City of Whitehorse

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Contents

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Introduction

The City of Whitehorse has been practising and adopting the principles of sustainability for a number of years. This report includes many City of Whitehorse previously adopted sustainable practices and policies.

Like many urban communities across Canada, Whitehorse's existing infrastructure is aging and needs to be replaced. There is not the ability for municipalities across Canada to raise the dollars necessary to repair and replace infrastructure and to manage growth. Municipalities do not have the legislated ability to raise the amount of money necessary to respond to what has been referred to as the "infrastructure deficit".

In response to the "infrastructure deficit" the Government of Canada established a program called the New Deal for Cities and Communities. This program provides funding from federal gas tax revenues. The Yukon Government and Canada entered into the Gas Tax Agreement in 2005. As part of the agreement all Yukon communities and Yukon First Nations are eligible for gas tax funding for capacity building, planning and infrastructure.

The City of Whitehorse entered into a contribution agreement for planning and capacity building with Yukon Government in 2006 to complete an Integrated Community Sustainability Plan.

The Government of Yukon created a Yukon Integrated Community Sustainability Plan (ICSP) Template in cooperation with the Council of Yukon First Nations and the Association of Yukon Communities. This template provides a framework for development of the ICSP's for communities and first nations and a minimum requirement in which ICSP's will be reviewed by the Review Committee for approval. If the Review Committee approves this ICSP the City of Whitehorse will be eligible for funding under the Community Works Fund to begin working on infrastructure improvements. This report responds to the Yukon Government ICSP Template.

Process

This Plan is the first part of a two part plan and process for Whitehorse's Sustainability Plan. The City of Whitehorse has completed this plan in-house with an Integrated Community Sustainability Plan Project Manager, a Project Team, City Council, through a number of community interviews and a one day public value and visioning session on May 23rd, 2007 in Whitehorse. The public has been invited throughout the process to participate through advertising in the Yukon News and Whitehorse Star.

The groups and individuals who participated in the process are listed in an appendix to this report.

The City of Whitehorse thanks all those participated in the development of this plan and we look forward to their continued involvement as the City of Whitehorse enters into phase 2 of the process.

ICSP City of Whitehorse Project Team:

Lesley Cabott, Project Manager
Valerie Anderson, Manager Financial Services
Brian Crist, Director of Operations
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Robert Fendrick, Director of Administrative Services
Mike Gau, Manager of Planning and Development
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Jim McLeod, Manager of Public Works
Dave Muir, Manager of Transit
Linda Rapp, Manager of Parks and Recreation
Sabine Schweiger, Environmental Coordinator
Wayne Tuck, Manager of Engineering and Environment
Jen Turner, Environmental Coordinator
George White, Manager of Maintenance and Safety Services

Phase 2: What's to Come

The second part of the Sustainability Plan is a Community Sustainability Charrette. The Charrette is set for October 22nd to October 25th 2007. During the Charrette the community will develop a comprehensive sustainability plan and strategic plan. These plans will be more comprehensive in scope and will reach out to the community at large. The charrette will incorporate what was learned from the development of this template and go beyond into all aspects of our community.

This plan, as stated in the template, is focused on the development of sustainable city infrastructure that improves air quality, water quality and reduces green house gas emissions. The next phase will include planning and strategies for all sectors in the community.

Areas that were considered in the development of this plan and will be further explored in Phase 2 include:

- Climate change
- Businesses and economy
- Health, social and justice issues
- Aging population
- Affordable housing
- Renewable energy
- Reducing our footprint on the earth's surface
- Yukon Carbon Fund

Whitehorse residents will need to come together to respond to the changes and challenges as we develop, grow, sustain and make decisions over the next 50 to 100 years. Keeping in mind the vision:

> "Whitehorse will be a well planned self sustaining community that is a leader in energy conservation and innovation that maintains and conserves wilderness spaces for future generations. Whitehorse will continue to strive for a better quality of life that is reflected in its vibrant economy and social life."

This is the challenge in Phase 2.

Community Profile

Whitehorse is the largest city in the Yukon Territory. It is the political and commercial capital of the Yukon and is home for the majority of Yukon residents. Whitehorse is a vibrant, modern city that played host to the 2007 Canada Winter Games.

Whitehorse is located along the Yukon River in the south central area of Yukon and is Canada's most north-westerly city.

Whitehorse is a large municipality geographically. Whitehorse developed over the past 100 years linearly along the Alaska Highway and Yukon River. From north to south the city extends approximately thirty kilometres and is forty-one thousand, six hundred hectares in size. Whitehorse is a picturesque city surrounded by the mountain peaks of Haeckel Hill, Mount McIntyre, Golden Horne and Grey Mountain.

The downtown/central business district is located in the geographic center of Whitehorse. The settlement radiates north and south from the downtown along the Alaska Highway. The pattern is non-contiguous offering natural open space amongst the twenty-four residential neighbourhoods ranging in densities from less than 4 units per hectare in the country residential neighbourhoods to over 40 units per hectare in the downtown.

Urban Residential ***> 40 units/ha.***	**Suburban Residential** ***14 to 40 units/ha***		**Country Residential** ***< 4 units/ha***	
Downtown	Riverdale	Hillcrest	Hidden Valley	Wolf Creek
	Porter Creek	McIntyre	MacPherson	Pine Ridge
	Crestview	Granger	Cowley Creek	McRae
	Kopper King	Arkell	Spruce Hill	Canyon Crescent
	Valleyview	Logan	Mary Lake	McLean Lake
	Takhini	Copper Ridge	Wolf Creek	Lobird

Source: City of Whitehorse 2002 OCP

History

The settlement of Whitehorse developed as a river/railway transportation hub and tent city in response to the Klondike Gold Rush in 1898. Historically the area of Whitehorse on the Yukon River was used by first nation's people for food gathering and a meeting place. The first nation's people by the nature of their mobile lifestyle did not establish a large village but rather trails, fishing and camping spots on a seasonal basis. Some of these traditional places are protected today by the Kwanlin Dun First Nation and Ta'an Kwach'an Council through their respective land claim and self government agreements. More however have been lost to 20th century development following the arrival of Europeans, in response to the Klondike Gold Rush. Following the building of the White Pass and Yukon Railway during the Klondike Gold Rush that linked Skagway and Whitehorse, Whitehorse began its role as the center of goods and services and transportation in and out of the territory. This role continues today. The second large influx of people into Whitehorse came during the Second World War when thousands of American Army personnel arrived in Whitehorse to construct the Alaska Highway. It was during this time that suburban development occurred with the residential development of Takhini, up the Two Mile Hill and outside of the downtown core. This type of post second world war development pattern was happening throughout North America and Whitehorse responded.

In 1950 Whitehorse became a city; in 1953 the Capital of the Yukon was moved from Dawson City to Whitehorse. Whitehorse continues today as the government center of the Yukon. The Territorial Government, the Council of Yukon First Nations, First Nation Governments, the Federal Government and the Municipal Government are major employers in Whitehorse and ensure economic stability.

In addition to governments Northwestel, Yukon Electric, (ATCO) and Air North are major private industry employers.

Whitehorse offers regional services to Yukon communities and southeast Alaskan communities. Amongst these services is retail, medical, transportation and education. The Whitehorse General Hospital receives and provides care for all Yukon residents. The Whitehorse International Airport has regular air service to Yellowknife, Vancouver, Edmonton, Calgary, and Alaska. During the summer there is also regular air service to Europe.

There are four secondary schools, eleven elementary schools in Whitehorse. The main campus of Yukon College, which in partnership with other institutions offer university degree programs, is located in Whitehorse.

Physical Environment

The terrain of the Whitehorse area is attributable to the last ice age, which occurred between 35,000 and 10,000 years ago. The Whitehorse area is made up of sequences of glacial, glacio-fluvial and glacio-lacustrine deposits.

The Whitehorse Copper Belt runs through the City on the east side of the Alaska Highway from the Crestview subdivision to the southern city border. The area has been mined intermittently over the past 100 years and has contributed at various times significantly to the development of Whitehorse. There is no mining activity at the present though from time to time new areas are staked. The City of Whitehorse works with the Yukon Mining Recorders office to mitigate impacts. It is unlikely that until metal prices are high enough and milling and production facilities are close by, will the Whitehorse Copper Belt will see renewed activity. The City of Whitehorse protects the Copper Belt area in the 2002 OCP for potential mineral extraction.

Vegetation in the Whitehorse area is a mixed forest of white spruce, lodge pole pine, aspen and willow. On south facing slopes aspen parkland communities and grassland ecosystems composed of juniper, kinnikinick and grasses are quite extensive.

Whitehorse has a diversity of wildlife. The wildlife includes: bears, moose, elk, foxes, coyotes as well as a variety of aquatic and avian species. The City of Whitehorse has also complied significant salmon habitat mapping. The City of Whitehorse through its Official Community Plan and Zoning Bylaw has protected the significant wildlife corridors within the City. Those corridors include Yukon River, McIntyre Creek, Croucher Creek, Wolf Creek, and Cowley Creek. Over 60% of the City is protected as having environmental and/or recreation/green significance.

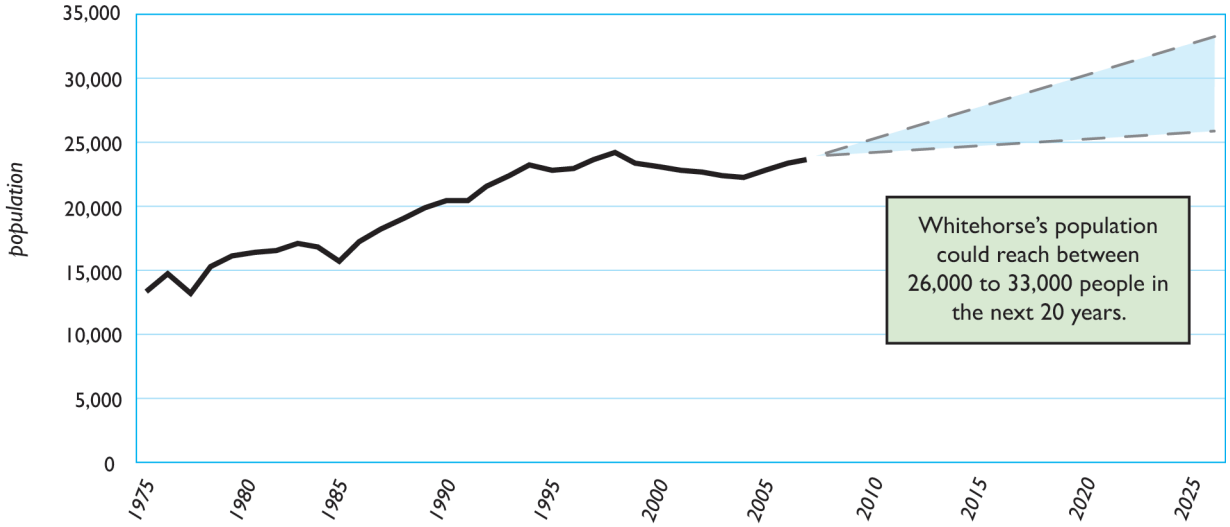
Population, Growth and Characteristics

The population of Whitehorse is growing and in December 2006, Whitehorse reached its peak population of 24,151. Well into the 20th century Whitehorse's population fluctuated based on the mining industry. Downturns in the economy saw people move out of the territory and the population decrease. Today, the population of Whitehorse is growing. In the past 20 years Whitehorse has grown by 10,000 people and statistics show these people are staying. The Whitehorse population of the past tended to be very mobile. Today 85% of the city's population have lived in Whitehorse for five years or more.

The number of births for the Yukon is declining and the number of deaths is increasing. Hence the Yukon and the City of Whitehorse will continue to rely on in-migration for population increases.

Utilizing the projected growth rates ranging from .5% as the low to 2.0% as the high as detailed in the Whitehorse Official Community, Whitehorse's population could reach between 26,000 to 33,000 people in the next 20 years.

Population Growth for the City of Whitehorse 1974 to 2006



Source Porter Creek Bench Socio- Economic Report, Nov 2006

Whitehorse's population is aging. This demographic will play a significant role in how resources and planning relating to life style, health, labour market, social programs and housing are managed in the coming years. The fastest growing age group in Whitehorse is those over 55 years of age. There has been an increase of 134% of Whitehorse residents over the age of 65 since 1996. This increase is the largest percentage in Canada *(Canadian Urban Land Institute)*.

Fifteen percent of the population of Whitehorse are First Nations people. The Ta'an Kwach'an Council and Kwanlin Dun First Nation have settled land claim agreements with Canada and Yukon. Both First Nations own land within the City of Whitehorse. The Whitehorse area First Nations have established governments and are developing legislation, policy and institutions to protect, develop and manage their land within the City. The First Nations have been practicing sustainable ways for centuries, their participation in this process and their sharing of information is invaluable.

Economic Characteristics

From 2001 to 2006 the total economic output for Yukon increased at an average annual rate of 2.4 percent. Tourism, construction and mineral exploration have contributed to this increase. The construction and Canada Winter Games associated investment contributed to the growing economy in the past 3 years.

The unemployment rate decreased from 2001 to 2006 from 11.6 percent to 4.7 percent in 2006. The strong labour market continues into 2007. Most of the economic output in Yukon is generated through personal and government spending on goods and services in Whitehorse.

Those employed in the government sector continues to rise and offer stability to Whitehorse's economy. In 1997, 21% of the Whitehorse labour force was employed in the government services sector. (StatsCan 1997) In 2001, 24% of the Whitehorse labour force was employed in the government services sector. *(StatsCan 2001)*.

The number of people employed by government is increasing, the number of people employed in private business is decreasing and the number of those being self employed has increased. *(Gartner Lee and Vector Research for City of Whitehorse, 2006).*

The average weekly earnings for Yukoners has increased by 20.8% in nominal terms (not taking into account inflation) between 1991 and 2005, however in real terms, earnings have decreased 3.3% (taking into account inflation).

Mineral exploration and mine development investment are expected to drive economic growth.

Arts and Culture

Whitehorse has a rich history in transportation, mining and First Nation's tradition and culture. There are a number of historic sites in Whitehorse; some are protected through the First Nation Agreements. These sites include old mines, wood lots, fox farms, buildings, archaeological areas, cemeteries and burial areas. The City of Whitehorse passed a Heritage Bylaw in 1997 and continues to work with governments and private individuals to protect significant historical buildings. The City of Whitehorse has a heritage inventory.

There are five museums in Whitehorse; MacBride Museum, Yukon Transportation Museum, Yukon Beringia Center, the Old Log Church and the Miles Canyon Railway Museum, showcasing the Copperbelt area of Whitehorse.

Whitehorse has a vibrant arts community. The 2001 census identified 505 people employed in arts, culture and recreation and sport. In 2004 the Yukon Government completed the Yukon Cultural Industries Labour Force Study which confirmed that cultural occupations in the Yukon have seen extraordinary growth. Employment in the cultural occupations has grown by more than one third since 1991.

Employment and growth within the cultural industries relies heavily on financial support, particularly from government. Much of the financial support for Whitehorse artists and cultural workers comes from the Yukon Government. The City of Whitehorse provides support for festivals and events through in kind services and tax and utility grants for cultural facilities. The Yukon Government funds personal artist development, provides operating grants, and projects funds for events as well as providing the legislated approvals.

Health

Whitehorse is the regional center for health in Yukon. The Whitehorse General Hospital is a regional facility serving all of Yukon. The majority of Yukon health care providers and services are situated in Whitehorse. The Department of Health and Social Services provides three main areas of service:

1. Health Services

- Insured Health and Hearing Services
- Community Health
- Community Nursing
- Emergency Medical Services

2. Social Services

- Family and Children Services
- Social Services
- Regional Services in the Communities

3. Continuing Care

- Extended/Complex Care
- Intermediate and Community Care

Community Vision Statement

"Whitehorse will be a well planned self sustaining community that is a leader in energy conservation and innovation that maintains and conserves wilderness spaces for future generations. Whitehorse will continue to strive for a better quality of life that is reflected in its vibrant economy and social life."

From May 23rd, 2007 Community Value and Visioning Session, Hi Country Inn

Community Values

Whitehorse Residents Value a Sense of Community

Whitehorse has a small town feel and yet offers many larger city services. People are friendly and involved in the community. There is a high level of community involvement. Residents value the uniqueness of our community and celebrate the diversity of our people.

Whitehorse Residents Value Their Quality of Life

Whitehorse is a safe community that offers a balanced lifestyle. Residents of Whitehorse value the opportunities to be challenged in their work and recreate nearby. We value the intergenerational mix of our population, access to health care and the educational opportunities available.

Whitehorse Residents Value the Natural Beauty and the Closeness to Nature

The Yukon River runs through Whitehorse and our city is surrounded by mountains. Our residents value the nearby access to the wilderness. Residents value the wildlife, green spaces and trails in our neighbourhoods and the connections to other neighbourhoods. We value clean air and clean water.

Whitehorse Residents Value Leadership

Whitehorse has world class recreational, cultural and educational facilities. We are leaders in business, science, culture and sports. We are proud of our accomplishments and support innovators and new ideas.

Whitehorse Residents Value the Contributions of First Nations

The Kwanlin Dun First Nation and the Ta'an Kwach'an Council have Final and Self Government Agreements. We value the First Nations' culture, traditions and governments. We value and respect their stewardship of the land. Whitehorse residents value the participation and contribution of the Kwanlin Dun First Nation and the Ta'an Kwach'an Council and their people.

Whitehorse Residents Values our Vibrant Arts and Cultural Community

Whitehorse residents are proud of our heritage and the numerous community events and celebrations that we enjoy. We value and support our many artists. We celebrate their unique and diverse works and performances. We value the cultural facilities which attract outside artists to perform and exhibit in our city.

Whitehorse Residents Value Local Businesses

Whitehorse residents value the ability to shop locally and support local businesses. Whitehorse residents are proud of Whitehorse/Yukon based businesses.

Whitehorse Residents Value...

Value	Goal	Measure of Success
Sense of Community	*Provide opportunities for community participation in City projects*	High degree of community "buy-in"
	Protect the small town feel	Neighbourhood meeting points Create a sense of place Keep each neighbourhood special Develop architectural guidelines for neighbourhoods
	Complete the development of the waterfront	Vibrant riverfront with traffic on the river
	Create common community image	Increased level of social interaction in Whitehorse
	Promote intergenerational interaction	Intergenerational urban gardening program Integrate schools into the community
Quality of Life	*Ensure a healthy population*	Lower health care costs Lower disease rates Lower obesity rates in children Lower drug and alcohol use Higher participation in recreation Less dependency on social programs
	Whitehorse is a good place to live and work	Diversity in housing choice and cost Balance human and wildlife habitat Safe community Locate new neighbourhoods close to existing services Eliminate urban sprawl
	Ensure pedestrian safety	Increase kilometres of safe sidewalks Landscape and streetscape the urban environment
	Preserve green spaces	Percentage of land protected Five minute walking distance to green space from residence Greenway Plan Trail Plan Ecological integrity maintained Plans are done before development
	Educational opportunities for all ages	Increase kilometres of formal trails Environmental education is available for youth. Increase the innovators in the school program. Develop innovative educational programs for all ages.

Continued...

Value	Goal	Measure of Success
Natural Beauty and Closeness to Nature	*Develop trail connections*	Hard-surfaced trails connecting all neighbourhoods Multi-use trails Trail conflicts have decreased Habitat corridors are protected Trails are linked to transit system
	No loss of green space	Increase density Redevelop existing disturbed/built lands Regional Land Use Plan
	Increase stewardship	Partnerships with First Nations Educational programs
	Protect Wildlife and Preserve Wilderness areas	Monitor wildlife habitat and populations Maintain important wildlife corridors Wildlife sightings remain frequent Protect watersheds Preserve access to wilderness
	Ensure safe, secure and clean drinking water	Water meets/exceeds National Standards Use 100% groundwater for drinking water Replace Selkirk pump house
	Reduce water consumption	Implement a water metering program Allow separate grey water systems
	Reduce green house gas emissions	Work towards being carbon neutral Increased transit ridership Infill and high density housing Carbon fund established Increase transit service Use Bio-diesel for buses Less vehicle idling Good air quality
	Establish green building regulations	Partnerships with Yukon Housing and First Nations All new government buildings are LEED Certified Demonstration projects Net Zero
	Reduce waste	Commercial composting Cart program city wide City-wide blue box program Reduce, reuse, recycle
	Reduce use of non-renewable energy	Increase KW produced through wind, solar, hydro, thermal and waste heat

Value	Goal	Measure of Success
Contributions of the First Nations	*Healthy First Nation culture*	Full participation in planning, decision making and management Use of traditional knowledge Culture and language is maintained Self-sufficiency Healthy land and wildlife
	Partner with First Nations	Increased cultural awareness Protection of special places
Leadership	*Retrofit existing buildings*	Incentives to green up buildings Innovative financing
	Support an innovation Cluster	Yukon College Leading academics
	Participate in Demonstration Projects	Porter Creek Bench Sustainable Neighbourhood New Fire Hall LEED certified Solar Panels on Shipyards Park Building Bike Lockers in the downtown Net Zero buildings
	Maintain and enhance indoor and our recreational facilities	Increase in Yukon athletes Increase in participation rates Increase in number of events
Vibrant Arts and Cultural Community	*Foster a vibrant and accessible arts and cultural community*	Increased arts infrastructure Increased arts promotion Partnerships Broad participation in the arts Sport tourism Artist's products are diverse High level of youth participation Number of events
Local Businesses	*Support locally produced goods and food*	More local producers
	Thriving local businesses	Local business adapts to change Local businesses develop niche market More small box retail

Integrated Community Sustainability Template Assessments

Community Inventory and Assessment Checklists:

Capital Project Infrastructure Inventory and Assessment

- Use this list to identify important structures, utilities and transportation assets and the needs that exist in your community.
- If there is something missing from the list add it under "other".
- If an item doesn't apply to your community, leave it blank.

Capital Project/Infrastructure	Do you have it? Yes/No	What is the condition? Good/Avg/Poor	Is there enough? Yes/No	Do you need it? Yes/No
City Hall	Yes	Avg	No	Yes
Airport	Yes	Avg	Being upgraded 2007	Yes
CGCCommunity buildings	Yes	Good	Yes	Yes
Community Hall	No			Yes
Dock facilities	2	Avg	No	Yes
Community energy systems	Yes	Avg	Yes/No	Yes
Fire Station	2	Avg Downtown 2 Mile poor	No	Yes
Health clinic	Yes	Good	Yes	Yes
Housing	Yes	Good/avg/poor	Yes	Yes
Internet service	Yes	Good	Yes	Yes
Library	Yes	Good	Yes	Yes
Police building	Yes	Good/ Avg	Yes	Yes
Post office	Yes	Good/ Avg	Yes	Yes
Recreation (parks)	Yes	Good	Yes	Yes
Roads	Yes	Avg	No	Yes
Schools	Yes	Good/avg	No	Yes
Sewage collection and disposal	Yes	Good/ avg	Yes/ no	Yes
Solid waste disposal	Yes	Good/ avg	Yes/ no	Yes
Water service	Yes	Good	Yes	Yes
Public transportation	Yes	Good	No	Yes
Active transportation	Yes	Good	No	Yes
Youth centre	Yes	Avg	Yes	Yes
Municipal Services Building	Yes	Poor	No	Yes
Transit Building	Yes	Poor	No	Yes
Parks Building	Yes	Poor	No	Yes

Community Inventory and Assessment Checklists:

Social, Health, and Cultural Services Inventory and Assessment

- Use this list to identify important cultural and social service assets and the needs that exist in your community.
- If there is something missing from the list add it under "other".
- If an item doesn't apply to your community, leave it blank.

Resource Category	Type of Service	Does this exist? Yes/No	Can it be improved? Yes/No
Health	Nutrition	Yes	Yes
	Weight loss	Yes	Yes
	Aids prevention	Yes	Yes
	Substance abuse	Yes	Yes
	Family planning	Yes	Yes
Public Safety	Police protection	Yes	Yes
	Fire protection	Yes	Yes
	Emergency response	Yes	Yes
	Search and rescue	Yes	Yes
Recreation Programs	Small children	Yes	Yes
	Teens	Yes	Yes
	Adults	Yes	Yes
Social Service Programs	Child care	Yes	Yes
	Domestic violence	Yes	Yes
	Seniors	Yes	Yes
	Disability services	Yes	Yes
	Counselling – adults	Yes	Yes
	Counselling – teens	Yes	Yes
	Legal services	Yes	Yes
	Suicide prevention	Yes	Yes
Self Government	Self government status	Yes	N/A
Cultural Programs	Elders group	Yes	N/A
	Music	Yes	Yes
	Subsistence food preparation	Yes	N/A
	Dance group	Yes	Yes
	Arts and crafts	Yes	Yes
	Language programs	Yes	Yes
	Spirit camps	Yes	Yes
	Storytelling	Yes	Yes
	Other		

Community Inventory and Assessment Checklists:

Economic Inventory and Assessment

- Use this list to identify important economic and human resource assets and needs that exist in your community.
- If there is something missing from the list add it under "other".
- If an item doesn't apply to your community, leave it blank.

Community Profiles			2007
Source Stats Canada 2001			

Industry	Number of Whitehorse residents employed in the particular industry
Agriculture and other resource based industries	430
Manufacture and construction industries	1,185
Wholesale and retail trade	1,940
Finance and real estate	505
Health and education	2,180
Business services	2,295
Other services	4,805

Occupation	Number of Whitehorse residents employed
Management occupations	1,795
Business, finance and administration occupations	2,580
Natural and applied sciences and related occupations	910
Health occupations	615
Social science, education, government service and religion	1,665
Art, culture , recreation and sport	505
Sales and service occupations	3,000
Trades, transport and equipment operators and related occupations	1,860
Occupations unique to primary industry	235
Occupations unique to processing, manufacturing and utilities	180

Community Inventory and Assessment Checklists:

Environmental Inventory and Assessment

- Use this list to identify basic environmental assets and the needs that exist in your community.
- If there is something missing from the list add it under "other".
- If an item doesn't apply to your community, leave it blank.

Environmental Assets/Needs	Do you have it? Yes/No	If this is lacking, does your community need it? Yes/No
Safe drinking water	Yes/ no	Yes
Adequate supply of water	Yes/ no	Yes, need ground water
Certified water treatment operators	Yes	Need more training
Safe sewage disposal and treatment	Yes	Yes
Permitted landfill	Yes/ no	Yes
Recycling program	Yes	Yes
Used oil storage area	Yes / no	Yes
Lead acid battery collection area	Yes	Yes
Developable land	Yes	More Downtown
Fuel spill prevention plan	Yes	Yes
Hazardous waste response plan	Yes	Yes
Erosion control	Yes	Yes
Contaminated sites identified	Yes/ no	Contaminated site on private property
Healthy subsistence food	Yes	Yes
Environmental Education programs	Yes	Yes
Healthy wildlife populations	Yes	Yes
Hazardous waste collection area	Yes / no	Certain days
Protected watershed plan	Yes	Yes
Environmental impact statement	Yes	Yes
Storm Water Treatment	no	Yes if new licenses require the City to Install

Community Inventory and Assessment Checklists:

Capacity Building and Job Training Inventory and Assessment

Capacity Building/ Training/Education Opportunities Category	Type	Does this job exist in the Community? Yes/No	Training/education needed? Yes/No	Is training available in the Community? Yes/No
The City Of Whitehorse Has 250 full time employees	CAO	Yes	Yes	No
	Accounting Officer	Yes	Yes	No
Education Yukon college 15 Schools	Principal	Yes	Yes	No
	Teachers	Yes	Yes	Yes
	Teacher aides	Yes	Yes	Yes
Health	Health aide	Yes	Yes	Yes
	Nurse practitioner	Yes	Yes	Yes
	Doctor	Yes	Yes	No
Transportation Utilities	Driver/pilot Transit	Yes	Yes	No
	Water treatment operator	Yes	Yes	Yes
	Sewage treatment operator	Yes	Yes	Yes
	Landfill operator	Yes	Yes	Yes
	Power plant operator	Yes	Yes	Yes
	Water delivery service operator	Yes	Yes	Yes
Justice	Judges	Yes	Yes	Yes
	Lawyers	Yes	Yes	Yes
	Correction Officers	Yes	Yes	Yes
Safety	Fire prevention officers	Yes	Yes	Yes more needed
	Hazardous waste	no	yes	No could be periodic
	Search & Rescue/ River rescue	no	yes	no

The City of Whitehorse is well served by professionals and trades people. Training as to new initiatives methodologies techniques, cultural awareness and other appropriate training are available in the community or travel out of the territories maybe required.

Service Agreements with Adjacent Governments: Existing and Potential

The City of Whitehorse has existing service agreements with the Yukon Government and the Kwanlin Dun First Nation Government. The service agreements include fire fighting and solid waste/landfill services.

There are opportunities to expand these services.

Fire Fighting Services with YG

The City of Whitehorse has a Mutual Aid Agreement with the Yukon Government and the following volunteer fire departments: Golden Horn, Mount Lorne, Marsh Lake, Ibex Valley, and Hootalinqua. The Mutual Aid Agreement allows those fire departments to request the services of the other fire departments to respond to fires and emergencies when requested at no charge. The community/hamlet fire departments operate with volunteer fire fighters. In the areas not serviced by an urban system, a water supply is not always readily available. This agreement allows for personnel and equipment to be shared.

The Whitehorse Fire Chief has suggested the agreement be extended to include Carcross, Tagish and Mendenhall.

Solid Waste/Landfill with YG

The City of Whitehorse War Eagle Landfill operates as a regional facility. Residential waste from Mount Lorne, Marsh Lake and Deep Creek are brought to the Whitehorse landfill. The City of Whitehorse charges $70.00/tonne and invoices the Government of Yukon $2,500 to $4,000 dollars a month for tipping fees.

The City of Whitehorse does not accept non residential waste from Mount Lorne, Marsh Lake and Deep Creek. Mount Lorne and Marsh Lake are controlled transfer stations/landfills and Deep Creek is not controlled. Deep Creek and Marsh Lake have seen an increase in metal refuge in the last few years which may attribute in part that it is an uncontrolled facility.

The Whitehorse landfill is the only managed landfill in the territory. There may be opportunities to expand the use of the landfill as a regional landfill for other communities. The Yukon Government has suggested that a 100 mile radius could be considered, this would then include the communities of Carcross, Teslin and Carmacks using the Whitehorse landfill. These communities are currently not operating any waste diversion programs.

Kwanlin Dun First Nation Agreements

The Kwanlin Dun First Nation has a garbage/land fill agreement with the City of Whitehorse. The Kwanlin Dun First Nation provide garbage pick up services in the MacIntyre subdivision. The Kwanlin Dun disposes of the residential waste at the Whitehorse landfill. The City of Whitehorse charges tipping fees to the Kwanlin Dun First Nation for approximately $2,500 dollars per month.

Following the 2005 Kwanlin Dun Land Claim Agreement the City of Whitehorse owns the developed roads in the McIntyre Subdivision and the Old Village and has easement agreements with the Kwanlin Dun First Nation for the below ground active infrastructure in the McIntyre and Old Village. Due to the road ownership and easement agreements the City of Whitehorse is responsible for the servicing and maintenance of the existing infrastructure. Any new infrastructure that may be developed on Kwanlin Dun lands will be owned by Kwanlin Dun First Nation until such time as it is developed to City of Whitehorse standards and turned over to the City.

The City of Whitehorse and Kwanlin Dun First Nation may choose to work together to develop additional infrastructure and consider operating and servicing agreements at that time.

Ta'an Kwach'an Council Agreements

The Ta'an Kwach'an Council has no current service agreements with the City of Whitehorse. The Ta'an Kwach'an Council are considering the development of a rural residential parcel of land across from the Hidden Valley subdivision which may include some land and/or servicing agreements. The Ta'an Kwach'an Council have worked with the City to bring water and sewer services to a waterfront parcel in the Shipyards Park yet to date have not developed the parcel. As the Ta'an Kwach'an Council makes development and land use decisions there may be additional opportunities to develop and operate infrastructure together and through agreements.

Infrastructure Descriptions/Priorities

As was identified in the introduction the City of Whitehorse requires infrastructure upgrades and replacements. The infrastructure that was built 50 to 75 years ago is old, failing, obsolete and not sustainable. The infrastructure that we build today needs to reflect our changing times; our population changes, our limited renewable resources, the climate and the environment.

The City of Whitehorse needs to address our preparedness for climate change impacts for all the infrastructure and services we are responsible for.

This section describes the state of the current City of Whitehorse infrastructure and Whitehorse's infrastructure priorities.

A healthy population and community, a thriving and accessible arts and cultural community and a vibrant business community are important to the long term sustainability of Whitehorse. The Gas Tax funding does not support infrastructure development specifically in these sectors.

Not all community priorities are within the scope or mandate of a municipal government. Community sustainability goes beyond jurisdictions as identified in the ICSP Template.

Eligible projects for gas tax funded projects need to improve air quality, improve water quality and/or reduce greenhouse gas emissions.

1. Water System

The City of Whitehorse's domestic water supplied is provided by a piped distribution system that draws water from Schwatka Lake and 5 ground water wells from an aquifer in the Riverdale neighbourhood. Currently, approximately 50% of the City's water supply is made of ground water used primarily in the winter and spring, when the surface water is very cold or is dirty due to spring runoff conditions. The groundwater is used in the winter to warm the water supply and avoid the high costs of heating with fuel, and in the spring when high surface water turbidity can affect effective chlorination of the potable water supply.

New expanded watershed and groundwater well management plans will be required to be implemented to improve the safety our City's water supply.

Water supply is currently treated only with chlorine. The Yukon does not have any water supply guidelines, but the City does follow the guidelines set by Public Health and the Canadian Drinking Water Guidelines.

After chlorination, the water is supplied to the city through the distribution system through five service areas consisting of a 5 reservoirs. The water system services an area of approximately 800 hectares from the neighbourhoods of Riverdale in the south to Crestview in the north. The water supply is pumped to the community from the main pumping station – Selkirk Pumping Station, which also distributes water to the downtown core and the neighbourhoods of Riverdale and Marwell. The Selkirk Water Pump house is over 50 years old and cannot meet maximum day water demands, new building and safety codes particularly for earthquake protection, and energy efficiency. The pipes and equipment are also old and are in constant need of repair. Water to the upper escarpment areas is supplied through the 2 Mile Hill Booster Station, which unlike Selkirk is a modern facility, sized to accommodate future population demands. Commercial and industrial areas, that obtain potable water supply are metered, while residential properties, with the exception of multi-family complexes which are also metered, are not metered, paying instead a flat monthly rate for water.

The rural areas of the City are not serviced from the City of Whitehorse water distribution system, but rely on private wells or on trucked water supplied by private businesses that draw water from the City's distribution system.

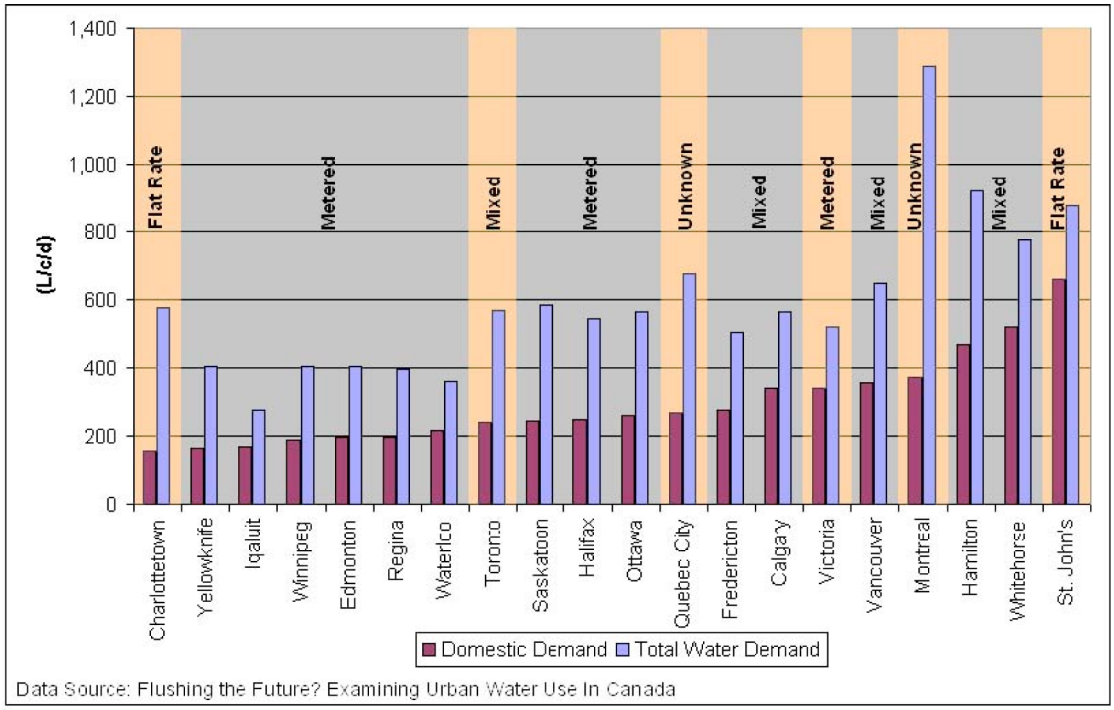
The Kulan, MacDonald, and portions of Marwell Industrial areas although located within the urban district of the City of Whitehorse, are not serviced with water and sewer mains.

The City currently employs sixteen full time persons for water and sewer maintenance. The operators are certified under the Environmental Operations Certification Program of British Columbia . Our training is through British Columbia Water and Waste Association. Operators require ongoing training to keep up their Certifications.

Two existing reservoirs in the older neighbourhoods are undersized and cannot meet the current Fire Underwriter's Association standards, and the maximum day demand requirements. Future population grow in those areas are also compromised.

The City of Whitehorse is a high water demand city as compared to other Canadian Cities in the "Flushing the Future? Examining Water Use in Canada."

Canadian Municipality Water Consumption (1999)



Data Source: Flushing the Future? Examining Urban Water Use In Canada

The City of Whitehorse 2003 Water and Sewer Study as prepared by Stantec lists a number of reasons for the City's high water usage. Those reasons include bleeding of water services and mains for protection from freezing weather, lack of metering, low cost to consumer for supply, low conservation efforts and water leakage. The Stantec Report makes a strong case for demand side management to decrease the costs associated with the City's water distribution system. The report recommends a number of demand strategies for the City to consider which include: continuing with leak detection and repair as required, bleeder reduction, education on conservation, residential metering, rate structuring to encourage conservation, economic incentives, regulations, politics, and low flow plumbing fixtures.

Currently, Whitehorse has an abundant, very good quality water supply that is not costly to supply as the only treatment currently being done by the City is chlorination. However, there are problems associated with ensuring a safe and potable water supply as the City does use unfiltered surface water. Particularly in the spring, the City struggles to meet the maximum day demand when the surface water supply is highly turbid.

The distribution system is extensive and expensive to maintain. Due to climate change and glacier melting, the City of Whitehorse, in 50 to 70 years, may not have the same amounts of water at the same times that we currently enjoy.

Needs for a more sustainable water system:

- New water supply wells in Riverdale to replace building and operating a surface water treatment plant
- Water distribution system is broken/cracked/poor pipe material/undersized in the Downtown, Marwell, Takhini North and Hillcrest neighbourhoods, and replacement to maintain service and eliminate waste through leakage.
- Upgrades to existing reservoirs to meet fire use, daily demands, growth/densification: Porter Creek and Valleyview
- Implement Demand Management Strategy such as water metering for residential properties
- Upgrade existing 1950's pump house for energy efficiency and safe drinking water.
- Elimination of bleeders.
- Establish permanent water sampling stations along the water mains
- Training for water system operators.
- Use materials in the construction of the systems that are sustainable.

2. Sanitary Sewer System

The City of Whitehorse consists of three independent sanitary sewer systems and two lagoons. The three systems are:

1. Marwell Lift Contributing Area
2. Porter Creek Sewerage System
3. Crestview Sewerage System.

Consistent with the water distribution system, the City of Whitehorse sanitary sewer system services the urban area of the City from Riverdale to Crestview. The rural areas remain non-serviced relying on in-ground private disposal systems and there is a minimal trucked sewage disposal.

The Marwell area is the largest system and services the urban areas from Riverdale and all area south of Porter Creek, including Downtown, Hillcrest, Takhini and Hillcrest expansion areas of McIntyre, Granger, Logan, Arkell and Copper Ridge. The system services approximately 15,000 people and has a capacity of 27,900. This system uses gravity and lift stations to transport the sewage across the Yukon River, past the old Whitehorse lagoons which are no longer in use (except as an emergency back-up), and onto the Livingston Trail Environmental Facility. Eighty percent of the City's sewage crosses the river through a buried underground force main built over 30 years ago.

The Livingston Trail Environmental Treatment Facility is a simple three cell lagoon system using primary and secondary treatment cells, followed by long term storage. Discharge occurs annually, and rather than discharging directly into the River, the treated effluent is disposed into a local lake, hydraulically connected to the River. The long term use of this lake is showing signs of failure, as the quantity of flow able to be discharged is less than when it started 10 years ago. A new outfall pipe directly to the River has been approved by the Yukon Water Board and may soon be required to avoid possible failure of the treatment system. Size of the lagoon has been based on lowering the per capita water use, similar to the Canadian Standard of 500 litres per capita per day.

The Porter Creek sewage system collects from four lift stations spread throughout the Porter Creek area and takes it to the Porter Creek gravity force main, located at the northeast corner of the Porter Creek neighbourhood. The system services approximately 4,100 people and has ultimate build out capacity to service 13,300 people. The sewage flows down the escarpment, under the Yukon River, and to the Livingston Trail Environmental Facility. The old Porter Creek lagoons are no longer in use, and this former lagoon area is proposed for remediation and restoration to make way for future residential developments in the lower bench area.

The Crestview Sewage system collects the sewerage from the Crestview neighbourhood only, and is treated at the Crestview Lagoons built over 30 years ago. This system serves approximately 800 people with no plans for expansion. However, there maybe opportunities to close the Crestview Lagoons and transport the sewage through a new development in the lower bench area and to the Livingston Trail Facility, then reclaiming the lagoon area for a new land use.

The City of Whitehorse will defer capital costs associated with sewage disposal if the demand side is more sustainable.

Needs for a more sustainable sewer system:

- Sewer mains need to repaired and/or replaced in the Downtown, Takhini North, Marwell and Hillcrest.
- New sewage outfall needs to be built for the Livingston Trail Treatment Facility
- Old Lagoons in Porter Creek and Whitehorse need to be abandoned
- Crestview Lagoon berms need repair; or close lagoon and transport sewage to Livingston Trail Treatment Facility
- Second pipe across river at Marwell and test and confirm condition of existing pipe.
- Training for sewage operators: Royal Roads
- Infiltration elimination assessment and repair
- Use materials in the construction of the systems that are sustainable.

3. Storm Sewer System

The City of Whitehorse storm sewer system consists of a number of smaller systems into which surface run-off is collected and drained to the Yukon River. The Downtown and Riverdale utilize a series of underground pipes which eventually flow out to the Yukon River. The 1997 DNA Downtown District Predesign Report advises that the 100 – year storm cannot be handled by the existing storm sewer pipe.

The City of Whitehorse has begun designing for 100 year storm surges rather than the 50 year surges that were traditionally used for the new subdivision developments, increased snow and a more frequent occurrence in storms in the spring have caused these design changes. Climate change adaptation should be integrated for storm water management.

Needs for a more sustainable storm management system

- Implement measures to mitigate the discharge of storm water into fish bearing streams so there is no impact on fish.
- Develop a standard for storm water management
- Develop a regulation to address onsite drainage for residential properties
- Require builders to construct to agreed to elevations
- Implement Climate Change Adaptation into new designs
- Use natural systems/wetlands/green systems and eliminate hard surface run-off.

4. Roads

There are over 220 kilometres of road for vehicle traffic in the City of Whitehorse. Approximately 60% of the roads are hard surfaced. The Alaska Highway is the main corridor through the City of Whitehorse and is under the jurisdiction of the Yukon Government. The arterial roads, which include Second and Fourth Avenues, Two Mile Hill, Robert Service Way, Mountain View Drive and Hamilton, are all connected to the Alaska Highway and the major areas of traffic generation.

The urban areas of Whitehorse that rate poor for road quality are also the areas that require water and sewer reconstruction. The areas include: Downtown, Marwell, Takhini North and Hillcrest. The DNA Downtown District Predesign Report 1997, reports the roads are generally fair to poor with alligator cracks, many trench patches, undulated and very coarse.

The rural roads are also rated as poor and require asphalt to lower the ongoing maintenance. Many of the rural roads have a BST surface.

This section deals specifically with roads and does not consider transportation as a whole. Active transportation and transit will be discussed in the next sections.

Needs for a more sustainable road system

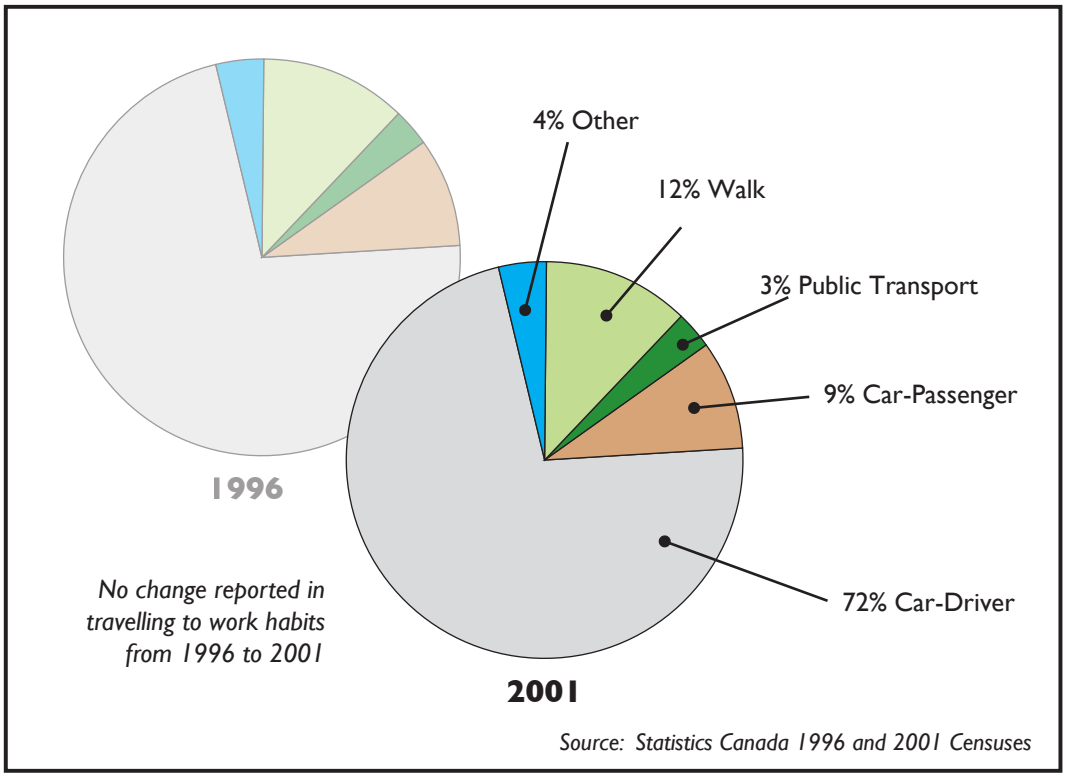
This section deals specifically with roads and does not consider transportation as a whole. Transportation will be considered in the next section.

- Roads need to be rebuilt in Marwell, Downtown, Takhini North and Hillcrest.
- Country Residential Neighbourhood roads require an asphalt service
- Establish and implement a pavement maintenance system.
- Rebuild 6th Avenue
- Reuse asphalt in lanes.

5. Active Transportation

"The traditional approaches to developing transportation plans and facilities within Whitehorse have not typically supported the goals of the community for the environment or the integration of alternative transportation modes such as cycling, walking and transit". *City of Whitehorse City-Wide Transportation Study UMA 2004.*

Mode of Transportation to Work for Whitehorse Residents



There was no change from 1996 to 2001 as to how Whitehorse residents travelled to work. However from City Transit statistics and anecdotal information the 2006 Canada Census should see a shift to more people walking/biking and/or using public transportation. This information will be available from Statistics Canada in the spring of 2008.

The City of Whitehorse in the past five years has been actively promoting alternative and greener methods for people to get to work and come into the Downtown. This has been done through the promotion of car pooling and active community programs (e.g., Commuter Challenge, Wheel to Work), zoning (decrease in parking requirements in the downtown), dedicated bike lanes, publishing a bicycle commuter map, reduction in bus fares for City of Whitehorse employees and improved walking trails from some neighbourhoods to the downtown.

The City of Whitehorse has more than 150 kilometres of trail that are considered significant city-wide trails such as connector trails, multi-use trails and bike paths. There are more than 700 kilometres of local or neighbourhood trails.

Needs for a more sustainable alternative transportation system

- Sidewalk improvements in the Downtown
- Construction of sidewalks: Lewes Boulevard west side from Selkirk to Nisutlin, Lewes Boulevard east side from Alsek Road to Hospital Road, Quartz Road from 2nd Avenue to Industrial Road.
- Installation of bike racks and bike lockers in the Downtown
- McIntyre Bridge reconstruction to connect Yukon College and Porter Creek to the Downtown
- Implementation of 2007 Trail Plan
- Improved trail connections at the Airport, Alaska Highway, Hillcrest, Takhini, Canada Games Center
- Black Street gully path connection
- Large employers consider reduced/free transit passes to their employees
- Upgrade (signage, paint and/or signals) at specific crosswalk locations
- Signal operation improvements to accommodate cyclists at Alaska Highway and Hamilton Boulevard and Two Mile Hill and Range Road
- Widening and repairing of Robert Campbell Bridge deck for creation of bike lanes

6. Public Transit

The City of Whitehorse operates a transit service within the urban area of Whitehorse connecting sixteen neighbourhoods to the downtown hub. The transit system operates on 35 minute schedule during peak times and a 70 minute schedule during off peak times. The transit fleet includes twelve regular buses and two handy-buses. The fleet is described below.

Whitehorse's transit fleet

Number	*Year*	*Size*	*Capacity seated*
4	2006	40 ft. accessible	38
2	2003	30 ft.	30
4	1997	40 ft.	45
2	1981	35 ft.	35
2 handy-buses: 2006, 2000 (the 2000 model is used as a spare)			

The system operates with a full-time manager, a dispatcher and a transit coordinator. There are 21 full-time positions operating the six routes Monday to Thursday from 6:00 a.m. to 7:00 p.m., Friday an extended evening service to 10:00 p.m. and Saturday service 8:00 a.m. to 7:00 p.m. There is currently no service on Sundays and Statutory holidays.

The transit system operates out of a 1980 building in the Marwell area. The building was not designed to house a transit system nor buses and creates some operational problems. The transit building also houses the City's carpenter shop and sign shop.

The four new buses purchased in 2006 are fully accessible. The city bus fleet is equipped with bike carriers to encourage active transportation as part of the customer's mode of transportation. The bus stops are commonly placed at the intersections of trails and roads. The Riverdale transit route is connected with the Millennium trail with a turn around at a main entrance to the trail.

Needs for a More Sustainable Public Transit Service

Buses: In order to maintain the current level of service six new low floor accessible buses are required. In 2008, a new transit bus is budgeted. There is consideration to use MRIF (Municipal Rural Infrastructure Funding) to leverage funds for 3 new buses in 2008.

Stops: Every bus stop needs to be reviewed through the lens of accessibility. Such items that need to improve for the stops include ramps, shelters, benches, schedules and lights (passenger activated and tied into a GPS).

Main Hub Building: The transit system has been operating from an Ogilvie hub location. Ogilvie Street is not a major destination in the City. The hub needs to be located near businesses and employers in the core area. A location near Main Street is preferred. Options to consider include:

- The City purchasing land downtown to facilitate the construction of a new hub;
- Build a new hub on one of the City owned Steele Street surface parking lots; and
- Combine a new hub with the construction of a parkade on one of the Steele Street properties.
- A hub should have public washrooms, a driver rest area and an information kiosk either electronic or staffed.

continued....

Electronic System: Some sustainable applications for transit may include an electronic system such as GPS on buses that are connected to the web, transit office/dispatch and bus stops. A sustainable system needs to increase ridership. This is an approach to better monitoring the fleet and providing customer information as to "where is my bus?"

Other applications of an electronic system may be considered for fare payment and for passenger counting.

Priority Transit System: The following could be considered to establish a transit priority system, making transit a quicker option than the personal vehicle. Items for consideration include: bus only lanes, electronic readers at light controlled intersections, legislated "Yield to the Bus Program".

Capacity Building/Training: Training is not available in the community. A training program that is specific to bus drivers is needed.

Continuous Marketing: A strong marketing campaign is required to sell the benefits of transit. This is part of the change process to get the public to think more sustainability and make more sustainable choices. Advise the amount of greenhouse gases emitted in a transit run versus 30 one vehicle trips from Riverdale to downtown.

Ridership Incentives: Work with organizations, employers, developers and individuals to increase ridership through incentive programs such as discounted passes or free transit passes with monies being collected through other sources, e.g. Specific transit tax.

The City of Whitehorse offers a fifty percent discount on transit passes for their employees. The discounted bus passes created a marginal increase in bus passes purchased by city employees when they became available at a 50% discount.

Bio Fuel and Hybrid Diesel Electrical: These alternative energy sources for the fleet should be further examined as to sustainability practices and energy savings. The City is currently working with Energy Solutions Center Yukon Government to examine the feasibility of a bio fuel product. The hybrid diesel electric bus could be considered a viable option however the initial capital cost of a new hybrid is approximately double the $450,000.00 of a regular bus. A cost analysis would need to be completed.

7. Buildings

The City of Whitehorse maintains 89 buildings. The buildings range in size, scope, use and age, from the Canada Games Center to the Marwell Lift Station. The Games Center offers a place of leisure, learning and competition while 85% of the City's sewage goes through the Marwell Lift Station.

The following buildings are identified by the City of Whitehorse Manager of Building and Safety Services as the City's main buildings as well as their respective condition.

Building	*Condition*	*Building*	*Condition*
Canada Games Center	Good	2 Mile Hill Pump House	Good
City Hall	Good	Marwell Lift Station	Fair
Takhini Arena	Good	Copper Ridge Lift Station	Fair
Municipal Services Building	Poor	McIntyre Creek Lift Station	Fair
Transit Building	Poor	Various City Reservoirs	Fair
Parks Building	Poor	Firehall #1	Fair
#1 Lift Station (Ogilvie and 2nd)	Fair	Firehall #2	Poor
Selkirk Pump House	Poor		

The Municipal Services Building (MSB) houses the following city departments: Planning and Development Services, Maintenance and Safety Services, Bylaw Services, Engineering and Environment Services, Public Works and Information Services. The building is rated as poor and needs to be replaced. The building has roof problems, is energy inefficient, is a poor place for people to work and not efficient to serve the public, it is not fully accessible and the air movement and ventilation is poor. The building is located downtown and is a poor location for the storage and maintenance of the city's heavy equipment. The building location does not comply with the City of Whitehorse Official Community Plan and Zoning Bylaw.

In 2004 the City of Whitehorse Climate Change Local Action Plan (LAP) identified that city buildings are responsible for 51% of the city (corporation) greenhouse gas (GHG) emissions. In 2001 the biggest energy user and GHG emitter was the Municipal Services Building (MSB). MSB is probably second to the Canada Games Center now in 2007.

Needs for a More Sustainable Building Inventory

- Design, build all new buildings to a LEED certified standard
- Build a LEED Certified new Fire Hall
- Educate and train building maintenance staff and project managers about green building technologies.
- Replace the Municipal Services Building with a LEED Certified building.
- Capture and exchange more heat at the Canada Games Center
- Upgrade City facilities for accessibility improvements
- Assess, evaluate and retrofit existing city buildings to a greener standard more energy efficient standard.

8. City Vehicle Fleet

The City of Whitehorse owns and maintains 114 vehicles. In 2004 the LAP identified 38% of the City corporation GHG emissions coming from the City's vehicle fleet. Specialized heavy equipment is the largest emission's source at 44%, followed by heavy trucks at 31%, vans and trucks 22% and automobiles and others at 3%.

The Manager of Maintenance and Safety Services advised that the City continues to replace its fleet with more efficient and low emission vehicles.

The 2004 LAP recommended four actions for reducing GHG emissions from the city vehicle fleet. Establishing an anti-idling campaign and the purchasing of a bike fleet have been implemented. Implementing a driver training program to reduce fuel consumption and the use of alternative fuel sources has not been implemented.

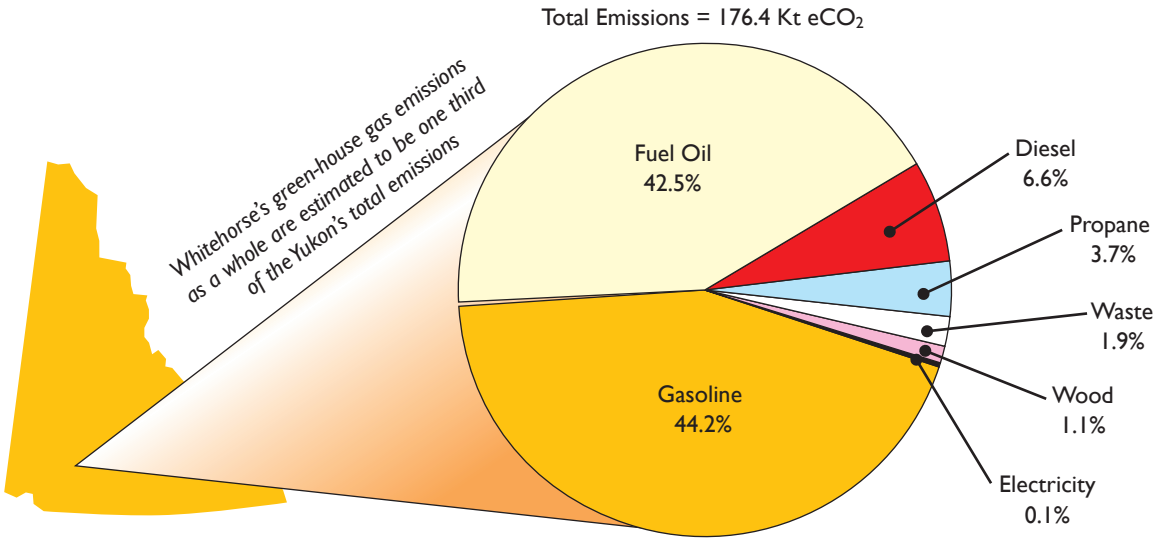
The City of Whitehorse is currently working with Yukon Government Energy Solutions Center to implement a test bio-fuel project on one City bus. The Manager of Maintenance and Safety Services recommends training of staff on new engine technologies is required.

9. Energy

Whitehorse's green-house gas emissions as a whole are estimated to be one third of the Yukon's total emissions. The activities that consume energy within Whitehorse are influenced by a number of factors, including: land use patterns, infrastructure, provision of services, design and operation including residential, commercial and industrial buildings.

The City of Whitehorse can influence many of these activities through land use decisions, the zoning bylaw, building and development permits and education.

2001 City and Community GHG Emissions by Source



Source: City of Whitehorse, Engineering and Environmental Services Department (LAP)

The OCP states that: "Where practical the City may consider pursuing natural energy alternatives for new development. This may be accomplished through educational programs. Examples of natural energy alternatives include the implementation of wood, solar and geothermal power." *(OCP 2002)*

Needs for More Sustainable Energy Use

- Examine the use of natural renewable energy
- Prepare an assessment/inventory of geoexchange potential
- Aim to achieve net –zero energy use
- Make upfront investments in technology for long term benefits
- Build to LEED standards
- Maximize solar access
- Dimming of street lights
- Replace street lights with more energy efficient bulbs

10. Financial: Asset Management: Sustainable Life Cycling Costing

Canadian municipalities have long used their asset management plans to help blueprint and build their municipal roads, sewers, water mains and other capital assets (known in accounting terms as tangible capital assets).

Even so, the Public Sector Accounting Board (PSAB) now recognizes the importance of managing these resources on a sustainable basis and thus requires, under PSAB 3150 that Canadian municipalities report on their tangible capital assets by 2009 – something that was not previously required.

By 2009, all municipalities must:

- Determine Historical Cost and Residual Value on all capital assets
- Determine Useful Lives of assets
- Calculate depreciation expense for all assets
- Record the Net Book Value of Tangible Assets on the Balance Sheet
- Record Depreciation as an Expense on the Income Statement

Compliance with PSAB 3150 will result in municipalities being more informed on what is available in assets and the municipalities' books will more accurately reflect the cost of doing business. PSAB 3150 will therefore, help in sustaining current infrastructure and future growth.

The City of Whitehorse has identified sustainable asset management as an area where training of employees is required.

11. Solid Waste Management

The City's goal is to achieve 50% diversion of waste from the landfill. The City of Whitehorse completed a Solid Waste Management Plan in 1995. The City operates the only managed landfill in the territory and receives waste from the Yukon Government and the Kwanlin Dun First Nation Government. The Yukon Government is considering working with the City to further expand the regional nature of the landfill. Currently the City landfill receives 2,500 to 4,000 tons of residential waste per month from the communities of Mount Lorne, Marsh Lake and Deep Creek.

The City has a city-wide curb side residential composting program. In June of 2007 the pilot project for the two-cart (non-bag) system was implemented in a selected area of the Porter Creek Subdivision and will run for one year. Approximately 500 households in Porter Creek will received 2 – 240L carts, a green one for compost and a black one for garbage. Feedback from program participants has been overwhelmingly positive in the first 2 months of the program, and compost weights have increased dramatically.

The Solid Waste Management Plan is old. The City requires a new plan which is identified as a capacity building initiative.

Needs for a More Sustainable Solid Waste Management

- Complete a new Solid Waste Management Plan
- Go to a city-wide compost and garbage cart system complete with carts and new trucks
- Complete landfill upgrades to ensure a more sustainable landfill
- Upgrade compost facility and new compost grinder

12. Land Use and Development

The City of Whitehorse 2002 Official Community Plan (OCP) is a land use and policy document that adheres to the four pillars of sustainability; environmental, economic, social and cultural.

The following are some key policies from the OCP Section 4.7 Environmental Sustainability that speak to growth management, settlement pattern and land use, energy efficiencies, alternative energy and innovative green infrastructure.

Policy 1: Future Development shall be directed in as compact a manner as feasible given already established land use patterns.

Policy 4: In order to minimize vehicular trips, and to provide shopping opportunities closer to residential areas, a mix of residential and commercial development shall be encouraged in the downtown. In addition, neighbourhood commercial development shall be encouraged to continue in already established neighbourhoods and to locate in future residential neighbourhoods such as Beyond Copper Ridge and Lower Porter Creek.

Policy 5: The City may consider educating property owners to retrofit existing buildings with sustainable energy alternatives and conservation measures through educational programs.

Policy 7: In order to ensure good air quality in the Whitehorse area, the use of modern pollution control technology and the implementation of additional emission reduction and management strategies shall be actively pursued.

Policy 9: The City may, in reviewing its road and servicing standards consider potential development standards that are environmentally appropriate, economically efficient and effective from a maintenance perspective.

Needs for a More Sustainable Land Use Pattern and City

- Work with the Kwanlin Dun Lands Committee and Government in planning, protecting and developing land.
- Establish partnerships for infrastructure development with the Kwanlin Dun First Nation
- Work with Ta'an Kwach'an Council to plan, protect and develop their lands
- Establish partnerships for infrastructure development with the Ta'an Kwach'an Council
- Work with Government of Yukon in the implementation of the Land Development Protocol between City of Whitehorse and Government of Yukon
- Implement the principles of "SMART GROWTH"

"Smart growth" is a collection of land use and development principles that aim to enhance our quality of life, preserve the natural environment, and save money over time. Smart growth principles ensure that growth is fiscally, environmentally and socially responsible and recognizes the connections between development and quality of life. Smart growth enhances and completes communities by placing priority on infill, redevelopment, and densification strategies.

The smart growth principles are:

1. Mix land uses. Each neighbourhood has a mixture of homes, retail, business, and recreational opportunities.

2. Build well-designed compact neighbourhoods. Residents can choose to live, work, shop and play in close proximity. People can easily access daily activities, transit is viable, and local businesses are supported.

3. Provide a variety of transportation choices. Neighbourhoods are attractive and have safe infrastructure for walking, cycling and transit, in addition to driving.

4. Create diverse housing opportunities. People in different family types, life stages and income levels can afford a home in the neighbourhood of their choice.

5. Encourage growth in existing communities. Investments in infrastructure (such as roads and schools) are used efficiently, and developments do not take up new land.

6. Preserve open spaces, natural beauty, and environmentally sensitive areas. Development respects natural landscape features and has higher aesthetic, environmental, and financial value.

7. Protect and enhance agricultural lands. A secure and productive land base, such as BC's Agricultural Land Reserve, provides food security, employment, and habitat, and is maintained as an urban containment boundary.

8. Utilize smarter and cheaper infrastructure and green buildings. Green buildings and other systems can save both money and the environment in the long run.

9. Foster a unique neighbourhood identity. Each community is unique, vibrant, diverse, and inclusive.

10. Nurture engaged citizens. Places belong to those who live, work, and play there. Engaged citizens participate in community life and decision-making."

From: http://www.smartgrowth.bc.ca

13. Fire Protection Services

The City of Whitehorse Fire Department responds to an average of 500 calls per year. The primary role of the Whitehorse Fire Department is to protect lives, property and the environment from the effects of fire or other hazardous situations. The Department provides the following services:

- Motor vehicle accident extrication (both inside and outside the City)
- Limited dangerous goods (HazMat) incidents
- Wild fires
- Damage caused by flood, earthquake, power loss, aircraft crashes (off airport property)
- Other natural or human caused emergencies
- Limited rescue services for ice and water incidents
- Mutual aid with the surrounding Fire Departments
- Fire Prevention and Public Education programs
- Monitoring of alarms in specific City and YTG facilities
- Attending to enquiries and complaints from the public after regular office hours
- Dispatching Bylaw and Public Works staff as required after regular office hours
- Confined space rescue
- High angle rescue
- Assist community associations with Yukon Government sponsored neighbourhood FireSmart programs.

The Department is a Composite Department consisting of 20 fulltime fire fighters, 30 volunteers and four staff including the Chief, Training Officer, Fire Prevention Office and Dispatcher. The Fire fighting equipment is reaching the end of its life; the newest pumper is a 1994 model.

Response times vary throughout the City with the goal being a response time of 6 minutes to 90% of the incidences. The City of Whitehorse has a Mutual Aid Agreement with the Yukon Government. Golden Horn, Mount Lorne, Marsh Lake, Ibex Valley, Hootalinqua and Whitehorse Fire Departments assist each other as required. There is no cost for this agreement.

There are no agreements for Carcross-Tagish and Mendenhall.

Needs for a More Sustainable Fire Protection Service

- Rebuild the Fire Hall at the top of 2 Mile Hill
- Rebuild the downtown Fire Hall to a more efficient building
- Build a third Fire Hall in Porter Creek in response to Whistle Bend
- Build a new Fire Hall south of Robert Service Way when population reaches 10% of total City population.
- Share full-time dispatch position with 911 area
- Training and equipment required to respond to Hazardous Wastes
- Training and equipment required for water and ice rescue.
- Establish a Regional Training Center for all Yukon Firefighters.
- Amend Building Codes to require residential sprinklers
- Expand the Mutual Aid Agreement to include Carcross-Tagish and Mendenhall.

14. Health

At the May 23rd, 2007, Whitehorse Value and Visioning Session the Yukon Department of Health and Social Services presented "Visions for Future". Whitehorse planning for the future needs to consider:

- Longer life expectancy
- More seniors
- Increased prevalence of chronic diseases and needs for support and care
- Economic outlook, (attracting new families)
- Strengthening the determinants of health

Needs for a More Sustainable Healthy Community

- Promote decreased reliance on the healthcare system
- Health promotion and education
- Active living
- Liveable neighbourhoods
- Safe surrounding
- Clean air, clean water, green environment
- Accessible and affordable recreation
- Decentralized services
- Social inclusion of marginalized groups
- Outreach
- Collaborative care options
- Continuum of services

15. Arts Culture and Heritage

Cultural industries are an important sector in the Whitehorse economy. Richard Florida, the author of the "Rise of the Creative Class" argues that the long-term economic and social development of cities relies on attracting and retaining entrepreneurial and creative people. In order to attract creative people a community needs a strong arts and cultural sector. Arts and culture also provides a strong sense of place for a community.

The 2004 Yukon Cultural Industries Labour Force Study identified a number of items that need to be addressed in order to better sustain and develop the cultural labour force.

Discussions with Laurel Parry, Arts and Culture Branch, Yukon Government and Miche Genest, of Heritage Canada further identified ways to sustain the arts and cultural sector.

Needs for a More Sustainable Arts and Cultural Sector

- Sustained funding and support for the arts
- Infrastructure development in the Downtown
- Support First Nation's cultural heritage
- Increased access to the arts for lower income groups
- Support the NGO's
- Expand the marketing of Yukon products
- Train Yukon artists in marketing, promotion and business management

16. Business

The Whitehorse economy and labour force have experienced growth since 2001. This has led to increased spending, increased housing demand and a low unemployment rate. The Yukon Government's, Yukon Economic Outlook 2006 predicts this trend to continue.

Needs for a More a Sustainable Downtown Business Community

- Carry out the Downtown infrastructure reconstruction projects
- Implement the Downtown Plan and Retail Strategy
- Address the labour market shortages (access to day care and transit)
- Increase use of business technology
- Examine downtown district heating
- Support the Cold Climate Research Facility
- Renew the Downtown Core

LIST OF POTENTIAL PROJECTS :

LIC = Local Improvement Charge WS = Water and Sewer Reserve DCC = Development Cost Charges
GMF = Green Municipal Funds MRIF = Municipal Rural Infrastructure Fund LR = Land Reserve

POTENTIAL PROJECTS :	Currently Funded	Not funded	Other possible funds
PUBLIC TRANSIT			
6 New Buses		$2,700,000	MRIF
INFRASTRUCTURE RENEWAL ***(Water, Sewer, Road, Electrical)***			
Hillcrest Reconstruction, Phase 1		$3,700,000	LIC
Hillcrest Reconstruction, Phase 2		$3,600,000	LIC
Downtown Reconstruction *(See Note)*		$70,000,000	LIC
Black Street, 4th to 8th Avenue		$5,500,000	LIC
Ogilvie , 2nd to 8th Avenue		$4,600,000	LIC
Strickland, Alexander, Hanson, Hawkins		$6,000,000	LIC
6th Avenue, 400 Blocks of Cook & Wheeler		$5,200,000	LIC
Marwell Upgrading			LIC
Gold, Gypsum, Silver, Industrial Dyke work		$3,000,000	LIC
Tlingit road, Tungsten, Galena		$3,500,000	LIC
Subtotal	$1,350,000	$101,400,000	
WATER			
Ground Temperature Monitoring Stations	$50,000		WS
Truck Fill Station at Fire Hall		$200,000	PRIV
City Wide Water Meters		$3,000,000	WS/GMF
Porter Creek Reservoir Upgrade		$4,000,000	WS/MRIF/DCC
Valleyview Reservoir Upgrade		$4,100,000	WS
Heat Trace Assessment City Wide		$100,000	
Selkirk Well Field Development		$3,200,000	WS/DCC/GMF
Selkirk Pump House Improvements		$6,600,000	WS/DCC
Permanent Water Sampling Station	$75,000		WS
Subtotal	$125,000	$21,200,000	
WASTEWATER			
Livingston Trail Lagoon Outfall Pipe		$2,200,000	WS
Lagoon Monitoring Wells		$90,000	WS
Pump House and Small Lift Station Upgrade	$440,000		WS
Infiltration Elimination Assessment City Wide		$2,000,000	WS
Marwell Forcemain Condition Study	$50,000		WS
Subtotal	$490,000	$4,290,000	
SOLID WASTE			
Landfill Upgrades	$275,000		
Composting & Garbage Carts for City Wide Collection		$1,200,000	
Multi-use Compartmental Garbage/Recycling Trucks		$1,200,000	
Upgrade Compost Facility		$125,000	
Paving Landfill Access Road		$350,000	
Subtotal	$275,000	$2,875,000	

Note: Downtown Infrastructure Renewal (upgrading is estimated at $70,000,000 split over 15 projects)

POTENTIAL PROJECTS :	Currently Funded	Not funded	Other possible funds
COMMUNITY ENERGY SYSTEMS			
Landfill Gas Production Feasibility		*$50,000*	
SUSTAINABLE TRANSPORTATION			
Trail Plan Implementation		*$535,000*	
Trail Development	*$96,000*		
Trail Connections Airport, Alaska Hwy, PorterCreek, Hillcrest, Takhini, CGC		*$500,000*	
Hospital Road and Lewes Blvd Intersection Improvements		*$225,000*	
Signal Replacement Ogilvie and 4th		*$250,000*	
Robert Campbell Bridge Widening for Bike Lane		*$700,000*	
Robert Campbell Bridge Deck Repair for Bike Lane		*$200,000*	
Sidewalk Upgrades		*$550,000*	
Industrial Rd to 2 Mile to Quartz Design		*$200,000*	*LIC*
Industrial Rd to Platinum to Quartz Construction		*$1,520,000*	*LIC*
Industrial 2 Mile to Platinum Design		*$220,000*	*LIC*
Industrial 2 Mile to Platinum Construction		*$1,600,000*	*LIC*
Bike Rack, Bike Lockers, at Various Locations		*$150,000*	
Surfacing of Country Residential BST	*$1,550,000*		
Surfacing Gravel Roads with Asphalt and /or BST		*$3,000,000*	
Winter Sand Pile Pad Water Pollution Protection	*$50,000*		
Unpaved Road Reconstruction	*$1,700,000*		
Subtotal	*$3,396,000*	*$9,650,000*	
BUILDING SYSTEM IMPROVEMENTS			
Energy Upgrades Takhini Arena		*$300,000*	
Increase Heat Reclamation from Ice Plant at CGC		*$250,000*	*GMF*
Green Building Upgrades City Wide		*$200,000*	
Upgrade Heating System at City Hall		*$75,000*	
Upgrade Public Safety Buildings to LEED Gold Standard (Fire Hall)		*$3,000,000*	*GMF*
Upgrade Municipal Services Building to LEED Standards		*$12,000,000*	*GMF/LR*
Accessibility Inclusion Upgrades		*$1,000,000*	
Subtotal		*$16,825,000*	
CAPACITY BUILDING PROJECTS			
Solid Waste Action Plan		*$75,000*	
Monitoring Local Area Climate Change Action Plan		*$10,000*	
Risk Management re Climate Change/Adaption CAVIAR		*$30,000*	
Green Local Purchasing Policy		*$20,000*	
GEO Exchange City Wide Sustainability Assessment		*$100,000*	
Subtotal		*$235,000*	

Total All	*$8,572,000*	+	*$162,925,000*	=	*$171,497,000*
Total Potential Eligible Gas Tax Projects	*$936,000*	+	*$47,410,000*	=	*$48,346,000*

Written Criteria

Description	Explanatory Detail
1. Public Health and Safety Risk management Staff Morale Fire Protection Active Transportation Pollution Avoidance	Public health and safety issues, for the public, are usually thought of with respect to things like fire protection but also include such matters as active transportation, and pollution avoidance. For the corporation of the City of Whitehorse public health and safety would reflect a range of issues from corporate risk management to staff morale. The City's role is to provide safe and reliable services and infrastructure within our fiscal capacity for prevention and suppression of fires, crime prevention and enforcement, development and enforcement of regulatory bylaws, animal control, and environmental protection. On the corporate side, it is the City's role to encourage a corporate culture that recognizes employee contributions and individual potential.
2. Legislated Existing City Policy Adopted Policy or Study Core Service Official Community Plan Commitment or Agreement in Place	Legislated responsibilities are those that are imposed on the City such as the Drinking Water Materials Safety Act [Canadian Drinking Water Standards]. Legislated responsibilities also include those that are delegated to the City of Whitehorse, the main such legislation being the Municipal Act. Much of what are thought of as the City's core services are rooted in the Municipal Act. With its delegated authority, the City of Whitehorse also imposes its own legislation, policies, and standards through bylaws such as the Official Community Plan and other adopted City policies, standards and studies. Legislated responsibilities are also thought of in the context to any legal claims, commitments, or agreements in place that bind the City. The City's role is to provide good governance in accordance with all statutes of the Territory and bylaws of the City along with the City's own bylaw and policy development and review.
3. Accessibility Percent of Population Benefiting Quality of Life Improvements *(short / long term)* Cultural Benefits Social Benefits Resident Complaint Driven City as a Role Model Partnerships How Many Benefit? Customer Service Active Transportation Produce Jobs	Accessibility criteria would entail answering the question about "are we benefiting the maximum possible percentage of population with any given program or service?" This would involve consideration of quality of life improvements (short / long term). Quality of life improvements could be viewed as broadly as activities that promote job production to initiatives that promote active transportation, access to recreation and any other activities or initiatives that promote cultural and social benefits. Requests for changes to programs and services are often resident complaint-driven, requests for additional customer service, or as a result of partnerships created between the City and one or more, usually non-profit, groups. In this context the City of Whitehorse should attempt to be proactive and should be required to be seen and/or to act as a role model. The City's role would be such that it offers opportunities to encourage people, counting youth, to stay in Whitehorse creating a healthy mix of youth, persons with disabilities, families, and elders. The City's role is also to offer equal accessibility to programs, services, and facilities with respect to persons with disabilities and older citizens. The City has a role to encourage cultural groups work co-operatively to create a friendly and supportive community and to encourage improvements to the quality of life through a wide choice of sport, recreational and cultural activities.

Description	Explanatory Detail
4. Efficiency Replacement or new Service Enhancement Operating and Maintenance Cost Impact Operational and/or Service Improvements Technical Improvement or Upgrade Operational Efficiencies Asset Protection Standardization Obsolete Consistency of Application Reached Capacity System Failure	The efficiency criterion looks at whether any particular initiative offers a service enhancement along with the associated operating and maintenance cost impact. A service enhancement would include looking at any operational and/or service improvements, technical improvement or upgrades, or operational efficiencies, energy efficiencies and/or reduction of greenhouse gases. When considering the replacement or purchasing new for the City there are many issues including asset protection, standardization, obsolescence, consistency of application, and whether capacity has been reached or system failure is imminent. The City's role is to maintain a balance of citizen well being, environmental integrity, energy efficiencies, reduction of greenhouse gases, and/or economic vibrancy through the provision of a safe and reliable infrastructure and efficient and affordable services that meets community needs.
5. Environmental Impact or Protection Protection of Natural Resources Climate Changes -- Short Term Climate Changes -- Long Term Reduce Green House Gases System Failure Environmental Disaster Active Transportation Pollution Avoidance Protects Natural Resources	Environmental impact or protection involves consideration of natural areas and resources, including considering the impacts of climate change – short term and long term. Deliberation could consider the reduction of greenhouse gases to the potential for system failure and/or environmental disaster. In this context, the criterion would range through pollution avoidance to active transportation . . . anything that ultimately protects the natural resources. The City's role is to both enforce protective standards and to be seen as a role model for leadership in integrated practices, water supply, stewardship, protection, and rehabilitation.
6. Sustainable Economic Development or Growth Related Climate Change Adaptation Protection of Natural Resources Economic Enhancement Climate Changes -- Short Term Climate Changes -- Long Term Future Growth Reduce Green House Gases Commercial Need Active Transportation Pollution Avoidance Protects Natural Resources Alternative Energy Energy Efficiency	Sustainable criterion looks at citizen well being, environmental integrity, and economic vibrancy. The City would look for continued or enhanced economic development and/or growth or meeting a commercial need and try to balance this with climate change adaptation, protection of natural resources, and pollution avoidance. This would involve considerations of climate changes (short and long term), future growth, and protection of natural resources. Initiatives might involve greenhouse gas reduction, promotion of active transportation, and/or alternative energy and energy efficiency. The City's role is to maintain a balance of citizen well being, environmental integrity, and economic vibrancy.

Description	Explanatory Detail
7. Strategic Plan Value Strategic versus Catch-up Social Requirements Funding Available Revenue Generating Partnerships	Strategic Plan values are the fundamental and enduring beliefs which direct the way in which the City makes decisions and undertakes activities. Values guide how the City designs and uses its systems and processes; the manner in which City Council and staff can contribute to the City's success; and the way in which the City interacts with its citizens and other agencies. Currently the City's values are documented as citizen involvement, creativity, decision process transparency, fiscal responsibility, integrity, partnership, respect, and sincerity. Ideally, the City would prefer to be in 'strategic' versus 'catch-up' mode in a proactive way to meet social requirements. The City's role is to apply these values when making decisions.
8. Qualifies for Funding Resource Generation	Funding available or not available – this dictates whether any given program, service, or initiative should be undertaken. Options such as revenue generation or partnership options can enhance a project's viability. Other considerations would be the qualification for external funding and/or any other resource generation possibilities. The City's role is to make service delivery sustainable and by being balanced with public fiscal interest.
9. Staff (or Consultant, etc) Capacity to Do the Work	Staff (or consultant, etc.) capacity to do the work is a limiting criterion. For the City of Whitehorse to deliver its programs and services the existing staffed capacity must be identified and any workforce gaps must be quantified. The gaps should be evaluated against current and future demand for services. A failure to accommodate identified gaps will ultimately create health and safety issues.

Prioritising Gas Tax Projects

At the beginning of this process the City of Whitehorse assembled a list of potential infrastructure projects from past reports, capital plans and the infrastructure assessment. The list included over 60 projects with a cost estimate of over 170 million dollars.

The gas tax allocation for Whitehorse is $47,774,884.40 *(including the program extension)*.

5% ICSP Planning and Capacity Building $2,388, 749.22

2005/2006	$2,204,999.28
2006/2007	$2,204,999.28
2007/2008	$2,939,999.04
2008/2009	$3,674,998.80
2009/2010	$7,349,997.60
2010/2011	$7,349,997.60
2011/2012	$7,349,997.60
2012/2013	$7,349,997.60
2013/2014	$7,349,997.60

Allocations for Whitehorse to 2014 have been provided by AYC

To prioritize the projects the City of Whitehorse evaluated the projects within nine criteria:

- Public Health and Safety
- Legislated
- Accessibility
- Efficiency
- Environmental Impact
- Sustainable
- Strategic Plan Value
- Funding Available
- Capacity

The criteria was developed using the sustainability principles, the vision, values and goals established at the May 23rd Workshop and Public Open House.

At a council and management workshop on July 17th the projects were rated against the criteria and the top 17 projects have been put forward in this report as the City of Whitehorse's Priority Gas Tax Projects. The estimated cost of these projects is $45,240,000.00 dollars.

Following the priority gas tax project list are specific project sheets that further describe the project. The project sheets of all the potential projects are included in an appendix to this report.

List of Priority Gas Tax Projects

LIC = Local Improvement Charge WS = Water and Sewer Reserve DCC = Development Cost Charges
GMF = Green Municipal Funds MRIF = Municipal Rural Infrastructure Fund LR = Land Reserve

From July 17th, 2007 Council Workshop; all estimated costs are 2007 estimates

Priority # and Project	Estimated Cost	Possible Other Funding
1. Selkirk Well Field Development	$3,200,000	WS
2. Selkirk Pump House Improvements	$6,600,000	WS
3. Livingston Trail Lagoon Outfall Pipe	$2,200,000	WS
4. City Wide Compost Program Improvements • Compost and Garbage Carts • 3 Multi-use Compartmental Garbage/Recycling Trucks • Upgrade Compost Facility	 $1,200,000 $1,200,000 $125,000	
5. Valleyview Reservoir Upgrade	$4,100,000	
6. Porter Creek Reservoir Upgrade	$4,000,000	WS/DCC/offsite levies
7. Lagoon Monitoring Wells	$90,000	WS/DCC
8. Permanent Water Sampling Station	$75,000	WS
9. Trail Connections: Airport, Alaska Hwy, Porter Creek, Hillcrest, Takhini, CGC	$500,000	WS
10. Sidewalk Upgrades	$550,000	
11. Accessibility Upgrades	$1,000,000	
12. Increase Heat Reclamation from Ice Plant at CGC	$250,000	
13. Infiltration Elimination Assessment City Wide	$2,000,000	GMF
14. Bike Rack & Lockers, *various locations*	$150,000	WS
15. Upgrade Municipal Services Building to LEED Standards	$12,000,000	LR/GMF
16. City Wide Water Meters	$3,000,000	WS/GMF
17. Upgrade Public Safety Building to LEED Standards (Fire Hall)	$3,000,000	GMF
Total	$45,240,000	

1 to 16 Capital Project Sheets

1. Selkirk Well Development

Estimated Capital Cost & Funding Sources

Department: Engineering

	2008	*2009*	*2010*	*2011*	*Total*
$$ Approved in 2007-2010 Plan	1,620,000	820,000	720,000		$3,200,000
City:					
LIC:					
YTG:					
GAS:	1,660,000	820,000	720,000		$3,200,000
Other - specify:					

Project History/Description/Purpose/Need:

The project involves the installation of production wells in the Selkirk Aquifer within the Riverdale subdivision. The wells will increase the volume of groundwater pumped into the existing water distribution system, with the goal of reducing and eventually eliminating Schwatka Lake surface water as a water source for the City of Whitehorse.

This project is a carryover for project that was originally budgeted for completion in 2006.

In 2008, construction is proposed for two wells on the south side of Riverdale. One well would be connected to the existing intake line along Nisutlin Road. In 2009, the second well located in south side of Riverdale would be connected to the discharge line installed 2008. The funds supplied from the gas tax would provide the engineering, design, technical support and equipment to upgrade the building to an energy efficient structures and equipment that would enable LEED certification. Use of well water will reduce the need to use fossil fuels to heat water in the distribution system during the winter months. The ground water well pumphouse would be designed with energy savings option such as solar heating, heat recovery, geothermal heat pumps, air to air heat pumps, more efficient pumps and controls settings.

In 2010, a well near Selkirk Street pumphouse is proposed as backup to the existing wells now in use.

In 2012 or beyond, depending on population growths, additional wells would be installed and connected to the existing water supply system in Hart and in Hyland Crescents, through existing public utility lots. This work will increase fire protection and reduce the need to bleed or circulate water for protection against frozen mains.

Project Analysis: *(How much and when)*

This would be a multiyear project taking place over three years.

2. Selkirk Water Pumphouse Improvements

Estimated Capital Cost & Funding Sources

Department: Engineering

	2008	*2009*	*2010*	*2011*	*Total*
$$ Approved in 2007-2010 Plan			6,600,000		6,600,000
City:					
LIC:					
YTG:					
GAS:			6,600,000		6,600,000
Other - specify:					

Project History/Description/Purpose/Need:

The existing Selkirk Pumphouse has been in operation since the 1950's and upgrades have been identified as required in previous Water & Sewer Studies. The existing pipes, valves and equipment are showing significant signs of age. The structure is not earthquake resistant and is subject to catastrophic failure.

The pumps and electrical supplies need to be upgraded to meet future water demands as our city increases in population and new areas are developed. The upgraded pumphouse would be designed with energy savings options such as solar heating, heat recovery, geothermal heat pumps, air to air heat pumps, more efficient pumps and controls settings. The funds supplied from the gas tax would provide the engineering, design, technical support and equipment to upgrade the building to an energy efficient structure and equipment that would enable LEED certification

The current annual O & M costs for Selkirk Station is approximately $150,000 and those costs would increase approximately 35% with the new pumphouse. However, if a new treatment plant were to be built in lieu of groundwater wells, the increase in O & M costs could be over 3 times more.

Project Analysis: *(How much and when)*

The initial phase of the project would be to engage the services of a consultant and to complete a preliminary and detailed design. The second phase would be the construction of the new facility.

3. Livingston Trail Lagoon Outfall Pipe

Estimated Capital Cost & Funding Sources

Department: Engineering

	2008	*2009*	*2010*	*2011*	*Total*
$$ Approved in 2007-2010 Plan	2,120,000				2,120,000
City:					
LIC:					
YTG:					
GAS:	2,200,000				2,200,000
Other - specify:					

Project History/Description/Purpose/Need:

The 1999 Annual Capital Budget for sewage treatment was $1,470,000. In 1998/99 the City undertook trial discharges of treated effluent to Pot Hole Lake (PHL). The report suggested that PHL could be a viable long term discharge alternative to the Yukon River. The report indicated that the performance of the Pot Hole Lake would degrade over time and funds will be required to undertake construction of the extension of the outfall line from the Pot Hole Lake to the Yukon River in future years, dependent on when the PHL was no longer able to handle the flows of treated effluent.

In 2000, preliminary engineering for the design of the outfall was completed. The concept was approved by the Yukon Water Board and a new Water Use License was approved. During the discharge in 2004, a decease in the performance of the PHL was noted. Based on the results of the discharge so far in 2005, a further reduction in the volume of water discharged is occurring. In 2006 discharge volumes were slightly higher than 2005 however volumes were lower than the years prior to 2004. Therefore, construction of the outfall to the river should be completed.

It is proposed to be a design/build project: predesign work has been completed, engineering final design to be completed in 2007, and construction to be undertaken in 2008.

Project Analysis: *(How much and when)*

Work is scheduled for completion in 2008.

4. City Wide Compost Program Improvements

Estimated Capital Cost & Funding Sources

Department: Engineering

	2008	*2009*	*2010*	*2011*	*Total*
$$ Approved in 2007-2010 Plan					
City:					
LIC:					
YTG:					
GAS:		2,400,000			$2,400,000
Other - specify:	65,000	60,000			$125,000

Project History/Description/Purpose/Need:

Compost & Garbage Carts

Since 2002, the City of Whitehorse has had a residential compost collection program which involves using biodegradable bags.

In June of 2007 the pilot project for the two-cart (non-bag) system was implemented in a selected area of the Porter Creek Subdivision and will run for one year. Approximately 500 households in Porter Creek received 2 – 240L carts, a green one for compost and a black one for garbage.

In 2008 approximately 6,900 compost and 6,900 garbage carts will be required to implement a City Wide dual cart collection. Carts will be ordered for delivery in the summer of 2008 with distribution and education to take place during the fall of 2008.

3 Garbage Trucks

The dual cart collection system for garbage and compost collection will require new collection trucks. The three new collection trucks will allow for single or dual garbage and compost collection. These trucks will have fully automated lifters and a compactor to allow more material to be carried and dumped. Two of the new trucks will be used on the regular schedule and the other truck with be for backup and overload use.

Many cities have found that automated collection has considerable economic benefits because municipalities are not loosing workers to lifting injuries. It was also found that with an automated system, an older worker force can complete the garbage and compost collection.

These vehicles will be powered with alternate source fuels if possible.

Upgrade Compost Facility

The existing compost facility was built in 1999. At present, it takes approximately two years to process the compost. An upgrade to the facility is required so the compost process can be complete in under one year.

With the increase in compostable material coming to the compost facility, the facility will be required to be enlarged. Also it is recommended by consultants that the sections of work surface of the existing facility be upgraded from gravel to a paved surface. The paved surface would allow for less contamination and better surface drainage to the drainage pond.

Project Analysis: *(How much and when)*

The shift to the two-cart system will be completed in the fall of 2008 following evaluation of the Pilot project.

There is a one year time lag between the ordering and receiving of the new collection vehicles.

It will take 2 years to upgrade the Compost facility.

5. Valleyview Reservoir Upgrade

Estimated Capital Cost & Funding Sources

Department: Engineering

	2008	*2009*	*2010*	*2011*	*Total*
$$ Approved in 2007-2010 Plan					
City:					
LIC:					
YTG:					
GAS:	4,100,000				$4,100,000
Other - specify:					

Project History/Description/Purpose/Need:

An upgraded water reservoir at Valleyview is required to meet existing and proposed future water demands. New developments and existing users require a secure water supply for use by the property owners and for emergency fire protection services.

This upgraded reservoir would be designed to meet the existing requirements with future expansion capabilities to meet the needs of new developments proposed in Takhini, airport, Porter Creek, Tankfarm, and Porter Creek Lower Bench.

The 2002 Water & Sewer Study recommended the twinning of the reservoir with a 7,000 m3 cell in the 5-10 year plan, and the construction of a 8,000m3 cell in the 20+ year plan.

Project Analysis: *(How much and when)*

The majority of the work will be completed in 2008.

6. Porter Creek Reservoir Upgrade

Estimated Capital Cost & Funding Sources

Department: Engineering

	2008	*2009*	*2010*	*2011*	*Total*
$$ Approved in 2007-2010 Plan					
City:					
LIC:					
YTG:					
GAS:	4,000,000				$4,000,000
Other - specify:					

Project History/Description/Purpose/Need:

A new water reservoir at Porter Creek is required to meet existing and future water demands. New developments and existing users require a secure water supply for use by the property owners and for emergency fire protection services.

This upgraded reservoir would be designed to meet the existing requirements with future expansion capabilities to meet the needs of new developments proposed and allow for future flows into in Porter Creek, and Porter Creek Lower Bench during demand periods.

The 2002 Water & Sewer Study recommended the twinning of the reservoir with a 5,500 m3 cell in the 0-5 year plan. It identified the reservoir as most critical in terms of expansion. The remote location of this reservoir makes this expansion a priority.

Project Analysis: *(How much and when)*

The majority of the work will be completed in 2009.

7. Lagoon Monitoring Wells

Estimated Capital Cost & Funding Sources

Department: Public Works

	2008	*2009*	*2010*	*2011*	*Total*
$$ Approved in 2007-2010 Plan					
City:	90,000				90,000
LIC:					
YTG:					
GAS:					
Other - specify:					

Project History/Description/Purpose/Need:

The perimeter monitoring wells around the Crestview, Whitehorse and Porter Creek Lagoons will provide for long term groundwater monitoring at each of these sites to determine if the lagoons are leaking effluent into the groundwater table. The installation of these wells will also provide soil stratigraphy for each area along with groundwater depths. The monitoring wells will be required as part of the City's Water License if any of these facilities are decommissioned.

This project is funded as part of the 2007 Capital Budget.

Project Analysis: *(How much and when)*

The installation of the monitoring wells will be completed over a period of two weeks in late 2007.

8. Permanent Water Sampling Station

Estimated Capital Cost & Funding Sources

Department: Public Works

	2008	*2009*	*2010*	*2011*	*Total*
$$ Approved in 2007-2010 Plan					
City:					
LIC:					
YTG:					
GAS:	25,000	25,000	25,000		$75,000
Other - specify:					

Project History/Description/Purpose/Need:

City of Whitehorse Pumphouse staff complete field sampling and monitoring of Total and Facael Coliforms; and residual chlorine on a weekly basis. These samples are taken in the subdivisions at various City facilities, schools and private residences. Some of the locations cannot be used year around, such as schools and outside taps on private residences. The City and the YTG Health requires all locations to be consistent representative sampling stations. Ideally samples should be taken as close to the water mains as possible. Under this project new permanent sampling locations would be established on the mains in the following areas:

2008 - Granger, Logan; Arkell Area
2009 - Porter Creek Area
2010 - Takhini, Range Road

Project Analysis: *(How much and when)*

The installation work will be staged and completed over three years.

9. Trail Connections

Estimated Capital Cost & Funding Sources

Department: Engineering

	2008	*2009*	*2010*	*2011*	*Total*
$$ Approved in 2007-2010 Plan					
City:					
LIC:					
YTG:					
GAS:	250,000	250,000			$500,000
Other - specify:					

Project History/Description/Purpose/Need:

The development of a multi use trail network that connects the various subdivisions to each other and the downtown core will help meet the City's goal of promoting alternate transportation.

Under this program, connector trails are proposed:

- along the Alaska Highway from the Airport to the existing trail Puckett Gulch Trail;
- along Range Road to the Two Mile Hill Bicycle/Pedestrian trails;
- and from Hillcrest to existing trail network.

As well, this program includes the development and upgrading of the Trans Canada Trail Connector to Porter Creek from the Takhini Arena.

Project Analysis: *(How much and when)*

This would be a multiyear project taking place over a two year period.

10. Sidewalk Upgrades

Estimated Capital Cost & Funding Sources

Department: Public Works

	2008	*2009*	*2010*	*2011*	*Total*
$$ Approved in 2007-2010 Plan					
City:					
LIC:					
YTG:					
GAS:	$350,000	$100,000	$100,000		$550,000
Other - specify:					

Project History/Description/Purpose/Need:

Some sections of Riverdale and Marwell/Downtown do not have sidewalks. At the present time, people walk down the side of the roads. This creates a dangerous situation when people are walking with the traffic along the side of the road. Upgrading to a concrete sidewalk would increase pedestrian safety and would encourage more people to walk.

- Lewes Blvd. west side of the street from Selkirk Street to Nisutlin Dr
- Lewes Blvd - east side from Alsek Rd to Hospital Road
- Quartz Road from 2nd Ave to Industrial Rd

Project Analysis: *(How much and when)*

This is a three year program with some sections of the work completed each year.

11. Accessibility Upgrades

Estimated Capital Cost & Funding Sources

Department: M/S Services

	2008	*2009*	*2010*	*2011*	*Total*
$$ Approved in 2007-2010 Plan					
City:					
LIC:					
YTG:					
GAS:	$50,000	$300,000	$350,000	$300,000	$1,000,000
Other - specify:					

Project History/Description/Purpose/Need:

Provision of funds for the upgrade of City facilities for accessibility improvements. This may include the installation of elevators/ handicap lifts or wheel chair ramps, push button access to public access doors and signage and other accessibility upgrades as required.

Project Analysis: *(How much and when)*

This would be a multiyear project taking place over three years.

12. Increase Heat Reclamation-CGC

Estimated Capital Cost & Funding Sources

Department: M/S Services

	2008	*2009*	*2010*	*2011*	*Total*
$$ Approved in 2007-2010 Plan					
City:					
LIC:					
YTG:					
GAS:	$250,000				$250,000
Other - specify:					

Project History/Description/Purpose/Need:

Project is for the engineering and completion of work to capture the remaining waste heat from the ice plants at the Canada Games Centre. Currently a large portion of the waste heat is reclaimed and reused in the facility but there is still some waste heat rejected to atmosphere. Work would entail the installation of additional heat exchangers.

Project Analysis: *(How much and when)*

Work would be completed in 2008 with 100% of funds required in 2008.

13. Infiltration Elimination Assessment City Wide

Estimated Capital Cost & Funding Sources

Department: Engineering

	2008	*2009*	*2010*	*2011*	*Total*
$$ Approved in 2007-2010 Plan					
City:					
LIC:					
YTG:					
GAS:	400,000	480,000	660,000	660,000	$2,200,000
Other - specify:					

Project History/Description/Purpose/Need:

2002 camera work provided an assessment of and categorized sanitary sewer mains and manholes for possible repairs. The degree of infiltration city-wide can then be quantified to estimate whether sewer segments have need for repairs, remediation, or replacement. Elimination of storm water connections to the sanitary sewer system would also be undertaken.

The reduction of infiltration into storm sewer connections and into the sanitary system would reduce the volume of effluent being pumped into the lagoons. Sewage Lift Station pump run times would be reduced, the lagoon life expectancy would be increased and there would be a reduction in the lagoon annual discharge volume.

Project Analysis: *(How much and when)*

This would be a multi year project over a 4 year period.

14. Bike Racks & Lockers, *various locations*

Estimated Capital Cost & Funding Sources

Department: Parks & Recreation

	2008	*2009*	*2010*	*2011*	*Total*
$$ Approved in 2007-2010 Plan					
City:	150,000				$150,000
LIC:					
YTG:					
GAS:					
Other - specify:					

Project History/Description/Purpose/Need:

This project includes the purchase of bike racks and bike lockers. The bike racks would be located along commuter routes and adjacent to areas that would typically be stopping and locking locations for commuter bike traffic.

The bike lockers would be located in the downtown core adjacent to typical areas that would be used by commuter bike traffic.

Project Analysis: *(How much and when)*

The total cost for this un-funded project is estimated at $150,000.
This work could be completed in 2008.

15. Upgrade Municipal Services Building to LEED Standard

Estimated Capital Cost & Funding Sources

Department: M/S Services

	2008	*2009*	*2010*	*2011*	*Total*
$$ Approved in 2007-2010 Plan					
City:		$500,000	$3,500,000		$4,000,000
LIC:					
YTG:					
GAS:			$8,000,000		$8,000,000
Other - specify:					
					$12,000,000

Project History/Description/Purpose/Need:

Provision of funds for the upgrade and consolidation of the City's service buildings including Municipal Services Bldg, Purchasing/warehouse, Parks and Rec Workshop, Transit Garage and Carpenter Sign Shop. All of these buildings would be amalgamated into one structure that would make more efficient use of energy resouces as well as limiting the amount of necessary trips by staff between buildings.

The current facilities are all old and not energy efficient and in the case of Municipal Services Bldg not located in the appropriate zoning for type of use it is being used for. The existing buildings would be sold with the proceeds used to offset capital construction costs of a new facility.

This is a project that has been identified by staff and management as a priority for several years.

Project Analysis: *(How much and when)*

The initial phase of the project would be to engage the servcies of a consultant and to complete a needs analysis of existing programs and to find a suitable site to relocate the combined services to. Also as part of the initial phase an appraisal of the existing properties would have to be completed.

The second phase would be the construction.

16. City Wide Water Meters

Estimated Capital Cost & Funding Sources

Department: Public Works

	2008	*2009*	*2010*	*2011*	*Total*
$$ Approved in 2007-2010 Plan					
City:					
LIC:					
YTG:					
GAS:				3,000,000	$3,000,000
Other - specify:					

Project History/Description/Purpose/Need:

At present, the City of Whitehorse requires that all businesses have water meters. Each business is charged according to the amount of water they use. Residential homes are presently not metered. All residents are billed a flat rate regardless of the amount of water they use. Whitehorse is well above the national average for water usage.

If water meters were installed, residential home owners would be required to pay for the amount of water they use. The home owners would try to conserve and not waste the treated water.

If less water is used, less energy would be used and lower pumping and treatment costs will occur. Less water going down the drain will also lessen sewage treatment costs.

Water meters would also help the City locate water main breaks.

Project Analysis: *(How much and when)*

The work would be completed over a Spring through Fall period.

17. Upgrade Public Safety Building to LEED Standard (Fire Hall)

Estimated Capital Cost & Funding Sources

Department: M/S Services

	2008	*2009*	*2010*	*2011*	*Total*
$$ Approved in 2007-2010 Plan					
City:	6,000,000				6,000,000
LIC:					
YTG:					
GAS:	3,000,000				3,000,000
Other - specify:					
					9,000,000

Project History/Description/Purpose/Need:

Provision of funds to supplement those provided by the City to construct the new Public Safety Building (Fire Hall #2) at the top of 2 Mile Hill on the same property that Fire Hall #2 sits on. The funds supplied from the gas tax would provide the engineering, design, technical support and equipment to upgrade the building to an energy efficient structure that would enable LEED certification.

These upgrades would likely include but not necessarily be limited to lighting, heat recovery, solar walls, passive heat loading and cooling, investigation and possible inclusion of ground water heat exchange, sustainable materials used in construction, landscaping, use of runoff for irrigation and high efficiency heating units.

Geoexchange using a vertical borehole closed loop system for heat exchange is an option. Geoexchange would facilitate the creation of new energy efficient technology that could be used as a model (educational tool) for engineers and contractors in the local building industry. Using this project as a training ground for local companies and apprentices would be facilitated during the design and construction phase of this project.

Project Analysis: *(How much and when)*

The initial work on programming is complete with the final drawing and construction documents to be completed prior to year for tender in early 2008. The construction completion is anticipated to be October 2008.

The Planning Process

The City of Whitehorse prepared this Integrated Community Sustainability Plan through a public planning process. The process and the invitation to participate have been well advertised through the Yukon News and Whitehorse Star. The Draft Plan was made available August 3rd at City Hall, the Integrated Community Sustainability Office and the Whitehorse Public Library. The Draft Plan is also available on the City of Whitehorse website. Copies of the Draft Plan have been sent to all those who have participated.

The following details the public meetings, public input opportunities and the public notification as required as per the template.

Council and Senior Management Meeting Workshop to discuss planning process: April 12th. Meeting was advertised in the Whitehorse Star and Yukon News April 5th.

Council Adoption of the Integrated Community Sustainability Plan Process at the Regular Scheduled Meeting of April 23rd. Meeting was advertised April 13th and April 20th on the WHTV rolling ads and in the Yukon News and Whitehorse Star. The planning process was presented at the Whitehorse Standing Committee Meeting on April 16th. All meetings of Council are televised and available on the City website.

Advertising for the public to participate in the development of the Vision and Values for the ICSP was placed in the Yukon News and Whitehorse Star May 11th, May 18th and May 21st. These advertisements invited the public to stop by the Whitehorse Sustainability Office and/or attend a Public Open House on May 23rd at the High Country Inn. Forty people attended the workshop and fifteen members of the public attended the open house.

Following the May 23rd Value and Visioning Workshop and the Public Open House the Vision and Values were prepared in draft form and placed in the Yukon News and Whitehorse Star June 22nd, June 29th and July 6th. Comments were asked for either in person, by email or by phone. Comments were provided by two members of the public.

Public Open Houses were held the week of August 13th during the day with an evening open house on August 15th All open houses were held in LePage Park at the Smith House, (City of Whitehorse Sustainability Office). The Open Houses were advertised in the Whitehorse Star and Yukon News July 27th, August 3rd and August 10th. The comments and Draft ICSP were presented to Council at the August 20th Regular Standing Committee. Council continued to accept comments on the Draft Plan up until September 24th when it was adopted by Council as a Final Plan.

> *Moved by Councillor Graham, seconded by Councillor Roberts*
> THAT the recommended changes to pages 26, 41 and 64 of the Integrated Community Sustainability Plan be approved; and
> THAT the Integrated Community Sustainability Plan be adopted as amended; and
> THAT the amended Integrated Community Sustainability Plan be forwarded to the Review Committee for approval.
> *Carried Motion # 2007-17-10*

The City of Whitehorse hosted a Public Presentation on September 13th to kick-off the Sustainability Charrette with Municipal Manager Richard Quail from Okotoks, Alberta to present the Sustainable Okotoks experience. The Draft ICSP was discussed at this meeting and copies available; 100 people attended the September 13th event.

The consultation process involved a series of interviews with governments, NGO's, the business community and individuals throughout the process.

Community Associations

Letters were sent to all Whitehorse Community Associations advising them of the plan and process. The Integrated Community Sustainability Plan Project Manager offered to attend community association meetings and invited members of the community association to attend the Value and Visioning workshop. The Project Manager attended the Porter Creek Community Association Meeting only. Four Community Associations participated in the workshop.

Governments

The Kwanlin Dun First Nation, Ta'an Kwach'an Council, Yukon Government and Government of Canada participated in the planning process.

• Kwanlin Dun First Nation

The Mayor of Whitehorse sent a letter to Chief Mike Smith on April 11th advising the Kwanlin Dun First Nation of the City's process to complete the ICSP. The Mayor asked Chief Smith how the Kwanlin Dun wanted to participate in the process. (letter attached as in appendix)

Throughout the planning process the Kwanlin Dun First Nation has met with the ICSP Project Manager and provided input into the plan through their Land Use Planning Manager, Gillian McKee. Gillian McKee and Sean Smith, Kwanlin Dun Lands Committee Member, participated and presented at the Values and Visioning Worksop.

The key message that the Kwanlin Dun First Nation presented at the workshop was that the land is the foundation for sustaining the Kwanlin Dun people. The land meets the physical needs, spritiual needs, cultural needs and economic needs of the Kwanlin Dun members. Kwanlin Dun gives the land social, cultural, economic and environmental value and all values need to be considered in planning.

Kwanlin Dun's values extend beyond their privately owned parcels. All future planning must consider the past.

The Kwanlin Dun First Nation is a recipient of gas tax dollars also for planning, capacity building and infrastructure. The Kwanlin Dun has not accessed this money yet due to other priorities and capacity. The City of Whitehorse and Kwanlin Dun see benefits of working together on planning and infrastructure development. When those opportunities arise the two governments will work together.

• Ta'an Kwach'an Council

The Mayor of Whitehorse sent a letter to Chief Ruth Massie also on April 11th advising the Ta'an Kwach'an Council of the City's process to complete the ICSP. The Mayor asked Chief Massie how the Ta'an Kwach'an Council wanted to participate in the process.

The Ta'an Kwach'an Council was not able to participate at the start of this project as they were without a Planner and Lands Officer. More recently the City and Ta'an representatives have met to discuss the ICSP. The Ta'an Kwach'an Council has participated in past city planning projects and was very involved with the development of the City of Whitehorse Official Community Plan. As well, they have participated in the Porter Creek Charrette and the Draft TKC Community Lands Land Use Plan.

Like the Kwanlin Dun First Nation, the Ta'an Kwach'an Council own parcels of land within the City of Whitehorse and plan in the future to develop these parcels and share infrastructure with the City.

The Ta'an Kwach'an Council is a recipient of gas tax dollars and has not yet accessed the funds. The Council has done past work on sustainable development and has shared their Draft Sustainable Development Strategy with the City. This document is in draft only and therefore does not form part of this report.

The Ta'an Kwach'an Council has expressed a desire to continue working with the City of Whitehorse on the second phase of the Sustainability Plan.

• Government of Yukon

The City of Whitehorse has met and or spoken with representatives from the following departments within the Government of Yukon as part of developing the ICSP:

Community Services

Environment

Energy Mines and Resources

Health and Social Services

Education

Tourism and Culture

Justice

Statistic Branch

• Government of Canada

The City of Whitehorse has met and or spoken with representatives from the following departments within the Government of Canada as part of developing the ICSP:

Heritage Canada

Environment Canada

Infrastructure Canada

Natural Resources Canada

A complete listing of those who were interviewed and/or participated in the value and visioning workshop is appended to this report.

Planning Process for Integrated Community Sustainability Plan (ICSP)

PHASE I - Template Completion and Startegic Plan Vision and Values

	Step	Purpose/Content
Community Profile/ Inventory/ Assessment	Community Profile Community Inventory and Assessment	Overview of physical environment, history, people, jobs, economy, culture and other information deemed important Complete Capital Infrastruture, Social Health, Cultural Services, Economic and Capacity Building and Job Training Assessment Checklists
	Evaluate the Inventory in terms of Sustainability	Describe the positives and negatives of the existing infrastructure in terms of meeting the sustainability principles
	Identify existing and potential service agreements	To ensure infrastucture being planned avoids duplication. To consult with KDFN, TKC, and YG. The City has existing agreements with YG and KD. Must be demonstrated that governments worked together.
	Identify Eligible Projects as per Capital Budget	Examine City budget for transit, wastewater, solid waste, community energy systems, active transportation, and building system improvements.
Public Engagement	Stakeholder Interviews	Conduct stakeholder interview with all sectors in community. Excite and engagement the stakeholders.
	Public Visioning Session	One day meeting to develop high level vision and values to be used in template development and charrette preparation.
	Open Downtown Office Displays	Daily Open House for interested public to stop by
	Council/Committee CASM Meetings	Present process, and a have discussion with Council as to their priorities.
Template Report	Identify Infrastructure Priorities and Priority Setting	Create a list of projects and identify how they qualify as per the checklists, the values, goals and sustainability principles. Identify any shared infrastructure opportunities
	Complete Draft Report	Compile the information into a document as per the template
	Consult with the Community on the Draft Report	Hold Open Houses and make draft plan available to all interested, stakeholders and Governments
	Presentation to Planning Committee	Take Draft Report to Council
	Adoption of Template Plan	Council approves or amends Template Plan and then submit to review committee for acceptance. Committee has 40 days to reply.
	Budget	Work with Department Managers to indentify projects for budget consideration. All projects need to be approved by review committee

Stakeholders

Alternative transportation, Doug Hnatiuk (City), City of Whitehorse
ARTS, Laurel Parry (YG, Arts & Culture), Miche Genest (Heritage Canada)
AYC, David Black (AYC), 15-1114 1st Ave, Y1A 1A3
Bald Hill Community Association, Carole Bookless (Community), 22-11th Avenue Y1A 4H7
Buildings, George White (City), City of Whitehorse
Business, Rick Karp (Chamber of Commerce), 101-307 Jarvis Y1A 2H3
City Manager, Dennis Shewfelt (City), City of Whitehorse
Copper Ridge Community Association, Leah Davy (Community) Box 31507 Y1A 6K8
Councilors, Dave Austin, Doug Graham, Jeanine Myhre, Florence Roberts, Jan Stick, Dave Stockdale (City), City of Whitehorse
Crestview Community Association, Jurgen Ponsioen, Susan Russell (Community)
Director/Operation, Brian Crist (City), City of Whitehorse
Director/Administration, Robert Fendrick (City), City of Whitehorse
Downtown Residents Association, Dianne Brendt (Community), 7178 7th Avenue Y1A 1R1
Energy, Doug MacLean (Energy Solutions Center), 206A Lowe Y1A 1W6
Environment, Ian Church (YG), Box 2703 Y1A 2C6
Environment, J. P. Pinard, Lewis Rifkind, Karen Baltgailis (YCS), 302 Hawkins Y1A 1X6
Environment, Bengt Petterson, EBA, Environmental Consultants
Environmental Coordinator, Jen Turner/Sabine Schweiger (City), City of Whitehorse
Financial, Valerie Anderson (City), City of Whitehorse
Fire Department, Clive Sparks (City), City of Whitehorse
Food Bank, Peter Becker/Ross Findlater (Anti-poverty Coalition)
Granger Neighborhood Association, Darielle Talarico (Community), Paulette Ruest, 136 Wilson Y1A 5T3
Health, Brian Kitchen (YG), YG Health and Social Services
Hillcrest Community Association, Doug Mowat (Community)
ICSP Yukon Government Community Services, Anthony Delorenzo (YTG), Box 2703 Y1A 2C6
Infrastructure, Wayne Tuck, Jim McLeod (City), City of Whitehorse, Pat McInroy, YG
Justice, Nils Clarke (Legal Aid)
Leisure Program, Suzette Delmage (City), City of Whitehorse
Mary Lake Community Association, Lois Johnston (Community), 53 Fireweed Dr. Y1A 5T8
Mayor, Bev Buckway (City), City of Whitehorse
McLean Lake Residents Association, Skeeter Miller-Wright, Maryanne Darraugh (Community), Box 31532 Y1A 6K8
Northern Climate Exchange, Michael Westlake, Katherine Sandiford (Climate Change), Box 2799 Y1A 4K4
Planning, Mike Gau (City), City of Whitehorse
Policing, Timothy Walton (RCMP), Whitehorse Detachment, 4100 4th Ave. Y1A 1H5
Porter Creek Community Association, Jeff Marinowske (Community), 64 Almond Place Y1A 5K6
Riverdale Community Association, Doug MacLean (Community), Box 31084 Y1A 2B2
Takhini North Community Association, Mark O'Brien (Community), Box 31763 Y1A 6L3
Takhini West Community Association, Rick Grant (Community)
Valleyview Community Association, Keith Butler (Community), 371 Valleyview Y1A 3C9
Transit, Dave Muir (City), City of Whitehorse
Wolf Creek Community Association, Scott Wilson (Community), 28 Harbottle Road Y1A 5T2
Youth, Vanier Social Justice Committee (Youth), Vanier School, Social Justice Committee Janet Clarke 16 Duke Y1A 4M2
Yukon Community Planning, George Stetkiewicz (YTG), Box 2703 Y1A 2C6

Project rating grid

	Public Health & Safety	Legislated	Accessibility	Replacement or New	Environmental Impact or Protection	Sustainable	Strategic Plan Values	Funding Available	Political Desire	Staff/Consultant Capacity	TOTAL:
Engineering											
1 Compost & Garbage Carts											
2 Downtown Reconstruction											
3 Downtown Reconstruction Beyond 2011											
4 Hillcrest Reconstruction, Phase 1											
5 Hillcrest Reconstruction, Phase 2											
6 Hospital Road and Lewes Blvd Intersection Improvements											
7 Industrial-Quartz to Platinum Design & Construction											
8 Industrial-2 Mile Hill to Quartz Design & Construction											
9 Infiltration Elimination Assessment City Wide											
10 Livingston Trail Lagoon Outfall Pipe											
11 Marwell Upgrading											
12 Paving Landfill Access Road											
13 Porter Creek Reservoir Expansion											
14 Robert Campbell Bridge Deck Repair											
15 Robert Campbell Bridge Widening											
16 Selkirk Pump House Improvements											
17 Selkirk Well Field Development											
18 Signal Replacement Ogilvie and 4th Ave.											
19 Surfacing Gravel Roads with Asphalt and /or BST											
20 Surfacing of Country Residential BST											
21 Trail Connections Airport, Alaska Hwy, Porter Creek, Hillcrest, Takhini, CGC											
22 Unpaved Road Reconstruction											
23 Valleyview Reservoir Upgrade/Expansion											

	Public Health & Safety	Legislated	Accessibility	Replacement or New	Environmental Impact or Protection	Sustainable	Strategic Plan Values	Funding Available	Political Desire	Staff/Consultant Capacity	TOTAL:
Maintenance & Safety Services											
24 3 New Buses											
25 Accessibility Upgrades-Facilities											
26 Upgrade Public Services Building to LEED Standard (New Fire Hall)											
27 Increase Heat Reclamation from Ice Plant at CGC											
28 In-ground Fuel Storage Tank Removal											
29 Energy Upgrades Takhini Arena											
30 MSB Building Replacement											
31 Upgrade City Hall Heating System											
Parks & Recreation											
32 Bike Rack, Bike Lockers, at Various Locations											
33 Trail Development											
34 Trail Plan Implementation											
Public Works											
35 3 Garbage/Compost Trucks with Lifting Devices											
36 City Wide Water Meters											
37 GEO Exchange City Wide Sustainability Assessment											
38 Ground Temperature Monitoring Stations											
39 Heat Trace Assessment City Wide											
40 Lagoon Monitoring Wells											
41 Landfill Gas Production Feasibility											
42 Landfill Upgrades											
43 Marwell Forcemain Condition Study											
44 Permanent Water Sampling Station											
45 Pump House & Small Lift Station Upgrade											
46 Sidewalk Replacement Program											
47 Truck Fill Station at Fire Hall											
48 Upgrade Compost Facility & New Compost Grinder											
49 Winter Sand Pile Pad											

April 10, 2007

Chief Ruth Massie

Ta'an Kwach'an Council

117 Industrial Road

Whitehorse, Yukon Y1A 5A5

Dear Chief Massie:

RE: City of Whitehorse Integrated Community Sustainability Plan (ICSP)

The City of Whitehorse has accessed the Planning and Capacity Building Funds from the Canada-Yukon Gas Tax Agreement; the New Deal for Canadian Cities. We have established a Sustainability Office at 3128 – 3rd Avenue and are working to complete the Yukon Government (ICSP) Template by June this year.

As two governments that live within the same jurisdiction and utilize much of the same infrastructure, with more opportunities to share in the development and operation of new sustainable infrastructure I would like to know how the Ta'an Kwach'an Council wishes to be involved in the development of the City of Whitehorse ICSP.

The City is completing the ICSP in two phases. The first being the completion of the Yukon Template in order to access the infrastructure dollars, followed by the second phase, which is envisioned to be a comprehensive plan that examines and makes recommendations for a new sustainable way to invest, build and manage environmentally sustainable infrastructure for the City of Whitehorse.

The City's schedule for completion of the template is June of this year. We are hoping to access gas tax dollars for infrastructure improvements this year and for budget planning in 2008. We are planning a city-wide visioning session in May for the template and to identify issues for a sustainability charrette in the fall.

I look forward to hearing from you as to how the City and Ta'an Kwach'an Council can work together on this exciting plan.

Sincerely,

Mayor Buckway

April 10, 2007

Chief Mike Smith

Kwanlin Dun First Nation

35 McIntyre Drive

Whitehorse, Yukon Y1A 5A5

Dear Chief Smith:

RE: City of Whitehorse Integrated Community Sustainability Plan (ICSP)

The City of Whitehorse has accessed the Planning and Capacity Building Funds from the Canada-Yukon Gas Tax Agreement; the New Deal for Canadian Cities. We have established a Sustainability Office at 3128 – 3rd Avenue and are working to complete the Yukon Government (ICSP) Template by June this year.

Ms Lesley Cabott is our Integrated Community Sustainability Plan Project Manager. Lesley has met with your Planner, Gillian McKee, to introduce the process administratively and professionally.

As two governments that live within the same jurisdiction and utilize much of the same infrastructure, with more opportunities to share in the development and operation of new sustainable infrastructure I would like to know how the Kwanlin Dun First Nation wishes to be involved in the development of the City of Whitehorse ICSP.

The City is completing the ICSP in two phases. The first being the completion of the Yukon Template in order to access the infrastructure dollars, followed by the second phase, which is envisioned to be a comprehensive plan that examines and makes recommendations for a new sustainable way to invest, build and manage environmentally sustainable infrastructure for the City of Whitehorse.

The City's schedule for completion of the template is June of this year. We are hoping to access gas tax dollars for infrastructure improvements this year and for budget planning in 2008. We are planning a city-wide visioning session in May for the template and to identify issues for a sustainability charrette in the fall.

I look forward to hearing from you as to how the City and Kwanlin Dun can work together on this exciting plan.

Sincerely,

Mayor Buckway

Capital projects sheets

4

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Compost & Garbage Carts City Wide

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:	1,200,000				$ 1,200,000
Other - specify:					$ -
Total:	$ 1,200,000	$ -	$ -	$ -	$ 1,200,000

Project History/Description/Purpose/Need:

Since 2002, the City of Whitehorse has had a residential compost collection program which involves using biodegradable bags. The main complaints about participation in the program involve the cost of the biodegradable bags, the inconvenience of having to purchase the bags, lack of consistent bag supply in the stores and the premature break-down of the biodegradable bags. The 2003 Status on Solid Waste Services Report recommended that the City "advance a two-cart system through the budget process". The two-cart automated system would not require participants to use any specialty bags for compost or garbage collection.

In June of 2007 the pilot project for the two-cart system was implemented in a selected area of the Porter Creek Subdivision and will run for one year. Approximately 500 households in Porter Creek will received 2 – 240L carts, a green one for compost and a black one for garbage.

In 2008 approximately 6,900 compost and 6,900 garbage carts will be required to implement a City Wide dual cart collection. Carts will be ordered for delivery in the summer of 2008 with distribution and education to take place during the fall of 2008.

Project Analysis:

(How much and when)

Project to be completed in the fall of 2008 following evaluation of the Pilot project.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Downtown Reconstruction

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:	5,500,000	4,600,000	5,200,000	6,000,000	$ 21,300,000
Other - specify:					$ -
Total:	$ 5,500,000	$ 4,600,000	$ 5,200,000	$ 6,000,000	$ 21,300,000

Project History/Description/Purpose/Need:

Engineering and construction services for the "Underground Works" and "Surface Works" portion of the Downtown Reconstruction Program.

These "Underground Works" will be done in conjunction with the "Surface Works" and the "Engineering Design Services" projects. The Surface Works portion includes all: road works; shallow utilities; street lights and landscaping improvements. Reconstruction is necessary to improve the look of the City and meet the service needs of businesses and the public. Surface work is a local improvement under the City's Local Improvement Policy. The Underground Works portion includes all: water works; sanitary sewers; storm sewers and building services. Underground Works to be done in conjunction with Surface Works.

The proposed phases are from the City's Downtown District Predesign Report, and are proposed as follows:

Year 2008 is proposed for construction of PhaseR3; Black Street - 4th Avenue to 8th
Year 2009 is proposed for construction of portions of ; Ogilvie Street - 2nd Ave. to 8th Avenue, made up from portions of Phase R1 ,R2 and R6
Year 2010 is proposed for construction of ; 6th Ave 400 Block of Cook and Wheeler, made up from portions of R8, R5, R4 and R2
Year 2011 is proposed for construction of Strickland, Alexander, Hanson, Hawkins (Residential Streets)

Projects are subject to approval under the Local Improvement Process, the benefiting properties paying only a portion of the surface works.

Due to the aging infrastructure in these areas maintenance costs are increasing and with the upgrading of u/g infrastructure the need to bleed water for frost protection of services and dead end mains will be eliminated.

Projects are subject to approval under the Local Improvement Process, the benefiting properties paying only a portion of the surface works.

Project Analysis:

This would be a multiyear project taking place over four years.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** DT Reconstruction Beyond 2011

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:				$ 48,700,000	$ 48,700,000
Other - specify:					$ -
Total:	$ -	$ -	$ -	$ 48,700,000	$ 48,700,000

Project History/Description/Purpose/Need:

Engineering and construction services for the "Underground Works" and "Surface Works" portion of the Downtown Reconstruction Program.

These "Underground Works" will be done in conjunction with the "Surface Works" and the "Engineering Design Services" projects. The Surface Works portion includes all: road works; shallow utilities; street lights and landscaping improvements. Reconstruction is necessary to improve the look of the City and meet the service needs of businesses and the public. Surface work is a local improvement under the City's Local Improvement Policy. The Underground Works portion includes all: water works; sanitary sewers; storm sewers and building services. Underground Works to be done in conjunction with Surface Works.

The proposed remaining phases are from the City's Downtown District Predesign Report, and are proposed as follows: Remaining portions of the Residential and Special Phases R2, R6, R4, R7, R5 and S2. Downtown Phases D2,D3, D4 and D5. Years and sequence of work will be determined as budget years advance.

Projects are subject to approval under the Local Improvement Process, the benefiting properties paying only a portion of the surface works.

With the aging infrastructure in these areas maintenance costs are increasing and with the upgrading of U/G infrastructure the need to bleed water for frost protection of services and dead end mains will be eliminated.

Project Analysis:

(How much and when)

These projects would be completed over a number of years and be split over 10 or 11 projects.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Hillcrest Recon-Des & Cons Ph 1

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan		*200,000*	*3,500,000*		
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:		200,000	3,500,000		$ 3,700,000
Other - specify:					$ -
Total:	$ -	$ 200,000	$ 3,500,000	$ -	$ 3,700,000

Project History/Description/Purpose/Need:

Meetings with Hillcrest Community Association have expressed desire to see some infrastructure renewal work completed in this area. The community feels that the lack of sound infrastructure is affecting property values and health and safety. Further, Yukon Electrical and Northwestel are also desirable to see some of their infrastructure upgraded as well, and meetings between all groups will be required.

The funds proposed is to commence the detailed design process using a consultant in 2009 which will allow tendering and construction of Phase 1 in 2010. The narrow road rights of way, location of public and private infrastructure will require review and compromise of standards to meet the desires of the community and respecting these challenges. Phases of reconstruction work have not been identified but will be developed in 2007.

Infrastructure renewal is subject to the local improvement process, and is not possible for a few years due to conflicting infrastructure renewal work in other communities. Meetings with the Association have identified these conflicts.

Upgrading of the underground infrastructure will eliminate the need for to bleed water as a method of frost protection for services.

Project Analysis:

(How much and when)

Funds proposed is to commence the detailed design process using a consultant in 2009 which will allow tendering and construction of Phase 1 in 2010.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Hillcrest Recon-Des & Cons Ph 2

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan		*200,000*			
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:		200,000		3,600,000	$ **3,800,000**
Other - specify:					$ -
Total:	$ -	$ 200,000	$ -	$ 3,600,000	$ 3,800,000

Project History/Description/Purpose/Need:

Meetings with Hillcrest Community Association have expressed desire to see some infrastructure renewal work completed in this area. The community feels that the lack of sound infrastructure is affecting property values and health and safety. Further, Yukon Electrical and Northwestel are also desirable to see some of their infrastructure upgraded as well, and meetings between all groups will be required.

The funds proposed is to commence the detailed design process using a consultant in 2009 which will allow tendering and construction of Phase 2 in 2011. The narrow road rights of way, location of public and private infrastructure will require review and compromise of standards to meet the desires of the community and respecting these challenges. Phases of reconstruction work have not been identified but will be developed in 2007.

Infrastructure renewal is subject to the local improvement process, and is not possible for a few years due to conflicting infrastructure renewal work in other communities. Meetings with the Association have identified these conflicts.

Upgrading of the underground infrastructure will eliminate the need for to bleed water as a method of frost protection for services.

Project Analysis:

(How much and when)

Funds proposed is to commence the detailed design process using a consultant in 2009 which will allow tendering and construction of Phase 2 in 2011.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Hospital Rd & Lewes Blv'd Int. Improvements

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan	*225,000*				
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:	225,000				$ 225,000
Other - specify:					$ -
Total:	$ 225,000	$ -	$ -	$ -	$ 225,000

Project History/Description/Purpose/Need:

This project is to install traffic signals or a roundabout at the existing intersection. Traffic studies indicate this intersection is one of the busiest and vehicles travel fast making it difficult to access and egress from the Hospital. A roundabout has been considered for this location based on City's 2002 Walkable Communities report and subsequent transportation study; however, there are some public opinion expressing concerns about a roundabout. Intersection upgrades will improve pedistrian and cyclist safety at this location.

Project Analysis:

(How much and when)

This project planning, design, drawing preperation and construction documents to be completed in January and February of 2008. The construction completion is anticipated to be the fall of 2008.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Industrial-Quartz to Platinum

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:		560,000			$ 560,000
YTG:					$ -
GAS:	200,000	960,000			$ 1,160,000
Other - specify:					$ -
Total:	$ 200,000	$ 1,520,000	$ -	$ -	$ 1,720,000

Project History/Description/Purpose/Need:

Engineering and construction services for the upgrading of underground & surface for Industrial Road from Two Mile Hill to Quartz Road to City standards. Design of the work in 2008 with construction in 2009. The standard will include: curb, gutter, walk, asphalt, water, sanitary & storm, traffic signals, some environmental cleanup of contaminated soils close to 2 Mile Hill, and underground street lighting.

Since this section of Industrial Road is a major corridor for access to Marwell , it is proposed that the construction be paid for using gas tax revenue from federal Government

Predesign from the Marwell Planning and Predesign Study was completed in 2002 and approved by Council.

The City has received numerous requests to complete the paving of the road surface.

Project Analysis:

(How much and when)

Design of the entire project from Two Mile Hill to Platinum will be undertaken in 2008 with Phase 1 and 2 of the construction from Two Mile Hill to Platinum Road to be completed in 2009.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Industrial-2 Mile Hill to Quartz

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:		598,000			$ 598,000
YTG:					$ -
GAS:	220,000	1,002,000			$ 1,222,000
Other - specify:					$ -
Total:	$ 220,000	$ 1,600,000	$ -	$ -	$ 1,820,000

Project History/Description/Purpose/Need:

Engineering and construction services for the upgrading of underground & surface for Industrial Road from Two Mile Hill to Quartz Road to City standards. Design of the work in 2008 with construction in 2009. The standard will include: curb, gutter, walk, asphalt, water, sanitary & storm, traffic signals, some environmental cleanup of contaminated soils close to 2 Mile Hill, and underground street lighting.

Since this section of Industrial Road is a major corridor for access to Marwell , it is proposed that the construction be paid for using gas tax revenue from federal Government

Predesign from the Marwell Planning and Predesign Study was completed in 2002 and approved by Council.

The City has received numerous requests to complete the paving of the road surface.

Project Analysis:

(How much and when)

Design of the entire project from Two Mile Hill to Platinum will be undertaken in 2008 with Phase 1 and 2 of the construction from Two Mile Hill to Platinum Road to be completed in 2009.

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City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Infiltration Elimination Assessment City Wide

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:	400,000	480,000	660,000	660,000	$ 2,200,000
Other - specify:					$ -
Total:	$ 400,000	$ 480,000	$ 660,000	$ 660,000	$ 2,200,000

Project History/Description/Purpose/Need:

2002 camera work provided an assessment and categorized of sanitary sewer mains and manholes for possible repairs. The degree of infiltration city-wide can then be quantified to estimate whether sewer segments have need for repairs, remediation, or replacement of all or some of the sections of the sewers maintenance problems could also be identified. Elimination of storm water connections to the sanitary sewer system would also be undertaken.

the reduction of infiltration into and storm sewer connections to the sanitary system would reduce the volume of effluent being pumped into the lagoons. Sewage Lift Station pump run times would be reduced, the lagoon life expectancy would be increased and there would be a reduction in the lagoon annual discharge volume.

Project Analysis:

(How much and when)

This would be a multi year project over a 4 year period.

3

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Livingston Trail Lagoon Outfall Pipe

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan	*2,120,000*				
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:	2,200,000				$ 2,200,000
Other - specify:					$ -
Total:	$ 2,200,000	$ -	$ -	$ -	$ 2,200,000

Project History/Description/Purpose/Need:

The 1999 Annual Capital Budget for sewage treatment was $1,470,000. In 1998/99 the City undertook trial discharges of treated effluent to Pot Hole Lake (PHL). The report suggested that PHL could be a viable long term discharge alternative to the Yukon River. The report indicated that the performance of the Pot Hole Lake would degrade over time and funds will be required to undertake construction of the extension of the outfall line from the Pot Hole Lake to the Yukon River in future years, dependent on when the PHL was no longer able to handle the flows of treated effluent.

In 2000, preliminary engineering for the design of the outfall was completed. The concept was approved by the Yukon Water Board and a new Water Use License was approved. During the discharge in 2004, a decease in the performance of the PHL was noted. Based on the results of the discharge so far in 2005, a further reduction in the volume of water discharged is occurring. In 2006 discharge volumes were slightly higher than 2005 however volumes were lower than the years prior to 2004. Therefore, construction of the outfall to the river should be completed.

It is proposed to be a design/build project: predesign work has been completed, engineering final design to be completed in 2007, and construction to be undertaken in 2008.

Project Analysis:

(How much and when)

Work is scheduled for completion in 2008.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Marwell Upgrading

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:			3,000,000	3,500,000	$ **6,500,000**
Other - specify:					$ -
Total:	$ -	$ -	$ 3,000,000	$ 3,500,000	$ 6,500,000

Project History/Description/Purpose/Need:

With the development and expansion being undertaken in the Marwell Industrial Subdivision, there is a need to provide the lot owners with water and sewer services, with the increased traffic the upgrading of the roads to a paved industrial standard including the installation of a storm sewer system to address local drainage issues is required.

Bring water services into the remainder of the Marwell Area, and new sewer mains on Gypsum. Water would be provided to properties fronting onto Gold, Industrial, Silver and Gypsum Roads. Increased water circulation would improve water quality in the area and allow properties to limit use of ground wells in the area. New fire hydrants would protect properties from fires. Watermains in this area may also encourage larger properties to subdivide by making the land more saleable.

Asphalt roads and storm drainage infrastructure would significantly reduce maintenance requirements in the area.

To address the periodic flooding of the area during periods of Yukon River Construction of a dyke along the Yukon River from Quartz Road to Tungsten road will be required.

Project Analysis:

(How much and when)

U/G infrastructure and road works would be completed on Gold, Gypsum, Silver and Industrial Rd. including the Dyke in 2010. In 2011 U/G and surface works would be completed on Tlingit, Tungsten and Galena Roads.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Paving Landfill Access Rd

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:		350,000			$ 350,000
Other - specify:					$ -
Total:	$ -	$ 350,000	$ -	$ -	$ 350,000

Project History/Description/Purpose/Need:

The landfill access road is currently a gravel road and requires regular maintenance (grading for wash boarding and dust control) during the spring, summer and fall months dependent upon the amount of precipitation received.

Upgrading of the access road to an asphalt standard would significantly reduce the maintenance requirements.

Project Analysis:

(How much and when)

Work is scheduled for completion in 2009.

6

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Porter Creek Reservoir Upgrade

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan		*3,500,000*			
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:		4,000,000			$ 4,000,000
Other - specify:					$ -
Total:	$ -	$ 4,000,000	$ -	$ -	$ 4,000,000

Project History/Description/Purpose/Need:

A new water reservoir at Porter Creek is required to meet existing and future water demands. New developments and existing users require a secure water supply for use by the property owners and for emergency fire protection services.

This upgraded reservoir would be designed to meet the existing requirements with future expansion capabilities to meet the needs of new developments proposed and allow for future flows into in Porter Creek, and Porter Creek Lower Bench during demand periods.

The 2002 Water & Sewer Study recommended the twinning of the reservoir with a 5,500 m3 cell in the 0-5 year plan. It identified the reservoir as most critical in terms of expansion. The remote location of this reservoir makes this expansion a priority.

Project Analysis:

(How much and when)

The majority of the work will be completed in 2009.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Robert Campbell Bridge Deck Repairs

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan	*300,000*				
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:	200,000				$ 200,000
Other - specify:					$ -
Total:	$ 200,000	$ -	$ -	$ -	$ 200,000

Project History/Description/Purpose/Need:

The Robert Campbell Bridge is currently the only access to Riverdale and does not provide a safe bike access. The project to widen the existing 1.6 meter wide sidewalks to 2.4 meters wide would: provide a safe route for pedestrians, isolate cyclists from vehicular traffic while connecting to the Millennium and Robert Service Way multi-use trails.

The City of Whitehorse is seeking to promote alternative modes of transportation to reduce green house gas emissions and increased bicycle bridge use will help to achieve this goal.

The concrete deck requires periodic maintenance and safety repairs.
2007 for consultant fees to undertake a detailed bridge inspection and preparation of a recommended repairs report.
2008 Fund provide for the concrete deck repairs, installation of new J-seals and the application of saline sealer over a two year period.

Project Analysis:

(How much and when)

This a two year project where all funds are committed in the first year in which majority of the work will be completed in the first year followed by a second application of sealant in the 2nd year.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Robert Campbell Bridge Widening

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan		*600,000*			
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:		700,000			$ 700,000
Other - specify:					$ -
Total:	$ -	$ 700,000	$ -	$ -	$ 700,000

Project History/Description/Purpose/Need:

The Robert Campbell Bridge is currently the only access to Riverdale and does not provide a safe bike access. The project to widen the existing 1.6 meter wide sidewalks to 2.4 meters wide would: provide a safe route for pedestrians, isolate cyclists from vehicular traffic while connecting to the Millennium and Robert Service Way multi-use trails.

The City of Whitehorse is seeking to promote alternative modes of transportation to reduce green house gas emissions and increased bicycle bridge use will help to achieve this goal.

Project Analysis:

(How much and when)

All work will be completed in 2009.

2

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Selkirk Water Pumphouse

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan			*6,600,000*		
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:			6,600,000		$ 6,600,000
Other - specify:					$ -
Total:	$ -	$ -	$ 6,600,000	$ -	$ 6,600,000

Project History/Description/Purpose/Need:

The existing Selkirk Pumphouse has been in operation since the 1950's and upgrades have been identified as required in previous Water & Sewer Studies. The existing pipes, valves and equipment are showing significant signs of age. The structure is not earthquake resistant and is subject to catastrophic failure.

The pumps and electrical supplies need to be upgraded to meet future water demands as our city increases in population and new areas are developed. The upgraded pumphouse would be designed with energy savings options such as solar heating, heat recovery, geothermal heat pumps, air to air heat pumps, more efficient pumps and controls settings. The funds supplied from the gas tax would provide the engineering, design, technical support and equipment to upgrade the building to an energy efficient structure and equipment that would enable LEED certification

The current annual O & M costs for Selkirk Station is approximately $150,000 and the above costs would be in addition to that amount if a new treatment plant will be built.

Project Analysis:
(How much and when)

The initial phase of the project would be to engage the services of a consultant and to complete a preliminary and detailed design. The second phase would be the construction of the new facility.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Selkirk Well Development

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan	*1,620,000*	*820,000*	*720,000*		
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:	1,660,000	820,000	720,000		$ 3,200,000
Other - specify:					$ -
Total:	$ 1,660,000	$ 820,000	$ 720,000	$ -	$ 3,200,000

Project History/Description/Purpose/Need:

The project involves the installation of production wells in the Selkirk Aquifer within the Riverdale subdivision. The wells will increase the volume of groundwater pumped into the existing water distribution system, with the goal of reducing and eventually eliminating Schwatka Lake surface water as a water source for the City of Whitehorse.

This project is a carryover for project that was originally budgeted for completion in 2006.

In 2008, construction is proposed for two wells on the south side of Riverdale. One well would be connected to the existing intake line along Nisutlin Road. In 2009, the second well located in south side of Riverdale would be connected to the discharge line installed 2008. The funds supplied from the gas tax would provide the engineering, design, technical support and equipment to upgrade the building to an energy efficient structures and equipment that would enable LEED certification. Use of well water will reduce the need to use fossil fuels to heat water in the distribution system during the winter months.

In 2009, a well near Selkirk Street pumphouse is proposed as backup to the existing wells now in use.
g, heat recovery, geothermal heat pumps, air to air heat pumps, more efficient pumps and controls settings. The funds supplied from the gas tax would provide the engineering, design, technical support and equipment to upgrade the building to an energy efficient structure that would enable LEED certification

In 2012 or beyond, depending on population growths, additional wells would be installed and connected to the existing water supply system in Hart and in Hyland Crescents, through existing public utility lots. This work will increase fire protection and reduce the need to bleed or circulate water for protection against frozen mains.

Project Analysis:

(How much and when)

This would be a multiyear project taking place over three years.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Signal Replacement Ogilvie & 4th Ave.

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan	*250,000*				
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:	250,000				$ 250,000
Other - specify:					$ -
Total:	$ 250,000	$ -	$ -	$ -	$ 250,000

Project History/Description/Purpose/Need:

This project is to replace the existing traffic signals with a completely new set of equipment including new davit poles, bases, light heads, controller, cabinet and new detector loops. The existing signals are old, have been damaged by vehicles, and the majority of the equipment is in need of replacement. New magnetic loops will provide for improved traffic flow by giving more flexibility in traffic control and provide for more efficient traffic flow during peak times. With 4th Avenue being designated as the main bicycle corridor efficient traffic flow through the intersection will enhance cyclist safety and movement at this location.

Project Analysis:
(How much and when)

The work will be completed in 2008.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** BST or ASP of Gravel Rds

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:	1,500,000	1,500,000			$ 3,000,000
Other - specify:					$ -
Total:	$ 1,500,000	$ 1,500,000	$ -	$ -	$ 3,000,000

Project History/Description/Purpose/Need:

There are approximately 66 lane kilometers of access roads, such as Grey Mountain Road, in the City of Whitehorse that are currently gravel. These roads require regular maintenance (grading for wash boarding and dust control) during the spring, summer and fall months dependent upon the amount of precipitation received.

Upgrading of these access roads to an asphalt standard would significantly reduce the maintenance requirements.

Project Analysis:

(How much and when)

This is a multi year project with funds to be spent over a 2 year period

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Country Res-BST Surfacing

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan	*350,000*	*400,000*	*400,000*	*400,000*	
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:					$ -
Other - specify:	350,000	400,000	400,000	400,000	$ **1,550,000**
Total:	$ **350,000**	$ **400,000**	$ **400,000**	$ **400,000**	$ **1,550,000**

Project History/Description/Purpose/Need:

The Rural Residential Road Surfacing Program makes provisions to upgrade secondary roads to BST surface standards. The project will improve service, lower road maintenance costs, and result in a safer and cleaner neighbourhood. It is proposed to BST only straight sections of roadway while the cul-de-sacs would remain graveled. Intersections will be paved where vehicle use is high. NO LIC recovery identified.

A portion of the budget would include repair and resurfacing to existing damaged BST where appropriate and addressing drainage concerns.

Hard surfacing of existing country residential gravel roads with BST will significantly reduce road maintenance costs.

Project Analysis:

(How much and when)

This would be a multiyear project taking place over four years.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Trail Connections

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:	250,000	250,000			$ 500,000
Other - specify:					$ -
Total:	$ 250,000	$ 250,000	$ -	$ -	$ 500,000

Project History/Description/Purpose/Need:

To meet the City's goal of and to promotion alternate transportation the development of a multi use trail network that connect the various subdivisions to each other and the downtown core is an important aspect to the success of the program.

Under this program connector trails are proposed along the Alaska Highway from the Airport to the existing trail Puckett Gulch Trail and along Range Road to the Two Mile Hill Bicycle/Pedestrian trails; Development and upgrading of the Trans Canada Trail Connector to Porter Creek from the Takhini Arena and from Hillcrest to existing trail network .

Project Analysis:

(How much and when)

This would be a multiyear project taking place over a two year period.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Unpaved Road Reconstruction

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:	60,000	60,000	50,000		**$ 170,000**
LIC:					**$ -**
YTG:					**$ -**
GAS:					**$ -**
Other - specify:					**$ -**
Total:	**$ 60,000**	**$ 60,000**	**$ 50,000**	**$ -**	**$ 170,000**

Project History/Description/Purpose/Need:

In recent years, the Public Works Department has been spending more scarce O&M funding on rural gravel road upgrades. Upgrading of the road would return the amount of time and energy required for repairs on these existing roads.

2008 - Long Lake Road from Whitehorse Lagoon to Livingstone Trail Lagoon Facility and Pot Hole Lake and a portion of Fish Lake Road
2009 - Cut down clay cliffs on Wickstrom Road
2010 - McLean Lake Haul Road

Project Analysis:

(How much and when)

This is a multi-year program with individual roads completed each year.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Engineering **Project:** Valleyview Reservoir Upgrade

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan	*4,040,000*				
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:	4,100,000				$ 4,100,000
Other - specify:					$ -
Total:	$ 4,100,000	$ -	$ -	$ -	$ 4,100,000

Project History/Description/Purpose/Need:

An upgraded water reservoir at Valleyview is required to meet existing and proposed future water demands. New developments and existing users require a secure water supply for use by the property owners and for emergency fire protection services.

This upgraded reservoir would be designed to meet the existing requirements with future expansion capabilities to meet the needs of new developments proposed in Takhini, airport, Porter Creek, Tankfarm, and Porter Creek Lower Bench.

The 2002 Water & Sewer Study recommended the twinning of the reservoir with a 7,000 m3 cell in the 5-10 year plan, and the construction of a 8,000m3 cell in the 20+ year plan.

Project Analysis:
(How much and when)

The majority of the work will be completed in 2008.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: M/S Services Project: 6 New Buses

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan	1,350,000				
City:	450,000				$ 450,000
LIC:					$ -
YTG:					$ -
GAS:		1,350,000			$ 1,350,000
Other - MRIF:	900,000				$ 900,000
Total:	$ 1,350,000	$ 1,350,000 -	$ -	$ -	$ 2,700,000

Project History/Description/Purpose/Need:

2008: Ongoing replacement of existing transit fleet -- 4 units replaced in 2006. 2008 funding identified to be part of MRIF funding application to replace an additional 3 units. Replacement units would be "kneeling" style to allow for greater accessibility.

Coupled with the major repair funding request for 2007 the Transit fleet will have 7 low floor accessible buses and two rebuilt 40 buses. The fleet will either be new buses/less than three years old or rebuilt.

Unless directed otherwise, the fleet will be maintained at 9 units: 6 units for regular scheduled service and 3 spare units. There will be 7 units surplused, 4 in 2007 and 3 in 2008.

Project Analysis:

(How much and when)

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: M/S Services **Project:** Accessibility Upgrades-Facilities

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:	50,000	300,000	350,000	300,000	$ 1,000,000
Other - specify:					$ -
Total:	$ 50,000	$ 300,000	$ 350,000	$ 300,000	$ 1,000,000

Project History/Description/Purpose/Need:

Provision of funds for the upgrade of City facilities for accessibility improvements. This may include the installation of elevators/ handicap lifts or wheel chair ramps, push button access to public access doors and signage and other accessibility upgrades as required.

Project Analysis:

(How much and when)

This would be a multiyear project taking place over three years

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: M/S Services

Project: Upgrade Public Svcs Bldg to LEED Standard (New Fire Hall)

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:	6,000,000				$ 6,000,000
LIC:					$ -
YTG:					$ -
GAS:	3,000,000				$ 3,000,000
Other - specify:					$ -
Total:	$ 9,000,000	$ -	$ -	$ -	$ 9,000,000

Project History/Description/Purpose/Need:

Provision of funds to supplement those provided by the City to construct the new Public Services Building (Fire Hall #2) at the top of 2 Mile Hill on the same property that Fire Hall #2 sits on. The funds supplied from the gas tax would provide the engineering, design, technical support and equipment to upgrade the building to an energy efficient structure that would enable LEED certification.

These upgrades would likely include but not necessarily be limited to lighting, heat recovery, solar walls, passive heat loading and cooling, investigation and possible inclusion of ground water heat exchange, sustainable materials used in construction, landscaping, use of runoff for irrigation and high efficieny heating units.

Should the ground water wells for heat exchange be an option there is also the potenial to use the water source as a non- potable source for fire fighting training as well for use in dust control on non-paved roads. This would eliminate the need to pump and treat water that doesn't need it.

Project Analysis:

(How much and when)

The initial work on progarmming is complete with the final drawing and construction documents to be completed prior to year for tender in early 2008. The construction completion is anticipated to be October 2008.

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City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: M/S Services **Project:** Increase Heat Reclamation-CGC

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:	250,000				$ 250,000
Other - specify:					$ -
Total:	$ 250,000	$ -	$ -	$ -	$ 250,000

Project History/Description/Purpose/Need:

Project is for the engineering and completion of work to capture the remaining waste heat from the ice plants at the CWG Centre. Currently a large portion of the waste heat is reclaimed and reused in the facility but there is still some waste heat rejected to atmosphere. Work would entail the installation of additional heat exchangers.

Project Analysis:

(How much and when)

Work would be completed in 2008 with 100% of funds required in 2008

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: M/S Services **Project:** Energy Upgrades-Takhini Arena

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:	100,000	200,000			$ 300,000
Other - specify:					$ -
Total:	$ 100,000	$ 200,000	$ -	$ -	$ 300,000

Project History/Description/Purpose/Need:

Supply and installation of energy efficiency technoloy Takhini Arena.

Project would be two components;
1) to provide low grade heat and ventilation to the ice surface area by use of solar wall technology on the south end of the arena. This not intended to provide heat to the office/ public areas such as mezzinine, lobby or dressing rooms.

2) heat recovery from the ice plants through the use of heat exchangers. The recovered energy could be used to heat the domestic hot water as well as provide some of the required heating load to the facility. As this energy source is only available during periods when the ice plants are in operation there would still be the requirement for 100% backup which already exists.

Project Analysis:

(How much and when)

It is anticipated this project could be completed over two year period; 1/3 of funds for the solar wall required in 2008, the remaining funds for heat recovery in 2009

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City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: M/S Services **Project:** MSB Building Replacement

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:		500,000	3,500,000		**$ 4,000,000**
LIC:					**$ -**
YTG:					**$ -**
GAS:			8,000,000		**$ 8,000,000**
Other - specify:					**$ -**
Total:	$ -	$ 500,000	$ 11,500,000	$ -	$ 12,000,000

Project History/Description/Purpose/Need:

Provision of funds for the upgrade and consolidation of the City's service buildings including Municipal Services Bldg, Purchasing/warehouse, Parks and Rec Workshop, Transit Garage and Carpenter Sign Shop. All of these buildings would be amalgamated into one structure that would make more efficient use of energy resouces as well as limiting the amount of necessary trips by staff between buildings.

The current facilities are all old and not energy efficient and in the case of Municipal Services Bldg not located in the appropriate zoning for type of use it is being used for. The existing buildings would be sold with the proceeds used to offset capital construction costs of a new facility.

This is a project that has been identified by staff and management as a priority for several years.

Project Analysis:

(How much and when)

The initial phase of the project would be to engage the servcies of a consultant and to complete a needs analysis of existing programs and to find a suitable site to relocate the combined services to. Also as part of the initial phase an appraisal of the existing properties would have to be completed.
The second phase would be the construction.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: M/S Services **Project:** Upgrade City Hall Heating System

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:	75,000				$ 75,000
Other - specify:					$ -
Total:	$ 75,000	$ -	$ -	$ -	$ 75,000

Project History/Description/Purpose/Need:

Provision of funds to complete the upgrade of the heating system at City Hall to remove all peumatic controls and install additional zone valves and a DDC system to provide for more constant heating and cooling. Currently the system is very hard to control given the age of the existing infrastructure that is controlling the system.

The ability to more accurately control the system will promote energy efficiency and reduce fuel consumption.

Project Analysis:

(How much and when)

Work will be mostly completed in 2007- City has allocated $50,000 to this project in 2007 fiscal year.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Parks & Recreation

Project: Bike Racks & Lockers
Various Locations

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:	150,000				$ 150,000
LIC:					$ -
YTG:					$ -
GAS:					$ -
Other - specify:					$ -
Total:	$ 150,000	$ -	$ -	$ -	$ 150,000

Project History/Description/Purpose/Need:

This project includes the purchase of bike racks and bike lockers. The bike racks would be located along commuter routes and adjacent to areas that would typically be stopping and locking locations for commuter bike traffic.
The bike lockers would be located in the downtown core adjacent to typical areas that would be used by commuter bike traffic.

Project Analysis:

(How much and when)

The total cost for this un-funded project is estimated at $150,000.
This work could be completed in 2008.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Parks & Recreation **Project:** Trail Development

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:	23,000	23,000	50,000		**$ 96,000**
LIC:					**$ -**
YTG:					**$ -**
GAS:					**$ -**
Other - specify:					**$ -**
Total:	**$ 23,000**	**$ 23,000**	**$ 50,000**		**$ 96,000**

Project History/Description/Purpose/Need:

This is a project that has been funded in the past by City Council to assist in the development of trail signage, trail grooming in winter, and ongoing trail maintenance on existing trail areas within the City. Partnerships include the KSA.

Project Analysis:

(How much and when)

The cost of $23,000 per year allows for seasonal grooming of the trails by the KSA and ongoing, signage installation, replacement. Included in this is the repairs to existing trails due to normal wear and tear.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Parks & Recreation **Project:** Trail Plan Implementation

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:	50,000	125,000	170,000	190,000	**$ 535,000**
LIC:					**$ -**
YTG:					**$ -**
GAS:					**$ -**
Other - specify:					**$ -**
Total:	**$ 50,000**	**$ 125,000**	**$ 170,000**	**$ 190,000**	**$ 535,000**

Project History/Description/Purpose/Need:

These funds are not funded and would be to further develop the commuter trail routes within the City. Currently the commuter routes are noted on the City's alternate transportation mapping, but requires significant upgrading for wayfinding, deliniation, and ongoing trail maintenance as well as enhanced development for improved use and decreased user conflicts.

Commuter trails are identified in the City 2005 Bicycling map

Project Analysis:

(How much and when)

Work on these trails would be phased over a 4 year period and would be focused on those commuter routes of highest current use first to ensure priority is given to the most popular routes or those with the greatest need.

1 Hamilton Boulevard
2 Porter Creek/Crestview
3 Downtown
4 Riverdale

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Public Works **Project:** 3 Garbage Trucks

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:		1,200,000			$ 1,200,000
Other - specify:					$ -
Total:	$ -	$ 1,200,000	$ -	$ -	$ 1,200,000

Project History/Description/Purpose/Need:

The existing garbage and compost collection vehicles were purchased in 2000. Semi automated cart lifters were installed on these vehicles in 2004 and 2007. The backup collection vehicle was purchased in the 1986.

As the City progresses towards a cart system for garbage and compost collection, new collection trucks will be required. The three new collection trucks will allow for single or dual garbage and compost collection. These trucks will be fully automated lifters to pick up the carts and deposit the carts material into the identified material bin of the truck. There will be a compactor on each of the vehicles to allow more material to be dumped and carried. These trucks will make the collection system for efficient. Two of the new trucks will be used on the regular schedule and the other truck with be for backup and overload use.

Many Cities have found that automated collection has considerable economic benefits because municipalities are not loosing workers to lifting injuries. It was also found that with an automated system, an older worker force can complete the garbage and compost collection.

These vehicles will be powered with alternate source fuels if possible.

Project Analysis:

(How much and when)

There is a one year time lag between the ordering and receiving of the new collection vehicles

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Public Works **Project:** City Wide Water Meters

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:				3,000,000	$ 3,000,000
Other - specify:					$ -
Total:	$ -	$ -	$ -	$ 3,000,000	$ 3,000,000

Project History/Description/Purpose/Need:

At present, the City of Whitehorse requires that all businesses have water meters. Each business is charged according to the amount of water they use.

Residential homes are presently not metered. All residents are billed a flat rate regardless of the amount of water they use. Whitehorse is well above the national average for water usage.

If water meters were installed, residential homes owners would be requires to pay for the amount of water they use. The home owners would try to conserve and not waste the treated water.

If less water is used, less energy and lower pumping and treatment costs will occur. Less water going down the drain will also realize less sewage treatment costs.

Water meters also helps the City to locate water main breaks

Project Analysis:

(How much and when)

The work would be completed over a Spring through Fall period.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Public Works **Project:** Geothermal Exchange City Wide

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:		100,000			$ 100,000
Other - specify:					$ -
Total:	$ -	$ 100,000	$ -	$ -	$ 100,000

Project History/Description/Purpose/Need:

Extracting heat from ground sources, water sources and municipal sewer pipes could be used to heat homes and businesses in existing areas of Whitehorse. The heating system would reduce the need to heat homes and businesses with gas, wood or electric power.

This study would determine which areas of the City would be able to benefit from this type of heat.

Project Analysis:

(How much and when)

This study would be completed over a one year period..

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Public Works **Project:** Ground Temp Monitoring Stations

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:		20,000	30,000		**$ 50,000**
LIC:					**$ -**
YTG:					**$ -**
GAS:					**$ -**
Other - specify:					**$ -**
Total:	**$ -**	**$ 20,000**	**$ 30,000**	**$ -**	**$ 50,000**

Project History/Description/Purpose/Need:

Public Works re-activated existing ground temperature monitoring stations in 2002. These stations monitor the amount of frost that is in the ground. The measurements from these stations help to better determine when water bleeders and boilers should be turned on and shut off. The proposed 2009 and 2010 programs would be for the installation of six new monitoring stations in areas not presently covered by the existing monitoring stations thus improving the effectiveness of the program.

Project Analysis:

(How much and when)

This work would be completed over a two year period.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Public Works **Project:** Heat Trace Assessment

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:			100,000		$ 100,000
Other - specify:					$ -
Total:	$ -	$ -	$ 100,000	$ -	$ 100,000

Project History/Description/Purpose/Need:

All water services within Whitehorse require freeze protection to keep the water services from freezing under the cold weather months.

From the 1970 to present, most new residential water services use heat trace as their method of freeze protection. With this method of freeze protection, there is no bleeding of water so no treated water is wasted.

For the past few years, Public Works has noticed an increase in failures of older heat traces. The water service line is operational but the heat trace wire has failed. A correct repair would be to dig up the yard and road and replace the heat trace. This is not practical. Many of the existing heat trace failures have been converted to Thermostatically Controlled Bleeders. (TCB) TCB's do bleed treated water into the sewer system.

This City wide assessment of heat traced water services will determine how the older heat traced lines can be replaced or modified without major repairs to the road or the resident's property. The City does not want to waste additional water by the installation of more TCB's

Project Analysis:

(How much and when)

This assessment work would be completed over a one year period. The implementation of the recommendations would be future multiple years.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Public Works **Project:** Lagoon Monitoring Wells

Estimated Capital Cost & Funding Sources

	2007	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:	90,000				**$ 90,000**
LIC:					**$ -**
YTG:					**$ -**
GAS:					**$ -**
Other - specify:					**$ -**
Total:	**$ 90,000**	**$ -**	**$ -**	**$ -**	**$ 90,000**

Project History/Description/Purpose/Need:

The perimeter monitoring wells around the Crestview, Whitehorse and Porter Creek Lagoons will provide for long term groundwater monitoring at each of these sites to determine if the lagoons are leaking effluent into the groundwater table. The installation of these wells will also provide soil stratigraphy for each area along with groundwater depths. The monitoring wells will be required as part of the City's Water License if any of these facilities are decommissioned.

This project is funded as part of the 2007 Capital Budget.

Project Analysis:

(How much and when)

The installation of the monitoring wells will be completed over a period of two weeks in late 2007.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Public Works **Project:** Landfill Gas Production Feasibility

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:			50,000		$ 50,000
Other - specify:					$ -
Total:	$ -	$ -	$ 50,000	$ -	$ 50,000

Project History/Description/Purpose/Need:

An byproduct of landfilling garbage and other materials is the production of methane gas. Many communities have a collection system to harness the methane gas. This gas is then refined and used for energy production.

The project would determine if there is enough methane gas being produced at the existing Whitehorse Landfill to require the installion a methane gas extraction system. This study woudl also investigate if there is enough methane gas for energy production.

Project Analysis:

(How much and when)

This program would be completed over a one year period.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Public Works **Project:** Landfill Upgrades

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:	40,000	2,000	125,000		**$ 167,000**
LIC:					**$ -**
YTG:					**$ -**
GAS:					**$ -**
Other - specify:					**$ -**
Total:	**$ 40,000**	**$ 2,000**	**$ 125,000**	**$ -**	**$ 167,000**

Project History/Description/Purpose/Need:

A landfill operations review was completed in 2001 that identified priority issues associated with improving ongoing landfill operations. Some of the capital works associated with these issues would be completed over the following years:
2007 - Upgrade of landfill access road, concrete pads for transfer station, installation of phone lines ($60,000)
2008 - Installation of 3 gas monitoring stations in the landfill
2009 - Installation of 3 new water/leachate monitoring wells
2010 - Supply and installation of new scale.

Project Analysis:

(How much and when)

The landfill upgrade program is a mulit year program, with individual components completed each year.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Public Works **Project:** Marwell Forcemain Condition Study

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:	50,000				**$ 50,000**
LIC:					**$ -**
YTG:					**$ -**
GAS:					**$ -**
Other - specify:					**$ -**
Total:	**$ 50,000**	**$ -**	**$ -**	**$ -**	**$ 50,000**

Project History/Description/Purpose/Need:

The steel Marwell Forcemain from the Marwell Lift Station, under the river and over to the Whitehorse lagoon area is 30 years old. A condition inspection is required to determine the remaining amount of life left in this forcemain. This single pipe forcemain carries all the sewage for Whitehorse with the exception of Porter Creek and Crestview to the Livingstone Trail Sewage Lagoon. There is no backup river crossing if this pipe breaks. Sewage from all serviced areas of Whitehorse with the exception of Porter Creek and Crestview flows through this forcemain

If this assessment is not completed, the City will not know the condition of the major sewer forcemain and will continue to be no backup forcemain pipe. If the main breaks, the City will be dumping raw sewage into the Yukon River.

Project Analysis:

(How much and when)

This non-destructive testing of the pipe will be complete over a one month period. Results from this assessment will identify any problems and any future work to be completed.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Public Works **Project:** Permanent Water Sampling Station

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:	25,000	25,000	25,000		$ 75,000
Other - specify:					$ -
Total:	$ 25,000	$ 25,000	$ 25,000	$ -	$ 75,000

Project History/Description/Purpose/Need:

City of Whitehorse Pumphouse staff complete field sampling and monitoring of Total and Facael Coliforms; and residual chlorine on a weekly basis. These samples are taken in the subdivisions at various City facilities, schools and private residences. Some of the locations cannot be used year around, such as schools and outside taps on private residences. The City and the YTG Health requires all locations to be consistent representative sampling stations. Ideally samples should be taken as close to the water mains as possible. Under this project new permanent sampling locations would be established on the mains in the following areas:

2008 - Granger, Logan;Arkell Area
2009 - Porter Creek Area
2010 - Takhini, Range Road

Project Analysis:

(How much and when)

Thie installation work will be staged and completed over three years

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Public Works **Project:** Pumphouse & Small Lift Station Upgrades

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:	265,000	75,000	100,000		**$ 440,000**
LIC:					**$ -**
YTG:					**$ -**
GAS:				250,000	**$ 250,000**
Other - specify:					**$ -**
Total:	**$ 265,000**	**$ 75,000**	**$ 100,000**	**$ 250,000**	**$ 690,000**

Project History/Description/Purpose/Need:

These upgrades have been identified as part of the 1999 Station Audit. If the pumps, controls and generator connections were upgraded, these stations would be compatible with the other new controls in other stations that have been upgraded. Some of the existing equipment is obsolete and high energy users. Minor code and ventilation upgrades will also be completed. There will be a decrease in electrical, pumping and callout costs, as a result of this project. The following upgrades are required:
2007 - Robonic Control Transfer Switch and Soft Starts at Marwell Lift Station. ($92,000)
2008 - Pump Replacement and Gen Set at Wann Lift Station. , new fire-pump for Crestview Booster Station not included in 2008 approved budget ($300,000)
2009 - Small Lift Station Control Upgrades.
2010 - Gen Set at Marwell Lift Station.
2011 - Inline Emacerator and new motor valve and controls with pipe modifications for PC Flush Tank (not funded in budget)

Project Analysis:

(How much and when)

This is muilti-year budget with specific work that will completed each year.

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City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Public Works **Project:** Sidewalk Replacement Program

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:	350,000	100,000	100,000		$ 550,000
Other - specify:					$ -
Total:	$ 350,000	$ 100,000	$ 100,000	$ -	$ 550,000

Project History/Description/Purpose/Need:

Some sections of Riverdale and Marwell/Downtown do not have sidewalks . At the present time , people just walk down the side of the roads. This creates a dangerous situation when the people are walking with the traffic along the side of the road. Upgrading to a concrete sidewalk would increase pedestrian safety and would encourage more people to walk..

Lewes Blvd. west side of the street from Selkirk Street to Nisutlin Dr
Lewes Blvd - east side from Alsek Rd to Hospital Road
Quartz Road from 2nd Ave to Industrial Rd

Project Analysis:

(How much and when)

This is a two year program with some sections of the work completed each year.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)
Truck Fill Station

Department: Public Works **Project:** Truck Fill Station

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:					$ -
Other - specify:	250,000				$ 250,000
Total:	$ 250,000	$ -	$ -	$ -	$ 250,000

Project History/Description/Purpose/Need:

The existing bulk water filling facility is connected to the Takhini Firehall. It is old, inefficient and there are many public health and occupational health related concerns to the infrastructure. The facility is very important as it serves both private and commercial potable water supply needs for a significant portion of rural residents. This is also a revenue generator for the City. The proposed facility will work on a cardlock system and have 2 fill points one for residential and one for commercial tankers.

This project with the bulk water controls to provide for online chlorine monitoring. The need for this project comes from the requirement in the proposed YTG Water Regulation that water distributed through the bulk water loader must have a chlorine residual of 0.4ppm. The only way to ensure this is to have an online chlorine analyzer at the new bulk loading station. The analyser would continuously monitor the chlorine residual and the station could be set to shut down if the residual fell below the specified level.

Project Analysis:

(How much and when)

This work would be completed in conjunction with the construction of the new Public Safety Building..

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Public Works

Project: Upgrade Compost Facility & Purchase New Grinder

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:					$ -
LIC:					$ -
YTG:					$ -
GAS:					$ -
Other - specify:	65,000	60,000			$ 125,000
Total:	$ 65,000	$ 60,000	$ -	$ -	$ 125,000

Project History/Description/Purpose/Need:

The existing compost facility was built in 1999. At present, it takes approximately two years to process the compost. An upgrade to the facility is required so the compost process can be completed in under one year.

There are no compost grinders presently in the Yukon.

With the increase in compostable material coming to the compost facility, the facility will be required to be enlarged. Also it is recommended by consultants that the sections of work surface of the existing facility be upgraded from gravel to a paved surface. The paved surface would allow for less contamination and better surface drainage to the drainage pond.

Project Analysis:

(How much and when)

This is a two year program.

City of Whitehorse
Potential Eligible Capital Projects (2008 - 2011)

Department: Public Works **Project:** Winter Sand Pile Pad

Estimated Capital Cost & Funding Sources

	2008	2009	2010	2011	Total
$$ Approved in 2007-2010 Plan					
City:			50,000		**$ 50,000**
LIC:					**$ -**
YTG:					**$ -**
GAS:					**$ -**
Other - specify:					**$ -**
Total:	$ -	$ -	$ 50,000	$ -	$ 50,000

Project History/Description/Purpose/Need:

Winter sand piles with up to 3% sand are stored on native ground at the kulan and Mountainview Public Works' yards. The storm water and snow runoff from these piles drains directly down into the ground. Many jurisdictions are requiring that winter sand piles be stored on concrete pads with drainage collection systems.

This work would have site grading and the construction of concrete pads with drainage collection systems completed at the Kulan and Mountainview yards to allow for the proper storage of winter sand.

Project Analysis:

(How much and when)

This program would be completed over a one year period.

Bibliography

Reference Books

Bopp, Michael and Julie. **Recreating the World, A Practical Guide to Building Sustainable Communities.** Four Worlds Press, 2nd Edition, 2006

Edwards, Andres R. **The Sustainability Revolution; portrait of a paradigm shift.** Andres Edwards 2005

James, Sarah and Lahti, Torbjorn . **The Natural Step for Communities; How Cities and Towns can change to Sustainable Practices.** Sarah James, Torbjorn Lahti2004

Lennertz, Bill and Lutzenhiser, Aarin **The Charrette Handbook; The essential Guide of Accelerated, Collaborative Community Planning.** American Planning Association 2006

McKenzie-Mohr, Doug and Smith, William. **Fostering Sustainable Behaviors; an Introduction to Community-Bases Social Marketing.** Doug McKenzie-Mohr 1999

Roseland, Mark **Toward Sustainable Communities; Resources for Citizens and their Governments.** Mark Roseland 2005

Schumacher, E.F. **Small is Beautiful; Economics as if people mattered.** Hartley & Marks Publishers Inc. 1999 (first printing 1973)

University of Victoria. **Thinking Beyond Pipes and Pumps; Top 10 Ways Communities can save Water and Money.** The Polis project on Ecological Governance, University of Victoria 2006

City of Whitehorse Council Adopted Reports

1. City of Whitehorse 2002 Official Community Plan, UMA

2. City of Whitehorse Conventional Transit Service Review 2004-2005, City of Whitehorse

3. City of Whitehorse Downtown District Pre-Design Report 1997, David Nairne & Associates

4. City of Whitehorse Downtown Plan 2006, UMA

5. City of Whitehorse Handy Bus Service Review 2001-2005, CITY

6. City of Whitehorse Local Action Plan to Reduce Energy and Greenhouse Gas Emissions, 2004, City of Whitehorse

7. City of Whitehorse Pumphouse and Lift Station Audit Report 1999, Doward/Stantec

8. City of Whitehorse Sanitary Sewer Main Ground Water Infiltration Study 1997, CITY

9. City of Whitehorse Solid Waste Management Plan for the Son of War Eagle Landfill 2003, Gartner Lee

10. City of Whitehorse Transit Operation Review 2003, CITY

11. City of Whitehorse Watershed Management Plan Volumes 1 and 2 2003 , UMA

12. City of Whitehorse Water and Sewer Study, 2003 Stantec

13. City of Whitehorse Wells Expansion Hydraulic Review and Conceptual Design 2006, Stantec

14. City of Whitehorse City-Wide Transportation Study, UMA

15. City of Whitehorse Whistle Bend Planning Study March 2007, Planning and Development Services Department, City of Whitehorse

16. City of Whitehorse Trail Plan First Edition 2007 Inukshuk Planning and Development

17. City of Whitehorse Porter Creek Bench Socio-Economic Background Report Nov. 2006, Gartner Lee Ltd. and Vector Research

18. CMHC, Northern Housing Report, 2007

19. Yukon Arts Center Corporation, The Yukon's Cultural Labour Force, 2004

20. City of Whitehorse, Fire Department Fire Service Strategy, 2002, City of Whitehorse