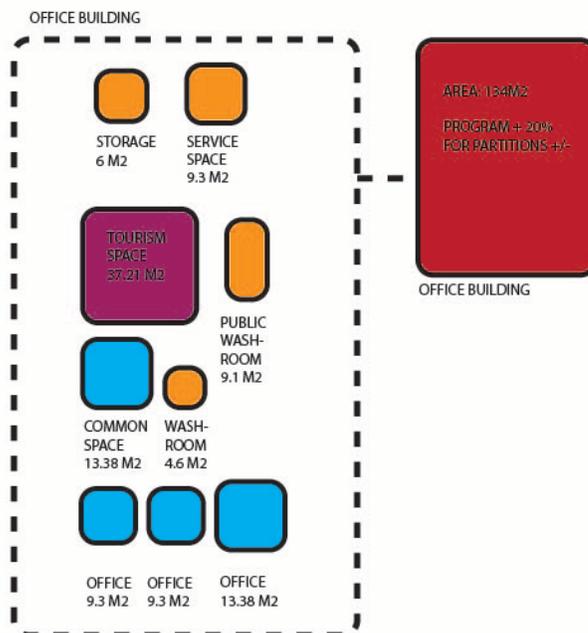
The scope of this project is governed by basic considerations and construction site planning & site landscape. For the Chief Jim Koe Park Area. The scope specifically includes:

- New Visitors centre that is accessible 12 months per year. To accommodate 3 staff members and have a small retail space with public washroom.
- An open Air with roof “Arctic Market” hall with space to accommodate 25 market stalls. Usable year round.
- Provision of minimal Parking
- Planning for: Stage, seating, ring road, and incorporating previous master plan.

2.2. Size of Buildings

Two buildings are required as part of this project: The Visitors Centre and the Arctic Market Hall.

- Visitors Centre= 134m²
 - This combines the program requirements as efficiently as possible and adding 20% area for walls and services. Rooms are as follows: 3 office spaces, common space, 2 washrooms, storage space, service space and tourism space.



- Arctic Market Hall=450m² downsized to 200m²
 - Allowing for 8'x8' space per stall for 25 stalls
 - +30% for circulation

2.3. Budget

TAG has worked almost continuously in Inuvik since 2000 (20years). Based upon this experience, TAG has developed the following Class “D” rough estimate for the proposed work.

- The visitor centre’s area will be approximately 134m² x \$4000/m² standard construction costs for the area.
=\$ 536,000.00
- Plus site work, utility and power connections
=\$ 200,000.00 depending on site location.
- The arctic market hall will be approximately 200m² x \$2000/m² for open air pavilion = \$ 400,000.00
- Plus site work, and power connections = \$
100,000.00 depending on site location.

=\$ 1,336,000.00 Class D estimated cost of construction for the Visitors Centre and Arctic Market following a typical tender process.

Available Funds = \$ 400,000.00

Difference = \$ -836,000.00

2.4. TAG Suggested Approach

Based on the projected budget, there is an estimated \$836,000.00 discrepancy, TAG recommends the following strategies to facilitate the program-to-budget discrepancy:

- Engage Aroura College - \$ 550,000.00
 - Utilize student Labour, equipment, facilities & supervision.
Estimated value: 50% of Construction costs
- Foundation on Pressure treated wooden Blocks instead of piles - \$130,000.00
 - Piles +/- \$5000.00 each installed @ 4m OC.
Estimated reduction construction cost by 10%-20%
- Project Manager coordinator Vs. General Contractor - \$100,000.00
Estimated value: 10% savings
- Combine the structures - \$ 60,000.00
Reduce site work, power and utility connections
Estimated value: 5%

Total value engineering: \$840,000.00

Based upon these proposed measures, TAG is of the opinion that the project can be achieved within the stated budget.

2.5. Collaboration with Aurora College Outlined

During the TOI council meeting on November 13, 2019, Taylor Architecture Group (TAG) was authorized to proceed in engaging Aurora College and their trades training program to assist in the development of new visitors centre & outdoor market enclosure building. This approach was proposed by TAG, and approved by the TOI, with the intent of addressing tight budget constraints and taking advantage of community building opportunities.

Upon meeting with TAG to discuss this proposed approach, Raymond Savard – Program Head of Aurora College - indicated that the college is interested in participating in this endeavor. The intent for this involvement is for Aurora College students to carry out as much of the construction as possible while also fulfilling course/curriculum requirements. As such, the project team is looking at integrating the construction of this project into a full-term course, as part of the Introductory to Carpentry module of the Building Trades Helper Program, that provides basic training for the following areas of construction:

- Basic site prep
- Surveying (leveling)
- Concrete forming
- Basic wood framing
- Insulation
- Drywalling
- Painting
- Roof Construction

The college anticipates that they would be able to offer the course for up to 10 students (likely 8 to 9). Each student would be required to work 145 hours, resulting in approximate 1250 person hours; this would work out to approximately 20 days of labour for each student (assuming 7 hrs per day per student). As discussed, Aurora College would not charge the TOI for the following, with regards to work completed for this involvement:

- Labour
- Equipment usage
- College heated workshop space use
- Coordination of students

Further, Aurora College would provide the services of Greg Nissen to supervise the work of the students on site. TAG is of the opinion that the project team can design a quality project that is within the means of the college student team to construct and that the opportunity to partner with the Inuvik Aurora College trades program represents a significant additional investment and opportunity to the project.

TAG is currently reviewing options for an overall project manager - who will coordinate with the Aurora College Project Manager and student team as well as coordinate all other trades/sub-trades.

2.5. Fiscal comparison between site options A and B

TAG has identified 2 site locations within the park where the visitor centre and arctic market could be located, section 3.0 gets into further detail for these options. The following chart is a comparison between site option A and B. The main difference between the two sites is the cost of the utilidor and power.

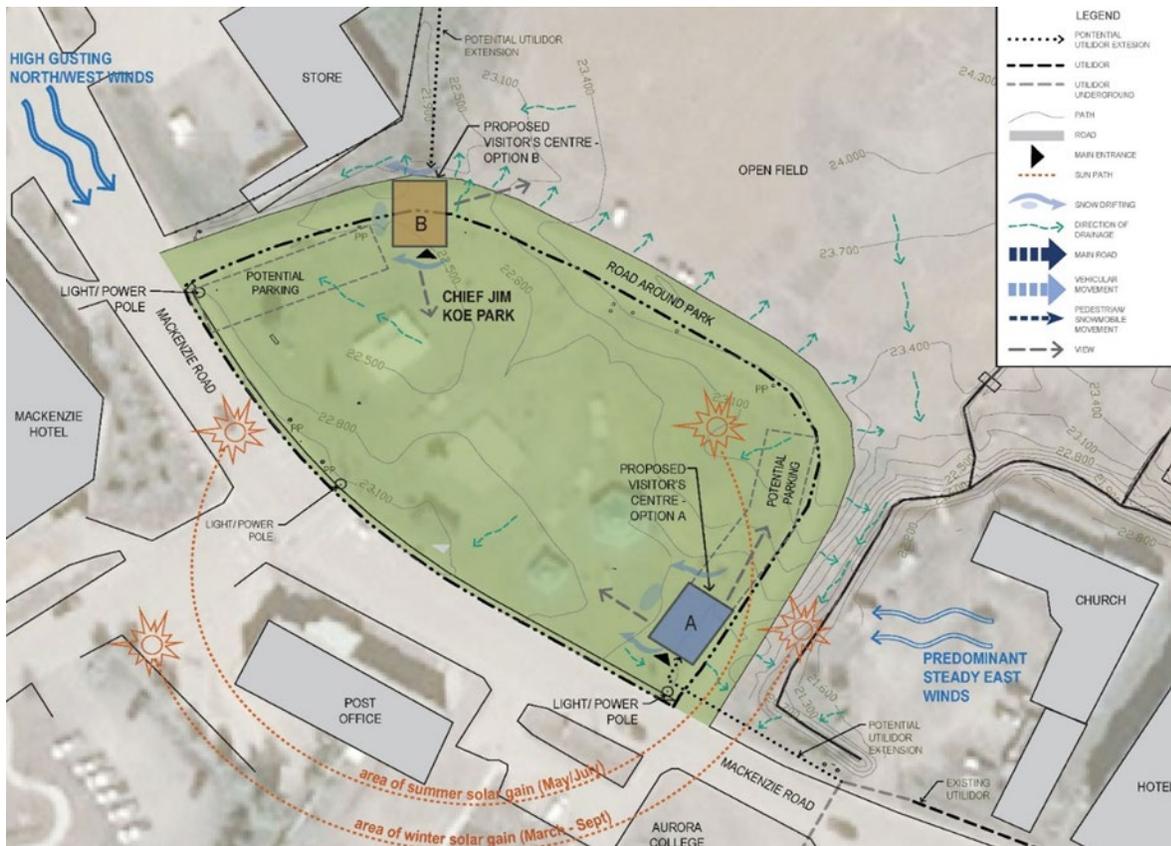


Figure 1. Site Plan Study – 2 options for visitor's centre

		Site A	Site B
#	Cost Item		
	Budget	\$400,000	\$400,000
1	Project Manager	\$50,000	\$50,000
2	Utilidor basic 200/foot (no piles)	100' = \$20,000	165' = \$33,000
3	Power Connection	\$50,000	\$100,000
	total	-120,000	-183,000
4	Budget – Totals =	\$280,000	\$217,000
	Office Program requires 134m2		
5	Typical construction \$4000/m2	\$536,000	\$536,000
6	Aurora College Labour Reduces cost 50%	-\$268,000	-\$268,000
7	Foundation to be pads and wood blocks Reduce cost by 20%	-\$107,200	-\$107,200
8	GC's Reduced by 10%	-\$53,600	-\$53,600
9	Cost for Office	\$107,200	\$107,200
10	#4-line minus #9-line cost = Funds left for Arctic Market	\$172,800	\$109,800
	Arctic Market Shelter 200m2		
11	Remaining funds divided by area	172,800/200	109,800/200
12	Money remaining per m2	\$864/m2	\$549/m2

2.6. Summary of the Fiscal Comparison Chart.

The comparison reveals that option A will be at least \$63,000.00 less expensive based upon the cost relate to the connection costs to the utilidor and power services.

For the Office to be constructed it would typically cost \$700,000 approximately. By partnering with the Aurora College and opting for the most economic foundation, we dramatically lower the construction costs.

Items not included in this budget include items such as demolition and /or removal of existing built facilities currently on site. Development and building permits are also not calculated in the costs.

3.0 Visitor's Centre Location

Two options for locations for the proposed visitor's centre have been presented on the following pages and compared in section 3. The two locations were selected on variety of factors, described on the following pages, with two of the key factors being connection to existing utilities (utilidor and power). These two locations are the closest locations to existing utilidors and, as such, would be the most feasible to construct.

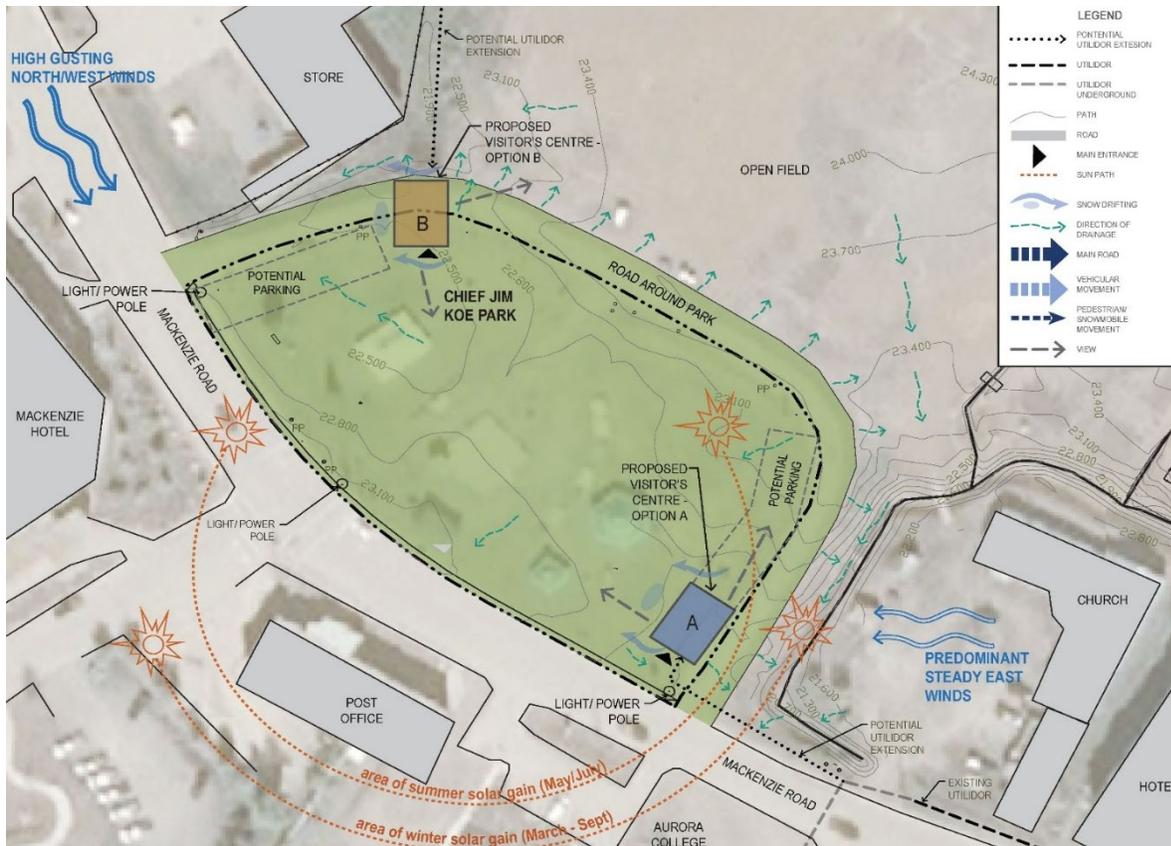


Figure 1. Site Plan Study – 2 options for visitor's centre (repeated)

3.1. Site A Analysis



Figure 2. Site A (one right side of image) – Photo taken along the ring road, north of the proposed site looking south. Aurora college can be seen beyond (in centre), with ditch on the left.

3.1.1. Site Location and Access

The proposed site is located at the southeast corner of the Park. This location is close to the main road (Mackenzie Road) and is in a low-lying part of the site, though there is a ditch along the perimeter of the site, with the grade falling away (down) away from the site (on north, east and west sides).

Due to its proximity to the main road, this site has potential for high visitor traffic.

There is a sidewalk running along the south side of the site, making pedestrian access to the visitor's centre very short and direct. Parking can be accommodated off the ring road around the park, just north of the proposed visitor's centre.

3.1.2. Environmental Factors

With regards to sun, the building is rotated off the north-south orientation with the long side along the east/west, meaning that it is not optimized for solar gain. However, the sun is located to the southeast at noon in Inuvik, meaning that this tilted orientation will take better advantage of the sun than if it was orientated to true North-South. Studies will be carried out by TAG to determine best orientation and placement.

In terms of shadowing, as the sun is quite low in the winter, even small buildings can cast long shadows. As such, the placement of this building will be creating shadowing on the park. However, if the roof is slanted downward to the west it is possible to reduce the amount of shadowing and should be able to avoid shadowing hitting the stage area as it is quite far away.

With regards to wind, the building is somewhat protected from the predominant easterly winds from the church and hotel to the east, though it is exposed to gusting winds from the Northwest. The building

entrance will be located along a wall parallel with the predominant winds (south face) to avoid snow build up by the entrance; However, some snow build up may occur as the south face is rotated a bit off of the east-west direction. This is also an optimal location for the entrance as it can be located either directly off the road (easy pedestrian access).

It should be noted that though this location is close to the road (and to exhaust fumes) the primary and secondary wind directions would mean that there should be minimal issue with regards to fumes from cars coming in the air intake. To reduce issues with this, intakes will be located on the north/northwest side of the building, further from the road.

3.1.3. Site Views

In terms of the building's visibility from the main road, this location is ideally placed as visitor's will be coming in from the east (from the airport and highway) and will be able to see it clearly when they come into town. It is also very accessible to residents, being so close to the road, making it easily visible and accessible by foot or car.

One consideration in terms of views from the street is that, coming from the east, the building could block views to the town monument. This will be considered when designing the layout and form of the visitor's centre, while ensuring enough space is provided between the building and the monument.

In terms of views from the building, the long faces of the building are the east and west sides, allowing for great viewing opportunities to the park to the west. There are no obstructions in any direction around the proposed building location to the park, open field to the north, church to the east or road to the south.

3.1.4. Infrastructure and Services

Access to power and the utilidor were two of the main factors in choosing appropriate options for placement of the visitor's centre. This location is ideal as both powerlines and the utilidor run close by this site location, just to the south and southeast, respectively. The utilidor is located just east of the site, and routes under the access road to the church parking. An extension to this utilidor is required; to note, this would be required if placing the visitor's centre anywhere on the site and this location allows for the shortest extension necessary.

As the grade slopes down and away from the site, the building will be located higher than the utilidor, which is vital with regards to drainage of the septic pipes. Water lines are under pressure so will not require a pump.



Figure 3. Utilidor seen routing down and below access road to church parking area

3.1.5. Physical Factors

The site is generally flat with little variation in elevation, making construction of a building here relatively simple (with regards to grading and installation of support/foundation system). One item that will be considered in the design is that there are power lines close running close by, with the power/light pole located just south of this proposed site being grounded just north of the pole. Clearance must be provided around this grounding connection.

3.1.6. Surrounding Amenities and Influences

There are several key community buildings and amenities surrounding this site. Refer to item 6.6 Surrounding Amenities and Influences.

It is also a nice plus to have the proposed building directly across the street from Aurora College, to highlight the strong connection of College with the project.

3.2. Site B Analysis



Figure 4. Photo of Site B, taken from “open field” to the north, looking south. Store is shown on the right side of the image, with Mackenzie Hotel beyond.

3.2.1. Site Location & Access

The proposed site is located at the south northwest side of the Park. As shown, the building projects into the ring road to leave as much of the park free as possible, and to minimize the amount of vehicular traffic moving around the site (making it safer, cleaner – i.e. Reducing exhaust fumes from vehicles – and more pedestrian-oriented).

This location is located further from the main road (Mackenzie Road) than option A. Like option A, it is in a low-lying part of the site, though there is a ditch along the perimeter of the site, with the grade falling away (down) away from the site (on north, east and west sides). The drop off is highest on the northwest corner of the site, meaning there should be ample height to run the septic lines from the proposed building to the extended utilidor and provide adequate slopes for the septic lines. Also, drainage can be easily accommodated as there is an existing drainage ditch to the north.

3.2.2. Environmental Factors

With regards to sun, the building is located north-south with the long sides along the east/west, meaning that it is not optimized for solar gain. However, the sun is located to the southeast at noon in Inuvik, meaning that light will come in from the east side from morning until 2pm. Studies will be carried out by TAG to determine best orientation and placement.

In terms of shadowing, as the building is located on the northwest corner of the site, no shadows will be cast onto the park area.

With regards to wind, the building is well protected from gusting winds from the northwest by the store, though it is exposed to the predominant easterly winds. The building entrance will be located along a wall parallel with the predominant winds (south face) to avoid snow build up by the entrance.

It should be noted that as the building is far from the road, issues with intake of exhaust fumes should be minimal. Also, as the parking area is located to the southwest of the building, the fumes should not be blown towards the building. With the north and east faces of the building facing away from the park, it should be relatively easy to install mechanical intake/exhaust on one of these faces without compromising the aesthetics of the building (and compromise views from the park).

3.2.3. Site Views

In terms of the building's visibility from the main road, this location is quite far from the road so may not be immediately visible, especially if coming from the west (as the store would block views to it). Good signage will be required on the road to direct people to the visitor's centre.

However, as the building is located far from the centre of the site and the road, there is no concern with the building blocking views to the monument, stage or any other features on the site. It would also not cast any shadows onto the site.

In terms of views from the building, this site location offers an unobstructed view of the park and of the open field, though view of the park is on the short side of the building (though studies will be done to see if the building should be rotated). View to the east and northeast is obstructed by the store.

3.2.4. Infrastructure and Services

As mentioned for the site A analysis, access to power and the utilidor were two of the main factors in choosing appropriate options for placement of the visitor's centre. This location is the next closest location to an existing utilidor, though extension of the utilidor will have to be longer than for option A. As the grade slopes down and away from the site, the building will be located higher than the utilidor, which is vital with regards to drainage of the septic pipes.

There is a power pole nearby, but it needs to be verified if this power is only for lighting and if new cables must be routed from the main line off Mackenzie Road. There is also an overhead wire to the existing store (to the northwest) directly above this site that will have to be considered in the design of the building (verify height of the wire and if the visitor's centre needs to be shifted a bit to be away from it).



Figure 5. Utilidor located to the north of site option B (north of Arctic Store)

3.2.5. Physical Factors

This site is out of the way from any obstructions, except for the overhead power line routing from the power pole adjacent to the site to the store to the west. See figure 4. There is also no concern for shadowing cast onto the visitor's centre.

Also, as this site is further from the road, there is less issue with regards to vehicular traffic or exhausts.

3.2.6. Surrounding Amenities and Influences

There are several key community buildings and amenities surrounding this site.

This site is also directly across from the Mackenzie hotel, and south of the daycare, meaning people who use these facilities may stop in.



Figure 6. Site Plan Study – Proposed Development Approach

3.3. Comparison of Two Site Options

	Advantages		Disadvantages	
	Site A	Site B	Site A	Site B
1	Immediately visible from road	No shadows cast onto park	Exposed to gusting winds and some main winds	Not immediately visible from road
2	Close to amenities/facilities	Minimizes vehicular traffic on site	Some snow build-up may occur by entrance (to be studied)	Larger distance to existing utilidor
3	Shortest distance to existing utilidor	Protected from gusting winds (NW)	Will cause some shadowing on park	May need to route new power lines to supply power
4	Close to existing power lines	Close to amenities/facilities	More exposed to vehicular exhaust from road	Longer walkway required to connect road to visitor's centre
5	Somewhat protected from main winds (E)	Visible for long time while driving by the park for visitors.	More People closer to the road during events	Views from visitor's centre to north and west obscured
6		Has the greatest potential for utilizing sun paths	Consideration for sun paths particularly evening sun will have to be considered	
7		Has the greatest potential for utilizing wind patterns and creating microclimates		

4.0. Recommendations

4.1 Selecting Site

TAG would recommend moving forward with site option A. Although option B is more desirable architecturally, fiscally option A is more feasible, the key difference is that connection to existing infrastructure will be easier for this option. This is significant as further extension of the existing utilidor and installation of new power lines (as is required for option B) would significantly impact cost and complication of construction.

The implications of selecting site A are as follows. We would be establishing the east side of the park as the part that will receive the infrastructure. Currently the park is cut up into thirds with the stage and seating eating up the middle and having park on the east and west sides. Setting up the east side as the busy “prospect” side of the park, the intent will be to establish the west as quite “refuge” side. This would allow more of the park to “be” park.

Consideration of the ring road will have to be established right away. 2 options are as follows: Keeping the east portion of the ring road open that will eventually lead to the washroom and canteen, outlined by the previous 2018 master plan, could be established. Or another approach may be utilizing the solid ground to then place the foundation work of the buildings on.

The proximity to the Diefenbaker monument will have to be assessed closely. Either cutting off the view of the monument and the proximity of the structure will have to be established as apart of the design.

Evening sun will be a key part of this design, with the views of the park to the west, the low evening sun will have to be carefully considered as apart of the design that will penetrate the west facing windows.

That said, both options are viable and have their strengths and weaknesses. Both options will be reviewed with the Town of Inuvik to determine which option is selected.

4.2. Foundation Selection

One of the main cost saving measures is reducing the foundation cost. See chart 2.5. fiscal comparison of the two site options. Rather than using expensive piles, TAG recommends choosing a more cost-effective system, such as wood blocking.

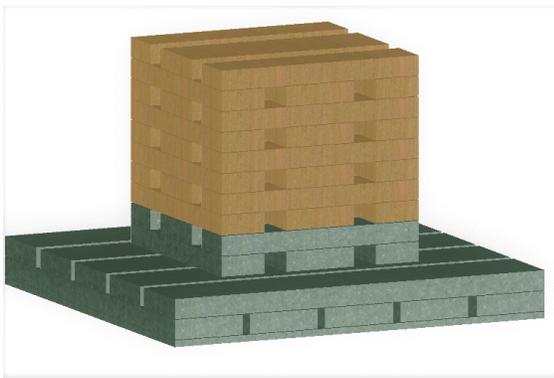


Figure 7. Wood block Foundation – Proposed Development Approach

4.3. Stage and bleacher location

The stage and bleacher locations will be further developed once the site selection is established. The information for the sizes and types have been previously provided by the TOI.

4.4. Arctic Market

The Recommendation of TAG is to build the Arctic Market directly off of the office building. By doing this we hope to utilize a common structure. The structure grid will be set up in a way to allow for further expansion in the future. This will be developed further once site selection is established.

4.5. Parking

Parking is located adjacent to the visitor's centre. As there are two site options for the visitor's centre, two potential parking areas are indicated on the plan. To accommodate sufficient parking, some parking may be required on both sides, but it should be possible to accommodate all parking on one side, as indicated in the Figure 9. Site Plan Study – Proposed Development Approach The intent in either case is to have the parking close to the main road – Mackenzie Road – and to stop vehicles from driving all around the site, to minimize vehicular traffic. This would create a safer and more pedestrian-friendly environment, as well as reduce fumes from vehicles coming onto the site. This will further be developed with the site selection and design moving forward.

5.0 Schedule

Pre-design report.....	January 30th
Town of Inuvik to sign of on Site Selection and Foundation.....	February 5th
Schematic Design.....	February 14th
Town of Inuvik to approve Design.....	February 19th
Design Development.....	February 28th
Project Manager selected.....	February 28th
Construction drawings complete.....	March 13th
Construction begins.....	April 6 th

6.0. Inspirational Structures

6.1. Inspirations ideas.

The four images selected have several architectural ideas we plan to draw from.

Figure 8. has several elements that are interesting. First is the repetitive structure. The simple thin columns allows the roof to float above the landscape. There is also a notion of solid and void, that can be translated into the park project.



Figure 8. Horse Stable – by 57studio.

Figure 9. rather than the structure being thin and transparent like in figure 8. Figure 9's structure controls the form and its repetitive nature makes it a beautiful element in the landscape.



Figure 9. House of chickens – by SO? Architecture & Ideas.

Figure 10. has a sense of solid and void. This further translates into the possibilities of separate programs being utilized under one roof.



Figure 10. Ancram Barn- by Worrell Yeung Architecture

Figure 11. also is playing with solid and void ideas. Here it about how the building form is in conversation with the outdoors.



Figure 11. Barn Rijswijk – by Workshop Architecten

7.0. Schematic Design

TAG initial design approach has been through the lens of making \$400,000 budget work for a \$1,500,000 project. Being conscious of site selection, using simple repetitive structural ideas and generating a simple form.

Below is the first iteration of TAG's schematic Design Proposal.

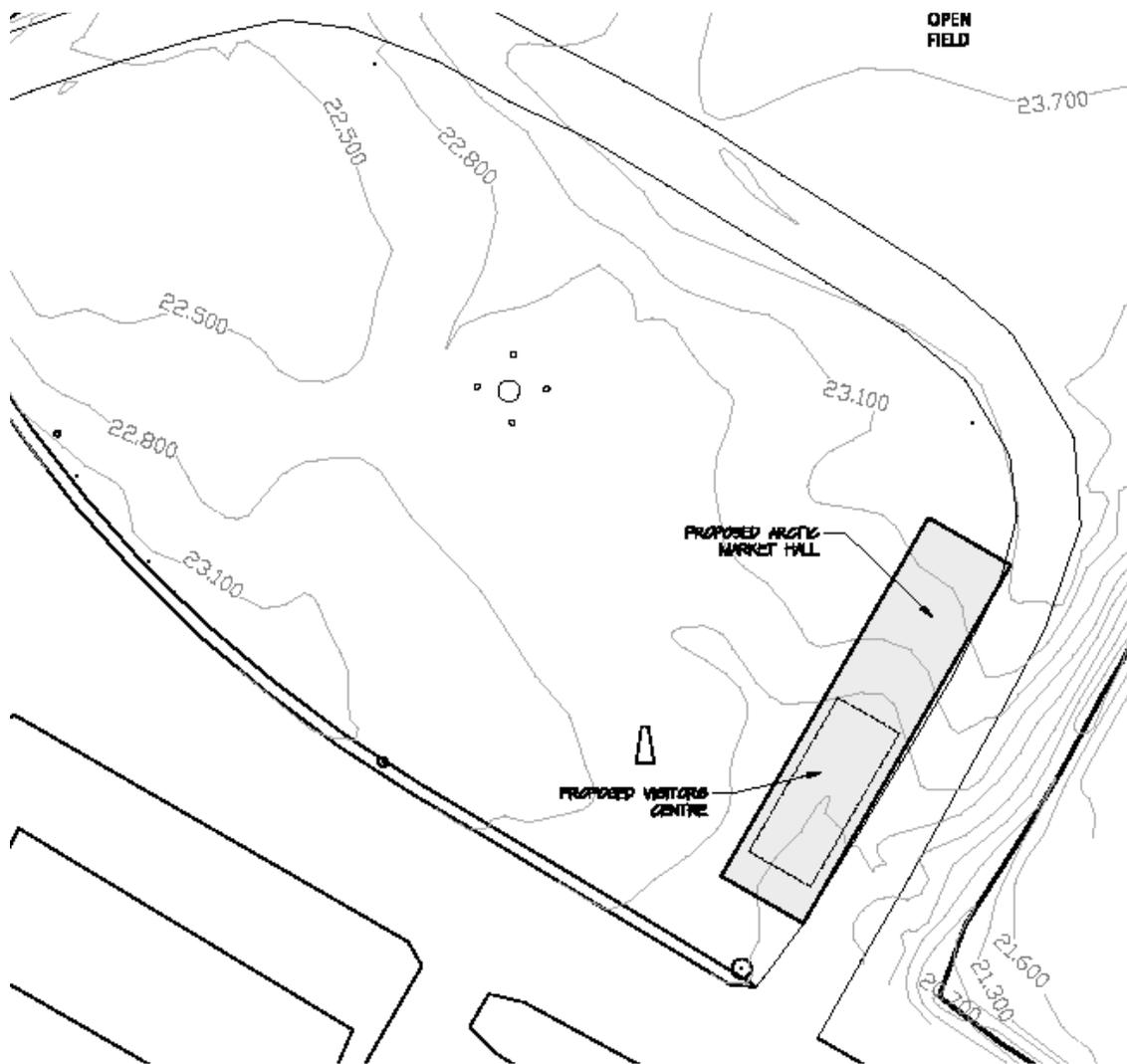


Figure 12. Site Plan – Schematic design 1.0

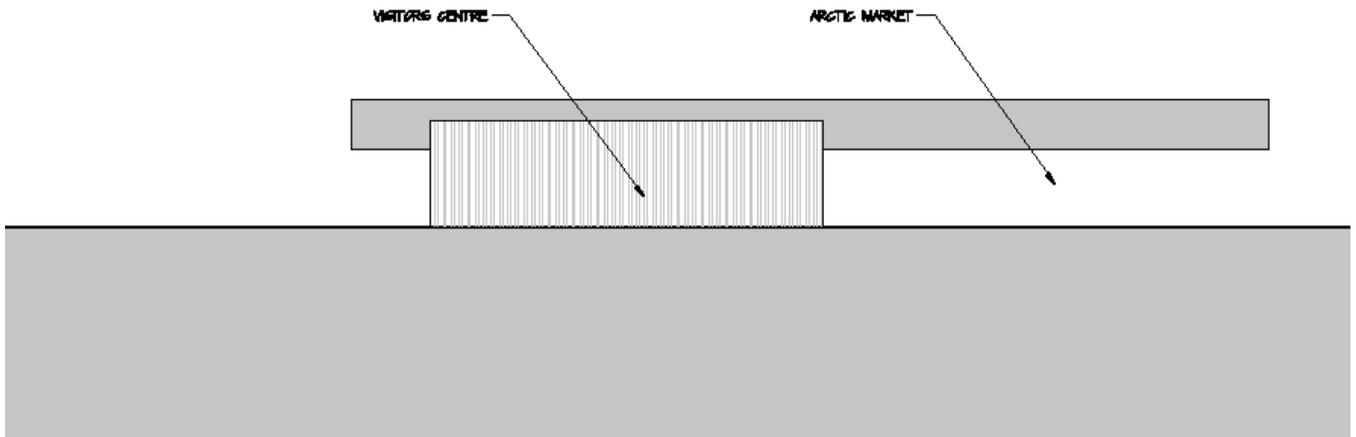


Figure 13. East Elevation – Schematic design 1.0

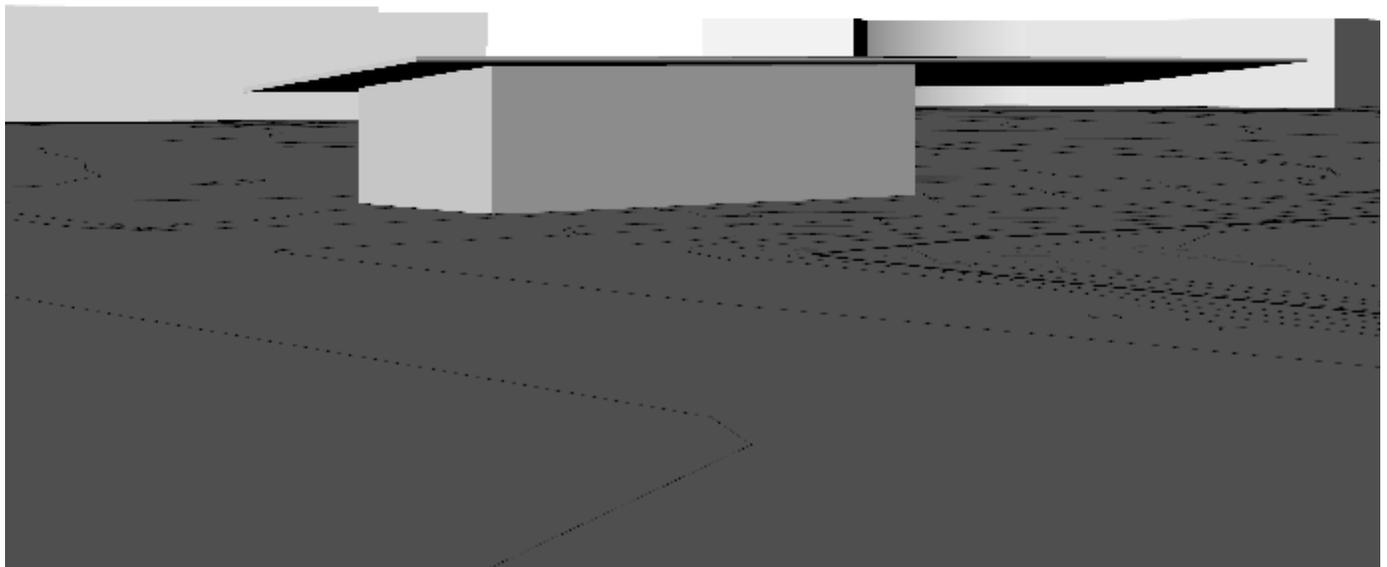


Figure 14. Perspective – Schematic design 1.0

8.0. Summary

The Chief Jim Koe Park is an exciting development for the town of Inuvik. The Taylor Architecture Group has put together an unorthodox approach to meet the needs of TOI while sticking to the prescribed budget. Teaming up with the Aurora College creates opportunity for the future builders of the town and allows us to stretch the budget to achieve the requirements. In addition to working with the college, the other cost saving measure are selecting the most feasible site and choosing economical building practices. Based upon the proposed measures, TAG is of the opinion that the project can be achieved.

The design that TAG is conceiving of is a system that utilizes a repetitive structure and also has a clear dialog with the landscape, encouraging engagement inside and out. We will continue to play with iterations on the design moving forward, but we believe this is a strong start.

Taylor architecture Group looks forward to proceeding with this design approach and to the successful completion of a compelling, useful & economical project.

CHIEF JIM KOE PARK APPENDICES

Town of Inuvik
February, 2020
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1.0 Description

The Town of Inuvik solicited proposals for consulting services for the planning, design, tendering, and construction support services for the Chief Jim Koe Park Project. This project was awarded to Taylor Architecture Group on October 10, 2019. As described in the RFP document:

“The Chief Jim Koe Park Project builds on the design and public outreach efforts completed in 2018. This resulted in a set of design plans for the sporting fields. As we await commitment and funding approval from the GNWT, the Town has recently applied and received funding to begin work on the area encompassing the Road known as Mackenzie Square.

The Area within Mackenzie Square will be redesigned to encompass a new Arctic Market Building, Visitor Centre/Tourism Office/Retail Building, New Stage and Seating with a covered membrane.

However, before proceeding with designing and constructing these new elements, it is important that this entire space which is seen as the heart of the community, a central meeting place, a key 'gateway' feature to the downtown, as well as a site for both passive and active recreational activities, be re-visualize and integrated with past design work, into this complete and holistic Master Plan.”

1.1. Documentation Provided by Client to Date

- Jim Koe Park Topographic Survey (2019-11-06)
- Aurora College Program/Course Information (2019-11-18)
- Chief Jim Koe Park Redevelopment Project (Public Consultation Presentations and Plans) – 2017 & 2018 (2019-09-06, as part of RFP)
- Town of Inuvik’s research into stage, bleaches and covers (2019-12-23)

1.2. Documentation Procured from Government Website(s)

- Town of Inuvik Zoning Bylaw - 2015 (2019-12-16)
 - o By-Law 1513 - Utilidor
- Town of Inuvik Community Plan Bylaw – 2015 (2019-12-16)
- Town of Inuvik Strategic Plan 2016-2021 (2019-12-16)

1.3. Visits to Site

- 2019-11-13 & 15 – Initial Site Visit, Meeting with Aurora College and Town Council Meeting/Presentation

2.0. Background Information

2.1. History – Inuvik and Chief Jim Koe Park

The Town of Inuvik (originally named “New Aklavik” and renamed to “Inuvik” in 1958) was created in 1953 as a replacement administrative centre for the hamlet of Aklavik - located approximately 55km west of Inuvik - as Aklavik is prone to flooding and has little room for expansion.

While the community itself only came into being in 1958, the area has a history that spans far beyond this date, with Inuvialuit, Dene and Metis peoples being present in the area for centuries. Both Aklavik and, later, Inuvik acting as hubs for the area is a result of the Mackenzie River (which is located between the two towns) acting as a main artery for transportation in this area in the past.

The Chief Jim Koe Park is located in a central spot in the community and, in combination with the soccer and baseball fields directly north of the site, is seen as the heart of the community, a central meeting place and a key “gateway” feature to the downtown (*Inuvik.ca – Chief Jim Koe Park Redevelopment Project*). As such, TAG understands the importance of this project for the community and that the redevelopment of this site will have a significant impact on the residents and on the future development of the town. Refer to section 2.

2.2 Culture and Demographics

As described on the town’s website “Our community thrives on the land, nature and culture as Inuvik is the traditional land of the Inuvialuit, Gwich’in and Metis people, complimented by a variety of non-aboriginal people who have made Inuvik home.” The town has a rich cultural diversity, being located on the traditional lands of the Gwich’in and Inuvialuit as well as being home of the most northern-located mosque in North America. Tolerance and celebration of cultural differences in the community is key to upholding the vision set out in this Strategic Plan. Refer to Section 2.5.

Census profile for Inuvik (2016):

- Population: 3,140
- Total private dwelling: 1,424
 - Private dwellings occupied by usual residents: 1,151
- Mother Tongue - # of residents [language spoken most at home]
 - Aboriginal Language: 150 [25]
 - Inuinnaqtun: 100 Inuktitut: 10
 - Official Language: 2,700
 - English: 2,655 [2,870] French: 45 [20]
 - Unofficial, Non-Aboriginal Languages: 170 [95]
 - Arabic: 35 Filipino: 45
- Aboriginal Identity: 2,050 (of population of 3,140)

- First Nations: 636 Metis: 105 Inuk (Inuit): 1,290
- Visible Minority Population: 225

A few key demographic trends from the NWT Bureau of Statistics:

- Population: declined over the past decade (3,622 in 2004, 3,140 in 2016)
- Birthrate: remained consistent since 2003
- Overcrowding: % of households with 6 or more people has declined significantly over the past few decades (from 10.3% in 1981 to 3.2% in 2014)
- Housing Adequacy: % of households in need remained static
- Violent crime: Trended downwards
- Income Assistance Beneficiaries: Trended upwards
- High School Diplomas (Residents with): Trended up since 1986
- Employment Rate: Trended downwards over past 30 years

2.3. Activities and Businesses/Industry

2.3.1 Past and Present Economy

While interest in the north by the military and petrochemical companies kept the town's economy supported – and brought people to the area - between 1971 and 1990, activity by these groups effectively ended in 1990. This occurred for a variety of reasons, including decreased government military subsidies, local resistance to petroleum exploration and low international oil prices (*Wikipedia*). As indicated in the *Town of Inuvik 2016-2021 Strategic Plan* “we have learned to live with the fluctuations that the boom-bust cycle of single industry reliance can bring.”

Today, the town's economy is mostly based on minor tourism and subsidy provided by the Indigenous and Northern Affairs Canada (INAC), Health Canada and the RCMP. As such, Inuvik is keen to provide a diversified economy through supporting local business – be them small business, industrial or traditional pursuits – to set the community up for future prosperity (*Town of Inuvik 2016-2021 Strategic Plan*). There is also an interest to take advantage of emerging technological fields, such as satellite tracking and arctic energy, and be active supporters/work collaboratively with Aboriginal governments with respect to changes as a result of self-governance.

While some residents still earn their living by hunting, trapping and fishing on the land, most are employed in Government and Indigenous Offices dedicated to enhancing the Arctic in transportation, construction, energy and tourism.

2.3.2 Lack of a skilled workforce

There is also a lack of skilled workers in Inuvik, making it difficult to take advantage of opportunities with regards to development, construction and work in emerging fields when they arise. As such, TAG has proposed working with the students of a trades course at Aurora College to construct elements of the park development (visitor's centre and outdoor market enclosure); this approach was approved by the Town of Inuvik in November, 2019. This will both benefit the local economy by employing local works, while also helping to build a skilled workforce in the community.

2.4. Town of Inuvik Strategic Plan (2016-2021)

The Town of Inuvik Strategic Plan – “Embracing Our Future” lays out the overall mission and vision for the future of the community and its enhancement and development. The development of the Chief Jim Koe Park must incorporate the vision of the Strategic Plan and help Inuvik move towards achieving the big picture goals for the future.

2.4.1 Mission

“The Town strives to maintain and enhance the quality of life for residents, businesses and visitors in Inuvik through respectful, collaborative leadership and effective, responsive programs and services.”

2.4.2 Vision

The three points to the Vision of Inuvik are all key factors in this project. How these points are addressed in the proposed approach are indicated in bullet points under each item.

1. Inuvik is a welcoming, culturally diverse community that celebrates its Arctic context while demonstrating innovation, excellence and economic strength for the benefit of residents, neighbours and visitors.
 - *Addressed through providing a park which can be used year-round, while showcasing the work of locals (in the construction of elements/buildings in the park)*
2. The Town of Inuvik supports a caring community, with quality programs and services, including abundant recreation and arts options, healthy infrastructure and environmentally sustainable practices.
 - *Addressed through providing a more usable, inviting recreational space in the community which is environmentally sustainable*
3. Inuvik’s stable, diversified economy, partnership with our Aboriginal neighbours and emphasis on innovation and emerging technologies positions the community for success
 - *Addressed through collaborating with Aurora College to have students in the trades program construct certain elements/buildings on the site, in collaboration with a general construction manager (with training part of the contractor’s involvement).*

2.4.3 Values

The values – or guiding principles – that the town “embraces and stands for,” as laid out in this Strategic plan, are:

- Professionalism
- Accountability
- Respect
- Adaptability
- Knowledge
- Open Communication
- Positive Outlook
- Sustainability and Living within our Means
- Healthy Community
- Diversity

2.5. Existing Facilities (In Inuvik)

One of Inuvik's greatest strengths is its impressive amenities and facilities, for a town of its size, which include:

- Regional Hospital
- New School (Kindergarten to high school)
- Aurora College
- Midnight Sun Recreation Centre
- Aurora Research Institute (where research in emerging technologies take place)
- Extensive and well-maintained municipal infrastructure (roads, utilidors, internet, etc.)

The Chief Jim Koe Park is located to many key amenities and facilities including (touristic destinations/amenities in bold):

- Anglican church (to the east)
- Aurora College (to the southeast)
- **Mackenzie Hotel** (to southwest)
- Arctic Foods store (to the northwest)
- **Lady of Victory Catholic Church – i.e. "Igloo Church"** (to the northwest, adjacent to the store)
- Open field and baseball diamond (to the north and northeast)
- Daycare to the north (west of the open field)

The "Igloo Church" is perhaps one of the most famous tourist destinations in Inuvik and its proximity to this site (and the fact that the visitor's centre will appear just before it as people drive into town) will likely help to bring people to the visitor's centre as well.

It is also a nice plus to have the proposed visitor's centre across the street from Aurora College, to highlight that key connection for the project.

2.6. Inuvik Zoning Bylaws

The Chief Jim Koe Park is zoned as "Park" area on the Inuvik zoning map and the requirements for this zoning type were reviewed by TAG. No issues were noted with regards to carrying out the design for this involvement. A few key items to note from the Bylaw are listed below:

- Land use: "Park" (per zoning map)
- Parking requirement: 1 for every 10 seating spaces or 1 for every 10m² used by the public - whichever is greater of those two options (pg. 50)
- Permitted uses: visitor's centre is listed as a permitted conditional use, in addition to public buildings and uses and buildings and uses accessory to the above. The bylaw also indicates that other uses which are considered by Council to be similar in character and purpose, and in keeping with the intent and purpose of the Community Plan, are permitted to be constructed on sites zoned as "Parks." As such, construction of a visitor's center and stage, as well as seating and canopy cover, are permitted
- Setbacks: no setback requirements listed for parks
- Extension of utilidors: to reference Bylaw 1531/UTIL/98 regarding utilidor setbacks, connection to, extension of, etc.

3.0. Master Plan of Chief Jim Koe Park Area Redevelopment REVIEW



Figure 1. Chief Jim Koe Area Redevelopment Master Plan – Produced by Aecom (2018)

The Chief Jim Koe Park Area Master Plan developed in 2018 by Aecom (in collaboration with the Town of Inuvik). Numerous public consultation sessions were carried out, in both 2017 and 2018, to ensure all concerns from the community were addressed, suggestions considered and by-in garnered.

As indicated in section “1.1 History – Inuvik and Chief Jim Koe Park” of the appendix the park, in combination with the soccer and ball fields north of it, is a key communal space for the community, a site for both passive and active recreational activities. As it is seen as the “heart of the community” it was thought prudent to study this entire area in a wholistic way and ensure it met the needs and aspirations of the community.

This master plan is consistent with the following documents:

1. "Embracing Our Future" Town of Inuvik's Strategic Plan 2016-2021
2. Town of Inuvik: Integrated Community Sustainability Plan Task List
3. Town of Inuvik Community Plan By-law #2582/P+D/15

In carrying out the site studies for Chief Jim Koe Park, this master plan was used as a starting point while considering environmental and other site-specific factors.

4.0. Geographic Information

a. Location and Access

Inuvik is located on the East Channel of the Mackenzie Delta, situated approximately 200km north of the Arctic Circle - just south of the treeline and Arctic Tundra – and 100km from the Arctic Ocean. The town sits within the Taiga (Boreal) Forest and is the administrative centre for the Inuvik Region, with the Mackenzie River, Dempster Highway and Inuvik-Tuktoyaktuk Highway connecting the town to smaller, nearby communities.

The Dempster highway provides vehicular/road access to Inuvik for most of the year, though the highway includes ferries and ice bridges in certain sections. As such, those sections of the highway are closed during freeze-up (typically late-October to mid-December) and thaw (typically mid-May to mid-June). During freeze-up and thaw periods, Inuvik is accessible by air only.

b. Climate/Temperature

Inuvik has a sub-arctic climate, with short transitional seasons and cooler summers due to its proximity to the Arctic Ocean. The town typically experiences cool and wet summers (with July - the hottest month - typically having a mean high temperature of 19.5°C, and typical mean low temperature of 8.6°C).

The average temperature for each month of the year in Inuvik, NT is shown on the following page. The average values were taken from sample data, as recorded by Environment Canada from 1981-2010.

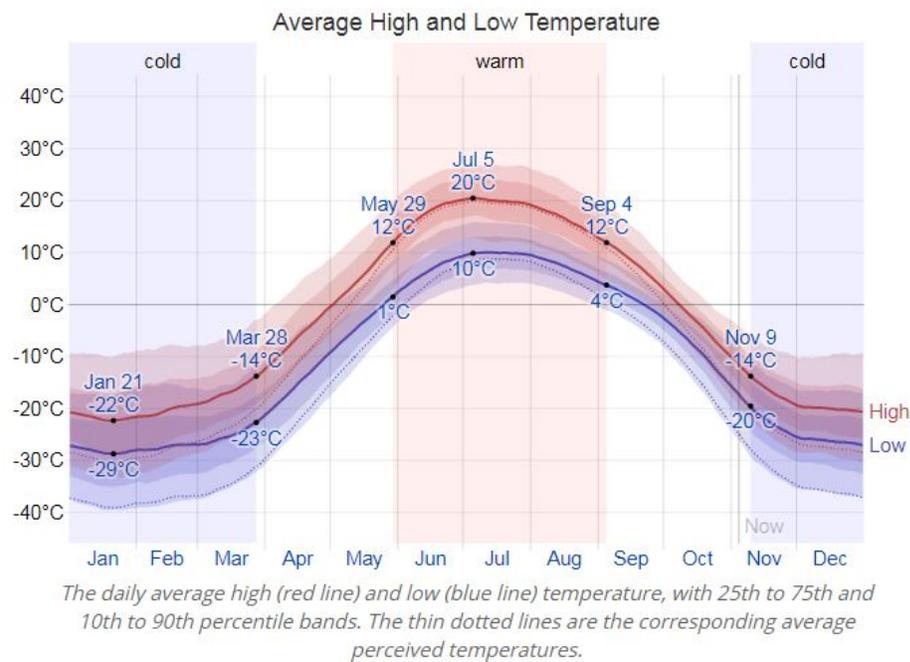


Figure 2. Monthly average temperature in Inuvik (°C)

c. Precipitation

In Inuvik, the winters are long, frigid and dry, with the “snowy period” lasting 8.5 months, from mid-September to the start of June, with an average snowfall of at least 2.5mm. The most snowfall occurs from October to mid-November. The summers are cool and wet.

The average precipitation for each month of the year in Inuvik is shown in the figures below. The average values were taken from sample data, as recorded by Environment Canada from 1981-2010.

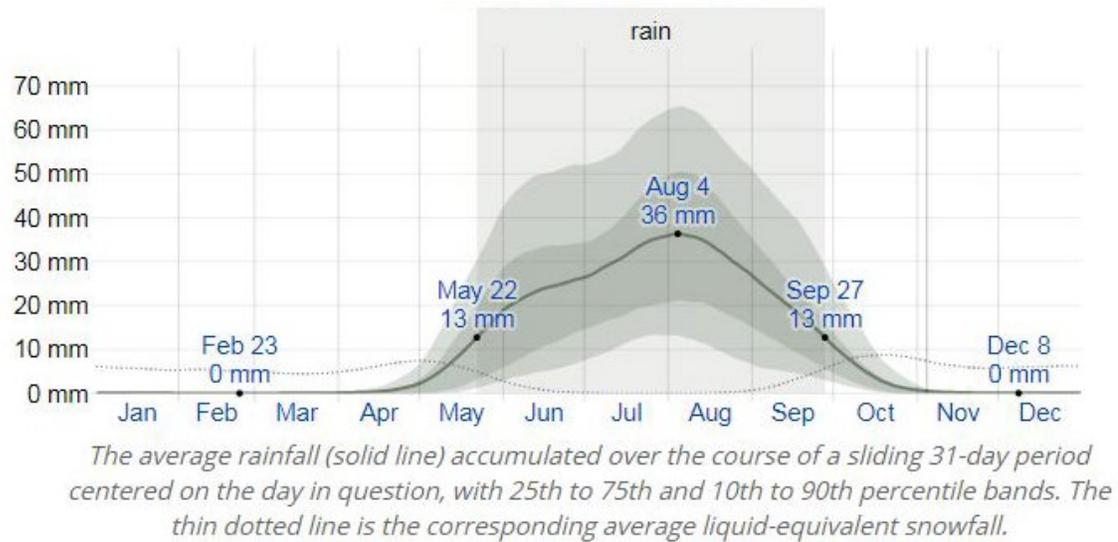
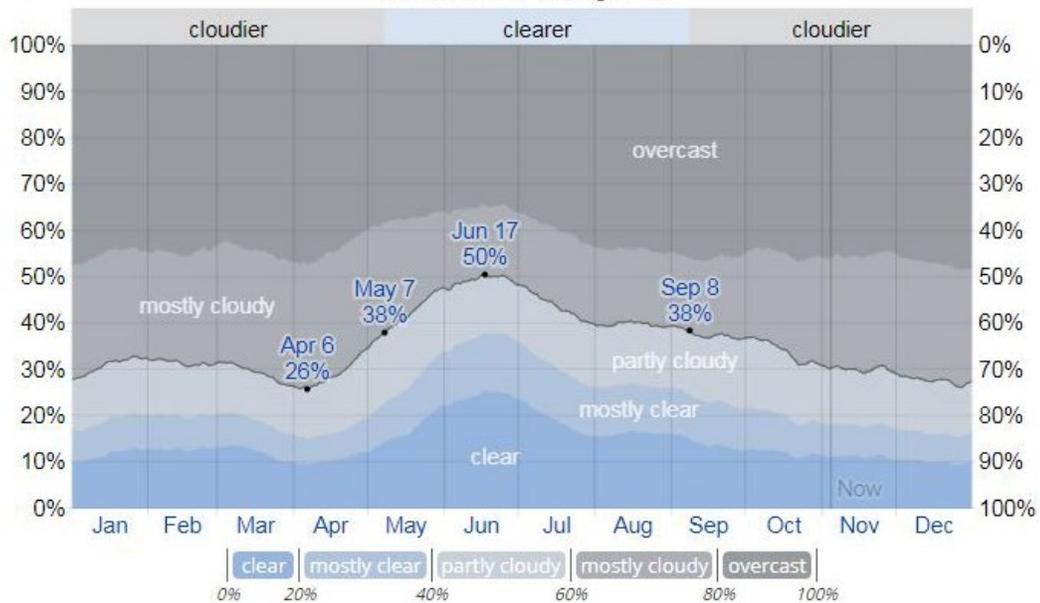


Figure 3. Average Monthly Rainfall – Inuvik



Figure 4. Average Liquid-Equivalent Monthly Snowfall - Inuvik

Inuvik is mostly cloudy year-round, with the most chance of clear skies in June. The average cloud coverage for each month of the year in Inuvik is shown in Figure 5. The average values were taken from sample data, as recorded by Environment Canada from 1981-2010.



The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

Figure 5. Cloud Coverage - Inuvik

d. Wind

Prevailing winds in Inuvik come from the East, with gusting winds coming from the North and North West. Gusting winds from the Northwest occur more frequently between January and February (as well as August), while gusting winds from the North occur very frequently from September to November. The rest of the year gusting wind occurs mostly from the northwest, though less frequently, except for June, which has primary and gusting winds occurring from East to Northwest relatively evenly.

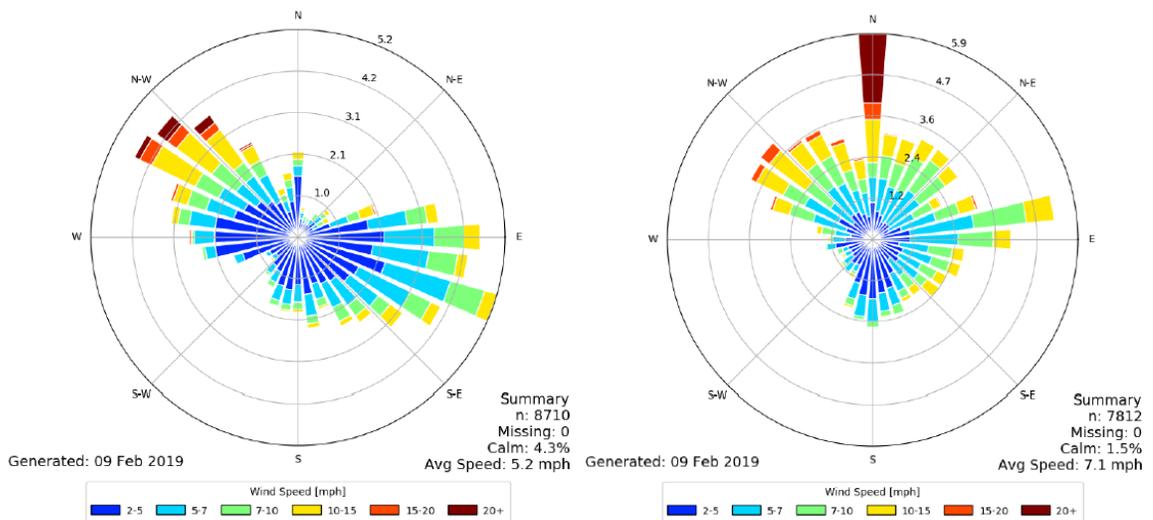
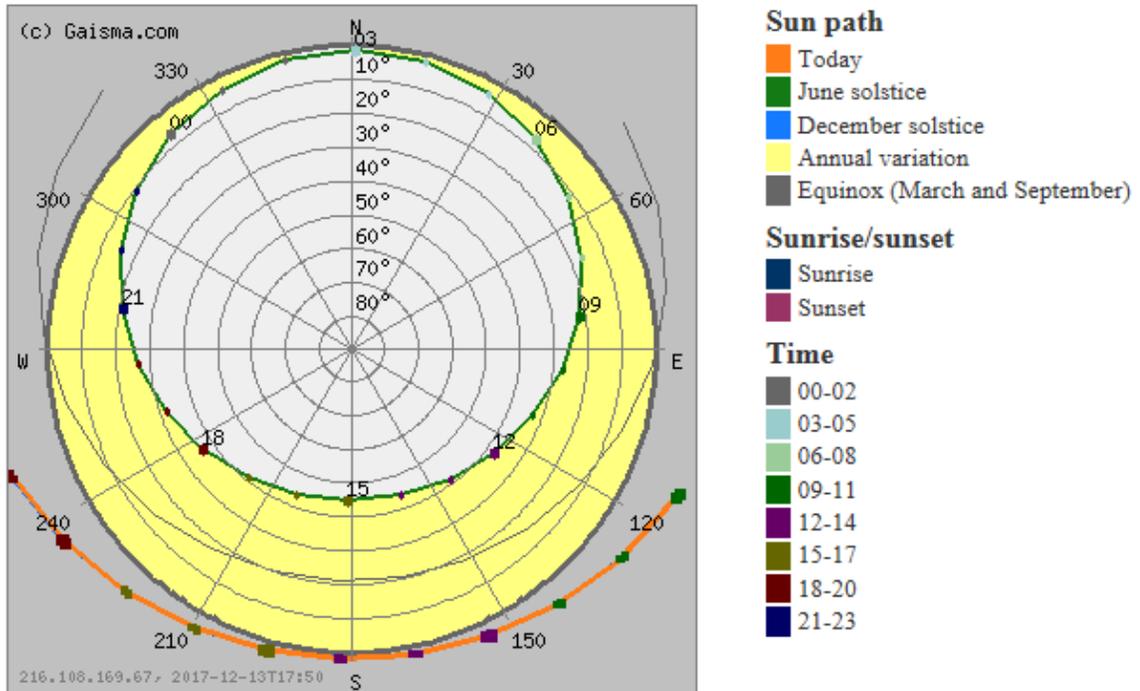


Figure 6. Wind Roses for January (left) and September (left) (right)



Notes: * = Daylight saving time, * = Next day. [How to read this graph?](#) [Change preferences.](#)

Figure 9. Annual Sun Path Diagram for Inuvik

The following table identifies the amount of sunlight available, approximately, each month in Inuvik.

Month	Sun Rise	Sun set	Total hours of sunlight
January 1st	Below the horizon		0
February 1st	11:11	17:02	5hrs, 51 mins.
March 1st	9:13	18:57	9hrs, 45 mins.
April 1st	7:02	20:50	13hrs, 49 mins.
May 1st	4:49	22:49	17hrs, 59 mins.
June 1st	Above the horizon		24hrs
July 1st	Above the horizon		24hrs
August 1st	4:07	23:50	19hrs, 42 mins.
September 1st	6:18	21:26	15hrs, 09 mins
October 1st	8:04	19:19	11hrs, 15 mins.
November 1st	10:01	17:09	7hrs, 07 mins.
December 1st	12:26	14:55	2hrs, 29 mins.

5.0. Review of Chief Jim Koe Park Site

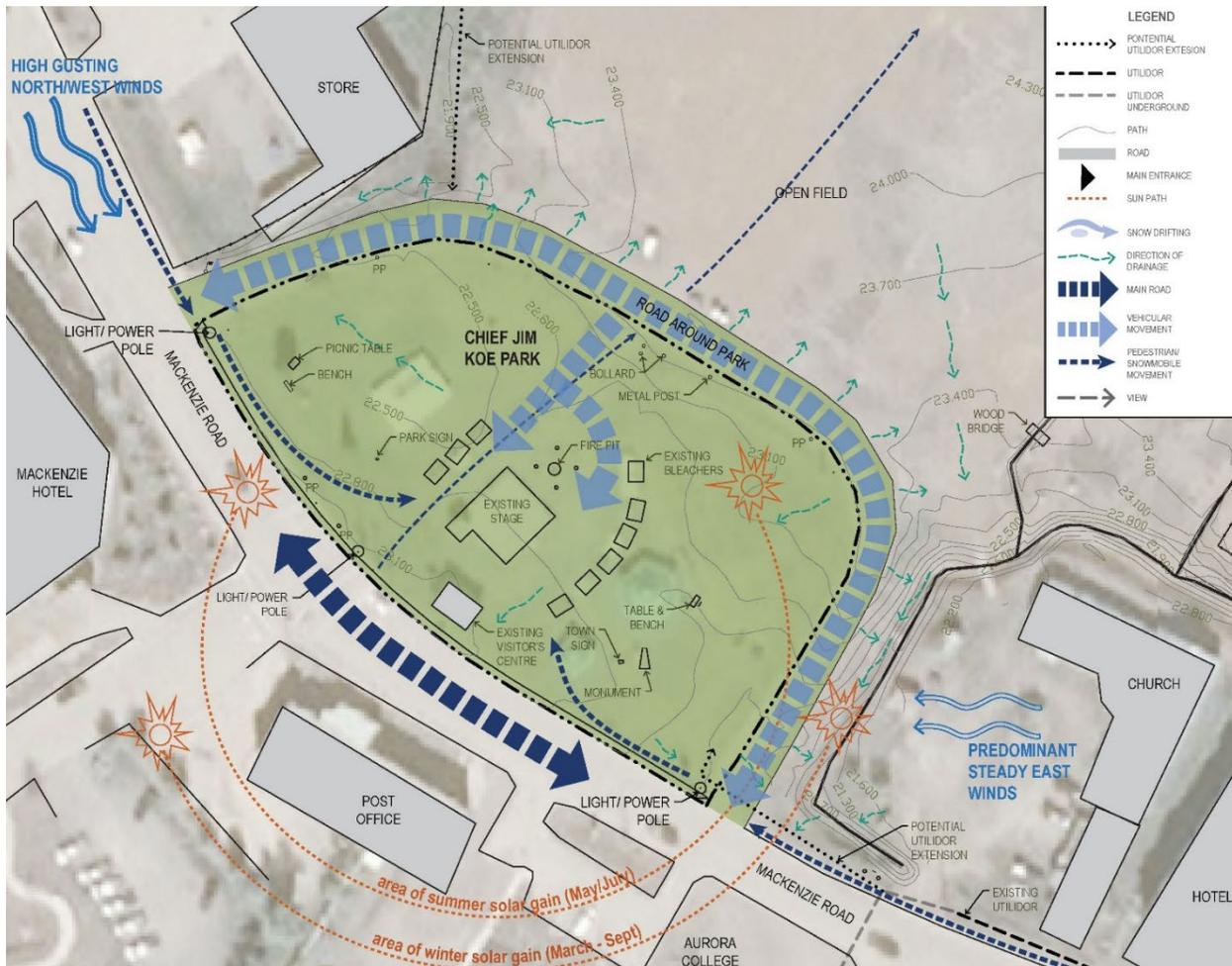


Figure 10. Site Plan Study – Existing Conditions

5.1. Site Location and Access

The Chief Jim Koe Park is located just a little east of the centre of the Town of Inuvik. To the south of the park is Mackenzie Road, which is the main (paved) road through town. A concrete sidewalk is located between the road, allowing for direct pedestrian access onto the park along the either south side of the site.

There is a ring road that wraps around the east, north and west sides of the park. Currently, vehicular access occurs at the centre of the north side of the site, leading to the centre of the site. As was laid out in the Master Plan study in 2018 (and 2017), parking is to be relocated to the perimeter of the park, off the ring road, either on the west or east sides; Which side will depend on which visitor's centre location is selected (to note, the master plan renderings produced in 2018 showed parking on the east and west sides, adjacent to the road, and northwest corner of the site)

There is a ditch along the perimeter of the site – on north, east and west sides -, with the grade falling away (down) away from the site.

There is a sidewalk running along the south side of the site, making pedestrian access to the visitor's centre very short and direct. Parking can be accommodated off the ring road around the park, just north of the proposed visitor's centre.

5.2. Environmental Factors

With regards to sun, the site receives virtually no shadowing from surrounding buildings, with only the post office and Mackenzie Hotel potentially casting a little bit of shadow, though they are far enough away that this would be extremely minimal and only in the middle of winter where the sun angle is very low. The stage area – and centre of the site - receives no shadows.

With regards to wind, the site is exposed to the primary easterly winds and gusting winds from the northwest, with minimal shelter provided by the Arctic store to the northwest and church to the east. Placement of structures on the site could help to create protected areas.

It should be noted that though this location is close to the road (and to exhaust fumes) the primary and secondary wind directions would mean that there should be minimal issue with regards to fumes from cars blowing onto the site.

5.3. Site Views

The main views to consider on this site are:

- Maintain clear views of the Inuvik Monument
- Views to open field to the north
- Stage, visitor's centre and other key features on the site to maintain clear visibility from Mackenzie road

5.4. Infrastructure and Services

The closest above-ground utilidors (which hold water supply and septic lines) from the site are located just east of the southeast corner of the site and further north of the northwest corner of the site (towards the north point of the Arctic Store). Refer to section 7.

Power lines and light poles run along the north side of Mackenzie road – along the south side of the site. There are a couple of poles located on the north side of the site, though it is unclear if power routed to these is solely for supplying power to the lights attached – this will be confirmed as we move forward with the development of this project.

5.5. Grading/Elevation

The site is generally flat with little variation in elevation, making construction here relatively simple (with regards to grading and installation of support/foundation system). One thing to be considered is that there are power lines running across the site/ring road in some places. Heights of these are to be confirmed to ensure adequate clearances are provided.

5.6. Surrounding Amenities and Influences

There are several key community buildings and amenities surrounding this site. Below is a list of key surrounding buildings, with touristic destinations/amenities in bold:

- Anglican church (to the east)
- Aurora College (to the southeast)
- Mackenzie Hotel (to southwest)
- Arctic Foods store (to the northwest)
- Lady of Victory Catholic Church – i.e. “Igloo Church” (to the northwest, adjacent to the store)
- Open field and baseball diamond (to the north and northeast)
- Daycare to the north (west of the open field)

The “Igloo Church” is perhaps one of the most famous tourist destinations in Inuvik and its proximity to this site will likely help to bring people to the visitor’s centre as well.

It is also a nice plus to have an Aurora College building located across the street, to highlight the connection and role they will play in this project.

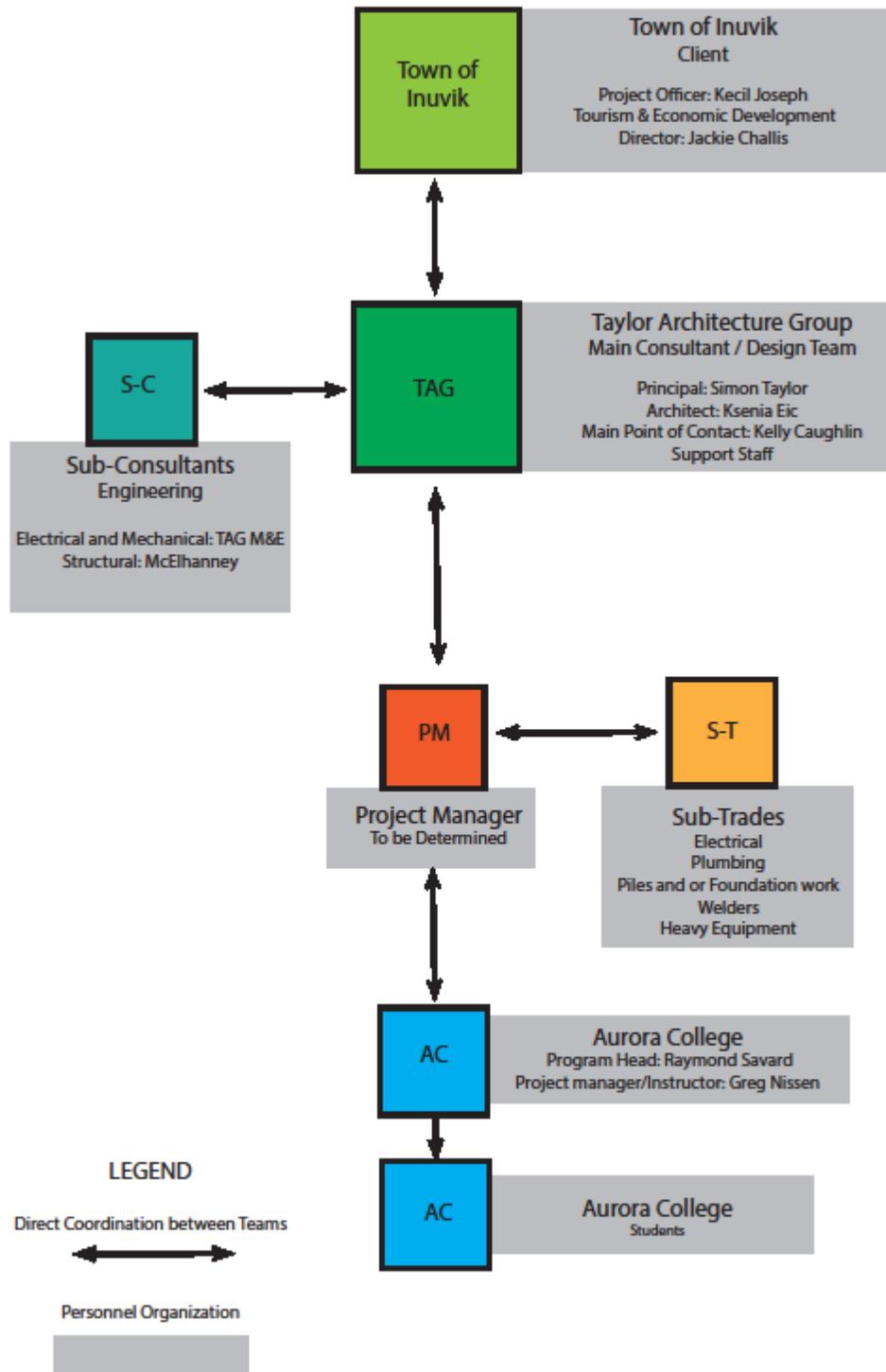


Figure 11. Lady of Victory Catholic Church, Inuvik



Figure 12. Chief Jim Koe Park, Inuvik (from Mackenzie Road looking north)

6.0.Hierarchy Chart



7.0. National Building Code

This building code analysis identifies code items from the 2015 National Building Code of Canada, which has jurisdiction in Inuvik.

The objective of the fire and safety analysis is to provide a level of safety at least meeting the intent of the National Building Code 2015 in terms of safety to occupants and protection of property.

Exiting will be designed as per the National Building Code 2015.

Firefighting access will be provided as required.

Barrier-free (handicap) requirements will be provided to the complete extent of code requirements.