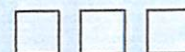




Suggestions for Managing Development



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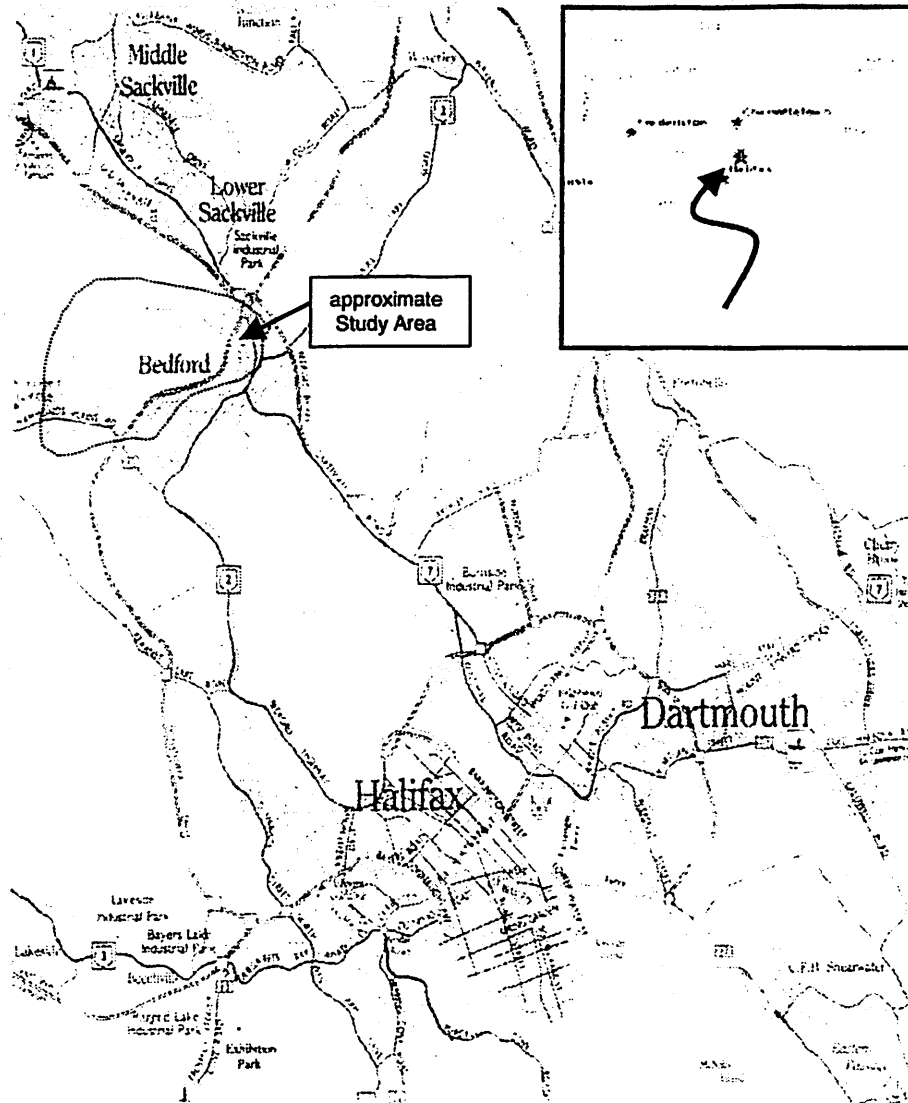
Suggestions for Managing Development

Table of Contents

Executive Summary	1
1.0 Introduction	2
2.0 Summaries	3
2.1 Case Studies	3
2.2 Demographic and Economic Analysis	4
2.3 Transportation	6
3.0 Management Strategies	9
3.1 What Will Occur With No Action	9
3.2 Action that should be taken	10
3.3 What could happen with appropriate action	11
3.3.1 Protection of the Riparian Zone Environment	11
3.3.2 Facilitating Transit-Oriented Development	12
3.3.3 Maximizing Enjoyment of Lakeside Amenity	13
4.0 Conclusions	13
4.1 Guiding Principles	13
References	14



Suggestions for Managing Development



Study area including Sandy Lake, Jack Lake, and Marsh Lake within the Halifax Regional Municipality (H.R.M.)



general study area location



Scale: 1: 25 000
Source: Halifax region road map, 2001

Study Location

Suggestions for Managing Development

Executive Summary

This paper provides synthesis and interpretation to an overview of issues of the Urban/Rural fringe. The paper integrates the background information provided in this larger document so that some suggestions regarding management practices can be considered for the Sandy Lake Area.

This paper supports and supplements the broad objectives of the Sandy Lake Residents Association to develop a comprehensive management strategy for the watershed and maintain the environmental integrity of the area. This paper begins by outlining some of the background information gathered in the document Issues of the Urban/Rural Fringe. It then proceeds to discuss the outcomes of different types of development and the consequences of each. It is the intention of this paper to display a variety of possible growth scenarios so that the community can then develop their own unique strategy.

We hope that this paper will provide the Sandy Lake Residents Association with a solid addition to their growing resource database and provide an increased knowledge base for future proposals and presentations to other organizations with a vested interest in this area.



Suggestions for Managing Development

1.0 Introduction

Responding to development pressures, the Sandy Lake Resident Association approached Dalhousie's School of Planning and the Faculty of Engineering for assistance in developing a growth management strategy. Over a course of eight months, a series of five reports were produced:

1. Environmental Inventory
2. Community Profile
3. Issues of the Urban/Rural Fringe
4. Water Quality Analysis
5. Policy Review and Recommendations

Reports 2 and 3 are complementary in the sense that report 2 considers growth management from an internal perspective, and report 3 from an external perspective.

This report presents information and summarizes the findings of report 3, and further articulates recommendations for developing management strategies. It is our intention that this report will aid the Sandy Lake Residents Association and HRM in the creation of a growth management strategy.



Suggestions for Managing Development

2.0 Summaries

2.1 Case Studies

This section of the document provides macroscopic context for the urban/rural fringe in post-war Canada. This includes a discussion on the growth patterns of the core cities and the outlying areas of the CMA, challenges of the urban/rural fringe, as well as land use patterns from a national perspective. Growth in the fringe needs to be managed. Uncontrolled growth in fringe areas is short sighted and creates long-term damage. This could include:

Dispersed settlement patterns are an expensive way to accommodate needs of a growing population.

- Low-density housing consumes more acreage than necessary and increases energy demands.
- Residents and businesses are highly dependent on cars.
- Busing children to school is expensive.
- New infrastructure increases the costs to taxpayers.
- Negative impact on environment (e.g., on-site septic systems often not properly maintained; separate buildings require more energy to heat).
- Fringe is drawing private and public capital away from inner cities.

The way to overcome these obstacles is by creating a thoughtful comprehensive plan. Such a plan needs to be based on public input and an understanding of the present condition of the community, as well as foresight about anticipated future trends.

Best management practices from similar communities in Canada and the U.S. are also examined. Practices considered include urban containment boundaries, watershed management, large lot zoning and cluster development. The Sackville River thesis by Rhea Mahar established a set of criteria for determining environmentally sensitive areas within the Sackville River Watershed based on the criteria established for the Region of Halton in Ontario. According to Mahar, Sandy Lake should be designated as an ESA. The importance of Sandy Lake for recreation areas and as an ecological preserve was recognised in 1971 when it was recommended as a provincial park (Mahar, 1994). However, the province never acted on this recommendation.

Marsh Lake (located just north of Sandy Lake) is of considerable ecological importance primarily due to its American Black Duck population and the cranberry bogs in the area. Some of this area



Suggestions for Managing Development

can be preserved under the Nova Scotia Conservation Easement Act (1992). This Act contains restrictions in the easement agreement, signed by the owner and either the province or a designated organisation, such as the Nature Conservancy (Mahar, 1994).

Real world examples also illustrate how each of these practices can be effectively implemented in communities on the fringe such as Sandy Lake. Water quality and other environmental criteria alone cannot determine what type of lakeside development meets the needs of a community. These factors tend to ignore social pressures and community needs. For this reason, it is instructive to observe other examples of lakeside development in order to better understand what future development at Sandy Lake might be like. Lessons that can be learned include

- All lakes feature important ecosystems, which should not only be protected, but respected through development.
- A lake's usefulness is determined by several factors, including environmental quality, accessibility, atmosphere, safety and available facilities.
- Development where private ownership includes the riparian zone often leads to problems with shoreline alteration and public access.
- Industrial development does not generally make use of amenities of the aquatic environment.
- Public places such as parks and swimming areas are a good use of lakeside environment, as long as they are welcoming and safe, and in concert with ecological factors.
- In order to create a welcoming atmosphere, all lakeside development must be compatible with the limnological and riparian environment.
- Residential development can be an effective use of lakeside amenity if it does not adversely affect the riparian ecosystem, and there is sufficient public access to the water's edge.

In the case of Sandy Lake, it is up to the stakeholders in the area to determine the best use of the surrounding area using these observations in the context of the information presented in this report. A clear idea about what the lake should be like in the future is paramount if it is to meet the needs of the community in future generations.

2.2 *Demographic and Economic Analysis*

This section provides insight into demographic and economic trends that have occurred within the urban-rural fringe of the Halifax CMA in the past 50 years. Specifically, the demographic and economic analysis compared Census Tract 132, an area adjacent to Sandy Lake, with the urban



Suggestions for Managing Development

core of the Halifax CMA. Census Tract 132 was chosen as it typically represents the urban-rural fringe of HRM. However, it is worth mentioning that much of the analysis is limited to the last quarter century, since data for Census Tract 132 is not available prior to 1976. The information collected and analyzed includes population growth and change, migration, dwelling types, housing quality, building permits, education levels, and average income.

Since the early 1970's, CT 132 has suburbanized at an increasing rate, which contributed to the swelling of the population. Starting in 1976, an influx of migrants from other regions of the province resulted in an increase in all cohort groups within the Halifax CMA. The difference between the population distribution by age and gender of the urban core and the one for CT 132, is that the later has fewer residents of university age. Only a small proportion of in-migrants to Halifax are new Canadians. Between 1987 and 1991, CT 132 witnessed a sudden jump of people moving in from other provinces and territories within Canada.

Single detached homes constitute the majority of housing for the population in CT 132. Only a small number of people living in CT 132 are housed in apartments. In contrast, nearly 40% of people in the urban core live in apartments. There is very little discrepancy in housing quality between the urban core and CT 132. Both areas have good housing quality with about one quarter of homes needing some minor repairs. Only 6% of homes in CT 132 and 7% of homes in Halifax were in need of major repairs during the 1996 Census.

Halifax County's share of the CMA's industrial construction values has been declining since the early 1990's. The last year reported, 1997, Halifax County's share was about 20% of the total monetary amount of industrial permits issued. However, between 1985 and 1990, Halifax County represented about 40% of the total amount of industrial development in the Halifax CMA. Halifax County's share of the CMA's commercial construction values has remained more or less constant in the 25-year period that was studied (1973-1997). Commercial development generally varied between 8 and 18% from year to year.

Until 1996, residents of CT 132 were earning slightly less than those of the urban core. However, this trend changed in 1996 when the income for males of CT 132 surpassed that of city dwellers, and the income for females became identical in both areas of the CMA. Education levels have



Suggestions for Managing Development

also improved across the board over the past 30 years in CT 132. An interesting trend is a significant shift of university graduates from the urban core to the fringe.

2.3 Transportation

Transportation is a critical element that impacts society. The automobile has a major impact on densities and livability of urban areas. Cities that grow in population typically consume more land to accommodate low-density residential areas. These areas commonly create dependence on the use of automobiles for transportation. This growth places additional demands on existing road networks or requires new roads to accommodate the increased traffic. This commonly creates a cycle: more roads increase the opportunity to access more land for further development.

Additional automobile usage leads to traffic congestion and further delays for commuters. This raises environmental concerns such as increased air and noise pollution, additional road salt usage, and increased fuel consumption. The city of Halifax, other organizations and individuals are using and promoting the benefits of alternatives to the privately owned automobile such as transit, walking, cycling and ride sharing. These options benefit both individual health and the health of the environment through reducing harmful greenhouse gases.

Transportation and land use planning must be closely monitored and studied in order to accommodate traffic growth. Street classification is particularly important for new development areas to address elements of land use, traffic density and mobility, safety and land access requirements.

The primary road network in the Sandy Lake area includes Lucasville Road, Hammonds Plains Road, Kearney Lake Road, Bicentennial (102) Highway, 101 Highway, Bedford Highway. The 100 series highways and the exits 2, 3, and 4 of Highway 102, are under provincial jurisdiction along with Hammonds Plains Road west of the Lucasville intersection. All other roads in the area are owned and maintained by Halifax Regional Municipality. The provincial highways are classified as expressways, Bedford Highway is considered a major collector, and the other roads are minor collectors. The Hammonds Plains Road currently has truck restrictions (3000 kg) to local deliveries only. This restriction is in place to prevent trucks from using the road to short cut in-between Highways 102 and 103. Restrictions of this nature are typically difficult to enforce.



Suggestions for Managing Development

Smith's Road is a local street; it is the planned access to the new beach development on Sandy Lake. The road does not have the capacity to handle traffic from new residential or industrial growth, but no major problem is expected from the beach development. The additional traffic generated from beachgoers will be seasonal and likely to occur during non-peak hours. There are concerns with the site's distance from Exit 3 interchange and the intersection with Hammonds Plains Road. This problem will be addressed with additional signage.

In a four-year period (1996-2000), traffic counts on Blue Mountain Road, Hammonds Plains Road, Kearney Lake Road, and Lucasville Road have all increased. The most drastic increase occurred on Blue Mountain Road. This can be contributed to additional residential growth in the area. The street is the only direct access for the area to get to Kearney Lake Road. There is increased usage on the Kearney Lake Road: between Blue Mountain and Bluewater Road traffic increased 57 % between 1996 and 2000. This indicates that most of the additional traffic from Blue Mountain Road is travelling south on Kearney Lake Road. Hammonds Plains Road typically experienced an average increase of 25 percent with the range between 21% and 29 %. This is approximately an extra 600 vehicles per day in the area. The highest increase, attributed to the additional residential growth, was between Kearney Lake and Kingswood Drive.

The province is planning to connect the 102 and the 103 Highways with a new highway, which will reduce traffic on Hammonds Plains Road. This project is estimated to occur within 10 to 15 years. The new highway would allow the Hammonds Plains Road to accommodate more local traffic. There are no plans at this time to improve the current conditions of Hammonds Plains Road. The existing development adjacent to the road has limited the potential to widen it. The possibility exists to construct an on/off ramp between Exits 3 and 4 towards the North on Highway 102. This would create a new access point to the Sandy Lake area. An interchange is planned to connect West Point Drive to Highway 102 and Sackville Drive. West Point Drive is expected to run parallel to Lucasville Road. This road will be constructed as development requires. There is limited potential to expand exit 2 because of the topography of the land and the existing local roads around the interchange.

Development around existing roads has limited the opportunities to improve infrastructure in order to accommodate more traffic. This also restricts the possibilities for developers to access the land in the Sandy Lake area.



Suggestions for Managing Development

Halifax Regional Municipality has adopted strategies that address the concern of increased automobile usage in the area. The region still has to find ways to implement policies and activities that allow citizens other transportation alternatives. There are many different methods that reduce transportation demand, but the ability to develop more compact development patterns has the highest potential to reduce traffic growth.



Suggestions for Managing Development

3.0 Management Strategies

The Sandy Lake Community currently finds itself at a crossroads. As development pressure increases, the natural environment and community fabric are at risk. Residents of the community wish to maintain and improve their quality of life, and therefore must make decisions about how development in the area should be controlled and managed.

Three cases are considered: likely development patterns under current systems, actions that should be taken, and possible scenarios for varying development priorities considered. The result is several guiding principles for managing development.

3.1 *What Will Occur With No Action*

It is easy to speculate about the type of development that will take place if no action is taken to control expansion in the Sandy Lake area. Currently, residential development is allowed by-right on lots that are at least five acres in area. Industrial and commercial enterprise, are for the most part, concentrated in 'business parks'; however, establishments such as Ben's Bakery exist beyond park boundaries.

If no further development controls are instituted the status quo will prevail. In this scenario, it is probable that homes on large lots with private water supplies and on-site sewage treatment will dominate the watershed landscape. At the same time, businesses of all types will continue to locate along arterial roads, where it is possible to access regional transportation networks.

These trends tend to reduce private and public open space and increase traffic congestion, making streets more noisy and less safe. Quality of water within the watershed would likely continue to deteriorate, especially if more residents are dependent on private water supplies and sewage systems. It is clear that residents who draw their water from Sandy Lake will no longer be able to do so for health considerations.

These patterns will likely not impinge on existing land uses; however, the new array of surrounding uses could serve to degrade the quality of the area for local residents. The haphazard nature of uncontrolled development could alter the current expectations and daily habits of



Suggestions for Managing Development

community members. When Farmer's Dairy arrived, even though cottage-dwellers could gain access to their properties by land instead of by water, it forced them to pass through the Dairy's security on the way.

It is clear that action must be taken by stakeholders in order to ensure development occurs in a responsible manner. Maximizing quality of life and realising potential value of the area can only be fully achieved through careful consideration of a comprehensive management process.

3.2 Action that should be taken

Three strategies which should be implemented to control development are:

- Watershed management plan;
- Comprehensive municipal planning strategy (MPS) for the new Halifax Regional Municipality (HRM);
- Extension of the municipal service boundary.

A watershed management plan is an opportunity to transcend political boundaries and use an ecosystem approach to mitigate impacts of development on terrestrial, aquatic and riparian environments. Development of such a plan will allow the Sandy Lake community to identify the aspects of their environment that are important. Potentially, value could be placed on water quality, wildlife habitat, open space and natural amenity. In identifying these elements, the Resident's Association should rely on personal ideals, and environmental and engineering reports produced by others. Models for policy development include the Laurel Creek Watershed Study, Nottawasaga Valley Watershed Management Plan and the City of Dartmouth Lakes Study.

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A comprehensive MPS facilitates the amalgamation of ideas and perspectives about a large geographic, social and economic community. Within this structure, context is provided for development in the Sandy Lake area. The MPS also gives political and legal legitimacy to local decision-making through the implementation of many tools such as zoning, and the requirement of development agreements and planned unit development areas. An effective public participation process and consideration of the watershed management plan will equip the writers of the MPS to successfully meet the needs of the local community and the region. This strategy can help to improve quality of life, and to take into account future growth considerations.



Suggestions for Managing Development

The above-mentioned MPS will potentially delineate areas for development that will make best use of existing and expanded infrastructure (including roads, water, and sewer, as well as schools). This macroscopic approach may identify regions that could benefit from the extension of the municipal service boundary, enabling development to occur in new areas in a controlled manner. The current situation of by-right development, particularly in the urban/rural fringe, serves to expand suburban areas and large-lot subdivisions, and to increase 'sprawl.' Inclusion of any area within the service boundary enables flexibility in development density, composition and design by removing the restrictive requirement of private water supply and sewage treatment. This flexibility is necessary for accurately addressing quality of life concerns related to environmental and social impacts of development. Service boundaries have been used to effectively manage growth in communities such as Nanaimo, BC and Portland, OR.

3.3 What could happen with appropriate action

To effectively manage growth for the Sandy Lake area, interested parties must first decide what overlying principles are vital to the integrity of the environment and to their quality of life. There are many differing objectives that each unique community may develop. However, after thorough analysis of Issues of the Urban and Rural Fringe, three potential priorities for determining growth become apparent. They are:

- Protecting of the riparian zone environment
- Facilitating Transit-oriented development
- Maximizing enjoyment of lakeside amenity

3.3.1 Protection of the Riparian Zone Environment

The riparian zone includes all waterways and lands of transition between aquatic and upland ecosystems. To regard the protection of these environmentally sensitive areas with paramount importance has many implications.

A community that chooses to control development using the protection of the riparian zone environment as their first priority will maintain or improve water quality within their watershed. The integrity of natural habitat for aquatic species will also be maintained, and the community will gain insurance against ecological risks such as flooding. In order to achieve these goals most



Suggestions for Managing Development

ideally, a public entity such as HRM or the Province of Nova Scotia could purchase and maintain the land within the riparian zone, likely as park and open space. Practically, developers could turn over all riparian land to the municipality as a requirement of development. At the same time, a moratorium on private lakeside development would be necessary, and it would be wise to eliminate all industrial developments within the watershed, especially those prone to polluting water resources. Finally, private sewage treatment would need to be prohibited, with municipal services being extended into the community.

In a less ideal (but more practical) scenario, private stewardship initiatives could be effectively implemented to limit development in the riparian zone. In this case, strict performance standards to reduce environmental impact would need to be imposed on private development in the nearshore. In addition, impacts of industries within the watershed could be regulated. Assuming that these regulations were sufficiently strict and enforced, effects to the water quality and overall ecosystem would be mitigated.

If successful, this type of community would be highly valued for its aesthetic quality and value of land adjacent to the riparian zone could increase dramatically. Moreover, public access to the waterfront would be opportune, drawing people from all over the larger community of HRM to the area for recreational purposes. To make the protection of riparian zone environments financially possible, it is likely that densities beyond protected riparian buffer zones would be much higher.

3.3.2 Facilitating Transit-Oriented Development

Transit-oriented development is an attempt to minimise the dependence on the automobile by providing efficient transit services. In order to accomplish this goal, critical mass must exist to provide enough ridership to make transit financially feasible. Transit-oriented development therefore requires that residential development be compact and centered around a transit hub. Every dwelling unit should be within walking distance of the transit hub. The compactness and human scale of the district tends to create a pedestrian-friendly environment, as well as promote community identity. While the centre of the development with its transit hub, commercial, cultural, and recreational activities becomes the focal point of the community, the streets with its wide sidewalks and street trees provide the opportunity for additional social interaction. Finally,



Suggestions for Managing Development

by having a more compact community, a larger amount of the natural environment can be maintained as open natural space or park space.

3.3.3 Maximizing Enjoyment of Lakeside Amenity

To maximize the enjoyment of the lake means to increase access to the lake; this is accomplished by diversifying both the possible uses of the lake, and the people who use it. A homogeneous population distribution does not provide this type of variety.

The intrinsic value of the lakeside environment is that all ages and interests can be satisfied through its use. Providing a variety of housing opportunities serves to diversify the population base.

Practically, the use of the lakeside environment should be balanced. A balance between public and private access, built and natural recreation, and economic and social values should be sought. Hotels and restaurants overlooking the water, camping, swimming, fishing and boating are all possible; taking a hike, flying a kite, or jumping in a lake are all worthwhile activities that residents and visitors to the Sandy Lake area should participate in.

As with any balanced approach, there are compromises, costs and trade-offs. Water quality and habitat could become degraded; seasonal population would likely be displaced; or non-compatible uses would have to be pushed farther away from the lake to eliminate noise and other nuisances.

4.0 Conclusions

4.1 Guiding Principles

After the community determines specific priorities, it should consider a set of guiding principles when developing a management strategy. These guidelines include:

- Maintaining the riparian zone
- Maintaining public access to the lake
- Sufficiently buffering the environmentally sensitive areas
- Respecting the limnological ecosystem through development that enhances the lake
- Encouraging responsible shoreline management through public ownership where possible and private stewardship when necessary



Suggestions for Managing Development

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