

TOWN OF GOLDEN

BUSINESS CASE SELECTIVE AIRPORT INITIATIVES GOLDEN AIRPORT



REPORT

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1.0 INTRODUCTION

The Town of Golden, British Columbia (BC), is located in the southern Rocky Mountain Trench, in the heart of Kicking Horse Country. Nestled between the Canadian Rockies to the east and the Purcell mountain range to the west, Golden is a community of great spirit with a rich industrial heritage and a burgeoning reputation as a year-round sporting and outdoor recreation destination. Located three hours by road west of Calgary, Golden is home to thriving companies, established industries, exceptional tourism attractions, and a growing service sector. It is an economically balanced area that offers a sense of community, authenticity, and an outstanding quality of life.

The Golden Airport or YGE (as designated in the *Canada Flight Supplement*), is operated by the Town of Golden and has a single, asphalt surfaced Runway 14-32 measuring at 4,519 ft x 75 ft (1,377.4 m x 22.9 m). The runway is normally maintained and serviceable year round. Other paved airside surfaces include connecting short taxiways and large apron areas (for aircraft movement and parking). There is no runway edge lighting so the airport is used only during daylight hours.

The Airport is home to a variety of aviation businesses and users including helicopter charter and maintenance, aviation fuelling, private aircraft owners (T-hangars), recreational flying, eco-tourism, and day-use picnic area. The Town maintains a building on the Airport providing visiting pilots with a washroom, telephone, and flight planning area. There is a helicopter hangar/office/maintenance facility and two other hangar/office buildings located between the groundside road and the airside surfaces that are presently vacant.

An Environment Canada weather station is also operated out of the terminal building, staffed by qualified weather observers and funded by Nav Canada. Weather observation reports (METARs) are disseminated on an hourly basis each day, from 14:00 to 24:00 GMT (07:00 to 17:00 local time).

In the spring of 2010, the first instrument approach procedure was published by Nav Canada for use at YGE. Presently, this approach is restricted to use by aircraft with wingspans less than 118 ft. The narrow mountain valley and narrow runway surface both contribute to this required safety-related restriction.

The provision of safe and efficient airport operations, as well as the goal of maximizing the economic potential of the Airport for the benefit of the entire Town, would be better served if the runway width was enhanced, and basic, lighted, visual aids (Omni-Directional Approach Lighting and Precision Approach Path Indicator Lights) were installed at YGE. These improvements, which complement the newly published instrument approach, will enhance air access to the Golden area, a boost to social and economic life in the community.

2.0 SCOPE OF PROJECT

In June 2010, the Town of Golden contracted EBA, a Tetra Tech Company (EBA) to develop a business case that would assist in applications for funding to undertake the important projects, noted above, at YGE. This business case was developed with particular emphasis on the provision of safe, efficient, and effective Airport operations and enhancing economic, social, and developmental prospects for the Town and surrounding area.

The scope of the business case development includes:

- Discussions with municipal officials, business people, health region representatives, and economic development folks regarding the purpose and requirements of the airport in the immediate and long-term;
- Review aviation activity (commercial, private, corporate, tourist) current and prospective;
- Prospects for enhanced economic development within the Town and community that may result from increased Airport activity; and
- Safer, more informed, and efficient use of Airport facilities and services.

3.0 AREA ATTRIBUTES

3.1 Area Transportation Network

There is presently no scheduled airline service operating into or out of YGE.

Primary transportation is provided by Highway 1 (TransCanada) east and west, and Highway 95 South to Cranbrook and beyond.

Greyhound Canada provides bus service to the area from Calgary to Vancouver and back multiple times daily. The trip time is approximately 10 to 13 hours to/from Vancouver and has numerous stops along the way; the Calgary service takes from 4 to 7 hours.

3.2 Population

The population of Golden is estimated to be around 4,000, with the service area population being approximately 8,000, according to BC Stats/Stats Canada.

3.3 Medical Facilities

Golden and District Hospital (GDGH) is a modern emergency, acute and continuing care facility that serves the primary medical needs of area residents and visitors. It is the only acute care facility in the IHA's Local Health Area 18. The Hospital offers round-the-clock care with a physician on-call for emergencies, an operating room, and a labour and delivery room with an operating room used for both scheduled and emergency surgeries. The hospital also has an on-site laboratory and X-ray facilities, including ultrasound. Specialty services not provided at GDGH are available in Alberta or at the Cranbrook Hospital.

A local health unit and medical clinic, as well as a range of other medical services (massage and physical therapy, dental, chiropractic, and naturopathic, etc.) are also available. Durand Manor is a 26 bed extended care centre adjacent to the hospital that includes 2 short stay beds for community respite, palliative, convalescence, or rehabilitation. An 8-unit assisted living facility is also located nearby.

Emergency services include general orthopaedics and trauma. Injuries serious enough to require tertiary care are stabilized and transferred to nearby hospitals in larger centres by both air and ground transport.

3.4 Air Medical Evacuations (Medevac)

Air medical evacuations (medevacs) from the Golden Airport are presently difficult as the facilities do not adequately support such a service, despite the recently published aircraft instrument approach procedure. Serious medical cases requiring air medevac may be ground transferred to an alternate airport (Fairmont, for example) and then flown out from there. The ability to air transfer patients to Kelowna or Vernon, from the Golden Airport, would be a great asset given the dangers of the Rogers Pass, especially in winter (4.5 hours by road).

Currently, some air medevacs to Alberta are accomplished by helicopter (STARS) from the heliport at GDGH; however, as the fleet is upgraded, use of this heliport will be an issue (2013). Fixed wing aircraft or helicopter medevac services from the Golden Airport are a practical planning alternative.

The Golden Airport has adequate runway length for air medevac operations; however, the enhanced width proposed in this business case, as well as the airfield visual aids, will provide a more appropriate operating environment for medevac aircraft. The recently published GPS based aircraft instrument approach for the Golden Airport will improve the utility of the Airport during periods of inclement weather, although the limits are quite high owing to the mountainous terrain. Reliable, accurate, and timely weather information is available at the Airport during daylight hours, which is a critical source of information for arriving/departing aircraft operators.

4.0 AIRPORT ECONOMIC IMPACT

The scope of work for this study did not include an economic impact assessment for the Airport; however, it is important to consider the economic significance when assessing the value of the Airport to the Town of Golden and surrounding area.

It is difficult to quantify the aviation activity at YGE presently (hard data is not presently collected); however, given the size of the community and the presence of an Airport, examples to compare may be found in Invermere, Fairmont, or Revelstoke. Although each situation is unique, there are similarities in terms of Airports, community size, and proximity to larger Airports with commercial air services. It must be recognized that each airport is unique and the economic benefit may vary with a more thorough economic impact assessment. A study done in Alberta (*A Socio-Economic Impact Assessment of Select Alberta Airports*, RP Erickson & Associates, January 2005) shows the average economic impact for airports similar in size to YGE may be in the vicinity of at least \$2,000,000 (directly and indirectly).

Full-time equivalent employees (FTEs) at the Golden Airport number between 5 and 10 with an estimated 15 to 20 non-direct FTEs. The estimated labour income and total value added GDP from the Golden Airport could be significant (\$1,000,000 to \$2,000,000).

The estimated direct and indirect airport-related economic impact shows the Airport to be an important component of the Town of Golden and surrounding area businesses.

5.0 BUSINESS CASE

5.1 Introduction

YGE serves Golden and area in southeastern BC and has been designated a resort municipality by the Provinces. The Airport provides key air transportation services to people and businesses in the Town of Golden and surrounding area, from Glacier National Park to the west, to Radium in the south and Field/Yoho National Park to the east. Key services include charter and corporate air services, private aircraft options, aircraft maintenance and aviation fuel. A drive of 2.5 or 3 hours, through mountainous terrain, is required to reach the closest airport with commercial air service: Canadian Rockies International (Cranbrook) to the south and Calgary International to the east.

Currently, there is a GPS-based Area Navigation (RNAV) instrument approach procedure, published for use by aircraft operators at YGE. Owing to the mountainous terrain, the limits for this procedure are quite high, to ensure a healthy safety margin for aircraft operations into and out of the Golden area, as well as to meet federal design standards.

YGE has a significant impact on the economy of the area, including as many as five to ten FTEs of direct employment (full time equivalents) and approximately \$2.0M of direct and indirect expenditures annually. Businesses and tenants located on the Airport pay their property taxes to the Town, Regional District, and Province. Contributions from the Town of Golden and the Columbia Shuswap Regional District (CSRD) are provided to defray the operating and maintenance costs of YGE not covered by airport revenues.

Despite the fact that there is no scheduled air carrier service at Golden Airport, use of the facility has shown a significant increase recently. In 2009, there were 84 registered landings by itinerant aircraft carrying 191 people, while in 2010 there were 143 landings registered and 332 people. These statistics come from a voluntary registration sheet in the air terminal, so actual numbers will definitely be higher.

YGE is owned and operated by the Town of Golden, and receives financial support from both the Town and CSRD to ensure the continued safe operation of this public facility. Access to some capital programs has been limited, in the past, whether it was Provincial (such as the discontinued BC Air Transport Assistance Program), or the Federal Transport Canada's Airports Capital Assistance Program (ACAP), is not available at this time, as the Golden Airport is not presently served by a scheduled air carrier.

Financial viability of YGE is dependent, at present, on the continued commitment from the municipal and regional governments and is, and will continue to be, affected greatly by the regional impacts of events beyond its direct control:

- Industry fluctuations (major local/regional industries);
- Tourism industry development in the region (KHMR expansion plans, etc.);
- Aviation industry (private/corporate charter aircraft activity, fuel costs, etc.);
- No access to Federal capital funding for safety related airport capital projects;
- Potential increased regulatory burden (and costs) to become a certified airport; and
- Effect of fees/taxes on airport revenue potential (Nav Canada, fuel tax, etc.).

5.2 Business Case

The Town of Golden, owner/operator of the Airport, strives to improve its ability to serve the area's interests and economic prospects through intelligent investment. In the past few years that has included Air Terminal improvements for visiting pilots and their passengers; airfield perimeter fencing along three sides (the fourth is the raised railbed of the CPR), and publishing the first instrument approach procedure for the Airport. Although the Town has been successful in operating the Airport on a cost-shared basis with the CSRD, many airport improvements or enhancements that would benefit the entire area (all who do or would use and depend on the Airport) are not possible without partner funding from other sources (i.e., the Province, the Government of Canada, or other agencies and organizations).

In this particular business case, the investment proposed is intended to address the inability of some aircraft operators to use YGE as a result of the width, not the length, of the runway, as well as to complement the recently published instrument procedure and assist aircraft operators in visually acquiring the runway when landing in weather conditions that are less than ideal. These operations would include aircraft up to the size of a Dash-8, as well as aircraft utilized for medevac purposes. The present facility limits the flexibility of aircraft operators to broaden their schedules, aircraft type, and purpose for using YGE.

5.3 Cooperation and Pursuit of Options

The Mayor and Council of the Town of Golden, the CSRD Area Director, and the Golden Airport Committee have been exploring how use of the Airport might be safely improved in the interest of the area's economic and social development. It must be clearly understood that the topography of the area, while ironically being one of the major attractions for the area, presents major challenges to safe aircraft operations into and out of YGE.

All airports in the area face the challenges of mountainous terrain, which restricts night and poor weather aircraft operations. YGE is the primary aviation facility for Golden and area. Its airport operations have long been restricted to daytime only, but there is now an instrument approach published for use and other Airport improvements are sought by the stakeholders to continue to improve the utility and reliability of YGE for economic, as well as social reasons.

6.0 PROJECTS COMPLETED

6.1 GPS (RNAV) Procedure

Instrument approach procedures for aircraft are published to assist aircraft operators to arrive (and in some circumstances depart) during periods of overcast cloud or other adverse weather conditions. Until recently, YGE, an unlit registered aerodrome, had no published instrument procedures. Effective June 3, 2010, the first such procedure was published in the Restricted Canada Air Pilot (RCAP), an aeronautical information publication used by pilots to safely operate into and out of airports across the country.

There are a number of limitations noted for this procedure:

- Only pilots operating aircraft with wingspans less than 110 ft are to use it;

- Narrow valley approach/mountainous terrain all around – altimeter setting is only available when weather observers are on duty; and
- The approach is aligned with the valley, not the runway centerline and is primarily intended to assist pilots in visually acquiring the airport.

Golden recently had an instrument procedure published in the Canada Air Pilot (CAP) as well, which is for general use by pilots with instrument ratings on their license and the appropriate equipment in their aircraft.

Because of these limitations, altitudes at which a pilot must see the Airport to use this procedure are quite high (3,845 ft above the elevation of YGE). However, on days when the cloud base is at or above this elevation, operators of aircraft arriving to the area will have a safe procedure to use when descending from above the cloud layers to land at the Airport.

6.2 Airport Perimeter Fencing

The Town of Golden recently completed a fencing project that enclosed the majority of the Airport boundary, excepting the portion of the boundary that runs adjacent to the CP Rail tracks (Right-of-Way). The location of the raised railbed serves as a barrier to unwanted or unintentional incursions by people and/or vehicles on to the Airport property.

7.0 PROJECTS PLANNED

Projects to enhance the safe aircraft operations at the Golden Airport, including larger aircraft such as Dash 8s and Convair 580s, were identified in the recently completed Land Use and Development Plan Brief. These improvements will encourage a wider variety of private, corporate, charter, and medevac aircraft to be operated at YGE, and upgrade the air services to area residents and businesses. Other BC airport communities benefit, in socio-economic terms, from their ability to host a broad range of airport users. The consequential benefits to Golden and area of the extended operational capability for commercial, corporate, and private aircraft operations would be significant: increased tourist air access opportunities; more options for business travellers; and fixed wing air medevac services without extended road travel, to name a few.

7.1 Preliminary Project Schedule

The anticipated milestones for the projects noted in the following sections are provided below and, of course, are dependent on partnership funding arrangements for their successful completion:

Funding Confirmation (all Partners)	September 2011
Detailed Design and Tender	November 2011 to January 2012
Construction and Installation	April 2012 to August 2012
Commissioning	September 2012

7.2 Runway Widening

Accommodating planned aircraft (the Dash-8-100 has been designated as the critical aircraft for planning purposes by the Golden Airport Committee) would require increasing the width of the runway. Transport Canada's Aerodrome Standards and Recommended Practices document (TP312E) outlines two elements relating to the runway's code (which determines its width requirement): length of the runway and wingspan of the design aircraft (TP312E, Section 1.3 – Table 1.1). The runway is currently 1,377 m long (4,519 ft), or Code 3, as defined by the table. A Dash-8-100 aircraft has a 96.82 ft (29.51 m) wingspan, designating it a Code C aircraft (wingspan 24 m to 36 m).

Code C runways should, according to TP312E, be at least 30 m (100 ft) wide. Presently, the runway at YGE (Runway 14-32) is only 23 m (75 ft) wide. Therefore, YGE is not meeting the standards to accommodate Dash-8-100 aircraft, the waterbomber aircraft currently in service (including the Convair 580), or the turbo-prop and jet aircraft favoured by businesses, charter carriers, and medevac operators.

The construction of this additional runway surface would also result in a consequential increase in the overall strip width (shoulders and obstacle free area requirements). A breakdown of costing for this runway width enhancement (on a conceptual or pre-design basis) is attached in Appendix A. A pre-design sketch of the proposed work is attached in Appendix B.

Estimated Cost: **\$2,000,000.00**

7.3 Airport Visual Aids (Lighted)

Where aircraft operators may have difficulty in judging the approach due to inadequate visual guidance, such as is experienced during an approach over featureless terrain by day (snow in winter), the presence of objects in the approach area may involve serious hazards if an aircraft descends below the normal approach path. This is particularly true if there are no visual aids to give warning of such objects, or the physical conditions at either end of the runway present a serious hazard in the event of an aircraft under shooting or overrunning the runway. In these circumstances, a visual approach indicator system should normally be provided.

The conventional system is called the Precision Approach Path Indicator (PAPI), the lights of which will assist pilots by giving visual reference during the approach descent to either runway end. Additionally, a simple approach lighting system (ODALS) is also useful for the newly published instrument approach to the Airport's Code 3C runway. If such a system is impractical to install due to terrain constraints or excessive cost, it may be possible to install runway end identification lights (REILs) at one end, which are strobe lights that serve to identify the runway ends from a significant distance. As noted previously, these lighted aids will complement the recently published instrument approach procedures, and are conventional for Code 3C runways according to Transport Canada's standards publication, TP312E.

Estimated Cost: **\$620,000.00**

7.4 Obstacle Limitation Surfaces

Protection of the aircraft manoeuvring area around YGE, for both instrument approach procedures and the new runway dimensions, can be specified using the standards Transport Canada enforces at certified airports. An area called the runway strip, 90 m wide, centred on the runway and running its length to 60 m beyond either threshold, then diverging on either side at 10% and rising 2.5% (1:40) for 2,500 m. A take-off and approach surface must be obstacle free. Additionally, a surface area along the entire length of both sides of the runway strip 45 m either side of the centreline and rising 14.3% (1:7) until it reaches 45 m above the Airport elevation.

An accurate survey of the constructed or natural obstacles in the vicinity of the Airport that penetrate these surfaces noted above should be completed. These obstacles should be removed or, if they are not, appropriate procedures or notations will need to be published in aeronautical publications to take them into account.

Estimated Cost: Obstacle Survey/Drawings	\$ 15,000.00
Obstacle Removal (finding dependent)	To Be determined

7.5 Aircraft Movement Statistics Collection and Runway Condition Reporting

A means of collecting reliable aircraft movement data at YGE is also recommended. At some airports with limited on-site personnel, and no Flight Service Station (FSS) or Air Traffic Control Unit (ATC), a voice-activated recording device connected to a radio receiver set to the proper cast frequency can be used to identify aircraft that land and take-off as pilots must broadcast their intentions when arriving and departing YGE. This is an opportunity to collect information such as the aircraft registration, type, and date/time of movement.

This information may be collected and analyzed to confirm the facilities and services that may be appropriate for the Airport, and when they might be needed. It also benefits the safe and efficient movement of aircraft using the facilities. Over time, the data may be used to analyze changes in aircraft types or frequencies, which will assist in targeting marketing or economic development initiatives appropriately. The information may also be used to provide the information needed to collect landing or facility fees, if such fees are implemented in the future.

Accurate runway surface condition reporting is valuable to operators of itinerant aircraft, especially jets, using an airport in winter. Truck mounted equipment to aid in determining the braking action on the runway will help to inform pilots who hope to use the Golden Airport during the tourism-critical winter season.

Estimated Cost:	\$15,000.00
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7.6 Air Terminal Facilities Required for Increased Level of Activity

Provisions need to be made to accommodate the increasing level of air traffic and passengers arriving/departing from the Golden Airport. In addition to the airside facilities mentioned, consideration has been given to the groundside interface, terminal and parking facilities. An upgraded public passenger

facility would provide a comfortable place for travellers to transition to ground transportation or wait for their flight to depart. Given the prospects of increased passenger use of the airport, improvements to the vehicle parking area adjacent to the air terminal would be a suitable complementary development. A conceptual cost estimate is provided below.

Estimated Cost: **\$850,000.00**

8.0 SOCIO-ECONOMIC BENEFITS OF THE PROJECTS

As noted earlier the consequential benefits of improving the safety, utility, and reliability of YGE for commercial, corporate, and private aircraft operations would be significant in both economic and social terms for the area. Improved air access is a key component of the development of Golden as part of the Resort Municipality Initiative. Also, the ability of fixed wing air medevacs to use, YGE would not only benefit the area, but afford its residents the service already available, even taken for granted, in other regions of BC.

Contribution Partnerships are sought for the funding required to enhance the runway width, install lighted visual aids and terminal facilities to improve the utility and reliability of aircraft operations at YGE. The partnerships in funding these initiatives include the Town of Golden, CSRD, and, it is hoped, the BC Transportation Partnerships Program, the Columbia Basin Trust, the Southern Interior Development Initiative Trust, the Canada-BC Western Economic Partnership, Towns for Tomorrow, and other unannounced sources related to tourism, economic development, and Golden's resort municipality status.

9.0 POTENTIAL PROJECT FUNDING SOURCES

As noted previously, there are a number of potential funding partners to consider that may have an interest in participating in the completion of these worthwhile projects at YGE. As these projects are intended to contribute to the economic development of Golden and area, especially in terms of supporting tourism and business expansion, plus improvements in the options for medical evacuations, it is appropriate that funding organizations with similar objectives are asked to participate. This is especially true for Golden, as it is designated as a resort municipality, under the terms of the Resort Municipality Initiative. The programs listed below are by no means the only ones available, but they represent current programs whose objectives are consistent with the aspirations of the Golden Airport Committee and its sponsoring municipal organizations.

9.1 Transportation Partnerships Program (BC – TPP)

Helping communities and regions realize economic growth through contributions to strategic BC port and airport developments, the BC-TPP is intended to help regions boost tourism and create new jobs and economic development opportunities. The BC Ministry of Transportation has reserved \$33 million over the next three years for this program. It has helped to fund numerous airport projects in the past few years.

9.2 Canada-BC Western Economic Partnership (WEPA)

The program is intended to promote economic development and diversification and to create a better environment for growth, business development, and innovation. Strategic outcomes of WEPA are an

expanded Western Canada business sector; economically viable communities in Western Canada and a high quality of life, including tourism revitalization.

9.3 Columbia Basin Trust (CBT)

Local governments pursuing projects related to economic development, health issues, transportation, and tourism can apply to the CBT for grant funding. It is especially applicable where a number of project sponsors are committed to a partnership that will see projects completed to improve the economic, social, and transportation prospects of the communities.

CBT works closely with people who live in the Columbia Basin to develop and deliver programs and initiatives that respond to their needs and support communities. By focusing on local priorities and issues, bringing people together around key issues, providing information, encouraging collaboration, and supporting planning, CBT strives to deliver benefits to the residents of the Columbia Basin.

The Community Development Program is one way that CBT works with the people of the Basin. The Community Development Program is a flexible granting stream with a continuous intake. Grants are provided to a range of community projects. The application guidelines provide further detail on how to apply to the Community Development Program and what types of projects are eligible.

Funds from the ***Community Initiatives Program*** are allocated on a per capita funding formula and are distributed once a year to certain communities, including the Town of Golden. Decision-making on how to disburse funds is community-based.

9.4 Southern Interior Development Trust (SIDIT)

The objective of the Southern Interior Development Initiative Trust is to help grow and diversify the economy of the Southern Interior of BC through economic development initiatives in key sectors. Primary targets for SIDIT grants are socio-economic development and tourism projects. SIDIT's mandate is to support regionally strategic investments in economic development projects with long lasting and measurable benefits to the Southern Interior of BC. The trust exists to contribute to economic sustainability of the communities through projects with regional impact. Partnership funding situations are preferred (i.e., leveraging grants from other contributors like CBT, BC-TPP, etc.), so that funding gaps for worthy projects are filled.

SIDIT's grant funding for fiscal 2010/2011 has been fully subscribed, so no new applications will be accepted by SIDIT, for its next fiscal period commencing April 1, 2011.

9.5 Towns for Tomorrow (T4T)

The *Towns for Tomorrow* program was launched in December 2006 as part of the Province's effort to address the unique challenges faced by smaller communities in BC (populations under 15,000), with respect to meeting their infrastructure needs.

Towns for Tomorrow provides funding for infrastructure projects that address climate change and contribute to the overall health, sustainability, and liveability of communities.

Unlike traditional government infrastructure programs that provide matching provincial funding up to one-third of the total project costs, Towns for Tomorrow provides up to 80% of the funding for approved projects. Under the revised program structure, communities with populations under 5,000 will continue to cost-share with the Province on an 80/20 basis, with a maximum provincial contribution of \$400,000. Communities with populations between 5,000 and 15,000 will share on a 75/25 basis, with a maximum provincial contribution of \$375,000.

Projects eligible for Towns for Tomorrow program funding include, but are not limited to, tourism projects and community development projects.

9.6 Unannounced Programs

There are a number of potential programs or funding sources in the works that would qualify the proposed airport improvements at Golden for participation. As these programs come on line, partnership will be pursued to advance the projects planned for YGE, for the general economic benefit of Golden and area.

10.0 SUMMARY

A challenge facing many smaller BC communities is the ability to attract new business and the prosperity that comes with economic growth. Communities are in competition and the success in attracting new activity and investment will largely depend on the incentives that the Town of Golden can provide to entice potential visitors and businesses to the area. YGE is a one of the keys to that success, especially to capitalize on the resort municipality status Golden now enjoys.

The importance of safe, reliable, and efficient Airport operations cannot be overestimated in achieving economic success for the Golden area.

Many businesses, particularly larger businesses, use corporate aircraft as a cost-effective tool for bringing executives or affluent tourists to a site. The ability to access the site quickly and effectively reduces cost and inconvenience. Although the exact number and complexion of aircraft movements is unknown, there is a general consensus among stakeholders and users that the Airport would be used more regularly if it were well equipped to provide the facilities and services today's aircraft operators depend on. Voluntary registration of arriving itinerant aircraft showed a 70% increase in aircraft landings and a 74% increase in passenger traffic through the Airport in 2010 over 2009.

The Airport already experiences some tourism-related charter aircraft activity. But with the ambitious plans of the Kicking Horse Mountain Resort, and other tourism opportunities in progress for the area, developing the Airport infrastructure to capitalize on potential market is crucial. It can be reasonably expected that YGE will experience significant spin-off activity from overall tourism initiatives in the surrounding area, if it can position itself appropriately from a facility and service perspective.

A reliable, safe Airport is important to the Town of Golden, and it provides good service to aviation users; however, it is limited when it comes to attracting new services and developments, or more and diverse aircraft operators. There are significant economic benefits associated with attracting new Airport users. The initiatives proposed will help the Town considerably in pursuing this objective. With funding assistance to complete these initiatives: **a runway width enhancement; lighted visual aids; obstacle**

limitation survey/remediation; an aircraft movement data collection system; runway surface condition measuring equipment; and air terminal/groundside improvements, the Town will be positioned to provide better Airport services for the people and businesses of Golden, as well as those who wish to visit, and do business in, the area.

The preceding information makes it clear that the Airport is an important asset to Golden and area. It is therefore critical that the Airport be equipped to provide a safe, reliable facility for aircraft operators and plan for the orderly development of Airport lands to meet future requirements. The initiatives planned will improve safe, efficient operations at the Airport and significantly enhance economic development prospects for the Town, by attracting new Airport users.

Proposed Projects Review – Golden Airport

Project	Cost Estimate
Runway Widening	\$2,000,000
Enhanced Visual Aids	\$620,000
Obstacle Survey/Remediation	\$15,000 +
Aircraft Movement Data Collection and Runway Surface Condition Measuring Equipment	\$15,000
Air Terminal and Groundside Improvements	\$850,000
Total	\$3,500,000

Note: Costs for obstacle remediation are dependent on survey findings.

11.0 CLOSURE

If you have any further questions or comments, please do not hesitate to contact the undersigned.

Respectfully submitted,
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APPENDIX A

APPENDIX A PRELIMINARY COST ESTIMATES

Appendix A: Cost Estimate - Runway Widening and Visual Aids (Golden Airport)

SUB TOTAL (Temporary Facilities, Runway Widening and Visual Aids)							\$ 1,941,200.00
25% Contingency							\$ 485,300.00
10% Engineering							\$ 194,120.00
TOTAL							\$ 2,620,620.00
Description	Unit	Neat Line	Mark-up	Marked Up Quantity	Estimated Quantity	Unit Price	Estimated Cost
Temporary Facilities							
Mob / Demob / Temporary Facilities / Survey / etc.	LS	1	0	1	1	\$ 100,000.00	\$ 100,000.00
SUB TOTAL							\$ 100,000.00
Runway Widening							
Earthworks							
Topsoil stripping (assume 100 mm thick)	m ³	7572	10%	8329.2	8400	\$ 16.00	\$ 134,400.00
Common excavation	m ³	11862.8	10%	13049.08	13100	\$ 10.00	\$ 131,000.00
Place and compact fill in runway subgrade (assume imported)	m ³	757.2	10%	832.92	950	\$ 25.00	\$ 23,750.00
Place and compact fill along slopes	m ³	19182.4	10%	21100.64	21100	\$ 10.00	\$ 211,000.00
Granular Course							
GBC/GSBC (350 mm depth for runway pavement structure)	m ³	2587.1	5%	2716.455	2800	\$ 40.00	\$ 112,000.00
Granular course for shoulders (90 mm depth)	m ³	9086.4	5%	9540.72	9500	\$ 40.00	\$ 380,000.00
Asphalt Surface							
Saw cutting	m	2646	5%	2778.3	2800	\$ 5.00	\$ 14,000.00
Milling (assume 65 mm thick)	m ²	1746	5%	1833.3	1900	\$ 10.00	\$ 19,000.00
Prime coat	m ²	10584	5%	11113.2	11200	\$ 1.00	\$ 11,200.00
HMAC (assume one lift of 65 mm)	tonne	1650.48	5%	1733.004	1800	\$ 140.00	\$ 252,000.00
Miscellaneous							
Line painting (assume 150 mm lines)	LS	6600	5%	6930	1	\$ 15,000.00	\$ 15,000.00
Supply and install geotextile and geogrid (provisional)	m ²	9338.8	5%	9805.74	10000	\$ 8.00	\$ 80,000.00
SUB TOTAL							\$ 1,383,350.00
Visual Aids							
PAPI (Precision Path Indicator Lights)							
Supply, install, and connect wires and duct/conduit	lm	298	10%	327.8	350	\$ 44.00	\$ 15,400.00
Supply, install, and connect wires	lm	1782.5	10%	1960.75	2000	\$ 6.00	\$ 12,000.00
Supply, install, and connect new pulpit	each	3.5		3.5	4	\$ 1,200.00	\$ 4,800.00
Supply and install 4 Light PAPI System	each	2		2	2	\$ 35,000.00	\$ 70,000.00
Supply and install PAPI Inclinator/Aiming Device	each	2		2	2	\$ 1,700.00	\$ 3,400.00
PAPI flight check	LS	1		1	1	\$ 5,000.00	\$ 5,000.00
Regulator	LS	1		1	1	\$ 25,000.00	\$ 25,000.00
REILS (Runway End Identification Lights)							
Supply and install end light complete with fixture, lamp, stake, isolating transformer, primary and secondary connections secondary cabling/conduit, grounding, and all required	each	2		2	2	\$ 2,500.00	\$ 5,000.00
Supply, install, and connect wires and duct/conduit	lm	887.5	10%	976.25	1000	\$ 85.00	\$ 85,000.00
Regulator (provisional)	LS	1		1	1	\$ 25,000.00	\$ 25,000.00
Supply, install, and connect new pulpit	each	100		100	10	\$ 1,200.00	\$ 12,000.00
ODALS (Simple Approach Lighting System)							
Omn-directional approach lighting system	LS	1		1	1	\$ 85,000.00	\$ 85,000.00
Supply, connect, and install wires into duct	lm	120	10%	132	150	\$ 15.00	\$ 2,250.00
Trench, supply, install, and connect wires and ducts/conduits	lm	1390	10%	1529	1500	\$ 60.00	\$ 90,000.00
Supply, install, and connect new pulpit	each	15		15	15	\$ 1,200.00	\$ 18,000.00
SUB TOTAL							\$ 457,850.00

Notes:

This cost estimate is based on the preliminary widening of Runway 14-32. It is assumed that existing condition of the runway is satisfactory and no rehabilitation work or overlay work is necessary.

This cost estimate is prepared for planning and budgetary purposes only, and does not constitute a guarantee on the project cost. The actual cost will be determined by the detailed design, tendering, and construction processes.

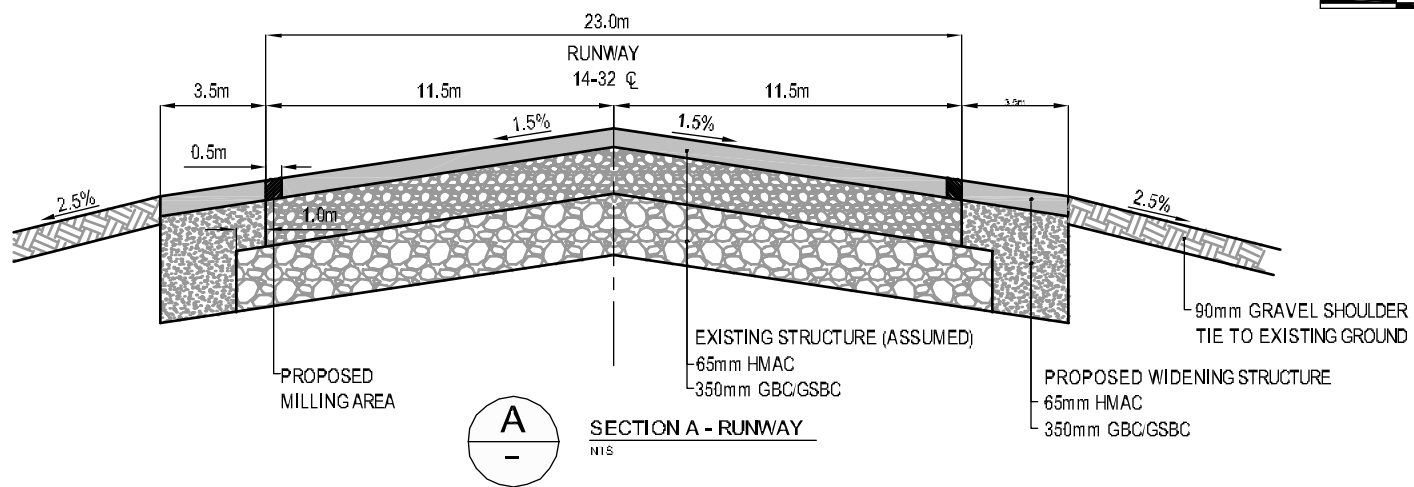
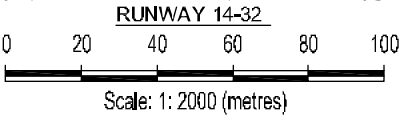
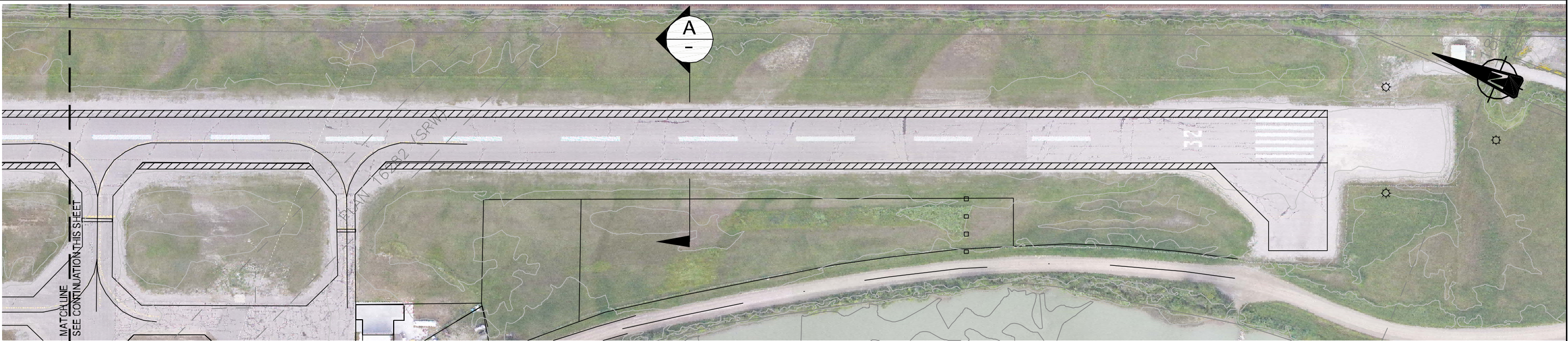
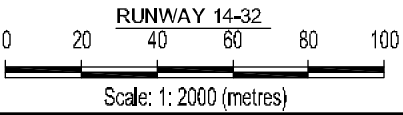
All unit prices are estimated in 2010 monetary value. Taxes are not included.

Existing drainage is utilized; no extra cost is included for mitigating any drainage problems, if any.

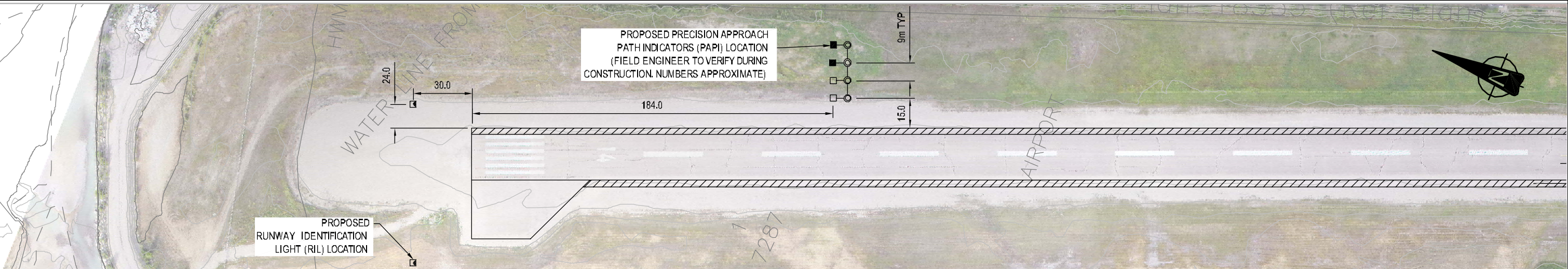
In the pavement structure calculations, designed for a Dash 8-100/200, and no frost protection has been accounted for.

APPENDIX B

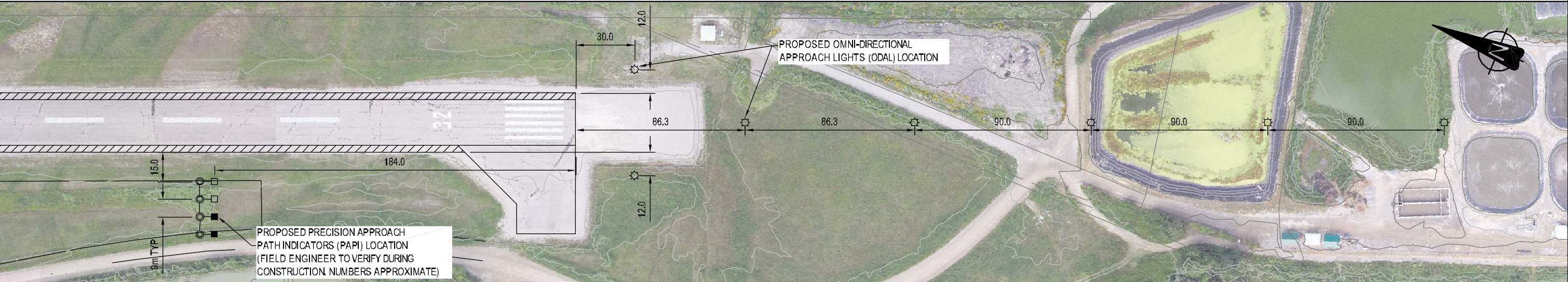
APPENDIX B PRELIMINARY PROJECT PLAN



EBA Engineering Consultants Ltd.					PROJECT			BUSINESS PLAN		
CLIENT					TITLE					
GOLDEN AIRPORT TOWN OF GOLDEN					RUNWAY WIDENING					
DATE		DWN.		CHKD.		FILE NO.		FIGURE 1		
2010-10-25		KA		SS		C31101259				



RUNWAY 14 LIGHTING LAYOUT
0 20 40 60 80 100
Scale: 1: 2000 (metres)



RUNWAY 32 LIGHTING LAYOUT
0 20 40 60 80 100
Scale: 1: 2000 (metres)

PAPI UNIT INSTALLATION & FOOTING (STEEL)
NTS

NOTES:
1. REFER ALSO TO LAYOUT AND FOOTING DETAILS.
2. EXCEPT FOR GROUNDING OF COMPRESSION CONNECT ON THE BUSHED CONNECTORS NOT PERMITTED.

PAPI UNIT LAYOUT DETAIL PROFILE
NTS

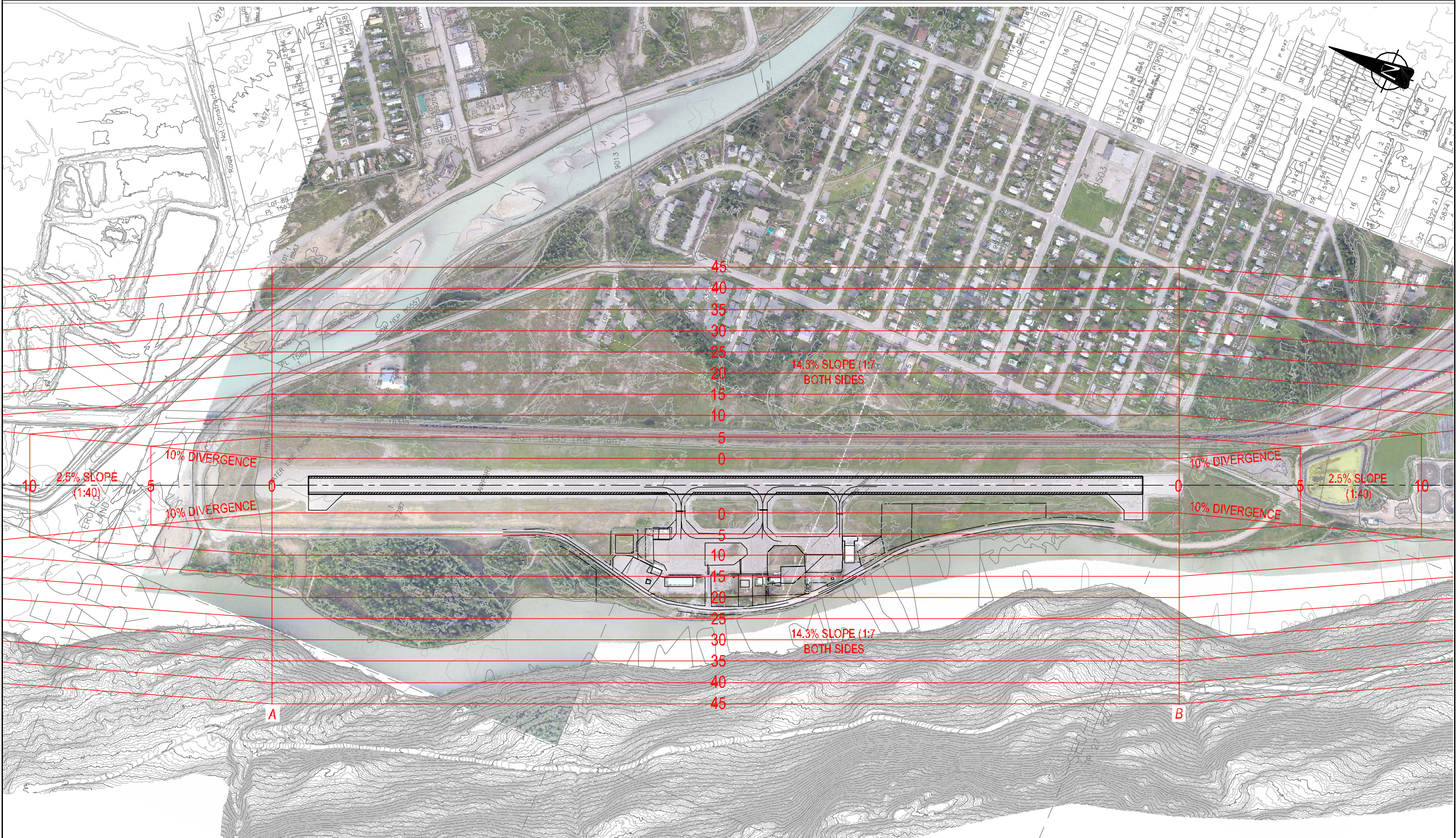
NOTES:
1. UNITS AIMED AT ANGLE 2° IN LONGITUDINAL
2. UNITS AIMED AT ANGLE 2° IN LONGITUDINAL
3. UNITS AIMED AT ANGLE 2° IN LONGITUDINAL
4. UNITS AIMED AT ANGLE 2° IN LONGITUDINAL
5. UNITS AIMED AT ANGLE 2° IN LONGITUDINAL
6. UNITS AIMED AT ANGLE 2° IN LONGITUDINAL
7. UNITS AIMED AT ANGLE 2° IN LONGITUDINAL
8. UNITS AIMED AT ANGLE 2° IN LONGITUDINAL
9. UNITS AIMED AT ANGLE 2° IN LONGITUDINAL
10. UNITS AIMED AT ANGLE 2° IN LONGITUDINAL

TYPICAL BASE MOUNTING DETAIL
(MASTER, SLAVE, HEADS AND SUBSTATION)
NTS

NOTES:
1. PAINT ALL EXPOSED APPARATUS IN PRIMER.
2. ENTIRE PACK TO BE OF NON-REPROBATE MATERIAL.
3. ALIGN LIGHTS AT AN ANGLE OF 2 DEGREES IN THE LONGITUDINAL AXIS OF THE RUNWAY AND AT AN ANGLE OF 7.5 DEGREES ABOVE THE HORIZONTAL.

ODALS UNIT MOUNTING DETAIL
NTS

NOTES:
1. WEIGHT
2. POWER CONSUMER 2.2 KW
3. 2 FLASHES 2.5 KW
4. 2 W D MBS 0.8 KW
5. 10 FRANCHISE COUPLERS PER UNIT
6. 10 FRANCHISE COUPLERS PER UNIT



	m/ASL
RUNWAY ELEV.	866.0
A	908.0
B	921.0

EBA Engineering Consultants Ltd. 				PROJECT BUSINESS PLAN	
CLIENT GOLDEN AIRPORT TOWN OF GOLDEN				TITLE OBSTACLE LIMITATION SURFACES	
DATE	2010-10-25	DWN.	KA	CHKD.	SS
FILE NO.	C31101259			FIGURE 3	