

DAWSON PLANNING REGION

TECHNICAL REPORT

ON

ISSUES AND INTERESTS

**GOVERNMENT OF YUKON
AUGUST 2011**

Compiled by the Corporate Policy and Planning Branch of the Department of Energy, Mines and Resources

TABLE OF CONTENTS

INTRODUCTION	3
AGRICULTURE	3
CLIMATE CHANGE	4
CULTURE/HERITAGE – HERITAGE RESOURCES & HISTORIC SITES; ARCHAEOLOGY; and PALAEOLOGY	5
ECONOMIC DEVELOPMENT	8
ENVIRONMENTAL ASSESSMENT	10
ENVIRONMENTAL CONTAMINATION & EFFECTS and ENVIRONMENT SOLID WASTE & AIR QUALITY	10
FISH & WILDLIFE – WILDLIFE; OUTFITTING & TRAPPING; FISH and RARE FLORA, FAUNA & ECOSYSTEMS	11
FORESTRY	14
LANDS.....	15
LOCAL AREA PLANNING	16
MINING & MINERALS and PLACER MINING / EXPLORATION	17
OIL & GAS.....	18
PARKS & PROTECTED AREAS	20
RENEWABLE ENERGY	21
TOURISM.....	22
TRANSPORTATION	23
WATER RESOURCES	24
CONCLUSION.....	24
APPENDIX 1: EXISTING AND ONGOING PLANNING AND POLICY PROCESSES AND REGULATIONS IN THE DAWSON REGION.....	26

DAWSON PLANNING REGION
DRAFT TECHNICAL REPORT ON ISSUES AND INTERESTS
GOVERNMENT OF YUKON

INTRODUCTION

Under the information gathering phase of its planning process, the Dawson Regional Planning Commission (DRPC) has asked the Yukon government to identify interests and issues in the Dawson region. The following is a compilation of issues and interests and for the DRPC to consider in developing a land use plan for the Dawson Region.

The identified issues and interests are provided by Yukon government departments with diverse mandates and perspectives, and who are responsible for land and resource management. The issues and interests listed are technical in nature, not necessarily exhaustive or reflective of Yukon government priority and policy. Regional planning will be beneficial in minimizing conflict between competing land uses and supporting sustainable development of the region's renewable and non-renewable resources in a way that considers and protects the integrity of the region's ecosystems, including cumulative effects.

The government looks forward to learning what other issues and interests will be identified by the DRPC and the public during this phase of the planning process.

DEPARMENTAL REPORTS ON INTEREST AND ISSUES

AGRICULTURE

Interests

The Dawson Planning Region contains some of the (potentially) most productive agriculture land in the Yukon. High quality agriculture soils are associated with the flood plains and lower terraces of major rivers all across the Yukon. In this region there are extensive suitable agriculture areas along the Yukon (both upstream and downstream of Dawson) and the lower Stewart River as well as along the Indian and, to a lesser extent, the Klondike River. Almost all areas of suitable agriculture land that are easily accessible are in Sunnydale/ West Dawson and are subject to the West Dawson Sunnydale Local Area Plan.

First Nation Settlement Lands along the lower Stewart and Yukon River contain many areas of land suitable for agriculture.

The superiority of the Dawson region for agriculture is based on the continental climate. Cool short summers are the greatest limitation on Yukon agriculture production and the growing season in the Dawson Planning Region is considerably warmer. Also rainfall is more predictable in spring. Cereals are capable of maturing in most growing seasons in the Dawson Planning Region. Reconnaissance scale soil mapping (1977, 1: 125,000) by the University of Saskatchewan (Rostad et al) estimates about 25,000ha of Class 3 and 4 lands in the Dawson/Mayo region. In contrast, Whitehorse Region was estimated to have no Class 3 and 4 lands.

The Yukon Agriculture Branch expects continued interest in acquisition of agriculture land in the Dawson Region at a low but steadily increasing level over the next ten years. The great majority of Yukon agriculture is currently situated within 80 km of Whitehorse and, with the current emphasis on

livestock production, the central Yukon is the natural place to look to for a Yukon grown livestock ration (consisting of grains).

Issues

1. The best agriculture land is accessible mainly by boat on major rivers.
2. The thaw of discontinuous permafrost (common in the Dawson Region) creates uncertainties related to developmental timelines. Removal of vegetation precipitates melting of ground ice and, depending on depth of frost and soil texture, it is difficult to predict when cleared land will be dry enough to farm.
3. Placer mining is extensive in the Dawson Region. Because placer mining claims grant both surface and subsurface rights, the availability of land for other land uses is difficult in the Dawson region. At the same time placer mining presents a unique opportunity for agriculture development. At the closure and restoration end of the placer cycle, provided that fine texture materials and organics are preserved for redistribution over the gravels, revegetation may provide a transition to agriculture uses.
4. Tr'ondëk Hwëch'in has recently expressed some interest in using reclaimed placer land for agriculture, but were not in agreement with the lands being sold to the placer miner.
5. Dawson Region is the northern extent of the Central Yukon climate zone and the logical progression (with Whitehorse as the primary market) is to see agriculture lands developed in the South Central Yukon first.

Tools & Information Products

- <http://www.emr.gov.yk.ca/agriculture/index.html>

CLIMATE CHANGE

Interests

- Average annual temperatures are increasing in the region. It is expected that temperature increases will be greater in Arctic and sub-Arctic regions than in southerly parts of Canada.
- As reported in the "Dawson Climate Change Adaptation Plan" (2005), a relatively uniform increase in annual average temperature of 2.5 degrees Celsius to 3.5 degrees Celsius is projected by the middle of this century. Annual average precipitation amounts are expected to increase by 10 to 40 %. More precipitation is expected during the winter months than in the summer.
- A changing climate can affect many of the interests and activities in the Dawson planning region. It is therefore important that consideration be given to both challenges and potential opportunities associated with climate change during the planning process.
- There is a need to enhance understanding and awareness of climate change in the Dawson planning region and to encourage development and implementation of adaptation strategies to mitigate the negative aspects of climate change and in order to take advantage of the opportunities associated with a changing climate.
- Increased monitoring and expanded research on the effects of climate change in the planning region, including but not limited to changes in ground temperature, streamflow and water quality, are needed.

Issues

Known potential effects of climate change within the Dawson planning region include:

- habitat and vegetation changes;
- wildlife migration pattern changes;
- snow depth changes;
- weather pattern changes;
- water volume and quality changes;
- damage to infrastructure and increases in construction costs;
- engineering challenges;
- shifts in operational costs for activities; and
- changes in accessibility on the land and rivers.

Tools and Information Products

- The “[Yukon Government Climate Change Action Plan](http://www.env.gov.yk.ca/monitoringenvironment/ccactionplan.php)” dated February 2009, is available at <http://www.env.gov.yk.ca/monitoringenvironment/ccactionplan.php>.
- The “[Yukon State of the Environment Report 2008](http://www.env.gov.yk.ca/monitoringenvironment/documents/state_of_env_report2008.pdf)”, dated March 2011, is available at http://www.env.gov.yk.ca/monitoringenvironment/documents/state_of_env_report2008.pdf.
- The “[Dawson Climate Change Adaptation Plan](http://www.taiga.net/nce/adaptation/Dawson_Plan_Final.pdf)” dated December 2009, is available at http://www.taiga.net/nce/adaptation/Dawson_Plan_Final.pdf.

CULTURE/HERITAGE

HERITAGE RESOURCES & HISTORIC SITES

Interests

- The Dawson Planning Region is one of the earliest regions to be settled in Yukon and is where the Klondike Gold Rush occurred in 1898, when thousands of people inundated the region looking for gold. This activity left an imprint on the landscape, and the region is recognized as having the highest concentration of historic resources within the territory.
- As of June 17, 2011, there are 1245 records of historic resources in the Dawson Planning Region. Over 700 of these are located outside of the Dawson municipal boundary. The majority of the sites outside of Dawson date from the early 1900s to the late 1950s and most are related to mining.
- Like archaeological sites, historic resources are protected under Yukon’s *Historic Resources Act* (R.S.Y. 2002, c. 109).
- The Dawson area has been listed on the tentative list for World Heritage Site designation demonstrating its historic and cultural significance. If designated a World Heritage Site, there would be no impact to the rights of the Tr’ondëk Hwëch’in or to mining activities in the Klondike Goldfields, however, the area in and around the municipality may be managed according to suggested guidelines in the Dawson Heritage Management Plan in order to preserve historic resources and heritage character.
- There are several significant historic sites in the area including:
 - Dawson City; the Forty Mile, Fort Cudahy, Fort Constantine Historic Site; and Tro’Chek National Historic Site;

- The Yukon Ditch system, related infrastructure, large artifacts used to construct and maintain the ditch; the North Fork Ditch, South Fork Ditch, related infrastructure and large artifacts used to construct and maintain the ditches;
- The Whitehorse-Dawson Overland Trail and the remains of associated roadhouse sites; the Ridge Road Heritage Hiking Trail; and remains of the Glacier Creek Trail and associated roadhouses/cabins and informal communities in the Sixty Mile area;
- Remains of industrial sites such as the Adams Dam on Bonanza Creek and the French Gulch Dam on Eldorado Creek; and the Klondike Mines Railway that connected Dawson City to Sulphur Springs near the head of Sulphur Creek; and
- Areas along the Yukon River and the early settlement of Ogilvie located on Ogilvie Island are likely to contain historic resources related to transportation, trapping or farming. (Note the Yukon River has not been inventoried and the likelihood of well-preserved historic resources is high.)

Issues

- The Ridge Road Heritage Hiking Trail is developed for cyclist and pedestrian use and is a fragile trail system. It is necessary to restrict access to motorized vehicles due to trail maintenance reasons and public safety for trail users. The area has mineral claims and consideration will be required to ensure the existing land use is not negatively impacted.
- The Yukon Ditch System is a system of pipe, flume and ditch that carried water from Tombstone Mts. to Bonanza Creek with maintenance camps approximately every 20km. The sections west of the Klondike River have been staked with quartz claims. It will be necessary to limit access roads across the ditch and to minimize mining impacts on the historic resources. Potential for hiking trails and interpretation of this monumental project is high as it is likely one of a kind in Canada.
- The Yukon Historic Sites Inventory has limited information on areas south of Blackhills Creek, the Sixtymile drainage, Yukon River, and the Coffee Creek drainage. There is no current information on sites located along Hunker, Dominion, Bonanza, Eldorado, Quartz, Sulphur, and the Indian River. The last inventory project occurred in the early 1990s.
- The need to assess potential impacts on historic resources has grown as the exploration and development of placer and quartz mines increases.

Tools and Information Products

- Yukon Historic Sites Inventory, Yukon Heritage Reserves Inventory and Yukon Aircraft Inventory.
- Research reports on the Whitehorse-Dawson Overland Trail, the Klondike Mines Railway, the Yukon Ditch, and the North Fork Ditch system.
- Dawson Heritage Management Plan.
- <http://www.tc.gov.yk.ca/programs/index.html>

ARCHAEOLOGY

Interests

- Archaeological sites and resources are protected and managed in Yukon according to the *Historic Resources Act* (R.S.Y. 2002, c. 109) and the *Archaeological Sites Regulation* (O.I.C.

2003/73). The *Quartz and Placer Mining Land Use Regulations* also address protection/avoidance of heritage sites (including burials) and require that miners who encounter heritage sites report their discovery to the Yukon government.

- As of June 2011, there are 257 recorded archaeological sites in the planning region. These are predominantly prehistoric archaeological sites, which span the period from the end of the last Ice Age (12,000 years ago) to historic times in the Yukon, such as the Gold Rush at the turn of the century and the building of the Alaska Highway in 1942-43. Included in this number are several significant sites relating to the Klondike Gold Rush period, including Forty Mile/Chëdä Dëk and the National Historic Site Tro'chëk/Klondike City, which preserve the material record of this dynamic period of culture contact and change in Yukon history.
- Although inventories are incomplete for large portions of the planning area, archaeological site concentrations identified in and around Tombstone Park appear to represent areas of importance for seasonal harvesting of migrating caribou over several millennia. Upper drainages of the Tatonduk, Miner, Whitestone, Eagle, Fifteenmile and Chandinidu Rivers are expected to have similar high concentrations of prehistoric site values.
- The ancient terraces along the Yukon River in the Dawson Planning Region have been identified as potentially preserving some of the earliest evidence of human populations in the unglaciated Beringian landscapes of the late Ice Age. The site of Moosehide has yielded evidence of occupations dating back to about 8,000 radiocarbon years (ca. 9,000 calendar years). The Yukon River was also the location of historically important salmon fish camps for Han people which reflect subsistence adaptations developed within the past 2,000 years.
- Due to intensive mining in the Klondike goldfields over more than a century, the prehistoric archaeological record of this area is largely unknown. The narrow valleys and steep rolling hills typical of this area may not have been ideal for hunters throughout much of the Holocene. One site in the Klondike Gold Fields, however, yielded an antler billet dated to about 11,500 radiocarbon years in age (ca. 13,000 calendar years), suggesting additional evidence of late ice age human presence may yet be found preserved in the frozen mucks, much like the fossil palaeontological evidence.

Issues

- Yukon government has limited archaeological site inventory information for large portions of the Dawson planning region.
- The need to assess potential impacts on archaeological resources has grown with increasing mining and exploration activity in the region. Heritage resources are identified as one of the major areas of concern in the majority of project reviews under YESAA.

Tools & Information Products

- Yukon Archaeological Site Inventory (<http://www.tc.gov.yk.ca/archaeology.html>)
- Best Management Practices for Heritage Resources have been developed for both Placer Mining and Mineral Exploration industries addressing archaeological, palaeontological and historic resources; the Handbook for the Identification of Heritage Sites and Features is also available to assist field personnel to recognize and protect heritage resources. (Available in print and on line at <http://www.tc.gov.yk.ca/1589.html>.)

PALAEONTOLOGY

Interests

- As of June 2011, there are 139 recorded palaeontological sites in the planning region. These are predominantly Ice Age fossil sites in the Klondike Goldfields and include the areas of the lower Stewart River, Thistle Creek, Black Hills Creek, Henderson Creek, Fifteenmile Creek,

and Sixtymile River watersheds. There are over 15,000 fossils from the region accessioned into the fossil collections of Yukon government and the Canadian Museum of Nature.

- Fossils are protected and managed in Yukon according to the *Historic Resources Act (1996)*. Management activities include periodic site visits and monitoring by Yukon government paleontology staff at active placer mines to collect fossil resources uncovered by mining activity. The *Placer Mining Land Use Regulations* require that miners who recover fossils report their discovery to the Yukon government.
- Permafrost found throughout the region enables exceptional preservation of ancient Ice Age biological remains, such as proteins and DNA in prehistoric bone, mummified animal soft tissue, plants, soils, bacteria, and is the focus of active scientific research programs.
- The region attracts internationally renowned scientific researchers annually to study Ice Age fossil localities.
- Virtually every drainage area that has been mined historically, or is currently being mined for placer gold, has yielded Ice Age fossil bones.
- Additional pre-Ice Age fossil sites are expected to be discovered in bedrock outcrops north of the Tintina Trench in the Ogilvie Mountains (Tatonduk River, Monster River, Ogilvie River), in the northern part of the planning region.

Issues

- Lack of palaeontological regulations under the *Historic Resources Act* to enforce industry compliance.
- Yukon government has limited palaeontological resource inventory information for much of the region outside of the historical footprint of the Klondike Gold Fields.
- There is a need to assess potential impacts on fossil resources by industry in light of increasing gold mining and other industry activity in the region.
- There is a substantial unregulated commercial trade in fossils from the Klondike region.

Tools & Information Products

- Yukon Palaeontology Program fossil database (<http://www.tc.gov.yk.ca/palaeontology.html>).
- Canadian Museum of Nature fossil database.
- Numerous scientific journal manuscripts and books.

ECONOMIC DEVELOPMENT

Interests

- The Dawson region has long been established as an area with a rich mining history. It is this history that has contributed to Dawson City being world-renowned as a destination for tourists who want to experience the feeling of an historic mining community. The successful co-existence of tourism and mining activities within the Dawson region continues to provide numerous employment opportunities in the region and economic benefits to the local business community.
- Regional land use planning needs to be linked to and cognizant of regional economic development planning for the Tr'ondëk Hwëch'in Traditional Territory in order to maximize conformity between the plans.
- Interest in future mineral development is high as the Dawson region is experiencing historically high levels of mineral staking and exploration spending. There is strong interest in the White Gold area in the Dawson region, an area which has a great deal of potential in terms of resource value but requires significant delineation to better understand the resources in the area. The Casino property is located primarily outside of the planning

region, at the southeast boundary of the region. If developed, Casino could provide substantial benefits to the territory as it is much larger than projects currently operating in the territory. Current estimates have the cost of development as high as \$1 billion, and the project could see production activity for over 30 years. Continued exploration activities and development of mineral production throughout the region has the potential to have a variety of benefits, including:

- Direct employment
- Indirect employment
- Taxation benefits
- Royalties
- A number of mining properties in the region have the potential to go to production in the short-to-medium term and could provide long-term economic impacts to the Dawson region and Yukon. Development of mining properties will require supporting infrastructure, in particular access and energy. Ongoing mineral exploration and future mineral development in the region is dependent on short-term exploration access and long-term access and infrastructure corridors to potential development projects.
- The planning region has a well-established, active tourism sector that provides economic benefits to the region and Territory.
- The regional land use plan and process needs to find a workable balance between environmental protection and economic development. Development opportunity in the Dawson region has the potential to be an important contributor to Yukon's overall economic health and growth in the foreseeable future, especially as it pertains to the development of mineral resources. The regional land use plan should consider future needs of the business community and industry and how to address those needs while limiting potential conflict among resource users.
- Support for First Nation opportunities for benefits of resource development. It is important to identify economic opportunities for First Nations that could arise from development in the region including:
 - Direct employment opportunities;
 - Indirect employment opportunities (i.e. service sector jobs);
 - Establishment of businesses to service resource development;
 - Royalties on Category A Settlement Land;
 - Mining reclamation opportunities; and
 - Development of energy resources on First Nation Settlement Land.

Issues

- Economic development in the Dawson region could be constrained by inadequate supply of affordable clean energy and also the need to improve the existing transportation infrastructure or develop new transportation infrastructure.
- Economic diversity can contribute to the long-term health of the region. As the mining sector can be cyclical it is important to examine all potential resource uses in the area, as some may be found to be more resilient to "boom and bust" scenarios. Alternative economic resource uses include activities related to tourism, forest products, agriculture, and oil and gas development.
- As tourism related activities provide significant economic contributions to the Dawson region, including employment for many residents, the regional land use plan should ensure that the tourism and mining sectors can continue to co-exist and provide economic benefits to the Dawson region.
- It is difficult to establish an accurate economic baseline for the Dawson region as the appropriate data at a regional or community level currently does not exist. Without the ability

to develop baseline data, it will be difficult to quantify the economic impacts associated with the development of the Dawson Regional Land Use Plan. This is an issue that is not isolated to a review of the Dawson region, and in the absence of new and improved data sets, will remain a challenge for all future land use planning.

Tools & Information Products

- Yukon Bureau of Statistics (<http://www.eco.gov.yk.ca/stats/index.html>)
- Socio-economic Web Portal (<http://sewp.gov.yk.ca/region?regionId=YK.DW>)
- Statistics Canada (<http://www.statcan.gc.ca/start-debut-eng.html>)

ENVIRONMENTAL ASSESSMENT

Interests

- The potential for cumulative effects in the White Gold region, particularly for mineral projects and related linear access, would be best addressed on a regional rather than project specific basis.
- Consideration is being given to access corridors to the White Gold region from Yukon's highway network to minimize cumulative effects. A list of baseline studies to support cumulative effects analysis is being prepared.
- Yukon government is working towards a series of recommendations for the YESAA process to ensure access is appropriately managed. When completed, information will also be provided to DRPC pursuant to 11.2.1.2 of the Umbrella Final Agreement, and should dovetail well with the Commission's regional planning work and schedule.

Issues

- The unprecedented level of mineral claim staking and resulting exploration programs in the White Gold region has raised concerns about cumulative effects on wildlife, particularly in relation to linear corridors.

Tools & Information Products

- Map of cumulative effects study areas and baseline information priorities under development.

ENVIRONMENTAL CONTAMINATION AND EFFECTS

Interests

- There are contaminated sites in the region which need to be cleaned up.

Issues

- Contaminated sites may impact fish and wildlife habitat and populations as well as human health.

Tools and Information Products

- Contaminated sites registry.
(http://www.env.gov.yk.ca/monitoringenvironment/contaminated_sites_regs.php#registry)

ENVIRONMENT SOLID WASTE AND AIR QUALITY

Interests

- There are multiple small landfill and incineration sites in the Dawson region.
- Effects of such sites need to be minimized.
- Healthy standard air quality should be maintained.

Issues

- Landfills may impact fish and wildlife habitat and populations as well as human health.
- There is an influx of people, meaning more camps, higher use and possibly more landfills, more potential for contamination and a greater need for management, monitoring, and mitigation.
- Wood smoke, garbage burners and industrial-scale burners are a threat to air quality in the region.

FISH & WILDLIFE

FISH

Interests

- Fish species have high subsistence, commercial and sport fishery value in the planning region.
- There are 22 species of fish in the Dawson region, including three species of salmon.
- The Yukon, Stewart, and Whistone rivers have the highest recorded diversity of fish species in the Dawson region.
- Fish are a primary indicator and a key component of the health of aquatic ecosystems.

Issues

- Maintenance of functioning aquatic ecosystems that support healthy fish populations is important to First Nations, the public and the government agencies.
- Salmon are migratory species that require broader regional and transboundary perspectives in habitat management.
- Industrial development has the potential to impact fish populations through direct loss of habitat, alteration of water quality or quantity.
- Additional road access increases the potential for harvest of fish from previously inaccessible locations. It also results in more river crossings and culverts, and the need for mitigation of negative impacts on fish habitat.
- Very little information exists on the distribution of freshwater fish and their important habitats in the planning region.

Tools and Information Products

- Department of Fisheries and Oceans (DFO) maintains a fisheries database called FISS.
- DFO and YG both have stream files that have information about fish resources.
- The Yukon Salmon Subcommittee has been established under the terms of the Umbrella Final Agreement (UFA). The public advisory body provides recommendations to the Minister of Fisheries and Oceans and First Nations on matters related to salmon and their habitat.
- <http://yssc.ca/>
- The Yukon Placer Authorization (YPA) provides guidance about the terms and conditions that regulate placer mining in the watersheds of the planning region.

- The Yukon Placer Secretariat has modeled the extent of salmon habitat and use for the Yukon River drainage, but it does not provide information for freshwater species distribution.
- <http://www.yukonplacersecretariat.ca/>

WILDLIFE

Interests

- Woodland and barren-ground caribou, moose and Dall's sheep inhabit the planning region and are important for subsistence, licensed hunting, and non-consumptive use (wildlife viewing).
- There are four caribou herds - Porcupine, Fortymile, Hart River and Clear Creek.
- Hart River and Clear Creek caribou are populations of Northern Mountain caribou and are listed as a Species of Special Concern under the federal *Species at Risk Act* (SARA). There is a draft management plan for this species. (<http://www.yfwmb.ca/northernmountaincaribou>) Also see http://www.sararegistry.gc.ca/document/default_e.cfm?documentID=2244.
- The Porcupine herd is comprised of barren-ground caribou. It is the Yukon's largest caribou herd and is cooperatively managed between the Yukon, Northwest Territories and Alaska via the Porcupine Caribou Management Agreement.
- The Fortymile herd is also comprised of barren-ground caribou and is an international herd that periodically winters partly in the Yukon, and summers in Alaska. A management plan for this herd was developed in 2006.
- Moose is the major species for subsistence and harvest in the planning region
- The largest numbers of sheep are found in the northern portion of the planning region in the Ogilvie Mountains. There are small, discrete groups of sheep occurring along the Yukon River in the southern portion of the planning region.
- Aside from Tombstone Territorial Park, there are currently no Habitat Protection Areas or Special Management Areas for wildlife in the planning region.
- The importance of the Klondike Valley area as a refuge for lynx has been identified in the Klondike Valley plan.
- The Dawson region is primarily a Beringia land form and is very lush and productive.
- Wildlife resources are managed with a combination of legislation, regulations, policies, environmental assessment guidelines and management plans.
- Identification and management of wildlife corridors that preserve connectivity. Such corridors allow the linkage of seasonal habitats and facilitate wildlife movement.

Issues

- Maintenance of functioning ecosystems that support wildlife populations is vital to First Nations, the public and the responsible agencies.
- Industrial development has the potential to impact wildlife populations through direct loss of habitat, the creation of barriers to movement, direct mortality, disturbance to individual animals and disturbance causing avoidance of certain areas.
- Increased road access increases the potential for harvest of animals and roadkill.
- Human activity and associated increased hunting as a result of an influx of people can negatively impact wildlife populations.
- The potential for cumulative effects on wildlife is an important consideration in the planning region.
- In some areas, harvest rates for some species may be near or at maximum.

Tools and Information Products

- The Department of Environment provides information on the distribution or range of the major wildlife species in the region.
- The Wildlife Key Areas (WKA) database provides information about important areas for certain species at critical times of the year. This includes information about known historical nesting areas. Maps and data can be accessed from www.env.gov.yk.ca/wildlifebiodiversity/wildlife_key_areas.php.
- Specific detailed studies of wildlife populations are limited but modeling can complement the existing reports.

OUTFITTING AND TRAPPING

Interests

- Portions of three outfitting concessions overlap the planning region.
- There are 42 trapping concessions wholly or partially within the planning region.
- The outfitting and trapping concessions have associated camps, and in some cases titled property.
- Outfitting and trapping are important sustainable industries, and the region contains some very productive trapping areas.

Issues

- Maintenance of functioning ecosystems that support wild populations is vital to trappers and outfitters.
- Outfitting generally relies on a wilderness experience where other human activity is minimal.
- Industrial development has the potential to impact wildlife populations through increased access for hunting, increase in human-bear conflicts, direct loss of habitat, and disturbance to the animals.
- Increased road access may increase the potential for harvest of animals.
- Human activity and associated interactions as a result of an influx of people can negatively impact outfitting and trapping.

Tools and Information Products

- Data showing the boundaries of the outfitting and trapline concessions is available.
- <http://www.environmentyukon.ca/maps/view/nav/2/15/>
- <http://www.environmentyukon.ca/maps/view/nav/2/30/>
- Cabins, camps and associated holdings are mapped.
- Wildlife harvest numbers are available on a Game Management Subzone basis.
- Furbearer harvest numbers are available for groupings of 10 or more active traplines.

RARE FLORA, FAUNA and ECOSYSTEMS

Interests

- The planning region supports a number of rare and endangered plants, possibly rare small animals and some unique ecosystems.
- A portion of the planning region is classified as Beringian, an area that was not glaciated in the last Ice Ages.
- Although there are many small wetlands, there are no large wetland complexes in the Dawson planning region.

Issues

- Maintenance of functioning ecosystems that support rare flora and fauna is vital to agencies, First Nations and the public.
- Industrial development has the potential to impact rare flora and fauna through increased access, small changes to water regimes in creeks, and direct loss of habitat.
- Human activity and associated interactions can negatively impact unique ecosystems.
- Limited knowledge of rare species in the region.
- Potential for invasive species in the reclamation of mineral properties.

Tools and Information Products

- Biotics, a database of information about occurrences of rare species. See the Conservation Data Centre at www.env.gov.yk.ca/wildlifebiodiversity/cdc.php.
- Rare ecosystems or features will be mapped using the Ecological Land Classification being developed www.env.gov.yk.ca/wildlifebiodiversity/elc.php.

FORESTRY

Interests

Forest Operations & Activity:

- Annual Limit for green wood harvesting is 5,000 m³/year (conifer) and 2,000 m³/year (deciduous) in the Dawson region, this limit is established in the *Forest Resources Regulation*. Following the finalization of the Dawson Forest Resources Management Plan (DFRMP) a new harvest level will be set.
- Currently, the largest forestry operator in the Dawson region is Arctic Inland Building Products, with a permanent outlet in Dawson and a current annual harvest of approximately 3,000 m³. Arctic Inland has updated its milling operation and has expanded its retail sales by developing a yard within Whitehorse.
- There are several other personal fuel wood suppliers in Dawson, with an estimated combined annual harvest of approximately 1,500 m³.
- From 1999 to 2008, an average of five roundwood permits and 10 commercial fuel wood permits were issued each year.

Forest Based Activity:

- In addition to timber and fuel wood harvesting, harvesting and processing of non-timber forest products, such as birch syrup, also contribute to the forest-based economy.
- Mushrooms are another commercial non-timber forest product that is occasionally harvested and sold, in the year following an exceptional wildfire event. Personal fuel wood collection and the harvest of other non-timber forest products, such as wild berries, are also common non-commercial uses of the forest land base.

Bio-Energy:

- Recently, a bio-energy project commenced in Dawson to utilize wood waste from Arctic Inland forestry operations. The first phase of the project is installing a wood chip boiler and heating Dawson's water supply and sewage treatment plant. The second phase includes adding boiler capacity to produce heat for a district heating plant to heat neighboring buildings. This project has the capacity to reduce diesel fuel consumption in Dawson by 600,000 litres per year. Projects of this type are expanding within the territory as energy independence and high heating costs drive people to utilize wood bio-mass for heating. There will likely be increased demand for wood energy over the short and long term.

Legislation and Plans:

- The *Forest Resources Act* establishes a hierarchy of planning prior to harvesting. The larger strategic planning process or Forest Resource Management Plans and their linkages to regional planning are included within Chapters 11 and 17 of the Final Agreements. The FRMP identifies the long term forest land base where forestry operations can be considered and also the forest which can contribute to sustainable harvest.
- The Dawson Forest Resources Management Planning process was initiated in 2006 through a joint planning committee with equal representation from Tr'ondëk Hwëch'in and Yukon governments. The plan covers both settlement and non-settlement land. It is anticipated that the planning team will recommend the plan for review and approval processes in late 2011.
- There are currently ten approved Timber Harvest Plans (THP) within the Dawson region. No harvesting of timber under a harvesting licence may occur until there is an approved THP for the area.

Issues

- Ensuring that there is an economically viable land base for sustainable forest resource harvesting. Viability generally requires access with limited road building requirements, three to five kilometers off existing all-season roads, and within 1.5 hours drive from the community of Dawson City.
- Maintaining the areas of traditional / historical harvesting and facilitating areas and priorities for future development of forest resources as identified through the *Forest Resources Act* planning processes.
- Access to forest resources.

Tools & Information Products

- The Draft Dawson Forest Resources Management Plan is available on the Forest Management Branch Website at:
http://www.emr.gov.yk.ca/forestry/pdf/Y-EMF_bk_FMP3_draft.pdf.
- Existing Timber Harvest Plans are listed in the *Forest Resources Regulations*, existing and new THPs are provided on the Forest Management Website at:
<http://www.emr.gov.yk.ca/forestry/204.html>.

LANDS

Interests

- Within the City of Dawson, the Land Management Branch (LMB) works in cooperation with Community Services and the City of Dawson for the development of planned lots within the municipal boundaries. While spot applications (commercial & institutional) are accepted within the city and subject to review with the municipality, no spot applications for rural residential are accepted within the municipality.
- LMB works with Land Planning Branch, EMR on any spot applications that occur within a local planning area such as West Dawson/Sunnydale. Spot applications are accepted in local planned areas but are subject to the zoning recommendations/regulations.
- In areas outside of local area plans, spot applications (rural residential, commercial/industrial, Institutional/Non-Profit) are accepted within 1km of all season roads except for big game outfitting and trapping uses which are accepted in hinterland areas.

- Many of land rights administered by LMB are located either in or near municipalities or along transportation corridors.
- LMB works with municipalities and Land Planning Branch-EMR to ensure any issuance of tenure is compliant with approved plans and in conformance with any applicable zoning.
- Land rights issued by LMB are subject to a review process that includes consultation with First Nations and may also include a YESAA review.

Issues

- At present, there is no land tenure in place to address hinterland use of land for commercial wilderness type activities.
- Need to develop new sources of granular materials as existing sites are exhausted, particularly in the Dawson City area as well as along the Klondike Highway, Top of the World Highway and Dempster Highway.
- The demand for land (planned lots and spot applications) continues to grow which calls for increased demand for all levels of planning, and land tenure policy for commercial wilderness activity in the hinterland areas.

Tools & Information Products

- The Land Information Management System (LIMS) provides a land registry database within Yukon land management branches which is supported by a GIS mapping system.
- Data from the GIS system is available through a land viewer system available on the EMR public website.
- http://www.emr.gov.yk.ca/mlv_jump.html

LOCAL AREA PLANNING

Interests

- A local area planning process for West Dawson-Sunnydale is in the final stage of development before being submitted to YG and TH for approval.
- Additional local area plans or land development plans for Klondike Valley may be necessary to manage growth and guide development.
 - Memorandum of Understanding Respecting the Development of a Local Area Plan for West Dawson & Sunnydale, section 1.3 specifies that "The Parties may agree to enter into a separate local area planning process for Bear Creek, Rock Creek and Henderson Corner area".
 - Klondike Valley District Plan suggested the need for more detailed plans being developed for the broader Klondike Valley.

Issues

- The broader Dawson area is experiencing increased demand for land and services in connection with increased mineral exploration activities.
- In cases where facilities cannot be located within the municipality or local planning areas, consideration is needed of infrastructure requirements in the region that serve both Dawson and outlying rural communities such as solid waste disposal sites, sewage lagoons, sources of potable water, airport, power lines, energy corridors, etc.
- Future growth areas and sequencing for rural residential, commercial and industrial land uses or mixtures of these land uses, that cannot be accommodated within municipal and local area plan boundaries, may need to be identified in the Dawson region, along with the need for additional sub-regional or local area planning in such areas.

Tools & Information Products

- Draft West Dawson-Sunnydale Local Area Plan
- http://www.emr.gov.yk.ca/lands/west_dawson_sunnydale.html
- Klondike Valley District Land Use Plan (1988)
- Klondike Valley District Land Use Plan – Implementation Strategy (1989)

MINING & MINERALS

Interests

- As of June 20, 2011, there are 51,959 active quartz claims totaling approximately 10,861 km² in the Dawson region. These claims are predominantly in the Klondike Gold Fields, the White Gold and the Dawson Range regions. There are also numerous claims east of the Dempster Highway.
- As of June 2011, there are 365 MINFILE occurrences (out of 2643 MINFILE occurrences Yukon wide). These occurrences include five mineral deposits (including Golden Saddle and Arc), six open pit past producers (including Clinton Creek and Brewery Creek) and seven underground past producers (of which three were for coal).
- The region is experiencing an increased level of mineral staking and exploration activity because of recent discoveries.

Issues

- Maximizing the exploration and possible mineral development land base is necessary for economically sustainable exploration and possible future mineral development, recognizing that the operating mine footprint is relatively small.
- Identification of a sustainable land base for resource development needs to consider economies of scale, access, and compatibility of adjacent activity.
- Access fragmentation and access restriction to areas of mineral potential affects the ability to identify and achieve an economic and sustainable land base for resource development.
- Economic viability for mineral development will partially depend on access roads to the resources.
- Mineral potential north of the Tintina Trench is not well known.
- Access planning needed, especially in the White Gold area, with linkages to the Dawson Trail and other connecting routes. (See discussion of Dawson Trail in Transportation section.)

Tools & Information Products / References

- Yukon Geological Survey MINFILE occurrences database (most current version is the online database www.geology.gov.yk.ca/databases_gis.html). Given the pace of exploration and new discoveries in the past few years and the requirements for confidentiality, the MINFILE database is not up-to-date and contains fewer occurrences than current exploration work activity would indicate.
- Bradshaw, G.D. and vanRanden, J.A., 2003. Yukon Regional Mineral Potential by Deposit Models 2003. Yukon Geological Survey, Open File 2003-11(D), 1 CD.
- Gordey, S.P. and Makepeace, A.J. (compilers), 2003. Yukon Digital Geology (version 2), Geological Survey of Canada, Open File 1749 (also known as Yukon Geological Survey Open File 2003-10(D), 1 CD.
- Yukon government quartz claims status maps.
- <http://www.emr.gov.yk.ca/mining/>

PLACER MINING / EXPLORATION

Interests

- As of June, 2011, there are 18,096 active and pending placer claims in the Yukon. 13,753 of these claims are in the Dawson planning region.
- Placer claims in the Dawson planning region total ~ 1100 km² and include the drainages of the Klondike River, Indian River, west Yukon (Fortymile and Sixtymile Rivers and the Moosehorn Range River), and lower Stewart River.
- More than 1900 km of placer streams (major gold bearing streams with significant mechanized placer mining operations) are found within the planning region.
- Placer mining contributes ~\$50 M per year to the Yukon economy and placer mines are largely (~90%) owned by Yukon residents.
- High gold prices are driving increased interest in placer mining and production on placer claims in the region.

Issues

- Placer mining requires access to (and the ability to modify) rivers and streams. Such land use considerations need to be tied to the Yukon Placer Mining Regime stream classifications. Future exploration and development of placer resources depends on continued access to valley-bottom and riparian-zone land in the planning region.
- The placer industry requires roads for transporting heavy equipment and an industrial and residential land base for mining operations adjacent to the resource.
- Little information exists with regard to placer potential in the Nahoni Range and Ogilvie Mountains in the northern part of the planning region.
- Future expansion out of traditional gold fields will likely be focused where the most prospective deposits are located in the region.

Tools and Information Products

- Yukon Placer Activity Map. YGS Open File 2001-34.
- Dawson Area Placer Activity Map, Portions of NTS Sheets 116B&C and 115N&O, Yukon. YGS Open File 2001-36.
- Stewart River Placer Project, Resource Appraisal Map for Placer Gold in the Stewart River (115N/O) and Part of the Dawson (116B/C) Map Areas, Yukon (1:250 000 scale). YGS Open File 2002-6.
- Placer geology of the Stewart River (115N&O) and part of the Dawson (116B&C) map areas, west-central Yukon, Canada. YGS Bulletin 14.
- http://www.yukonplacersecretariat.ca/placer_atlas.html
- Yukon Placer Database (http://www.geology.gov.yk.ca/databases_gis.html)

OIL & GAS

Overview

The northern section of the Dawson planning region encompasses 2,538 km² of the Kandik and 1,315 km² of the Eagle Plain sedimentary basins. Both basins are identified as having potential for oil and natural gas resources.

Interests

Eagle Plain Basin

- The extreme southwest portion of the Eagle Plain Basin occurs in the Dawson planning region.

- Oil and natural gas discoveries have been made in southern Eagle Plain basin, immediately northeast of the Dawson planning region boundary (see Osadetz *et al.*, 2005).
- Thirty-four oil and gas wells have been drilled in the Eagle Plain basin. Seven wells recovered oil/condensate and twenty-four recovered natural gas from drill stem tests (Osadetz *et al.*, 2005).
- Mean petroleum resource estimates for the entire Eagle Plain Basin are 436 MMbbls oil and 6,054 Bcf gas (Osadetz *et al.*, 2005). More subsurface and surface geological knowledge is required to adequately delineate and quantify oil and natural gas resources.
- There are no oil and gas dispositions in the planning region portion of Eagle Plain Basin. Northeast of the planning region there are existing dispositions.

Kandik Basin

- The southeast portion of the Kandik Basin occurs in the Dawson planning region.
- The Kandik Basin contains sedimentary strata which are prospective for both oil and gas resources. Mean petroleum resource estimates for the Yukon portion of the Kandik Basin are 99.3 MMbbls oil and 649 Bcf gas (adapted from Hannigan *et al.* (2000) by adjusting for area % of play occurring in Yukon). These values are based on conceptual plays in an area where no defined pools or discoveries have been made.
- In general, there is a lack of geological knowledge about the region. In the Alaska portion of the basin, oil staining has been observed in outcrop samples. In 2000, a resource assessment was conducted for the basin based on very limited subsurface geological data. In order to adequately assess the petroleum resource potential of the basin, substantial subsurface data (including well data and seismic data), and a better understanding of the rock units from surface outcrops would need to be obtained.
- Petroleum exploration in the Kandik Basin in the Yukon occurred in the early 1970s. Between 1970 and 1972, three exploration wells were drilled in the basin. These wells did not encounter hydrocarbons. A reflection seismic survey of approximately 180 line-kilometres was conducted in the region in 1971.
- Based on limited geological knowledge in the surrounding region, the rocks in the Kandik Basin are expected to contain all elements of a petroleum system including reservoir and source rocks, seals and traps.
- There are no oil and gas dispositions in the Yukon Kandik Basin.

Issues

- Access fragmentation and access restriction to areas of petroleum potential affects the ability to identify and achieve an economic and sustainable land base for resource development.
- The identification of an economically sustainable land base for resource development needs to consider economies of scale, access and compatibility of adjacent activity.
- Exploration and future development in the region is dependent on short-term exploration access (e.g. drilling programs, seismic acquisition) and long-term access and infrastructure corridors to potential development projects.
- Development of oil and gas resources in and north of the planning region is dependent on access to potential industrial customers in the South such as the mining belt in the southern portion of the planning region. Consideration of an access and energy corridor traversing the region is required.
- An inventory of surficial materials (e.g. sand and gravel) would be beneficial as these resources are key building materials for roads and pipeline corridors.

Tools & Information Products / References

<http://www.emr.gov.yk.ca/oilandgas/>

Hannigan, P.K., Osadetz, K.G., Dixon, J, and Bird, T. 2000. Petroleum resource assessment of the Kandik Basin, Yukon Territory, Canada. Oil and Gas Resources Branch, Department of Economic Development, Yukon Government, 20 p. plus appendices.

Oil and Gas Resources, Department of Energy, Mines and Resources, Government of Yukon, Yukon Oil and Gas: A Northern Investment Opportunity, 2010.

PARKS & PROTECTED AREAS

Interests

Tombstone Territorial Park

- Tombstone Territorial Park (TTP) is the only protected area located within the Dawson planning region. Comprising a total of 2,050 km², TTP was formally designated as a park in 2004 and further established as a Natural Environment Park in August 2009, when the Park Management Plan was approved by the Parties: Yukon and Tr'ondëk Hwëch'in governments.
- Abundant populations of five big game species inhabit TTP, which is highly unusual in so small an area. The area is also critical to Hart River caribou, a local woodland herd.

Recreation Values

The Klondike Region is one of the Yukon's most active recreation and tourism destinations. The region is well known for its wilderness landscapes, wildlife resources and recreational river routes – with most activities centered on the Yukon River, Tombstone Territorial Park, and the Dempster Highway. It is an important recreation area for the wilderness tourism industry as well as for Yukon residents and self-guided tourists. TTP has exceptional hiking, sightseeing, hunting and fishing opportunities. Other popular activities within the region include hiking and backpacking, canoeing, fishing, boating, biking, berry picking, horseback riding and photography. Winter recreational activities focus on Dawson City for dog mushing, and Tombstone Territorial Park for skiing and snowmobiling.

Issues

Tombstone Territorial Park (TTP)

- Development activities that are occurring outside the park boundaries – and associated potential cumulative effects – could affect the state of the ecological and cultural features of the park – i.e. wildlife corridors, critical habitat for wildlife whose range extends beyond the boundaries of the Park.
- The well-being of TTP's wildlife populations relies on healthy ecosystems inside and outside the park boundary. Management of habitat continuity beyond the park boundary is an important contribution to the well-being of TTP's wildlife populations.
- Since hikers and other recreational users often travel into TTP from routes that begin outside the park boundary, a high quality wilderness setting adjacent to the park is important for the overall wilderness experience.

Protected Areas and Conservation Priorities

- There has never been a comprehensive assessment of conservation priorities in the planning region in the past. Therefore there is a need to assess and identify conservation priorities

and potential protected areas as the Dawson regional plan progresses. Criteria for protected areas would include ecological, cultural and recreational factors, and resource values.

- Waterways, wetlands, and riparian zones in the planning region provide important ecological functions, and can provide resilience to climate change.
- There is a need to establish long-term climate change monitoring in the planning region, with sites in each ecoregion or Ecological Land Classification unit that serve as permanent ecological benchmarks.

Tools & Information Products

- Outdoor Recreation Data Review – a report commissioned by Yukon Parks and contracted to Environmental Dynamics Inc.
- Recreation Features Inventory maps (to be digitized in 2011).
- Tombstone Territorial Park Management Plan (2009).
- <http://www.env.gov.yk.ca/parksconservation/tombstonepark.php>

RENEWABLE ENERGY

For the purpose of this report, 'renewable energy' is defined as energy which comes from natural resources such as sunlight, wind, rain, tides and geothermal heat; all of which are renewable or naturally replenished. Current renewable energy interests in Yukon include hydro electric, solar, wind, geothermal and biomass energy. (Note: In addition to the information below, the Yukon Energy Corporation will submit input on issues and interests directly to the DRPC.)

Interests

Hydro Electric - The Dawson region has recently and significantly lessened its dependency on diesel power generation in favour of hydro power from the Mayo dam located outside of the planning region. The North Klondike River was a source of power in the past for the Dawson region and could again be a source in the future. (See Section 7.8.1 of the Tr'ondëk Hwëch'in Final Agreement for reference to the North Fork Hydro Project.)

Solar - The Dawson region receives on average approximately 2.66 kWh/m² of solar radiation in any given day making solar energy a viable technology for producing both heat and electricity; however, the current economics of the energy sector make the use of large scale solar energy projects in the region unlikely in the short term. This region may see an increase of smaller scale solar projects associated with existing residential/commercial development.

Wind - The wind speed has been measured at several sites (approximately six) in the Dawson region and all sites have shown a poor wind regime, with wind speeds under five metres per second. This does not mean that there are no suitable sites in the region. The best wind regimes are on high mountain tops, but not at the specific locations where the wind was measured in the Dawson region. The findings in the Dawson region are consistent with other areas in the Yukon.

Geothermal - No records or research on geothermal resources in the Dawson City region.

Biomass - See Forestry section for a description of the resource and a current bio-energy project.

Issues

- Access is needed for potential future renewable energy producers in the region to be able to connect to the Yukon's electrical energy grid.
- Renewable energy development needs to be undertaken in an environmentally, social and economically sustainable manner.

Tools & Information Products

- The "Energy Strategy for Yukon" dated January 2009, is available at http://www.energy.gov.yk.ca/energy_strategy.html.
- A renewable energy resource map is available at http://www.energy.gov.yk.ca/renewable_energy_map_viewer_jump.html.

TOURISM

Interests

- The Dawson region is a premier destination for visitors to the Territory. Regional tourism is an important contributor to the Yukon economy.
- The Yukon River, Dempster Highway, Tombstone Territorial Park and wilderness areas accessed from rivers and the Dempster Highway north of Dawson City are particularly important.
- Historic sites and travel routes play a key role in supporting the region's tourism sector as attractions and as the basis for interpretation of the region's ancient and recent history.
- Canoeing, hiking, motorized boat tours and summer and winter events are the most popular visitor activities:
 - Annually, 14-18 tourism operators, the majority of which are Yukon-based, guide over 300 multi-day canoeing clients on the Yukon River; and 1,500 tourists rent canoes for self-guided trips on the Yukon River.
 - About 15,000 tourists take motorized boat trips on the Yukon River each year, mostly between Dawson and the Yukon-Alaska border and return.
 - From 1995 to 2007, annual visitation to the Dempster Highway Interpretive Centre grew from about 3,000 to over 12,000. Approximately 20 tour companies include the Dempster Highway and Tombstone Park as part of a Yukon tour, and six companies, the majority of which are Yukon-based, guide multi-day trips into the Park.
 - Three outfitters guide hunts in the planning region.

Issues

- Tourism is a resource-based industry. The continued success of existing tourism businesses and potential growth in the Dawson planning region depends on maintaining important resources that tourism is based on.
- Industrial activity and related access can have negative impacts on wilderness, wildlife and historic resources that support tourism. Areas of particular concern include:
 - Aesthetics, water quality and safety considerations along the Yukon River corridor;
 - Development activities near Tombstone Park boundaries that affect tourism values;
 - Guided hunting activity and wilderness and wildlife values that support guided hunting;

- Scenic viewsapes and access to recreation activities along the Dempster Highway and river corridors; and
- Impacts of new ground access on Yukon Quest International Dog Sled Race route. (See discussion of Dawson Trail in Transportation section.)
- Increased resident and visitor use of popular routes and destinations may impact environmental and cultural values and resources.

Tools and Information Products

(See Dawson Regional Land Use Plan Tourism Information Report for more information and detail.)

- Yukon Wilderness Tourism Status Report.
- *Yukon Wilderness Tourism Licensing Act* trip and rental report information.
- Klondike Regional Land Use Plan: Outdoor Recreation Data Review.
- Draft Wilderness Tourism Resources and Activity map for the planning region.
- 2004 Yukon Visitor Exit Survey border crossing data and other visitor data.

TRANSPORTATION

Interests

The Klondike, Dempster and Top of the World highways are important transportation facilities in the planning region. There are many maintained secondary highways and unmaintained roads in the region as well providing access to residential, commercial, recreational, cultural and industrial properties and/or land uses. The Dawson Airport provides a vital transportation service to the region. Several other airstrips serve a variety of economic and public safety purposes. Chapman Lake and McQuesten Field airstrips are managed by YG Highways and Public Works (HPW). HPW also retains tenure on a number of road building and maintenance material sources in varying stages of development.

Issues

- The need to preserve the ability to provide reasonable ground access within the region in response to confirmed access needs.
- Continued operation and ongoing development of existing construction and maintenance material sources, including sources of water.
- Need to develop new material sources as existing sites are exhausted and new sites are identified.
- Potential for development of new roads or other infrastructure in response to economic or other development that requires transportation service. Wherever possible, linear infrastructure development, such as roads, power lines and pipelines, should be grouped within a corridor.
- Potential replacement of ferry service at Dawson City with a permanent bridge.
- Major upgrading of Klondike Highway requiring realignment.
- Location of Dawson Airport and its proximity to the Klondike Highway.
- Potential year round operation of roads now operated seasonally.
- The Dawson Trail and other connecting accesses are not all-season routes, but may have potential for all-season access to the White Gold region. There are multiple and varied uses of such trails including tourism, dog-mushing, mining, hunting and recreation. There is a need for access planning and consideration of cumulative effects. (See Environmental Assessment section.)

WATER RESOURCES

Interests

- The Water Resources Branch is committed to the preservation, conservation and sustainable use of water resources in the region.
- As of June 2011, Water Resources Branch is responsible for: three active and 12 inactive hydrometric stations, three active and one inactive snow survey courses, one active groundwater monitoring site, and one active water quality monitoring network station (operated in partnership with Environment Canada) within the Dawson Planning Region.
- There are several active water licences in the region which the Water Resources Branch enforces under the *Waters Act*.

Issues

- This is a data sparse region. Therefore, increased water quality and quantity baseline data is required to adequately understand and support the impacts to water of future developments.
- The use of historical hydrometric data (there is little current data) for design purposes could result in inadequate design.
- Climate change could significantly alter flow regimes and water quality (with respect to elements liberated from permafrost such as organic carbon).
- Due to the acidity of soils, disturbance of the soils has the potential to impact water chemistry.
- The long winter and limited flow regimen severely limits human water use and the dilution of contaminants.
- Future industrial demand for water is expected to increase which may impact water quality and quantity.

Tools & Information Products

- Yukonwater.ca available at: <http://yukonwater.ca/>.
- Yukon Snow Survey Bulletin and Water Supply Forecast available at http://www.env.gov.yk.ca/monitoringenvironment/snow_survey.php.
- River Flood Forecasting (data maintained internally by Water Resources Branch).
- Yukon Hydrometric Network - historical data from 1975 to 2004 available at <http://www.env.gov.yk.ca/pdf/hydrometricmanual2005.pdf> (data since 2004 is maintained internally by the Water Resources Branch).
- Yukon Meteorological Network (data maintained internally by Water Resources Branch).
- Yukon Wide Long-Term Groundwater Monitoring Program (data maintained internally by Water Resources Branch).
- Yukon Water Well Registry - data available through the Groundwater Information Network at http://ngwd-bdnes.cits.nrcan.gc.ca/service/api_ngwds:gin/en/wmc/aquifermap.html.
- Pacific Yukon Water Quality Monitoring Program data available on Environment Canada's website at <http://ec.gc.ca/eaudouce-freshwater/Default.asp?lang=En&n=95862893-0>.

CONCLUSION

Yukon government departments have identified a very wide range of technical interests and issues for the Dawson Regional Planning Commission (DRPC) to consider in developing a regional land use plan. As noted at the start of this document, the interests and issues listed are technical in nature, and not necessarily exhaustive or reflective of Yukon Government priority and policy.

The many contributors to this document throughout Yukon government have a wealth of knowledge and experience that will be provided to Dawson Regional Planning Commission (DRPC) in the preparation of the Dawson Regional Plan, particularly during the next Resource Assessment stage of the planning process. Should there be any questions or need for further information about this report or concerning other documents and expertise within Yukon government; pursuant to Section 11.1 and Appendix A of the Terms of Reference for DRPC, please contact the Yukon's Technical Working Group member for further details, meetings, briefings or transmittal of information between DRPC and Yukon government.

Yukon looks forward to the next stages of the planning process, and to continued productive and positive work efforts with the Dawson Regional Planning Commission.

APPENDIX 1: EXISTING AND ONGOING PLANNING AND POLICY PROCESSES AND REGULATIONS IN THE DAWSON REGION

The Yukon government sectoral planning report (as of July 2011) identified the following planning processes for the Dawson Planning Region:

- Tombstone Territorial Park Management Plan, 2009.
- A draft Tombstone Corridor plan prepared by an internal Yukon Government working group will be undergoing internal reviews.
- Regular North Yukon Oil & Gas disposition processes are proceeding.
- Mineral assessments will be conducted in support of regional land use planning.
- *Dempster Highway Development Area Regulations* pursuant to the *Area Development Act*.
- Yukon Common Oil and Gas Regime Overview.
- Dawson Heritage Management Plan.
- Dawson Tourism Plan.
- Dawson Forest Resources Management Plan (draft).
- Local area planning for West Dawson and Sunnydale.
- Regional Economic Planning pursuant to Chapter 22 of the Tr'ondëk Hwëch'in Final Agreement.