Shaping Our Future

THE REGIONAL DISTRICT OF NANAIMO
GROWTH STRATEGY REVIEW

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Regional Growth Strategy Review 2007-2008

Implications of the State of Sustainability Report for the Regional Growth Strategy Review

REGIONAL DISTRICT OF NANAIMO

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1.0 INTRODUCTION

The Regional District of Nanaimo recently released a report titled *Prospering Today, Protecting Tomorrow: The State of Sustainability of the Regional District of Nanaimo*. Using 41 sustainability indicators, that report provides an assessment of how the Regional District is progressing towards meeting its stated sustainability goals. In general, the indicators show that there is still significant work to be done to meet our sustainability goals. The findings of the State of Sustainability Report have implications for the Regional Growth Strategy as it indicates where action is needed to improve the region's sustainability.

The purpose of this report is to provide more detail on the implications of the State of Sustainability Report for the Regional Growth Strategy. Generally, this report attempts to answer the question: do the results of the State of Sustainability Report indicate that improvements are needed to the RGS if it is to be more effective in supporting the Regional District's goals, policies and actions regarding its vision for a sustainable region.

Specifically, this report provides an assessment of the implications for each of the 41 indicators for the RGS. Included in the assessment is whether a particular sustainability indicator can be addressed in the RGS and if it can suggestions are made on how the RGS can be strengthened or improved.

This assessment of implications for the RGS will also provide context for subsequent discussion papers on how the RGS can be changed to better support the vision for a sustainable region.

2.0 FORWARD FOR ENVIRONMENTAL CAPITAL IMPLICATIONS

The indicators for environmental capital were designed to determine if our important ecosystems and ecological features, air and water are protected and healthy and if we are using our natural resources in a sustainable manner. The indicators highlighted the following main points:

- Our water resource is in a state of decline and cannot be sustained given our present consumption behaviours and land use methods;
- At 9.5%, our impermeable surface area may be interfering with stormwater flows needed to sustain aquatic life;
- Our population outside of the Urban Containment Boundary (UCB) is growing faster than inside the UCB and our land use bylaws permit the subdivision of many more small acreages;
- Our open space and forest lands are being converted to other uses;
- Much of our agricultural land is not being farmed;
- Our air quality frequently exceeds the recommended acceptable health levels for ground level ozone;
- Our per capita electricity and natural gas consumption rates are high compared to other areas and continue to increase;
- We rely heavily on the private automobile as our main source of transportation and our per capita number and use of private automobiles are increasing. Transportation is the greatest contributor to our green house gas emissions load;
- Our public transit ridership remains low even though most residents live within walking distance of a bus stop;
- Our waste generation is increasing, but a large portion of the waste is being diverted and recycled;

The indicators used to assess the state of the region's environmental capital are summarized below along with the implications each indicator has for the Regional Growth Strategy.

3.0 THERE IS A SAFE, SUFFICIENT SUPPLY OF WATER

3.1 WATER CONSUMPTION

Grade: Below Average *Trend: Getting Worse*

The Regional District of Nanaimo consumes considerably more water per capita than the provincial average. In 2003, the RDN consumed 471 L/day compared to the provincial average of 425 L/day per capita. Furthermore, the rate of water consumption is greater than the population growth, indicating that each person is consuming more water. From 2001 to 2004, the total water consumed increased by 8% while the population increased only 3.8%. Please note that the consumption rate for the RDN does not include water use from private suppliers.

3.1.1 Relevance to Sustainability

Water demand increases as economic activity and population increase, consequently affecting ecosystems when the surface and groundwater are not replenished. Over consumption of water resources may impact local communities, agricultural production, recreational uses and ecosystem function.

3.1.2 Implications

The RGS policies on Environmental Protection recognise the value of surface and groundwater resources, through the participation of member local governments in integrated management projects and the identification of groundwater resources. However, the *State of Sustainability* report suggests that the water consumption has increased faster than population growth, indicating that people are using more water per capita. The indicator implies that the RGS policies for the sustainable use of water resources could be more effective. More focus on implementation and stronger policy is required for water conservation goals to be achieved.

3.2 WATER ELEVATION

Grade: Cannot be Assessed *Trend: Stable to Getting Worse*

There are some areas within the RDN with decreasing groundwater elevations indicating that groundwater is being over consumed and cannot replenish at the current rates of water consumption. Some aquifers in the Parksville / Qualicum area have lost almost 26% of their capacity. Significant water table drops in the Cassidy and Parksville /

Qualicum Beach Areas generate reason for concern. As well, three production wells in the Nanoose Peninsula area are in a state of decline. Generally, the aquifers in the Lantzville and Bowser/Deep Bay areas are maintaining recharge levels. Data was not available for all water purveyors.

3.2.1 Relevance to Sustainability

Groundwater provides for communities and economic activity, as well as fresh water to discharge areas such as lakes, streams, estuaries and the foreshore. Ecosystems that rely on groundwater to replenish water bodies are impacted when water is not being returned to the aquifer.

3.2.2 Implications

The policies of the RGS Environmental Protection goal do recognise the need to identify and protect the groundwater resources in the Nanaimo region. The water elevation indicator suggests that the high demand on groundwater resources for human settlement has diminished the quantity of water available in some of the region's aquifers. Due to the high rate of development within the region, the decline in groundwater in some areas will not improve without intervention. The existing RGS policy has not proven to be effective in reducing water consumption. More focus on implementation and stronger policy will assist in achieving sustainable water use goals.

3.3 GROUNDWATER QUALITY

Grade: Cannot be Assessed *Trend: Getting Worse*

Water quality is generally within drinking water standard guidelines. Many wells were only tested for bacteria. Of the other wells tested, elevated electrical conductivity and/or chloride concentrations were found in a well in Lantzville and in wells in the Parksville and the Qualicum Beach areas. Normally, fresh water floats on top of salt water. Elevated conductivity levels indicate the presence of salt in the water, which means that the water table is being drawn down to the point where the fresh water and salt water are mixing and becoming brackish. This tends to occur more frequently along coastal areas.

3.3.1 Relevance to Sustainability

Groundwater provides for communities and ecosystems, as it discharges into streams and freshwater bodies. Any decrease in the quality of groundwater will increase the costs of treatment for human consumption, as well affect the water quality in riparian ecosystems, adversely affecting habitat for fisheries.

3.3.2 Implications

The Environmental Protection policies of the RGS do address the need to protect the quality of groundwater and surface water, which are connected through discharge. The indicators suggest that the water quality in the region overall is good, and do not indicate any increasing or decreasing trends in pH, electrical conductivity, or chlorine concentrations, with a few localized exceptions. While there are no major concerns with groundwater quality, the RGS could include stronger policies regarding the identification and protection of groundwater resources. Implementation of policies through official community plans and other means would be key to protecting the groundwater resource.

3.4 IMPERMEABLE SURFACE AREA

Grade: Well Below Average *Trend: Getting Worse*

Many areas of the RDN are at or beyond the point where impermeable surfaces can have an impact on the surface and groundwater flow. Approximately 9.5% of the RDN is covered by impervious surface. Impervious surface areas that exceed 8-10% reduce interflow to the point that streams cannot maintain a sufficient base flow to sustain life, which can result in a loss of approximately 80% of the fish stock. Notably, we rely on streams for drinking water. The amount of impermeable surface area in the region has reached a level where a reduction in recharge and interflows has occurred. Lowered recharge and interflow rates lead to a reduction in the amount of water transmitted and stored in aquifers, ultimately reducing the amount of water available for human consumption and for streams.

3.4.1 Relevance to Sustainability

Impermeable surface areas affect the amount of water that can recharge aquifers. Impermeable surfaces stop the rainwater from seeping into the ground and often rainwater is diverted far from its source meaning that water is not replenishing both riparian areas and aquifers. The decrease in water resources impacts communities and

ecosystems dependent on potable groundwater. As well, impervious surfaces increase the intensity of runoff which in turn increases the potential for erosion of fish habitat and damage to the built environment.

3.4.2 Implications

The Environmental Protection policies in the RGS address the amount of impermeable surfaces in the region indirectly through the collaboration between the RDN and municipalities on integrated management projects. Many areas in the RDN have already exceeded the recommended impermeable surface coverage at which there is no impact on water sources. The indicator results suggest that existing policy within the RGS has not effectively addressed mitigation of the impact of impermeable surfaces. Policy may be added to provide more specific direction for limiting impervious surfaces and rainwater management that mimics natural processes.

3.5 VOLUME OF WATER EXTRACTED

Grade: Well Below Average *Trend: Uncertain*

Approximately, 4.4 million cubic metres of groundwater were used in the region in 2004. The groundwater usage increased slightly between 2002 and 2004. The causes for the increase were partially attributed to an increase in population growth and development. Data from several of the large water purveyors, private wells and suppliers was not supplied. Therefore, the analysis does not supply a good representation for the entire region.

3.5.1 Relevance to Sustainability

The increase in development also increases the volume of water extracted from aquifers, which in turn can reduce groundwater reserves. Unsustainable use of water places more pressure on water sources for existing communities and ecosystems.

3.5.2 Implications

Within the RGS policies on Environmental Protection, the member local governments agreed to take measures to identify and to protect groundwater resources in the region. The *State of Sustainability* report indicates that groundwater is being extracted in some places at a greater rate then it is being recharged. The report also suggests that data is not currently available to effectively gauge the volume of water extracted over long term

periods. Stronger policy may be required with respect to monitoring water use and reducing the volume of water extracted. More focus on implementation would also aid in achieving sustainable water use goals.

3.6 STREAM TEMPERATURE

Grade: Meeting the Average *Trend: Stable to Getting Worse*

Water temperature is used as a general indicator of the impacts of land development because groundwater discharge to surface water streams moderates the stream temperature. Therefore, increases in stream temperature demonstrate a reduction in groundwater discharge into streams most likely caused from development. The temperature of most of the streams have neither increased nor decreased substantially. The winter temperature decreased and the summer temperature increased for Nile Creek, indicating that the groundwater flow into Nile Creek has declined over the past 10 years.

3.6.1 Relevance to Sustainability

Groundwater resources provide a potable water resource for communities and economic activity, and are a contributor to the health of riparian ecosystems through discharge into streams. Decreases in groundwater discharge to streams may indicate that there is less water available in storage, which may be caused by reduced infiltration or increased water extraction or a combination of both.

3.6.2 Implications

The Environmental Protection policies in the RGS support taking measures to identify and protect surface and groundwater resources. With the exception of Nile Creek, the stream temperature data do not indicate stream temperatures are either increasing or decreasing. But the data sources are limited for stream temperatures, and do not represent long term trends. While there is no indication that current RGS policies are not working with respect to regulating stream temperature, stronger policies to protect groundwater and more focus on the implementation of policies will support the sustainable use of groundwater which in turn will assist with maintaining natural stream temperature cycles.

4.0 IMPORTANT ECOSYSTEMS AND ECOLOGICIAL FEATURES ARE PROTECTED, HEALTHY AND PRODUCTIVE

4.1 WATER QUALITY IN SELECTED LAKES AND RIVERS

Grade: Well Below Average *Trend: Uncertain*

Water quality usually complies with drinking water guidelines; however, cadmium and lead levels did not comply with acceptable levels in some watercourses. Specifically, high cadmium levels in the large water resources of Brannen Lake, Green Lake, Englishman River and Little Qualicum River as well as a spike in lead concentrations in the Englishman River (in 2001) beyond Canadian Water Quality Guideline standards demonstrate reason for concern.

4.1.1 Relevance to Sustainability

Water quality indicates the health of a water body and the presence of harmful contaminants. Contaminated water sources may contain toxic substances hazardous to human health and wildlife. The indicator suggests that poor water quality also has economic impacts on fisheries and aquaculture, tourism and recreation.

4.1.2 Implications

The policies for Environmental Protection support the protection of the supply and quality of surface water resources and aquatic habitat. The high contamination levels in selected lakes suggest that the policy has not effectively addressed the connection between land use policy and contamination of surface water. The findings in the *State of Sustainability* report are also limited by the available data. RGS policies could be improved to provide more direction for monitoring and protecting water quality.

4.2 AMOUNT OF LAND AND LENGTH OF WATERCOURSE PROTECTED BY PARK OR DEVELOPMENT PERMIT AREA DESIGNATION

Grade: Data Cannot be Assessed *Trend: Uncertain*

A substantial portion of the region's land base is protected within parks, federal wildlife reserves, or on land owned by conservation organizations. As well additional lands are located within development permit areas that were established for the purpose of

protecting the natural environment. The two types of areas combined encompass approximately 23% of the RDN land base. The report indicates that 21% or 45, 075 hectares of the region's land base is located in development permit areas which among other features include the protection of 288 eagle and heron perch trees. The recently adopted Fish Habitat Protection Development Permit Areas also provides increased protection for fish habitat and fresh water resources.

4.2.1 Relevance to Sustainability

Development permit areas are intended to protect natural ecosystems recognised in Official Community Plans, such as watercourses, coastlines, sensitive habitat or other natural areas. These areas are environmentally or culturally significant, and recognised in OCPs as an important community resource.

4.2.2 Implications

The Environmental Protection goal does contain policies for the protection of environmentally sensitive areas, which is the intention of most development permits. While 23% of the region is designated as a development permit area, the data has not been collected to determine the effectiveness of development permits in reducing the loss of environmental assets. Other indicators do suggest that RGS policies could be strengthened and implemented to provide greater protection for sensitive areas.

5.0 THE AIR IS CLEAN AND SAFE TO BREATHE

5.1 GROUND LEVEL OZONE

Grade: Well Below Average *Trend Stable*

Data from the air quality monitoring site on Labieux Road shows that the ozone levels in the City of Nanaimo frequently exceeds the health reference level of 20 ppb and are increasing over time. Since 1999, the health reference levels have been exceeded between 37% and 51% of the time. The ozone levels for the City of Nanaimo appear high considering the strong prevailing winds in the area. While the ground level ozone levels were consistently well below the Canada Wide Standard of 65 ppb, it is likely that some residents are experiencing health problems on the days when ozone levels exceed 20 ppb. Ground level ozone poses a great risk to human, wildlife, and ecosystem health. There is no safe level for ozone only a threshold level where health

problems increase significantly. More monitoring stations distributed throughout the region would help provide a regional perspective on ground level ozone.

5.1.1 Relevance to Sustainability

The concentration of ground level ozone indicates the impact that automobiles and other emissions contributors are having on air quality. The indicator acknowledges the effect that even low concentrations of ozone have on human health and wildlife.

5.1.2 Implications

The Urban Containment, Environmental Protection, Improved Mobility and Nodal Structure policies of the RGS promote good air quality by encouraging land use patterns that support alternative modes of transportation such as walking, cycling or public transit. While direction for more active transportation and public transit is provided in several policies in the RGS, it appears that they have not been effective in stopping the increase in ground level ozone concentrations. More needs to be done with respect to implementing policies related to urban containment, nodal development, active transportation and public transit. Efforts to reduce the levels of ground level ozone will also aid in reducing greenhouse gas production.

5.2 FINE PARTICULATE MATTER

Grade: Data Cannot be Assessed *Trend Uncertain*

Data from the air quality monitoring site on Labieux Road shows that the fine particulate matter levels in the City of Nanaimo occasionally exceed the health reference levels of 15 mg/m^3 but have consistently remained within the Canada - Wide Standards of 30 mg/m^3. Data for the rest of the region is not available. Given that scientists have concluded there is no effects threshold for particular matter and that there are times when the health reference levels have been exceeded, it is likely that residents are experiencing occasional health problems related to poor air quality as once inhaled $PM_{2.5}$ remain in the lungs forever.

5.2.1 Relevance to Sustainability

The concentration of fine particulate matter in the atmosphere is an indicator of the suitability of the air to human and environmental health. Harmful substances such as toxic trace metals can be deposited in the respiratory tract and may result in respiratory

problems or premature death. The main sources of fine particulates are dust from roads, soot from fires, vehicle emissions and industrial activity.

5.2.2 Implications

The Environmental Protection, Improved Mobility and Nodal Structure policies address changing behaviour in regards to mode of transportation. The *Local Government Act* requires the RGS to work towards reducing and preventing air, land and water pollution. The regional growth strategy does not currently address all sources of emissions affecting air quality. Policies for transportation and other sources of air pollution may need to be strengthened to reduce fine particulate matter in the atmosphere. As well, more focus is needed on implementing policies related to supporting more compact forms of development.

6.0 ALL NATURAL RESOURCES ARE CONSERVED, AND RENEWABLE RESOURCES ARE AVAILABLE IN PERPETUITY

6.1 MANAGED FOREST LANDS / RESOURCE LANDS AND OPEN SPACE SUBDIVISIONS

Grade: Cannot be Assessed *Trend: Getting Worse*

The region's managed forests and other resource lands are being developed over time. Nearly all of the managed forest land is in the RGS Resource Lands and Open Space land use (RLOS) designation. Seventy-three percent of our region's land base or 152,902 hectares is managed forest. Between 1994 and 2005, 2,942 hectares of RLOS designated lands were developed with most of this development occurring in 2002 (63%).

6.1.1 Relevance to Sustainability

This indicator is important to our sustainability as it measures the amount of land available for agriculture, forestry, public recreation and environmental preservation. As a result, the balance of land within the RLOS directly impacts the region's ability to produce goods, employ residents, support recreational opportunities, and provide environmental stability.

6.1.2 Implications

The RGS contains policies that provide direction for protecting rural integrity and for limiting development in rural areas. In 2006 the RDN increased the minimum parcel size for subdivision to 50 hectares for much of the private managed forest lands and some Crown lands. The purpose of this zoning change was to discourage conversion of resource lands to other uses. No information is yet available on the effect of this rezoning. However, for much of the RDN, official community plan policies to increase the minimum parcel size in rural areas have not been implemented. Policies related to rural parcel size and development could be improved and more focus could be placed on implementing the policies.

6.2 CURRENT AND PROJECTED AGE CLASS DISTRIBUTION FOR ARROWSMITH TIMBER SUPPLY

Grade: Well Below Average *Trend: Stable*

The portion of the Arrowsmith Timber Supply Area (TSA) within the RDN has an unbalanced age class distribution, for both the timber and the forested non-timber harvesting land bases. Within the RDN, 93% of the trees are less than 120 years old. The entire Arrowsmith TSA has a small distribution of trees aged 60 to 240 years old. A large percentage of area contains trees under 60 years of age in the timber-harvesting land base and trees older than 240 years in the forested non-timber harvesting land base.

6.2.1 Relevance to Sustainability

Age class distributions in trees affect biodiversity and local employment. Failure to maintain diversity in tree ages affect the provision of habitat for species dependent on mature forests, as well may lead to a timber supply shortfall with serious negative economic impacts.

6.2.2 Implications

While RGS policies can address the conversion of forest lands to other uses, it does not appear that the RGS can address the age class distribution of trees in forests. Regulation of silvilculture and related forestry industries is outside of the jurisdiction of local governments. As forestry operations and practices fall under provincial jurisdiction,

it is not clear how this indicator can be addressed in the RGS except perhaps under cooperation among jurisdictions.

6.3 AMOUNT OF AGRICULTURAL LAND RESERVE (ALR)

Grade: Well Below Average Trend: Getting Worse

The amount of land within the Agricultural Land Reserve (ALR) continues to decline. Since 1974, the amount of land within the ALR has declined by 12%. However, the majority of exclusions (11.3%) occurred prior to 1994. Since this time the decline has occurred at a much slower rate.

6.3.1 Relevance to Sustainability

Agriculture is important for a sustainable region as it provides a local food source, reduces transportation costs for shipping food from other areas, generates economic spin-offs, and promotes cultural and social values through farmers markets, festivals, and non-profit organizations.

6.3.2 Implications

The RGS supports the protection of ALR land through the policies for Rural Integrity. While it is not clear how effective the RGS has been in supporting agriculture and protecting farm land, the RGS could provide more direction in this regard. As well, the RGS could include policies related to support for farming and related economic activities.

6.4 PROPORTION OF FARMLAND IN CROPS

Grade: Meeting the Average Trend: Getting Better

The RDN's land in crops is increasing, both in hectares and in proportion to the total farmland. Between 1991 and 2001, the amount of land in crops throughout the region increased 63% from 2508 hectares to 4,050 hectares, compared to the province's increase of only 9%. In 2001, the RDN had 33% of the land in crops, considerably higher than the provincial average of 23%.

6.4.1 Relevance to Sustainability

The proportion of farmland in crops increases the amount of food that can be produced and consumed locally. Locally grown and consumed food improves the health of

residents, and benefits the local economy through employment and the environment through less transportation.

6.4.2 Implications

While there are limitations to what the RGS can do to encourage farming, there may be opportunities for the RGS to provide direction on how to make sure that lands remain available for farming.

6.5 SUSTAINABLE FARMING PRACTICES

Grade: Slightly Below Average *Trend: Getting Better*

In 2001, 8.62% of the region's farmland in crops applied insecticides and fungicides, which was slightly higher than the provincial average of 8.45%. The amount of chemical application in the region increased between 1991 and 1996, but then declined slightly between 1996 and 2001 to 8.62%. Because the analysis does not account for the local weather conditions, soil and crop production types, and volume, toxicity, type or necessity of application for insecticides and pesticides, the results cannot be accurately compared to other regions.

6.5.1 Relevance to Sustainability

Sustainable farming practices benefit the environment by reducing contaminants that may negatively affect ecosystems or human health. The farming practices may also have an economic benefit by adding value to products and reducing operating costs for farmers.

6.5.2 Implications

Presently, the policies within Rural Integrity deal with the location and amount of land available for farming and not the manner in which the activity is undertaken as this responsibility is left to individual farmers and the Ministry of Agriculture. At first glance it does not appear that the RGS can directly address the practices of farmers. However, it may be possible to provide some direction in this regard as the RGS can deal with environmental protection and cooperation with other agencies.

6.6 FARMS REPORTING SALE OF ORGANIC PRODUCTS

Grade: Well Below Average *Trend: Uncertain*

The RDN has a very low percentage of farms producing certified organic products, less than the provincial average and other comparable regions. In 2001, the RDN had five farms, or 1.02 percent of all farms, reporting production of certified organic products, which is lower than the provincial rate of 1.57% and the Capital Regional District rate of 3.08%.

6.6.1 Relevance to Sustainability

The use of pesticides and other toxic contaminants are a hazard to the natural environment and may adversely impact human health. Organic crops also have added value and are more profitable for the farmer to cultivate.

6.6.2 Implications

Presently, the policies within Rural Integrity deal with the location and amount of land available for farming and not the manner in which the activity is undertaken as this responsibility is left to individual farmers and the Ministry of Agriculture. At first glance it does not appear that the RGS can directly address the practices of farmers. However, it may be possible to provide some direction in this regard as the RGS can deal with environmental protection and cooperation with other agencies.

7.0 ENERGY REQUIREMENTS ARE REDUCED/ ENERGY IS OBTAINED IN WAYS THAT MINIMIZE NEGATIVE IMPACTS ON THE ENVIRONMENT AND GREENHOUSE GASES ARE MINIMIZED

7.1 AMOUNT OF ELECTRICITY AND NATURAL GAS CONSUMED

Grade: Well Below Average *Trend: Getting Worse*

The regional consumption of electricity and natural gas is increasing and there is no energy manufactured in the region. From 1994 to 2004, the region's per capita electricity consumption increased by 9%, which exceeds both Greater Victoria and the Lower Mainland. The amount of electricity used increased 19% from 1.12 billion kilowatt hours in 1994 to 1.38 billion kilowatt hours in 2004. During this time, residential consumption increased 17% while commercial consumption increased 21%.

7.1.1 Relevance to Sustainability

The production of electricity and the consumption of non-renewable fossil fuels affect the environmental health of the region. Hydro dams, the primary source of electricity in the province, impact the aquatic ecosystems it relies on to produce electricity. Hydro also disrupts other habitats with the construction of required infrastructure to supply electricity to individual homes. The consumption of natural gas reduces reserves of fossil fuel resources and contributes to greenhouse gas emissions in the atmosphere.

7.1.2 Implications

The RGS does not currently address energy use in the region. Therefore the RGS does not provide direction with respect to energy conservation or local energy sources. However, the *Local Government Act* requires the RGS to work towards planning for energy supply and promoting efficient use, conservation and alternative forms of energy. The RGS may include stronger policy to support energy efficient services. As well, new provincial legislation expected this spring will require a RGS to include policies and targets for greenhouse gas reduction.

7.2 GREENHOUSE GAS EMISSIONS

Grade: Data Cannot be Assessed *Trend: Uncertain*

In 2002, the region produced approximately 667,769 tonnes of greenhouse gas emissions. At 73%, the transportation sector was the greatest polluter, followed by buildings at 23% then solid waste at 4%. On average, each person generates 4.6 tonnes of greenhouse gas emissions.

7.2.1 Relevance to Sustainability

Carbon dioxide emissions, largely from vehicles, are a greenhouse gas that prevents the sun's energy from escaping from the earth's atmosphere, consequently increasing the earth's temperature. The world's top scientists are in agreement that the change will bring variability and extreme weather, causing unusual floods, droughts and storms that will affect local government services, assets and infrastructure.

7.2.2 Implications

The main focus of the RGS for reducing emissions of greenhouse gases is urban containment and nodal development. Having people live close to where they work, go to

school, shop and play will reduce the reliance on the automobile and support other modes of transportation such as walking, cycling and public transit. As well, focussing development in urban areas will help preserve forest lands and other natural areas which help to reduce the amount of GHGs getting into the atmosphere. Currently, the RGS does not address energy efficiency in buildings. As stated above, new provincial legislation expected this spring will require a RGS to include policies and targets for greenhouse gas reduction.

7.3 MODE OF TRANSPORTATION TO WORK, AND LOCATION OF WORK

Grade: Well Below Average *Trend Getting Worse*

Employed residents are increasingly reliant on private automobiles to commute to work, despite living closer to work than those in other regions. Markedly, 88% of residents in the region commute to work by private vehicle which is 6% higher than the provincial average. The number of people commuting to work as drivers has increased while the number of passengers has decreased, indicating there are more single occupant vehicles on the road. Only 8% of residents choose to commute by walking or cycling. While the number of users is increasing, still only 2% of workers use public transit to commute to work.

7.3.1 Relevance to Sustainability

The distance to travel to work and the mode of travel by residents determine environmental impacts for the emission of greenhouse gases and social impacts of the physical health of the population. The more time residents spend driving, the more susceptible they are to chronic illnesses and weight gain.

7.3.2 Implications

The RGS does provide direction for encouraging active modes of transportation and transit, particularly in the policies for the Nodal Structure and Improved Mobility goals. The policies address designing communities to maximize the practicality of walking, cycling or using transit by residents. The indicator suggests that despite living closer to work, the dependence on automobiles has increased. The increase in vehicles may be reflected in density and infill goals not being met and existing land use patterns not being conducive to efficient public transit. More focus on implementation is likely needed to achieve the goals related to nodal development and transportation alternatives.

7.4 BUS RIDES PER CAPITA

Grade: Data Cannot be Assessed *Trend: Getting Better*

The number of people using public transit is increasing in the region. Between 1998 and 2004, ridership increased 39% per capita. However, the number of riders remains low. Only 2% of people chose public transit as a means of travel to work. Ridership is an indication of the efficiency of the public transit system.

7.4.1 Relevance to Sustainability

Public transit provides a more environmentally efficient transportation service than personal vehicles as buses have a higher passenger capacity, reducing the required number of cars and greenhouse gas emissions. Higher bus rides per capita reduce harmful emissions in the atmosphere that affect human health.

7.4.2 Implications

The RGS does support public transit service in several goals, including Nodal Structure and Improved Mobility. The indicator suggests that bus ridership per capita has increased, but there is still room for improvement. As suggested by the previous indicator, the majority of residents still use a personal vehicle on their commute to work. The effectiveness in the delivery of transit services may still be improved. The continued implementation of policy related to urban containment and nodal development will assist in increasing the efficiency of public transit services.

7.5 RESIDENTS WITHIN WALKING DISTANCE OF AMENITIES

Grade: Well Below Average *Trend: Getting Better*

There has been an increase in the proportion of residences within 400 m of schools, retail outlets and services, indicating that some nodal development is occurring. When amenities are close by people tend to walk more and use their vehicle less. However, even though nodal development and proximity to amenities may be improving, vehicle use is not declining. More worrisome is that the indicator demonstrates that the percentage of residences within walking distance to green space and recreation is declining because green space is being used for the development of residences and amenities.

7.5.1 Relevance to Sustainability

Close proximity to amenities permits active transportation such as cycling or walking, instead of relying on personal vehicles. Walking, instead of driving, promotes healthy lifestyle among residents, reduces the deterioration of infrastructure and increases air quality.

7.5.2 Implications

The Nodal Structure goal of the RGS does direct nodes to be designed to include places to live, work, play, shop and access services. The indicator suggests that residences within 400m of multiple amenities have increased within nodes between 2000 and 2005. The policy appears to have contributed to the encouragement of developments where residents can walk to amenities. Despite more people living closer to amenities there are more cars on the road and people are driving more. Other policies that address transportation and mobility may need to be strengthened along with more focus on implementation.

7.6 RESIDENCES INSIDE URBAN CONTAINMENT BOUNDARIES WITHIN WALKING DISTANCES OF A BUS STOP

Grade: Slightly Below Average *Trend: Uncertain*

Most residents that live within the Urban Containment Boundary are within walking distance of a bus stop. In 2001, 89% of residents inside urban containment boundaries lived within 400 m of a bus stop. Therefore, many people have access to public transit, yet few take advantage of the service.

7.6.1 Relevance to Sustainability

The indicator measures the potential for residents to access public transit services. Public transit may increase mobility options for people without access to a personal vehicle and reduce the emissions of greenhouse gases into the atmosphere.

7.6.2 Implications

The RGS addresses the provision of public transit within urban containment boundaries through policies to improve land use patterns and increase opportunities and access to transit. The indicator suggests that the majority of residences inside the UCB are within walking distance of a transit stop, but it does not indicate if the proximity to a

transit stop has increased ridership. Other factors may deter residents from using transit, such as schedules, transferring or length of trip. Policies to support public transit may be strengthened but other initiatives should focus on other factors relating to the effective use of transit.

7.7 VEHICLES PER HOUSEHOLD

Grade: Well Below Average *Trend Getting Worse*

The report states that the number of vehicles per household is increasing. In only two years between 2001 and 2003, the number of insured vehicles per household increased from 2.21 to 2.22 vehicles in our region. Our vehicle rates are exceptionally high compared to Vancouver and Victoria's which have less than 1.11 vehicles per household. Qualicum Beach has the greatest number of vehicles per household at 2.73.

7.7.1 Relevance to Sustainability

The number of vehicles per household relates to the incidence of vehicle use on local roads. Higher vehicle use contributes more greenhouse gases into the atmosphere and increases the frequency of motor vehicle accidents. As well, higher vehicle use affects the health of people in the region as more vehicles means more pollution and because people are not using active forms of transportation.

7.7.2 Implications

The Improved Mobility policies in the RGS supports providing information to the public about the benefits of environmentally friendly modes of transportation and the consequences of automobile travel. The increase in the number of cars per household would indicate that the policy has not been effective. The policy may not be effective because residents do not have access to practical environmentally friendly transportation means or the information has not been provided. New policies could be added to assist in discouraging automobile use along with more focus on implementation. As well, more emphasis could be placed on implementing the policies on urban containment and nodal development.

8.0 LAND AND RESOURCES ARE EFFICIENTLY USED, AND NEGATIVE IMPACTS OF LAND USE AND DEVELOPMENT ARE MINIMIZED

8.1 POPULATION GROWTH AND DENSITY, AND AMOUNT OF LAND IN URBAN CONTAINMENT BOUNDARIES

Grade: Slightly Below Average *Trend: Getting Better*

The population density inside the urban containment boundaries (UCB) remains higher than the rural areas; however the population outside of the UCB is growing at a faster rate. In 2001, the population density inside the UCB was 8.62 persons per hectare compared to 0.19 persons per hectare in the rural areas. However, population growth in the rural areas is occurring at a faster rate. During 1991 to 2001, the population in the rural areas increased by 46% while the population inside the UCB increased by only 15%, indicating that many people still prefer to live in a rural setting.

8.1.1 Relevance to Sustainability

Maintaining high residential density within the urban containment boundaries reduces development pressure on rural lands and green spaces. Higher densities of urban centres also permit more efficient delivery of services, greater mixing of land uses and promotes walking or cycling. More people living closer to where they work, shop and go to school also helps reduce the amount of greenhouse gas emissions from automobile use.

8.1.2 Implications

The majority of the goals of the RGS deal with urban growth management. The Strong Urban Containment goal supports only approving new urban development within the Urban Containment Boundaries. The indicator suggests that the policy has been effective since the density of urban growth centres continue to increase. However, the population growth rate is still higher outside of the urban containment boundaries, contrary to the intent of the policy. A recent effort to decrease densities outside of the Urban Containment Boundary is to increase minimum parcel size on forestry land to 50 hectares (as mentioned above). Further efforts in the implementation RGS policies are needed to encourage growth inside the UCB and discourage growth in the rural areas.

8.2 AMOUNT OF LAND OUTSIDE OF URBAN CONTAINMENT BOUNDARTIES THAT MAY BE SUBDIVIDED INTO PARCELS SMALLER THE 4 OR 10 HECTRES

Grade: Data Cannot be Assessed *Trend: Uncertain*

At the time of the State of Sustainability Report there were 41, 686 hectares of land that could be subdivided into parcels smaller than 4 or 10 hectares. If the 41,686 hectares was divided into only 10 hectare lot sizes, there would be an additional 4,168 lots. In 2006 the RDN adopted amendments to its zoning bylaw to maintain a 50 hectare minimum parcel size for forest resource lands.

8.2.1 Relevance to Sustainability

The intent of the RGS is to direct development inside the urban containment boundaries, and reduce the amount of development outside of the boundaries. Subdivisions of land with lots less then 4 hectares will allow for a greater amount of people living in the rural areas than will subdivisions where the minimum parcel size is 10 hectares. This will have a greater impact on the rural integrity of areas outside of the urban containment boundary and will also contribute to more greenhouse gas emissions because more people will be driving longer distances.

8.2.2 Implications

The RGS does address rural subdivisions in the Urban Containment and Rural Integrity goals. The Rural Integrity goal supports investigating the ideal minimum parcel size for Resource Lands and Open Space. The RDN has increased the minimum parcel size on forestry lands to 50 hectares in 2006, complying with the previous RGS policy. The indicator does not gauge the performance of the changes in the region, so there is no certainty that the RGS policy has been effective. Further implementation is needed to achieve the intended effect of the policy.

9.0 WASTE IS MINIMIZED, TREATED AND DISPOSED USING ENVIRONMENTALLY SOUND METHODS

9.1 AMOUNT OF WASTE TO THE LANDFILL, AMOUNT OF WATER DIVERTED, AND AMOUNT OF WASTE RECYCLED

Grade: Meeting the Average *Trend: Getting Better*

There is an increasing amount of waste generated and disposed at the landfill; however a greater portion of the waste that is generated is being diverted and recycled. Between 1998 and 2004, the amount of waste generated in the region increased 27% from 101,795 tonnes to 137,826 tonnes and the amount of waste sent to the landfill increased by 13% from 58,057 tonnes to 65,666 tonnes. However, during the same period, the amount of waste recycled increased by 63% from 38,365 tonnes to 62,762 tonnes and the amount of waste reduced and/or recycled increased by 75% from 5,376 tonnes to 9,398 tonnes. The region's Zero Waste Plan is helping to reduce the amount of waste going to the landfill.

9.1.1 Relevance to Sustainability

As existing landfills reach capacity, finding appropriate sites for landfills is complicated by environmental constraints or resistance from neighbouring residents. Much of the waste may be diverted and recycled, reducing much of the environmental and economic costs of operating landfills and reusing many renewable resources such as plastics and metals.

9.1.2 Implications

The Environmental Protection policies do support a zero waste objective, being the elimination of the need for waste disposal. The indicator suggests that the amount of waste disposed at the landfill is increasing, due to population growth, but the amount of waste being diverted and recycled also has increased. The region has been doing well and continues to improve in comparison with other regions, so there appears to be no need to change the existing policy in the RGS.

9.2 QUALITY OF BIOSOLIDS FROM WASTEWATER TREATMENT PLANTS

Grade: Exceeding the Average *Trend: Getting Better*

The quality of the biosolids from the waste water treatment plants in Nanaimo and French Creek are well within the provincial standards. The center in Nanaimo has decreased concentrations of arsenic, cadmium, mercury and lead. The center in French Creek has generally stable mercury levels but its lead content is on the rise.

9.2.1 Relevance to Sustainability

The quality of biosolids determines if the waste can be used in fertilizers for landscaping, forestry or landfill closure. Reusing waste for productive purposes decreases the amount of biosolids requiring disposal.

9.2.2 Implications

The RGS does not address the quality of biosolids produced by the sewage treatment process. The RGS growth strategy may include a policy for quality and reuse of biosolids but the indicator suggests that it would be unnecessary. The region exceeds the provincial average for the quality of biosolids.

10.0 FOREWORD FOR SOCIAL CAPITAL IMPLICATIONS

The indicators for social capital were designed to determine if residents were healthy, educated, employed, safe, mobile, properly housed, and prosperous. The indicators highlighted the following main points:

- The region lacks affordable housing and has an exceptionally high and growing number of families in need of subsidized housing;
- The region has a growing number of poor and working poor as the cost of living is rising faster than pay rates;
- The region has an increasing number of lower paying jobs in the service sector;
- The region's education levels are lower than the provincial average;
- There is a substantially higher than average juvenile break and enter rate;

- There is a higher than average teen pregnancy rate;
- The region lacks sufficient, safe and efficient low-cost environmentally friendly transportation alternatives;
- There are a growing number of pedestrians and cyclists being hit on our roadways;
- The majority of residents rely on private automobiles - the demand and use of private vehicles is increasing substantially and greatly exceeds other regions.

The indicators used to assess the state of the region's social capital are summarized below along with the implications each indicator has for the Regional Growth Strategy.

11.0 RESIDENTS ARE HEALTHY, AND HEALTHCARE SERVICES AND FACILITIES AND FACILITIES ARE AVAILABLE WHEN NEEDED

11.1 BIRTH WEIGHT

Grade: Meeting the Average *Trend: Getting Better*

The number of low birth weight rates is declining in the region and in 2003 was below the provincial average. Between 1998 and 2003, the rate of low birth weight babies declined from 46 to 43 occurrences per 1,000 women, or 4.6% to 4.3%, which is below the provincial average and provincial target of 5.1%. The declining trend of low birth weights indicates that women have improved their living conditions by mitigating the factors that cause low birth weight babies.

11.1.1 Relevance to Sustainability

The birth weight is an indicator for the health and economic conditions of the community. The indicator suggests that birth weight is related to other indicators of quality of life, such as poverty, inadequate housing, drug and alcohol abuse, or poor nutrition.

11.1.2 Implications

The RGS does not address birth weight, nor is it within the scope of the RGS to provide policies for birth weight. But the RGS may include policies for social factors affecting birth weight, such as affordable housing.

11.2 LIFE EXPECTANCY AT BIRTH

Grade: Well Below Average *Trend: Getting Better*

The average life expectancy in the region is increasing, but remains below the provincial average. Between 1991 and 2003, the life expectancy in the region increased from 79.4 years to 79.9 years, which is lower than the provincial average of 80.8 years, Vancouver Island's rate of 80.4 years, and the Vancouver Coastal rate of 82.0 years. For an unknown reason, the life expectancy in the region peaked at 80.25 in 2002 and then declined again. Life expectancy rates are used to determine the health and social development of an area. Notably, the region is experiencing a large influx of retirees which influences the social and economic characteristics of the region.

11.2.1 Relevance to Sustainability

The life expectancy at birth is an indicator for the health and economic conditions of the community. The indicator suggests that life expectancy is related to other social factors, such as education, poverty, nutrition and access to health care.

11.2.2 Implications

The RGS does not address life expectancy, nor is it within the scope of the RGS to provide policies for life expectancy. The Regional Growth Strategy currently has no policies that address the social impacts of our built environment because its purpose is intended to guide land use rather than act as a tool to deal with social issues. However, the design of buildings and neighbourhoods can either promote or prevent socialization and physical activity, and improve mental health, injury and disease prevention. The RGS may also address some of the factors that determine life expectancy, such as affordable housing or access to parks and recreation.

11.3 LIVE BIRTHS TO TEENAGE MOTHERS

Grade: Slightly Below Average *Trend: Getting Better*

From 1998 to 2003, the teen pregnancy rate has declined throughout the region but remains above the provincial average. There are approximately 14.7 live births per 1,000 teenage women in the region compared to 13.7 live births in the province. Qualicum Beach is the only location in the region that is below the provincial average, most likely because of the higher average age of its residents. Internationally, our region

is well above other countries such as Japan and Switzerland who experience 5 live births per 1,000 teenage women.

11.3.1 Relevance to Sustainability

The indicator suggests that the number of live births has an impact on the health or economic status of the teen parent, the child and the community. Due to their age and financial condition, teen parents may not be able to provide adequate parental care for their child.

11.3.2 Implications

The RGS does not address live births to teenage mothers, nor is it within the scope of the RGS to provide policies for live births to teenage mothers. However, the RGS may include policies for social factors affecting births to teenage mothers, such as affordable housing.

11.4 MOTOR VEHICLE ACCIDENT RATES

Grade: Slightly Below Average *Trend: Stable*

From 2000 to 2003, the number of motor vehicle accidents declined slightly. But in comparison with other communities in the regional district, Nanaimo experienced almost double the number of vehicles accidents than Qualicum Beach. While motor vehicle accidents in the region remained fairly stable, the number of pedestrian related incidents increased 20%, and the number of cyclist related accidents climbed an alarming 40%. In general, municipalities that provide infrastructure and resources for pedestrian and cycling travel experience fewer incidents.

11.4.1 Relevance to Sustainability

The number of motor vehicle accidents has social and economic consequences of death or injury to driver, pedestrians or cyclists. The indicator suggests effects on quality of life for households through lost income, greater costs to the health care system and higher insurance rates.

11.4.2 Implications

One objective of the Nodal Structure Goal is that communities be designed to maximize personal safety and security, such as on roadways. Other RGS policies also support

environmentally friendly modes of transportation which may reduce the number of vehicles on the road, and the number of collisions. The indicator has remained stable despite the policies of the RGS. Stronger policies on good urban design and alternative transportation could be added to the RGS. As well, more effort could be focussed on implementing the Nodal Development policies.

12.0 RESIDENTS ARE EDUCATED OR TRAINED SO THEY ARE QUALIFIED FOR EMPLOYMENT

12.1 EDUCATIONAL ATTAINMENT

Grade: Well Below Average *Trend: Getting Better*

The Regional District is improving but remains below the provincial average with regard to educational attainment levels. Since 1991, the percentage of residents with university level education has increased from 17% to 22%. From 1991 to 2001, the percentage of persons in the region with trade certificates and diplomas increased significantly from 5% to over 15%. Notably, more residents are choosing to go back to school later in life to achieve their grade 12 equivalent and complete trade, certificate and diploma courses. Malaspina University-College's transition to a degree-granting university could help improve regional education levels.

12.1 Relevance to Sustainability

Education attainment provides residents with the capacity to undertake higher levels of employment and improve their income. The indicator also recognises the role education plays in increasing environmental and ethical awareness and effective public participation in decision making.

12.1.2 Implications

It is not clear how the RGS can address education attainment levels. Perhaps policies could be added under the goal on Cooperation Among Jurisdictions.

13.0 A WIDE VARIETY OF EMPLOYMENT OPPORTUNITIES EXIST, AND RESIDENTS ARE EMPLOYED

13.1 UNEMPLOYMENT RATE

Grade: Well Below Average *Trend: Getting Better*

The unemployment rates for the City of Nanaimo have fluctuated greatly over the past decades and in 2004 were higher than the provincial average or Victoria and Vancouver. The unemployment rates for the region were not supplied. In 2004, the unemployment rate for Nanaimo dropped to 7.8% from a high of 12.5% in 2001. At 3.7%, Employment insurance rates for the region remain slightly above the provincial average of 3.6%. The report attributes the higher than average unemployment rates to a less diversified employment sector.

13.1.1 Relevance to Sustainability

Unemployment is a major contributor to the economic health and the amount of poverty within a community. Poor economic performance and poverty are contrary to the concept of sustainability. A sustainable region would be able to meet its environmental, social and economic objectives without compromising quality of life.

13.1.2 Implications

The Vibrant and Sustainable Economy policies of the RGS direct local governments to attract economic development through the dissemination of information about opportunities in the region to business. The performance of the local economy and the attraction of economic development are related to employment opportunities. The indicator suggests that the unemployment rate for the region has been improving, though it is still above the provincial average. The RGS may make further provisions to encourage economic development. The *Local Government Act* allows the RGS to include provisions for economic development that supports the unique character of communities. The Vibrant Economy Goal may be expanded with more specific development policies and more focus could be placed on implementation.

14.0 POVERTY IS MINIMIZED, AND RESIDENTS CAN MEET THEIR BASIC NEEDS

14.1 AVERAGE ANNUAL INCOME COMPARED TO COST OF LIVING (REAL INCOME PER CAPITA)

Grade: Well Below Average *Trend: Getting Worse*

The average income in the region has been declining since 1990 and is lower than the provincial average and other comparable jurisdictions. Between 1995 and 2000, the cost of living rose 5% while the average gross income increased by only 4.5%. Notably, the average income dropped by almost $2,000 per year between 1990 and 1995 and did not recover until after 2000.

14.1.1 Relevance to Sustainability

The indicator states that the increasing cost of goods and services, in comparison with the rise in average income and purchasing power, may contribute to a decline in the economy. Less disposable income for residents may precipitate an outmigration from the region, contrary to the goal of economic sustainability.

14.1.2 Implications

The RGS supports the attraction of desirable economic development activity to the region, including businesses that offer high wages. The indicator shows that the RDN has an average lower income then the provincial average and other jurisdictions. The other jurisdictions that are below the provincial average are the Capital Regional District, Comox-Strathcona Regional District and the North Okanagan Regional District. The indicator may not be accurate due to the number of retirees dependent on pensions and retirement savings. Despite this limitation, and the strong economy of the region, the indicator implies that wages are not keeping up with living costs. The economic policies may be strengthened for more emphasis on the role local governments will play in attracting desirable business to the region, to reflect the findings of the indicator.

14.2 HOUSEHOLDS BELOW LOW INCOME CUT-OFF

Grade: Meeting the Average *Trend: Uncertain*

Up until 2001, the number of households below the low income cut-off was increasing. Between 1991 and 2001, the percent of households below low-income cut off increased from approximately 14.9% to 17.4%. In 2001, more than 21,000 people in the region were below the low income cut-off. Our region is below the provincial average, but above other Vancouver Island regional districts.

14.2.1 Relevance to Sustainability

The indicator depicts the region's incidence of poverty and the effectiveness of government programs to alleviate poverty. Determined by low wages, high living costs and under employment, poverty may place stresses on health care and social services to provide for households in need.

14.2.2 Implications

The RGS does not include any policies that directly address the incidence of low income in the region. Traditionally, the promotion of employment services has been the jurisdiction of the federal government. The RDN is permitted to include other provisions that affect income. The *Local Government Act* permit the RGS to include policies for economic development that support the unique character of communities and for the provision of adequate and affordable housing, two characteristic that can affect average regional income. The Vibrant and Sustainable Economy goal does promote desirable economic development, such as business with high wages, as per the *Local Government Act.* The RGS could strengthen existing policies and include new policies related to economic vitality. The RGS may also include policies on affordable housing.

15.0 HOUSING IS AFFORDABLE, AND A VARIETY OF DIFFERENT TYPES AND SIZES OF HOUSING IS AVAILABLE

15.1 RESIDENTS IN CORE HOUSING NEED

Grade: Well Below Average *Trend: Getting Worse*

There are an increasing number of people in need of affordable and suitable housing in the region. Approximately, 75% of people in the region own their homes; the remainder

are rented. From 1991 to 2001, the number of homeowners in need of affordable and suitable housing increased by 57.7%, which was by far the highest increase in the province. In 2001, the region had the highest percentage of renters (36%) in need of affordable and suitable housing, above the provincial average of 31%. In contrast, comparable regions and the province as a whole experienced positive reductions in this category. If no actions are taken aimed specifically at providing a range a housing options, the need for affordable housing will most likely increase as property values continue to climb.

15.1.1 Relevance to Sustainability

The indicator provides the number of residents living in an inadequate or unaffordable housing unit. The state of housing for people living in core housing need may be either that the house is in poor condition, it is not large enough for the residents or the tenants are paying more then 30% of their income for the accommodation. In any of the conditions, basic needs for housing are not being met.

15.1.2 Implications

The RGS currently provides direction to provide a range of housing types and to provide housing for all income levels. The *Local Government Act* permits local governments to include provisions to provide for affordable, adequate and appropriate housing within the RGS. More specific policies and targets could be included in the RGS on affordable housing and more focus could be placed on implementation.

15.2 APPLICANTS ON WAIT LIST FOR SUBSIDIZED HOUSING

Grade: Well Below Average *Trend: Uncertain*

Compared to the provincial average, the Regional District has a high number of applicants awaiting family and senior subsidized housing and the longest wait periods. At 6.7%, the number of applicants awaiting family housing is almost double that of the province. This correlates into a wait time of approximately 7 years. The outlook for senior subsidized housing in the region is not as bleak with wait periods of less than a year. With 0.7% of applicants waiting for subsidized senior's housing, the region exceeds the provincial average of 0.5%, but is lower then many other regional districts in BC. Most likely the low number of applicants for senior housing can be attributed to a wealthier senior population.

15.2.1 Relevance to Sustainability

The indicator depicts the need for the provision of affordable housing within the region. Access to adequate and suitable housing is important to maintain quality of life in the region and ensure that basic needs are met.

15.2.2 Implications

While the RGS does address affordable housing through policies to provide a range of housing types, it does not include any policies with respect to the provision of subsidized housing within the region. The high number of people on the waitlist for subsidized housing within the region suggests that the RGS could provide more direction on this particular aspect of affordable housing. The *Local Government Act* permits local governments to include provisions to provide for affordable, adequate and appropriate housing within the RGS. Another option is to develop a regional affordable housing strategy.

16.0 THE NEED FOR TRAVEL IS MINIMIZED, AND NECESSARY TRIPS DO NOT REPLY SOLELY ON PRIVATE AUTOMOBILE TRAVEL

16.1 MODE OF TRANSPORTATION TO WORK, LOCATION OF WORK

Please refer to Section 7 – Energy Requirements are Reduced / Energy is Obtained in ways that Minimize Impacts on the Environment and Greenhouse Gases are Minimized

16.2 BUS RIDES PER CAPITA

Please refer to Section 7 – Energy Requirements are Reduced / Energy is Obtained in ways that Minimize Impacts on the Environment and Greenhouse Gases are Minimized

16.3 RESIDENCES WITHIN WALKING DISTANCES OF AMENITIES

Please refer to Section 7 – Energy Requirements are Reduced / Energy is Obtained in ways that Minimize Impacts on the Environment and Greenhouse Gases are Minimized

16.4 RESIDENCES INSIDE URBAN CONTAINMENT BOUNDARIES WITHIN WALKING DISTANCE TO A BUS STOP

Please refer to Section 7 – Energy Requirements are Reduced / Energy is Obtained in ways that Minimize Impacts on the Environment and Greenhouse Gases are Minimized

16.5 VEHICLE PER HOUSEHOLD

Please refer to Section 7 – Energy Requirements are Reduced / Energy is Obtained in ways that Minimize Impacts on the Environment and Greenhouse Gases are Minimized

17.0 THE REGION IS A SAFE PLACE TO LIVE, AND RESIDENTS CARE FOR AND RESPECT EACH OTHER

17.1 CRIME RATE

Grade: Slightly Below Average *Trend: Getting Better*

Since 1999, the crime rate for serious violent crime, break and enter and non-cannabis drug offences has declined in the region for both juvenile and adults. The adult non-cannabis drug offences in the region dropped 43% per 10,000 people. However, from 2002 to 2003, there was an increase in juvenile and adult serious violent crime, adult break and enter, and adult non-cannabis drug offences. At 6.9 crimes per 1,000 people, the regional juvenile break and enter crime rate was substantially higher than the provincial average of 3.9 crimes per 1,000 people. While the crime rate for the region has declined overall, property crimes for the City of Nanaimo increased 35% from 5,705 in 1999 to 7,693 in 2004, and the overall rate of crime within the City increased by 29%.

17.1.1 Relevance to Sustainability

Crime directly threatens residents' safety and security, as well affects the quality of life in the region. Crime is also a reflection of other social and economic influences, such as poverty or unemployment that affect the regions liveability.

17.1.2 Implications

The Nodal Structure goal of the RGS does provide some direction for addressing crime by recommending that nodes be designed to maximize personal safety and security. Overall, the indicator suggests that the crime rate has decreased, with a small increase

in the juvenile crime rate. The RGS could provide more direction to maximize safety and security and more focus could be placed on implementation.

18.0 THERE ARE A VARIETY OF OPPORTUNITIES FOR RESIDENTS TO INTERACT WITH EACH OTHER AND NATURE

18.1 PARTICIPATION IN RECREATIONAL AND CULTURAL PROGRAMS

Grade: Slightly Below Average *Trend:* Getting Better

The report analysed the amount of participants in recreational and cultural programs offered only by the City of Nanaimo, RDN, and Malaspina University-College. The number of users, admissions and enrolments in recreational and cultural programs has increased in the programs offered by the local governments and the university overall, the only exception being a decline in enrolment between 2002-2004, in Malaspina's continuing studies courses. The greatest increase occurred in the number of admissions at the Ravensong Aquatic Center, which experienced nearly doubled admissions between 2002 and 2005.

18.1.1 Relevance to Sustainability

The participation of residents in programs offered by local government and educational institutions suggest the level of activity in resident's leisure time, as well as gauging the quality of programs being offered by institutions. An active lifestyle in the community implies that the institutions are providing for resident's recreational needs, an aspect to a high quality of life.

18.1.2 Implications

The RGS does not deal specifically with the provision of recreational and cultural programs. Also, the *Local Government Act* does not specifically mention recreation or cultural programs in the matters to be dealt with by the RGS. But the RGS is not limited by the content of the *Local Government Act,* and recreational programs have traditionally been controlled by local government. Despite the improvement in the participation in programs, the RGS may include policies to support cultural and recreational programs by recognizing these programs and the facilities where they occur as community

amenities. Also, RGS policies could support the provision of recreational, cultural and educational facilities as part of approvals for new developments.

18.2 PARTICIPATION IN ELECTIONS

Grade: Slightly Below Average *Trend: Stable*

The region has comparable voter turnout for elections with other regions and the province as a whole. Within the region, voter turn out for federal elections increased 3%, provincial elections decreased about 5%, and municipal elections fluctuated and ranged from a low of 28% of registered voters in Parksville to a high of 65% in Qualicum Beach. The average percentage of voters in the region, approximately 67% for federal elections and 72% for provincial elections, is aligned with the provincial average and other regions.

18.2.1 Relevance to Sustainability

The amount of participation in elections reflects the engagement and interest of residents in decision making. The indicator suggests that low turnout is a result of unfamiliarity with the voting process, apathy, disempowerment and the state of community well being.

18.2.2 Implications

The RGS does not have any policies for public engagement in elections. It is not clear how the RGS could be used to influence this indicator.

18.3 AMOUNT OF ACTIVE AND NATURE PARKLAND

Grade: Meeting the Average *Trend: Uncertain*

The region contains 3,525.5 hectares of community, regional and provincial parks or 27.75 hectares of park land per 1,000 residents. The amount of park land per resident is high in comparison to the average amount of park land in other North American cities. Parks not only supply an area for socializing but support a longer, healthier and more productive lifestyle.

18.3.1 Relevance to Sustainability

The provision of parks and open space promote healthy, active lifestyles among the community and provides active transportation corridors within urban areas. Maintaining

community parks and open spaces also support the protection of ecosystems and habitat for wildlife.

18.3.2 Implications

The intention of the RGS is to maintain resource land and open space, including many different types of parkland. Nodal Structure Goal policies also recommend that 20% of a node consist of open space / parkland. The indicator suggests that parkland per resident is high, but questions the quality of parkland in the region. Adequate parkland should consider access, attractiveness or quality in addition to quantity. The *Local Government Act* suggests that the RGS include a statement on preserving and linking urban and rural open space, including parks and recreation. The RGS only addresses the connection between urban and rural open spaces in a very general way. The RGS could include more specific policies on these connections and the relationship with other policies such as transportation.

19.0 FORWARD FOR ECONOMIC CAPITAL IMPLICATIONS

The indicators for economic capital were designed to determine if there are jobs, trained and educated labour, a favourable tax system, positive economic growth and a diversity of types and sizes of business. The indicators highlighted the following main findings:

- There is a growing number of businesses and an increasingly diverse range of employment generating industries;
- The region has a growing number of poor and working poor as the cost of living is rising faster than pay rates;
- The region has an increasing number of lower paying jobs and the top employment sector provides lower than average incomes;
- The education levels are lower than the provincial average;
- There are a high number of low income farms;
- A large proportion of the region's retail space exists in the urban core areas.

The indicators used to assess the state of the region's economic capital are summarized below along with the implications each indicator has for the Regional Growth Strategy.

20.0 THERE IS POSITIVE ECONOMIC GROWTH IN THE REGION

20.1 AVERAGE ANNUAL INCOMECOMPARED TO THE COST OF LIVING (REAL INCOME PER CAPITA)

Please refer to Section 14 – Poverty is Minimized, and Residents can meet their Basic Needs

20.2 BUSINESS FORMATIONS AND BANKRUPTCIES

Grade: Slightly Below Average *Trend: Getting Better*

Since 1990, there have been a decreasing number of business bankruptcies in the City of Nanaimo and an increasing number of business formations throughout the region. From 2000 to 2004, the number of bankruptcies has declined from 48 to 19. Between 1990 and 2004, the number of business incorporations increased from 380 to 606, indicating a positive economic trend.

20.1.1 Relevance to Sustainability

Business formation and bankruptcies are a gauge for the performance of the economy. As an economy grows, the number of business formations increase and the number of bankruptcies decrease. Diversification in the number of businesses also reduces the reliance on one employer, and reduces the effect of the failure of a single large employer.

20.1.2 Implications

The Vibrant and Sustainable Economy Goal of the RGS supports the linkage of economic development with land use and rural and environmental protection. Existing RGS policies focus on land use aspects of the economy such as maintaining land and access for natural resource related activities such as farming, forestry and aggregate extraction. Other land use related policies include limiting land needed for retail related activities while at the same time ensuring there is enough land for light industrial uses. The RGS also recommends that infrastructure and access be improved to attract desirable economic development. A sustainable region would have a diversified economy that is less susceptible to the failure of a single business or industry. The

indicator implies that the region has developed a healthy economy, with increasing numbers of business formations and decreasing business bankruptcies. Though there is no comparable information from other jurisdictions, the indicator suggests that the region is graded as fair and moving towards sustainability. As the RGS currently focuses on land use and not on business formations/bankruptcies it is difficult to make a link between the RGS policies and the indicator. There may be a need to look at how the RGS could support the economy in addition to the existing policies on land use.

21.0 THE TAX SYSTEM FAVOURS SUSTAINABLE, ENVIRONMENTALLY RESPONSIBLE ECONOMIC ACTIVITIES

21.1 TAXES PAID PER CAPITA

Grade: Meeting the Average *Trend: Uncertain*

The level of municipal property taxes paid per person is increasing in the region but less rapidly than in Vancouver and Victoria. Between 2000 and 2004, the municipal property taxes in the region increased an average of $90 per capita from $538 to $628. Residential property owners paid in the range of $420 to $496 per person while non-residential property owners paid only $174, which is less than half of the non-residential taxes per capita in Victoria ($478) and Vancouver ($451). The region has lower municipal taxes than Vancouver and Victoria per capita but the numbers do not account for the level of services provided. As well, this indicator only covers total taxes paid as there is no data on the amount of business taxes paid nor is there data on environmentally responsible economic activities.

21.1.1 Relevance to Sustainability

Taxes are a source of revenue for government to use in the provision of public services and infrastructure, but it may also reduce the disposable income of residents if it is too high. Taxes that are too high may promote out migration from the region as business moves to other locations with lower taxes or may discourage personal saving and spending.

21.1.2 Implications

The implications of this indicator for the RGS are not clear. One possibility is that under the Goals for a Vibrant and Sustainable Economy and Cooperation Among Jurisdictions the RGS could provide direction for consistent levels of property taxation throughout the region and instituting incentives to attract green and other desired businesses.

22.0 THE ECONOMY IS CHARACTERIZED BY A DIVERSITY OF DIFFERENT TYPES AND SIZES OF BUSINESS

22.1 PERSONAL INCOME FROM TOP THREE INDUSTRIES AS PROPORTION OF PERSONAL INCOME IN REGION AND PERSONAL INCOME BY INDUSTRY

Grade: Slightly Below Average *Trend: Stable*

The region has an increasingly diverse range of employment generating industries, which is a good indication of a healthy economy. Between 1990 and 2000, the percentage of top three income generating industries decreased from 36% to 33.8%, indicating economic diversification. The region's top three generating industries changed from Manufacturing, Retail and Construction in 1990 to Health and Social Service, Manufacturing and Retail in 2000, indicating that the economy is in transition. The employee incomes for two of the top three industries - manufacturing and retail – declined, while health and social services increased slightly.

22.1.1 Relevance to Sustainability

The indicator provides an assessment of the diversity of employment within the region. More diverse job opportunities reduce the susceptibility of the economy in the occasion of the failure of a single industry. The requirements for a sustainable economy are industries that are goods and service producing, not entirely dependent on resource based industries, and provide above average wages to their employees.

22.1.2 Implications

As stated above, the RGS policies focus on land use aspects of the economy such as maintaining land and access for natural resource related activities such as farming, forestry and aggregate extraction. Other land use related policies include limiting land

needed for retail related activities while at the same time ensuring there is enough land for light industrial uses. The RGS also recommends that infrastructure and access be improved to attract desirable economic development. A sustainable region would have a diversified economy that is less susceptible to the failure of a single business or industry. As the RGS currently focuses on land use and the promotion of certain types of businesses it is difficult to make a link between the RGS policies and the indicator. There may be a need to look at how the RGS could support diversification of the economy in addition to the existing policies on land use.

23.0 A WIDE VARIETY OF EMPLOYMENT OPPORTUNITIES EXIST AND RESIDENTS ARE EMPLOYED

23.1 EMPLOYMENT BY INDUSTRY SECTOR

Grade: Slightly Below Average *Trend: Getting Worse*

The employment by occupation is remaining stable within the region. However, the top employment sectors in the region provide lower than average incomes. The top three employers in our region are health and social services, the retail trade and the accommodation/food and beverage service industries. Most workers are employed in retail (15%) followed by the health and social services industries (nearly 12%). The service sectors account for more than 79% of our regional economy and continues to grow while employment in resource extraction is declining. The region is experiencing a growth in employment with low incomes and low educational attainment levels such as retail, accommodation, food and beverage, which will negatively impact the region economically and socially. The statistics show that our economy is healthy and not dependent on a single industry.

23.1.1 Relevance to Sustainability

Employment by industry sector implies that diversity in employers reduces the susceptibility of the economy to the failure of a single industry. The indicator also suggests that industry determines household income, a determinant in people's ability to afford services and housing in the region.

23.1.2 Implications

The Vibrant and Sustainable Economy goal of the RGS supports attracting desirable economic activity to the region. The indicator suggests that diverse economic activity is attracted to the region, but the employment sectors that are growing are in low paying industries, such as retail and tourism. More focus on the implementation of the policy may be needed to attract desirable businesses, with high wages, to the region.

23.2 UNEMPLOYMENT RATE

Please refer to Section 13 – A Wide Variety of Employment Opportunities Exist, and Residents are Employed

24.0 A WIDE VARIETY OF EMPLOYMENT OPPORTUNITIES EXIST AND RESIDENTS ARE EMPLOYED

24.1 EDUCATIONAL ATTAINMENT

Please refer to Section 8 – Land and Resources are Effectively Used, and Negative Impacts of Land Use and Development are Minimized

25.0 THE URBAN CORE AREAS OF THE REGION ARE CHARACTERISED BY THEIR VITALITY

25.1 POPULATION DENSITY AND AMOUNT OF LAND IN URBAN CONTAINMENT BOUNDARIES

Please refer to Section 12 – Residents are Educated or Trained so they are Qualified for Employment

25.2 AMOUNT OF RETAIL SPACE INSIDE AND OUTSIDE OF THE URBAN CORE AREAS

Grade: Slightly Below Average *Trend: Uncertain*

The study shows that 63% of the retail space is located outside of the urban core areas. The remaining 37% of retail space is spread across the urban core areas in the City of Nanaimo (22%), Parksville (8%) and Qualicum Beach (7%). The study concludes that

with the large amount of retail in the downtown cores in Nanaimo, Parksville and Qualicum Beach, they have the potential for vitality.

25.2.1 Relevance to Sustainability

Downtown retail space promotes economic development in the area by centralising business activity to attract more consumers than a single business could do alone. The downtown location is accessible to consumers and support services by various modes of transportation, such as walking, cycling or transit.

25.2.2 Implications

The intent of the RGS is to direct and encourage commercial development inside the urban containment boundaries at a scale that provides for the needs of the local community. The policies for the Nodal Development and Urban Containment Goals combine to support the majority of new retail inside of nodes. These nodes are identified for each of the municipalities and are designated as village centres in electoral areas. In order to progress towards sustainability, the amount of retail space should increase within the urban core areas and not be increased outside of the urban core areas. The implications for the RGS are that more focus should be placed on implementing the nodal development and urban containment policies.

26.0 REGIONAL CONSUMPTION OF PRODUCTS AND SERVICES PRODUCED IN THE REGION IN ECONOMICALLY VIABLE WAYS IS MAXIMIZED

26.1 ECONOMIC HEALTH OF AGRICULTURE

Grade: Well Below Average *Trend: Stable*

Between 1991 and 2001 the total gross receipts and farm capital increased in the region. However, there are a high number of low income farms. During these ten years, farm capital nearly doubled and the total gross farm income increased from $15.3 million to $16.6 million, but the gross income per farm declined. In 2001, 84% of farms reported an income of less than $25,000, which is much higher than the provincial average of approximately 66%. Only 7% of the farms in the region generate returns over $100,000, which is approximately half of the provincial average. There are a number of variables that were not considered in the analysis. Gross farm receipts per hectare of agricultural

land may provide a more accurate look at the economic health of agriculture in the region.

26.1.1 Relevance to Sustainability

The economic health of agriculture ensures the ability of farmers to sustain farming operations and the maintenance of the region's food source. Access to local food sources reduces the need to import food into the region and reduces associated transportation costs.

26.1.2 Implications

The Vibrant and Sustainable Economy goal of the RGS supports maintaining the viability of agriculture within the region through an agricultural study and initiatives by the provincial government. The status of farm receipts for the industry has increased, while per farm receipts has decreased. More focus on implementation is required for the existing policies of the RGS including the recommended study on agriculture in the region to address issues and needs.

27.0 CONCLUSION

The majority of indicators from the *State of Sustainability* report do have implications for the Regional Growth Strategy. The review of the indicators and their implications suggest that many policies in the RGS could be improved to better address the 22 characteristics of a sustainable region, as established in the State of Sustainability Project. Another implication from the indicator results is that there is a need to examine if new policies can be added to cover those aspects of sustainability that are not currently covered in the RGS. While the RGS is a key document in creating a sustainable region, its focus is limited as its main intent is to manage land use and development. There is a need to look at how the RGS can be used to further sustainability goals related to society and the economy. In addition, the RGS provides sufficient direction on many aspects of sustainable development but more resources need to be focussed on implementing the policies of the RGS. A summary of the implications for each indicator is provided in the table found in Appendix 1.

The implications outlined above, provide an assessment of the effectiveness of the RGS in addressing each indicator from the *State of Sustainability* report. This report identifies five different types of implications for the RGS based on the results of the indicators. The review of indicators identifies the following five types of actions: new policies could be added to the RGS; benefits could be realized from stronger or improved policies; more focus is needed on implementation; no action is identified as it is not clear how it can be addressed in the RGS; and, no action is needed as the policy seems to have been effective.

27.1 NEW POLICIES ADDED

Several sections of the RGS do require updating to include content that is either supported in the *Local Government Act*, or contributes to the long term vision for a sustainable region. One of the more important challenges that is currently not addressed in any detail in the RGS is the provision of affordable housing in the region. Growth strategies in other jurisdictions have included specific policies on housing options and affordable housing.

Other areas where new policies can be added to the RGS will build upon existing goals. The Environmental Protection goal may include policies that provide recommendations for impermeable surfaces and reducing the consumption of electricity, natural gas and water. The former considerations may also be included in the goal for the delivery of efficient services. Currently the Efficient Services goals only include service delivery for water and sewer. As well, the provincial government is expected to introduce legislation in 2008 that will require a RGS to address greenhouse gas (GHG) production and to include targets for GHG reduction.

27.2 STREGNTHEN AND IMPLEMENT POLICY

The majority of policies within the RGS do require changes to ensure that the document is still meeting its goals. The indicators suggest that many policies are not having their intended effect and either require strengthening or more focus is needed on implementation. Areas that appear to not be meeting the vision of a sustainable region include aspects of environmental protection, water consumption, level of growth in rural areas, transportation alternatives and economic diversity.

28.0 APPENDIX 1

Appendix 1

Implications of Indicators for the Regional Growth Strategy					
Indicator	**New Policy**	**Strengthen Policy**	**Implement Policy**	**No Clear Implications**	**Policy Effective**
Water Consumption		ü	ü		
Groundwater Elevations		ü	ü		
Groundwater Quality		ü	ü		
Impermeable Surface Area	ü	ü	ü		
Volume of Water Extracted		ü	ü		
Stream Temperature		ü	ü		
Water Quality in Selected Lakes and Rivers		ü	ü		
Amount of Land & Length of Watercourses Protected by Park or Development Permit Area Designation		ü	ü		
Ground Level Ozone		ü	ü		
Fine Particulate Matter	ü	ü	ü		
Greenhouse Gas Emissions	ü	ü	ü		
Managed Forest Lands/Resource Lands and Open Space Subdivisions		ü	ü		
Current and Projected Age Class Distribution for Arrowsmith Timber Supply Area	ü			ü	
Amount of Agriculture Land Reserve	ü	ü			
Proportion of Farmland in Crops	ü			ü	
Sustainable Farming Practices	ü			ü	

Indicator	New Policy	Strengthen Policy	Implement Policy	No Clear Implications	Policy Effective
Farms Reporting Sale of Organic Products	ü			ü	
Amount of Electricity and Natural Gas Consumed	ü				
Mode of Transportation to Work and Location to Work		ü	ü		
Bus Rides per Capita		ü	ü		
Residences Within Walking Distance of Amenities		ü			ü
Residents Inside Urban Containment Boundaries Living Within Walking Distance of a Bus Stop	ü	ü	ü		
Vehicles per Household	ü	ü	ü		
Motor Vehicle Accident Rates	ü	ü	ü		
Population Growth and Density, & Amount of Land in Urban Containment Boundaries			ü		
Amount of Land Outside Urban Containment Boundaries that May Be Subdivided into Parcels Smaller than 4 or 10 Hectares			ü		
Amount of Waste to Landfill, Amount of Waste Diverted, and Amount of Waste Recycled					ü
Quality of Biosolids from Wastewater Treatment Plants					ü
Residents in Core Housing Need	ü				
Applicants on Wait List for Subsidized Housing	ü				
Average Annual Income Compared to Cost of Living		ü	ü		
Households Below Low Income Cut-Off	ü	ü	ü		
Educational Attainment	ü			ü	
Unemployment Rate		ü	ü		
Crime Rate		ü	ü		

Indicator	New Policy	Strengthen Policy	Implement Policy	No Clear Implications	Policy Effective
Participation in Recreational and Cultural Programs	ü				ü
Participation in Elections				ü	
Amount of Active and Nature Park Land	ü	ü	ü		
Birth Weight				ü	
Life Expectancy at Birth				ü	
Live Births to Teenage Mothers				ü	
Business Formations and Bankruptcies	ü	ü			ü
Taxes Paid Per Capita	ü			ü	
Personal Income from Top Three Industries as a Proportion of Personal Income in Region and Personal Income from Industry	ü	ü			
Employment by Industry Sector		ü	ü		
Amount of Retail Space Inside and Outside of the Urban Core Areas			ü		ü
Economic Health of Agriculture			ü		