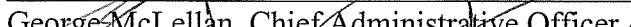


Halifax Regional Council
October 1, 2002

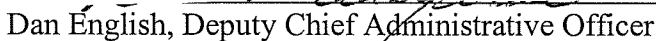
To: Mayor Kelly and Members of Regional Council

Original Signed

Submitted by:


George McLellan, Chief Administrative Officer

Original Signed


Dan English, Deputy Chief Administrative Officer

Date: September 24, 2002

Subject: Case 00431: Plan Amendment to the Planning Districts 14 and 17 Municipal
Planning Strategy

STAFF REPORT

ORIGIN:

An application by L. Archibald Holdings Ltd relating to lands east of Rocky Lake Road in Waverley.

RECOMMENDATION:

It is recommended that Regional Council authorize staff to initiate a plan amendment process for the Planning District 14 and 17 (Shubenacadie Lakes) Municipal Planning Strategy and Land Use By-law to:

1. Consider residential development on a portion of the lands of L. Archibald Holdings Ltd. (Area B as shown on Map 3) east of Rocky Lake Road;
2. Consider amending the Waverley Water Service Boundary to include the lands of L. Archibald Holdings Ltd. East of Rocky Lake Road (as shown in Map 4); and
3. Proceed with a public participation program in accordance with the Public Participation Resolution adopted by Regional Council on February 25, 1997.

BACKGROUND:**Subject Property**

L. Archibault Holdings Ltd. is the owner of lands located in the community of Waverley in the vicinity of Rocky Lake, Powder Mill Lake and Lake William. The subject lands, comprising approximately 584 acres which straddle Rocky Lake Road, are identified as Areas A, B and C on Map 1 of this report.

This report will focus on a portion of the property, comprising approximately 295 acres, located east of Rocky Lake Road identified as Areas B and C on Map 1. These lands are identified in the Municipal Planning Strategy (MPS) as the "C-I-L Lands" and were once the site of two explosive manufacturing facilities.

One of the former manufacturing facilities, which produced nitroglycerin, was located on the west side of Rocky Lake Road (Site 3 on Map 1). The other facility, which produced black powder, operated until 1915 from an approximately 60 acre site on east side of Rocky Lake Road (Site 1 on Map 1). Site 1 is currently used as an explosives storage facility operated by Atlantic Explosives Limited.

Proposal

The property owner wishes to re-locate the existing explosives storage area from Site 1 to a location on the west side of Rocky Lake Road (Area A of Map 1). This would leave Area B available for redevelopment. The intention is to develop Areas B and C, as a single family residential subdivision of approximately 120 lots based on the requirements of the R-6 (Rural Residential) Zone. The R-6 Zone permits residential development on minimum lot sizes of 20,000 square feet. The developer would also like to service the subdivision with centralized water service.

DISCUSSION:**Existing MPS Policy and Zoning**

The larger area identified as Area C, on Map 1, comprising the eastern portion of the property, is designated "Resource" and Zoned R-7 (Rural Estate) Zone under the MPS and land use by-law. The R-7 Zone permits as-of-right residential development, on minimum lot sizes of 80,000 square feet. The applicant is seeking to rezone this area to the R-6 Zone which permits development on 20,000 square foot lots.

Past practices associated with the manufacture and storage of explosives resulted in contamination of soils primarily on the lands situated west of Rocky Lake Road. As a result, the area west of Rocky Lake Road, along with the approximately 60 acres comprising Area B (Map 1), were designated "Special Area" and zoned (H-1) Hazard with the consent of the previous property owner. The Hazard Zone permits explosives storage facilities but does not permit residential development. Since the MPS policy was adopted, a technical evaluation has been conducted for these lands.

The MPS contemplates future land uses on the hazard lands subsequent to further assessment of the extent of contamination and a determination of remedial measures required to render them suitable for future development. Provision is made to consider rezonings to permit residential, parkland or industrial uses. However, the MPS stipulates that lands formerly occupied or used for the manufacture or storage of explosives, together with lands fronting on Rocky Lake Drive, may only be considered for rezoning to permit industrial development. Thus, a large portion of the property, including all of Area B, is precluded from consideration for residential development under current MPS policy.

Shortly after the approval of the Municipal Planning Strategy in 1989, an environmental analysis and risk assessment of the C-I-L Lands was conducted by Nolan Davis & Associates. This analysis examined both Areas A and B, and focussed on the two areas formerly used to house explosive manufacturing facilities. It was determined that Area B had some minor contamination issues which could be remedied. The owner has taken steps to remedy the identified contamination in Area B and a July 2001 report by ADI Limited indicates that soil tests for this area conclude that it now meets national soil guidelines for residential and parkland use.

Centralized Water Service

In regards to centralized water service, the lands which are subject to this proposal are outside the limits of the Windsor Junction-Waverley Water Service District (identified on Map 5 of the MPS). Current MPS policy precludes centralized water service from being extended to this area to accommodate the proposed development.

The developer proposes to provide water service to the proposed development area by extending a new main from Lakeview Road to Rocky Lake Road over the subject lands. This new main would feed the proposed subdivision and connect to the existing Waverley Water System on Rocky Lake Road.

The applicant cites a number of factors in support of the water service extension. It will:

- increase the capacity of the Waverley water system,
- provide better fire flows;
- reduce demands on the existing supply line to Waverley; and
- provide looping of the service.

Required MPS/LUB Amendments

In order to accommodate the applicant's proposal, it will be necessary to:

- Redesignate the lands designated "Special Area" and rezone them from H-1 (Hazard) to R-6 (Rural Residential) Zone; and
- Rezone the area currently zone R-7 (Rural Estate) to R-6 (Rural Residential) Zone (this could occur either in concurrent with or subsequent to, the requested MPS amendment process).

Additionally, it will be necessary to:

- update current MPS policy relative to expressed concerns about these lands; and finally
- include the subject development area within the Water Service District Boundary.

Technical and Policy Considerations

The Halifax Regional Water Commission (HRWC) has indicated that the existing Waverley System functions well and as originally intended. The HRWC has indicated that a second supply main into the south side of Waverley would be beneficial in the event of a break along the current single feeder main. Any improvements to the fire flows in Waverley as a result of the proposed second connection would be marginal at best because of the small diameter main present in the Waverley system.

The applicant has suggested that the proposed subdivision would proceed regardless of whether or not central water is provided. Therefore, extending central water at this initial stage of development would avoid costs to future residents and to HRM associated with extending the service after development is complete.

Notwithstanding the technical merits associated with this proposal, there are a number of associated policy considerations which should be addressed in determining if a residential subdivision is appropriate for these lands and if centralized water service should be extended. These include:

- a desire expressed in the current MPS to maintain Waverley's "Village" character;
- expressed MPS criteria for evaluating requests to extend Water Service Districts; and
- HRM capability to provide other municipal services to the proposed development in a cost-effective manner.

The MPS states that the current Waverley Water System was installed to overcome arsenic and other mineral problems in area wells (Attachment 2). The system was designed to have the capacity for a limited number of connections (approximately 625). Waverley residents have expressed through the MPS policies a desire to limit growth in their community by limiting access to the water system. This limited number of connections was intended to maintain the village character of Waverley as surplus capacity was felt to encourage growth which would detract from this character.

Criteria for considering amendments to expand or establish new Water Service Districts are set out in Policy P-8(b) (attached as Attachment #2). The policy gives priority to water service extensions which meet the following criteria:

- areas experiencing quality and/or quantity problems with the existing water supply.
- existing communities within a reasonable distance of an existing water system where there is a demonstrated need, conditional on the availability of water.
- areas which would provide looping of infrastructure thereby enhancing the reliability of the water system.

Additionally, the criteria stipulates that Council have regard to:

- detailed engineering and financial implications of a proposal; as well as to
- the broader planning and environmental considerations related to the development of a particular area with central water.

The scale and pattern of the proposed development may be a contrary to expressed MPS policies regarding water service extensions. Extending central water services in the Waverley area or to any other development primarily to accommodate new growth is contrary to the general intent of the planning strategy to support such service extensions where they are intended to resolve existing water related problems and/or to improve the reliability of a local water system. In this case, water service would be extended to support a new subdivision, the development of which may result in demands for additional services and which may be inconsistent with MPS current policy.

Introducing centralized water service to accommodate new residential development which relies on on-site septic systems also raises other issues, particularly in regards to potential impacts on groundwater resources. There is a growing evidence which suggests that the use of centralized water systems in such instances adds to hydraulic loading of on-site septic systems leading to a higher rate of septic system failure. Eventually, this could result in demands to extend centralized sewer systems to address environmental issues.

Arsenic Contamination

Although this proposal is inconsistent with several aspects of MPS policy criteria regarding Water Service District extensions, it may warrant special consideration given past concerns related to arsenic contamination and its impact on existing and future quality of groundwater resources in this area. The natural geology of the Waverley area, along with the history of mining and industry has resulted in high concentrations of minerals in groundwater. These minerals, specifically arsenic, have caused health problems in the Waverley area. Arsenic is a naturally occurring element which, when found in sufficient concentrations in drinking water, is known to cause cancer.

In general, the risk of arsenic contamination in Waverley can be attributed to three factors:

- *Natural geology and groundwater fluctuations* - fluctuating ground water levels can cause arsenic to enter the water table from the surrounding bedrock.
- *Mining in the early 1900's* - this resulted in the production of mine tailings which had a high concentration of arsenic. These tailings were redistributed throughout the community and were used as bedding material for the railway which passes through the subject site. Exposure to air and water has resulted in arsenic leaching into the groundwater.
- *Increased development* - development of land uses with on-site wells in areas which have a natural arsenic problem causes fluctuations in groundwater levels which may exacerbate arsenic contamination on the site or for surrounding properties. Prediction of such contamination is difficult and varies from site to site.

This area is likely to experience all three conditions which could cause arsenic contamination of groundwater. Since such contamination may have a direct impact on life safety, there may be some justification for extending centralized water service to this area. It should be noted that residential subdivision development may occur as-of-right on Area C.

Through the plan amendment process, Council has the flexibility to look beyond the parameters of current policy. In this instance, Council may wish to consider the likelihood of future groundwater contamination on the subject parcel due to the three risk factors identified above. The Waverley area is known for Arsenic contamination and there is a likelihood that in the future, water service may have to be extended to the proposed development at significant cost to the Municipality or the future residents of the area. The potential for ground water contamination from arsenic may therefore be significant as to warrant extending the Waverley Water Service boundary to include this area.

Conclusion

On the basis of the environmental information provided, the soil contamination issues associated with Area B warrant reconsideration of the concerns expressed in the MPS. At the same time, however, redesignation of these lands to accommodate significant residential development serviced by centralized water services raises other questions which must be addressed. These include the pros and cons associated with extending centralized water service to the area given the environmental issues associated with arsenic contamination and potential impacts that extensive (semi-serviced) residential development may have on:

- the existing community of Waverley;
- nearby lakes, waterways and natural habitat;
- groundwater resources and septic systems; and
- the provision of infrastructure and other municipal services.

Staff recommends that Council approve the request to initiate the plan amendment process for the Planning District 14 and 17 Municipal Planning Strategy and Land Use By-law to consider residential development on a portion of the lands of L. Archibault Holdings Ltd. (Area B as shown on Map3) on the east side of Rocky Lake Road and to consider amending the Water Service District boundary to accommodate this development.

BUDGET IMPLICATIONS:

There could be significant budget implications associated with approving this proposal. These will be examined in more detail during the plan amendment process and prior to a final report and recommendation being provided to Regional Council.

FINANCIAL MANAGEMENT POLICIES/BUSINESS PLAN:

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating Reserves, as well as any relevant legislation.

ALTERNATIVES:

1. Refuse the requested amendments. A request to amend its Municipal Planning Strategy is at Council's discretion and cannot be appealed. As there appears to be some merit in proceeding with amendments to the Planning District 14 and 17 Municipal Planning Strategy to update stated concerns about soil contamination, staff does not support this option.

ATTACHMENTS:

Map 1	Lands of Archibauld Holdings
Map 2	Ltd.Generalized Future Land Use Map
Map 3	Zoning Map
Map 4	Waverley Water Service Boundary and Proposed Extension
Attachment 1	MPS Policy for Waverley Hazard Lands
Attachment 2	Water Service Boundaries

ADDITIONAL REPORTS (available upon request)

Waverley Site Scoping, Porter Dillon, 1988

An Environmental Assessment at the C-I-L Former Explosives Manufacturing Site, Nolan Davis, 1989


Report on Soil Sampling Undertaken on ICI Canada Property, ADI Nolan Davis, 1993

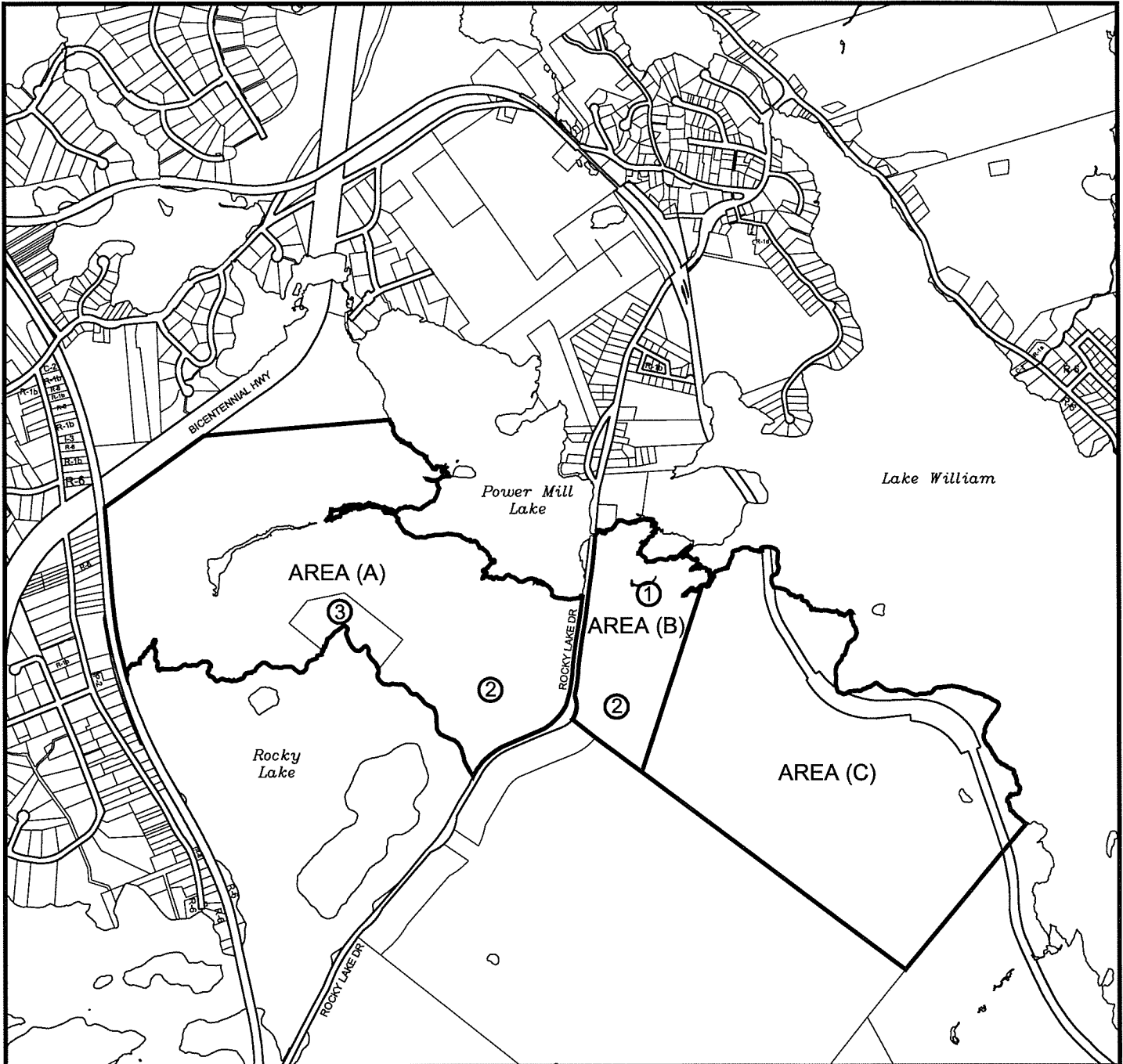
Final Report on Soil Sampling Former CIL Explosives Site, Powder Works Area, ADI, 2001

Environmental Degradation of Black Powder, Rho Sigma Associates, Inc, 2002

Additional copies of this report, and information on its status, can be obtained by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by: ~~Andrew Bone, Planner, 869-4226~~

Report Approved by:  Original Signed
Paul Dunphy, Director, Planning & Development Services

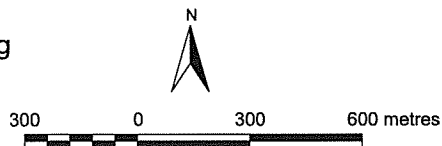


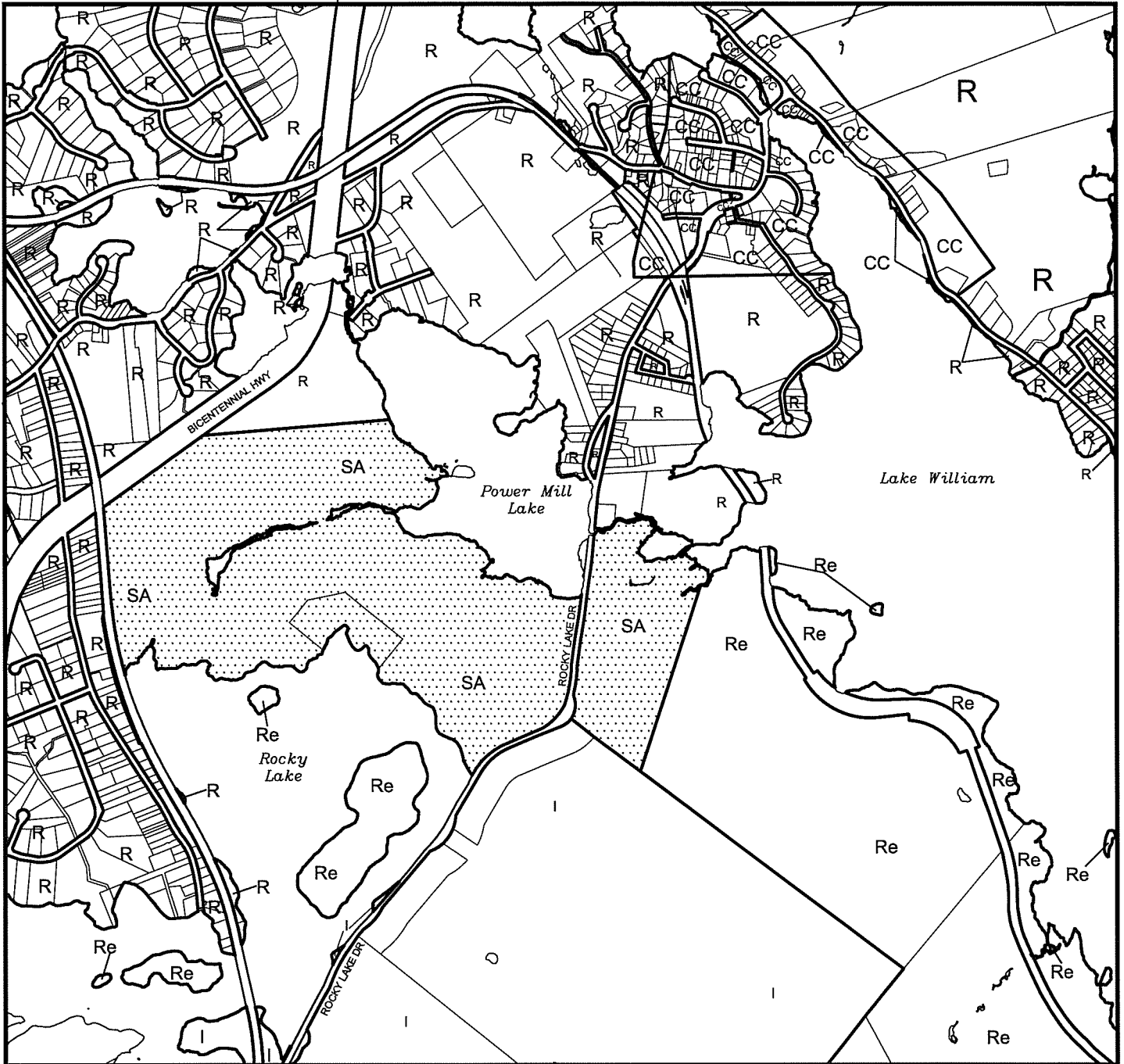
Map 1
Lands of L. Archibald Holdings Ltd.

HALIFAX
REGIONAL MUNICIPALITY
PLANNING SERVICES

Past and Present Land Uses :

- ① Former Acadia Powder Works (Black Powder Manufacturing)
- ② Existing Storage of Explosives
- ③ Former Nitro Glycerin Manufacturing



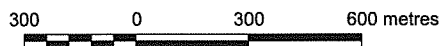


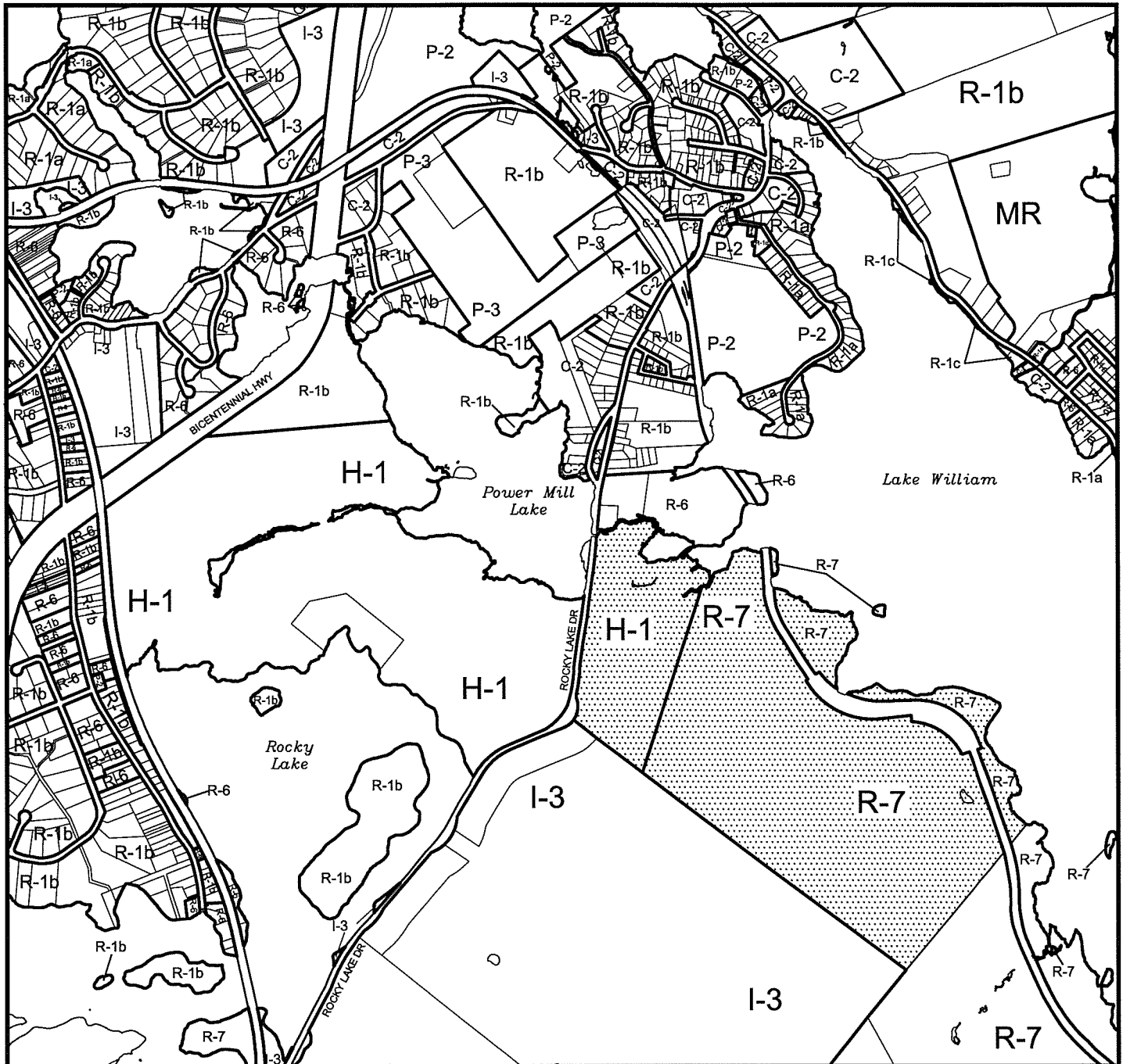
Map 2
Generalize Future Land Use

 CIL Lands




- R Residential Designation
- CC Community Centre Designation
- I Light Industrial Designation
- Re Resource Designation
- SA Special Area Designation





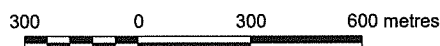
**Map 3
Zoning**

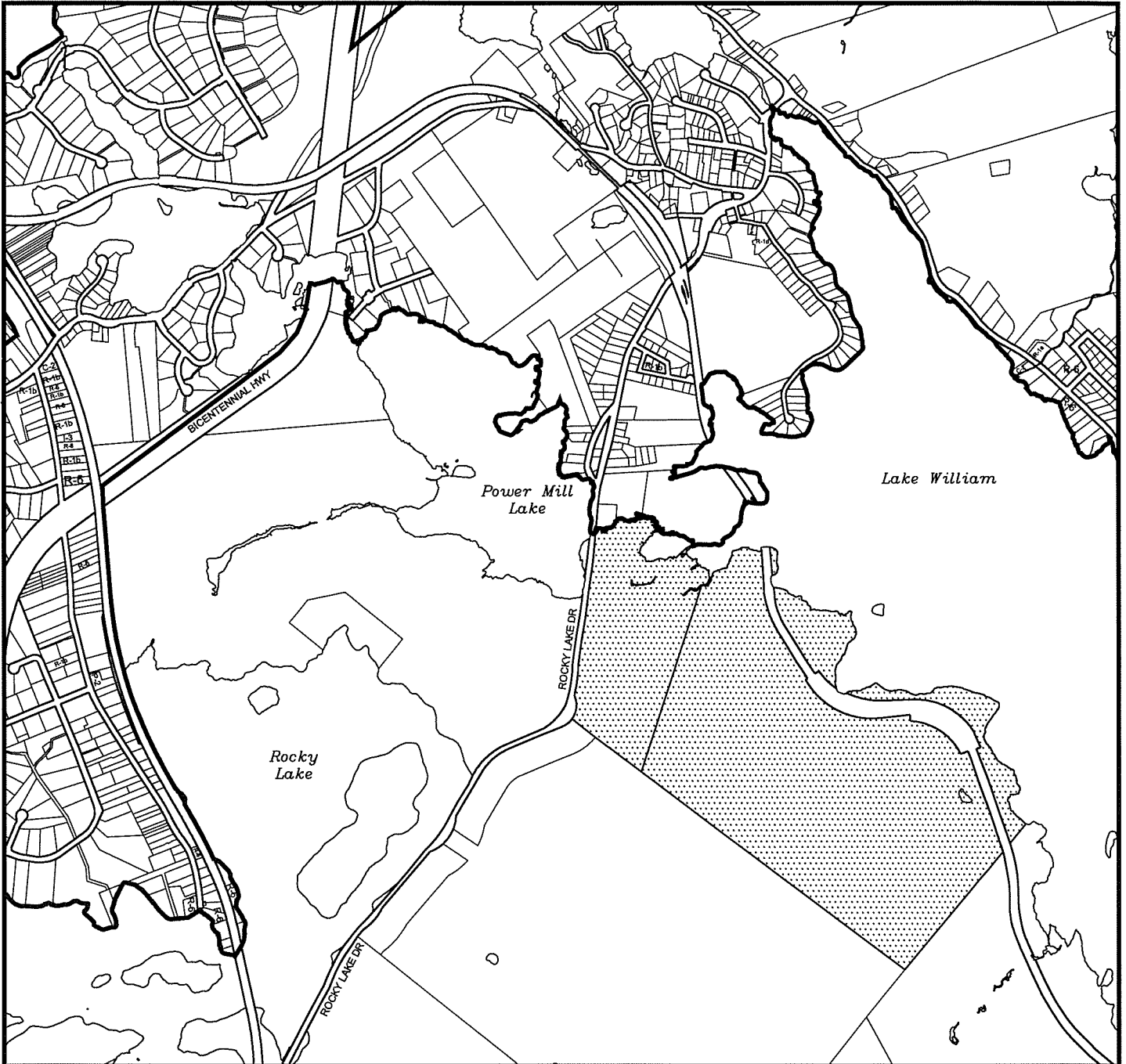
 Area to be rezoned from H-1 and R-7 to R-6



- R-1a Single Unit Dwelling Zone
- R-1b Suburban Residential Zone
- R-1c Waterfront Residential
- R-6 Rural Residential Zone
- R-7 Rural Estate Zone



- C-2 Community Commercial Zone
- P-2 Community Facility Zone
- P-3 Mixed Industrial Zone
- H-1 Hazard Zone
- I-3 Light Industrial Zone





Map 4
 Windsor Junction - Waverley Water Service
 Boundary and Proposed Extension



-  Proposed extension to the Windsor Junction - Waverley Water Service Boundary
-  Windsor Junction - Waverley Water Service Boundary



Attachment 1 -MPS Policy for Waverley Hazard Lands

C-I-L Lands

A portion of the lands of Canadian Industries Limited (CIL), located to the north-west of Rocky Lake Drive was formerly occupied by the Acadia Powder Works. In the late 1800s, black powder and later nitroglycerine were manufactured on these lands.

In the early part of this century (circa 1915), production ceased and most of the structures were removed. In 1935 newspaper¹ reports indicated that a portion of the site had exploded, killing two members of a crew involved in site maintenance. The site is presently occupied by a number of explosives magazines.

Although modern explosive storage requirements are stringently regulated by the Federal Government², the previous history of these lands suggest that prior to the development of any use other than explosive storage, the site will require careful attention to decontamination. In this regard, it is appropriate to establish a limited industrial zone on these lands within which explosives storage and related uses will be permitted.

If the lands, at some future point, the landowner is able to satisfy Energy Mines and Resources Canada and the provincial Department of Environment with regard to the safety of the site, then Council may consider amending the land use by-law to permit alternative uses in conformity with those permitted on adjacent lands.

P-126 Within the Special Area Designation, it shall be the intention of Council to establish a hazard zone which shall only permit uses related to the storage and distribution of explosives. Setback requirements shall be established which are related to the amount of explosive being stored. It shall further be the intention of Council that this zone shall be applied to the lands of Canadian Industries Limited, LRIS No. 527119.

P-127 Notwithstanding Policy P-126, Council may consider amending the land use by-law to permit the development of residential, parkland or industrial uses on lands owned by Canadian Industries Limited and having regard to the following:

- (a) the safety of the site for the proposed development, as determined by a report from the appropriate provincial or federal government authority;
- (b) that all use of the lands for the storage or distribution of explosives has ceased;
- (c) that lands formerly occupied or used for the manufacture or storage of explosives, together with lands fronting on Rocky Lake Drive, are to be included within an industrial zone;
- (d) that the proposed road system is coordinated so as to discourage the access of industrially generated traffic through any residential portion of the lands;
- (e) the provisions of Policy P-155.

¹ July 26, 1985, Halifax Herald.

² Canada Explosives Act.

Attachment 2 - MPS Policies - Water Service Boundaries**Water Supply**

Large portions of the Plan Area are underlain with either gold bearing rock formations or pyritic slates. Wells drilled into these bedrock types can be contaminated by unacceptable levels of arsenic or sulfides and reduced Ph, respectively. While most wells in the Plan Area do not encounter these problems, concentrations of contaminated wells have led to the extension of municipal water services in some areas such as Waverley.

It can be expected that much new development will occur without the benefit of central municipal water. It is important in areas where contamination is possible and where the extension of central municipal water services would be costly, that alternative water sources be encouraged. Such alternatives may include rainwater collection and cistern storage facilities.

P-7 It shall be the intention of Council, in cooperation with the Departments of Public Health and the Environment, to identify and inform future residents of potential areas of ground water contamination and to encourage the use of alternative water sources in such areas. Furthermore, it shall be the intention of Council to encourage the Province to establish a program for the identification of areas prone to well water contamination.

The expansion of municipal responsibility for the provision of central water service has largely been a response to specific problems of ground water contamination or inadequate supply. It is important to overall future development and the safety of area residents that any new or expanded central water systems be sized so as to provide for the installation of fire hydrants. In addition, future systems should also be designed so that trunk water lines are looped or joined to existing systems wherever possible. This will ensure that any break in the system will affect as few users as possible.

P-8 In considering new or expanded central municipal water distribution systems, it shall be the intention of Council to provide for sufficient fire flows and the looping of trunk water lines wherever possible.

In early 1993, municipal staff expressed concern to Council about the lack of clear policy direction with respect to development accessing only central municipal water services. Central water service from the Pockwock water system had been extended to a number of areas located outside of designated serviceable areas where both municipal water and sewer services are required. The primary motivation in extending central water to these areas was to resolve identified water quality or quality problems. However, the extension of trunk services to these areas also resulted in new development being able to access central water. The rapid rate of growth which central water seemed to encourage and the potential scale of development which could occur, coupled with the general lack of policy direction, caused staff to bring the matter

before Council. Engineering concerns related to overall water system capacity and the adequacy of internal system design were significant issues as were planning considerations related to development patterns and the adequacy and demand placed on other services.

In the fall of 1993, following public input concerning the issue of central water, Council approved the designation of several Water Service Districts in areas served by the Pockwock water system. These Water Service Districts included areas to which central water only had already been extended or committed as well as areas where it was anticipated that central water would be required to resolve a community based water quality or quantity problem. Within the Planning Districts 14 and 17 plan area, Water Service Districts include Lakeview; Windsor Junction; and Waverley (see Map 5).

It is the intent of Council that central municipal water services will only be permitted within designated Water Service Districts. Council may, however, consider the expansion of existing Water Service Districts or the establishment of new ones when satisfied that all engineering, financial, and planning concerns have been properly addressed.

P-8(a) It shall be the intention of Council to establish Water Service Districts for those areas to which central municipal water services only have or may be extended in the future, as shown on the Water Service District Map (Map 5). It shall be the policy of Council that the extension of central municipal water services shall not be permitted outside of designated Water Service Districts. It shall further be the policy of Council that within the Water Service Districts, central municipal water services shall be provided to all subdivisions adjacent to existing municipal water services and which propose to provide a new or extended public street or highway.

P-8(b) Notwithstanding Policy P-8(a), Council may consider amending this planning strategy and the Municipal Subdivision By-law to permit the expansion of existing or the establishment of new Water Service Districts. When considering new or expanded Water Service Districts, priority shall be given to:

- (1) areas identified as experiencing problems related to insufficient quality and/or poor quality of existing sources of water supply;
- (2) existing communities within a reasonable distance of the central water supply system where there is a demonstrated need and conditional upon the availability of water supply capacity; and
- (3) areas which would provide looping of existing infrastructure thereby enhancing reliability of the water system in the local area.

In addition to the priority criteria outlined above, it shall also be the policy of Council when considering the establishment of new or expanded Water Service Districts, to have regard to the following:

- (a) the engineering and financial implications of such extensions as identified by the Master Infrastructure Plan, Implementation Plan, and Financial Plan carried out pursuant to Municipal Services General Specifications;**
- (b) the potential scale of such development and the effects which this may have on existing and future levels of services, as well as the development pattern which is desired and deemed appropriate within this plan area as well as the larger Municipality; and**
- (c) environmental considerations related to the long term integrity of on-site sewage disposal systems as well as natural water drainage systems. (C-March 28, 1994 / M-April 15, 1994)**

Waverley Water System

The Waverley water system was installed to overcome arsenic contamination in area wells. The water system consists of a sixteen inch trunk water line, extended from the Sackville system along Cobequid Road, through Windsor Junction to Waverley. Prior to the installation of the Waverley water system, there was considerable public discussion concerning the effects such a system might have on the future development of the Waverley area. Subsequently, a plebiscite was held and it was the broadly supported intention of the community that the new water system should not substantially alter the nature of the community. As a consequence of this public decision, the water system as designed by the Municipality and approved by a Public Utilities Board is limited.

The trunk main was reduced in size to an eight inch trunk line at the edge of the Waverley area, and only a limited standpipe system was installed for fire protection. The Waverley water system has the capacity to accommodate approximately 625 residential connections³ within a defined service area.

P-9 It shall be the intention of Council to reaffirm municipal policy and support the established community goals with regard to the provision of central municipal water services, by establishing the Waverley Water Service Boundary, as shown on the Environmental Health Services Map (Map #2). Furthermore, it shall be the intention of Council to prohibit the extension of municipal water services beyond the Waverley Water Services Boundary.

While the water system design allows for an initial 625 domestic connections, there may, in fact, be additional capacity. Average water consumption rates in areas with central water servicing but without central sewage collection have not been clearly established and will, therefore, require

³ Design parameters and System Hydraulics, C.B.C.L., 1983.

monitoring. Should actual consumption rates be less than those for which the initial design was intended, then a portion of the reserve capacity may become available for additional domestic connections within the Waverley water Service Boundary. Alternatively, when the initial 625 domestic connections have been placed in service, and should the remaining developable lands require less water capacity than the proven remaining capacity, it may be appropriate to consider expansion of the Waverley Water Service Area.

Although it may be appropriate to consider expanding the Waverley Water Service Boundary, there are important considerations which should be addressed. Most of the Waverley area is served by gravity flow from a 270,000 gallon storage reservoir located on a height of land overlooking the northern end of Lake William. However, a portion of the Silverside Subdivision located above the 155 foot contour is not served by gravity flow, and requires a pressure boosting pump. Expansion in this portion of the water service area could require substantial additional costs and should be discouraged. In addition, it may be the case that upon completion of consumption monitoring and the completion of the initial 625 service connections, additional water capacity may be available. Priority should be given to servicing the remaining undeveloped lands within the Service Boundary prior to consideration of any expansion of the boundary.

- P-10 It shall be the intention of Council to ensure an adequate supply of domestic water within the Waverley Water Service Boundary by monitoring domestic consumption, limiting service connections to the established initial design capacity and discouraging the installation of service connections for other than domestic and light commercial purposes. Upon the completion of the consumption monitoring program and when the initial service connection design capacity of 625 connections have been completed, it shall be the intention of Council to review the status of the Waverley Water System. Notwithstanding Policy P-9, Council may consider permitting additional service connections within the Waverley Water Service Boundary and/or the expansion of the Water Service Boundary.
- P-11 With regard to policy P-10, it shall be the intention of Council to only consider, by plan amendment, expansions of the Waverley Water Service Boundary into areas which are capable of being serviced by gravity flows from the existing reservoir or which do not require the construction of additional pumping stations. Furthermore, when considering any proposal to extend the Waverley Water Service Boundary, it shall be the intention of Council to consider:
- (a) the financial ability of the Municipality to absorb any costs relating to the extension;
 - (b) the amount of vacant developable land which remains within the Water Service Boundary;
 - (c) the type, and density of existing and proposed land uses to be served;
 - (d) existing potable water contamination problems in the area under consideration; and
 - (e) the capacity of the soils to absorb domestic sewage effluent in the area under consideration.