Attachment B – Summary of RP+5 Research

Internal Research

The *RP+5* core staff team have undertaken research for each in-scope topic (issue). The staff team included expertise in planning, urban design, community development, citizen engagement, communication, and mapping. The project also had access to staff expertise from HRM Finance, Legal Services, Community and Recreation Services, Planning and Infrastructure, Government Relations and External Affairs, Metro Transit and Halifax Water. Existing policies and best practices have been examined, and options for HRM, looking longer term, have been identified. The internal research was used to develop the proposed policy. A key factor considered in the review process has been that in the first five years of the Plan HRM is not tracking to meet its 25-year urban growth targets as indicated in Fig. 1.

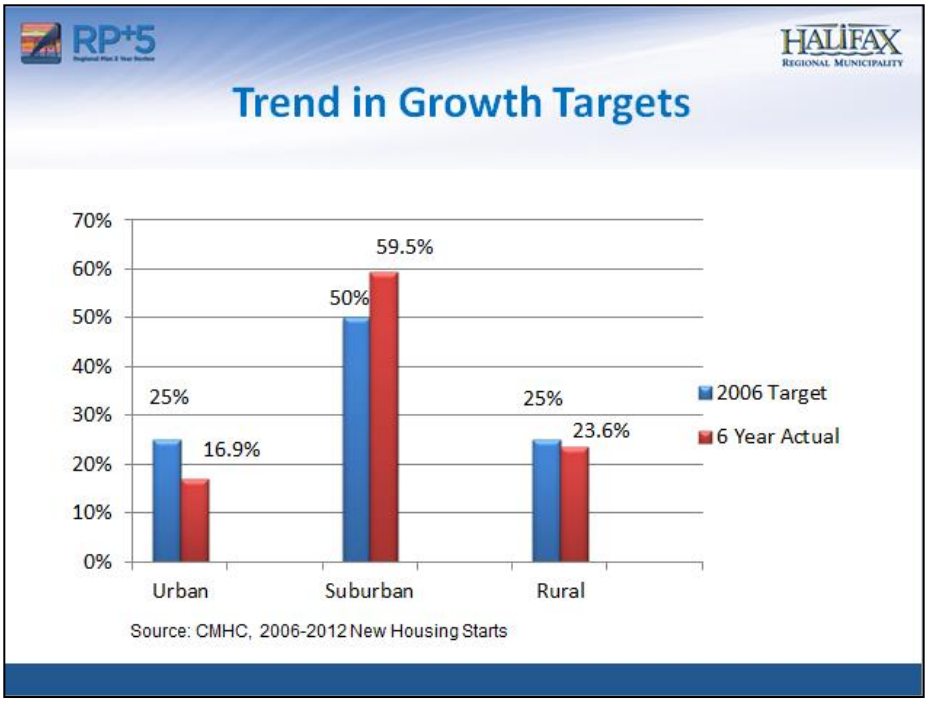

Fig. 1 HRM's growth compared to Regional Plan's growth targets (2006-2012)

Greenbelting

In response to public input, staff also conducted a review of greenbelting policies in other jurisdictions. The review found that HRM's system of open space under the Open Space and Natural Resources designation compares very favourably with other jurisdictions. For example, the Greater Golden Horseshoe Greenbelt Plan includes a 1.8 million acre band of land that encompasses the rural and agricultural land surrounding the Greater Toronto Area, Niagara Peninsula, and parts of the Bruce Peninsula. HRM's Regional Municipal Planning Strategy designates 890,000 acres of its 1.4 million acre land base (64%) as Open Space and Natural

Resource. This designation extends throughout the rural area of HRM extending from Hubbards in the west to Ecum Secum in the eastern part of the Municipality.

HRM's Regional Plan protects open space through establishing land use designations in policy as shown on the Generalized Future Land Use Map (GFLUM). The Open Space and Natural Resource Designation is the overarching Designation that encompasses the natural network of HRM consisting of federal parks, habitat and wilderness protected areas designated by provincial and federal statutes, regional parks, provincially designated parks, provincial park reserves, provincially designated wilderness reserves, resource lands, conservation areas, saltmarshes, beaches and other environmentally sensitive areas, trails and greenways and cultural landscapes. This designation was created to preserve and interconnected system of open space and minimize fragmentation and to promote an approach to environmental management and economic development that supports a sustainable future.

The proposed plan includes the requirement that HRM undertake a *Greenbelting and Public Open Spaces Priorities Plan* for the purpose of delineation and greater protection of natural corridors and connectivity. The revised Plan also proposes to further focus rural development within rural growth centres, and to designate additional Crown and conservation areas as Open Space and Natural Resources.

External Research

A number of external studies have been important to the review process and are summarized below. Population and housing projections have been updated by Altus in 2009 and Stantec in 2013.

Altus Group. 2009. Employment, Population and Housing Projections Halifax Regional Municipality: An Update

HRM had relatively stable population growth over the last 25 years and has grown 3.3 % between 2006 and 2011. The population growth of HRM over the 25-year period between 2011 and 2031 is projected to be approximately 73,000 persons, using a base case scenario. Two thirds of net migration is expected to come from international sources, while the remainder is expected from other parts of Canada.

HRM's population is aging, and by 2031 there will be more than twice the number of people over the age of 65 than in 2001 (163% increase) while the number of school aged children is expected to level off This shift in age distribution will have significant implications on the demand for housing and types of services provided in HRM. Using the base case scenario over the period 2011 to 2031, HRM is now expected to add 61,000 new dwelling units and 12,500 new commuters.

Stantec. April 2013. Sustainable Urbanism: Quantifying the Costs and Benefits to HRM, Residents and the Environment of Alternative Growth Scenarios

The 2006 Regional Plan estimated $250M in cost savings as a result of more compact development pattern[1]. RP+5 expanded this economic analysis through a central piece of research by Stantec called *Sustainable Urbanism: Quantifying the Costs and Benefits to HRM, Residents and the Environment of Alternative Growth Scenarios.*

HRM sought to quantify the costs and benefits of municipal growth under a range of potential densities and development patterns. Four scenarios were evaluated:

2006 Regional Plan Growth Goals:	25% urban, 50% suburban, 25% rural
Actual Observed Growth Since 2006[2]:	16% urban, 56% suburban, 28% rural
Hypothetical Growth Scenario A:	40% urban, 40% suburban, 20% rural
Hypothetical Growth Scenario B:	50% urban, 30% suburban, 20% rural

The first scenario reflects the Plan's goals for growth in designated urban (Regional Centre), suburban, and rural areas of the region. The second reflects actual growth patterns since 2006 while the third and fourth generally explore greater concentration of growth in the core of the region.

The study compared public, private, and social costs and benefits anticipated from these scenarios over the period from 2011 to 2031. The consultants have worked with HRM and Water Commission staff and other organizations to develop a modelling framework that would estimate both capital and operating costs of different growth patterns. The Stantec Study also provides an analysis of HRM's past and current growth patterns and how it compares to other similarly sized Canadian and US cities. Key study finding include:

- Adhering to the Regional Plan growth targets is estimated to save $670 million over the current pattern of development. The savings come from avoiding costs related to the provision and maintenance of more extensive infrastructure as well as reduced travel costs.
- Significant additional cost savings could be achieved by increasing growth in the Regional Centre.
- Municipal savings may range from $65 million (meeting growth targets) to $715 million (under Scenario B).
- More concentrated development can reduce locally generated greenhouse gas (GHG) emissions.

[1] According to the HRM Settlement Pattern and Form Cost Analysis (2005), the cost of providing local road service to a rural estate form of development, at a density of 1 unit per 10,000 m2 (1 unit per ha), is 41% more per unit than the cost of providing the service to a more compact form of rural development, at a density of 1 unit per 5,500m2 (1 unit per 0.6 ha).

[2] 16% urban share of new housing starts from 2006 – mid 2012 when the study was commenced. Data which includes the end of 2012 shows that 16.9% new housing starts occurred in the Regional Centre.

The projected savings do not include localized water and wastewater infrastructure upgrades that may be needed to re-develop opportunity sites and commercial corridors in the Regional Centre. Staff are aware of potential capacity issues, and are planning to undertake a Regional Centre Water and Waste Water Master Plan as part of the Regional Centre Plan project to investigate these issues in more detail.

The Regional Centre Plan will address both land use regulation and investment required to facilitate ongoing revitalization of the urban core. The draft Regional Plan proposes a new wording for growth targets where "at least" 25% of new growth should take place in the Regional Centre and "at least" 75% should take in combined urban and suburban areas. This means that if growth targets in urban core are exceeded, this will be consistent with the Plan.

Altus Group. Feb. 2013. Study of Commercial Taxes as a Driver for Business Location Decisions Phase I&II

The second key piece of research to inform RP+5 was the *Commercial Location Study* undertaken by Altus Group to examine whether commercial taxes, as a component of business costs, are discouraging retail or office tenants from locating in the Regional Center. This project was developed through partnership with the Strategic Urban Partnership in two phases. Phase I identified factors influencing the location decisions of business owners and managers in HRM, particularly in the office and retail sectors and identified the recent movement of growth and/or decline in businesses in the downtown areas and other parts of the Regional Centre. Phase II focused on best practices and possible solutions that could lead to revitalization. Based on 100 interviews and best practice research the study concluded the following:

- Taxes are not the primary factor for location decisions or development motivation within HRM. On its own, the overall level of taxation is not a significant role in choosing a suburban versus downtown location within HRM.
- Key decision factors for downtown tenants include preferences of the employer, image/profile and perception, and proximity to clients and customers.
- Key decision factors for suburban tenants include parking availability and cost, commute time and availability of appropriate space.
- Increasing population living in or near downtown areas would create demand for downtown office and retail space.

The study recommended that the most promising measures to revitalize commercial growth in the downtown areas and Regional Centre should include:

- Bring People Downtown and to the Regional Centre to Live
- Explore Residential Tax Incentives.
- Improve Transportation
- Improve Parking

- Government Investment (public improvement projects, redevelopment of vacant lands such as Cogswell Interchange, and consolidation of government offices in Downtown Areas).

Watershed Studies

Since the adoption of the Regional Plan in 2006 HRM completed four watershed studies for the areas of Musquodoboit Harbour, Lake Echo, Birch Cove Lakes and Hubbards. Five studies are currently near completion or underway in Porters Lake, Shubenacadie Lakes, Tantallon, Sandy Lake and the Preston areas. The completed watershed studies have found that:

- some lakes are at risk of significant degradation without remediation or the use of low impact development approaches to future development[3];
- available groundwater supplies have limited capacity to support additional development in some areas;
- the provision of central municipal water and wastewater management services to many rural communities may be cost prohibitive.

HRM seeks to address these issues through enhanced growth management and rural subdivision conservation standards for rural developments in Chapter 3 and, potentially new by-laws, as outlined in Chapter 8. Watershed study findings will also be an important consideration in future secondary planning processes.

Undergrounding Studies

HRM is the only community of its size in Canada where utilities in new subdivisions are still permitted overhead and along streets[4]. With increasing global average temperatures, the frequency and intensity of extreme storm events is expected to increase, in many estimates by up to two-fold, posing increased risk to utility poles[5]. Undergrounding makes for more attractive streetscapes, more urban forest cover, and more reliable service. Overhead wires reduce street tree leaf cover of by 35%[6]. Over the last number of years, HRM conducted a number of studies, consulted with the development community and polled the public on the issue of undergrounding. The process concluded that:

- While there is public support (91% of HRM general public surveyed in 2011 - 300 participants) completely agree/mostly agree with undergrounding for new residential

[3] Assimilative capacity is an indication of the amount of additional loads of various pollutants a waterbody may receive without exceeding water quality objectives.
[4] Marbek Resources Consultants. Economic Implications of Buried Electric Utilities. March 21, 2007
[5] Marbek Resources Consultants. Economic Implications of Buried Electric Utilities. March 21, 2007.
[6] Halifax Regional Municipality. Urban Forest Master Plan. August, 2012 (Section 1.1 pp. 3-4)

subdivisions[7]) for full undergrounding, it would be prudent to introduce an underground initiative in a staged approach.

- The cost of implementation for full undergrounding depends on new home size and design, and is estimated at $8,800 for 40 ft lot[8] Costs would be higher for rural areas.
- A staged approach will allow the development community to work with utilities to update underground design standards. Nova Scotia Power and Bell Aliant support the concept of undergrounding and have participated in several common trench design applications.
- While many of the benefits of full undergrounding will not initially be realized, (reliability improvement, aesthetics, expanded urban forest, property value[9]) this approach will broadly introduce undergrounding to residential subdivisions and eliminate a significant amount of overhead infrastructure.

The policy respecting new subdivision development will, therefore, focus on the undergrounding of secondary service connections, from the power pole to the property line, with a consideration for future amendments to the Subdivision By-law to require undergrounding of all power and telecommunications cable on new local streets. The cost of this level of servicing is estimated at between $2,500 and $3,000 for a typical residential lot.

Gardner Pinfold June 2013. Economic Impacts of Growth Related Infrastructure Costs Development Charges

This study investigated whether increases associated with anticipated charges for HRM and Halifax Water infrastructure requirements, combined with the costs associated with underground wiring, would increase house prices to the point where HRM's growth targets would not be met. The study found that:

- Development charges on their own, account for about 1.1% of the median price of a new single detached house in HRM, among the lowest impact of the cities surveyed.
- Overall, fees in HRM account for 17.2% of the house price of $380,000, with provincial and federal sales taxes accounting for almost 80 per of the impact.

Therefore, development charges represent a minor component of overall housing costs when compared with construction, land and sales taxes. In practice, the relatively small impact on monthly mortgage created by an additional $5,000 to $10,000 on house prices in the $350,000 to $450,000 range could be readily mitigated. Consequently, increases in this range are unlikely to materially affect affordability in the new house market or location choice. Cost increases in the $15,000 - $20,000 range may impact location choice.

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[7] Nextbus - Thinkwell Research Inc. Sept. 2011. See http://www.halifax.ca/undergroundwiring/

[8] Stantec Engineering. Engineering Study of Joint Gas, Power and Communications Trench. April 2008 (2012 Update of the Joint Trench Installation Costs. March 2013). See http://www.halifax.ca/undergroundwiring/

[9] Report of the Putting Cables Underground Working Group to the Minister for Communications, Information Technology and the Arts, Australia. Putting Cables Underground.1998.