



Yukon Resource Gateway Project

Application for National Infrastructure
Component Funding

January 2016



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I. Introduction

At approximately 483,000 square kilometres (kms), Yukon is the smallest of the three northern territories, but one with a land mass larger than any of the four Atlantic Provinces. However, Yukon is the smallest jurisdiction in Canada by population, with only 37,000 residents, or one resident for every 13.05 km². Yukon is also home to 14 First Nations, 11 of which have finalized Land Claim and Self-Government Agreements with the governments of Yukon and Canada.

The transportation system in Yukon is reasonably well developed for a northern jurisdiction. Approximately 4,800 kms of all-season highways connect every community in Yukon except Old Crow, Yukon's most northerly community, which is served only by air. The highway network connects inter-jurisdictionally to British Columbia and the Northwest Territories, as well as internationally to Alaska. The air network includes four certified airports, nine community aerodromes, and an additional 16 remote airstrips. Daily scheduled air service to southern Canadian hubs is available, as is seasonal international charter service between Frankfurt, Germany and Whitehorse.

Delivering a safe, reliable, and sustainable transportation network in Yukon is not without its challenges. A small population spread over a large geographical area creates unique service delivery challenges. An equally small tax base from which to generate revenues limits government's ability to build, improve and maintain transportation infrastructure.

Yukon's economy is largely dependent on expenditures in the public administration and mining sectors, with the tourism sector also providing significant inputs to the economy. In the past decade, Yukon has seen steady growth in GDP, although there has been a contraction in the past year. The decade-long growth trend followed by the recent contraction has been reflected in both private and public sector expenditures.

The Yukon economy is heavily influenced by market forces outside the territory. Specifically, the mining sector is of great importance to the Yukon economy, contributing a significant portion of the territory's GDP. For this reason, Yukon is particularly sensitive to the cyclical

fluctuations that characterize global commodity markets. Yukon possesses a significant resource base from which to develop and expand its economy. Development of this resource base will bring benefits to the rest of Canada through direct employment, taxes, and royalty payments to the federal government. However, Yukon faces a challenge with the overall lack of suitable infrastructure along the "last mile" to significant mineral deposits. The potential costs of building this infrastructure lay beyond the financial capacity of Yukon Government alone.

Yukon has the potential to be – and wishes to be – a major contributor to the economic health of Canada. A reliable expanded transportation network will play a critical role in making this a reality. The direct economic impact of the Yukon Resource Gateway Project is significant in terms of GDP increases (\$482 million), labour income (\$262 million) and jobs (4500). If those major mining projects expected to proceed following the Yukon Resource Gateway Project in fact do so, governments will see estimated tax income of over \$3.5 billion, returning almost 10:1 for every public dollar invested.

Ultimately, the Yukon Resource Gateway Project is about:

- fulfilling the Territory's economic and export potential;
- significantly increasing the productivity of Yukon's mining sector;
- generating long-term economic opportunities for Yukon communities and First Nations;
- improving road safety for all users; and
- setting Yukon on a path to economic self-sufficiency.

Rationale for National Infrastructure Component Application

Since Confederation, Canada's North has held a special place in the psyche of the nation and has been a fundamental part of our heritage, identity, and our future. Throughout the history of Canada, federal governments of all political persuasion have recognized the North as a key component of our national sovereignty and a land of untapped potential.

This application is about tapping that potential.

Investing in Canada's North recognizes the tremendous economic potential and the very real opportunity that exists to strengthen northern communities, create opportunities for lasting benefits for First Nations, build a stronger Canada by creating stable, long term, private-sector jobs, and expanding our export potential. In Yukon, promoting social, and economic development is inextricably linked to mining. The resource sector has been the mainstay of Yukon's economy since gold was discovered on Rabbit Creek in 1896, touching off the Klondike Gold Rush. Over the ensuing 119 years, placer mining has continued to draw gold from Yukon deposits and hard rock mines have opened and operated; some have thrived, some have closed. Today, Yukon consistently ranks near the top of any jurisdiction in the world for mineral development potential.

How best then to realize the potential national economic and social benefits that will arise from mineral development in Yukon? By accessing the National Infrastructure Component (NIC) of the Building Canada Fund, Yukon proposes to improve transportation infrastructure to a level that will support long-term sustainable mineral development. Yukon has focused its proposal on improving access to two significant mineral rich areas in the territory. By focusing its efforts on key corridors, Yukon can encourage industry to leverage that support, make further investments in Yukon transportation networks, and bring their projects to a state of production.

At the time of this application, world commodity prices are still declining after an extended downturn. Some operating mines in Yukon are in temporary closure, and associated expenditures in the mining industry are in decline. This is precisely the time to make investments in needed infrastructure improvements. The commodity cycle is just that – a cycle. Demand will increase again, prices will rise, and global mining projects will be

advanced. Yukon needs to ensure that it is in a strong position when markets recover in order to maximize the potential benefits to the people of Yukon, First Nations and Canada.

Mining project viability is currently compromised by a lack of suitable transportation infrastructure. When commodity prices are high, capacity within the Yukon construction industry is stretched by activity in the mining sector, which raises the relative costs of public construction projects. For this reason, Yukon needs to prepare for the next upturn by investing in key infrastructure now, rather than scrambling to make needed investments in the wake of the next commodity market resurgence.

Yukon currently allocates approximately \$60 million per fiscal year for capital investments in transportation infrastructure and an additional \$62 million for operations and maintenance. In order to make the necessary capital investments for the Yukon Resource Gateway Project, Yukon would have to dedicate its entire capital transportation budget for the period 2018 – 2024; clearly, this is not possible. Therefore, augmenting Yukon investments with funding from the NIC is the most reasonable option, especially given the significant economic returns to Canada, Yukon and First Nations that could potentially flow from such investment.

The federal government's priorities are perfectly aligned with Yukon's desire to advance its economy by investing in transportation infrastructure in order to maximize future development. Specifically, the Yukon Resource Gateway Project will help to accomplish the following objectives:

- building a strong economy by building a strong middle class;
- creating opportunities for young Canadians;
- investing now in projects which our country needs;
- strengthening communities;
- skills and employment training;
- investing in Canada's north to help northern economies grow;
- a renewed relationship with indigenous peoples; and
- expanding exports and opportunities for Canadians and getting Canadian goods to market.

In addition, the project clearly meets all four criteria of the NIC:

- generating positive economic activity, with projections of over \$30 billion added to Canada's GDP resulting in a 10:1 return for public investment;
- reducing potential economic disruptions or foregone economic activity by opening up the potential of what has consistently been ranked as one of the most attractive jurisdictions in the world for mining;
- generating productivity gains for the Canadian economy, with major improvements to the operating efficiency of current and planned mining operations; and
- providing benefits that extend beyond the Yukon, as detailed later in our proposal with thousands of jobs and billions in economic activity for the rest of Canada if the Territory's mining potential can be accessed with an improved road network.

When the federal government speaks of the importance of "strategic and trade enabling infrastructure" to Canada's future, you need look no further than the Yukon Resource Gateway Project (YRGP).

The Yukon Advantage

Yukon has some distinct advantages that position it as an ideal location in which to invest public and private sector dollars in pursuit of long-term economic returns. These include a well-developed transportation network, abundant and well-defined mineral deposits, First Nation Final Land Claim and Self-Government Agreements, established environmental assessment and permitting processes, and an enviable track record of successfully delivering public infrastructure projects under federal funding programs.

Existing Public Transportation Network in Yukon

Yukon has been inhabited for tens of thousands of years. Archaeological evidence from the Bluefish Caves in the vicinity of the community of Old Crow indicates human habitation existed at least 10,000 years ago and may have, in fact, existed over 25,000 years ago.

First Nations used an extensive trail network as well as the waterways of Yukon to travel between seasonal camps for hunting and gathering, and to neighboring territories for trade. With European contact in the early 1800s, use of the waterways and trails as the main transportation networks continued.

In 1896, the first major expansion of Yukon's transportation system began when gold was discovered on Rabbit Creek near present-day Dawson City, igniting one of the world's great gold rushes. The age of steam came to Yukon and, by the early 1900s, a narrow gauge railway ran from Skagway, Alaska to Whitehorse and shallow draft paddlewheel vessels ran downstream on the Yukon River to Dawson City.

By 1927, commercial aviation was established in Yukon, further expanding the existing transportation network. In the early years of the Second World War, aviation expanded its reach in Yukon with the establishment of a series of aerodromes called the Northwest Staging Route, allowing war materials, including aircraft, to be shipped by the United States to allied forces as part of the Lend-Lease initiative.

When the United States entered into the Second World War in 1941, a new age in Yukon transportation was born with the building of the Alaska Highway from Dawson Creek, British Columbia to Fairbanks, Alaska. The 2,400 km pioneer route, built in an amazing 10 months, formed the major highway artery in Yukon. In the mid to late 1950s, road access was increased in the territory with construction of the Klondike Highway north to Dawson City, spelling the end of the riverboat era. In the 1960s and '70s, further road expansion was completed to provide access to mineral rich areas and connect isolated communities. The last major highway construction project in Yukon was completed in 1979 with the opening of the Dempster Highway, connecting Inuvik, Northwest Territories (NWT) with southern Canada.

Table 1. Yukon Transportation Network Tangible Capital Asset Values			
Asset Category	Asset Cost Opening Balance 2014/15	Net Book Value Opening Balance 2014/15	Percentage of Total Net Book Value
Airport Runways	\$ 28,365,920	\$ 17,789,513	2.5%
Bridges and Culverts	\$161,183,185	\$128,012,530	17.9%
Highways and Surfaces	\$744,198,283	\$492,782,843	68.9%
Buildings	\$ 66,324,851	\$ 37,275,386	5.2%
Land Improvements	\$ 17,928,843	\$ 15,900,779	2.2%
Equipment	\$ 65,359,098	\$ 23,939,244	3.3%
TOTAL	\$1,083,360,180	\$715,700,295	

The total current net book value of the transportation network, including equipment and the facilities needed to maintain it, is \$715,700,295. As shown in Table 1, the highest value components of the system are highway-related.

Current Service Delivery Model

All public transportation infrastructure forming part of Yukon’s Tangible Capital Asset base as outlined in Table 1, is built, maintained, and regulated by the Government of Yukon through the Department of Highways and Public Works (HPW). Highway, bridge, paving and airport construction is coordinated and managed through HPW. Actual construction projects are tendered to private sector contractors.

Highway maintenance activities are conducted by HPW crews HPW maintains a network of 21 highway maintenance stations located in all incorporated communities, four unincorporated communities and eight remote locations. Airport maintenance activities are carried out by dedicated Aviation Branch forces at four certified airports, while highway maintenance crews are responsible for maintenance activities on the remainder of the system. HPW is also responsible for regulation of the transportation system through motor vehicle licensing and registration, as well as National Safety Code and Carrier Compliance operations conducted at strategically located weigh scales.

Highway Network

For a small territory, the Yukon highway network is fairly well developed. Major highways connect all communities in Yukon, with the exception of Old Crow in the north. All-season connections with British Columbia (BC) are maintained at four access points, three all-season and one seasonal international border crossing with Alaska are located on major highways, and year-round access to the NWT is also maintained. Yukon highways include two coastal mountain passes and the only all-season highway in Canada to cross the Arctic Circle.

Yukon highways also form part of the National Highway System (NHS). The Alaska Highway and the South Klondike Highway are designated as Core Routes and the North Klondike and Dempster Highways are designated Northern Remote Routes under the NHS.

The maintained highway network is comprised of 4,820 kms and includes 132 bridges. Of this, 2,561 kms are gravel, 350 kms are asphalt pavement and the remaining 1,909 kms are Bituminous Surface Treatment (BST). Also known as chip seal, BST is an oil emulsion-based treatment that provides a hard surface covering for gravel roads and provides a cost effective alternative to asphalt pavement.

Not included in this figure are several hundred kilometres of road constructed by resource sector interests over the years which are not maintained by Government of Yukon. These roads provide access for mineral exploration as well as back country access for the public. When new resource developments are proposed, these roads often form the basis for industrial access, although all would need significant upgrades to achieve a suitable standard.

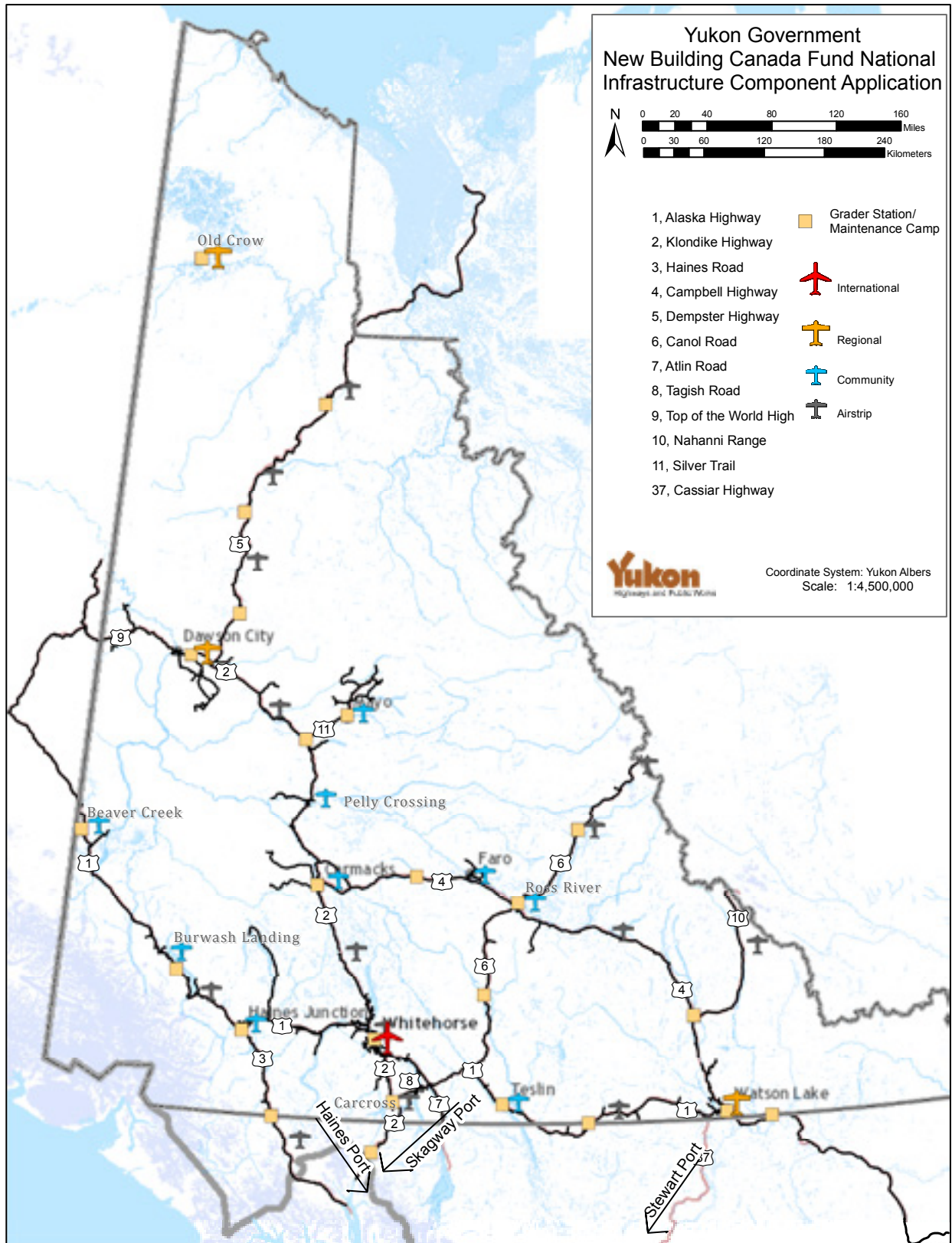
Air Network

The Government of Yukon maintains and operates four airports and 25 aerodromes throughout the territory. The four certified airports include Watson Lake, Whitehorse, Dawson City and Old Crow. Of the 25 aerodromes for which the Yukon government is responsible, nine are located in communities and the remainder are remote airstrips normally located adjacent to existing highways (Figure 1). The Yukon government also manages the Community Aerodrome Radio Stations (CARS) program at eight aerodromes on behalf of Nav Canada. The CARS program provides aircraft landing and takeoff information, radio communications, flight planning assistance and weather observations.

Erik Nielsen Whitehorse International Airport (ENWIA) is the main hub in the system. Daily scheduled domestic jet service is provided to Whitehorse by Air Canada and Air North with direct flights to Vancouver, Edmonton, Calgary and Ottawa (via Yellowknife). Summer service with direct flights to Vancouver is also provided by WestJet. Condor Airlines also provides a weekly summer charter service with direct flights to and from Frankfurt, Germany. In 2014, Holland America Lines (HAL), in association with Air North, began daily charter flights between Fairbanks, Alaska and Dawson City, Yukon as part of its cruise ship/tour operations.

In addition to the major carriers, several smaller fixed-wing and rotary charter companies provide medevac, industrial and tourism services throughout Yukon.

Figure 1: Yukon Transportation Network



Source: Yukon Transportation Engineering Branch

Rail

The rail system in Yukon is owned by the White Pass and Yukon Railway (WPYR). In the 1960s, the WPYR ran between Skagway, Alaska and Whitehorse and was the first intermodal containerized shipping operation in Yukon servicing the Faro lead/zinc mine. Since the initial mine closure in the early 1980s, the rail system has not had an industrial use and trains have not run into Whitehorse since that time. WPYR currently runs a seasonal tourist operation between Skagway, Alaska and Carcross, Yukon, servicing the cruise ship industry in Skagway.

WPYR has given no official indication of a desire to restart industrial operations and any expansion of service to Whitehorse will require upgrades of the existing track. For planning purposes, HPW does not consider potential ore shipments by rail as an alternative to heavy haul road transport at this time.

Marine

Bulk mineral export from Yukon is currently accomplished through the Skagway, Alaska port and the Stewart, BC port. There is potential for industrial shipments through the Haines, Alaska port as well but this would require upgrades to the current port configuration.

Regulatory

One unique advantage Yukon has is the opportunity for bulk haul permits to facilitate ore transport and export. Under a bulk haul permit, industrial carriers are allowed to haul heavier loads than normally allowed under the Highways Act and can increase their gross tare from 63,500 kg to 77,000 kg on specified routes while meeting the specified axle loading limits. Permit operating conditions are tailored to each operation and specify explicit terms that must be met relating to such variables as the governance of speeds, operational reporting requirements, truck configuration and standards, while dictating minimum driver experience requirements. Bulk hauls have operated successfully in Yukon since the mid-1980s and the operations have had a very good safety record in that time.

The advantage shippers derive from being able to haul an additional 13,500 kg per load is obvious. However, bulk hauls also yield public benefits, such as the safety advantages that result from requiring fewer trucks to transport a given volume of ore. Bulk hauls also facilitate additional carrier innovation, as carriers seek to implement measures to maximize payload and transport efficiency, with new, innovative configurations or modifications being proposed on many bulk haul permit applications.

Yukon Mineral Potential

Yukon is rich in both precious metals and base metals. Gold and silver have been mined extensively throughout the Yukon and large scale mining developments have extracted copper, lead and zinc for export. Between 1999 and 2002, the Yukon Geological Survey conducted a broad scale assessment of mineral potential across the territory. The resulting report and map series (Appendix A) presents a snapshot of this potential in the Nahanni and Dawson Ranges. In assessing these rankings, it is important to note that they are presented relative to one another, meaning an area assigned a lower ranking does not

necessarily have a low mineral potential in absolute terms, but, rather, has been identified as having lower potential relative to areas with higher mineral potential. Ongoing exploration and production continue to identify and further delineate the vast mineral resource wealth that exists within the Yukon.

First Nation Land Claim and Self-Government Agreements

Yukon has been at the forefront of land claim negotiation and settlement in Canada since Yukon First Nations personally presented *Together Today for Our Children Tomorrow* to Prime Minister Trudeau in 1973. This document formed the basis for the negotiation of comprehensive land claim agreements in Yukon. In 1993, a final version of the Umbrella Final Agreement (UFA) was signed between Yukon First Nations, as represented by the Council for Yukon First Nations, and the Governments of Canada and Yukon. The UFA provided a template for individual final agreements to be negotiated with individual First Nations.

Currently in Yukon, 11 First Nations have signed Final Land Claim Agreements and Self-Government Agreements. The Final Land Claim Agreements are modern day treaties and are protected under section 35 of the Constitution of Canada. The Self Government Agreements recognize individual First Nations as governments and provide First Nations the power to enact laws and negotiate the drawdown of program responsibilities from Canada and Yukon.

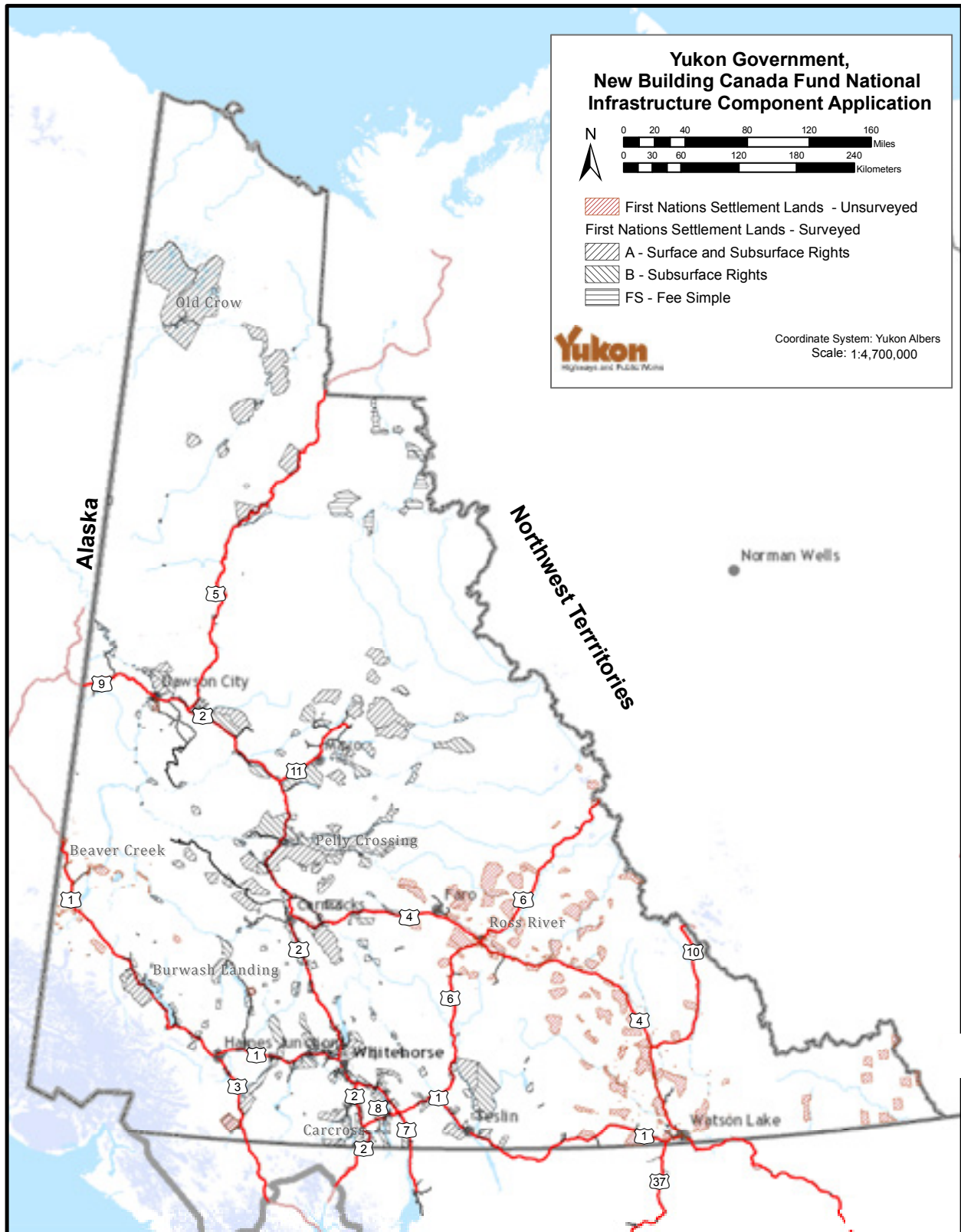
Three Yukon First Nations have not signed Final Land Claim Agreements and remain governed under the federal Indian Act. All three First Nations have entered into bi-lateral negotiations and specific arrangements with Yukon outside of the federally mandated comprehensive land claim process.

Having established Agreements in place, with defined obligations, processes, and lines of responsibility, provides a level of certainty for a project proponent that is not necessarily evident in many jurisdictions. This is not to suggest there are no disagreements between various governments over the interpretation and/or implementation of Land Claim Agreements. However, the Agreements themselves do provide a solid foundation from which to jointly address key issues and advance social and economic growth within the territory.

All of the Yukon First Nations have demonstrated an interest in expanding economic opportunities within their individual communities through the establishment of development corporations and the expansion of the business lines within these corporations, provided that potential environmental and social impacts can be mitigated. Various development corporations have entered into joint venture arrangements with private sector firms in order to leverage opportunities to deliver large scale construction projects.

Figure 2 illustrates the extent of settlement land within Yukon. Due to the scale of the map not all of the smaller site specific land selections are shown.

Figure 2: Yukon First Nations Settlement Lands



Source: Yukon Transportation Engineering Branch

Environmental Assessment and Permitting Processes

One requirement of the UFA was the establishment of a made-in-Yukon environmental assessment regime. The Yukon Environmental and Socio-Economic Assessment Act (YESAA) was proclaimed under federal legislation in 2003. The assessment process is managed by the Yukon Environmental and Socio-Economic Assessment Board (YESAB), an arms-length body independent of government. YESAB is responsible for the administration of the environmental assessment process and for providing project-specific recommendations for each project reviewed under the legislation. The YESAA dictates the thresholds for projects to require a review, determines the methodologies of those reviews, mandates the solicitation of public input, and establishes the timelines to which reviews must adhere. It also establishes Decision Bodies to make final determination on projects, based on YESAB recommendations, depending on where the project is taking place. In some cases, Yukon and First Nations are the sole Decision Body, in others they may be joint Decision Bodies.

Following a successful YESAA assessment and the completion of a Decision Document signed off by the applicable Decision Bodies, projects then enter a permitting stage. Depending on the scale and complexity of the project, this may involve any number of permits governing water and land use, as well as permits specific to the mining industry, such as Quartz Mining Licences. Each of these permits has its own application and review process and all the major permits provide an additional opportunity for public input and comment.

Delivery Record

Yukon has taken full advantage of available federal infrastructure funding programs over the years. In doing so, it has established a solid performance record of delivering infrastructure projects within the stated parameters of the specific programs being accessed.

Under the original Building Canada Fund (BCF) Yukon successfully delivered over \$265 million in infrastructure projects over the life of the program. These included several transportation related projects, such as bridge upgrades and highway reconstruction.

In the economic downturn of 2008, the federal government announced an additional economic stimulus funding program. Again, Yukon stepped up and delivered beneficial infrastructure projects on very tight timelines. The Yukon projects were delivered in advance of a hard deadline established by Ottawa, and Yukon accomplished this while still delivering scheduled BCF and non-federally funded projects.



II. Yukon Resource Gateway Project Description

Overview

Yukon is ranked among the top 10 most attractive jurisdictions in the world for mining investment. It is currently the highest-ranked Canadian jurisdiction in that regard (see figure 3). It is one of only two Canadian jurisdictions to have held the #1 ranking in the world¹ and the only one that has been awarded that ranking twice. Mining companies consistently identify Yukon as having amongst the highest mineral development potential of any Canadian jurisdiction², but the ability for Yukon to take advantage of the possibilities offered by resource development are compromised by inadequate infrastructure. Mining is recognized as a future economic driver of Canada's North; however, the vast economic potential can only be realized if key infrastructure challenges are met.³ Notably, the lack of adequate transportation infrastructure is cited as one of the greatest obstacles to mining development.⁴

The Yukon Resource Gateway Project will be critical in shaping Yukon's resource development potential and long term community resiliency. It will address the inadequate regional infrastructure that is threatening long-term economic growth. The project is eligible for National Infrastructure Canada funding, as it enables major natural resource development and export opportunities, promises to deliver broad public benefit, and will contribute to the long-term economic growth and prosperity of Yukon, Canada, and First Nations.

Yukon's Opportunity:

Realize the economic potential of one of the world's best mining deposits, generating thousands of jobs and billions in economic activity for the Territory and the country.

¹ Fraser Institute (2014) Annual Survey of Mining Companies.

² Ibid p.14

³ See, for example Conference Board of Canada, (2015) Building a Resilient and Prosperous North; Minister of Indian Affairs and Northern Development (2009) Northern Strategy

⁴ Conference Board of Canada, (2013) The Future of Mining in Canada's North

Figure 3: Yukon Ranked Among Most Attractive Jurisdictions for Mining Investment Globally



Source: Fraser Institute (2014) Annual Survey of Mining Companies.

Yukon’s mining real gross domestic product increased almost 500% from 2007 to 2011, and is forecast to increase again by 2017.⁵ There has been an investment of approximately \$700 million in mining development over this period and the annual value of mineral production currently averages approximately \$460 million per year.⁶ Although there is no doubt that the contributions to the Yukon and Canadian economies to date have been substantial, the ability to further develop resource activities is doubtful without improved road access to the mineral rich corridors of central Yukon.

Between 2007 and 2015, Yukon made significant investments in improvements to transportation infrastructure, including \$46.4 million on reconstruction of the Campbell Highway between the Nahanni Range Road junction and the Alaska Highway at Watson Lake and \$32.5 million on reconstruction on other key Yukon highways, including the Klondike Highway. Additionally, Yukon plans to make a further investment of \$52 million for Alaska Highway improvements in the Whitehorse Corridor over the next six years.

Yukon’s Challenge:
An underdeveloped road network that undermines the economic viability of accessing some of the world’s major mineral deposits.

⁵ Conference Board of Canada (2013) The Future of Mining in the North

⁶ *Yukon Economic Outlook*, January 2015, p.15

In the United States, proposed investments of approximately \$85 million (US) in port infrastructure improvements in Skagway, Alaska are also planned over the next several years to enhance ore shipping capacity and capabilities.

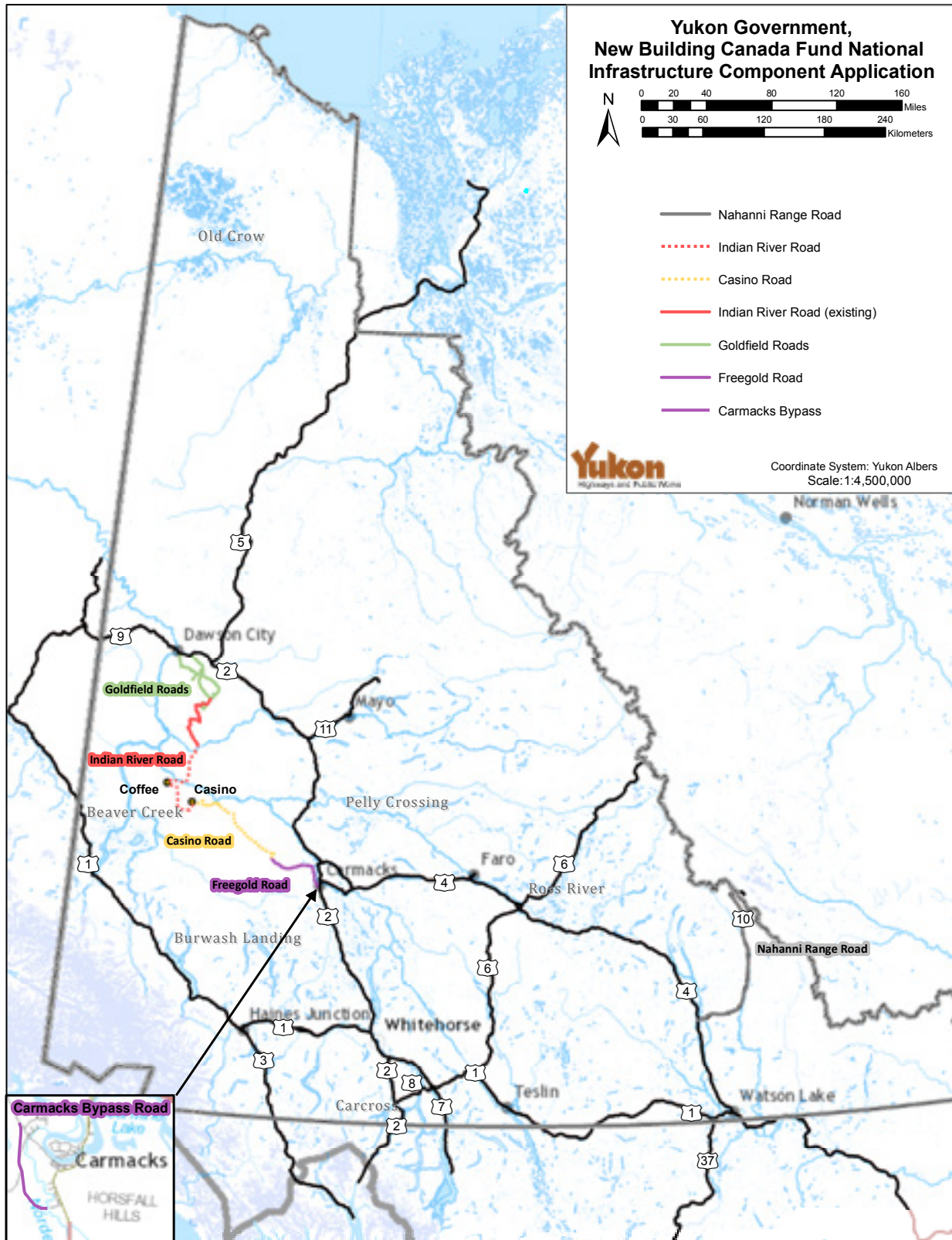
Private sector investments in the Port of Stewart in BC totaling over \$60 million in the last five years will also directly enhance the viability of mining operations in the Yukon through increased break bulk capacity and future bulk terminal upgrades.

In short, Yukon has the mining potential and the shipping access to get minerals to market, but the missing element is the road network to make projects economically viable.

To solve that, the Yukon Resource Gateway Project will provide needed upgrades of existing public infrastructure to two key areas of high mineral potential and active mining within Yukon. These areas include the Dawson Range and Nahanni Range (see Figure 4).



Figure 4: Overview of Project Components



Source: Yukon Transportation Engineering Branch

The Dawson Range access will include upgrades to four separate road systems that will provide improved access to a significant area of mineralization in the central Yukon on existing public roads and resource-related access trails from southern and northern access points.

The southern access point for the Dawson Range will involve upgrades to the Freegold Road corridor that runs northwest from the community of Carmacks to Big Creek. From Big Creek, the route will follow the Casino Road (also referred to as the Freegold Extension) through to the proposed Casino mine site. Upgrades to these sections of road will improve access for placer mining operations, provide improved access for quartz mining operations, and improve safety for public users of the road system. Upgrades will also directly impact the viability of the Casino Project, a major copper and gold mine proposal in the central Dawson Range that is currently undergoing environmental review.

The northern access to the Dawson Range will involve upgrades to a series of roads starting from the Klondike Highway near Dawson City and extending south to the proposed Coffee Mine property. Collectively, these are known as the Goldfield Roads and, in addition to providing access to the Dawson Range, upgrades of these roads will also provide increased access for the Yukon Placer industry and increased safety for users of this road network. Improvements will also positively impact the viability of the Coffee Project, an open-pit gold mining proposal in the northern portions of the Dawson Range.

The final component of the Dawson Range access would see a road connection constructed between the Coffee and Casino properties. Completion of this link would eventually provide controlled access between Dawson City and Carmacks via the Dawson Range.

The Nahanni Range Road extends northeast from the Campbell Highway to the Yukon/NWT border and provides access to another rich mineral area as well as providing access to an existing tungsten mine in the NWT. Improvements to this road will increase safety for public users, improve access to potential mineral developments, and directly impact the viability of a major lead/zinc mine proposal currently undertaking preparations for environmental assessment.

First Nation Engagement and Participation

All components of the YRGP are located within traditional territories of various Yukon First Nations. Moreover, the Dawson Range Access component of the YRGP is located entirely within traditional territories of Yukon First Nations with Final Land Claim Agreements in place. Yukon recognizes its obligations under these agreements, as well as its obligations to the First Nations without final land claim agreements in proximity to the Dawson Range and in eastern Yukon.

Beyond fulfilling consultation obligations, Yukon proposes to involve First Nations directly in the project planning and delivery. Yukon believes there are significant long-term benefits associated with the project. These benefits could bring economic development opportunities to local First Nations communities, either through road construction and maintenance or in support services, and Yukon will work to maximize those benefits.

Training and business development associated with the YRGP will also allow First Nations to leverage additional opportunities associated with future resource developments.

Preliminary discussions have occurred with all directly affected First Nations and all have expressed an interest in continuing discussions to ensure their interests and concerns are addressed as the project moves forward and that any benefits that arise from the project are experienced primarily at a First Nation and community level. Yukon is committed to this approach.



Project Components

Project Data Sources

Yukon has commissioned and accessed several reports and studies to determine preliminary engineering and design components as well as preliminary cost estimates for the various components of the YRGP. These include:

- Freegold Road Functional Plan, March 2015, Associated Engineering (HPW);
- Goldfield Roads Functional Plan, December 2015, Associated Engineering (HPW);
- Nahanni Range Road Functional Plan, April 2015 Associated Engineering (HPW);
- Casino Mine Feasibility Access Study, August 2012, Associated Engineering (Western Copper and Gold Corporation); and
- Coffee Gold Project Site Access Road Evaluation of Route Options, January 2015, JDS Energy and Mining (Kaminak Gold Corporation).

Design Standards

Yukon's Highways and Public Works department follows the Transportation Association of Canada *Geometric Design Guide for Canadian Roads* for all construction or modification on public highways. The design guide specifies criteria to be met depending on the type of road under consideration. In addition, there are other road standards that industry uses such as the BC Ministry of Forests, *Forest Road Engineering Guidebook 2nd Edition*.

Regardless of the standard applied, road designs are based on anticipated traffic types and volumes to allow for safe operation under various conditions. Where terrain conditions dictate, lower design speeds are applied.

Table 2 outlines the basic design criteria for all the components of the YRGP. The current public sections of the Goldfield Roads will be constructed to a two-lane design speed of 60 km/h with a reduced design speed of 30 km/h where necessitated by terrain restrictions. The Indian River/Coffee and Coffee/Casino Connector will be constructed as a one-lane road with pullouts to a design speed of 50 km/h with a 30 km/h limit in terrain restrictive sections. The Casino Road will be constructed to a 70 km/h design speed and lowered to 50 km/h where terrain is restrictive. The Freegold Road will be designed to an 80 km/h standard, reflective of the existing mix between industrial and private traffic. The Nahanni Range Road will be designed to a 70 km/h design standard. This reflects the challenges the Nahanni Range Road presents as a public highway situated in terrain more mountainous than that of the Freegold Road. Applying an increased design speed to the Nahanni Range Road would require building it to a higher engineering standard and a significant increase in cost.

Dawson Range Access

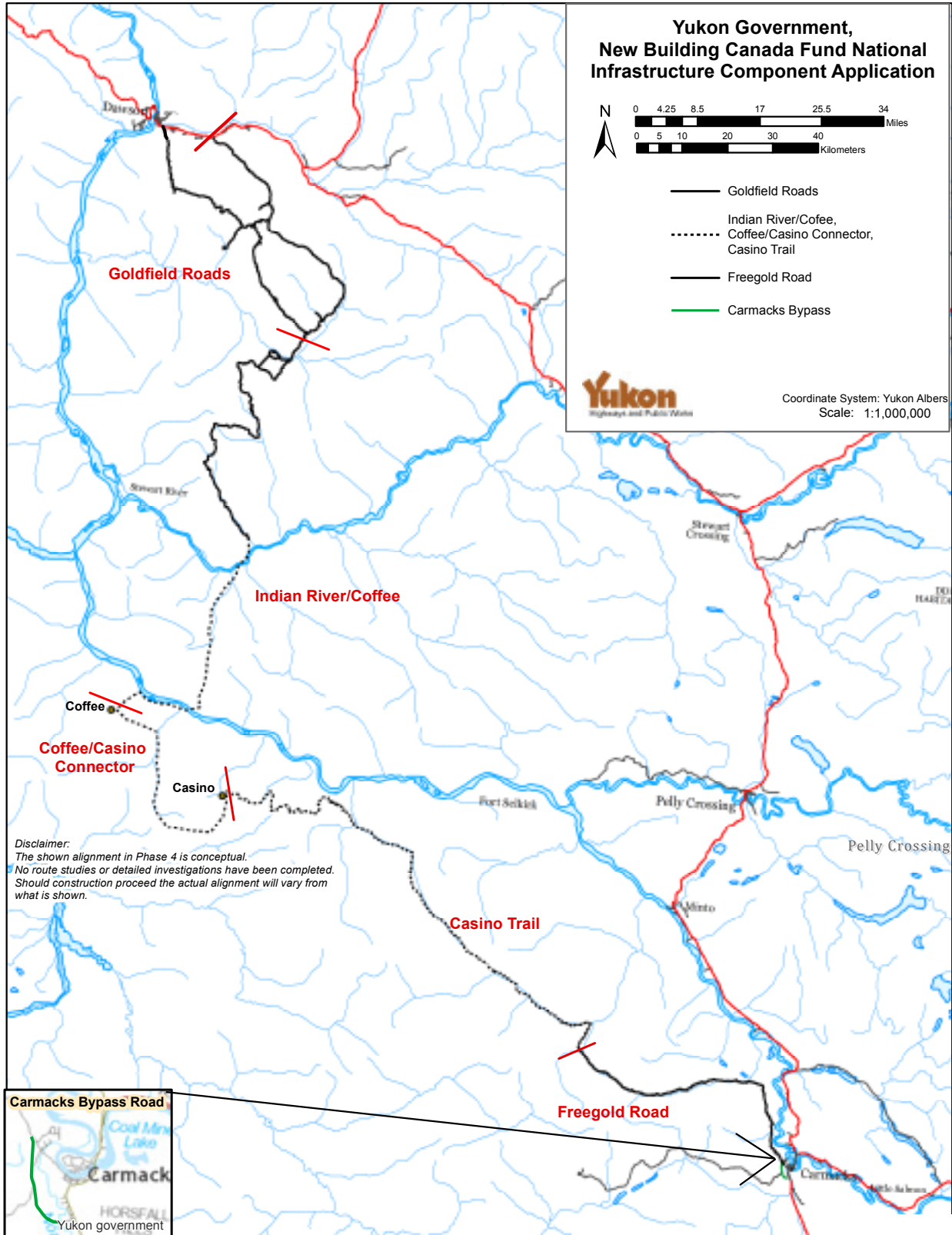
The Dawson Range currently has limited seasonal access. The southeastern end of the mineral belt is accessed by the Freegold Road, which runs 82 kms from the Community of Carmacks to Big Creek. From Big Creek, a "cat trail" known as the "Casino Road" runs another 126 kms further northwest to provide winter access for hauling supplies to exploration projects along the route. Access to the Dawson Range from the north is gained through the Goldfield Roads, a network of low volume seasonal mining roads that extend south from the Klondike Highway near Dawson City to the Stewart River. Access to the eastern part of the Dawson Range Area can also be gained by barge along the Yukon River, by aircraft to several remote airstrips established at mineral camps throughout the Dawson Range, or by seasonal access via the Pelly Ranch/Scroggie Creek Road network.

The proposed Dawson Range Access is broken down into four distinct components: the Freegold Road, the Casino Road, the Goldfields, and the Coffee/Casino connector.

Yukon recognizes the central portion of the Dawson Range will require controlled and permitted access. As such, it is proposed that public access will be restricted beyond Big Creek in the south and the Stewart River in the north. Use of the roads into the Dawson Range beyond these points will be permit based and subject to tolling. The final structure and details of the road governance model will be finalized in collaboration with First Nations and industry. The remainder of the roads in the YRGP will remain public without any access restrictions.

Table 2. Road Design Criteria					
Criteria	Design Speed (kph)	# Lanes	Road Width (m)	Max Grade (%)	Min Curve Radius
Goldfields	60	2	7.5	6-8	135
Goldfields (Terrain Restricted)	30	2	7.5	10	30
Indian River/Coffee Road	50	1	5	8-10	80
Indian River/Coffee Road (Terrain Restricted)	30	1	5	8-10	35
Coffee/Casino Connector	50	1	5	8-10	80
Coffee/Casino Connector (Terrain Restricted)	30	1	5	8-10	35
Casino Road	70	2	8.2	6-8	200
Casino Road (Terrain Restricted)	50	2	8.2	8-10	100
Freegold Road	80	2	9	6-8	230
Nahanni Range Road	70	2	9	9-10	170

Figure 5: Overview of Dawson Range Components



Source: Yukon Transportation Engineering Branch

Freegold Road

The existing Freegold Road is a two-way gravel road with a finished road width of approximately four to six metres. The posted speed limit is 40 km/h; however, actual operating speeds are lower through many sections in order to safely navigate the horizontal and vertical curves. The road is used to access a number of traditional First Nation fishing camps along the Yukon River and provides access for recreational activities such as fishing, hunting snowmobiling, and hiking. Current resource and industrial users of the Freegold Road include placer mine operators and exploration mining companies active in the Seymour Creek and Big Creek valleys.

The road is seasonally maintained by Government of Yukon up to km 61.8 at Seymour Creek. There are a number of culvert stream crossings along the Freegold Road and a single lane bridge is located at Crossing Creek. The bridge at Big Creek is not usable and vehicles must ford the watercourse to gain access to the Casino Road.

More specifically, to meet the current and future demands along the Freegold Road Corridor for both public and industrial road users, this component includes:

- reconstruction of the Freegold Road from km 0 to km 82;
- construction of a 4.8 km Carmacks By-Pass Road including construction of a new bridge across the Nordenskiold River;
- replacement of bridges at Crossing Creek, Seymour Creek, Big Creek and Bow Creek with single lane bridges; and
- construction of stream crossings to meet current fish passage and environmental requirements.

The road will be designed to Low Volume Road (LVR) 80 Standard, as outlined in Table 2. Roads will be gravel surfaced at the conclusion of construction. A typical road cross section design is included in Appendix B. The reconstructed road will follow the existing alignment and no major revisions are anticipated.

All bridges will be built to meet L100 vehicular loading to facilitate industrial ore hauling and facilitate transport of overweight and oversized construction components. Most stream crossings on this portion of the project are small and bridge structures will be a standard design. A typical bridge design is included in Appendix B. Corrugated steel pipe culverts will be installed at smaller stream crossings and drainages as required.

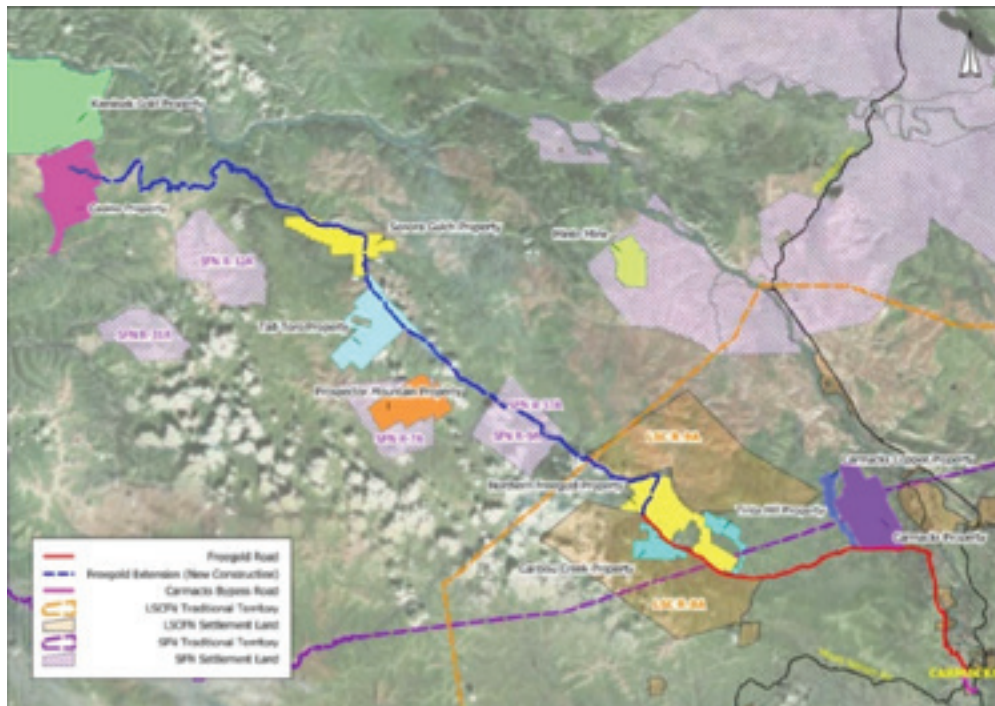
The Freegold Road component of the YRGP will also involve construction of a bypass route around Carmacks to take industrial traffic out of the downtown core of this small community.

The Carmacks Bypass Road will provide an alternative route for industrial traffic to avoid travelling through Carmacks. The new 4.8 km route will connect directly to the Klondike Highway near km 354 at the Garvice Industrial Subdivision. During the YESAB review of the Carmacks Copper Project in 2008, comments were received from Carmacks that indicated community members preferred the Carmacks Bypass Road as the route for mine related traffic. The YESAB Executive Committee Screening Report and Recommendation for the Carmacks Copper Project also identified the bypass route as the community's preference. The Village of Carmacks and the Little Salmon Carmacks First Nation have also written letters of support for a bypass to Yukon government on several occasions over the past eight years.

Construction of the Carmacks bypass will necessitate a new bridge over the Nordenskiöld River just south of the community. This will be the largest bridge on the project (at an estimated bridge length of 72.477 m and total width of 11.35 m) and will require additional design considerations. A preliminary design was completed for this crossing in the mid-1990s; however, further geotechnical investigation along the proposed alignment is required to inform the final design.

Figure 6 provides an overview of the Freegold Road and Casino Road Components of the Dawson Range portion of the YRGP.

Figure 6: Freegold Road and Casino Road



Casino Road Upgrades

The Casino Road runs northwest from Big Creek to the Casino property, a distance of approximately 126 kms. The current route is essentially a winter use cat trail with limited summer access available on the southernmost portions of the route. The majority of the proposed route follows valley bottoms before climbing out of the Hayes Creek valley to the Casino property.

To meet the current and future demands along the Casino Road for mainly industrial road users, this component includes:

- reconstruction of the Casino Road from km 82 to km 208;
- construction of 18 bridge crossings over various creeks along the route;
- installation of approximately 71 culverts between 1500 – 2400 mm in diameter; and
- construction of stream crossings to meet current fish passage and environmental requirements.

The road will be designed to LVR 70 Standard, as outlined in Table 2. Roads will be gravel surfaced at the conclusion of construction. A typical road cross section design is included in Appendix B. The reconstructed road will follow the existing alignment and no major revisions are anticipated.

All bridges will be built to meet L100 vehicular loading to facilitate industrial ore hauls and allow transport of overweight and oversized construction components. Most stream crossings on this portion of the project are small and bridge structures will be a standard design. A typical bridge design is included in Appendix B. Corrugated steel pipe culverts will be installed at smaller stream crossings and drainages as required.

Goldfield Roads Upgrades

The Goldfield Roads are a group of interconnected roads providing seasonal access to the Dawson goldfields. The primary Goldfield Roads currently maintained by HPW total approximately 164 kms in length and include Bonanza and Upper Bonanza, Hunker, Sulphur, Dominion, and Quartz Creek. The roads are two-way gravel with a finished road width that varies from six to nine metres. The posted speed limit on these seasonally maintained roads is 50 km/hr; however, lower operating speeds are necessary through many sections in order to safely navigate the horizontal and vertical curves, and areas with sub-grade and surfacing challenges.

While considered part of the Goldfield Roads, the Indian River/Coffee Road is not currently maintained by HPW. However, the existing road is accessible by the public over much of its approximately 98 km length, and is characterized by steep grades, narrow widths and poor surfacing.

Current resource and industrial users of the Goldfield Roads include numerous placer mine operators and exploration mining companies. Over the past several years, reality television productions focused on placer mining operations have also increased use of the roads. In addition to mining and television production, the roads provide access for tourists exploring the history of the Klondike Gold Rush and for recreational users for activities such as fishing, hunting, snowmobiling, off road vehicle usage and hiking.

Goldfield Roads will not be built to the same standard as the Freegold Road and Casino Road portion of the Dawson Range access. The nature of the Goldfield roads is such that significant bulk ore hauls will not be needed on these routes and the roads can be built to a lower structural standard while still handling industrial and public traffic.

The current publically maintained sections of the Goldfield Roads are proposed to be reconstructed to a LVR 60 standard, as outlined in Table 2. Roads will be gravel surfaced at the conclusion of construction. The reconstructed road will follow the existing alignments and no major revisions are anticipated.

The Indian River/Coffee Road is proposed as a one-lane gravel surfaced road with pullouts built to a LVR 50 standard, as outlined in Table 2. The crossings of the Stewart and Yukon Rivers will be accomplished with a combination of a summer barge/tug ferry operations and a winter ice bridge. A typical road cross section design is included in Appendix B. All remaining bridges will be built to meet L100 vehicular loading to facilitate transport of overweight and oversized construction components. All stream crossings on this portion of the project are small and bridge structures will be of a standard design. A typical bridge design is included in Appendix B. Corrugated steel pipe culverts will be installed at smaller stream crossings and drainages as required.

Coffee/Casino Connector

The last phase of the Dawson Range access component is the Coffee/Casino Connector. Unlike the other components, preliminary engineering or design work has not been completed, making this section largely conceptual in its design at this stage.

The connector would be approximately 52 kms in length, based on preliminary estimates, and would be designed to the same standard as the Indian River/Coffee Road: a one-lane gravel surfaced road with pullouts built to a LVR 50 standard, as outlined in Table 2. A typical road cross section design is included in Appendix B. All bridges will be built to meet L100 vehicular loading to facilitate transport of overweight and oversized construction components. All stream crossings on this portion of the project are small and bridge structures will be of a standard design. A typical bridge design is included in Appendix B. Corrugated steel pipe culverts will be installed at smaller stream crossings and drainages as required.

Nahanni Range Road

The Nahanni Range Road (NRR) component of the YRGP addresses required improvements to an existing access route from the intersection with the Campbell Highway at km 0 to the NWT border at approximately km 180. The Nahanni Range Road is open and maintained year round. A tungsten mine has operated just inside the NWT border since the mid-1970s, with occasional temporary closures over that period. The mine is currently in care and maintenance. All re-supply and export of product for this mine occurs via the Nahanni Range Road.

The NRR is a two-way gravel road with a posted speed limit of 70 km/hr. The road is characterized by a narrow driving surface with a rolling vertical profile and winding horizontal alignment. In some cases, sharp curves are combined with steep grades or sudden changes in the vertical profile. The existing road geometry only provides limited sight distance and does not meet the minimum stopping sight distance required for the posted speed in many locations.

The road was originally constructed with an approximate road width of seven to 7.5 metres. Since the road reopened in 2002, there has only been minimal maintenance consisting mostly of snow plowing, surface grading, and minor culvert repairs. Vehicles typically only travel down the middle of the road except when passing, and the road top has become rounded as surface gravels erode away from the edges. The road use characteristics, combined with a lack of regular maintenance, has resulted in a narrowed road width that varies from approximately five to seven metres. The reduced road width makes passing difficult and creates a safety hazard, especially when two large trucks travelling in opposite directions pass each other.

The NRR will be designed according to the LVR 70, as outlined in Table 2. A typical road cross section design is included in Appendix B. The largest bridge on the project will cross the Francis River. This crossing is currently a one-lane “bailey” type bridge of approximately 98 metres in length. The metallurgy of the bridge requires significant weight restrictions during extreme cold events. The bridge structure itself does not allow for any oversized loads. As such, replacing this bridge with a modern structure is critical. One additional bridge installation will be required at an unnamed creek at approximately km 142. Other bridge crossings along the route were upgraded after severe washouts in June of 2012 and significant additional work on these structures is not anticipated. Corrugated steel pipe culverts will be installed at smaller stream crossings and drainages as required.

All bridges will be built to meet L100 vehicular loading to allow industrial ore hauls and facilitate transport of overweight and oversized construction components. A typical bridge design is included in Appendix B.

Hyland Airstrip Upgrade and Road Realignment

The airstrip, located at approximately km 115 of the NRR, is important for re-supply and to support emergency medevac during construction as well as ongoing mineral exploration activity in the area. The NRR therefore requires realignment from km 112 to km 113.5 in order to meet the minimum clearance requirements for both the existing and proposed airstrips. Figure 7 provides an overview of the NRR component.

Figure 7: NRR Component of the Yukon Resource Gateway Project



Land Tenure

All land currently associated with the Yukon Resource Gateway Project is either crown land under the control of the Yukon government or First Nation Settlement Land. All components of the project are located within the traditional Territories of the Tr'ondëk Hwëch'in, Selkirk, Little Salmon Carmacks, Ross River Dena Council and Liard First Nations. Portions of the Goldfield Road project are in an area of traditional territory overlap between the Tr'ondëk Hwëch'in and Nacho Nyak Dun First Nations. In areas of overlapping traditional territories, management and precedent arrangements are developed between the affected First Nations.

The existing Freegold Road passes through a parcel of Little Salmon Carmacks First Nation (LSCFN) settlement land. The Final Land Claim Agreement with LSCFN identifies a public road right-of-way for the existing road alignment. Should any realignment or diversion from the existing road right-of-way through this land selection take place, the approval of the First Nation will be required.

Likewise, the Casino Road portion of the Dawson Range Access crosses Selkirk First Nation (SFN) Settlement Land. As with the Freegold Road, there are provisions within the SFN Final Land Claim Agreement for access over these parcels of settlement land. However, the proposed alignment deviates significantly from the identified right-of-way and approval of the First Nation will be required to allow road construction on the proposed route within these settlement land parcels.

The proposed upgrades to the Goldfield Roads, the Coffee/Casino Connector and the Nahanni Range Road are all contained within Crown land.



Project Timeline

The proposed project timeline, broken down by individual component, is outlined in Table 3. A more detailed Gantt chart is provided in Appendix C. The current proposed schedule is contingent on reaching an agreement in principle with Canada by June 2016, and final project agreements with First Nations by December 2016. This will allow all construction activities to be completed by March 2024 to match the end of the Building Canada Fund.

The project schedule is ambitious but achievable. Should the NBCF be extended or if an alternative end date were to be established as part of the NIC Project Agreement, then timelines and cash flows for some of the components could be adjusted accordingly.

As noted in Table 3 and Appendix C, construction activity will be phased. Work will commence on portions of the Goldfield Roads first, then progress to the Freegold, Casino and Nahanni Range roads before finishing with the Coffee/Casino Connector.

Table 3: Estimated Project Timelines by Component

Yukon Resource Gateway Project - Timelines			
Task	Sub Task	Start Date	End Date
Administration	NIC Application Development	Apr-15	Dec-15
	Agreement in Principle Review	Jan-16	Jan-16
	NIC Funding Agreement Review	Jul-16	Aug-16
	NIC Funding Agreement	Sep-16	Mar-14
	Establish YG Project Office	Jan-16	Aug-16
	Preliminary Design Goldfields Hunker/ Sulphur	Apr-15	Jan-16
	Preliminary Design Goldfields Indian River/ Coffee	Apr-15	Jan-16
	Preliminary Design Goldfields Bonanza/ Dominion	Apr-15	Jan-16
	Preliminary Design Goldfields Quartz	Apr-15	Jan-16
	Preliminary Design Freegold & Carmacks Bypass	Apr-15	Jan-16
	Preliminary Design Casino Road	Apr-15	Jan-16
	Preliminary Design Coffee/ Casino Connector	Apr-18	Jan-19
	Preliminary Design Nahanni Range	Apr-15	Jan-16
	Final Design & Geotech Goldfields Hunker/ Sulphur	May-16	Dec-16
	Final Design & Geotech Goldfields Indian River/ Coffee	May-16	Dec-16
	Final Design & Geotech Goldfields Bonanza/ Dominion	May-17	Dec-17
	Final Design & Geotech Goldfields Quartz	May-19	Dec-19
	Final Design & Geotech Freegold & Carmacks Bypass	May-17	Dec-17
	Final Design & Geotech Casino Road	May-16	Dec-17
	Final Design & Geotech Coffee/ Casino Connector	May-19	Mar-20
Final Design and Geotech Nahanni Range	May-17	Dec-17	
Progress Reporting	Mar-17	Mar-24	
Regulatory	Environmental Assessment Goldfields Hunker/ Sulphur	Jan-16	Dec-16
	Environmental Assessment Goldfields Indian River/ Coffee	Jul-16	Nov-17
	Environmental Assessment Goldfields Bonanza/ Dominion	May-18	Nov-18
	Environmental Assessment Goldfields Quartz	May-20	Nov-20
	Environmental Assessment Freegold & Carmacks Bypass	Jan-16	Oct-17
	Environmental Assessment Casino Road	Jan-17	Nov-18
	Environmental Assessment Coffee/ Casino Connector	Jan-20	Nov-21
	Environmental Assessment Nahanni Range	Jan-16	Nov-17
	Water Licence and Permits Goldfields Hunker/ Sulphur	Jan-17	May-17
	Water Licence and Permits Goldfields Indian River/ Coffee	Nov-17	Mar-18
	Water Licence and Permits Goldfields Bonanza/ Dominion	Jan-19	May-19
	Water Licence and Permits Goldfields Quartz	Jan-21	May-21
	Water Licence and Permits Freegold	Oct-17	Feb-18
	Water Licence and Permits Casino Road	Nov-18	Mar-19
Water Licence and Permits Coffee/ Casino Connector	Nov-21	Mar-22	
Water Licence and Permits Nahanni Range	Nov-17	Mar-18	
IN Consultation	Trondok Heedhin	Jan-16	Dec-16
	Selkirk	Jan-16	Dec-16
	Little Salmon Carmacks	Jan-16	Dec-16
	Kaska Dena	Jan-16	Dec-16
Construction	Goldfields Hunker/ Sulphur	Jan-17	Nov-20
	Goldfields Indian River/ Coffee	May-18	Nov-21
	Goldfields Bonanza/ Dominion	Jan-19	Nov-22
	Goldfields Quartz	Jan-21	Nov-23
	Freegold Carmacks/ Bypass	May-18	Nov-19
	Freegold Km C - Km R2	May-18	Mar-24
	Casino Road	May-19	Mar-24
	Coffee casino connector	May-22	Mar-24
	Nahanni Range Francis River Bridge	May-18	Nov-21
	Nahanni Range Road Reconstruction	May-18	Mar-24
Project Audit/ Report	Goldfields Hunker/ Sulphur	May-22	May-23
	Goldfields Indian River/ Coffee	May-22	May-23
	Goldfields Bonanza/ Dominion	May-23	May-24
	Goldfields Quartz	May-23	May-24
	Freegold Carmacks/ Bypass	May-20	May-21
	Freegold Km C - Km R2	May-24	Mar-25
	Casino Road	May-24	May-25
	Coffee/ Casino Connector	May-24	May-25
	Nahanni Range Francis River Bridge	May-22	May-23
	Nahanni Range Road Reconstruction	May-24	May-25



III. Project Outcomes and Benefits

Achievement of NIC Objectives

In 2006, Yukon released *“Prospecting Corridors for Growth – A Transportation Vision for Yukon”*. As articulated in this document, the Yukon Transportation Vision is *“A multi-modal transportation system that connects communities, enables economic development, enhances national sovereignty and security, and creates corridors and gateways to national and global markets”*.

Enabling economic development is a key underlying principle of Yukon’s transportation strategy. The Yukon Resource Gateway Project is primarily about enabling future economic development while at the same time increasing public access on existing routes and improving safety for all road users.

The Yukon Resource Gateway Project also meets investment principles outlined in the Transportation Strategy by supporting economic development, diversification and self-reliance while facilitating corridor development and gateway access to markets. Potential priority projects identified in the Transportation Strategy include regional access road and mining access road developments. Over the past several years, Yukon has continued to make improvements to the Robert Campbell Highway, which was specifically identified as a priority in the Transportation Strategy.

In 2008, Yukon, NWT, and Nunavut released *“Northern Connections - A Multi-Modal Transportation Blueprint for the North.”* This pan-northern document highlighted the importance of transportation as an economic enabler in the north. It also reaffirmed Yukon’s commitment to regional access roads primarily serving the mineral industry.

In addition to the Yukon Transportation Strategy, other documents/studies over the years have identified the need for public investments in northern transportation infrastructure that will enhance economic growth. In 2011, Transport Canada, in cooperation with the three northern territories, sponsored *A Northern Transportation Systems Assessment*.⁷ This document highlighted the need for further investment in Yukon to enable resource development.

⁷ Prologue (2011). *A Northern Transportation Systems Assessment*
<https://www.tc.gc.ca/eng/final-report-northern-transportation-548.htm>

In 2012, Yukon formalized a *Resource Access Road Framework*. This document outlines Yukon's commitment to enhancing public infrastructure to enable resource development, while outlining clearly where industry and government responsibilities for such development rest.

Yukon has also begun planning for an updated Transportation Strategy. The departments of Energy Mines and Resources, Economic Development, and Environment will work in concert to produce an integrated strategy that looks across all sectors and compliments existing initiatives, such as the Yukon Mineral Development Strategy currently in development under the leadership of Energy Mines and Resources.

Lastly, the Yukon Resource Gateway Project aligns perfectly with the platform of the current federal government. By investing now in infrastructure that will facilitate steady economic returns and development in the north and increase exports, we can support stronger communities, enhance prosperity, and forge a renewed, collaborative relationship with indigenous peoples.

Moreover, the Project is a perfect fit with the criteria of the NIC in a number of ways, by:

- **Generating Positive Economic Activity**

The Yukon Resource Gateway Project will generate and enable \$30 billion in direct and indirect GDP – a huge return on a projected federal investment of \$248 million.

- **Reducing Potential Economic Disruptions or Foregone Economic Activity**

Yukon is one of the top ten jurisdictions in the world for mining potential, but that potential is not currently being realized due to insufficient road access to areas with significant deposits. All the other pieces are in place, including private sector investors and easy access to ports to get product to market.

- **Generating Productivity Gains for the Canadian Economy**

The Yukon Resource Gateway Project will significantly improve the productivity and efficiency of existing and new mining operations by reducing travel times and associated costs. The Project will greatly improve the viability of existing and new development activities.

Benefits that flow from these projects will not be limited to Yukon and will extend to the provinces and Canada as a whole, through jobs and increased tax revenue.

Economic Benefits

The Yukon Resource Gateway Project will both generate and facilitate significant incremental economic activity. It will result in over \$30 billion in direct and indirect GDP impacts, while providing significant productivity gains for the Yukon and Canadian economies. The majority of these benefits will arise from private sector investments in capital and operating requirements for resource development initiatives, including privately funded extensions to road access in many cases. Significant benefits will flow to Canada over many years from these potential projects, including over \$3.5 billion in tax revenue for federal, provincial and territorial governments and potentially another \$2.0 Billion in mineral royalties. The following sections identify these expected benefits. The full extent of these benefits will only be obtained, however, if the Yukon Resource Gateway Project investments are made. Information on the economic, efficiency, community and safety benefits are further outlined below.

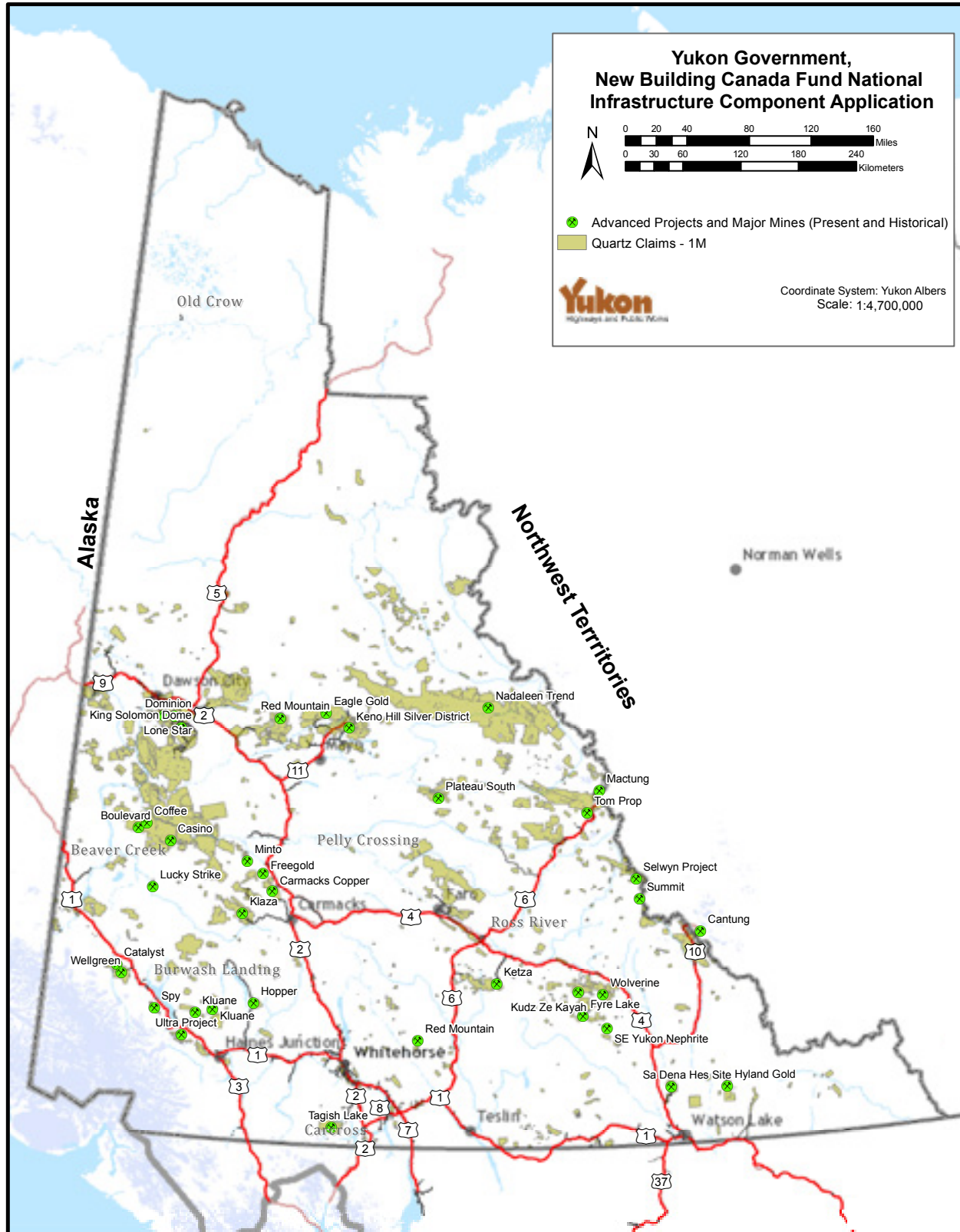
Current Economic Output

Mining and quarrying are key contributors to Yukon's economy, accounting for almost 20% of total real GDP. As noted previously, the average value of mineral production in the Yukon is currently estimated to be approximately \$460 million per year. Although lower mineral prices have resulted in reduced spending on exploration, development and production, long term forecasts predict an increase in future years with a rebound in commodity prices.

As indicated in Figure 8, the area of the Yukon under quartz mineral claims is significant and the active properties associated with these claims are numerous.



Figure 8: Quartz Claims and Mineral Properties



Source: Yukon Transportation Engineering Branch

As an example of the important role mining plays in the economic health of Yukon, the placer industry is an excellent proxy. The Dawson Goldfield placer region has been a significant producer of gold in Yukon for the last 117 years. In the period from 1978-2014, a total of 2,605,222 ounces of gold were recovered in this region alone (Resource Maps Appendix A). At an average of \$500 (US) per ounce over that period, the value of extracted Dawson placer gold is in the neighborhood of \$1.3 billion US.

Thousands of mineral claims are staked in the Dawson Range region with numerous deposits currently supporting placer operations, including 58 existing placer operations that use portions of the Goldfield roads.

These operations provide positive benefits by:

- employing approximately 250 people with an annual payroll estimated at \$12 million;
- supporting five fuel companies through consumption of over 15 million litres of fuel a year requiring approximately 380 fuel trucks per year; and
- generating traffic of about 300 semi-truck trips and 9,000 light vehicle trips per year.⁸

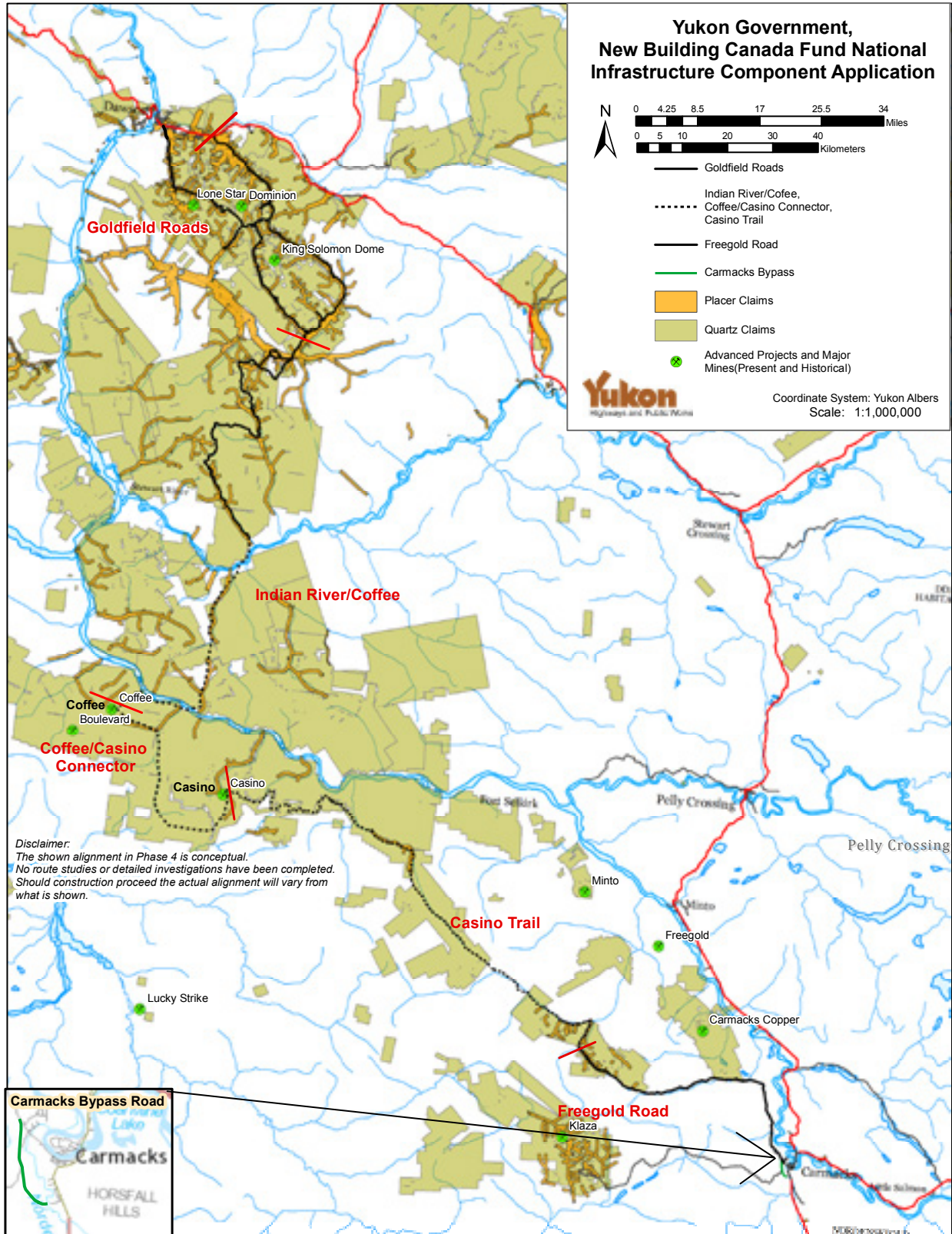
The five largest producers using the road currently generate an estimated \$40 million annually in economic activity.

The proposed road upgrades would provide significant benefit to a number of larger mines serviced by this road that have 10-20 year mine lives on known placer deposits, as well as to the numerous claim holders in the area that do not currently have active mining land use permits/water licences. There are 22 existing operations not currently accessed by the road (only barge, winter road, or air access) that would gain all additional access and significantly reduced costs with the road extensions beyond the Stewart River.

These improvements could increase their productivity and make more deposits on the various properties economically viable. Current annual economic activity on these properties is estimated at \$8.8 million, and industry analysts estimate that figure could increase to \$20 million with improved road access. In addition, there are numerous claim and lease holders that would benefit from the proposed road extension, and 10-15 new operations may become economically viable if these improvements are made, contributing approximately \$6-10 million in additional annual expenditures. Figure 9 indicates the extent of the placer claims in the Goldfields and Dawson Range areas.

⁸ Estimates provided by Klondike Placer Miners Association

Figure 9: Placer and Quartz Claims in the Goldfields and Dawson Range



Source: Yukon Transportation Engineering Branch & Energy Mines and Resources

Direct Economic Impacts from Road Upgrades

The direct economic impacts that will be generated by the Yukon Resource Gateway Project are significant and will result in important contributions to the Yukon and Canadian economies. Within the Yukon, a capital expenditure of \$442.8 million (direct construction expenditures only) would increase Yukon's GDP by \$268.7 million, and generate labour income of \$142.3 million through the creation of 2,645 jobs.⁹ These figures include direct*, indirect** and induced*** impacts.¹⁰ The project would also generate benefits outside the Yukon, with a further \$214.5 million increase in GDP, \$120.5 million of labour income generated through the creation of 1,939 jobs Canadian jobs outside of Yukon.¹¹

Table 4. Total Projected Construction Impacts of YRGP Roads			
Total Construction Impacts (Direct, Indirect and Induced)	GDP	Jobs	Labour Income
Total Yukon Impacts	\$268,700,000	2645	\$142,300,000
Rest of Canada	\$214,500,000	1939	\$120,500,000
All of Canada Total	\$483,200,000	4584	\$262,800,000

The mining potential that will follow is all added economic benefit to Canada – and it is massive.

Potential Economic Impacts from Future Mineral Development

Within the corridors that make up the Yukon Resource Gateway Project there are numerous potential mining developments that will see their economic viability increase through making these needed investments in transportation infrastructure. Several of these projects are in advanced feasibility analysis or are currently in the environmental permitting process.

To demonstrate the potential economic benefit to Canada and the Yukon from this development, three significant projects currently in planning are assessed.

⁹ See Dept of Economic Development input/output tables, <http://economics.gov.yk.ca/impact.aspx>

¹⁰ Note: The impacts that are derived from the model are usually classified as direct, indirect and induced:

* Direct impacts are the value-added increase in employment, local incomes, and local GDP retained in the area, and tax receipts to all governments created directly by the spending.

** Indirect impacts are the value-added increase in employment, local incomes and local GDP retained in the area, and tax receipts to all governments from local suppliers of goods and services related to the spending in question.

***Induced impacts are the increase in employment, local incomes, local GDP, and tax receipts from the spending and re-spending of all labour income generated by the original expenditure

¹¹ Ibid.

Casino Mining Corporation (CMC) – Casino Project

The proposed Casino Mine is located approximately 150 kms northwest of Carmacks, Yukon. The project, currently in environmental assessment, is designed to process approximately 120,000 tonnes per day or 43.8 million tonnes per year of copper and gold ore.¹² With an anticipated 22 year mine life, the Casino project will produce an estimated 5.72 million ounces of gold, 30.26 million ounces of silver, 3.58 billion pounds of copper, and 325 million pounds of molybdenum. Mine development will include an open pit, a tailings management facility, processing facilities, a heap leach facility and associated mine infrastructure components.

Proposed access to the mine site would occur via the existing public portion of the Freegold Road to km 82 at Big Creek, with an additional 126 kms following the Casino Road north of Big Creek. Eventual ore transport would be via the Casino Road/ Freegold Road to the Klondike Highway, then south to the port at Skagway, Alaska

Casino's impact from operations on real Gross Domestic Product (GDP) is estimated to be \$350 million annually, in addition to the \$1.98 billion impact anticipated to result from the construction phase of the project. CMC estimates the project will increase Yukon's GDP by \$363 million over the four-year construction period and by \$274 million annually during operations (equivalent to approximately 10% of the Yukon's 2011 GDP).¹³

The estimated economic impacts to Canada and Yukon from the development of the Casino Mine are outlined in Tables 5, 6 and 7.

Table 5: Total Projected Construction Impacts of the Casino Project							
Total Construction Impacts (Direct, Indirect and Induced)	Output (millions)	GDP (millions)	Employment (FTEs)	Wages and Salaries (millions)	Federal Tax (millions)	Yukon Territorial and Provincial Tax (millions)	Other Tax (millions)
Total Yukon Impacts	\$779	\$363	5,091	\$195	\$33	\$22	\$7
Rest of Canada	\$4,359	\$1,613	17,509	\$928	\$201	\$134	\$10
All of Canada Total	\$5,138	\$1,976	22,601	\$1,123	\$234	\$156	\$17

Casino Mine Corporation – Economic Impacts of the Casino Mine Project March 2013 – Report by MNP LLP

¹² Casino Mining Corporation proposal to YESAB (2014)
http://www.casinomining.com/project/project_proposal/

¹³ CMC Supplementary Information Report (SIR) to YESAA, Appendix A.13A Economic Impacts of the Casino Mine Project

Table 6: Total Projected Annual Operating Impacts of the Casino Project

Total Construction Impacts (Direct, Indirect and Induced)	Output (millions)	GDP (millions)	Employment (FTEs)	Wages and Salaries (millions)	Federal Tax (millions)	Yukon Territorial and Provincial Tax (millions)	Other Tax (millions)
Total Yukon Impacts	\$342	\$274	855	\$43	\$20	\$81	\$1
Rest of Canada	\$138	\$76	453	\$19	\$12	\$10	\$0
All of Canada Total	\$480	\$350	1,308	\$61	\$32	\$92	\$2

Casino Mine Corporation – Economic Impacts of the Casino Mine Project March 2013 – Report by MNP LLP

Table 7: Total Projected Impacts of the Casino Project Construction and Operation

Total Projected Life Impacts – 4 years of construction and 22 years of operation (Direct, Indirect and Induced)	Output (millions)	GDP (millions)	Employment (FTEs)	Wages and Salaries (millions)	Federal Tax (millions)	Yukon Territorial and Provincial Tax (millions)	Other Tax (millions)
Total Yukon Impacts	\$8,308	\$6402	23,893	\$1,131	\$464	\$1,810	\$36
Rest of Canada	\$7,388	\$3,275	27,480	\$1,338	\$472	\$359	\$16
All of Canada Total	\$15,696	\$9,678	51,373	\$2,469	\$936	\$2,169	\$52

Casino Mine Corporation – Economic Impacts of the Casino Mine Project March 2013 – Report by MNP LLP

Kaminak Gold Corporation – Coffee Gold Project

The Coffee Gold project is located within the Dawson Range, approximately 130 kms south of Dawson City and approximately 160 kms northwest of Carmacks. Access to the property is by airplane or helicopter from Whitehorse and/or Dawson City and by barge via the Yukon River. In 2011, Kaminak Gold Corporation (Kaminak) constructed a 23-kilometre road from the barge landing at the Coffee project camp to key drilling areas.

The project anticipates the mining over 53.4 million tonnes of ore and the production of 1,859,000 ounces of gold over an 11 year period with an average annual production of 167,000 ounces of gold.¹⁴ Mine development will include construction of approximately 40 kms of new road and upgrades to approximately 130 kms of roads, as well as construction of processing facilities and camp infrastructure, requiring an estimated initial capital investment of \$305 million.¹⁵ Road construction costs (for the Kaminak portion of road) are estimated at \$29 million. Initial estimates of anticipated road use project volumes of approximately 1500 semi-trucks per year and approximately 500 light traffic vehicles per year.

Kaminak is forecasting they will hire between 400 and 425 employees with an annual payroll of between \$39.8 million and \$41.8 million. Total royalties are estimated at \$28.2 million and taxes (Yukon, Federal and Mineral Tax) at \$370 million over the life of the mine.

The projected economic impact to Canada and Yukon that would result from Kaminak's Coffee Gold project is found in Tables 8 and 9.

Table 8: Total Projected Construction Impacts of the Coffee Gold Project¹⁶					
Total Construction Impacts (Direct, Indirect and Induced)	Output	GDP	Jobs	Labour Income	Yukon and Federal Taxes
Total Yukon Impacts	\$380,901,146	\$129,369,416	457	\$97,607,157	\$2,011,626
Rest of Canada	\$365,086,419	\$183,490,691	558	\$110,739,580	\$8,881,332
All of Canada Total	\$745,987,565	\$312,860,107	1015	\$208,346,737	\$10,892,958

¹⁴ See Kaminak Gold Preliminary Economic Assessment (2014)
http://www.kaminak.com/_resources/reports/pea_2014.pdf

¹⁵ Ibid

¹⁶ Assumptions: \$1,000.00 \$US/gold oz Exchange Rate: 0.75 ; Production (oz): 1,859,000;
 Total Value of Output: CDN\$2,478,666,667; Mine Life (Years): 12 (Determined from:
<http://www.kaminak.com/coffee/overview/> and Statistics Canada Input Output Multiplier Tables)

Table 9: Total Projected Operations Impacts of the Coffee Gold Project

Total Operations Impacts (Direct, Indirect and Induced)	Output	GDP	Jobs (over life of mine)	Labour Income	Yukon and Federal Taxes
Total Yukon Impacts	\$2,850,717,240	\$1,812,170,056	2,110	\$753,137,373	\$28,726,662
Rest of Canada	\$1,702,047,111	\$935,191,757	1,503	\$501,870,185	\$44,559,571
All of Canada Total	\$4,552,764,351	\$2,747,361,813	3,613	\$1,255,007,558	\$73,286,233

Selwyn Chihong – Howard’s Pass Project

The proposed Selwyn Project is an open pit zinc-lead mine with a current projected mine life of more than 10 years, and is one of the largest undeveloped zinc-lead deposits in the world. The mine is being designed to process 35,000 tonnes per day (tpd) of ore which, after processing, is expected to result in 2,500 tpd of zinc and 600 tpd of lead concentrate. Once processed, the concentrate will be trucked to the Port of Stewart for export.^z Selwyn Chihong has also completed agreements with the Sahtu and Dehcho First Nations in the NWT, and initialled a benefits agreement in 2015 with the Kaska Dene First Nation in Yukon. This agreement is scheduled for a community ratification vote in 2016.

More than \$170 million has been spent to date to develop the proposed Selwyn Project, and preliminary cost estimates indicate a capital cost of approximately \$2.5 billion US, annual operating costs of \$1.2 billion and royalties of \$127 million.

Selwyn Chihong estimates the proposed mine will create approximately 1,300 person-years of employment during construction and will sustain approximately 750 jobs during operation (including 500 employees at the mine site, and 225 employees at a maintenance and trucking hub site to be located in Watson Lake). Federal taxes during the construction phase are estimated at \$195 million and \$96 million annually during operation, while the tax revenue to Yukon is estimated at \$32 million during construction and \$24 million annually.

The estimated economic impact to Canada and Yukon resulting from the Selwyn Chihong Howard’s Pass project are estimated in Tables 10 and 11.

¹⁷ See Selwyn Chihong Company Fact Sheet - http://selwynchihong.com/wp-content/uploads/2015/07/SCML_CompanyFactsheet2.pdf

Table 10: Total Projected Construction Impacts of the Selwyn Project¹⁸

Total Operations Impacts (Direct, Indirect and Induced)	Output	GDP	Jobs	Labour Income	Yukon and Federal Taxes
Total Yukon Impacts	\$2,497,712,435	\$848,324,045	2,285	\$640,046,932	\$13,190,990
Rest of Canada	\$2,394,009,307	\$1,203,217,649	2,793	\$726,161,186	\$58,238,244
All of Canada Total	\$4,891,721,742	\$2,051,541,694	5,078	\$1,366,208,118	\$71,429,234

Table 11: Total Projected Operations Impacts of the Selwyn Project

Total Operations Impacts (Direct, Indirect and Induced)	Output	GDP	Jobs (over life of mine)	Labour Income	Yukon and Federal Taxes
Total Yukon Impacts	\$17,134,605,576	\$13,815,012,600	14,454	\$1,735,635,766	\$161,653,206
Rest of Canada	\$3,930,566,471	\$1,882,078,216	10,951	\$6,012,780,904	\$94,356,433
All of Canada Total	\$21,065,172,047	\$15,697,090,816	25,405	\$7,748,416,670	\$256,009,639

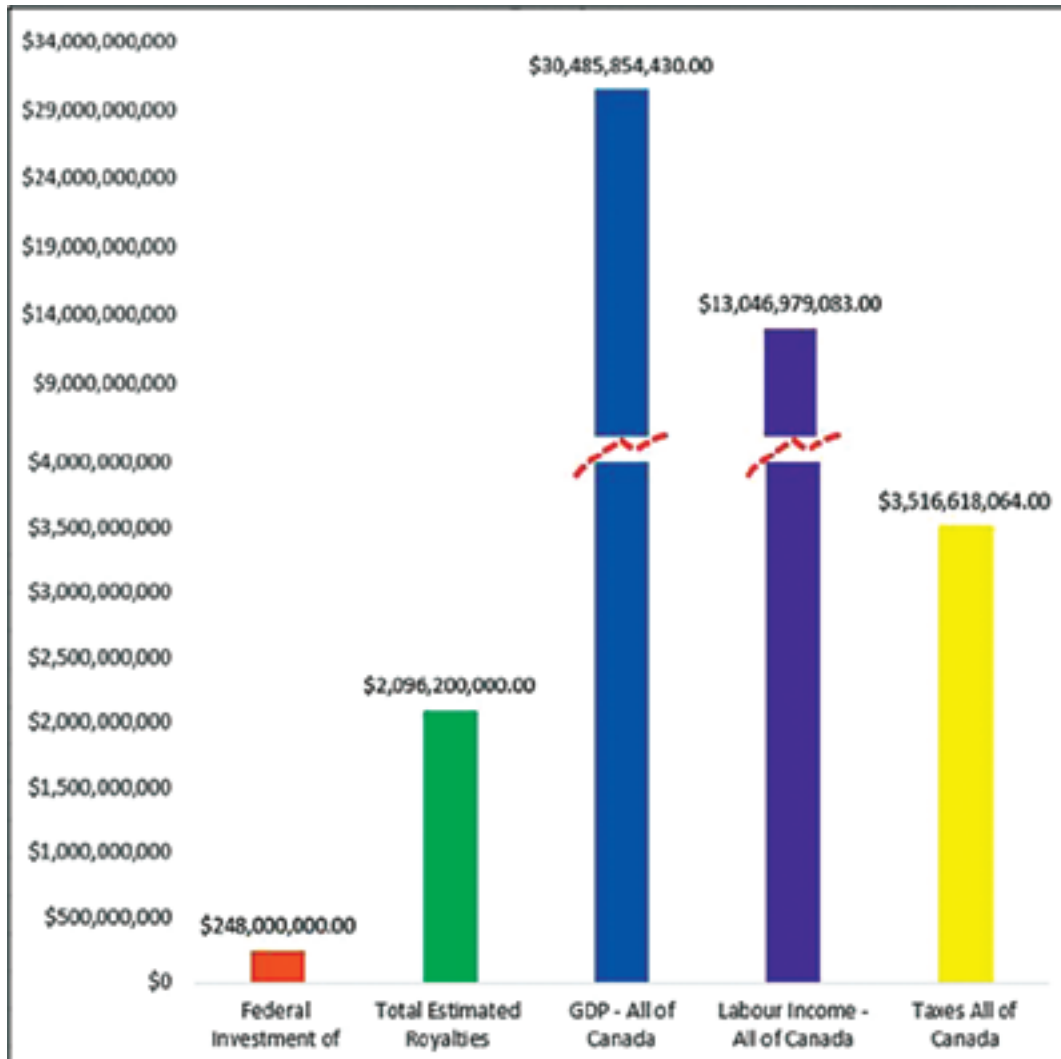
When viewed together, these three projects alone could see an overall contribution to GDP of over \$30 billion and tax revenues of over \$3.5 billion.

In addition to tax revenue for various governments, these projects will also generate mineral royalties. Royalties from mining projects in Yukon are distributed to Yukon, Canada and First Nations as per financing formulas outlined in legislation. Over the estimated life of these three projects and based on anticipated production and current royalty regime, an estimated \$2 billion in royalties could be generated.

¹⁸ Assumptions: Zinc Price US\$0.80 / CDN\$1.07; Lead price: US\$0.70 / CDN\$0.93; Exchange Rate: 0.75

Mine Life: 11 years; Op Days per Year: 350; ZN lbs/day: 3,031,875; PB lbs/day: 793,800 (Determined from: Selwyn Company Factsheet: http://selwynchihong.com/wp-content/uploads/2015/07/SCML_CompanyFactsheet2.pdf and Statistics Canada Input Output Multiplier Tables

Table 12: Total projected impacts of Casino, Coffee and Selwyn mining projects



In addition, there are several other properties and potential developments throughout these corridors which would see their economically viability increase from the Yukon Resource Gateway Project, including:

- Carmacks Copper and Northern Freegold projects accessed by the Freegold corridor, and numerous advanced exploration properties including the Prospector Mountain, Tad-Toro, Sonora Gulch and Idaho Creek Properties along the Dawson Range;
- Kinross (White Gold project), Independence Gold, Taku Gold, Klondike Gold, Selene Holdings, Kestrel Gold, Pacific Ridge, Gold Strike, Comstock, and Gold Bank Mining along the Gold Field roads; and
- Cantung Mine and the Golden Predator, Aben Resources' Justin Gold-Tungsten and Precipitate Gold Corp's Reef Properties accessed by the Nahanni Range Road.

To sum up, an investment in the Yukon Gateway Resource Project will see a significant return both in the short and long term.

Increased Efficiency and Productivity

The proposed road improvements will have significant positive impacts on mining operations, increasing efficiency and productivity through reducing travel times and associated costs. Significant tangible benefits will arise through realizing greater efficiencies in supply and employee transport, yielding savings in fuel costs and equipment and vehicle repair and maintenance costs, for example. These savings have the potential to improve the viability of a number of existing and new resource development activities. The proposed improvements would also increase the potential for opening up underexplored areas to exploration and developing existing deposits which have not been economically viable to this point due to high costs and inaccessibility.

The condition of the existing Freegold Road is significantly lower than standards being proposed. The proposed geometric standard, structural standard, surface type, projected traffic volumes, and road user cost standard represent great improvements. At present, many sections can accommodate only one vehicle, and operating speeds are less than 30 km/hr. The proposed road improvements along the Freegold Road will result in significant travel time benefits arising from a 40 km/hr speed increase and a 5 km shorter route (70 kms for the existing route vs 65 kms for the route being proposed). In addition, vehicle operating costs will be reduced by over 40% through shortening the route, implementing more efficient operating speeds, and the elimination of grades steeper than 8%. Projected traffic volumes along the Freegold road are for 225 ADT (average daily traffic) from km 0 to km 32, 167 ADT from km 32 to Seymour Creek, and 148 ADT beyond Seymour Creek, with up to 60% of projected traffic comprised of heavy vehicles. Based on these projections, the proposed road improvements can be expected to generate an estimated savings of over \$53.5 million for operators over the next 25 years.¹⁹

Improvements to the Goldfield roads will also result in safer driving and decreased travel times and will reduce the need for expensive helicopter traffic, supporting exploration and mining activity. These improvements will be of significant benefit to companies active in the area.

Any improvements to the Casino Road will improve usability and effectiveness of this route.

The Nahanni Range Road resource projects are expected to generate an increase in traffic from the current 30 ADT to 220 ADT. The road improvements will result in a 10 km/hr improvement in running speed for heavy trucks, generating significant travel time and vehicle operating cost savings estimated at over \$41 million dollars for operators over the next 25 years.²⁰

¹⁹ Associated Engineering, 2015, Freegold Road Functional Plan Final Report, p.7-3

²⁰ Associated Engineering, 2015, Nahanni Range Road Functional Plan, p. 3-3

Increased Safety

All of the roads proposed for upgrading in the Yukon Resource Gateway Project are currently (and will remain) public roads. In addition to industry use, there is also a relatively high volume of recreational use. Specifically, First Nations use these routes to access traditional territories. Increased industrial traffic has increased public safety concerns, as can be expected when mixing industrial and public traffic on narrow roads. Road improvements are required to minimize potential impacts. Under existing conditions, which include steep grades and an average cross section of five metres, the Freegold Road corridor has a high risk of severe incidents such as head-on and off-road crashes.²¹ With the proposed road alignment, which includes grades of less than 8% and average cross section of 9 m, the probability of these types of incidents can be expected to decrease, resulting in greater road safety relative to the existing conditions.

Increased use of the Goldfield roads over the past several years has also increased collision concerns. There too users would benefit from the increased safety that would accompany road upgrades. Similarly, the Nahanni Range Road component of the project will also generate important safety benefits, making substantial improvements in road sections with horizontal curvature or vertical grade challenges.

Community Benefits

The Yukon Resource Gateway Project will bring significant benefits to a number of Yukon communities. Local employment and business opportunities will expand during through both road construction and the resource development activities enabled by road improvements. The additional person-years of employment and the related training and capacity development opportunities will provide particular benefit for the residents and businesses of the communities most directly linked to the proposed upgrades (including Carmacks, Pelly Crossing and Dawson City for the Dawson Range component, and Ross River and Watson Lake for the Nahanni Range Road component).

In addition, a number of Yukon First Nations will likely obtain economic benefits and opportunities in connection with the development of resource initiatives within and around their traditional territories. Beyond the potential for First Nations members and businesses to participate in employment and opportunities related to mine construction, operation and providing services to mine employees, the Yukon government is committed to exploring opportunities to extend contracts related to road construction and maintenance to First Nation businesses. The potential for the associated long-term investment and business opportunities that provide stable employment in Yukon communities will be among the longest lasting benefits to this project.

²¹ Associated Engineering, 2015, Nahanni Range Road Functional Plan, p. 3-3

IV. Administration

Project Governance

Eligible Recipient

The recipient for the proposed funding is the Government of Yukon, with overall project management provided by the Department of Highways and Public Works. Within Highways and Public Works, a Yukon Resource Gateway Office (YRGO) will be established to take advantage of existing expertise and processes in relation to project management and contracting.

YRGO, in cooperation with First Nation and industry partners, will coordinate the delivery of environmental assessment and permitting (not currently underway), design, construction contract development and tendering, contract administration, quality assurance and inspection, risk management, audit/reporting, and NIC Agreement administration with Canada. YRGO will use both in-house resources in HPW as well as external consultants to achieve these outcomes. First Nations consultation and negotiation of any benefits agreements or other opportunities arising from discussions will be coordinated by the Yukon Government Executive Council Office Aboriginal Relations group. Construction management and inspection services will be provided by consultants.

For the Dawson Range component of the project, Yukon will propose a Project Oversight Committee made up of senior level representatives of the directly affected First Nations as well as industry with funding commitments to the project. The purpose of this group will be to deal with the broader issues of access control and economic benefits. Yukon anticipates sub-committees will also be formed to deal with issues specific to each of the four individual components of the Dawson Range access; these sub-committees will not necessarily have the same First Nation or industry representation.

Yukon recognizes that as discussions advance with First Nations and industry, the final project governance model will evolve. This will involve finalization of governance issues surrounding the operation and maintenance of the assets following reconstruction as well as coordination of activities between First Nations and industry partners during the reconstruction process.

Regardless of the final project delivery mechanism, Yukon government will retain responsibility as a single point of contact and accountability with the federal government in relation to the NIC funding agreement.

Financial Requirements

Proposed Cost Sharing Allocation

The total capital cost of the YRGP will be shared between Yukon, Canada and industry partners, Casino Mining Corporation and Kaminak Gold Corporation. The industry partners will contribute specifically to components of the project which are required to be completed to enable their projects to go forward. For the most part these sections will be within the controlled access portion of the project and are in relation to the Casino Road upgrade and portions of the Goldfield Roads upgrades. Upgrades to the Nahanni Range Road do not have an industry partner associated with them. Selwyn Chihong Mining Corporation will bear the full cost of needed upgrades to the Nahanni Range Road in the NWT and the Howard's Pass Access Road leading to the mine site. The estimated cost of those upgrades is currently estimated to be approximately \$100 Million.

For the segments where industry is a partner, Yukon is proposing a cost sharing arrangement of 70/20/10 between industry/Yukon/Canada. This recognizes the benefit to industry from having government partners involved in the project, but also recognizes the obvious economic benefits to both Canada and Yukon from seeing these developments proceed.

It must be noted that budget allocations for industry partners in fiscal years beyond 2015/16 are subject to internal corporate approvals. Inclusion of these estimated contributions in this application do not signify corporate approval. Should future funding not be approved by industry partners for whatever reason, Yukon will not proceed with those segments of the project but will focus efforts on the remaining sections of the YRGP.

On segments where industry is the major funder, it is envisioned Yukon and Canada would act as contribution agents to the project with the total government share of 30% being based on actual eligible expenditures by industry.

On the remainder of the project, Yukon anticipates the same 75/25 arrangement as is the case for the New Building Canada Fund. Given the potential economic returns to Canada from the YRGP and Yukon's limited financial capacity, this is a reasonable arrangement, particularly when viewed as an investment by Canada in future returns.

Project Costs and Cash Flows

This submission puts forward the business case for an investment in the future of the Yukon. Through the end of the NBCF in 2024/25 an estimated total of \$468,845,000 could potentially be invested in the YGRP (all \$ figures 2014). Of this total amount, industry would commit and estimated \$108,660,000 (23%), Yukon would commit \$112,004,000 (24%), and Canada would commit \$248,179,000 (53%). Detailed estimates of cash flow by eligible and total expenses are included in Appendix D.

Cash flows of eligible expenditures in fiscal year 2016/17 are pro-rated based on an agreement in principle being signed mid calendar year.

If the Yukon Resource Gateway Project were to be approved by September 2016, it would be expected to be completed by October 2025. Based on a review of Annex C of the NBCF National Infrastructure Component Business case Guide (Eligible and Ineligible Expenditures), it is anticipated that this project will incur \$10,920,000 in ineligible costs, which will be funded by the Government of Yukon and industry. In addition to the ineligible costs sustained by industry in fiscal year 2015/16, industry partners have already spent in excess of \$26 million on environmental assessment and background work related to permitting.

It should be noted these are all preliminary cost estimates. As the various components of the project move into final design, more detailed cost estimates can be developed. As well, these numbers are based on 2014 dollars. Appendix D also includes estimated cash flows by source inflated at 2 % per annum over 2014.



Table 13: Yukon Resource Gateway Project – Estimated Project Costs

Component	Activity	Eligible Costs	Ineligible Costs	Total Project Costs
Administration	NIC Application Development	0	50	50
	Agreement in Principle Review	0	5	5
	NIC Funding Agreement Review	0	10	10
	YGR Project Administration CA	0	3,000	3,000
	Project Management	7,500	500	8,000
	Preliminary Design Goldfields/Hunter/Sulphur	0	20	20
	Preliminary Design Goldfields Indian River/Coffee	120	300	480
	Preliminary Design Goldfields/Bonanza/Dominion	0	20	20
	Preliminary Design Goldfields/Quartz	0	10	10
	Preliminary Design Fregold & Carmacks Bypass	0	100	100
	Preliminary Design Casino Road	250	1,250	1,500
	Preliminary Design Coffee/Casino Connector	100	0	100
	Preliminary Design Nahanni Range	0	100	100
	Final Design & Geotech Goldfields/Hunter/Sulphur	225	225	450
	Final Design & Geotech Goldfields Indian River/Coffee	100	100	200
	Final Design & Geotech Goldfields/Bonanza/Dominion	900	0	900
	Final Design & Geotech Goldfields/Quartz	400	0	400
	Final Design & Geotech Fregold & Carmacks Bypass	900	0	900
	Final Design & Geotech Casino Road	850	150	1,000
	Final Design & Geotech Coffee/Casino Connector	200	0	200
Final Design and Geotech Nahanni Range	1,300	0	1,300	
Progress Reporting/Project Audits	0	360	360	
Regulatory	Environmental Assessment Goldfields/Hunter/Sulphur	50	55	105
	Environmental Assessment Goldfields/Indian River/Co	100	200	300
	Environmental Assessment Goldfields/Bonanza/Dominion	100	0	100
	Environmental Assessment Goldfields/Quartz	80	0	80
	Environmental Assessment Fregold	140	70	210
	Environmental Assessment Casino Road	250	3,000	3,250
	Environmental Assessment Coffee/Casino Connector	200	0	200
	Environmental Assessment Nahanni Range	140	70	210
	Water Licenses and Permits Goldfields/Hunter/Sulphur	30	25	45
	Water Licenses and Permits Goldfields/Indian River/Co	40	0	40
	Water Licenses and Permits Goldfields/Bonanza/Dominion	40	0	40
	Water Licenses and Permits Goldfields/Quartz	40	0	40
	Water Licenses and Permits Fregold & Carmacks Bypass	30	30	60
	Water Licenses and Permits Casino Road	80	0	80
	Water Licenses and Permits Coffee/Casino Connector	100	0	100
	Water Licenses and Permits Nahanni Range	60	10	70
	PN Consultation	Trondelk Heroin	60	140
Selkirk - Fregold		60	140	200
Little Salmon Carmacks		60	140	200
Naska Dena		60	40	100
Construction	Goldfields/Hunter/Sulphur	31,200	0	31,200
	Goldfields/Indian River/Coffee	30,000	0	30,000
	Goldfields/Bonanza/Dominion	36,400	0	36,400
	Goldfields/Quartz	8,200	0	8,200
	Fregold/Carmacks/Bypass	10,000	0	10,000
	Fregold/Highway 0 - Km 62	100,000	0	100,000
	Casino Road	116,000	0	116,000
	Coffee/Casino Connector	10,000	0	10,000
	Nahanni Range Francis/River Bridge	10,000	0	10,000
Nahanni Range Road Reconstruction	91,000	0	91,000	
Project Audit/Report	Goldfields/Hunter/Sulphur	20	0	20
	Goldfields/Indian River/Coffee	20	0	20
	Goldfields/Bonanza/Dominion	20	0	20
	Goldfields/Quartz	20	0	20
	Fregold/Carmacks/Bypass	20	0	20
	Fregold/Highway 0 - Km 62	40	0	40
	Casino Road	40	0	40
	Coffee/Casino Connector	40	0	40
	Nahanni Range Francis/River Bridge	20	0	20
Nahanni Range Road Reconstruction	40	0	40	
TOTAL		467,925	16,320	484,245

Table 14 identifies the anticipated cash flows for all expenses and funding sources for the project.

Table 14: Yukon Resource Gateway Project – Estimated Project Cash Flow All Expenses By Source											
Funding Source	Cash Flow by Fiscal Year (\$000)										
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Industry	4,530	1,358	1,218	10,556	30,100	20,300	20,300	20,300	0	0	108,662
Government of Yukon	925	1,355	4,368	19,381	25,150	18,640	17,625	17,280	7,200	80	112,004
Government of Canada	0	1,777	10,914	49,283	52,630	40,100	37,055	36,020	20,280	120	248,179
Total	5,455	4,490	16,500	79,220	107,880	79,040	74,980	73,600	27,480	200	468,845

Table 15 identifies the anticipated cash flows for eligible expenses and funding sources for the project.

Table 15: Yukon Resource Gateway Project – Estimated Project Cash Flow Eligible Expenses By Source											
Funding Source	Cash Flow by Fiscal Year (\$000)										
	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2024/25	Total
Industry	679	1,218	10,556	30,100	20,300	20,300	20,300	0	0	103,453	108,662
Government of Yukon	487	3,928	18,941	24,710	18,200	17,185	16,840	6,760	40	80	112,004
Government of Canada	979	10,914	49,283	52,630	40,100	37,055	36,020	20,280	120	120	248,179
Total	2,145	16,060	78,780	107,440	107,880	74,540	73,160	27,040	160	200	468,845

Yukon's Department of Highways and Public Works employs a comprehensive road management and maintenance program, maintaining over 4800 kms of Yukon roads. HPW has determined the future investment necessary to ensure long-term sustainability of roads upgraded under this project and has the capacity to provide this maintenance, either directly or through aforementioned contracting opportunities with First Nations supplemented by tolling revenues for industrial road users.

Legal Requirements

All projects in Yukon are subject to assessment under the *Yukon Environmental and Socio-Economic Assessment Act* (YESAA). For the YRGP, it is anticipated each component of the work will be assessed under YESAA at an Executive Committee screening level.

Casino Mining Corporation has already entered into a YESAA assessment for its project, which includes initial review of the proposed upgrades to the Casino Road and the Freegold Road in addition to the mine development. This assessment will continue as the YRGP moves through the approval process.

It is anticipated that Kaminak Gold Corporation will enter into a YESAA assessment in mid-2016.

Additional environmental assessment activities that start before the NIC agreement is signed will be coordinated through the Environmental Affairs Unit of HPW's Transportation Engineering Branch. Following a successful Environmental Assessment, any permitting required for the project will be coordinated by Yukon Resource Gateway Office.

All contracting activities associated with the Project will be conducted according to Yukon's *Financial Administration Act* and Contract and Procurement Regulations and Directive as existing at the time. These legal requirements ensure procurement is conducted in a transparent, competitive, and fair manner, consistent with value for money principles. All contracting activities will be conducted in compliance with Yukon's obligations under the Agreement on Internal Trade and international trade agreements.

Notwithstanding these obligations, Yukon remains committed to maximizing First Nation and community benefits from these projects.

The Yukon government will meet its obligations in regards to Aboriginal consultation and, where required, accommodation.

Yukon will fulfill its consultation obligations to First Nations with overlapping traditional territories or asserted traditional territories covering the areas associated with the YRGP.

Please refer to Appendix E for the Environmental, Aboriginal Consultation and Project Location Questionnaire (Annex D).

Project Risks and Mitigation Measures

Highways and Public Works employs a multi staged risk analysis for all projects to improve project planning, produce more reliable cost estimates, and to transfer knowledge. A risk register is developed using an internal project management system. The risk register documents the identified risks, the assessment of their root causes, the probability and impact analyses, along with the criteria informing those assessments and the potential severity of each identified risk. The probability and potential impact of each risk are ranked first, then the relative severity of each is calculated by combining the probability and impact. The risk register also includes mitigation strategies and identifies risk and mitigation owners on a project level. As capital projects move through the planning and design phase to tendering and construction, the risk analysis and mitigation is updated to reflect the evolution of the project.

A completed risk analysis for the current stage of the YRGP is included in Appendix F. The highest risk identified to date is for First Nation or community opposition to the project. As stated previously, Yukon is committed to maximizing the benefits to First Nations and local communities; however, we also recognize that economic benefits are not the sole criteria on which the project will be judged. As such, Yukon is also committed to dealing openly and transparently with environmental and social issues arising from the proposed project and working collaboratively with all stakeholders to develop acceptable mitigation measures.

P3 Requirements/Screen

Yukon notes that the new federal government has indicated the P3 Screen will no longer be a requirement for projects being assessed under the NBCF. As per the requirements of the NIC Business Case Guide and based on advice from Infrastructure Canada, Yukon has completed a preliminary P3 Screen for review by Infrastructure Canada and P3 Canada. The P3 Screen is included in Appendix G.

V. Conclusion

The Yukon Resource Gateway Project is the top infrastructure priority of our government. Moreover, it is an ideal fit with the criteria of the NIC and the federal government's focus on investments in strategic and trade enabling infrastructure.

It was conceived as a critical step in unlocking the potential of the north. Completion of this project will not guarantee resource development activities will automatically follow. However, not dealing with the general lack of suitable transportation infrastructure will continue to limit the ability for resource projects to move forward and will continue to limit Yukon's ability to fully contribute to the Canadian federation.

The Yukon Resource Gateway Project is a very limited risk proposition for Canada. The road building alone will generate significant economic activity and the mining developments that may proceed once that access is in place will then increase the return on investment by upwards of 10:1.

Yukon is not asking for a contribution from Canada. Rather, Yukon is inviting an investment from Canada; an investment that will provide a positive return for Canada, Yukon, Yukon First Nations and Yukon communities.

VI. Appendices

Appendix A – Yukon Mineral Potential

Appendix B – Road and Bridge Typical Designs

Appendix C – YRGP Timelines

Appendix D – YGRP Financial Spreadsheets

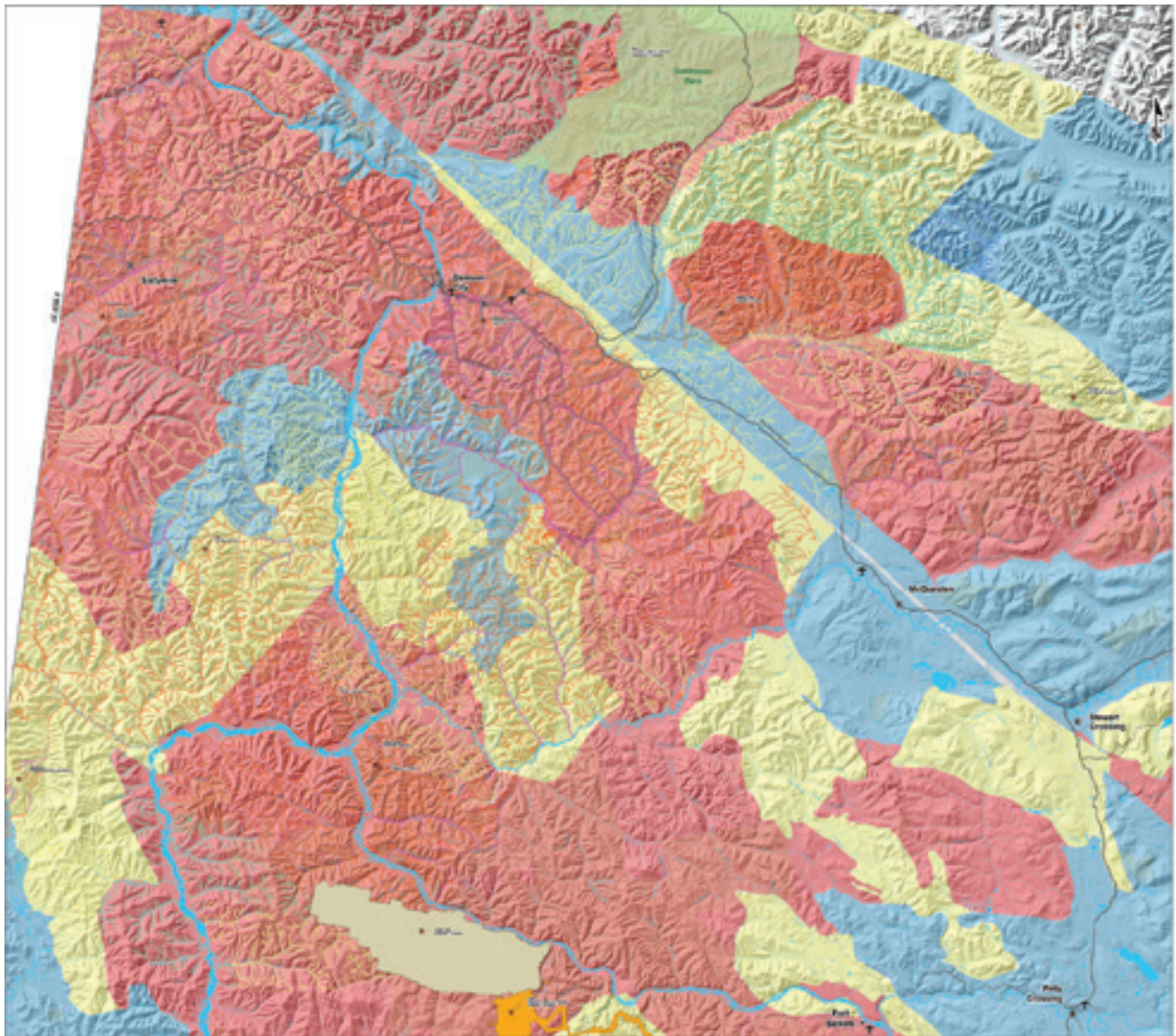
Appendix E – NIC Annex D

Appendix F – YRGP Risk Registry

Appendix G – P3 Screen

Appendix A

Yukon Mineral Potential



Dawson Goldfields Mineral Potential and Exploration Activity

Study Area Features

- Place Names
- ✈ Air Strips
- ★ Deposits with Resources
- Parks and Protected Areas

Mt = million tonnes
 gt Au = grams of gold per tonne
 gt Ag = grams of silver per tonne
 % Cu = percent copper
 % Mo = percent molybdenum
 % Pb = percent lead
 % Zn = percent zinc

Existing Roads

- Highway
- Primary Roads
- Local Roads
- Resource / Recreation
- Alley / Service Lane
- Winter
- Limited-use road
- Trail
- — — Cut line

Quartz Mineral Claims and Mining Land Use Permits

- Active and Pending Quartz Mineral Claims
- Western Copper and Gold Corporation - Casino Property
- Kamirak Gold Corporation - Coffee Creek Property

Regional Mineral Potential

- 1 (Lower)
- 2 (Moderate)
- 3 (Higher)

Placer Potential (potential for gold in bedrock)

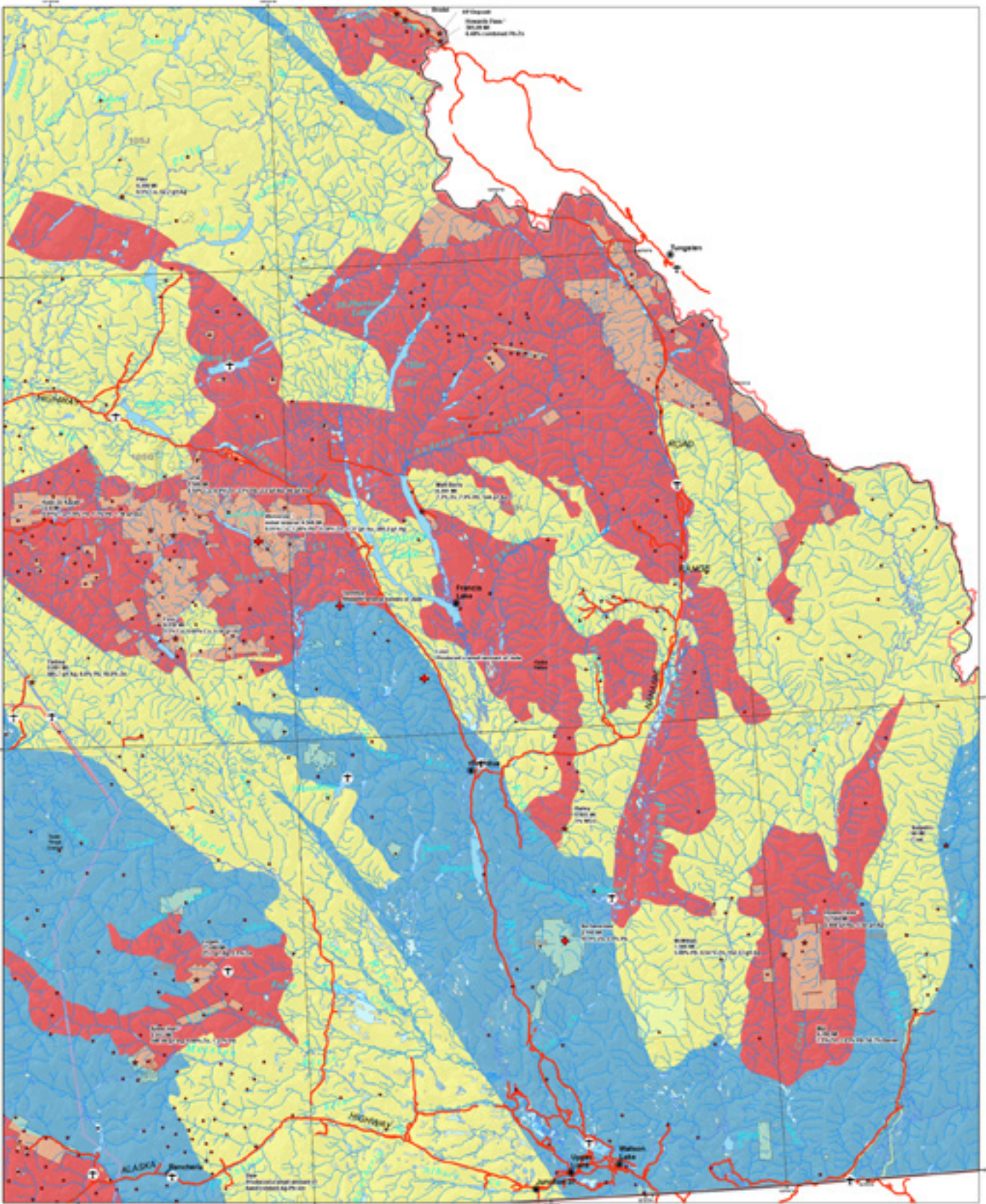
- 1. Low probability: 0-20th percentile tract potential for gold in bedrock
- 2. Low to moderate probability: 20-40th percentile tract potential for gold in bedrock
- 3. Moderate probability: 40-80th percentile tract potential for gold in bedrock
- 4. High probability: 80-100th percentile tract potential for gold in bedrock or proximal to confirmed probability
- 5. Confirmed probability: previous production or exploration supporting a placer deposit

Dawson Area Placer Gold Production 1978 - 2014

Stream or Area	Tributary to	Production (g)
Algoa	Yukon	380
Algoa Slick	Benoist	94
Arncliffe Hill	Benoist	50
Bakaw	Hudson	1950
Baker	Benoist	1375
Baron	Cash	128
Beer	Kanaka	1460
Bedrock	Benoist	796
Big Box	Benoist	1237
Black Hill	Benoist	1837
Bludray	Hythe	4
Bozanga	Kanaka	14210
Brewer	Benoist	4
Brown	Benoist	3
Cable	Cash	2
Callista	Benoist	2
Canyon	Cash	234
Castle	Benoist	47
Cedar	Benoist	1088
Chase Hill	Hudson	184
Chester	Hudson	2428
Chlorite	Benoist	2720
Chimney	Hudson	8
Chukki	Hudson	1630
Chukki Hill	Benoist	42
Chukki	Hudson	1290
Clover Slick	Kanaka	42
Cold Slick	Benoist	25
Cool	Hudson	13
Cool Slick	Lower Benoist	44
Cop Slick	Benoist	1480
Coyote	Benoist	1632
Craig Slick	Lower Benoist	1452
Creek Bottom	Benoist	3875
Creek Hill	Benoist	8
Creek Run	Benoist	14294
Cross Creek	Cash	44
Cross Slick	Hudson	121
Crust	Benoist	1037
Curry Slick	Hudson	152
Curtis	Hudson	42
Dale	Kanaka	13
Dawson Lake	Lower Benoist	870
Deer	Kanaka	25740
Diamond	Hudson	43
Dolan	Hudson	28474
Doyle Hill	Kanaka	79
Duckhorn	Hudson	76
Dunbar	Hudson	1242
Durbin	Hudson	1637
Earl Slick	Cash	347
Eddy	Benoist	228
Elk Slick	Benoist	177
Elk Slick	Benoist	1344
Louisa Beach	Hudson	1404
Elk Slick	Hythe	252
Elk Slick	Benoist	42
Emery	Polymet	104
Emery Hill	Benoist	1434
Emery	Benoist	1400
Emery Hill	Black Hill	3430
Emery	Hythe	2089
Emery Slick	Hudson	88
Emery	Hudson	178
Emery Slick	Benoist	81
Emery	Polymet	147
Emery	Hythe	84
Emery Hill	Hudson	44
Emery Hill	Lower Benoist	84
Emery Hill	Hudson	1870
Emery	Polymet	122
Emery	Hudson	88
Emery	Hudson	2870
Emery Slick	Lower Benoist	170
Emery	Benoist	4124
Emery	Hudson	132
Emery Hill	Lower Benoist	70
Emery	Hudson	84
Emery	Hudson	2844
Emery	Hudson	1407
Emery	Hythe	81
Emery	Cash	50
Emery	Cash	1004
Emery	Benoist	1024
Emery	Hudson	1081
Emery	Hudson	1637
Emery	Kanaka	224
Emery	Hudson	24
Emery Hill	Kanaka	9
Emery Slick	Benoist	180
Emery Slick	Lower Benoist	70
Emery Slick	Hudson	8
Emery	Hudson	170
Emery Slick	Hudson	2080
Total Dawson Area Production		1,038,233



Copyright Government of Yukon
 Base Data provided by Geomatics
 Forestry Roads data provided by Forestry
 Mineral Potential and Deposit data provided by
 Yukon Geological Survey
 Prepared by EMR and HPW, July 2015



NAHANNI RANGE ROAD AREA Mineral Potential Map

Study Area Features

- ⊙ Communities
- Highways, roads, 4x4 roads
- ✈ Airstrips
- Quartz Claims
- Placer Claims

Mineral Potential Ranking

- 1 (low potential)
- 2 (medium potential)
- 3 (high potential)

Mineral Deposits With Reserves or Resources (* denotes 43-101 compatible)

- ✚ Producer or Past Producer
- ★ Deposit

Yukon First Nation Traditional Territory

- Kaska Nation
- Teslin Tlingit Council

Yukon Regional Mineral Potential by Deposit Models

Introduction

The data presented in these mineral potential maps are the results from four separate regional mineral potential assessments initiated by the Yukon Government from 1999 to 2001. The assessments were designed to assist in land use planning exercises, but also may be of interest to the mineral exploration industry. The 18 maps are in PDF format, and each illustrates the mineral potential of a different deposit model, as indicated by the file names. An index tract map and table contain information on the number and type of mineral deposit models that were assessed for each tract. This document provides detailed information on the purpose, methodology and limitations of the mineral assessment process.

Regional Mineral Potential Assessments

Regional mineral potential studies have been completed over the majority of Yukon Territory (with the exception of the northernmost Yukon and southwest of the Alaska Highway). Regional mineral potential was assessed in four phases (Fig. 1).

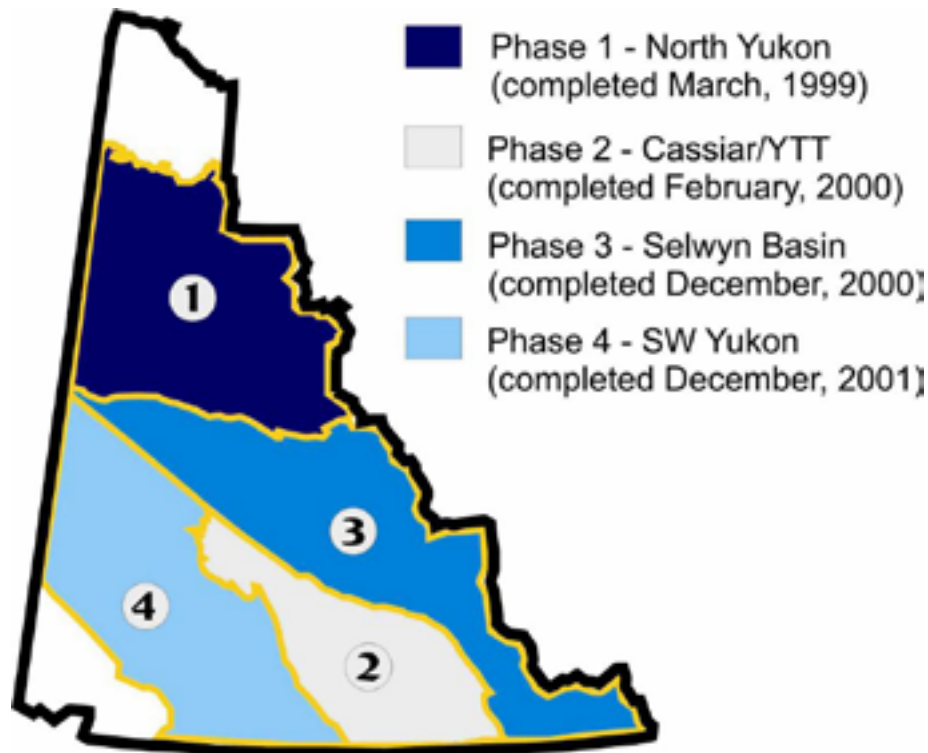


Figure 1: Regional mineral potential assessments

These regional mineral resource assessments were conducted using a quantitative method for prediction of undiscovered deposits that was developed by the United States Geological Survey (USGS). This method is based on 39 mineral deposit types (i.e., mineral deposit models of Cox and Singer, 1986) and their probability of being hosted in a particular geological environment. The British Columbia Geological Survey (BCGS) modified the deposit models defined by the USGS and added others to best fit the geological and metallogenic setting of the southern Canadian Cordillera (Lefebure and Ray, 1995; Lefebure and Hoy, 1996). For the Yukon assessments, the deposit models utilized by the BCGS were further modified to incorporate Yukon deposits (Fonseca and Abbott, in press). This method is best suited for regions such as Yukon where vast tracts of land commonly lack complete geological characterization and may contain a variety of mineralization styles. Although this method of mineral assessment is not without shortcomings, it yields reproducible and unbiased results.

Mineral potential

The mineral potential of a region describes the probability for the existence of undiscovered metallic mineral deposits. This mineral potential is based on the current state of scientific knowledge, and its accuracy is dependent upon the availability and quality of geoscientific data (also supplemented by the mineral exploration history records). Regional mineral resource assessments utilize the following geoscience and mineral exploration data: (1) bedrock geology maps at 1:250000 and 1:500000 scale; (2) regional airborne geophysical surveys; (3) regional stream sediment, lake sediment, and till surveys (RGS); and (4) exploration history (Deklerk, 2002). These regional assessments were based on existing, publicly available data. Mineral potential of a region is a “snapshot in time” and should be re-evaluated when there is a significant advance in the knowledge of the geology and the mineral deposit types in the region, or when new base data (e.g., RGS data) becomes available.

Assessment Methodology

Each mineral resource assessment consists of seven phases: (1) compilation; (2) definition of tracts; (3) preparation of deposit models; (4) assessment workshop; (5) data entry; (6) statistical simulation, and (7) ranking.

Compilation

Yukon Digital Geology (Gordey and Makepeace, 1999) was used as the geological base map at 1:250000 scale. The overall accuracy of this compilation on a regional scale is considered to be very good, although the geology in some areas is based on studies done as long as 60 years ago. The Yukon Digital Geology compilation includes many recent 1:50000-scale maps produced by the

Yukon Geological Survey (YGS), and 1:250000-scale maps produced by the Geological Survey of Canada (GSC).

Regional stream sediment geochemical surveys (RGS) have been completed over a large part of the Yukon Territory. Median values were calculated for 21 diagnostic elements, and multiples of the medians were reported on 1:250000-scale geochemical maps for each element. At the time of the mineral assessments, geochemical coverage was absent or incomplete in the following 1:250000-scale map sheets: NTS 95C and 95E in southeast Yukon; NTS 106B, 106C, 106E, 106F, and 106L in northeast Yukon; and NTS 116F, 116G, 116H, 116I, 116J, 116K, 116N, 116O and 116P in north Yukon. RGS coverage has improved considerably since the completion of the regional mineral assessments, especially in the north Yukon (Fig. 2).

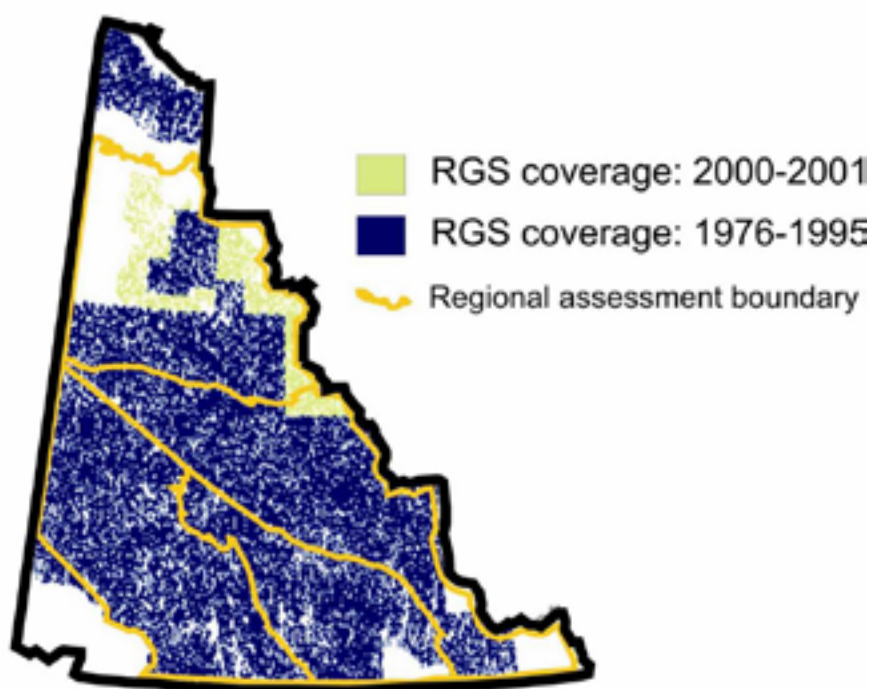


Figure 2: Yukon RGS coverage

Aeromagnetic coverage is available for most of the Yukon (Fig. 3). There is little or no geophysical coverage for NTS 106C, 106D, 106E and 106F in northeast Yukon. Most flight lines in the southern Yukon are at 0.8-km spacing. Flight lines in the north Yukon (north of $\sim 65^\circ$) are at 2-km spacing. Digital data was captured by digitizing contoured analog data, because most surveys are 1950-1960 vintage. Coloured maps illustrating the variations in the aeromagnetic total residual field were provided for each of the assessments.

Mineral occurrences from the Yukon MINFILE database (anomalies, showings and deposits) were plotted on geological and geochemical maps to highlight

areas of known mineralization and past exploration activity. Summaries and original descriptions of the mineral occurrences in each assessment area, which include deposit type, status, commodities, work history, and geological description, were provided as supplements to the geology and geochemistry maps.

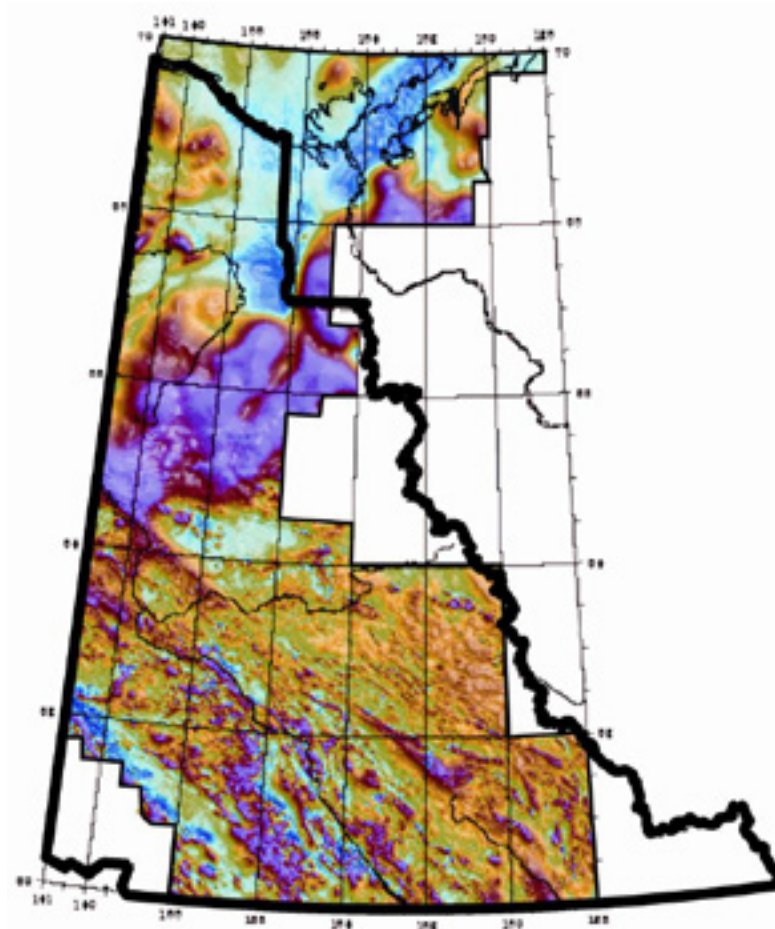


Figure 3: Yukon airborne geophysical coverage

Tracts

The Yukon Territory was divided into four large regions (each corresponding to a distinct mineral assessment phase) based on the large scale geological environment (e.g., Selwyn Basin). The area of each assessment phase was separated into a large number of tracts of approximately equal area (~1000 km²). Tracts were defined on the basis of the regional geology. Tract boundaries are most commonly geological contacts (more specifically faults, lithologic contacts, or limits of Quaternary cover). A few tracts were assigned arbitrary boundaries, such as drainage patterns or roads, in order to maintain similar areas.

Digital deposit models

Tonnage and grade curves for 44 metallic mineral deposit types were utilized for the regional assessments. The number of tracts for each of the four assessments, and the deposit models assessed for each tract are summarized as a separate table, which is included with this document.

Assessment workshops

Assessment workshops took place following the data compilation for each of the four phases. Five industry geologists (hereafter referred to as “the estimators”) with considerable field experience and knowledge of the geology and mineral deposit models applicable to each region participated in the assessment workshops. The following procedure was used for each of the four assessments: (1) for each tract, the estimators decided on the mineral deposit models that could potentially occur; (2) for each mineral deposit model, and for each individual tract, the estimators evaluated the percent probability (from 100 to 0) of discovering new deposits of that type in that tract; (3) for each tract, the estimators recorded their confidence (from 100 to 0) in the current knowledge of the geology; and, (4) for each mineral deposit model, and for each tract, each estimator distributed 100 points between the other four estimators to evaluate the knowledge and experience of each individual estimator. No estimates were made for non-metallic minerals such as diamonds, asbestos, emeralds, and rhodonite. Likewise, potential for placer gold deposits and gravel deposits was not evaluated.

Statistical simulation and ranking

Data provided by the estimators were entered into a spreadsheet. Measurements of tract confidence and confidence level for undiscovered deposits were digitized in AutoCAD, and then copied to the spreadsheet. The data were then converted to a single evaluation for each tract/deposit model combination. The Monte Carlo Mark 3b simulator used the data to produce metal tonnages at the 90%, 50%, 10%, 5% and 1% confidence level intervals for each tract. The tonnages represent a combination of all possible mineral deposit models that could potentially occur within a given tract. These tonnages are then converted to dollar values using 10-year average prices for each of the commodities that are dictated by the relevant mineral deposit models. A “confidence index” is derived from each of these dollar values by dividing the dollar value that corresponds to each confidence interval by the tract area. A “confidence score” is calculated for each of the confidence level intervals by sorting and ranking the confidence index for each tract (i.e., the lowest confidence index has a score of 1, and the highest has a score equal to the total number of tracts). A final confidence score referred to as “sum score” is then calculated for each tract using the individual confidence scores weighted according to the 90%, 50%, 10%, 5% and 1% confidence level

intervals. The sum score value is then ranked from highest to lowest, and defines the rank intervals used on the mineral potential map.

For this compilation, the data provided by the estimators from all four regional assessments were used to calculate, in the same manner as described above, the potential for each tract to host a particular deposit type (i.e., a new “sum score” was calculated for every tract that was assessed for a given deposit model). This value is used to rank the relative potential for each deposit type throughout the Yukon.

Mineral potential maps by deposit models

The mineral potential of the entire Yukon is ranked on the following maps using 18 individual deposit models. Of the 44 deposit models utilized in the 4 regional assessments, these 18 deposit types were deemed the most beneficial for publication as mineral potential maps. Relative rankings are from higher to lower and are illustrated using three categories for purposes of simplicity and ease of display. The index tract map shows the regions covered by each assessment phase, and the numbered tracts within each region. The subsequent maps show the relative potential, from higher to lower, for each tract to contain a specific deposit type. Every tract that was assessed for a given deposit model is ranked, and therefore tracts defined during different assessment phases are now ranked relative to one another. Tracts that were not assessed for a given deposit model are not ranked, and are displayed as white tracts on the respective mineral deposit model map. It should be emphasized, however, that no tract has zero potential and it still may be possible for a mineral deposit of a specific type to exist within a tract not assessed for that deposit model.

Limitations of Regional Mineral Assessments

The primary limitation of mineral potential studies is that they are based on geological knowledge and data that was available at the time of the assessments. Rankings are subject to change as more data becomes available and geological knowledge improves. Although the estimators recorded their confidence in the current knowledge of the geology for each tract, it was not possible to integrate this information into the simulator. Furthermore, there may be potential in Yukon for deposit models that have not yet been recognized. Most commonly, tracts with limited baseline data were ranked as lower potential. For example, many tracts in the North Yukon were either not assessed or were found to have lower potential for most mineral deposit types. This is, at least partly, because of the relatively low level of geological knowledge and lack of baseline data (e.g., RGS) at the time of the North Yukon assessment.

Mineral potential assessments are also limited by the quality of the data on which they were based. For example, RGS data collected in 1976 does provide important information, but has not benefited from recent advances in the science

of geochemistry and may prove to be unreliable for certain elements due to improvements in our understanding in how to collect and analyze samples. The number, locations, and types of mineral occurrences (from the Yukon MINFILE database), although controlled primarily by geology, also depend on the amount of exploration work done, which in turn depends on ease of access, price of commodities, and other non-scientific issues. Also, information pertaining to geology and mineral deposit models from the MINFILE database may require updating, particularly where derived from properties not recently worked.

Despite the limitations, quantitative regional mineral assessments yield reproducible and unbiased results. The deficiencies are a direct consequence of the fact that the mineral potential of a region is a “snapshot in time” and should be re-evaluated when there is a significant advance in the knowledge of the geology and the mineral deposit types in the region, or when new base data (e.g. RGS data) becomes available.

Acknowledgements

This compilation is the result of the extensive efforts of former Yukon Government mineral assessment geologists: in particular A. Fonseca, with large contributions from D. Héon, R. Hulstein and R. Stroshein. Geologists M. Baknes, E. Balon, G. Bidwell, M. Burke, R. Carne, A. Doherty, G. Gilsen, M. Jones, P. Holbek, B. Mawer, R. Stroshein, Paul MacRobbie, Jean Pautler, and M. Stammers are thanked for sharing their considerable knowledge of Yukon geology, mineral exploration history, and deposit model profiles during the assessment workshops.

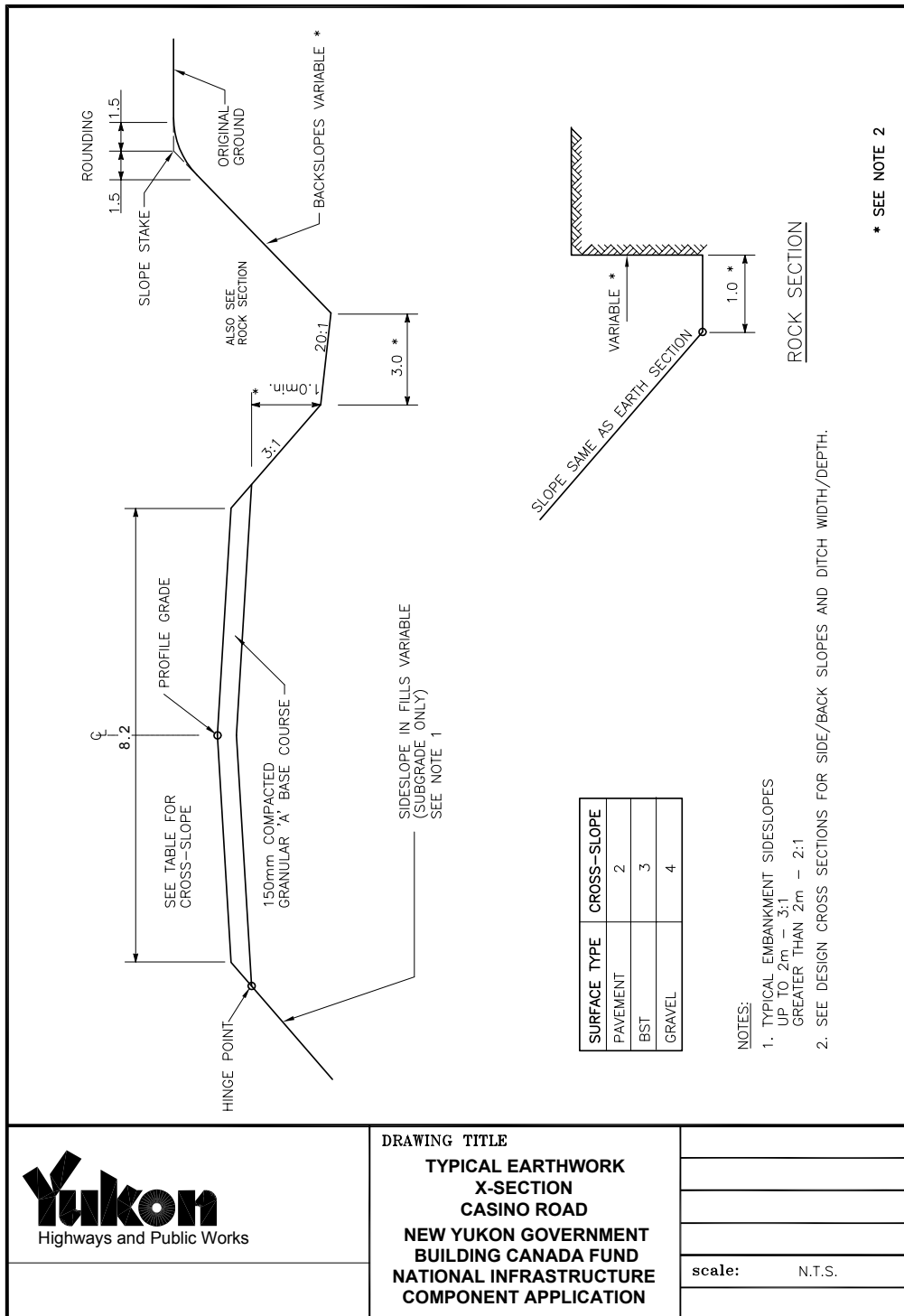
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Lefebure, D.V. and Höy, T. (eds.), 1996. Selected British Columbia Mineral Deposit Profiles, Volume 2 – Metallic Deposits. British Columbia Ministry of Energy, Mines, and Petroleum Resources, Open File 1996-13, 172 p.

Appendix B

Road and Bridge Typical Designs

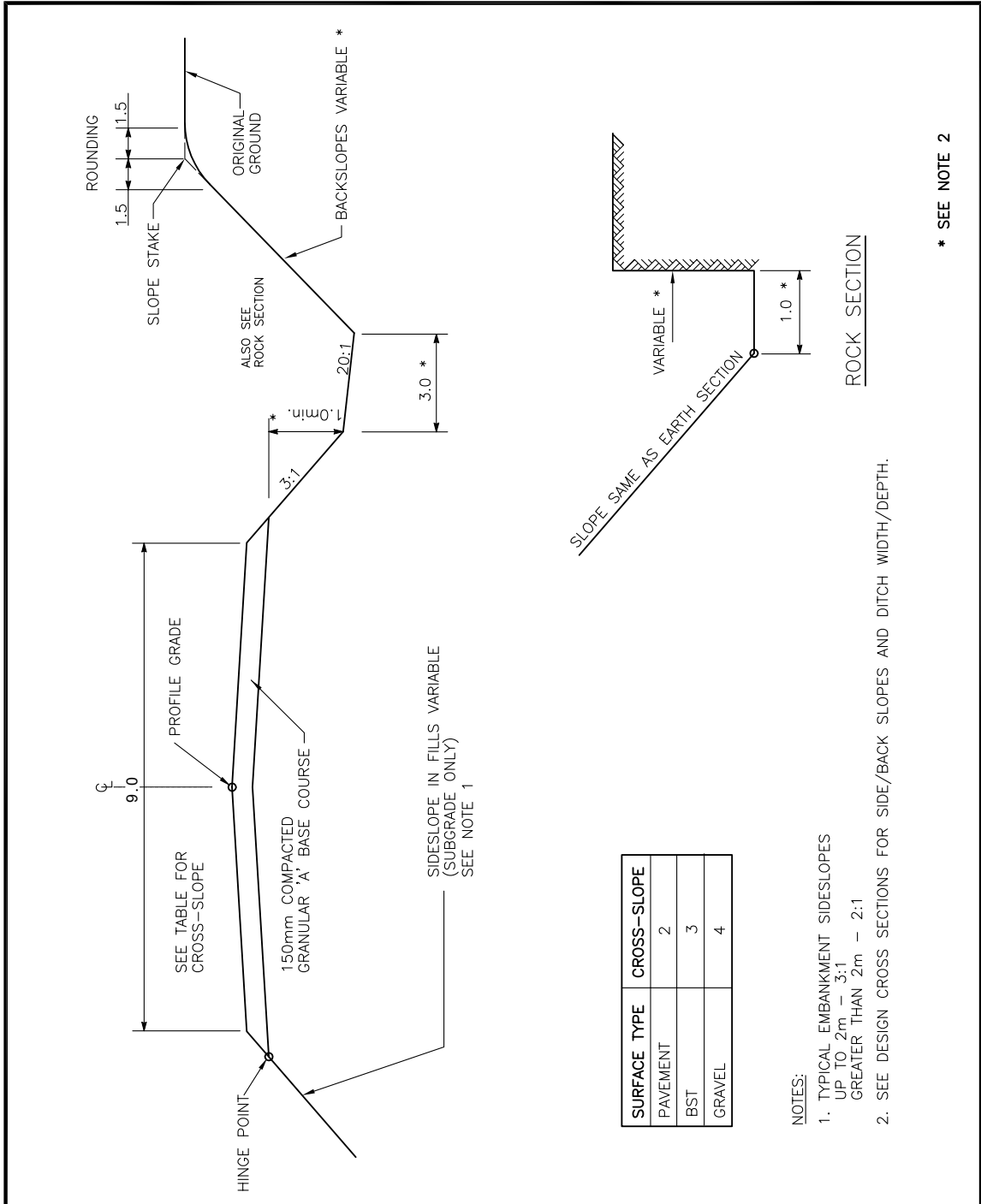



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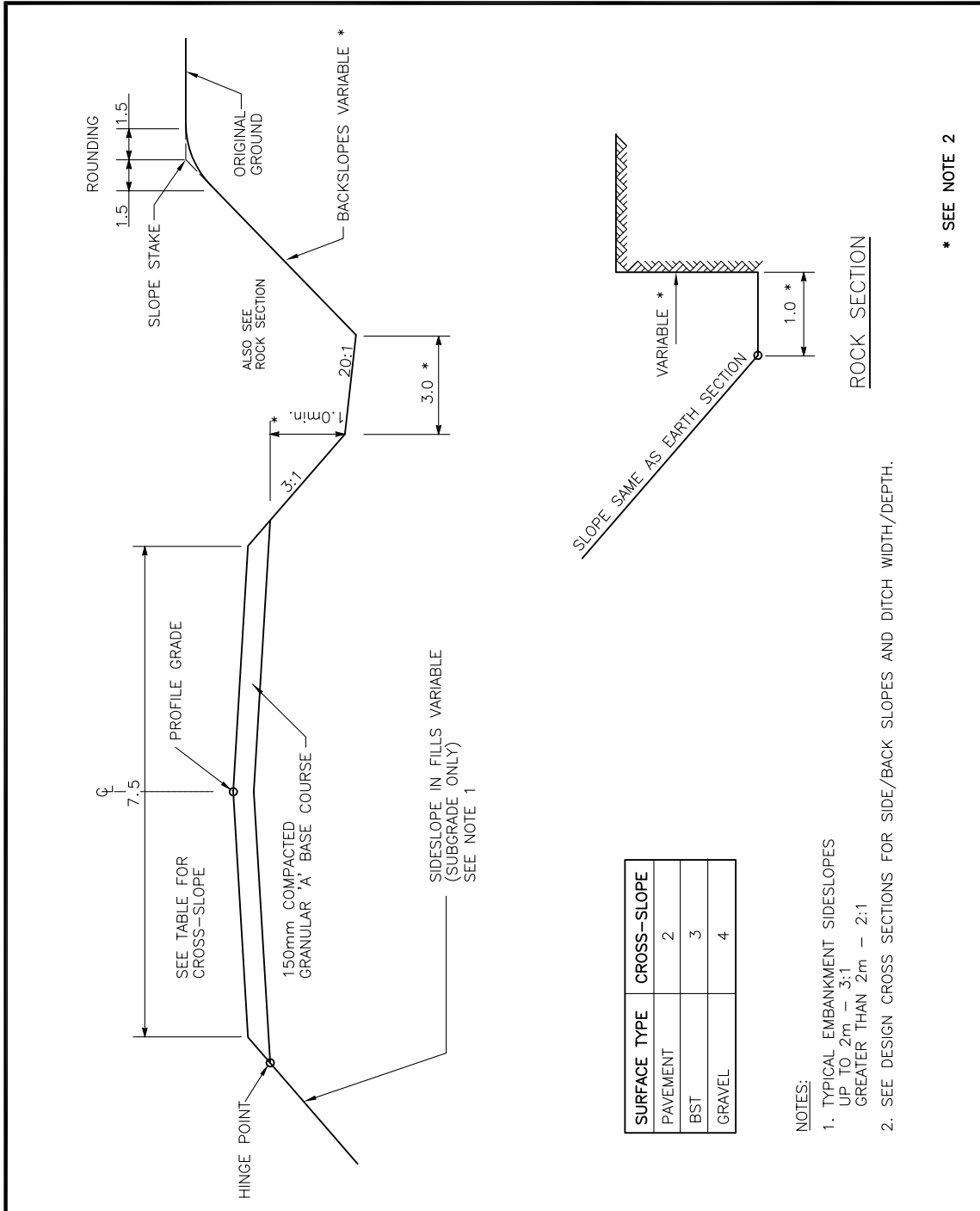
**TYPICAL EARTHWORK
X-SECTION
CASINO ROAD**

**NEW YUKON GOVERNMENT
BUILDING CANADA FUND
NATIONAL INFRASTRUCTURE
COMPONENT APPLICATION**

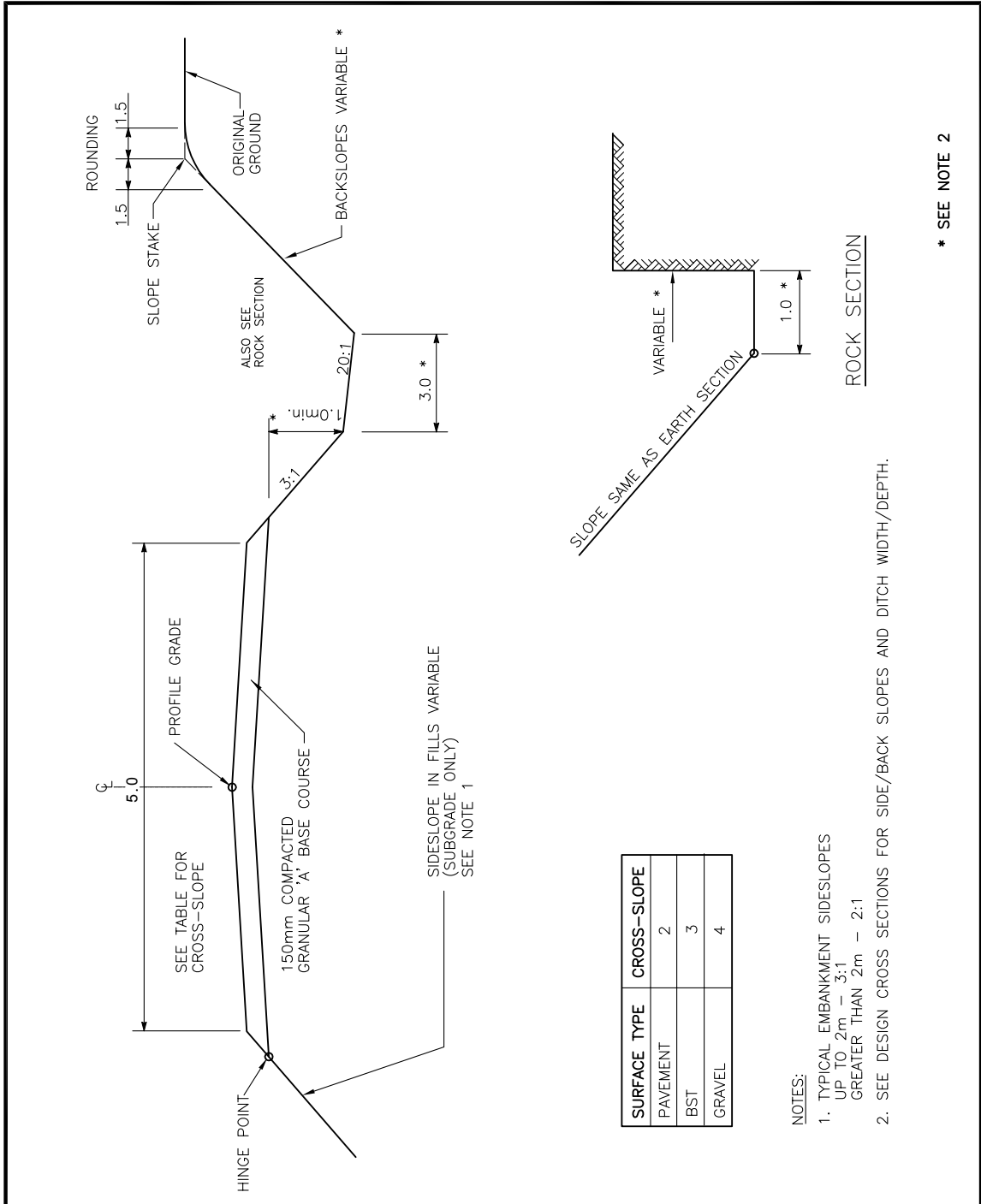
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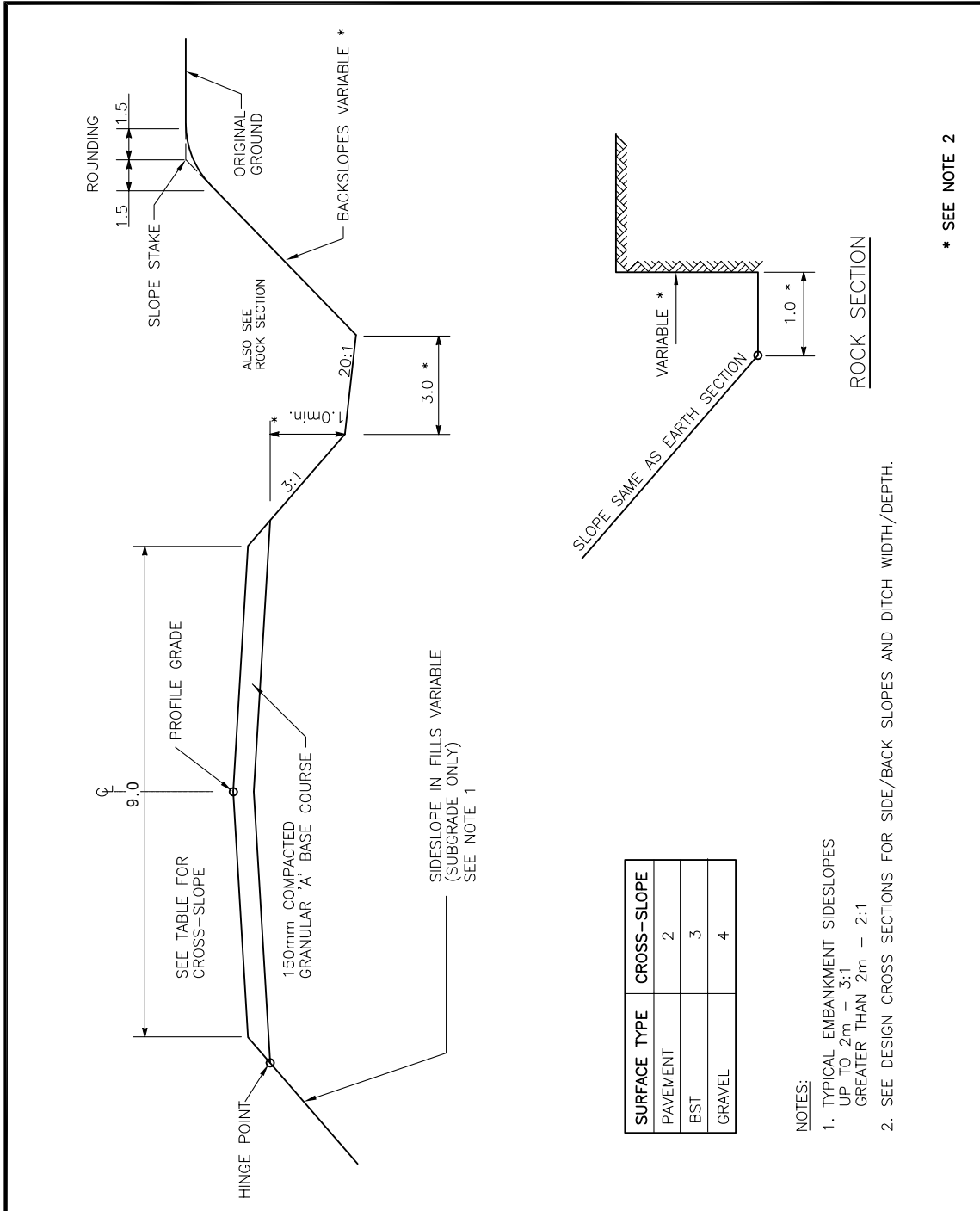
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		scale: N.T.S.



	DRAWING TITLE	
	TYPICAL EARTHWORK X-SECTION GOLDFIELD ROAD NEW YUKON GOVERNMENT BUILDING CANADA FUND NATIONAL INFRASTRUCTURE COMPONENT APPLICATION	
	scale:	N.T.S.



	DRAWING TITLE TYPICAL EARTHWORK X-SECTION INDIAN RIVER/COFFEE ROAD & COFFEE/CASINO CONNECTOR YUKON GOVERNMENT NEW BUILDING CANADA FUND NATIONAL INFRASTRUCTURE COMPONENT APPLICATION	
	scale: N.T.S.	



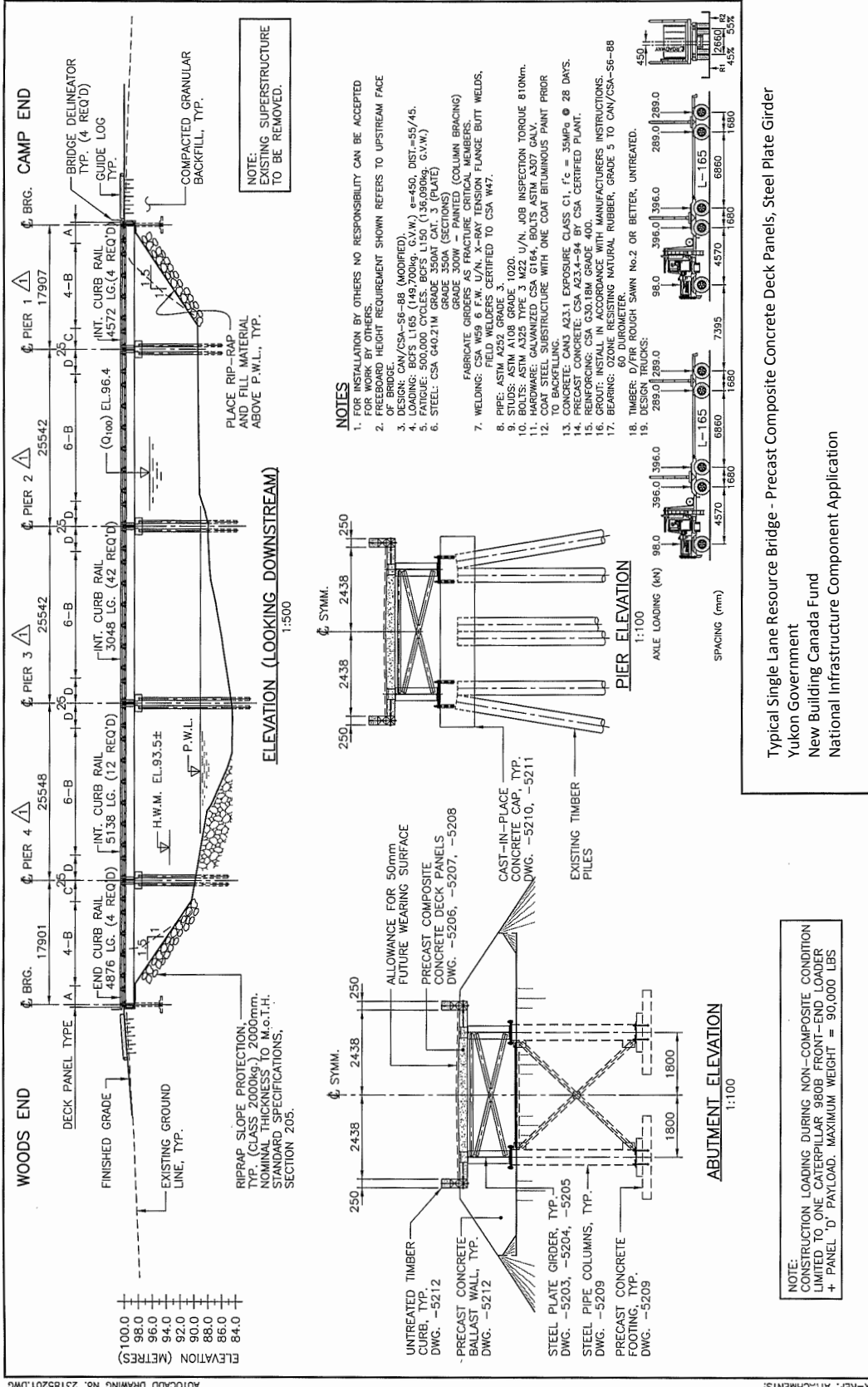
SURFACE TYPE	CROSS-SLOPE
PAVEMENT	2
BST	3
GRAVEL	4

NOTES:

1. TYPICAL EMBANKMENT SIDESLOPES
UP TO 2m - 3:1
GREATER THAN 2m - 2:1
2. SEE DESIGN CROSS SECTIONS FOR SIDE/BACK SLOPES AND DITCH WIDTH/DEPTH.

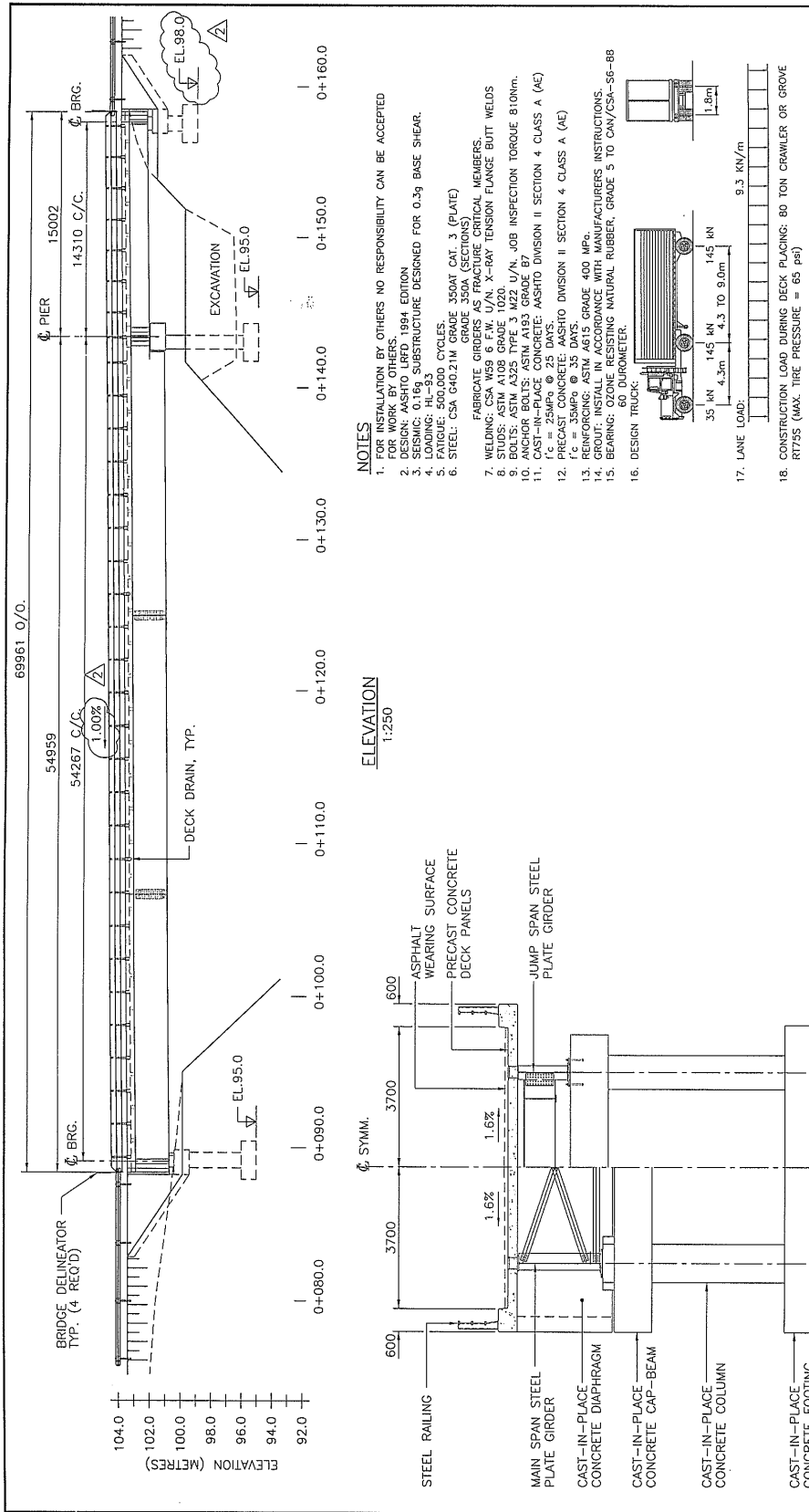
* SEE NOTE 2

	<p>DRAWING TITLE</p> <p>TYPICAL EARTHWORK X-SECTION</p> <p>NAHANNI RANGE ROAD</p> <p>NEW YUKON GOVERNMENT BUILDING CANADA FUND NATIONAL INFRASTRUCTURE COMPONENT APPLICATION</p>	
	<p>scale: N.T.S.</p>	



Typical Single Lane Resource Bridge - Precast Composite Concrete Deck Panels, Steel Plate Girder
 Yukon Government
 New Building Canada Fund
 National Infrastructure Component Application

ALL DRAWINGS SUPERSEDED PRIOR TO REVISION



X-REF. ATTACHMENTS:

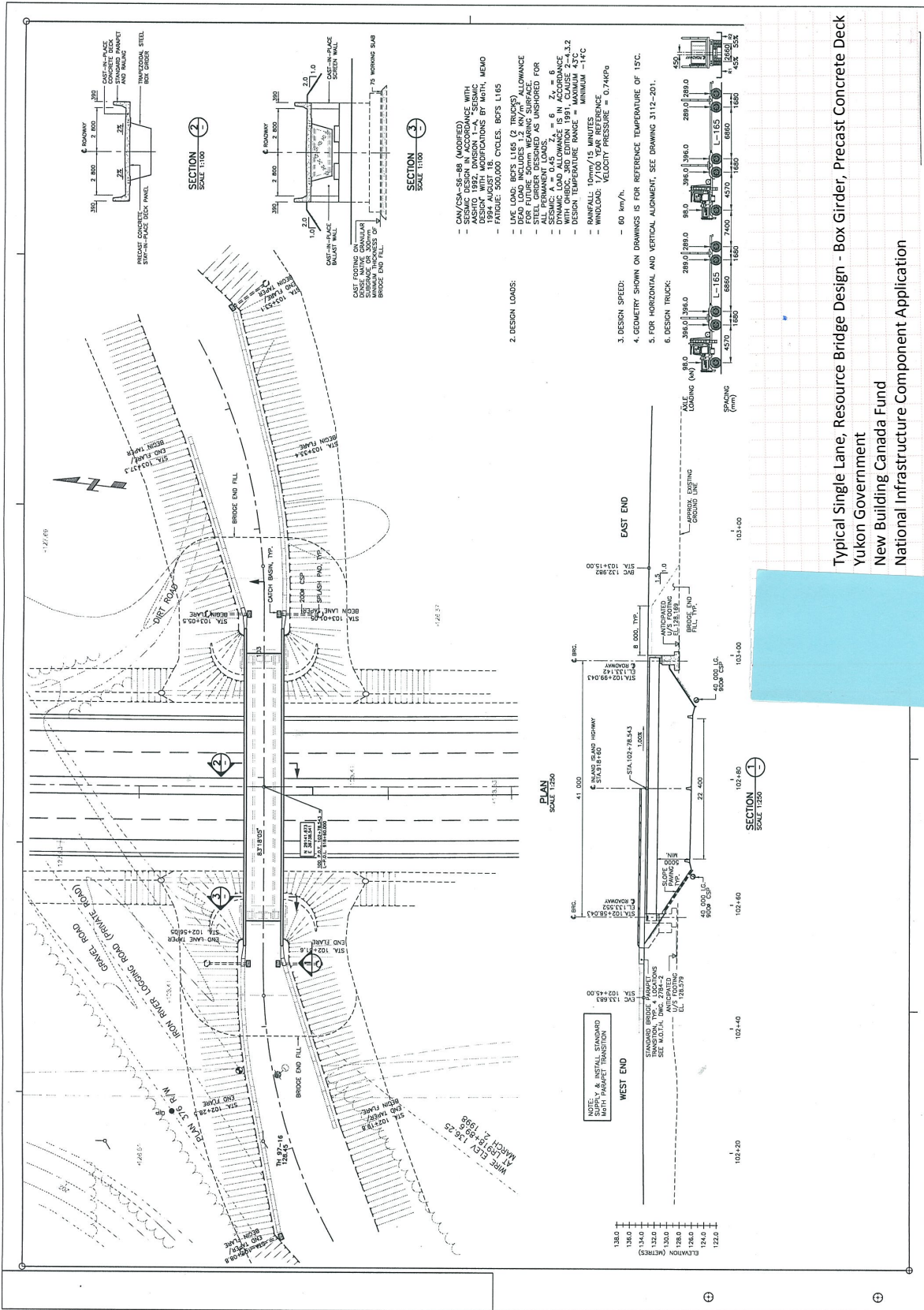
Typical Resource Bridge - Precast Concrete Deck, Steel Plate Girder
 Yukon Government
 New Building Canada Fund
 National Infrastructure Component Application

- NOTES**
1. FOR INSTALLATION BY OTHERS NO RESPONSIBILITY CAN BE ACCEPTED FOR WORK BY OTHERS.
 2. DESIGN: ASHTO LRFD 1994 EDITION.
 3. BRIDGE SUBSTRUCTURE DESIGNED FOR 0.3g BASE SHEAR.
 4. LOADING: HL-93.
 5. FATIGUE: 500,000 CYCLES.
 6. STEEL: CSA G40.21M GRADE 350AT CAT. 3 (PLATE)
 7. WELDS: FABRICATE GIRDERS AS FRACTURE CRITICAL MEMBERS.
 8. STUDS: ASTM A108 GRADE 1020 X-RAY TENSION FLANGE BUTT WELDS.
 9. BOLTS: ASTM A325 TYPE 3 M22 U/N. JOB INSPECTION TORQUE 810Nm.
 10. ANCHOR BOLTS: ASTM A193 GRADE B7
 11. CAST-IN-PLACE CONCRETE: ASHTO DIVISION II SECTION 4 CLASS A (AE)
 12. PRECAST CONCRETE: ASHTO DIVISION II SECTION 4 CLASS A (AE)
 13. REINFORCING: ASTM A615 GRADE 400 MPa.
 14. GROUT: INSTALL IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
 15. BEARING: OZONE RESISTING NATURAL RUBBER, GRADE 5 TO CAN/CSA-S6-88
 16. DESIGN TRUCK: 80 DUROMETER.

ELEVATION
 1:250

1/2 ABUTMENT
 ABUTMENT ELEVATION
 1:100

AUTOCADD DRAWING No. 2W191001



2. DESIGN LOADS:
- CAN/CSA-S8 (MODIFIED) - BRIDGE DESIGN LOADS WITH ASHITO 1992, DIVISION 1-A, SEISMIC DESIGN WITH MODIFICATIONS BY MTH, MEMO
 - FATIGUE: 500,000 CYCLES, BEF'S L165
 - LIVE LOAD: BC'S L165 (2 TRUCKS)
 - DEAD LOAD INCLUDES 1.2 kN/m² ALLOWANCE
 - SUPERSEDES ALL PREVIOUS SPECIFICATIONS
 - STEEL GIRDER DESIGNED AS UNSHORED FOR CONSTRUCTION
 - SEISMIC: WIND LOADS: $Z_1 = 6$, $Z_2 = 6$
 - WIND: WIND SPEED: 40 m/s
 - DYNAMIC LOAD ALLOWANCE IS IN ACCORDANCE WITH CANADIAN BRIDGE DESIGN CODE
 - DESIGN TEMPERATURE RANGE = MAXIMUM +3°C MINIMUM -15°C
 - RAINFALL: 10mm/15 MINUTES
 - WINDLOAD: 1/100 YEAR REFERENCE VELOCITY PRESSURE = 0.74MPa
 - 60 km/h

3. DESIGN SPEED: 60 km/h
4. GEOMETRY SHOWN ON DRAWINGS IS FOR REFERENCE TEMPERATURE OF 15°C.
5. FOR HORIZONTAL AND VERTICAL ALIGNMENT, SEE DRAWING 3112-201.
6. DESIGN TRUCK:
- | | | | | |
|-----------------|-------|-------|-------|-------|
| AXLE LOADS (kN) | 289.0 | 316.0 | 316.0 | 289.0 |
| SPACING (mm) | 1800 | 1800 | 1800 | 1800 |

Typical Single Lane, Resource Bridge Design - Box Girder, Precast Concrete Deck
 Yukon Government
 New Building Canada Fund
 National Infrastructure Component Application

Appendix C – YRGP Timelines

NIC Timelines Central Yukon Resources Access Project

TASK	SUB TASK	2015-16			2016-17			2017-18			2018-19		
		APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH
ADMINISTRATION	NIC APPLICATION DEVELOPMENT	█											
	AGREEMENT IN PRINCIPLE REVIEW				█								
	NIC FUNDING AGREEMENT REVIEW							█					
	NIC FUNDING AGREEMENT							█					
	ESTABLISH YG PROJECT OFFICE							█					
	PRELIMINARY DESIGN GOLDFIELDS HUNKER/SULPHUR	█											
	PRELIMINARY DESIGN GOLDFIELDS INDIAN RIVER/COFFEE	█											
	PRELIMINARY DESIGN GOLDFIELDS BONANZA/DOMINION	█											
	PRELIMINARY DESIGN GOLDFIELDS QUARTZ	█											
	PRELIMINARY DESIGN FREEGOLD & CARMACKS BYPASS	█											
	PRELIMINARY DESIGN CASINO ROAD	█											
	PRELIMINARY DESIGN COFFEE/CASINO CONNECTOR										█		
	PRELIMINARY DESIGN NAHANNI RANGE	█											
	FINAL DESIGN & GEOTECH GOLDFIELDS HUNKER/SULPHUR						█						
	FINAL DESIGN & GEOTECH GOLDFIELDS INDIAN RIVER/COFFEE						█						
	FINAL DESIGN & GEOTECH GOLDFIELDS BONANZA/DOMINION							█					
	FINAL DESIGN & GEOTECH GOLDFIELDS QUARTZ							█					
	FINAL DESIGN & GEOTECH FREEGOLD & CARMACKS BYPASS							█					
	FINAL DESIGN & GEOTECH CASINO ROAD							█					
	FINAL DESIGN & GEOTECH COFFEE/CASINO CONNECTOR								█				
FINAL DESIGN & GEOTECH NAHANNI RANGE								█					
PROGRESS REPORTING								█					
REGULATORY	ENVIRONMENTAL ASSESSMENT GOLDFIELDS HUNKER/SULPHUR					█							
	ENVIRONMENTAL ASSESSMENT GOLDFIELDS INDIAN RIVER/COFFEE					█							
	ENVIRONMENTAL ASSESSMENT GOLDFIELDS BONANZA/DOMINION							█					
	ENVIRONMENTAL ASSESSMENT GOLDFIELD QUARTZ								█				
	ENVIRONMENTAL ASSESSMENT FREEGOLD & CARMACKS BYPASS					█							
	ENVIRONMENTAL ASSESSMENT CASINO ROAD							█					
	ENVIRONMENTAL ASSESSMENT COFFEE/CASINO CONNECTOR								█				
	ENVIRONMENTAL ASSESSMENT NAHANNI RANGE					█							
	WATER LICENSE AND PERMITS GOLDFIELDS HUNKER/SULPHUR						█						
	WATER LICENSE AND PERMITS GOLDFIELDS INDIAN RIVER/COFFEE							█					
	WATER LICENSE AND PERMITS GOLDFIELDS BONANZA/DOMINION								█				
	WATER LICENSE AND PERMITS GOLDFIELDS QUARTZ								█				
	WATER LICENSE AND PERMITS FREEGOLD & CARMACKS BYPASS							█					
	WATER LICENSE AND PERMITS CASINO ROAD								█				
	WATER LICENSE AND PERMITS COFFEE/CASINO CONNECTOR								█				
	WATER LICENSE AND PERMITS NAHANNI RANGE								█				
FN CONSULTATION	TRONDEK HWECHIN					█							
	SELKIRK					█							
	LITTLE SALMON CARMACKS					█							
	KASKA DENA					█							
CONSTRUCTION	GOLDFIELDS HUNKER/SULPHUR							█					
	GOLDFIELDS INDIAN RIVER/COFFEE							█					
	GOLDFIELDS BONANZA/DOMINION							█					
	GOLDFIELDS QUARTZ							█					
	CARMACKS BYPASS							█					
	FREEGOLD KM 0 - KM 82							█					
	CASINO ROAD							█					
	COFFEE/CASINO CONNECTOR							█					
	NAHANNI RANGE FRANCIS RIVER BRIDGE							█					
	NAHANNI RANGE ROAD RECONSTRUCTION							█					
PROJECT AUDITS & FINAL REPORT	GOLDFIELDS HUNKER/SULPHUR												
	GOLDFIELDS INDIAN RIVER/COFFEE												
	GOLDFIELDS BONANZA/DOMINION												
	GOLDFIELDS QUARTZ												
	FREEGOLD CARMACKS BYPASS												
	FREEGOLD KM 0 TO KM 82												
	CASINO ROAD												
	COFFEE/CASINO CONNECTOR												
NAHANNI RANGE FRANCIS RIVER BRIDGE													
NAHANNI RANGE ROAD RECONSTRUCTION													



Appendix D

YGRP Financial Spreadsheets

1. Project Timelines

Yukon Resource Gateway Project - Timelines

Task	Sub Task	Start Date	End Date
Administration	NIC Application Development	Apr-15	Dec-15
	Agreement in Principle Review	Jan-16	Jun-16
	NIC Funding Agreement Review	Jul-16	Aug-16
	NIC Funding Agreement	Sep-16	Mar-24
	Establish YG Project Office	Jun-16	Aug-16
	Preliminary Design Goldfields Hunker/Sulphur	Apr-15	Jan-16
	Preliminary Design Goldfields Indian River/Coffee	Apr-15	Jan-16
	Preliminary Design Goldfields Bonanza/Dominion	Apr-15	Jan-16
	Preliminary Design Goldfields Quartz	Apr-15	Jan-16
	Preliminary Design Freegold & Carmacks Bypass	Apr-15	Jan-16
	Preliminary Design Casino Road	Apr-15	Jan-16
	Preliminary Design Coffee/Casino Connector	Apr-18	Jan-19
	Preliminary Design Nahanni Range	Apr-15	Jan-16
	Final Design & Geotech Goldfields Hunker/Sulphur	May-16	Dec-16
	Final Design & Geotech Goldfields Indian River/Coffee	May-16	Dec-16
	Final Design & Geotech Goldfields Bonanza/Dominion	May-17	Dec-17
	Final Design & Geotech Goldfields Quartz	May-19	Dec-19
	Final Design & Geotech Freegold & Carmacks Bypass	May-17	Dec-17
	Final Design & Geotech Casino Road	May-16	Dec-17
	Final Design & Geotech Coffee/Casino Connector	May-19	Mar-20
Final Design and Geotech Nahanni Range	May-17	Dec-17	
Progress Reporting	Mar-17	Mar-24	
Regulatory	Environmental Assessment Goldfields Hunker/Sulphur	Jun-16	Dec-16
	Environmental Assessment Goldfields Indian River/Coffee	Jul-16	Nov-17
	Environmental Assessment Goldfields Bonanza/Dominion	May-18	Nov-18
	Environmental Assessment Goldfields Quartz	May-20	Nov-20
	Environmental Assessment Freegold & Carmacks Bypass	Jun-16	Oct-17
	Environmental Assessment Casino Road	Jun-17	Nov-18
	Environmental Assessment Coffee/Casino Connector	Jun-20	Nov-21
	Environmental Assessment Nahanni Range	Jun-16	Nov-17
	Water Licence and Permits Goldfields Hunker/Sulphur	Jan-17	May-17
	Water Licence and Permits Goldfields Indian River/Coffee	Nov-17	Mar-18
	Water Licence and Permits Goldfields Bonanza/Dominion	Jan-19	May-19
	Water Licence and Permits Goldfields Quartz	Jan-21	May-21
	Water Licence and Permits Freegold	Oct-17	Feb-18
	Water Licence and Permits Casino Road	Nov-18	Mar-19
	Water Licence and Permits Coffee/Casino Connector	Nov-21	Mar-22
	Water Licence and Permits Nahanni Range	Nov-17	Mar-18

Yukon Resource Gateway Project - Timelines

Task	Sub Task	Start Date	End Date
FN Consultation	Trondek Hwechin	Jan-16	Dec-16
	Selkirk	Jan-16	Dec-16
	Little Salmon Carmacks	Jan-16	Dec-16
	Kaska Dena	Jan-16	Dec-16
Construction	Goldfields Hunker/Sulphur	Jun-17	Nov-20
	Goldfields Indian River/Coffee	May-18	Nov-21
	Goldfields Bonanza/Dominion	Jun-19	Nov-22
	Goldfields Quartz	Jun-21	Nov-23
	Freegold Carmacks Bypass	May-18	Nov-19
	Freegold Km 0 - Km 82	May-18	Mar-24
	Casino Road	May-19	Mar-24
	Coffee/Casino Connector	May-22	Mar-24
	Nahanni Range Francis River Bridge	May-18	Nov-21
Nahanni Range Road Reconstruction	May-18	Mar-24	
Project Audit/Report	Goldfields Hunker/Sulphur	May-22	May-23
	Goldfields Indian River/Coffee	May-22	May-23
	Goldfields Bonanza/Dominion	May-23	May-24
	Goldfields Quartz	May-23	May-24
	Freegold Carmacks Bypass	May-20	May-21
	Freegold Km 0 - Km 82	May-24	Mar-25
	Casino Road	May-24	May-25
	Coffee/Casino Connector	May-24	May-25
	Nahanni Range Francis River Bridge	May-22	May-23
Nahanni Range Road Reconstruction	May-24	May-25	

YGRP Financial Spreadsheets

2. Estimated Project Costs

Yukon Resource Gateway Project - Estimated Project Costs (\$000s)

Component	Activity	Eligible Costs	Ineligible Costs	Total Project Costs
Administration	NIC Application Development	0	50	50
	Agreement in Principle Review	0	5	5
	NIC Funding Agreement Review	0	10	10
	YG Project Administration/QA	0	3,600	3,600
	Project Management	7,500	500	8,000
	Preliminary Design Goldfields Hunker/Sulphur	0	20	20
	Preliminary Design Goldfields Indian River/Coffee	120	360	480
	Preliminary Design Goldfields Bonanza/Dominion	0	20	20
	Preliminary Design Goldfields Quartz	0	10	10
	Preliminary Design Freegold & Carmacks Bypass	0	100	100
	Preliminary Design Casino Road	250	1,250	1,500
	Preliminary Design Coffee/Casino Connector	100	0	100
	Preliminary Design Nahanni Range	0	100	100
	Final Design & Geotech Goldfields Hunker/Sulphur	225	225	450
	Final Design & Geotech Goldfields Indian River/Coffee	100	100	200
	Final Design & Geotech Goldfields Bonanza/Dominion	900	0	900
	Final Design & Geotech Goldfields Quartz	400	0	400
	Final Design & Geotech Freegold & Carmacks Bypass	900	0	900
	Final Design & Geotech Casino Road	850	150	1,000
	Final Design & Geotech Coffee/Casino Connector	500	0	500
	Final Design and Geotech Nahanni Range	1,300	0	1,300
	Progress Reporting/Project Audits	0	360	360
	Regulatory	Environmental Assessment Goldfields Hunker/Sulphur	50	55
Environmental Assessment Goldfields Indian River/Coffee		100	290	390
Environmental Assessment Goldfields Bonanza/Dominion		100	0	100
Environmental Assessment Goldfields Quartz		80	0	80
Environmental Assessment Freegold		140	70	210
Environmental Assessment Casino Road		250	3,050	3,300
Environmental Assessment Coffee/Casino Connector		200	0	200
Environmental Assessment Nahanni Range		140	70	210
Water Licence and Permits Goldfields Hunker/Sulphur		20	25	45
Water Licence and Permits Goldfields Indian River/Coffee		40	0	40
Water Licence and Permits Goldfields Bonanza Dominion		40	0	40
Water Licence and Permits Goldfields Quartz		40	0	40
Water Licence and Permits Freegold & Carmacks Bypass		20	30	50
Water Licence and Permits Casino Road		80	0	80
Water Licence and Permits Coffee/Casino Connector		100	0	100
Water Licence and Permits Nahanni Range		60	10	70

		Eligible Costs	Ineligible Costs	Total Project Costs
FN Consultation	Trondek Hwechin	60	140	200
	Selkirk - Freegold	60	140	200
	Little Salmon Carmacks	60	140	200
	Kaska Dena	60	40	100
Construction	Goldfields Hunker/Sulphur	31,200	0	31,200
	Goldfields Indian River/Coffee	30,000	0	30,000
	Goldfields Bonanza/Dominion	36,400	0	36,400
	Goldfields Quartz	8,200	0	8,200
	Freegold Carmacks Bypass	10,000	0	10,000
	Freegold Km 0 - Km 82	100,000	0	100,000
	Casino Road	116,000	0	116,000
	Coffee/Casino Connector	10,000	0	10,000
	Nahanni Range Francis River Bridge	10,000	0	10,000
Nahanni Range Road Reconstruction	91,000	0	91,000	
Project Audit/Report	Goldfields Hunker/Sulphur	20	0	20
	Goldfields Indian River/Coffee	20	0	20
	Goldfields Bonanza/Dominion	20	0	20
	Goldfields Quartz	20	0	20
	Freegold Carmacks Bypass	20	0	20
	Freegold Km 0 - Km 82	40	0	40
	Casino Road	40	0	40
	Coffee/Casino Connector	40	0	40
	Nahanni Range Francis River Bridge	20	0	20
Nahanni Range Road Reconstruction	40	0	40	
TOTAL		457,925	10,920	468,845

YGRP Financial Spreadsheets

3. Cash Flow Eligible Expenses

Yukon Resource Gateway Project - Estimated Project Cash Flow Eligible Expenses

Component	Activity	Industry	2016/17 Yukon	Canada	Industry	2017/18 Yukon	Canada	Industry	2018/19 Yukon	Canada	Industry
Administration	NIC Application Development Agreement in Principle Review										
	NIC Funding Agreement Review										
	YG Project Administration/QA										
	Project Management		125	375		250	750		250	750	
	Preliminary Design Goldfields Hunker/Sulphur										
	Preliminary Design Goldfields Indian River/Coffee	84	24	12							
	Preliminary Design Goldfields Bonanza/Dominion										
	Preliminary Design Goldfields Quartz										
	Preliminary Design Freegold & Carmacks Bypass										
	Preliminary Design Casino Road	175	50	25							
	Preliminary Design Coffee/Casino Connector								25	75	
	Preliminary Design Nahanni Range										
	Final Design & Geotech Goldfields Hunker/Sulphur		56	169							
	Final Design & Geotech Goldfields Indian River/Coffee	70	20	10							
	Final Design & Geotech Goldfields Bonanza/Dominion						225	675			
	Final Design & Geotech Goldfields Quartz										
	Final Design & Geotech Freegold & Carmacks Bypass						225	675			
	Final Design & Geotech Casino Road	105	30	15	490	140	70				
	Final Design & Geotech Coffee/Casino Connector										
	Final Design and Geotech Nahanni Range							325	975		
Progress Reporting/Project Audits											
Regulatory	Environmental Assessment Goldfields Hunker/Sulphur		12	38							
	Environmental Assessment Goldfields Indian River/Coffee	70	20	10							
	Environmental Assessment Goldfields Bonanza/Dominion								25	75	
	Environmental Assessment Goldfields Quartz										
	Environmental Assessment Freegold		15	45		20	60				
	Environmental Assessment Casino Road	175	50	25							
	Environmental Assessment Coffee/Casino Connector										
	Environmental Assessment Nahanni Range		15	45		20	60				
	Water Licence and Permits Goldfields Hunker/Sulphur		5	15							
	Water Licence and Permits Goldfields Indian River/Coffee				28	8	4				
	Water Licence and Permits Goldfields Bonanza Dominion										
	Water Licence and Permits Goldfields Quartz										
	Water Licence and Permits Freegold & Carmacks Bypass		5	15							
	Water Licence and Permits Casino Road								56	16	8
Water Licence and Permits Coffee/Casino Connector											
Water Licence and Permits Nahanni Range					15	45					
FN Consultation	Trondek Hwechin		15	45							
	Selkirk - Freegold		15	45							
	Little Salmon Carmacks		15	45							
	Kaska Dena		15	45							
Construction	Goldfields Hunker/Sulphur					2,500	7,500		2,500	7,500	
	Goldfields Indian River/Coffee				700	200	100	10,500	3,000	1,500	9,800
	Goldfields Bonanza/Dominion								2,500	7,500	
	Goldfields Quartz										
	Freegold Carmacks Bypass								1,000	3,000	
	Freegold Km 0 - Km 82								4,500	13,500	
	Casino Road										20,300
	Coffee/Casino Connector										
	Nahanni Range Francis River Bridge								1,125	3,375	
	Nahanni Range Road Reconstruction								4,000	12,000	
Project Audit/Report	Goldfields Hunker/Sulphur										
	Goldfields Indian River/Coffee										
	Goldfields Bonanza/Dominion										
	Goldfields Quartz										
	Freegold Carmacks Bypass										
	Freegold Km 0 - Km 82										
	Casino Road										
	Coffee/Casino Connector										
	Nahanni Range Francis River Bridge										
	Nahanni Range Road Reconstruction										
TOTAL		679	487	979	1,218	3,928	10,914	10,556	18,941	49,283	30,100

2019/20 Yukon	Canada	Industry	2020/2021 Yukon	Canada	Industry	2021/2022 Yukon	Canada	Industry	2022/2023 Yukon	Canada	Industry	2023/2024 Yukon	Canada	Industry	2024/25 Yukon	Canada	Total
																	0
																	0
																	0
																	0
250	750		250	750		250	750		250	750		250	750				7,500
																	120
																	0
																	0
																	250
																	100
																	0
																	225
																	100
100	300																900
																	400
																	900
125	375																850
																	500
																	1,300
																	0
																	50
																	100
			20	60													80
																	140
			50	150													250
																	200
																	140
																	20
																	40
10	30																40
			10	30													20
																	80
			15	45		10	30										100
																	60
																	60
																	60
																	60
2,500	7,500		300	900													31,200
2,800	1,400					1,600	4,800										30,000
2,500	7,500		2,500	7,500		1,025	3,075		1,025	3,075							36,400
1,000	3,000		500	1,500													8,200
4,500	13,500		4,500	13,500		4,500	13,500		4,500	13,500		2,500	7,500				100,000
5,800	2,900	20,300	5,800	2,900	20,300	5,800	2,900	20,300	5,800	2,900							116,000
									1,250	3,750							10,000
1,125	3,375		250	750								1,250	3,750				10,000
4,000	12,000		4,000	12,000		4,000	12,000		4,000	12,000		2,750	8,250				91,000
									5	15							20
									5	15							20
												5	15				20
			5	15								5	15				20
															10	30	40
															10	30	40
															10	30	40
									5	15					10	30	40
24,710	52,630	20,300	18,200	40,100	20,300	17,185	37,055	20,300	16,840	36,020	0	6,760	20,280	0	40	120	457,925

YGRP Financial Spreadsheets

4. Eligible Cash Flow By Source

Yukon Resource Gateway Project - Estimated Project Cash Flow Eligible Costs

Funding Source	2016/17	2017/18	2018/19	2019/20
Industry	679	1,218	10,556	30,100
Government of Yukon	487	3,928	18,941	24,710
Government of Canada	979	10,914	49,283	52,630
Total	2,145	16,060	78,780	107,440

5. Inflated Eligible Cash Flow

Yukon Resource Gateway Project - Estimated Project Cash Flow Eligible Costs

Funding Source	2016/17	2017/18	2018/19	2019/20
Industry	679	1,218	10,556	30,100
<i>Inflation@ 2%/Yr</i>	<i>706</i>	<i>1,293</i>	<i>11,426</i>	<i>33,233</i>
Government of Yukon	487	3,928	18,941	24,710
<i>Inflation@ 2%/Yr</i>	<i>507</i>	<i>4,168</i>	<i>20,502</i>	<i>27,282</i>
Government of Canada	979	10,914	49,283	52,630
<i>Inflation@ 2%/Yr</i>	<i>1,019</i>	<i>11,582</i>	<i>53,346</i>	<i>58,108</i>
Total	2,145	16,060	78,780	107,440
<i>Total @ 2% Inflation/Yr</i>	<i>2,232</i>	<i>17,043</i>	<i>85,274</i>	<i>118,622</i>

Cash Flow by Fiscal Year (\$000)

2020/21	2021/22	2022/23	2023/24	2024/25	Total
20,300	20,300	20,300	0	0	103,453
18,200	17,185	16,840	6,760	40	107,091
40,100	37,055	36,020	20,280	120	247,381
78,600	74,540	73,160	27,040	160	457,925

Cash Flow by Fiscal Year (\$000)

2020/21	2021/22	2022/23	2023/24	2024/25	Total
20,300	20,300	20,300	0	0	103,453
<i>22,861</i>	<i>23,318</i>	<i>23,785</i>	<i>0</i>	<i>0</i>	<i>116,622</i>
18,200	17,185	16,840	6,760	40	107,091
<i>20,496</i>	<i>19,740</i>	<i>19,731</i>	<i>8,079</i>	<i>49</i>	<i>120,554</i>
40,100	37,055	36,020	20,280	120	247,381
<i>45,159</i>	<i>42,565</i>	<i>42,203</i>	<i>24,236</i>	<i>146</i>	<i>278,363</i>
78,600	74,540	73,160	27,040	160	457,925
<i>88,516</i>	<i>85,623</i>	<i>85,719</i>	<i>32,315</i>	<i>195</i>	<i>515,539</i>

YGRP Financial Spreadsheets

6. Cash Flow All Expenses

Yukon Resource Gateway Project - Estimated Project Cash Flow All Expenses

Component	Activity	2015/16			2016/17			2017/18			2018/19			
		Industry	Yukon	Canada	Industry	Yukon	Canada	Industry	Yukon	Canada	Industry	Yukon	Canada	
Administration	NIC Application Development		50											
	Agreement in Principle Review		5											
	NIC Funding Agreement Review		10											
	YG Project Administration/QA		400			400			400			400		
	Project Management		0	0		250	750		250	750		250	750	
	Preliminary Design Goldfields Hunker/Sulphur													
	Preliminary Design Goldfields Indian River/Coffee	240			168	48	24							
	Preliminary Design Goldfields Bonanza/Dominion		20											
	Preliminary Design Goldfields Quartz		10											
	Preliminary Design Freegold & Carmacks Bypass		100											
	Preliminary Design Casino Road	1,000			350	100	50							
	Preliminary Design Coffee/Casino Connector											25	75	
	Preliminary Design Nahanni Range		100											
	Final Design & Geotech Goldfields Hunker/Sulphur					112	338							
	Final Design & Geotech Goldfields Indian River/Coffee				140	40	20							
	Final Design & Geotech Goldfields Bonanza/Dominion								225	675				
	Final Design & Geotech Goldfields Quartz													
	Final Design & Geotech Freegold & Carmacks Bypass								225	675				
	Final Design & Geotech Casino Road				210	60	30	490	140	70				
	Final Design & Geotech Coffee/Casino Connector								325	975				
Final Design and Geotech Nahanni Range														
Progress Reporting/Project Audits					40			40			40			
Regulatory	Environmental Assessment Goldfields Hunker/Sulphur		5			25	75							
	Environmental Assessment Goldfields Indian River/Coffee	190			140	40	20							
	Environmental Assessment Goldfields Bonanza/Dominion										25	75		
	Environmental Assessment Goldfields Quartz													
	Environmental Assessment Freegold & Carmacks Bypass		10			30	90		20	60				
	Environmental Assessment Casino Road	2,800			350	100	50							
	Environmental Assessment Coffee/Casino Connector													
	Environmental Assessment Nahanni Range		10			30	90		20	60				
	Water Licence and Permits Goldfields Hunker/Sulphur		5			10	30							
	Water Licence and Permits Goldfields Indian River/Coffee							28	8	4				
	Water Licence and Permits Goldfields Bonanza/Dominion													
	Water Licence and Permits Goldfields Quartz													
	Water Licence and Permits Freegold & Carmacks Bypass		10			10	30							
	Water Licence and Permits Casino Road										56	16	8	
Water Licence and Permits Coffee/Casino Connector								15	45					
Water Licence and Permits Nahanni Range														
FN Consultation	Trondek Hwechin	100	40			15	45							
	Selkirk	100	40			15	45							
	Little Salmon Carmacks	100	40			15	45							
	Kaska Dena/NND		40			15	45							
Construction	Goldfields Hunker/Sulphur													
	Goldfields Indian River/Coffee							700	2,500	7,500	10,500	2,500	7,500	
	Goldfields Bonanza/Dominion											3,000	1,500	
	Goldfields Quartz											2,500	7,500	
	Freegold Carmacks Bypass											1,000	3,000	
	Freegold Km 0 - Km 82											4,500	13,500	
	Casino Road													
	Coffee/Casino Connector													
	Nahanni Range Francis River Bridge												1,125	3,375
	Nahanni Range Road Reconstruction												4,000	12,000
Project Audit/Report	Goldfields Hunker/Sulphur													
	Goldfields Indian River/Coffee													
	Goldfields Bonanza/Dominion													
	Goldfields Quartz													
	Freegold Carmacks Bypass													
	Freegold Km 0 - Km 82													
	Casino Road													
	Coffee/Casino Connector													
	Nahanni Range Francis River Bridge													
	Nahanni Range Road Reconstruction													
TOTAL		4,530	925	0	1,358	1,355	1,777	1,218	4,368	10,914	10,556	19,381	49,283	

Industry	Cash Flow by Fiscal Year (\$000)															Total		
	2019/20 Yukon	2020/2021			2021/2022			2022/2023			2023/2024			2024/25				
	Canada	Industry	Yukon	Canada	Industry	Yukon	Canada	Industry	Yukon	Canada	Industry	Yukon	Canada	Industry	Yukon	Canada		
																	50	
																	5	
																	10	
																	3,600	
																	8,000	
																	20	
																	480	
																	20	
																	10	
																	100	
																	1,500	
																	100	
																	100	
																	450	
																	200	
																	900	
																	400	
																	900	
																	1,000	
																	500	
																	1,300	
																	360	
																	0	
																	105	
																	390	
																	100	
																	80	
																	210	
																	3,300	
																	200	
																	210	
																	45	
																	40	
																	40	
																	50	
																	80	
																	100	
																	70	
																	0	
																	200	
																	200	
																	200	
																	100	
																	0	
																	31,200	
																	30,000	
																	36,400	
																	8,200	
																	10,000	
																	100,000	
																	116,000	
																	10,000	
																	10,000	
																	91,000	
																	0	
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																	20	
																	20	
																	40	
																	40	
																	40	
																	20	
																	40	
																	0	
30,100	25,150	52,630	20,300	18,640	40,100	20,300	17,625	37,055	20,300	17,280	36,020	0	7,200	20,280	0	80	120	468,845

YGRP Financial Spreadsheets

7. All Cash Flow By Source

Yukon Resource Gateway Project - Estimated Project Cash Flow All Costs

Funding Source	2015/16	2016/17	2017/18	2018/19
Industry	4,530	1,358	1,218	10,556
Government of Yukon	925	1,355	4,368	19,381
Government of Canada	0	1,777	10,914	49,283
Total	5,455	4,490	16,500	79,220

8. Inflated All Cash Flow

Yukon Resource Gateway Project - Estimated Project Cash Flow All Costs With Inflation

Funding Source	2015/16	2016/17	2017/18	2018/19
Industry	4,530	1,358	1,218	10,556
<i>Inflation @ 2%/Yr</i>	<i>4,621</i>	<i>1,413</i>	<i>1,293</i>	<i>11,426</i>
Government of Yukon	925	1,355	4,368	19,381
<i>Inflation @ 2%/Yr</i>	<i>944</i>	<i>1,410</i>	<i>4,635</i>	<i>20,979</i>
Government of Canada	0	1,777	10,914	49,283
<i>Inflation @ 2%/Yr</i>	<i>0</i>	<i>1,849</i>	<i>11,582</i>	<i>53,346</i>
Total	5,455	4,490	16,500	79,220
<i>Total @ 2% Inflation/Yr</i>	<i>5,564</i>	<i>4,671</i>	<i>17,510</i>	<i>85,750</i>

Cash Flow by Fiscal Year (\$000)						
2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	Total
30,100	20,300	20,300	20,300	0	0	108,662
25,150	18,640	17,625	17,280	7,200	80	112,004
52,630	40,100	37,055	36,020	20,280	120	248,179
107,880	79,040	74,980	73,600	27,480	200	468,845

Cash Flow by Fiscal Year (\$000)						
2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	Total
30,100	20,300	20,300	20,300	0	0	108,662
<i>33,233</i>	<i>22,861</i>	<i>23,318</i>	<i>23,785</i>	<i>0</i>	<i>0</i>	<i>121,949</i>
25,150	18,640	17,625	17,280	7,200	80	112,004
<i>27,768</i>	<i>20,992</i>	<i>20,246</i>	<i>20,246</i>	<i>8,605</i>	<i>98</i>	<i>125,921</i>
52,630	40,100	37,055	36,020	20,280	120	248,179
<i>58,108</i>	<i>45,159</i>	<i>42,565</i>	<i>42,203</i>	<i>24,236</i>	<i>146</i>	<i>279,194</i>
107,880	79,040	74,980	73,600	27,480	200	468,845
<i>119,108</i>	<i>89,012</i>	<i>86,128</i>	<i>86,234</i>	<i>32,841</i>	<i>244</i>	<i>527,063</i>



Ottawa, Canada
K1P 0B6

Annex D - Environmental and Aboriginal Consultation Information Requirements

As part of the application process for funding, applicants are required to complete the following questionnaire, found in Annex D of the Business Case Guide, in order for Infrastructure Canada (INFC) to determine if the *Canadian Environmental Assessment Act, 2012* (CEAA, 2012) and/or environmental assessment process in Northern Canada apply to the project. In addition, the information provided will also be used by INFC to determine if there is a requirement to consult with Aboriginal Groups.

All yellow highlighted text is instructional and is provided to explain in more detail the type of information requested by INFC. This instructional text can be deleted once information is provided in the appropriate boxes. Please provide your response in the spaces provided in the boxes, and use as much space as necessary.

Note that if you have any questions filling out the questionnaire; please submit your questions to the following email address: INFCERA-EEA@infcc.gc.ca.

General information

Project Name: Yukon Resource Access Gateways

Project Proponent: Government of Yukon

Contact person for any question Infrastructure Canada could have regarding the environmental assessment and aboriginal consultation:

Name: Allan Nixon, Assistant Deputy Minister, Yukon Highways and Public Works

Address: Box 2703, Whitehorse Yukon, Y1A 2C6

Phone: 867-667-5196

Email: allan.nixon@gov.yk.ca

Note (scope change): If you are completing this questionnaire due to a proposed project amendment for a project already submitted to Infrastructure Canada (INFC), please only include the amended project information.

Project and existing environment description

Project Description: Reconstruction and upgrade of five separate road networks to facilitate improved public safety and future resource development

Description of the existing environment: Existing roads within central Yukon

Project Location Part

PL.1.1: Would any part of the project or activities be located on:		
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Federal land. If yes, provide details regarding the federal land administrator:
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Provincial land. If yes, provide details: Yukon Crown Land
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Indian Reserve land. If yes, provide details:
If you answered “yes” to any of the above.	Is the entire project footprint located on that land? If not, please indicate the portions that will take place on that land (provide a map).	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

PL.1.2: Would any part of the project or activities be located in:	
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Internal waters of Canada, in any area of the sea not within a province <i>Internal waters refers to: the internal waters of Canada as determined under the Oceans Act, including the seabed and subsoil below and the airspace above those waters.</i>
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	The territorial sea of Canada, in any area of the sea not within a province <i>Territorial sea refers to: The territorial sea of Canada as determined under the Oceans Act, including the seabed and its subsoil below and the airspace above that sea.</i>
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	The exclusive economic zone of Canada <i>Exclusive economic zone refers to: The exclusive economic zone of Canada as determined under the Oceans Act, including the seabed and its subsoil.</i>
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	The continental shelf of Canada <i>Continental shelf refers to: the continental shelf of Canada as determined under the Oceans Act.</i>
If you answered “yes” to any of the above:	Please provide the information regarding the land administrator.

PL.2 In order to facilitate and accelerate INFC’s assessment of your application for funding, please provide an accurate project location in order for INFC to geographically locate your project.

Option 1: Project with a fixed address

Address of the project	Location 1	Location 2
Civic Number: Unit/Suite/Apt: Street Name: Municipality: County: Province: Postal Code:		
Project Longitude: Project Latitude:		

Option 2: Project with no fixed address or multiple components

Please indicate, for each project component, any points of interest, intersections, major highways or streets, or other physical characteristics located in the vicinity of the project (e.g. near airport, adjacent to Lions Gate Bridge, 3 km east from Centennial Park, at intersection of Fifth and Queen, etc.)

- Component A: Nahanni Range Road, Yukon Highway # 10
- Component B: Freegold Road, Yukon Highway # 309 Connected to Klondike highway at Carmacks.
- Component C: Casino Trail. Connected to Freegold Road
- Component D: Goldfield Roads, Connected to Klondike Highway near Dawson City
- Component E: Coffee/Casino Connector, Connected to Goldfield Roads and Casino Trail

PL.3 Project Location Documents

<p>A project location map, as a minimum, has been included with this questionnaire.</p>	Yes <input checked="" type="checkbox"/>
<p><i>If available, include also any other additional project map (e.g. site plan, etc.) that may be useful in locating the project.</i></p>	

Environmental Requirement Part

ER.1.1: Does any part of your project involve the construction, operation, decommissioning or abandonment of the following infrastructure?		
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Electrical transmission lines
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Electrical generating facility
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Structure for the diversion of water including dam, dyke or reservoir
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Canal, lock or structure to control water level
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Oil and gas pipeline
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Marine terminal
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Railway line and / or Railway yard
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	All season public highway
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Aerodrome or airport runway
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Hazardous waste facility
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Waste management facility
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Industrial facility

ER.1.2: Are any part of the project or activities proposed within:	
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<p>A wildlife area</p> <p><i>A wildlife area means: (according to the wildlife areas listed in Schedule 1 of the Wildlife Area Regulations).</i></p> <p><i>To use this list, find the section corresponding to the province in which the project is located and then determine if the project is located in one of the wildlife areas listed. If necessary, the cadastral lot numbers can be used.</i></p>
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<p>A migratory bird sanctuary</p> <p><i>A migratory bird sanctuary means: (according to the migratory bird sanctuaries listed in the schedule of the Migratory Bird Sanctuary Regulations).</i></p> <p><i>To use this list, find the section corresponding to the province in which the project is located and then determine if the project is located in one of the bird sanctuaries listed. If necessary, the geographical coordinates expressed in latitude and longitude can be used.</i></p>

ER.1.3: Is the project a designated project according to the *Regulations Designating Physical Activities?**
***<http://laws-lois.justice.gc.ca/eng/regulations/SOR-2012-147/index.html>**
If a project appears on the list, it will likely be considered a designated project and has to be referred to the Canadian Environmental Assessment Agency. Should this be the case, it is recommended you contact them as soon as possible to confirm their requirement and process.

Yes <input type="checkbox"/>	Please elaborate:
No <input checked="" type="checkbox"/>	
Unknown <input type="checkbox"/>	<i>It is possible that the project's status in the Regulations Designating Physical Activities is unknown at the time of the application.</i>

ER.1.4: If you have answer yes to previous question ER1.3 (i.e. the project is a designated project), have you provided the Canadian Environmental Assessment Agency with a project description as per Section 8(1) of the Canadian Environmental Assessment Act, 2012?

Yes No

To learn more about the information required by the Canadian Environmental Assessment Agency (Agency), please refer to the [Prescribed Information for the Description of a Designated Project Regulations](#)

ER.2: Does the project (either in full or in part) require an environmental assessment under a northern regime or other regime?

Yes <input checked="" type="checkbox"/>	Please elaborate: All components of the Project will be assessed under the Yukon Environmental and Socio Economic Assessment Act
No <input type="checkbox"/>	

ER.3: Are public concerns expected as a result of this project?

The project may have potential to cause significant public concern. Here is a non-exhaustive list of examples:

- Water and/or land use disputes and the possible cumulative effects of an unequal distribution of access rights to the land or water in question;*
- Health and safety risks from potential accidents (e.g. potential spills in water bodies, etc.);*
- Breaches of the cultural values of local communities;*
- Etc.*

If the public is concerned about the project, information on the nature of the concern and any other relevant information must be provided to INFC.

Yes <input type="checkbox"/>	Please elaborate:
No <input checked="" type="checkbox"/>	Upgrades of the roads will bring concerns about potential future development questions about allocation of public resources, and potential environmental impacts. This is normal in all major infrastructure projects.

ER.4.1: Are environmental issues expected as a result of this project?	
Yes <input type="checkbox"/>	Please elaborate:
No <input checked="" type="checkbox"/>	Standard environmental issues associated with road reconstruction can be expected and can be mitigated.

ER.4.2: Is any part of the project located in whole or in part on land potentially contaminated by previous activities:	
Yes <input type="checkbox"/>	Please elaborate:
No <input checked="" type="checkbox"/>	

ER.4.3: Is an environmental site assessment available for this project regarding contaminated site(s):		
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Phase I
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Phase II
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Phase III
If you answered “yes” to any of the above, please provide copies of all reports related to the project, if not already provided. If the report(s) is/are at the development stage, please indicate the phase, and when a copy will be provided to INFC.		

ER.4.4: Does the project (either in full or in part) require a provincial environmental assessment?	
Yes <input checked="" type="checkbox"/>	If not already provided, please provide copies of all reports related to the project. If the report(s) is/are at the development stage, please indicate when it/they will be completed and when a copy will be provided to INFC. As per attached project schedule.
No <input type="checkbox"/>	

Aboriginal Consultation Part

This section contains a number of questions aimed at developing a better overview of the types of activities and/or work that will be carried out to determine the potential impact it could have on the Aboriginal or treaty rights of Aboriginal peoples. To determine whether the Crown conduct could have an adverse impact on established or potential Aboriginal or treaty rights, information must be compiled on those rights, which could include the right to hunt, fish, trap, gather and trade, and may either be established by a court or in a treaty, or may be asserted by an Aboriginal group, for example, in litigation or for the purpose of negotiating a treaty.

This step must be taken into consideration very early on in the process otherwise project delays can be expected if consultation is not completed satisfactorily or in a timely manner.

AC.1: Activities Related to the Project that could potentially impact Aboriginal rights.

Examples of traditional Aboriginal activities can vary, and include gathering wild mushrooms and medicinal herbs on a river bank, fishing in a salmon river, hunting moose in the forest, and may involve ceremonial sites and former burial grounds.

If one or more of the questions in this part are answered in the affirmative, please provide a description of the activity or activities in the last line of the table.

Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<p>Does the project involve works or activities on, under, over, through or across a water body such as a wetland, stream, river or lake?</p> <p>Check all that apply.</p> <p>Fresh water: <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Lake <input type="checkbox"/> Wetland <input checked="" type="checkbox"/> River <input type="checkbox"/> Pond <input type="checkbox"/> Reservoir <input type="checkbox"/> Active Floodplain <input checked="" type="checkbox"/> Fish Bearing Watercourse</p> <p>Coastal and Marine: <input type="checkbox"/> Beach <input type="checkbox"/> Cove <input type="checkbox"/> Mud Flat <input type="checkbox"/> Salt Marsh <input type="checkbox"/> Bay <input type="checkbox"/> Exposed Coastline <input type="checkbox"/> Estuary <input type="checkbox"/> Fish Bearing Watercourse</p> <p>Other: <input type="checkbox"/> Please describe:</p>
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<p>Can the work proposed have upstream or downstream impacts (e.g. change in water or temperature level upstream that could result in positive or negative impacts downstream, change in the turbidity, etc.)?</p>
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<p>Are there activities proposed that may affect aboriginal traditional activities. Check all activities that apply.</p> <p><input checked="" type="checkbox"/> Fishing (e.g., preventing access to a fishing area or work in a waterbody such as river, lake, stream, culverts)</p> <p><input checked="" type="checkbox"/> Hunting (e.g., preventing access to a hunting area or clearing of forest or other vegetation etc.)</p> <p><input checked="" type="checkbox"/> Gathering (e.g., preventing access to a gathering area or clearing of forest or other vegetation etc.)</p> <p><input checked="" type="checkbox"/> Other (e.g. work close to or preventing access to sites of cultural/historical/archeological/ceremonial significance near the project etc.)</p>
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<p>Is the project (in full or in part) occurring on undisturbed or undeveloped land?</p>

		<i>If yes, please provide information about how much land will be affected by the project in the appropriate space. Disturbed and/or developed land may include land that has undergone deforestation, land previously used for agricultural purposes, or land that has been built up (e.g. buildings were previously constructed upon, etc.).</i>
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is any component of the proposed project located outside the existing infrastructure footprint (build up footprint)?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Are there any relevant project activities that might affect other aspects of the environment (e.g. increases sound and/or noise levels, creates barriers to or limits access to harvesting areas, adds runoff to a watercourse, involves excavation)?
<p>If you answered “yes” to any of the above, please provide details.</p> <p>Any highway reconstruction involves dealing with stream crossings however there are several decades of experience in mitigating impacts to water quality and fisheries resources as well as legal standards for protection of such that must be met. First Nation use of the areas is well documented and is a key component of the Yukon Environmental Assessment regime. Some activities, such as, back slope protection, realignments and granular pit development, may occur outside of the existing road footprint. Continued access to traditional use areas and established public/private access is a standard part of Yukon highway construction contracts and programs.</p>		

AC.2: Has another federal, provincial or territorial government entity indicated that Aboriginal consultation is required for this project?	
Yes <input type="checkbox"/>	Please specify.
No <input checked="" type="checkbox"/>	Yukon fully understands its consultation obligations.
Unknown <input type="checkbox"/>	

AC.3.1: Has the province (or territory) been in contact with any Aboriginal groups regarding this project?	
Yes <input checked="" type="checkbox"/>	<p>Please provide a summary of the consultation activities completed to date. If available, please provide details such as if any concerns were raised by Aboriginal groups, the nature of the concerns raised, and include in an attachment any information that may be useful (e.g. consultation plan, consultation summary, contact information, letters, emails, public notices, and any other types of communications).</p> <p>Preliminary discussions with affected First Nations started in the fall of 2015. Ongoing discussions with an aim to complete Project Agreements with First nations will continue.</p>
No <input type="checkbox"/>	

AC.3.2: Have <u>you</u> been in contact or plan to contact any Aboriginal groups regarding this project?	
Yes <input checked="" type="checkbox"/>	<p>Please provide a summary of the consultation activities completed to date. If available, please provide details such as if any concerns were raised by Aboriginal groups, the nature of the concerns raised, and include in an attachment any information that may be useful (e.g. consultation plan, consultation summary, contact information, letters, emails, public notices, and any other types of communications).</p> <p>Concerns raised in preliminary discussions involved potential environmental impacts, cumulative effects, access control and economic benefits.</p>
No <input type="checkbox"/>	

AC.4: Involvement of the Crown - Other Federal or Provincial Departments or Agencies may be involved in the project (e.g., if a permit, authorization, land transfer agreement, lease, etc. is required), such as, but not limited to:			
<p><i>The purpose of this section is to identify if other federal or provincial departments or agencies may be undertaking Aboriginal consultation activities as a result of their involvement in the project (e.g., issuing a permit and/or authorization).</i></p> <p><i>If other authorities are involved, it is important to identify them, and to describe their role, particularly if they have to issue or have issued a permit and/or authorization. This is necessary for a number of reasons: to avoid procedural duplication, to enable the coordinated actions of the various authorities involved and to avoid submitting unnecessary repetitive requests to the Aboriginal groups concerned.</i></p> <p><i>The information provided about the authorities and their actual or potential involvement in the project will help INFC to confirm their collaboration as early on in the process as possible.</i></p>			
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Unknown <input type="checkbox"/>	Fisheries and Oceans Canada (e.g. <i>Fisheries Act</i>)
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Unknown <input type="checkbox"/>	Transport Canada (e.g. <i>Navigation Protection Act</i>)
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Unknown <input type="checkbox"/>	Natural Resources Canada (e.g. <i>Explosives Act</i>)
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Unknown <input type="checkbox"/>	Environment Canada (e.g. <i>Species at Risk Act, Migratory Birds Convention Act, Canadian Environmental Protection Act</i>)
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Unknown <input type="checkbox"/>	Parks Canada Agency
Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unknown <input checked="" type="checkbox"/>	Other departments (e.g. federal department, provincial department, funding department, ...) If applicable, please identify the federal department or agency and approval required.
If you answered “ yes ” to any of the above, please describe the involvement of the identified department(s)/agency(s) in detail.			
All Federal Departments with an applicable responsibility for any aspect of a project have a			

legislated role to play in the Yukon Environmental and Socio Economic Assessment Act. In addition several Federal Departments must participate in review of, and in some cases issue, permits required to allow actual construction to commence.

Please provide contact information for each department identified so INFC can coordinate with them to avoid delays and duplication.

AC.5: Provincial (or territorial) permits

Please list all provincial (or territorial) permits that will be required for the project.

Standard permits required in the Yukon for highway reconstruction include:

Water Licence – Yukon Territory Water Board
Timber Permit – Yukon Department of Energy Mines and Resources
Burning Permit – Yukon Department of Community Services
Land Use Permit (if off highway activities required) – Yukon Department of Energy Mines and Resources
Solid Waste Permit (if generating) – Yukon Department of Environment
Special Waste permit (if generating) – Yukon Department of Environment

Declaration of Information


Please check boxes to acknowledge you understand and/or agree to the following statements:

INFC may have a duty to consult and, where appropriate, accommodate aboriginal groups, when the Crown contemplates conduct (such as providing funding) that might adversely impact potential or established Aboriginal or Treaty rights. INFC will rely to the extent possible on other processes that included Aboriginal consultation (e.g., a provincial environmental assessment process). However, it is understood that INFC may delegate certain procedural responsibilities to the proponent and the proponent will assist or carry out various aspects of consultation (e.g., the gathering of information). Note that a Proponent Guide and Toolkit for Aboriginal Consultation Process will be provided at the appropriate time.

It is understood that INFC may not enter into a contribution agreement until such time as INFC has determined that its Aboriginal consultation obligations have been met.

I hereby certify that the information provided is accurate to the best of my knowledge and I understand that inaccurate information may result in the requirement for additional environmental and/or aboriginal consultation review.

Questionnaire completed by: Allan Nixon

Signature:	
Date:	15/12/09

Additional Links

Complete versions of the various acts outlined in this document please copy and paste these links into your browser.

- ***Oceans Act***-<http://laws-lois.justice.gc.ca/PDF/O-2.4.pdf>
- ***Wild Life Regulation***-<http://laws-lois.justice.gc.ca/PDF/O-2.4.pdf>
- ***Migratory Bird Sanctuary***-http://laws-lois.justice.gc.ca/PDF/C.R.C.,_c._1036.pdf
- ***Regulations Designating Physical Activities***-http://laws-lois.justice.gc.ca/PDF/C.R.C.,_c._1036.pdf
- ***Prescribed Information for the Description of a Designated Project Regulations***- <http://laws-lois.justice.gc.ca/PDF/SOR-2012-148.pdf>

Risk Assessment

Risk assessment establishes levels of **Likelihood** (probability that the risk will actually occur) and **Consequence** (the degree of severity of the effect). The resultant calculation is called the **Ranking**.

5-point scales are most often used for Likelihood and Consequence, as well as the resultant ranking calculation.

LIKELIHOOD = Probability of the risk event actually occurring.

Score	Descriptor	%
1	Improbable; Rare	0 - 4%
2	Unlikely	5 - 24%
3	Possible	25 - 54%
4	Likely	55 - 89%
5	Certain	90 - 100%

CONSEQUENCE = Degree of severity.

Score	Descriptor
1	Insignificant: negligible effects
2	Minor: normal administrative difficulties
3	Significant: delay in accomplishing program or project objectives
4	Major: program or project re-design, re-approval and re-do; required: fundamental rework before objective can be met
5	Catastrophic: project or program irrevocably finished; objective will not be met

RANKING = Likelihood x Consequence

Score 1-5	Low
Score 6-10	Medium
Score 12-16	High
Score 20-25	Extreme

RISK MATRIX

5	LOW	MEDIUM	HIGH	EXTREME	EXTREME
4	LOW	MEDIUM	HIGH	HIGH	EXTREME
3	LOW	MEDIUM	MEDIUM	HIGH	HIGH
2	LOW	LOW	MEDIUM	MEDIUM	MEDIUM
1	LOW	LOW	LOW	LOW	LOW
LIKELIHOOD ↑	1	2	3	4	5

CONSEQUENCE →

Likelihood & Consequence: Scales, Descriptors and Risk Criteria

Scales and Risk Ranking Calculation: The scales and ranking calculation shown above are easy to use generalizations.

Descriptors: The verbal descriptors for five levels of Likelihood and Consequence given above were developed for generic use in government and public sector programs – they have been used with success in many different lines of business.

Likelihood is the probability that the risk event identified will actually occur.

Departments must often estimate Likelihood without the benefit of quantified historical data. They must rely on professional memory and qualitative information to select “Unlikely”, “Likely”, “Certain” etc. – each of which are associated with a numerical ranking.

Of course, if actuarial or statistical data exists, it can be brought to bear on the analysis. By the same token, if they do not exist, and the analysis is relying on professional opinion and judgment, there is no point in complicating the estimate of Likelihood by introducing, for example, artificial distribution probabilities into the risk register.

The use of “Frequency” in lieu of Likelihood is not recommended. A risk event might have very low frequency (e.g. “once in a career”), but if evidence shows the event is imminent, the Likelihood may be “Certain”.

Consequence is the severity of the impact of the risk on objectives. The descriptors for Consequence, were developed and tested in many different contexts, and for that reason, the Risk Criteria implicit in the descriptors are especially suited to the development and implementation of plans and projects.

Different projects and department branches have unique risks which should be addressed. The Risk Register spreadsheet sample may not be complete or may contain risks that are not applicable. The bold items are compulsory from the auditor’s requirements for risk management.

Risk Category:	Risk: Provide a description of Risk including causes and effects.	Likelihood	Consequence	Risk Score	Degree of Risk	Existing Controls: What is currently in place to mitigate this risk?	Control Strategy: How are we planning to mitigate the risk?	Mitigation Strategy: Provide a detailed description of the action plan.	Risk Owner: Who is responsible for mitigating this risk?	Expected Completion Date:
Organizational	Capacity within Yukon Highways and Public Works to administer the project	1	2	2	LOW	Project management structures/processes/controls in place. Human Resource planning and recruitment strategy in place are known.	Manage	Dedicated staff hired or assigned specifically to manage the program	Highways and Public Works (HPW)	
	Delays in Management Board Approvals for project planning and implementation	1	2	2	LOW	Process is used now and timelines are known.	Manage	Early engagement of MB Secretariate staff. Use existing project planning and mapping processes	HPW	
Personnel/HR	Capacity to Manage Project within existing structure	3	3	9	MEDIUM	Transportation Engineering Branch and Procurement support center have capacity and expertise in construction contract and procurement	Share / Transfer	Contract out construction management and retain QA/QC and Administrative functions in house	HPW and Construction Management Consultant	
	Recruitment and retention of suitable Project Administration staff	2	2	4	LOW	Yukon Government is a desirable employer, internal transfer opportunities interdepartmentally are encouraged. Human resource and recruitment strategy are in place.	Manage	Identify suitable candidates internally to fill positions then recruit externally	HPW	
Environmental	Terrain stability issues impacting final design	1	3	3	LOW	Existing roads, issues are known. Preliminary engineering assessments complete	Share / Transfer	Geotechnical analysis and final design	HPW and Design Consultants	
	Terrain stability and soil conditions affecting construction	2	3	6	MEDIUM	Existing roads where conditions are known for the most part.	Share / Transfer	Thorough geotechnical analysis and testing. Contracts structured to share risk of unknown soil conditions with construction contractor	HPW, Design Consultants, Construction Contractors	
	Sever weather events impact sustainability of the roads	2	2	4	LOW	Current design standards take into account possibility of extreme weather events. Where significant events have occurred HPW has reopened roads after reasonable delays and maintained them	Share / Transfer	Ensure final designs identify mitigation for extreme weather events	HPW, Design Consultants, Construction Contractors	
	Permafrost degradation affects long term road stability	3	2	6	MEDIUM	Designs in place to mitigate long term effects to extent possible. Experienced dealing with issue	Manage	Apply techniques developed through ongoing HPW research and gained from experience.	HPW	
Economic	Market capacity	3	3	9	MEDIUM	Reasonably strong existing construction industry in Yukon. Draws on established Highway contractors as well as smaller companies through equipment rental. Normal contracts are based on what can be done in one or two seasons.	Manage	Encourage development of additional capacity within First Nation Development Corps through working with them to build-up internal capacity. Demand will encourage out of territory contractors to bid on projects. Structure contracts for longer terms to allow contractors the opportunity to gear-up for an extended period.	HPW	
	Focus on Yukon Resource Gateways limits ability to continue reconstruction of other transportation assets	3	3	9	MEDIUM	Reasonably strong existing construction industry in Yukon. Draws on established Highway contractors as well as smaller companies through equipment rental. Normal contracts are based on what can be done in one or two seasons.	Manage	Encourage development of additional capacity within First Nation Development Corps through working with them to build-up internal capacity. Demand will encourage out of territory contractors to bid on projects. Communicate long term construction plans/schedules to allow contractors time to prepare for upcoming work.	HPW	

Risk Category:	Risk: Provide a description of Risk including causes and effects.	Likelihood	Consequence	Risk Score	Degree of Risk	Existing Controls: What is currently in place to mitigate this risk?	Control Strategy: How are we planning to mitigate the risk?	Mitigation Strategy: Provide a detailed description of the action plan.	Risk Owner: Who is responsible for mitigating this risk?	Expected Completion Date:
	Construction cost increases over life of project	3	3	9	MEDIUM	Systematic estimating process in place. Contingency built in to current cost estimates. Inflation factor built in to original estimates.	Manage	Manage contingency, update construction estimates as final designs are completed and re-base them on current construction contracts.	HPW	
	Cost overruns during construction	3	2	6	MEDIUM	Risk estimating part of contingency planning in individual contracts	Share / Transfer	Thorough planning and design phases eliminating some risk. Remainder transferred to contractor by means of the contract requirements.	HPW/Contractor	
Political	Change in Government	3	1	3	LOW	Yukon election scheduled for October 2016	Accept	Control expenses in the first year of any agreement with Canada.	Yukon	
Financial	Reduction in committed funds by either party	1	4	4	LOW	Funding agreements	Accept	Funding agreement should specify process for deferral or cancellation of some aspects of the project should financial priorities shift.	Yukon/Canada	
	Reduction in committed funds by industry	3	3	9	MEDIUM	Industry partners are currently in feasibility study/environmental assessment processes. Estimated costs are known and plans are being actioned based on these costs.	Accept	Funding agreement should specify process for deferral or cancellation of some aspects of the project should financial priorities shift.	Industry	
Legal	Delays in environmental approvals (YESAA)	2	3	6	MEDIUM	Knowledge of process and extensive corporate experience in successfully moving projects through assessment particularly on existing public roads where impacts have already occurred.	Manage	Early submission to YESAA. Use of consultants to prepare background information and YESAA application. Manage information requests.	HPW	
	Delays in regulatory permitting (Water Licence)	2	3	6	MEDIUM	Knowledge of process and extensive corporate experience in successfully moving projects through permitting particularly on existing public roads where impacts have already occurred.	Manage	Early submission to Yukon Water Board. Use of consultants to prepare background information and Water Licence applications. Manage information requests.	HPW	
First Nation	Lack of agreement that consultation/accommodation obligations have been met.	2	4	8	MEDIUM	Land Claim agreements in place with some First Nations. Reconciliation Agreement negotiations ongoing with non-assessed first Nations. Well established consultation protocols/processes in place.	Manage	Early commitment to consultation negotiation with affected First Nations starting in advance of application to Infrastructure Canada. Yukon Aboriginal Council Office. Aboriginal relations group to work with HPW to complete consultation.	Yukon	
	Negotiations on benefits agreements fail to produce agreement.	2	4	8	MEDIUM	Governments obligation to negotiate benefits agreements with individual First Nations is specified in final land claim agreements. Yukon Government has a strong stated desire to maximize local and First Nation benefits on this project.	Manage	Early commitment to benefits negotiation (in partnership with industry) starting in advance of application to Infrastructure Canada. Identify new opportunities for FN participation in the project through long term economic development opportunities.	Yukon	
	First Nation community opposition to access improvements	3	4	12	HIGH	Open consultation processes and environmental assessment processes in place and functioning.	Manage	Early community consultation. Identification of environmental impact mitigation and economic opportunities associated with project.	Yukon	
Public	Opposition to the project delays approvals.	3	3	9	MEDIUM	Open consultation processes and environmental assessment processes in place and functioning.	Manage	Early public communications efforts. Identification of environmental impact mitigation and economic opportunities associated with project.	Yukon	
				N/A	N/A					

Appendix G

P3 Screen

ANNEX F - P3 SUITABILITY ASSESSMENT QUESTIONNAIRE

Projects with total eligible costs of over \$100 million are subject to the P3 Screen to assess their viability for P3 procurement. As a first step, all project proponents will have to complete the required P3 Suitability Assessment Questionnaire included in this Guide as part of the Initial Review process. Project proponents, with assistance from Infrastructure Canada officials, will need to work in consultation with PPP Canada Inc. to complete the Questionnaire. **More information about the Questionnaire and the Suitability Assessment process can be found on PPP Canada Inc.'s website www.p3canada.ca.** Once completed, the Questionnaire will be submitted by Infrastructure Canada to PPP Canada Inc. for review.

NO.	CRITERIA	EXPLANATION	SCORE	RESPONSE INDICATORS				
				5	4	3	2	1
1	Asset Life: What is the anticipated useful life (i.e. service life) of this asset?	The duration of P3 contracts tends to be tied to the useful life of the asset and, in general, longer-lived assets tend to be better suited to a P3.	5	Asset life is greater than 25 years.	Asset life is 20-24 years.	Asset life is 15-19 years.	Asset life is 10-14 years.	Asset life is less than 10 years.
	Scoring Rationale-	Upgrades of existing public roads and construction of new access asset life estimated well in excess of 25 years.						
2	Asset Complexity: How complex is the asset both with respect to construction and operations & maintenance?	P3s lend themselves to complex investments. Complexity can arise as a result of the nature of the asset, the site on which it will be constructed, or the number of distinct asset classes involved in the investment.	1	Combines three or more asset classes or varying complexity (i.e. building+ road+ outbuildings)	The planned investment by its nature is very complex.	Combines two asset classes of medium complexity (i.e. rail line and station).	Combines two asset classes of low complexity (i.e. road and toll booths, or one asset of higher complexity, water treatment plant).	Single asset of low complexity
	Scoring Rationale-	Roads and bridges. Possible tolling mechanism.						
3	Outputs and Performance Specifications (Construction): What is the availability of output specifications for the construction of the asset?	P3s are characterized by the public sector setting their desired outcomes or outputs in the form of measurable technical output/service/performance specifications that provide the basis for performance based contracts.	3	Output specifications for the construction of same type of asset(s) exist and are available.	Output specifications for the construction of similar asset are available.	Existing conventional specifications can easily be converted into output or performance specifications for construction.	Existing conventional specifications can be converted into output or performance specifications for construction.	New technical outputs and specifications for construction will have to be developed.
	Scoring Rationale-	Road specifications exist as do industrial resource road output and performance specifications. Will need to be modified to fit the Yukon context.						
4	Stability of Operational Requirements: Are the long term operational requirements of the planned asset relatively stable and predictable?	Assets with stable and predictable performance and maintenance requirements lend themselves to P3 delivery.	2	Operational and maintenance requirements are predictable and stable.	Operational and maintenance requirements are predictable, but have some instability based on known factors.	Operational requirements are unstable, but maintenance requirements are predictable.	Operations requirements are not stable and maintenance requirements are somewhat predictable.	Operations and maintenance requirements cannot be predicted and are unstable over the useful life of the asset.
	Scoring Rationale-	Industrial use of the roads for operational purposes is dependant on externalities such as commodity prices and private sector investment which Yukon Government does not control. Level of maintenance on the roads is determined by level of industrial and public use.						

NO.	CRITERIA	EXPLANATION	SCORE	RESPONSE INDICATORS				
				5	4	3	2	1
5	Performance Specifications and Indicators (Operations Period): What is the availability of operations- and maintenance-related performance specifications and indicators?	Establishing and monitoring performance in relation to key performance indicators (KPIs) is an important element of performance based contracts, a foundational element of P3s.	2	Performance outputs and indicators for operations and maintenance are available.	Performance outputs and indicators for operations and maintenance exist, but are not readily available.	Performance outputs and indicators for operations and maintenance of comparable assets exist and are available.	Performance outputs and indicators for operations and maintenance of comparable assets exist, but are not readily available.	Performance outputs and indicators for operations and maintenance will have to be developed.
	Scoring Rationale-	Construction specifications exist but maintenance specifications and outputs for industrial/public roads are more difficult to obtain or define.						
6	Life-Cycle Costs: Can most of the full life-cycle costs of the asset, mainly related to construction and fit-up (i.e. project costs) and long-term operations, including maintenance, be qualified upfront with reasonable assumptions and/or availability of historic data?	Life cycle costs are very important factor in success of a P3. The public authority will pay for maintenance and/or operation through the P3 agreement and expects the asset to be well-maintained and efficiently operated at the lowest cost possible.	3	The total asset life-cycle costs are well understood and accurate estimates can be developed by the public authority.	The total asset life-cycle costs are understood but estimates, while accurate are incomplete to some extent.	The total asset life-cycle costs are well understood, and can somewhat be accurately estimated by the public authority.	There is limited understanding of life-cycle costs but costs cannot be accurately estimated by the public authority.	The total asset life-cycle costs are not well understood and cannot be estimated by the public authority.
	Scoring Rationale-	Difficult to accurately estimate maintenance costs, particularly winter costs, where maintenance activities have not historically been done. Also difficult to estimate due to potential fluctuations in volumes/types of traffic over the long term.						
7	Revenue Generation: Does the planned investment have inherent scope to generate any revenue?	Revenue generation is not a requirement for a successful P3. However, where an asset could potentially generate revenue and reduce the burden on public funds, the P3 model is ideally suited to leveraging that potential.	3	The planned investment will generate revenues and the private sector may be willing to assume associated revenue risk.	The planned investment could generate revenues and private sector may be willing to share revenue risk.	The planned investment could generate revenues and the private sector's willingness to accept revenue risk is unknown.	The planned investment could generate minimal revenues and the private sector is unlikely to accept any revenue risk.	It is unlikely that the planned investment will generate any revenues.
	Scoring Rationale-	Tolling revenues will be dependant on future industrial activity which is out of the control of Yukon Government. Long term public sector expenditures should be made on the basis of need.						
8	Private Sector Expertise: How many private sector firms have the capacity to deliver and maintain this type of asset?	The availability of private sector expertise is critical for two reasons: (1) ensuring a competitive bidding environment; and (2) ensuring that there is private sector capacity to perform the functions and manage the risks envisioned in the P3.	5	There are more than 5 private sector firms capable of forming teams with the expertise to design, construct and maintain/operate this type of asset.	There are more than 5 private sector firms capable of designing, constructing and maintaining this type of asset. Operations capability is not yet determined.	There are 3 to 5 private sector firms capable of forming teams with the expertise to design, construct and maintain/operate this type of asset.	There are 3 - 5 private sector firms capable of designing, constructing and maintaining this type of asset. Operations capability is not yet determined.	There are fewer than 3 private sector firms capable of forming teams with the expertise to design, construct and maintain/operate this type of asset.
	Scoring Rationale-	Significant private sector experience is anticipated to be available.						

NO.	CRITERIA	EXPLANATION	SCORE	RESPONSE INDICATORS				
				5	4	3	2	1
9	Market Precedents: Have investments with similar requirements and of similar size and scale been delivered through the P3 model?	The existence of P3s for similar assets is a key indicator regarding the viability of a P3.	3	Investments of similar size and scope have been delivered as P3s in Canada.	Smaller investments of similar size or, of similar size but smaller scope have been delivered as P3s in Canada.	Investments of similar size and scope have been delivered as P3s internationally.	Smaller investments of similar size or, of similar size but smaller scope have been delivered as P3s internationally.	Investmentss of similar size and scope have not been previously delivered as P3s.
	Scoring Rationale-	Resources roads in western Canada such as Sierra YoYo Deslan in northeastern B.C.						
10	Nature of Development Site: What is the nature of the development site (greenfield vs. brownfield) and what proportion of this investment involves the expansion/renovation of existing facilities/assets?	In general, investments involving all new construction on previously undeveloped sites lend themselves to maximizing risk transfer to the private sector.	3	Asset is new construction on an undeveloped site.	Asset is new construction on an already developed site.	The planned investment involves at least 50% new construction and also significant renovations to the existing asset.	The planned investment involves expansion and/or refurbishment of an existing asset.	The planned investment mainly involves refurbishment, modernization, minor renovation, or involves integration of new facilities with existing facilities.
	Scoring Rationale-	Primarily upgrade of existing infrastructures. Some new road construction.						
11	Scope for Private Sector Innovation Gains: To what extent will the public sector be able to rely on output/performance-based requirements /specifications?	The scope for private sector innovation is inversely related to the public sector's need to be prescriptive.	1	The public sector is able to use output specifications for all phases of the investment life-cycle.	There are very few areas where the public sector feels it must be prescriptive/use input-based specifications.	The planned investment requirements will be a mix of input-based and output-based requirements.	The planned investment's design and construction will be based on input specifications.	The public sector must define specific input requirements for the majority of the asset.
	Scoring Rationale-	Potential public use over much of the asset means government must set standards and specifications.						
12	Potential for Contract Integration: Which elements of the potential P3 (i.e., design, build, finance, maintain, operate) can be integrated into one contract?	One of the mechanism by which P3s generate value is the integration of various elements of the potential P3 (i.e., design, build, finance, operate/maintain). The greater the potential for integration, the more likely a P3 will be viable.	4	All elements of a potential P3 (i.e. design-build-finance-maintain-operate) could be integrated into one contract.	Design-build-finance-maintenance and some operations could be integrated into one contract.	Design-build-finance and some maintenance could be integrated into one contract.	At least design-build-finance could be integrated into one contract.	Only two elements could be integrated into one contract.
	Scoring Rationale-	Government will have some regulatory responsibilities that cannot be transferred to the private sector.						

