

6 Environment

Our quality of life is closely linked to our physical environment and natural areas in and around the City. Residents continue to express the great value of the natural environment throughout the myPG Sustainability Plan and OCP review process. This strong sense of stewardship and desire to protect the environment has been identified.

Since everyone uses, benefits and affects our local environment in which we live, work and play, the City of Prince George is committed to a community approach to maintaining a healthy environment. A community approach acknowledges there are a broad range of actions, strategies and commitments that can be made by individuals, community and interest groups, education sector, public health organizations, businesses, and all levels of government.

The community has provided its top goals within the myPG Sustainability Plan, also identified with the myPG Environment Strategy which include Clean Air, Clean Water, Green City Green Practices, Green Energy, Reduce Carbon Emissions and Adapt to Climate Change, and Reduced Waste. These goal areas are utilized to provide policy direction outlined within this Plan.

As part of developing this Plan, considerable work was completed to identify and map the key physical characteristics of the city such as significant slopes, various watercourses, energy and greenhouse gas emissions, etc. See also Part D for Implementation.

Designation of Areas

Natural Environment

Schedule B-1: Natural Environment provides context for policies and development permit area guidelines, which can both refer directly to areas on this map. This Schedule includes: Agricultural Land Reserve (ALR), Parks, Significant Slopes, Watercourses, Bodies of Water, Groundwater Protection Development Permit Areas, and Riparian Protection Development Permit Areas. Please note that properties identified as *ALR exclusion subject to ALC Resolutions* west of the airport lands have been approved for exclusion from the ALR by resolutions of the Agricultural Land Commission (ALC). The purpose is to facilitate light industrial development, with the ALR exclusion subject to conditions to be met at the time of rezoning, subdivision and servicing as outlined within ALC resolutions.

6.1 Clean Air

Improving air quality is a key goal that has been expressed through past OCPs and again emphasized through the myPG Sustainability Plan process. There are many factors that contribute to our air quality issue and we cannot point to one single emission source as our primary issue. Recent research shows there are multiple pollution sources from tail pipes, to road dust, to natural background dust levels, to our transportation industries and to a number of our other industries and even some of our commercial businesses. Our geography and weather conditions also play key roles, sometimes causing air and pollutants to be trapped in the bowl and occasionally triggering air quality advisories. In recent years, significant work by major industries and others has helped to reduce particulate matter levels and odour (the smell from pulp mills caused by “total reduced sulfur”). Making significant reductions in pollutants such as particulate matter should require reductions in all sectors including residential, transportation, commercial and industrial and every individual has a role and responsibility to play.



Objectives

Objective 6.1.1 Improve air quality by reducing fine particulate matter levels, odour and other harmful pollutants.

Policies

- Policy 6.1.1 Encourage all sectors (residential, community facilities, commercial, industrial and agricultural) to investigate and implement new technologies to reduce air pollutants.
- Policy 6.1.2 The City shall continue to work with the Regional District of Fraser-Fort George to identify new heavy industrial lands outside of the Bowl area
- Policy 6.1.3 The City should continue to promote the use of best available technology in all new and existing industry.
- Policy 6.1.4 The City should continue to play an active role in and support voluntary airshed research, education and planning initiatives such as the Prince George Air Improvement Roundtable (PGAIR) and the implementation of their airshed plans.
- Policy 6.1.5 The City should continue to review and update the Clean Air Bylaw as information, technology and standards change and improve.
- Policy 6.1.6 The City should continue to promote programs that achieve net benefits to air quality and climate change.

Policy 6.1.7 The City should encourage new and existing development to use hard surfacing of parking or storage areas while managing stormwater on-site (where appropriate), to reduce negative impacts to water quality and quantity.

6.2 Clean Water

The community would like to ensure its waterways and the water supply are protected and consumption is reduced. The City and its partners should continue to protect water supplies from overuse and potential contamination, to treat wastewater adequately, to improve management of storm runoff and its impacts on waterways, and to identify and implement methods to reduce leaching and runoff from snowdumps and waste management areas.

The City of Prince George relies on groundwater for all of its water supply. Over 80% of the City's water wells tap into aquifers that are recharged by the Nechako River. City drinking water comes from 6 municipal wells that draw 17.8 billion liters of water each year from underground aquifers. By utilizing underground aquifers, residents are protected against bacteria and other pollutants often found in surface sources such as lakes or rivers. Treated water is pumped to and stored in 14 service reservoirs throughout the City. Water is supplied to homes either directly from water supply well pumps or from one of these reservoirs.



Although there appears to be an abundant supply, our groundwater is vulnerable to contamination due to limited protective covering to prevent contaminants from entering the aquifer. There are many potential sources of contamination located near to this valuable groundwater source. A reduction in water demand slows the movement of any potential contaminants into and through the aquifer, making it easier to treat, and easier to avoid potential contamination (City of Prince George 2005).

The quantity of water supply should be altered by climate change. Rising temperatures are expected to diminish snowpacks and increase evaporation. This should affect the seasonal availability of water, and may result in more frequent periods of water scarcity (IPCC 2007a). Also, although precipitation in central BC is projected to increase, studies predict a widespread increase in extreme precipitation events. Although there should be more precipitation, there should be an increase in periods of drought (Christensen et al., 2007). Groundwater recharge rates and surface water interactions should also be influenced with climate change. (Picketts et al, 2009)

In addition, groundwater supports river flows and supplies wetlands, lakes and other important natural features. Groundwater protection and management is an

often overlooked but vital part of work that the City of Prince George carries out. [See also Section 6.2.A Groundwater].

Objectives

- Objective 6.2.1 Preserve, protect and enhance the quality of water resources and reduce consumption of the water supply.
- Objective 6.2.2 Preserve, protect and restore riparian and wetland areas to maintain and enhance water quality and quantity, and the ecological functions of watercourses so they continue to support healthy fish and wildlife populations.
- Objective 6.2.3 The City should continue to facilitate learning opportunities, build capacity in the community, and develop measures to preserve, protect, enhance, and conserve our water resources quality and quantity

6.2 A. Groundwater

Objectives

- Objective 6.2.4 To protect well heads and aquifers from incompatible development that may lead to contamination of the City's potable water supply. By regulating development within capture zones the City may reduce the potential risk of contamination.

Policies

- Policy 6.2.1 Where development plans are considered for aquifer recharge areas all uses and interests in the watershed should be considered, particularly related to the water supply.
- Policy 6.2.2 In groundwater protection areas the City should not permit proposals for new development of:
- incinerators;
 - transfer stations;
 - vehicle dismantlers and metal recyclers (scrap yards);
 - waste management or treatment facilities;
 - manufacture, processing, sale, storage, or distribution of wood waste;
 - manufacture, processing, sale, storage, or distribution of agricultural waste;
 - manufacture, processing, sale, storage, or distribution of petroleum products or allied petroleum products;
 - manufacture, processing, sale, storage, or distribution of waste or effluent as defined under the Environmental Management Act;

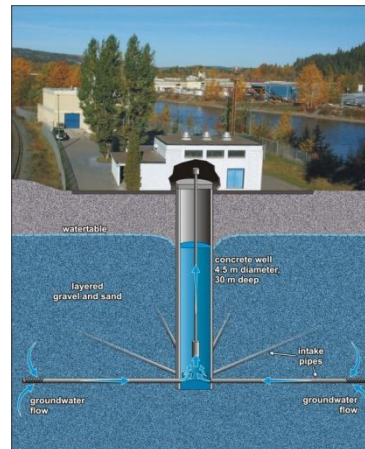
- snow storage;
- composting or burial of livestock, poultry or aquaculture products;
- sewage effluent discharges to ground; nor,
- any other development which may pose a risk to groundwater.

Policy 6.2.3 In groundwater protection areas the City should not allow any new effluent, stormwater runoff, or other contaminated discharges to ground. Where such discharges already exist the City may, if necessary, control the activity by enforcement of a bylaw.

Policy 6.2.4 The City should consider refinement and additional groundwater protection areas for the catchment area of the City’s water supply wells, including but not limited to protecting areas immediately adjacent to the Nechako and Fraser Rivers upstream from the wells.

Policy 6.2.5 The City may require developers/property owners to investigate, monitor and control (and where necessary remediate) land and groundwater contamination.

Policy 6.2.6 The City should contemplate prohibiting all pesticide use within groundwater protection areas.



6.2 B. Integrated Stormwater Management

Integrated, or watershed-based, stormwater management recognizes the relationships between the natural environment and the built environment, and manages them as integrated components of the same watershed. It includes attention to both stormwater quality and quantity in a proactive approach.

Objectives

- Objective 6.2.5 The City promotes a watershed and cumulative effects approach to riparian area protection with the aim of preserving the health of the entire watershed when considering impacts on watercourses and riparian areas.
- Objective 6.2.6 The City strives to preserve drinking water quality by controlling the quality of storm and creek waters impacting water supply sources and wastewater treatment under the City’s direct control.

Policies

- Policy 6.2.7 The City encourages the use of approved pervious surfaces for roads, driveways and parking lots, ensuring their application are not to the detriment of other policies identified in this bylaw (i.e., air quality).
- Policy 6.2.8 The City should ensure erosion and sediment control for development are considered on a watershed scale and identify areas of high risk sediment movement and erosion potential.
- Policy 6.2.9 The City should continue to develop watershed drainage plans and implement priority areas identified within those plans.
- Policy 6.2.10 Storm water management planning shall consider protecting development from erosion, sedimentation and flooding.
- Policy 6.2.11 To adapt to climate change, storm water management in Prince George should be designed to account for future temperature and precipitation changes. The City should undertake further study to determine the local impacts of climate change on existing storm water infrastructure, and consider any required changes to promote resiliency.
- Policy 6.2.12 To adapt to climate change, stormwater in Prince George should be designed with maximum onsite retention to minimize related flooding, improve water quality and save on infrastructure costs.
- Policy 6.2.13 To adapt for climate change, water supply (both quantity and quality) should be protected and conserved to the greatest extent possible by: protecting aquifers and recharge zones; concentrating development near existing sources; and encouraging household and industry water conservation.
- Policy 6.2.14 The City should continue to promote community outreach and education that addresses water quality and quantity protection, and promotion of integrated storm water planning.

6.2 C. Water Conservation

In 2005, the City of Prince George initiated a Water Conservation Plan that provided an overview of the City's water system and identified actions to conserve water. The goal of water conservation planning is to achieve more efficient water-use by residential, industrial, commercial and institutional consumers in the City of Prince George. The impetus for moving toward water conservation is both economic and environmental. Economic concerns include a desire to alleviate capacity constraints, defer infrastructure renewal and replacement costs, and reduce operational costs.

Environmental considerations involve minimizing the impact of both extracting and subsequently releasing treated city water to the natural environment.

Water conservation is often perceived to be restrictive and associated with personal inconvenience and rationing. Water conservation is however, not only a matter of using less water through use-limits such as sprinkling regulations, but involves careful management of water resources using a wide variety of methods. Mechanisms to assure and maintain water quality, repair leaks, use water saving technology (such as low-flow-toilets), and xeriscape (low water-use landscaping) all reduce excessive demand and contribute to water conservation.



Objectives

- Objective 6.2.7 Use all feasible water-use efficiency tools to reduce residential water consumption.
- Objective 6.2.8 Operate sustainably to reduce water demand which should reduce operational costs and should help defer future capital investments for additional storage, pumping and distribution capacity.
- Objective 6.2.9 Increase public awareness on the value of aquifers and reduce their vulnerability.
- Objective 6.2.10 Protect groundwater resources and the Nechako River and Fraser River as the receiving environment for the City's wastewater.

Policies

- Policy 6.2.15 Support existing conservation efforts and pursue implementation of new strategies identified within the City of Prince George Water Conservation Plan, 2005 for: water metering, volumetric pricing, information & education, and municipal leadership in advancing water use efficiency.
- Policy 6.2.16 Encourage developers and landscapers to incorporate xeriscaping (drought resistant, low water requirement) concepts into development of landscape projects.
- Policy 6.2.17 The City should work with all government levels and agencies to demonstrate leadership in advancing water use efficiency.
- Policy 6.2.18 Develop water efficient landscaping through a partnership between the City and community members/organizations.
- Policy 6.2.19 The City should consider integrating rain collection and reuse in all City and private developments and renovations.

Policy 6.2.20 The City and Regional District of Fraser-Fort George should continue to exchange information regarding Foothills Landfill groundwater monitoring results and the Nechako Aquifer water quality.

6.2 D. Watercourses and Wetlands

The City is fortunate to have a number of streams, lakes and wetlands within our community in addition to the Nechako and Fraser rivers. These watercourses provide important spawning, rearing and overwintering habitat for a variety of salmon, trout, the critically endangered Nechako white sturgeon and numerous other fish and wildlife species. Fish are sensitive to land use changes from tree removal (loss of cover, shade, food and bank stability), changes to water quality (introduction of sediment, contaminants and chemicals), and damage to habitat (sediment infilling spawning beds, garbage entering the water). The streams are linked to our groundwater resources beneath our feet which our residents rely on for clean, safe drinking water.

The land we live in is very diverse with the low lying Bowl area of the river valleys, the cutbanks to the north, Nechako Plateau towards the west and rugged mountains towards the east and north. The different geography provides a diverse opportunity to live, work, and play in our city and the region around us.

Objectives

- Objective 6.2.11 Preserve sensitive ecosystem areas, their living resources and connections between them in a natural condition and free of development to the maximum extent.
- Objective 6.2.12 The City encourages the rehabilitation, restoration and enhancement of negatively impacted riparian features and functions.
- Objective 6.2.13 The City promotes a watershed and cumulative effects approach to riparian area protection with the aim of preserving the health of the entire watershed when considering impacts on watercourses and riparian areas.

Policies

- Policy 6.2.21 The City should work with all levels of government to promote public awareness and advise proponents of development and infrastructure projects to employ best practices in development planning to achieve no net loss of fish habitat.

Policy 6.2.22 To achieve no net loss of fish habitat, require that all City infrastructure projects and private development proposals follow this sequence of management actions:

- Avoid impacts to habitat through appropriate siting and design;
- Mitigate minor or temporary impacts by reducing the level of impact, and repairing and restoring damaged habitat to their former state or better; and,
- Compensate only when loss of habitat is unavoidable. Compensation proposals should not be accepted where effective mitigation measures are feasible. Applicants are responsible for proving that all measures to avoid or mitigate habitat loss have been exhausted before proposing compensation.



Policy 6.2.23 When using fill material to raise the natural ground elevation, the toe of the fill slope shall be outside the riparian leavestrip area. The fill must be adequately protected against erosion that could carry sediment to a watercourse.

Policy 6.2.24 The City recognizes the importance of wetlands and the need for their protection and/or rehabilitation in land use planning and should work to identify and develop recommendations to protect wetlands.

Policy 6.2.25 Where appropriate, watercourses are to be maintained in an open state (not enclosed in a culvert, or other engineered material). The City should explore reviewing the establishment of a program to identify and remove obstacles impeding fish movement such as inappropriately designed or installed culverts or other stream crossings.

Policy 6.2.26 Other than inside designated groundwater protection areas, the City should support the use of sustainable drainage systems for new discharges to ground of surface run-off from roads, vehicle parking and public/amenity areas, provided that an appropriate level of risk assessment demonstrates the groundwater conditions to be suitable. There should be adequate protective measures for groundwater and arrangements for effective management and maintenance of the system.

Policy 6.2.27 The City should prohibit the discharge of unmanaged rainwater into watercourses and to reduce instances of point and non-point pollution sources that negatively affect water quality within watercourses.

- Policy 6.2.28 The City should continue to work with stakeholders and support programs for the critically endangered Nechako White Sturgeon.
- Policy 6.2.29 The City should work with developers to plan discrete access points to watercourses that do not degrade or destroy riparian habitat.
- Policy 6.2.30 Maintain intergovernmental partnerships to facilitate a “one-window” approach to planning and approvals.
- Policy 6.2.31 Implement stewardship awareness programs, in cooperation with other levels of governments, local environment organizations and schools to increase public awareness and support protecting sensitive and important ecosystems.

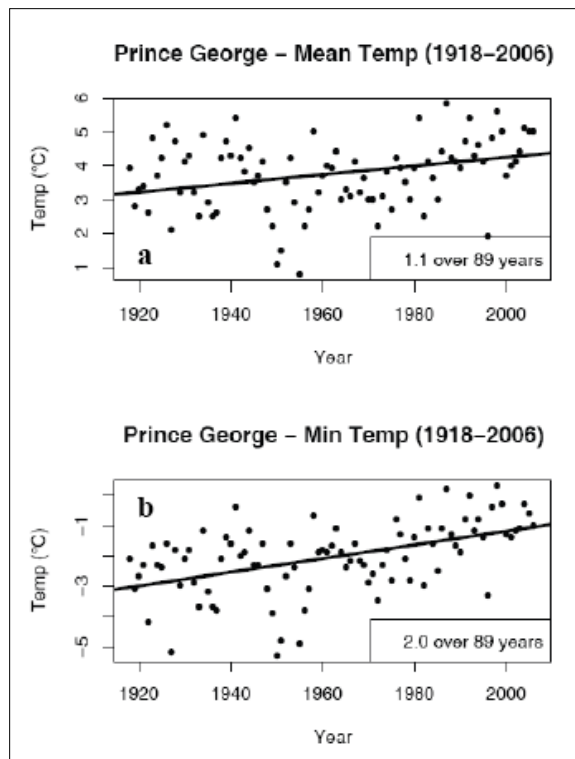
6.3 Climate Change Adaptation

Climate change adaptation is preparing for the impacts a community is expecting to experience, and making it more resilient to unexpected changes. The city has made adjustments in response to many climate related impacts, and these impacts are expected to intensify over at least the next 50 years even if extensive mitigation occurs. It is important for a community to proactively plan for changes in order to avoid costly consequences such as infrastructure damage and risks to safety, and to capitalize on any potential positive benefits such as longer growing seasons. The purpose of this section is to communicate the concept of climate change adaptation, identify the priority impacts for Prince George, and set out policies and objectives to reduce risks and maximize potential benefits associated with climate change.

Since 2007, the City has been working with many partners to examine future temperature and precipitation projections, and to determine how they should affect the City. Over the past 90 years average temperatures in Prince George have risen by 1.1 °C, and night time minimum temperatures have risen by 2.0 °C (see Figure 1). In the 2050s, temperatures are projected to increase by 1.6 to 2.5 °C (compared to baseline temperatures), and precipitation levels are expected to rise by 3 to 10% with most of the precipitation increase should occurring in winter. Given the range of future projections and the uncertainty of predictions, it is important to plan for resiliency to account for the unexpected changes and events.



Figure 2: (a) Mean and (b) Minimum Temperature Trends in Prince George: 1918-2006, Courtesy of the Pacific Climate Impacts Consortium.



Community adaptation requires input from local stakeholders that understand the region and the municipality. The results of several exercises with experts and community members in Prince George indicate that the priority local climate impacts are:

1. Forests;
2. Flooding;
3. Transportation;
4. Severe weather/emergency response;
5. Water supply;
6. Slope stability;
7. Storm water; and,
8. Buildings and utilities.

Other important priorities that need to be considered include: health; agriculture; and, new residents and businesses. The adaptation priorities should be quite similar across north-central BC.

This section has close relationships with many other components of this Plan. Adaptation actions should be coordinated with mitigation actions, and the City should search for strategies that address both concurrently (such as local agriculture and compact urban form). Furthermore, a community that proactively pursues adaptation and makes it more resilient should ultimately experience significant social and economic benefits.

Objectives

- Objective 6.3.1 Promote climate change adaptation in order to minimize negative climate related impacts on human safety, health and well being.
- Objective 6.3.2 Consider climate change adaptation in all aspects of future decision making related to the priorities identified in the Adapting to Climate Change in Prince George document.
- Objective 6.3.3 Adapt to climate change by encouraging infrastructure development that minimizes the risk of negative climate related impacts.
- Objective 6.3.4 Adapt to climate change by promoting resiliency to unexpected climate related changes.
- Objective 6.3.5 Adapt to climate change by planning to capitalize on positive impacts that may arise as a result of climate related changes in the region.
- Objective 6.3.6 Improve public awareness of climate change, and work to concurrently adapt to and mitigate climate change impacts.

Policies

General

- Policy 6.3.1 Future climate conditions and their expected impacts should always be considered in the planning, design and construction of any new development. This consideration should be explicitly stated in designs.
- Policy 6.3.2 Developments should be resilient to a wide range of future conditions (such as instances of severe and unusual weather).
- Policy 6.3.3 All climate change mitigation efforts should examine their climate change adaptation implications (and vice versa) to ensure that adaptation and mitigation efforts are complementary.
- Policy 6.3.4 The climate change impact priorities outlined in the Adapting to Climate Change in Prince George document should be considered in new development proposals. Consideration of these priorities should minimize the risks of potential negative impacts, and maximize potential opportunities.
- Policy 6.3.5 The City should take a leadership role in promoting adaptation to climate change by: educating local stakeholders and developers about climate change; assisting developers and stakeholders as they

consider climate impacts; and providing resources and conducting research to enable adaptation.

6.4 Green City, Green Practices

6.4 A. Brownfield Redevelopment

A brownfield can be identified as an abandoned, vacant, derelict or underutilized site with active potential for redevelopment that may have contamination or the perception of contamination from a previous use. These sites are often former commercial or industrial properties. Examples of Brownfield Sites can include:

- Abandoned gasoline/service stations;
- Former waste disposal facilities;
- Former commercial sites (junkyards, automotive repair shops);
- Former industrial sites (drycleaners, mills); and,
- Vacant derelict buildings.

Brownfields may be contaminated sites but are not always. Some experts suggest that up to 30% of brownfield sites, once investigated, are found to be uncontaminated or marginally contaminated. Further, not all contaminated sites are brownfields. The difference lies in the redevelopment potential of the site.

Reinvestment into brownfield sites shifts development pressure away from undeveloped land and uses existing infrastructure investment. Benefits include returning non-productive real estate assets to a higher and better use, strengthening the social fabric by increasing community pride and safety, and protecting the environment at various levels including groundwater that we drink and the ecosystems our watercourses sustain. The need for a Brownfield Redevelopment Strategy is established and supported through various City plans, policies, and documents. The goal of brownfield redevelopment is to bring brownfield sites back into productive use by the removal of perceived and real threats of contamination.

Objectives

- Objective 6.4.1 To promote and facilitate the remediation and redevelopment or reuse of brownfield sites to strengthen established and readily serviced growth areas within the City through stimulation of private sector initiatives and strategic municipal action by:
- a) Increasing community awareness of the economic, social and environmental benefits of brownfield redevelopment;
 - b) Improving the health and safety of established neighbourhoods, in which brownfield properties are located;
 - c) Improving environmental conditions of the City through the remediation or removal of contaminated soils;

- d) Improving the municipal tax base by encouraging reinvestment on brownfield sites; and,
- e) Working cooperatively with our partners in the community to integrate site contamination mitigation and prevention measures to ensure public health and safety with emphasis on protecting our City's groundwater aquifers.

Policies

- Policy 6.4.1 City endorsed revitalization areas should be prioritized for key brownfield development and redevelopment initiatives.
- Policy 6.4.2 The City should enter into partnerships with other governments and the private sector to undertake brownfield remediation and redevelopment projects, and increase awareness.
- Policy 6.4.3 Ensure development or redevelopment of Brownfield or other levels of contaminated sites incorporate environmentally sensitive remediation plans and consider the wide range of environmental impacts (energy, and waste, air, water, and land impacts) that an end-use may have.
- Policy 6.4.4 The City should use sustainable methods of demolition and cleanup, including natural and ecological forms of remediation and the reuse of building materials where possible.

6.4 B. Caring for our Natural Environment & Forests

Prince George's natural environment dominates the landscape, bringing the natural areas into close proximity with urban and residential developed areas. In addition to having all of the urban amenities, residents are surrounded by the natural environment including ample open spaces, community parks, streams and the forested landscapes. Natural areas take into account not only the wildlife and natural features of the landscape, but they are also important to residents and have a direct impact on the quality of life cherished by many. For some people it is the local park they walk in, and others it is a patch of natural forest that provides for wildlife viewing.



(Photograph courtesy Andrew Johnson)

Prince George is a city within the forests. Extensive natural and managed forested landscapes surround the city and an abundance of forested lands weave throughout the urban and rural landscapes of Prince George. We have a mix of large parcels of natural forests, forests that are abutting a neighborhood (interface forests), and managed forests in our parks and greenbelts. While the benefits of this close

relationship with our forests are many, this situation also poses certain challenges and hazards. This Plan identifies management issues for urban/natural interface environments and sets out objectives and policies for maximizing benefits and reducing human-wildlife conflicts, and other undesirable events or conditions affecting or derived from interface areas. [See also Section 6.4 C Wildfire Hazard regarding the risks of interface fire].

Although the proximity of residential and urban areas to natural areas is very desirable, it also means there is little buffer between the two. We face a large ratio of natural to developed area, and must manage multiple factors in order to maintain the integrity of each. Managing development, encouraging stewardship, and supporting initiatives that protect and promote our interface areas are important in ensuring a positive legacy for future generations of Prince George citizens.

Prince George is emerging from a major shift in the landscape due to the mountain pine beetle. The majority of pine stands have been removed, leaving a more open landscape in many areas. Long term planning is required to balance new threats to our landscape from forest pests, forest fire risk and wildfire interface, as well as climate change and how that should affect future growing regimes in our region.

Objectives

- Objective 6.4.2 Protect environmentally significant and sensitive areas, and the unique land features in our community.
- Objective 6.4.3 Require environmentally responsible development practices and the integration of development design into the natural features.
- Objective 6.4.4 Maintain and promote awareness of the social, cultural, environmental, and economic values of Prince George's urban forest.
- Objective 6.4.5 Reduce the potential for human-animal interactions before they occur.
- Objective 6.4.6 Minimize or reduce the negative impacts of invasive species on the natural environment, ecological integrity and biological diversity, and consider the effects of climate change on future invasive species propagation.

Policies

General

- Policy 6.4.5 Encourage the incorporation of preventative measures in new development plans that consider the natural environment. This can include, but is not limited to, the prevention of soil contamination,

urban interface planning, hazardous conditions analysis, energy efficiency, etc.

- Policy 6.4.6 Enhance awareness of the importance and benefits of maintaining a healthy environment and environmentally sensitive areas through a variety of approaches including opportunities for public participation in protection and restoration activities that create enjoyment and respect for the natural environment and sensitive areas
- Policy 6.4.7 The City should maintain the habitat, landscape connectivity, and ecosystem diversity needs of wildlife within the greater landscape context, where appropriate within municipal boundaries.
- Policy 6.4.8 The City should continue to seek ways to balance interface values such as visual quality, recreation, wildlife habitat, erosion potential, and development priorities.
- Policy 6.4.9 The City should continue to manage the forests in the Prince George Community Forest according to the objectives laid out in the Probationary Community Forest Agreement and the Prince George Community Forest Management Plan (2006-2011) and subsequent agreements and plans as may be created. The City should support the Prince George Community Forest Advisory Committee in its role as community advisors in the management of the Prince George Community Forest as long as is appropriate.
- Policy 6.4.10 To adapt to climate change, forest and natural areas related planning and study should include the consideration of climate change and its effects on environmental, economic and social conditions in Prince George. Forest impacts related to climate change include: fires; infestations; changing growth rates; and changing composition.
- Policy 6.4.11 Integrated land use approaches should be implemented wherever possible to improve opportunities for biodiversity, ecosystem connectivity, recreation, agriculture, and local food production, while reducing conflicts.

Multiple Urban Forest Values

- Policy 6.4.12 The City recognizes that it is important to have a mosaic of urban forest types to meet the needs of the public.
- Policy 6.4.13 The value of the urban forest in mitigating climate change, improving air quality, providing ecosystem services, and achieving



social objectives should be considered when weighing development options.

Policy 6.4.14 Safety should always be considered within the design and implementation of forest management activities.

Policy 6.4.15 The City should monitor and respond as appropriate to forest and ecosystem health trends influenced by climate change, pest or pathogen infestations, wildfire suppression, urban development, and other factors.

Policy 6.4.16 Visual quality, recreation, noise buffering, water quality, flood mitigation, erosion mitigation, climate change mitigation, slope stability, wildlife habitat, provision of privacy, shading, spiritual and cultural values, and other identified values should be considered when choosing forest management options for interface sites.

Policy 6.4.17 The City should consider supporting community tree and shrub planting initiatives, where the locations, densities, and species selection are consistent with:

- Fire hazard mitigation concepts;
- Future development plans;
- Climate change adaptation principles and future climate projections;
- Safety management;
- Drainage management;
- Site or ecosystem restoration objectives;
- Visual quality and viewscape management;
- Wildlife management and human-animal conflict avoidance;
- Soil erosion management;
- Minimized impacts on utilities like water, sewer, hydro, telecommunications, and road infrastructure;
- Recreation objectives; and,
- Other plans, principles, and values pertinent to the site.

Wildlife

Policy 6.4.18 The City should dissuade bear-human conflicts before they occur. This could include active management and/or development of bylaws governing the following:

- garbage storage and collection;
- fruit trees;
- composts;
- community gardens;
- greenbelt dumping;

- connectivity and design of parks and open spaces; and,
- other attractants and habitat considerations.

Policy 6.4.19 In addition to concerns about the creation of “problem” bears, the City’s management of fruit trees should take into consideration the importance of birds, bees, butterflies, and other pollinators in the maintenance of biodiversity and ecosystem integrity, especially as a tool in climate change adaptation.



(Photograph courtesy Northern Bear Awareness Society)

Policy 6.4.20 The City supports continued community education efforts about human-bear conflict mitigation.

Policy 6.4.21 The City should continue to support initiatives like the Fruit Exchange Program and work with the Northern Bear Awareness Society, local Conservation Officers, and other organizations to develop strategies for monitoring and reducing human-bear conflicts.

Policy 6.4.22 Efforts to increase landscape connectivity for biodiversity and sensitive habitat needs should be balanced with measures to reduce the introduction of bears into urban neighbourhoods.

Policy 6.4.23 New public green spaces, trails and development areas are to take into consideration the potential disturbance of wildlife habitats and travel corridors.

Policy 6.4.24 When designing fuel management treatments, the City could consider the potential impacts on bear habitat and attractants that may be created due to a short-term increase in shrub layers, herb layers, and berry production.

Policy 6.4.25 The City should manage human-ungulate interactions through consideration of important ungulate winter range habitat, high-use corridors, and high conflict areas.

Policy 6.4.26 Greenfield development should consider impacts to rare and endangered species and their habitat including amphibians, ungulate winter range and other sensitive species.

Invasive Species

Policy 6.4.27 New development should include strategies to reduce or prevent the introduction and colonization of disturbed sites by invasive species.

Policy 6.4.28 Continue to participate with appropriate agencies in the management of local invasive species.

Policy 6.4.29 The potential introduction of invasive species should be considered when designing new trails and access into interface areas.

Policy 6.4.30 The City should actively reduce invasive species on City-owned land and along transportation corridors. This includes road development and maintenance that results in gravel/dirt shoulders and side-banks (prime habitat for invasive species), that should be managed for invasive species, particularly near agricultural areas (ALR).

Safety

Policy 6.4.31 Any new development should maintain adequate access to interface areas for maintenance by City and utility personnel/equipment as well as for fuel treatments and fire suppression activities.

Policy 6.4.32 Bylaws should not preclude the removal of hazardous trees or treatment of hazardous conditions within interface areas, where necessary for the protection of life or property.

Planning

Policy 6.4.33 The City should encourage retention of native plants and trees (with protection of root systems) during land clearing, development, and infrastructure construction activities. Any replanting plans are to consider using native vegetation similar to the surrounding environment.

Policy 6.4.34 The City should work toward conserving or protecting areas having significant natural habitat value and/or important wildlife corridors.

Policy 6.4.35 Ensure that City infrastructure and private development projects identify and respect applicable low risk timing windows such as nesting, spawning, hibernating and migrating when scheduling projects. The vegetation clearing window to avoid breeding birds is August 1 to April 15. Raptor nests may not be removed at any time without prior approval from the appropriate Provincial and/or Federal agencies.

Policy 6.4.36 Ensure that the management of City activities considers the following:

- Identify all aspects of operations that may have a significant impact on the environment;
- Manage and control operations and processes to minimize impacts on the environment;
- All materials deposited on City property should be identified and recorded. Any materials that may be contaminated shall be placed in designated areas;

- Achieve compliance with environmental legislation and regulations; and,
- Continuously improve the City's environmental performance.

Policy 6.4.37 Implement road planning, design and operations to reduce wildlife-vehicle collisions and minimize fragmentation of wildlife habitat.

Policy 6.4.38 Use Naturescape principles wherever possible. The goal of Naturescape is to create a biodiverse habitat for wildlife as well as to create a visually attractive, low maintenance landscape. Promote backyard habitat that attracts birds and other appropriate wildlife.



Policy 6.4.39 The city should implement more naturalized boulevards and some park areas.

Policy 6.4.40 For areas that have the potential for high wildlife densities and value identified within a Sensitive Ecosystem Inventory, planning and development shall be required to include seasonal wildlife utilization assessments.

Policy 6.4.41 The City should require information to determine if there is any special wildlife or species at risk (including their habitat) prior to development and infrastructure planning. Projects are to be directed away from these areas.

Policy 6.4.42 Where the results of environmental and utilization assessments indicate areas of significant utilization for wildlife, the following strategies should be implemented:

- Landscaping guidelines
- Fencing opportunities
- Planning greenbelt location, size, and configuration
- Road layout design

6.4 C. Hazardous Conditions

Some hazards can dramatically affect the residents, institutions and businesses of Prince George and lead to a major emergency or disaster. The purpose of this section is to identify those hazards with high probability and consequence that are related to planning and land use management, and set out objectives and policies that should reduce risk by imposing restrictions on the use of land subject to hazardous conditions.

Prince George is susceptible to a variety of hazardous conditions and this section focuses on six (6) key hazards: flooding (including ice jams), erosion and sedimentation, landslides, wildfires, atmospheric hazards and hazardous materials.

This Plan includes statements and map designations (schedules) for restrictions on the use of land that are subject to hazardous conditions, and promotes settlement patterns that minimize the risk associated with hazardous conditions. However, the City does not represent to any person that activities, uses and development undertaken in accordance with the objectives and policies of this Plan will not result in injury, suffering, loss of life, loss of use, or property damage due to hazardous conditions. Furthermore, this Plan is not a “local emergency plan” prepared under the *Emergency Program Act* and regulations.



Objectives

- Objective 6.4.7 Promote settlement patterns that minimize the risk associated with hazardous conditions to:
 - a) protect against injury, suffering and the loss of life, and minimize loss of use, and property damage by prohibiting or regulating development on lands subject to hazardous conditions, and,
 - b) identifying and alleviating hazardous conditions which restrict the use of land or pose a risk of injury or damage.
- Objective 6.4.8 Protect public infrastructure from hazardous conditions.
- Objective 6.4.9 Reduce or prevent negative impacts to air, soil, and water quality, the natural environment, its ecosystems and biological diversity that may result from hazardous conditions.
- Objective 6.4.10 Inform hazard mitigation and emergency preparedness efforts.
- Objective 6.4.11 Improve public awareness of hazardous conditions.

Designation of Areas

Hazardous Conditions

Land identified in *Schedule B-2: Hazardous Condition Areas* may be subject to hazardous conditions including: flooding, significant slopes, wildfire, and hazardous material areas (e.g. dangerous goods routes and rail lines). In addition to those flood hazard areas shown on *Schedule B-2: Hazardous Condition Areas* the following areas may be subject to hazardous flood conditions:

- a) land within 30 metres measured horizontally from the natural boundary of a watercourse not identified on the attached *Schedule B-2: Hazardous Condition Areas*;

- b) notwithstanding sub-section a) above, land within 15 metres of the top of a steep bluff where the toe of the bluff is subject to erosion and/or closer than 15 metres from the natural boundary of a watercourse, or a horizontal distance equal to 3 times the height of the bluff as measured vertically from the toe of the bluff, whichever is greater; and
- c) land within 15 metres from the natural boundary of a water body, including a lake, pond, swamp or marsh.

Policies

General

- Policy 6.4.43 The possibility of hazardous conditions should always be considered with the design and construction of any development.
- Policy 6.4.44 It is best to avoid developing in areas subject to hazardous conditions.
- Policy 6.4.45 Vulnerable development should be prohibited from hazardous condition areas, unless the applicable hazard can be practically alleviated, and until adequate risk reduction measures are in place.
- Policy 6.4.46 Any hazard assessment for land designated as a hazardous condition area should include the consideration of climate change and its impacts before approval is granted for a zoning or land use contract amendment bylaw.
- Policy 6.4.47 Unless mitigative measures are in place, concentrations of development density, whether or not the development is classified as vulnerable development, should be limited in hazardous condition areas to reduce overall long term risk.
- Policy 6.4.48 Development on lands within the hazardous condition areas should likely encounter hazardous conditions. A development approval applicant should be notified if the subject property overlaps with one of these areas. Notification should include a determination whether a hazard assessment is necessary.
- Policy 6.4.49 It is recommended that when land is subject to, or could reasonably be expected to be subject to a hazardous condition, the landowner provide a report prepared by a qualified professional in accordance with the *Land Title Act, Community Charter, Local Government Act*, or other applicable enactment. A relaxation to any hazardous condition provision of this Plan, or any other applicable City Bylaw, should only occur where a proven serious hardship exists and no other reasonable alternative is available to the landowner. Before consideration is given other options such as alternative sites,

construction techniques and designs should be prepared by the landowner or their agent and provided to the City.

Policy 6.4.50 It is recommended that when land is subject to, or could reasonably be expected to be subject to a hazardous condition, the landowner provide a covenant that applies to the property for as long as the risk exists for the development and includes:

- A statement that the land is subject to a hazardous condition;
- Restrictions on use, buildings, subdivision and alienation;
- Obligations that land, hazard protection works, or a specified amenity in relation to it be protected, preserved, conserved, maintained, enhanced, restored or kept to the extent provided in the covenant. Amenity may include any natural, historical, heritage, cultural, scientific, architectural, environmental, wildlife or plant value relating to the land that is subject to the covenant;
- Conditions respecting reimbursement by the land owner for any expenses that may be incurred by the City as a result of a breach of the terms of the covenant;
- A waiver of claims against the City coupled with an indemnification against third party claims; and,
- Engineer's certificate confirming that the land can be used safely for the use intended.



Policy 6.4.51 Where a development has the possibility of exacerbating a risk to an adjacent parcel or development, a higher level of diligence on the development should apply. Thus risk reduction measures may be required to proceed or coincide with the construction and use of the development. However, where it is determined that the development does not have the possibility of exacerbating a risk to an adjacent parcel or development, security to guarantee the construction of risk reduction measures within a reasonable period may be acceptable.

Flood Hazard Area

Policy 6.4.52 Agricultural, park and open-land recreation uses are considered appropriate for designated flood hazard areas as the threat to life and property is low. Other uses may be considered within a designated flood hazard area subject to Provincial Regulations and

Guidelines, Flood Plain Regulation Bylaw, any plan or program the City has developed, and any hazard assessment undertaken for that development.

Policy 6.4.53 Where development is presently located in flood plain hazardous condition areas, or current zoning permits new development in designated flood plain hazardous condition areas the future construction of, addition to, or alteration of a building or structure to be used for habitation, business, or the storage of goods damageable by floodwaters should be flood-proofed in accordance with the applicable Provincial Guidelines defined within Section 910 of the *Local Government Act*.

Erosion and Sedimentation Hazard Area

Policy 6.4.54 The land identified as significant slopes on *Schedule B-3: Significant Slopes* and land designated Flood Hazard development permit areas in Section 9.3 of this Bylaw may be subject to erosion and sedimentation hazards.

Policy 6.4.55 Park and open-land recreation uses are considered appropriate for lands subject to erosion and sedimentation hazards as the threat to life and property is low. All other development should be located a safe distance from the watercourse, water body, and significant slopes to avoid areas prone to erosion based on geotechnical analysis prepared by a qualified professional.

Policy 6.4.56 Erosion control should be provided on all construction sites including minimizing the amount of land disturbed and limiting damage caused by changes to water flow on the land. This may include:

- Sediment and erosion control plans;
- preserving existing grass and trees to the extent possible;
- replanting as soon as possible;
- using best management practices to prevent erosion and control sediment;
- locating soil piles away from waterways and roads;
- constructing an access drive for all vehicles including a dry apron, or tire wash station, to avoid tracking of mud onto streets;
- immediately clean-up sediment carried off-site by rain water or vehicles; and,
- control the runoff from roof, driveway and other hard-surfaces to reduce erosion.

Landslide Hazard Area

Policy 6.4.57 The land shown on *Schedule B-3: Significant Slopes* are slopes greater than 20% grade and may be subject to landslide hazards.

Policy 6.4.58 Park and open-land recreation uses are considered appropriate within hazard areas as the threat to life and property is low. All other development should be located a safe distance from landslide hazards based on geotechnical analysis prepared by a qualified professional.

Policy 6.4.59 To adapt to climate change, projected temperature and precipitation changes should be considered when designating landslide hazards. The City should undertake further study to determine the local impacts of climate change on slope stability.

Policy 6.4.60 The following activities should be avoided on significant slopes:

- excavation of slope or its toe;
- use of unstable earth fills for construction;
- loading of slope or its crest, such as placing earth fill at the top of a slope;
- deforestation – cutting down trees/logging and clearing land for crops; unstable logging roads;
- irrigation and lawn watering;
- mining/mine waste containment;
- artificial vibration such as pile driving, explosions, or other strong ground vibrations;
- water leakage from utilities, such as water or sewer lines; and,
- alteration of the natural drainage.



Wildfire Hazard Area

Policy 6.4.61 The land shown on *Schedule D-3: Wildfire Hazard Development Permit Areas* is designated as a wildfire hazard development permit area for the protection of development from wildfire hazards.

Policy 6.4.62 Resource extraction (including agriculture), park and open-land recreation uses are considered appropriate for designated wildfire hazardous condition areas as the threat to life and property is low. Other uses may be considered within a designated wildfire hazard area subject to Provincial Regulations and Guidelines, Tree Protection Bylaw, any plan or program the City has developed, and any hazard assessment undertaken for that development.

Policy 6.4.63 New developments proposed in the Wildfire Interface Development Permit Areas must address the interface wildfire risk through the removal of forest fuel and the use of appropriate building materials as defined in the *Home Owners FireSmart Manual* (British Columbia Edition).

Policy 6.4.64 Fire Smart practices should be encouraged and the following potential ignition sources and wildfire fuels should be avoided in the wildfire hazard area:

- standing dead trees;
- dense mature forests with abundance of brush layers;
- campfires;
- heavy industry;
- vehicle traffic;
- railways;
- homes and other residential structures;
- power lines; and,
- unmonitored park and open spaces where historical or current nuisance activity occurs.

Policy 6.4.65 In order to mitigate wildfire risk, development in the wildfire hazard area should:

- While considering overall forest values, change as appropriate, the characteristics of the forest that elevate wildfire hazards by reducing the natural fuels (dead trees, lower branches, brush layers), by thinning the forest (selectively removing trees) and moving towards less fire-prone species (e.g., deciduous);
- Without unduly causing inappropriate motorized access uses, improve access through the development of road and recreation trail system for fuel breaks and control lines for suppression efforts;
- increase water availability by ensuring adequate location and number hydrants with sufficient flow in urban settings, and identifying suitable natural water bodies in rural areas;
- reduce the number of ignition sources;
- Follow Fire Smart practices; and,
- Consider the future effects of climate change on hazard risk.

Policy 6.4.66 The City should maintain emergency services and facilities that should be able to safely and quickly address interface fires where appropriate or until provincial services can be deployed.

Policy 6.4.67 The City should continue to work with the appropriate agencies and personnel to develop strategies and partnerships to reduce the risk of wildfire entering the city's boundaries from areas outside municipal boundaries.

Atmospheric Hazards

Policy 6.4.68 New power utilities should be installed underground to reduce the potential for service interruption due to atmospheric hazards.

Policy 6.4.69 New neighbourhoods should be planned with multiple access points to ensure that emergency responders can attend to all areas of the City even if certain roads become impassable due to an atmospheric event.

Hazardous Material Area

Policy 6.4.70 When deciding where to locate vulnerable development land owners should consider a minimum of 150 m from Dangerous Goods Routes as identified on *Schedule B-2: Hazardous Conditions* and a minimum of 300 m from hazardous material manufacturing, processing, and disposal sites. A hazard assessment may recommend greater or lesser setbacks.

Policy 6.4.71 The City should require a hazard assessment for new land use applications for any hazardous material manufacturing, processing, storage and disposal sites and may recommend greater or lesser setbacks from vulnerable development.

6.5 Green Energy and Reduce Carbon Emissions

Prince George residents, businesses, industries, and services depend on grid-supplied electricity, natural gas and other energy sources. Much of the energy sources currently used in Prince George are derived from fossil fuels, particularly petroleum and natural gas products. The consumption of these fuels contributes to greenhouse gas (GHG) emissions¹. There are often correlations, synergies and co-benefits in strategies that support alternative energy resources, reduce energy, reduce GHG emissions and adapt to climate change. As such, the discussion on energy often has a link to GHGs and vice versa.

There are two key strategies to address Prince George's long-term energy needs. The first is to focus on "demand side management" (DSM) in order to use energy wisely and reduce our consumption. The second is to develop alternative energy

¹ *Electricity in BC is low-carbon (the 1990-2009 National GHG Inventory states that emissions are 32 g of carbon dioxide equivalent (CO₂e) per kWh, although some electricity is imported from Alberta, which has a much higher carbon intensity (880 g CO₂e/kWh).*

sources, particularly low-carbon sources. Locally supplied renewable energy sources have the ability to lower emissions while supporting the regional economy. Our natural areas also play a role in mitigating climate change, and land use decisions should consider these carbon sinks and ecosystems such that their natural processes (decomposition, evapotranspiration, combustion, etc) should have an effect on carbon emissions.

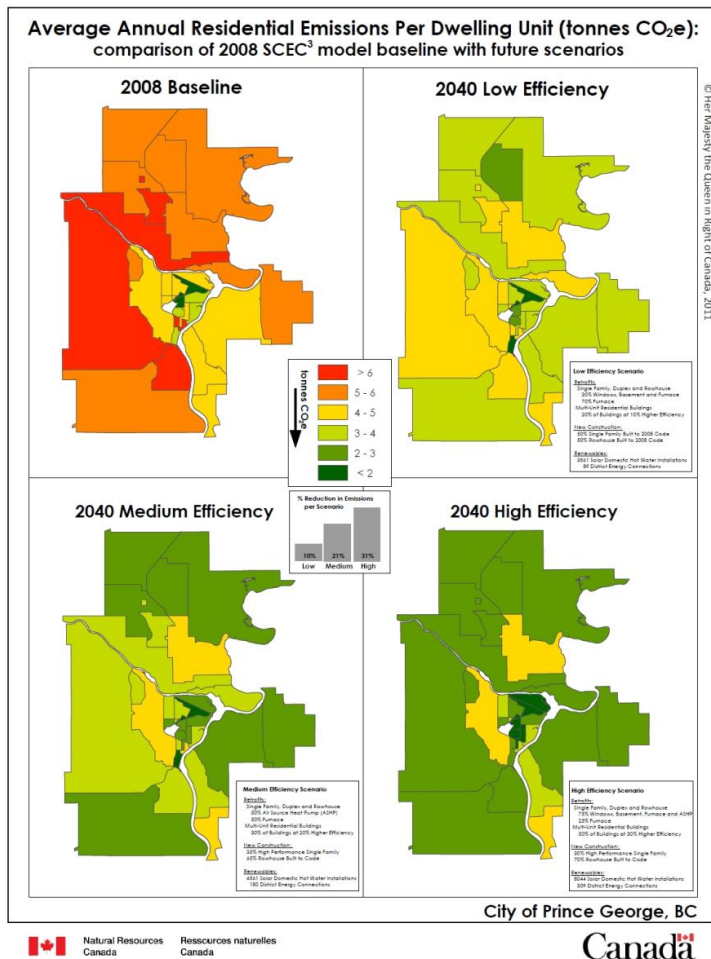
The City of Prince George in 2007, established a voluntary community target of 2% less GHG emissions from 2002 levels by 2012 and a corporate target of 10% less GHGs from 2002 levels by 2012. This target is also related to energy efficiency strategies due to the correlation between energy use (particularly fossil fuel consumption) and GHG emissions.

According to the most recent Community Energy and Emissions Inventory (CEEI), supplied by the Provincial Government, Prince George's 2007 energy use was 12.7 million GJ. Excluding the contributions of large industry, about 31% of the energy use occurs in residential buildings, 48% in road transportation, and 21% in the commercial and small industrial sector. The total GHG emissions for Prince George in 2007 (excluding heavy industry) is estimated at 659,000 tonnes of carbon dioxide equivalents (t CO₂e), with 63% coming from on-road transportation, 33% from buildings, and 4% from solid waste.

The purpose of this section is to set out objectives and policies related to planning and land use management that support opportunities for reducing GHG emissions through DSM and the promotion of energy alternatives.

Objectives

- Objective 6.5.1 Reduce energy use and GHG emissions generated by existing buildings through retrofits or redevelopment and the introduction of renewable energy technologies.
- Objective 6.5.2 Improve energy efficiency, use of renewable energy, and reduce GHG emissions for new buildings.
- Objective 6.5.3 Improve energy efficiency, use of renewable energy, and reduce GHG emissions for City owned buildings and facilities.
- Objective 6.5.4 Recognize the role of our natural environment in climate change mitigation and greenhouse gas emission reduction in land use decisions.



Policies

General

- Policy 6.5.1 The City dedicates its support to the British Columbia Climate Action Charter by achieving carbon neutrality in City corporate operations by 2012.
- Policy 6.5.2 By 2012, the City shall reduce corporate greenhouse gas emissions by 10%, and the City targets reducing community greenhouse gas emissions (GHG) by 2%, compared with 2002 levels.
- Policy 6.5.3 The City shall adopt longer term corporate and community energy targets and should implement strategies to achieve energy and GHG reductions, based on the Greenhouse gas and Land Use planning report completed for the myPG project. The City should explore further options for achieving medium- and long-term Provincial targets.
- Policy 6.5.4 The City should work with partners and guiding policies identified in energy and GHG management plans to achieve significant

measurable reductions in grid-supplied and fossil-fuel based energy and greenhouse gas emissions.

- Policy 6.5.5 The City should act as a resource to the community by promoting energy efficiency and awareness and work with partners establish means to demonstrate and explain energy efficiency and GHG reduction building techniques, appliances, renewable energy technology and methods.
- Policy 6.5.6 The City should work to expand the customer base connected to the Downtown District Energy System (DDES) and look for opportunities to expand the DDES infrastructure (underground piping) in conjunction with other works.
- Policy 6.5.7 Consider the role of forests in climate change mitigation and greenhouse gas emission reduction in our land use decisions. [See also Section 6.4 Green City, Green Practices]
- Policy 6.5.8 Endeavour to link mitigation and adaptation objectives wherever possible, and identify creative solutions to lower GHGs and become more resilient to climate impacts.

Existing Buildings

- Policy 6.5.9 The City should continue to work with other orders of governments to actively promote grant and incentive programs through the means available to the City.
- Policy 6.5.10 At the time of rezoning the City should negotiate energy efficiency and renewable energy targets.
- Policy 6.5.11 Through collaborative efforts with organizations, business groups, utilities and community groups, the City should develop strategies to enable energy efficiency upgrades or retrofits and drive the demand for energy efficient appliances and equipment.
- Policy 6.5.12 The City should engage with the commercial (small & medium size business) and light-industry sectors, and support processes that facilitate engagement with these sectors (e.g., workshops conducted by Climate Smart Business, the Prince George Chamber of Commerce's Business Energy Advisor, and their equivalents), to develop energy efficiency targets, strategies and action plans and to encourage participation in third party programs (e.g., BOMA Go Green program, incentive programs from utilities).
- Policy 6.5.13 The City should work with local building organizations to promote and encourage builders to become Built Green™ certified and



use means available to the City to promote the Built Green™ program, or an equivalent green building program.

Policy 6.5.14 The City should promote and support the use of renewable energy technology that has been sanctioned by other levels of government or certification and standards associations.

Policy 6.5.15 The City should continue to utilize energy mapping tools (e.g., SCEC³ model) as part of the City's routine energy and emissions programming and planning. The model can be used to inform targets and policies related to retrofits of the existing housing stock and the introduction of renewable energy technologies (e.g., solar hot water) and district energy; in particular, to target low cost, highly effective retrofit measures; and as an integrating information resource, to provide neighbourhood level and city level findings to the public in combination with relevant incentive packages.

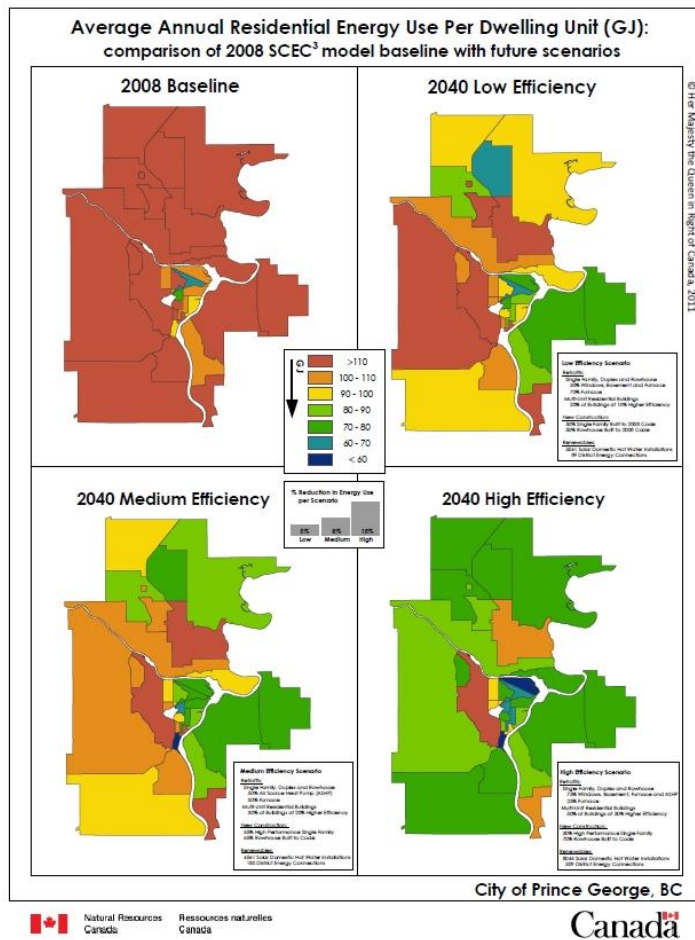
New Buildings

Policy 6.5.16 The City encourages energy efficiency for new residential development throughout the city. Examples of this include:

- high efficiency housing (e.g., 70 kWh/m²/year for space and water heating) and/or housing that uses at least 10% renewable energy resources; and,
- housing to connect and utilize a shared heating and/or power plant (e.g., neighbourhood sized district heating or geo-exchange heating systems).

Policy 6.5.17 The City should amend infrastructure policies and standards to encourage the development of energy efficient and green buildings that enable the use of renewable energy (e.g., alignment for passive solar gain, solar hot water readiness, district heating readiness, and minimum renewable energy standards for new buildings exceeding a minimum size (e.g., 1000 m²)).

Policy 6.5.18 The City should support and promote education and awareness and the use of recognized programs that train local builders on energy efficiency, renewable energy alternatives and green building techniques.



Policy 6.5.19 To encourage energy efficiency, the City should consider facilitating the use of innovative financial tools for the capital costs for new buildings within the City that will achieve high levels of energy efficiency or use of renewable energy.

Policy 6.5.20 The City should develop and implement demonstration projects (City owned or other private/other public entity owned) through partnerships and incentive or grant programs that demonstrate green building techniques.

Municipal Buildings and Facilities

Policy 6.5.21 The City should update, where needed, and implement the City of Prince George Sustainable Energy Management Plan in order to achieve energy and greenhouse gas reductions through such initiatives as:

- capital equipment retrofit and replacement;
- energy awareness programs;
- operational and maintenance improvements; and,
- construction of district energy systems.

Policy 6.5.22 New City buildings and facilities should achieve high energy efficiency and, where practical, use renewable energy sources.

6.6 Reduced Solid Waste

The Foothills Boulevard Regional Landfill is a municipal solid waste landfill located on an 87 hectare parcel of land located in the northwest sector of the city. The lifespan of the current fill area is estimated to be 17 years with a final utilization date of 2027. The site is large enough to accommodate future expansion and should accommodate projected future population growth based on current solid waste projection trends. The sanitary landfill site is situated above the Nechako aquifer and employs a regular environmental monitoring program to monitor landfill leachate with an objective to mitigate any potential risk associated with landfill leachate impacting groundwater. In addition, the Quinn Street and Vanway Recycle Depot and Transfer Stations within the city include multi-material recycling bins, household garbage disposal, and composting & yard waste drop off area



Objectives

Objective 6.6.1 The City is committed to the Regional District of Fraser Fort George Solid Waste Management Plan and its efforts to reduce the amount of waste coming to the landfill each year and to educate the public around the idea of reducing, reusing, and recycling waste products.

Policies

- Policy 6.6.1 The capacity of the current solid waste landfill site boundaries are deemed adequate for the projected growth of the city. Measures to monitor and manage any offsite impacts should continue.
- Policy 6.6.2 Given the sensitivity of this overall area as an important component to the city's water supply, expansion of the landfill site, or development of any new sites should give particular regard to the impact on groundwater.
- Policy 6.6.3 For aesthetic and safety reasons, only open land buffer or recreation uses are permitted within 300 m of the landfill site.
- Policy 6.6.4 Examine the feasibility of a curb-side compost pick-up system as well as composting systems for municipal facilities as part of an overall waste management strategy.