

Review of two sections of:

HRM Regional Municipal Planning Strategy: August 2006

1. Section 2.2 Water Resources pages 26 - 29
2. Section 3.5.1. Open Space Design Developments pages 47 - 49
3. Table of Contents: Chapter 2: Environment (subjects for possible further review)

Website address for full Report:

halifax.ca/regionalplanning/documents/Regional_MPS.pdf

nature reserves designated under the *Special Places Protection Act*, and conservation-related properties owned by government or private conservation organizations. The Zone shall only permit scientific study and education, trails and similar public, conservation and recreational uses.

- E-7 Further to Policy E-6, HRM shall encourage the Province to evaluate the potential for the designation of the Ship Harbour Long Lake Crown block for protection under the *Wilderness Areas Protection Act*.

2.2 WATER RESOURCES

Water, a limited and precious resource, is one of HRM's highly valued environmental assets. Protection of this resource for potable waters supply, wildlife habitat, recreational enjoyment, and aesthetic value is important to HRM. HRM's strategy is aimed at protecting this resource through land use control and retention of those features that regulate water flow, mitigate flooding, reduce water pollution and protect ecological functions. Restoration and protection of water quality in Halifax Harbour is discussed in detail in Chapter 5.

2.2.1 Potable Water Supply

The protection of the watersheds designated for municipal water supply is a matter of regional importance. The Pockwock Watershed serves the communities of Halifax, Bedford, Sackville, a portion of Fall River, Waverley and Timberlea. The Lake Major Watershed serves the communities of Dartmouth, Eastern Passage, Cole Harbour and Westphal. Communities in Grand Lake, Lake Thomas, a portion of Fall River, Enfield and the adjacent Municipality of East Hants rely on water from the Shubenacadie River Watershed. The Bennery Lake Watershed is a water source for the Halifax International Airport and Aerotech Industrial Park but future expansions could require HRM to draw from Shubenacadie Grand Lake.

The land uses permitted within these watersheds should not threaten water quality. Low-density residential, conservation related uses and resource activities may be undertaken in some of these watersheds without having adverse effects on water quality. Currently, with the exception of the Grand Lake and Lake Thomas watersheds, land use activities are regulated under existing land use by-laws leading to a wide variation in the range of permitted land uses in the conservation zones of each community. HRM will continue to allow for a variety of land uses as currently permitted at the community level as long as these uses do not threaten the municipal water supply. Activities and practices within the provincially designated Pockwock Lake, Lake Major and Bennery Lake watersheds are further restricted by their respective regulations prescribed under the *Environment Act*.

Consideration needs to be given to adopting sustainable measures to manage the supply of potable water for HRM communities that draw water from Lake Thomas and Grand Lake. The future water supply needs of the Halifax International Airport and Aerotech Industrial Park also need to be considered.

- E-8 HRM shall, through the applicable land use by-law, establish a Protected Water Supply Zone. This Zone shall be applied to all publically owned lands within designated public watersheds including, but not limited to, the Pockwock, First and Second Chain Lakes, Lake Major, Bennery Lake watersheds and to lands around Topsail Lake and Lake Lamont and Tomahawk Lake. This Zone shall also be applied to private lands within these watersheds as is necessary to protect the public water supply. The Zone shall permit water distribution and purification facilities, passive parks and trails, conservation related uses, and other uses as provided by the existing secondary planning strategies for these areas.

2.2.2 Wetlands Protection

Wetlands and other watercourses are vital components of the hydrological cycle and affect the quality and quantity of groundwater. They are natural filters for removing sediment, contaminants and excessive nutrients which are drawn up by the vegetation and settle out naturally before entering groundwater. They absorb peak stormwater flows, reducing the risk of flooding downstream while offsetting groundwater extraction to reduce the risk of wells running dry. Wetlands also provide habitat for fish and wildlife and provide opportunities for education and research. Moreover, wetlands are also unsuitable for development as they pose a hazard for the stability of structures, but they do enhance the overall aesthetics of a community. The protection of wetlands is therefore essential.

The alteration of wetlands falls under provincial jurisdiction. Wetlands less than 2 hectares in area are assessed under the Nova Scotia Wetland Designation Policy and those more than 2 hectares in area require an environmental impact assessment reviewed under the *Environmental Assessment Act*. Through this Plan, it is HRM's intent to prohibit the development of wetlands until such time as they are made suitable for development in accordance with provincial requirements.

- E-9 HRM shall, through the applicable land use by-law, establish a Wetlands Schedule to be used as a reference in determining the presence of wetlands 2000 m² or greater in area. On all applications for development approval, the by-law shall require the proponent to verify the existence and extent of any wetland shown on the schedule. The by-law shall prohibit development within any such wetland.

2.2.3 Riparian Buffers

Retaining riparian buffers around watercourses and along the coastline is important for the protection of water quality, wildlife and the protection of property from natural hazards of flooding. In addition to the functions of flood regulation, riparian buffers reduce the impacts of sedimentation and erosion and nutrient loading on watercourses, regulate the temperature of adjacent watercourses, provide important wildlife habitat and add aesthetic value to HRM.

The *Water Resource Management Study*⁹ recommends the adoption of riparian buffers as

⁹ Dillon Consulting Ltd. *HRM Water Resource Management Study*. Dec. 2002. Halifax.

established by the Department of Natural Resources. These setbacks are considered adequate for stream bank stability, water temperature regulation and aesthetic value. They also provide minimal protection of wildlife and flood mitigation and partial benefits for sediment removal. They will be used as a general method of riparian buffer protection for the whole of HRM until buffers that meet the specific needs of each watershed can be determined through the watershed studies and implemented through secondary planning processes.

To maximize the protection benefits of riparian buffers, trees, shrubs, ground cover vegetation and soils must be protected. Retaining native vegetation and native soils enhances runoff storage capacity, infiltration, and nutrient recycling. The canopy should also be retained over watercourses, soil erosion should be prevented, and activities or land uses which introduce nutrients or contaminants into watercourses need to be excluded. In some cases it may also be determined that HRM should consider the ownership of riparian buffers to protect public interest and public access.

- E-10 HRM shall, through the applicable land use by-law, require the retention of a minimum 20 metre wide riparian buffer along all watercourses throughout HRM to protect the chemical, physical and biological functions of marine and freshwater resources. The by-law shall generally prohibit all development within the riparian buffer but provisions shall be made to permit board walks, walkways and trails of limited width, fences, public road crossings, driveway crossings, wastewater, storm and water infrastructure, marine dependent uses, fisheries uses, boat ramps, wharfs, small-scale accessory buildings or structures and attached decks, conservation uses, parks on public lands and historical sites and monuments within the buffer. In addition, no alteration of land levels or the removal of vegetation in relation to development will be permitted.
- E-11 Policy E-10 shall not apply to lands designated Halifax Harbour on the Generalized Future Land Use Map (Map 2), industrial lands within the port of Sheet Harbour and lands within the Waterfront Residential (R-1C) Zone under the Shubenacadie Lakes Secondary Planning Strategy.
- E-12 Further to Policy E-10, where a use or development can be considered by development agreement, HRM shall consider, under the development agreement, the acquisition of riparian buffers as public open space as well as alternative uses within the buffers.
- E-13 Further to Policy E-10, HRM shall, through the applicable land use by-law, relax the riparian buffer requirement for lots in existence on the effective date of this Plan and lots shown on current tentative and final subdivision applications, where otherwise development would be prohibitive. No relaxation to the buffer under the by-law shall be permitted for lots created after the effective date of this Plan.

2.2.4 Floodplains

Land adjacent to rivers and streams which are subject to flooding (floodplains) are unsuitable for development. Development or alteration of a floodplain can restrict the normal water drainage patterns and cause significant damage to property and infrastructure and risk to life. Limiting

development on these lands reduces the need for costly flood control infrastructure such as channels, reservoirs and dykes, and protects the public from property damage and loss of life.

To minimize the effects upon natural stormwater flows, HRM will exercise control over the placement and stabilization of fill necessary for the flood proofing of structures permitted within a floodplain designation of a Secondary Planning Strategy. Through the review of subdivision applications, any roadways proposed within a floodplain designation will need to meet HRM's stormwater requirements. The following policies are intended to mitigate the consequences of flooding along major rivers and stress the environmental importance of rivers in regulating and draining water flows through watersheds.

- E-14 HRM shall restrict development and prohibit the placement of fill or alteration of grades in association with development that restricts the capacity of flow or increases flood levels within the 1 in 100 year and 1 in 20 year floodplains for designated watercourses, under secondary planning strategies and land use by-laws. Boardwalks and walkways, conservation uses, historic sites and monuments and wastewater, stormwater and water infrastructure shall be permitted within floodplains.
- E-15 Notwithstanding Policy E-14, within the 1 in 100 year floodplain, provisions may be made in secondary planning strategies and land use by-laws to permit development which has been adequately flood-proofed.

2.2.5 Coastal Inundation

Sea level has slowly risen along the Atlantic Coast, accelerated by global warming. Expected increases in the frequency and severity of storm events related to climate change is an additional concern. Rising sea levels and storm surges can result in increased damage to coastal communities and have significant impacts on coastal infrastructure, environmental assets, utilities, property and community economic development. The following policy mitigates the potential impact that coastal inundation and storm surge events could have on human safety. It is intended as an interim measure pending the completion of the Potential Hazards to Development Functional Plan.

- E-16 HRM shall, through the applicable land use by-law, prohibit all residential development on the coast within a 2.5 metre elevation above the ordinary high water mark, except for lands designated Halifax Harbour on the Generalized Future Land Use Map (Map 2) and industrial lands within the port of Sheet Harbour. Provisions shall be made within the by-law to permit residential accessory structures, marine dependant uses, open space uses, parking lots and temporary uses within the 2.5 metre elevation.

development on new roads in the Rural Commuter and Rural Resource designations. Further, with the adoption of this Plan, the Residential Growth Management Controls within the Hammonds Plains, Beaver Bank and Upper Sackville Secondary Planning Strategy and the Interim Growth Management Controls as approved in 2004 will no longer be in effect. Notwithstanding, provisions will be made within the Hammonds Plains, Beaver Bank and Upper Sackville Secondary Planning Strategy to allow for the future development of large scale subdivisions on lands zoned or under application for rezoning to a Comprehensive Development District prior to Council's first notice of its intention to adopt this Plan.

3.5.1 Open Space Design Developments

Large-scale residential development may be considered through a development agreement if it is in some form of Open Space Design. Open Space Design Development is a creative form of development designed to conserve a connected system of open space. It begins with the identification of primary conservation areas to be protected - such as riparian buffers, wetlands, vernal pools, natural corridors, slopes exceeding 30%, rock outcropping, archeological sites, floodplains, and natural resources. It follows with the identification of secondary conservation areas that should be protected or carefully developed. These include mature forests, slopes between 15% and 30%, scenic views, trails, historic sites and buildings. Building sites are then located on the lands where soils are best suited for development and are then connected through a common road system. Lot lines are then drawn to delineate the extent of private or public ownership of the parcel.

In its classic form, Open Space Design Developments are designed to achieve connectivity in open space by retaining conservation areas under single ownership such as in the form of a condominium corporation or HRM. There are concerns, however, that the small lots required to achieve the classic form of Open Space Design may not be feasible in all areas of HRM without experiencing interference between private wells. There is also a desire by some homeowners to service the dwelling units with individual on site sewage disposal systems and the Nova Scotia Department of Environment and Labour will not allow these systems to be located off-site into the commonly owned lands. It may, therefore, be necessary to allow the entire parcel or portions of the development to be subdivided into large, privately-owned lots. HRM will strive to achieve Open Space Design in these areas by establishing maximum building site disturbance areas and minimizing the extent of road development to avoid impact on the primary and secondary conservation areas. This form of Open Space Design Development may be considered only in the Rural Commuter and Rural Resource Designations.

In areas where there are sufficient soil and water conditions to allow the developer to set aside a significant majority of the parcel as common open space, densities will be increased from one unit per hectare to one unit per 0.4 hectares. This form of Open Space Design Development may be considered in all rural designations, including the Agricultural Designation, as it would leave a substantial amount of the conservation land intact under single ownership. This would minimize the impact of development on larger tracts of land required to maintain a viable commercial farm.

To provide an opportunity for more active use of the common open space, consideration of golf courses as an appropriate use within the classic form of Open Space Design Development shall be

given during secondary planning processes. Given the prevalent use of pesticides and irrigation needs of golf courses it may be most appropriate that golf courses only be considered within centres where municipal water distribution systems are to be provided. Analysis at the secondary planning level will benefit from the findings of watershed studies and community visioning.

S-15 HRM shall permit the development of Open Space Design residential communities, as outlined in this Plan, within the Rural Commuter and Rural Resource designations and within the Harbour designation outside of the Urban Service Area, but not within the portions of the Beaver Bank and Hammonds Plains communities as identified in the Subdivision By-law under Policy S-25 and within the Rural Area Designation under the Eastern Passage/Cow Bay Plan Area. HRM will consider permitting the maximum density of such developments to one unit per hectare of gross site area. In considering approval of such development agreements, HRM shall consider the following:

- (a) where the development is to be serviced by groundwater and as determined through a hydrogeological assessment conducted by a qualified professional, that there is an adequate supply of ground water to service the development and that the proposed development will not adversely affect groundwater supply in adjacent developments;
- (b) that there is sufficient traffic capacity to service the development;
- (c) the types of land uses to be included in the development which may include a mix of residential, associated public or privately-owned community facilities, home-based offices, day cares, small-scale bed and breakfasts, forestry and agricultural uses;
- (d) whether soil conditions and other relevant criteria to support on-site sewage disposal systems can be met;
- (e) the lot frontages and yards required to minimize the extent of road development, to cluster building sites on the parcel and provide for appropriate fire safety separations;
- (f) that the building sites for the residential units, including all structures, driveways and private lawns, do not exceed approximately 20% of the lot area;
- (g) approximately 80% of the lot is retained as a non-disturbance area (no alteration of grades, except for the placement of a well or on-site sewage disposal system in the non-disturbance area shall be permitted and provision shall be made for the selective cutting of vegetation to maintain the health of the forest);
- (h) that the development is designed to retain the non-disturbance areas and to maintain connectivity with any open space on adjacent parcels;
- (i) connectivity of open space is given priority over road connections if the development can be sited on the parcel without jeopardizing safety standards;
- (j) trails and natural networks, as generally shown on Map 3 or a future Open Space Functional Plan, are delineated on site and preserved;
- (k) parks and natural corridors, as generally shown on Map 4 or a future Open Space Functional Plan, are delineated on site and preserved;

- (l) that the proposed roads and building sites do not significantly impact upon any primary conservation area, including riparian buffers, wetlands, 1 in 100 year floodplains, rock outcroppings, slopes in excess of 30%, agricultural soils and archaeological sites;
 - (m) the proposed road and building sites do not encroach upon or are designed to retain features such as any significant habitat, scenic vistas, historic buildings, pastoral landscapes, military installations, mature forest, stone walls, and other design features that capture elements of rural character;
 - (n) that the roads are designed to appropriate standards as per Policy T-2;
 - (o) views of the open space elements are maximized throughout the development;
 - (p) opportunities to orient development to maximize the capture of solar energy;
 - (q) the proposed residential dwellings are a minimum of 800 metres away from any permanent extractive facility;
 - (r) the proposed development will not significantly impact any natural resource use and that there is sufficient buffering between any existing resource use and the proposed development to mitigate future community concerns; and
 - (s) consideration be given to any other matter relating to the impact of the development upon surrounding uses or upon the general community, as contained in Policy IM-15.
- S-16 Further to Policy S-15, within the Rural Commuter, Rural Resource and Agricultural Designations, HRM shall permit an increase in density for Open Space Design Developments up to 1 unit per 4000 square metres, or greater in centres as may be provided for in secondary planning strategies, where approximately 60% or more of the site is retained in single ownership of an individual, land trust, condominium corporation or the Municipality. Notwithstanding Policy E-5, the parkland dedication shall be relaxed to a minimum of 5% for this type of development. In considering approval of such development agreements, HRM shall consider the following:
- (a) the criteria specified in Policy S-15, with the exception of items (f) and (g); and
 - (b) that the common open space cannot be used for any other purpose than for passive recreation, forestry, agriculture or conservation-related use except for a portion of which may be used as a village common for active recreation or the location of community facilities designed to service the development.

S-17 Through secondary planning processes, HRM shall undertake detailed analyses, particularly in centres where municipal water distribution systems are to be provided, to identify where golf courses may be considered an acceptable use of the common open space in Open Space Design Developments.

3.5.2 Island Development

The coast of HRM contains approximately 1700 islands, a portion of which are government-owned while others are privately owned. Buildings have been constructed on more than 230 of the privately owned islands. Currently, 22 islands in HRM have been subdivided. HRM intends to protect the natural environment of its islands and to prevent impact on

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