

CHAPTER 3.0
MOFFAT CREEK FRAMEWORK

3.0 MOFFAT CREEK POLICY FRAMEWORK

3.1 INTRODUCTION

Lands within the Moffat Creek Watershed are expected to experience growth pressures both within the existing urban boundary of the City of Cambridge and in the adjoining portion of the Township of North Dumfries. Growth and activity in the Watershed is governed by Federal, Provincial, and Municipal legislation and policies. The legislation and policies which applied to this Watershed study at the time most of the report was being written (April, 1995 through January, 1996) are listed in Table 3.1. These are the documents to which this report has been written.

3.2 FEDERAL LEGISLATION AND POLICIES

Generally, Federal Policies and Legislation guide development of the more specific and detailed Provincial and Municipal legislation and policies. The *Federal Policy for the Management of Fish Habitat* (DFO, 1986) is of importance in the Moffat Creek Watershed where there is a warm water fishery. This policy states that there must be "no net loss of habitat". The policy has been supported Provincially by *Fish Habitat Protection Guidelines for Developing Areas* (MNR, 1994).

3.3 PROVINCIAL LEGISLATION, POLICIES AND GUIDELINES

3.3.1 Introduction

The Environmental Assessment Act and/or the new Planning Act govern most development within the Province. The Environmental Assessment Act requires that particular aspects of the environment be considered when a major public undertaking is proposed. This Act requires that alternatives to the undertaking be considered and then alternative locations for the undertaking be evaluated. In the Moffat Creek studies, the Environmental Assessment Act will apply when Creek crossings, road upgrades and sewer lines, including extension of existing sanitary sewers to this area, are proposed. In each instance, a Class Environmental Assessment must be completed.

The new *Planning Act* is the Provincial legislation which most pertains to the Moffat Creek studies. The requirements of this Act have been outlined in the *Comprehensive Set of Policy Statements*. An introduction to this legislation follows in section 3.3.2. The sections of the Act which govern this Watershed study are described in more detail in the following sections:

- 3.3.3 Natural Heritage Policy;
- 3.3.4 Wetland Policy;

**TABLE 3.1
POLICIES AND GUIDELINES PERTAINING TO MOFFAT CREEK**

POLICIES AND GUIDELINES
<i>FEDERAL</i>
<ul style="list-style-type: none"> • Department of Fisheries and Oceans, 1986. Policy for the Management of Fish Habitat.
<i>PROVINCIAL</i>
<ul style="list-style-type: none"> • Commission on Planning and Development Reform, 1994. The Planning and Municipal Statute Law Amendment. • Grand River Conservation Authority, 1990. Guidelines on Erosion and Sediment Control for Construction Sites. • Ministry of Environment and Energy, 1994. Stormwater Quality and Best Management Practices Planning and Design Manual • Ministry of Municipal Affairs, 1995. Comprehensive Set of Policy Statements. • Ministry of Municipal Affairs, 1995. Comprehensive Policy Statements: Implementation Guidelines, First Edition. • Ministry of Natural Resources, 1989. Technical Guidelines - Erosion and Sediment Control. • Ministry of Natural Resources, 1994. Fish Habitat Protection Guidelines for Developing Areas. • Ministry of Natural Resources and Ministry of Municipal Affairs, 1992. Manual of Implementation Guidelines for the Wetlands Policy Statement. • Ontario Regulation 149 as amended by 69/93 and 669/94 Sections 3 and 4 Fill, Construction and Alterations to Waterways Regulations
<i>MUNICIPAL</i>
<ul style="list-style-type: none"> • City of Cambridge, 1989. Official Plan City of Cambridge. • City of Cambridge, 1990. Official Plan Amendment, Number 46. • City of Cambridge, 1992. Official Plan Amendment, Number 63. • City of Cambridge, 1994. Official Plan Amendment, Number 72. • City of Cambridge, 1995. Official Plan Amendment, Number 74. • Township of North Dumfries, 1989. Official Plan. • Township of North Dumfries, n.d. Official Plan Amendment Number 11. • Regional Municipality of Waterloo, n.d. Official Plan Amendment Number 7. • Regional Municipality of Waterloo, 1986. Guidelines for the Preparation Environmental Impact Statements for Environmentally Sensitive Policy Areas. • Regional Municipality of Waterloo, 1991. Guidelines for Hydrogeological Studies for Privately Serviced Developments. • Regional Municipality of Waterloo, 1994. Regional Official Policies Plan (R.O.P.P.).

- 3.3.5 Non-Developable Lands; and
- 3.3.6 Environmental Impact Statements.

Numerous Guidelines have been prepared or released by various Provincial Ministries which guide planning in the Province of Ontario. For example, the *Water Quality Guidelines* (MOEE, 1994) provide acceptability limits of various chemicals in water. These Guidelines have been considered in this report.

3.3.2 Comprehensive Set of Policy Statements (Planning Act)

On March 28, 1995 the new Planning Act came into effect with the passing of Bill 163 in the Ontario Provincial Legislature. This Bill is "An Act to revise the *Ontario Planning and Development Act* and the *Municipal Conflict of Interest Act*, to amend the Planning Act and the Municipal Act, and to amend other statutes related to planning and municipal matters". This Bill included amendments to fourteen other Acts, including such Acts as Aggregate Resources, Development Charges, and Environmental Protection. This bill was not intended to be applied retroactively to projects which were in process at the time the Bill was passed. Therefore, development applications made prior to March 28, 1995 will be processed under the legislation applicable at the time the application was submitted. All applications submitted to an approval authority after March 28, 1995, "shall be consistent with" the new *Comprehensive Set of Policy Statements*.

As a result of Bill 163, a *Comprehensive Set of Provincial Policy Statements* was released by the Minister of Municipal Affairs. This document was issued under Section 3 of The Planning Act and came into effect March 28, 1995. It replaced four policy statements as follows:

- Mineral Aggregate Resources;
- Flood Plain Planning;
- Wetlands; and
- Land Use Planning for Housing.

This new Planning Act also incorporates portions of the Ontario Ministry of Agriculture and Food and Rural Affairs' *Food Land Guidelines* (1979) as Policy D - Agricultural Land Policies. The Comprehensive Set of Policy Statements contains Goals associated with the following Policies:

- A Natural Heritage, Environmental Protection, and Hazard Policies;
- B Economic, Community Development, and Infrastructure Policies;
- C Housing Policies;
- D Agricultural Land Policies;

- E Conservation Policies; and
- F Mineral Aggregate, Mineral and Petroleum Resource Policies.

Policy A contains specific goals which guide this Moffat Creek Watershed Plan and Comprehensive Environmental Impact Statement. These goals and their implications will be further discussed in Section 3.3.3- Natural Heritage policies, Section 3.3.4- Wetlands Policy, Section 3.3.5-Non-Developable Lands, and Section 3.3.6- Environmental Impact Statements.

3.3.3 Natural Heritage Policy

The Natural Heritage Policy (MMA, 1995) is defined by the first goal of Policy A of the *Comprehensive Set of Policy Statements*. This goal is “to protect the quality and integrity of ecosystems, including air, water, land and biota; and where quality and integrity have been diminished, to encourage restoration or remediation to healthy conditions”. This goal is further defined by four subsections or policies:

Policy A1.1 states that “Development_{1, 2, 3, 4} may be permitted only if the quantity and quality of groundwater and surface water are protected.”

Policy A1.2 states that “Natural features or the ecological functions for which the area is identified” will be protected.

Policy A1.3 states that “Development₂ may be permitted if it does not harmfully alter, disrupt or destroy fish habitat”.

Policy A1.4 states that: "In decisions regarding development₂, every reasonable opportunity should be taken to: maintain the quality of air, land, water, and biota; maintain biodiversity compatible with indigenous natural systems; and protect natural links and corridors. The improvement and enhancement of these features and systems is encouraged”.

In the *Comprehensive Set of Policy Statements* the term “Development” has been defined in four different ways. The specific definition used in the Policies has been identified through the use of a subscript number. The same subscript has been used in this report and definitions of each of the four types of development have been provided in the glossary at the end of this report.

The natural heritage features and ecological functions of the Moffat Creek Watershed have been identified in Chapter 4 and potential impacts are assessed in Chapter 5 of this study. A Natural Heritage strategy is outlined in Chapter 6. As required by the above policies, this Watershed Study will identify the location and extent of areas

where no development will be permitted and will include strategies to reduce or minimize impact to natural features and ecological functions.

The policy requires that all natural heritage features and areas be identified and mapped. These features and areas include the following:

- Significant ravine, valley river and stream corridors;
- Significant portions of the habitat of endangered, threatened and vulnerable species;
- Significant woodlands;
- Areas of natural and scientific interest;
- Shorelines of lakes, rivers and streams;
- Significant wildlife habitat; and
- Significant natural corridors.

Each of these features and areas will then be classified into one of two categories as follows:

- Category 1 - where no development is permitted; and
- Category 2 - where development may be permitted, subject to an Environmental Impact Study (EIS), only if it does not negatively impact the features or ecological functions for which the area is identified.

Unconstrained lands, those lands not identified as either category 1 or 2, may be developed. Category 1 lands are to be zoned specifically for no development. Much of the Category 2 land will include land adjacent to significant features or areas. Within these category 2 lands, it will be necessary to complete an EIS in order to determine the function of the lands adjacent to the significant feature or area and the areal extent of that function. The results of this EIS could reduce the size of adjacent lands (Category 2) by recommending appropriate buffer areas.

The following Watershed Management Plan will also fulfill the requirements of a Comprehensive Environmental Impact Statement as required by Goal A.2 (to ensure that wetlands are identified and adequately protected through the land use planning process and to achieve no loss of provincially significant wetlands) of the Comprehensive Set of Policy Statements.

3.3.4 Wetland Policy

The Moffat Creek Provincially Significant wetland complex was previously identified by the Ontario Ministry of Natural Resources. Therefore, the above Policy and subsections are applicable to this study. This wetland complex is a relatively large core area of land which generally surrounds Moffat Creek, occupying its wide, flat

flood plain. Some additional provincially significant wetlands beyond the flood plain have also been identified as part of the complex because they drain to Moffat Creek. These wetlands and others have been mapped and described in Chapter 4.

The Comprehensive Set of Policy Statements Wetland Policy Goal A.2 is as follows:

“To ensure that wetlands are identified and adequately protected through the land use planning process and to achieve no loss of provincially significant wetlands.”

This Goal is further defined by seven subsections or policies.

Policy A2.1 states that “All planning jurisdictions ... shall protect provincially significant wetlands where they have been identified”.

Policy A2.2 states that: “All planning jurisdictions ... are encouraged to protect other wetlands”.

Policy A2.3 states that: “In the Great Lakes-St. Lawrence Region development₂ shall not be permitted within provincially significant wetlands”.

Policy A2.4 states that: “On adjacent lands, development₂ may be permitted only if it does not result in any of the following:

- a) Loss of wetland functions;
- b) Subsequent demand for future development₂ which will negatively impact on existing wetland functions;
- c) Conflict with existing site-specific wetland management practices; and,
- d) Loss of contiguous wetland area.

This shall be demonstrated by an Environmental Impact Study (E.I.S.), prepared in accordance with established procedures, and carried out by a proponent addressing a) to d) inclusive”

Policy A2.5 states that: “In the Boreal Region ... development₂ may be permitted”.

Policy A2.6 states that: “On adjacent lands, established agricultural activities are permitted without an EIS”.

Policy A2.7 states that: “New utilities/facilities shall be located outside provincially significant wetlands wherever possible.”

The following report is consistent with these policies. In particular, Policy A2.4 requires the preparation of an EIS. As a result of this policy and others, the following watershed plan also fulfills the requirements of a comprehensive EIS. The requirements of an EIS are identified in Section 3.3.6 of this Watershed Plan.

3.3.5 Non-Developable Lands

Both Goals A.1 and A.2 refer to lands where development will not be permitted. Non-development provides the maximum opportunity for protection and enhancement of natural environmental features and functions. These lands have been referred to as non-developable or category 1 (as per the Policy) lands. The Policies are specific about some of these non-developable lands in that they name identified Provincially Significant Wetlands as non-developable. In other instances, the Policies are less specific and require the completion of an EIS to determine the existence of and boundaries for non-developable lands.

Non-developable lands are characteristic areas performing functions such as protection of water quality and the provision of specialized wildlife habitat. For these reasons, these lands should be protected from land use impacts which would degrade their quality or impair their function. Areas of non-developable lands in the Moffat Creek Watershed include the following:

- Provincially Significant Wetlands;
- Areas exhibiting characteristics consistent with the criteria (R.O.P.P., 1995) identifying ESPA's;
- Lands identified as regulatory flood plain, (G.R.C.A., Fill Construction and Alteration To Waterways, 1993);
- Areas meeting criteria similar to ESPA criteria (R.O.P.P., 1995). These areas are associated with continuous natural vegetation which provides plant and wildlife habitat, allows for the movement of seeds and animals through the watershed, improves the air quality and climate of the watershed and make the area more pleasant to live in.
- The "riparian setback on stream corridor system" which may serve to protect and enhance water quality, fish habitat, and stream bank stability by reducing erosion, filtering surface water and providing shade which may moderate water temperature;
- Buffers around significant features and areas where it has been determined that development would negatively impact or cause a loss of environmental functions; and
- Primary Linkage and Support Areas: areas of reforestation, hedgerows, old fields and disturbed or degraded habitats, adjacent to ESPAs and core areas.

3.3.6 Environmental Impact Statements

Environmental impact statements are a requirement of Goal A.1 - Natural Heritage and Goal A.2 - Wetlands.

Environmental impact statement (EIS) for the purposes of:

- Policy A.1.2 means a study prepared in keeping with established procedures, to identify and assess the impacts of developments_{1,2} on a specified feature or system; and
- Policies in Goal A.2, means a study prepared in accordance with established procedures, to identify and assess the impacts of development₂ on provincially significant wetlands.

As outlined in Section G of the Comprehensive Policy Statements, an EIS shall include:

- a) A description of the existing natural environment that will be affected or that might reasonably be expected to be affected, either directly or indirectly;
- b) The environmental effects that might reasonably be expected to occur;
- c) Alternative methods and measures for mitigation of potential environmental effects of the proposed development_{1,2}; and
- d) A monitoring plan to measure the potential effects on the environment.

The Comprehensive Set of Policy Statements defines three types of Environmental Impact Statements:

1. Comprehensive Environmental Impact Statement
2. Site Environmental Impact Statement
 - 2(a). Full Site Environmental Impact Statement
 - 2(b). Scoped Site Environmental Impact Statement

Comprehensive EIS's are prepared as part of background studies in the development of official, secondary or special area plans or plans for particular natural heritage features or areas. It is a tool for planning at a broad landscape level. A Comprehensive EIS includes mapping the extent of areas where no development will be permitted. Therefore, the Moffat Creek Watershed Plan will incorporate the elements of a Comprehensive EIS.

According to Policy, Comprehensive EIS Statements may reduce further requirements for Site EIS's which are undertaken by proponents of site-specific development proposals. Site EIS's require that the proponent of development conduct a "sufficiently careful analysis of the environmental effects of development". A

Comprehensive EIS makes use of existing information (it could include some field study) and provides results in an overview form where mapping would be completed at a scale such as 1:50,000.

The *Comprehensive Set of Policy Statements* define two types of Site EIS's. Full Site EIS's require that site specific detail be provided "to establish that the development proposal does not negatively impact the features or ecological functions of the area". Both Full Site and Scoped EIS's include field studies. Mapping for Full Site EIS's should provide detail at approximately the 1:10,000 to 1:5,000 scale and Scoped EIS mapping could be at the detailed scale of 1:2,000.

Scoped EIS's are carried out where "proposed developments are expected to result in minimal or no environmental impacts". Scoped EIS's are often a requirement within an area where a Comprehensive EIS has previously mapped areas of no development and defined buffers and other mitigation measures. If the Comprehensive EIS is not in place, then a Full Site EIS may be required.

Within the Moffat Creek Watershed, two types of EIS's have been anticipated. The first, a Comprehensive EIS will be completed in the following report. The second type, which relates to specific developments, will be completed during the planning stages of those developments.

3.3.7 Grand River Conservation Authority Policies

The Grand River Conservation Authority has policies which apply to Moffat Creek as follows:

- D) Sections 3 and 4 - Fill, Construction and Alterations to Waterways Regulations (Ontario Regulation 149 as amended by 69/93 and 669/94). Under this regulation permission is required from the GRCA to:
- Construct a structure in a flood plain, pond or swamp;
 - Place fill on flood plains, wetlands or steep slope areas designated in the Schedules in the Regulation; or
 - Alter a watercourse.

A request for permission must be completed in writing by filling out an Application (Schedule A). This application must be accompanied by a fee which ranges from \$100 to more than \$1,200 depending on the nature of the fill, construction or alteration.

Permits would be required for alterations within Moffat Creek wetlands, flood plain or ponds. These regulations are not directly applicable to this Watershed

Plan but will need to be considered during the development process which follows approval of this Plan.

- II) Guidelines on Erosion and Sediment Control for Construction Sites (GRCA, 1990).

These guidelines will be considered by all future development within the Moffat Creek Watershed to reduce the impacts of erosion and sedimentation during construction.

3.4 MUNICIPAL LEGISLATION AND POLICIES

3.4.1 Introduction

The Moffat Creek Watershed lies within the Regional Municipality of Waterloo and is therefore, subject to the Planning Policies which have been approved by this Region. These Policies are outlined in Section 3.4.2.

The Watershed is also within the Municipal boundaries of the City of Cambridge and the Township of North Dumfries. Both these municipalities have Official Plans which contain policies pertaining to this Study. These policies are discussed in Sections 3.4.3 and 3.4.4 respectively.

3.4.2 Regional Official Policies Plan

The Regional Official Policies Plan (R.O.P.P.) is the Official Plan for the Regional Municipality of Waterloo. The R.O.P.P. was adopted by Regional Council in May, 1995 and since that time, modifications have been made to make it consistent with the *Comprehensive Set of Policy Statements*. The R.O.P.P. provides the policy framework within which municipal (City and Township) plans designate land use. This Official Plan is expected to be approved under the new Planning Act.

Section B of the R.O.P.P. contains the policies which are most applicable to the Moffat Creek Watershed Study. In this Section titled "Environmental Stewardship" there are four Chapters:

- Environmental Planning;
- Natural Habitat Network;
- Natural Resources; and
- Heritage Conservation.

Environmental Planning

One of the four principles outlined in this Chapter of the R.O.P.P. identifies “watershed planning” as an “effective tool for establishing policies in advance of urban development to protect the environmental features and functions of a watershed”.

A second principle requires that “environmental standards for development be established not only to prevent or minimize negative environmental impacts, but also where feasible, to enhance environmental features and functions”.

The policies of watershed planning which are guided by these principles are outlined in Section 3.1 of the R.O.P.P.. Policy 3.1.2 requires completion of a watershed study where it has been agreed by the interested parties that the completion of this watershed study is a prerequisite to further development approvals in the watershed. The developers and agencies involved in the Moffat Creek Watershed have agreed that this Watershed Study is a prerequisite to further development approvals.

Policy 3.1.3 directs watershed studies to address the Comprehensive Set of Policy Statements, and where feasible, to fulfil Environmental Assessment and Comprehensive EIS requirements for major infrastructure and Provincially Significant Wetlands respectively. This study addresses the Policy Statements and the Comprehensive EIS requirements, but it does not undertake an Environmental Assessment.

The focus of Regional interests and the manner in which they will be reflected in planning approvals is set out in Policies 3.1.4 and 3.1.5 respectively.

Policy 3.1.4 states that Regional participation in watershed studies will focus upon the preparation of recommendations relating to:

- a) Protection and management of the quantity and quality of groundwater resources;
- b) Surface water quality with reference to Regional water taking requirements and the capability of receiving streams to assimilate effluent from waste water treatment plants;
- c) Protection and management of Environmentally Sensitive Policy Areas; and
- d) The implications of development opportunities on the provision of Regional infrastructure.

Policy 3.1.5 states that portions of watershed studies that deal specifically with Regional interests identified in Policy 3.1.4 will be approved by the Region prior to the approval or acceptance of any amendment to Area Municipal Official Plans or

Area Municipal Implementation Plans that implement the recommendations of the studies. Staff from the Region of Waterloo are on the Steering Committee for this study and have provided input relative to Regional interests.

Policy 3.2.1 requires the preparation of Environmental Impact Statements (EIS) relative to elements of the Natural Heritage Network. The Region will require EIS's for development applications potentially affecting Environmental Protection Areas, ESPA's or Regionally Significant Natural Corridors which may be identified in the watershed. EIS respecting Provincially Significant Wetlands must be prepared in accord with Provincial Policy and submitted to the Ministry of Natural Resources for their review in consultation with the Region and the affected Area Municipality. The general requirements in terms of the need for, and the scope and content of EIS's is addressed in Policies 3.2.2 - 3.2.12. This Watershed Plan and Comprehensive EIS follows these requirements.

Natural Habitat Network

Five principles have been identified in the R.O.P.P. relative to the natural habitat network. These principles, which are all applicable to the Moffat Creek Watershed study, are as follows:

- "Significant natural areas are highly valued and considered irreplaceable."
- "Interconnections among significant natural areas should be recognized, maintained, and enhanced to prevent further fragmentation and degradation of the ecological integrity of the landscape."
- "Development within flood plains and watercourses must be regulated to minimize hazards to life and property, and reduce impacts on surface water quality."
- "Development should be viewed as an opportunity for enhancement of the natural features and functions of the Natural Habitat Network."
- "Government agencies, the private sector, and the community need to work co-operatively to conserve and enhance the natural features and functions of the Natural Habitat Network."

Environmentally Sensitive Policy Areas (ESPA's) have been listed (Table 4.2) and mapped (R.O.P.P., Map 1). Policies associated with ESPA's are outlined in section 4.3 of the R.O.P.P.. The Regional Official Policy Plan not only mandates the protection of existing identified ESPA's but also provides the criteria which would qualify an area for designation as an ESPA.

Although there are no ESPA's located within the Moffat Creek Watershed, ESPA # 68 (Oliver's Pond and Bog) is located near the southern boundary of the Watershed. Section 4.3.4 of the R.O.P.P. recognizes that candidate sites for ESPA

designation may be identified through watershed studies. To qualify for designation, such areas must fulfil criteria listed in policy 4.3.2. Major Natural Heritage Areas identified in this study will be evaluated in terms of these criteria.

Section 4.5 of the R.O.P.P. restricts development within flood plain areas. The Region has adopted a "One Zone Policy" (4.5.3) for flood plain management unless otherwise designated in the Area Municipal Official Plans.

Section 4.4 of the R.O.P.P. outlines the policies affecting Provincially Significant Wetlands. The responsibility for the identification and evaluation of the wetlands rests with the Ministry of Natural Resources. The policy requires that wetland EIS's be coordinated with other environmental studies (4.4). The R.O.P.P. requires that area municipalities recognize these Wetlands in their Official Plans through mapping and policies. The implementation of these policies to prohibit development within provincially significant wetlands would be directed through zoning by-laws or development controls. Environmental Assessments for public infrastructure projects affecting Provincially Significant Wetlands will be reviewed by the Region (Policies 4.4.8 and 4.4.9).

Policy 4.4.5 states that development on lands adjacent to Provincially Significant Wetlands "be permitted ... where it is demonstrated by an Environmental Impact Statement ... that the development application would not result in a loss of wetland function, create subsequent demand for future development which would negatively impact existing wetland functions, conflict with existing site-specific wetland management practices, or result in the loss of contiguous wetland areas."

Section 4.1.8 of the R.O.P.P. considers significant woodlands as elements of a Natural Habitat Network and sets out a process for addressing the identification and protection of significant woodlands. Policy 4.1.11 stipulates that where potential elements of the Natural Habitat Network have not yet been evaluated, the applicant will prepare a Natural Habitat Inventory prior to submission of a development application.

The Moffat Creek Watershed Study endeavours to provide this inventory through the application of the ESPA evaluation criteria in Policy 4.3.2. The results, for this Watershed, are presented on Table 6.2. The Region will consider whether the areas thus evaluated qualify for designation as ESPAs through an amendment to the R.O.P.P..

Natural Resources

Six principles pertaining to the conservation of natural resources, preservation of prime agricultural lands, development in rural areas, provision of sustainable potable

water supplies, aggregate resource extraction and the preservation and enhancement of woodlands have been identified in the R.O.P.P. and are consistent with the Province's Comprehensive Set of Policy Statements.

Agricultural resource area policies listed in Section 5.1 of the R.O.P.P., state that the primary activities in "Agricultural Resource Areas" will be "farming, mineral aggregate extraction and forestry". As shown on Map 3 of the Official Plan, most of the Watershed which is located within the Township of North Dumfries has been designated as a "Non-Prime Agricultural Resource Area".

Section 5.2 of the R.O.P.P. sets out water resource policies. The Moffat Creek Watershed is not within a Sensitive Groundwater Area as designated on Map 4. This watershed study, however, will address the "protection and management of the quantity and quality of groundwater resources" as required by Policy 3.1.4.

Heritage Conservation

Two of the three heritage conservation principles pertain to the Moffat Creek Watershed study. These principles require that a region-wide inventory of heritage resources be maintained and that a high priority be given to the protection of heritage resources in their surrounding context and that the effects of development be minimized.

Heritage resources, which have been identified by area municipalities, located within the Moffat Creek Watershed have been mapped in Chapter 4 so that they may be included in future plans as features to be preserved.

Regional Settlement Patterns

Regional Settlement Patterns (R.O.P.P., Chapter 7, Map 6) designate the portion of the Moffat Creek Watershed within the City of Cambridge as City Urban Area. As a result, these lands have the potential for urbanization before the year 2016. The R.O.P.P. also recognizes two existing rural settlement areas within the North Dumfries section of the Moffat Creek Watershed. The Mackie and Clyde settlements are located along Clyde Road at the intersections of Shellard Road and the Clyde Side Road respectively.

Beverly Amendment

The Beverly Area of North Dumfries Township is the subject of a special policy (5.1.4.2) which permits the creation of new non-farm-related residential lots in some circumstances. This policy initiative was supported by a hydrogeological study (DRASTIC) of the area. The part of the Watershed falling within the Beverly area

was found to have a relatively low susceptibility to groundwater contamination. Therefore, the Region's usual hydrogeological requirements pertain, as set out in the *Guidelines for Hydrogeological Studies for Privately Serviced Developments*. Under this guideline, developments of fewer than five lots are normally exempt from detailed hydrogeological studies. Map 3.1 shows the Beverly Amendment areas relative to the Moffat Creek Watershed boundary.

3.4.3 City of Cambridge Official Plan

The City of Cambridge Official Plan was adopted on July 19, 1982 and consolidated April 1989 after approval and modifications by the Regional Municipality of Waterloo. The City is currently undertaking a comprehensive review of its Official Plan which is scheduled for completion in 1996.

The City of Cambridge Official Plan designations have been presented on Map 2.3 in Chapter 2 of this Watershed Plan. Within the Watershed, the lands north of Moffat Creek and east of Highway 8 are designated Class 2 Industrial, Class 3 Neighbourhood Commercial, Class 2 Major Recreation Open Space and Foodland. Other lands in the Watershed are designated Class 1 (Urban) Residential with the exception of a small area north of Main Street adjacent to the city boundary which is designated Class 2 (Suburban) Residential. Lands along Moffat Creek have been designated as Class 1 Open Space. Several Official Plan amendments also affect land designations within the Watershed.

Amendment 63, adopted by City Council but not yet approved, redesignates the land between Moffat Creek and Main Street as Class 1 (Urban) Residential. The auto wrecker's yard south of Main Street abutting the Cambridge City Limits is also designated Class 2 Industrial. Within the Watershed, lands along Moffat Creek have been designated as Class 1 Open Space. Official Plan Amendment 72 redesignates 16.6 ha (41 acres) of land south of Myers Road and east of Highway 24 from Class 2 Industrial to Class 1 Residential (holding). "Holding residential" means that the residential development may occur only after services have been installed. Official Plan amendment 74 would redesignate approximately 18 ha (44 acres) of land along Main Street east of Franklin Boulevard from Class 2 Industrial to Class 1 Residential and a small parcel of land on the north side of Moffat Creek on Dundas Street from Class 2 Industrial to Class 1 Open Space.

A number of Policies in the City of Cambridge Official Plan affect this Watershed Study. Most of these policies are located in Sections 2.5 - Heritage Conservation and Section 2.6 - Environmental Protection and Safety.

Heritage Conservation

Policy 2.5 encourages the conservation of the City's heritage resources. This Policy is consistent with the Ontario Heritage Act. Buildings and sites of potential heritage significance have been identified by the City and are shown on Map 4.13 in Chapter 4 of this report.

Environmental Protection and Safety

The City of Cambridge Official Plan Policies related to Environmental Protection and Safety are outlined in Section 2.6 of the Official Plan. Section 2.6.1 designates river and creek valleys as Class 1 open space ecological corridors. The purpose of this policy is to facilitate and encourage the survival of wildlife and protect its habitat, conserve the City's remaining natural resources, protect natural water retention and recharge areas and reduce potential hazards to life and property. Other land uses may be permitted in these areas where council has investigated the acceptability of such alternative development or use of such lands if the lands:

- Are not hazard lands, or an environmentally sensitive policy area;
- Are not subject to GRCA regulations (fill, construction or alteration of a waterway);
- Do not require services where the cost is not warranted, do not lie lower than the regional flood line; and
- Given that the proponent has submitted development plans which the Council, MNR and GRCA have approved.

Where a development proposal may encroach on ESPA lands, Official Plan Section 2.6.2.1 requires that an EIS be completed and Section 2.6.2.2 outlines the provisions under which the EIS will be completed.

Policy Section 2.6.3 makes reference to Woodlot Conservation and, in particular, encourages the conservation of prime woodlots. Policy subsection 2.6.3.1 requires the conservation of all land designated Class 1 Open Space. Therefore, the Class 1 Open Space lands within the Moffat Creek Watershed have been designated for conservation in the City's Official Plan.

Section 2.6.3.2 states that where lands (not defined as Class 1 Open Space) containing a woodlot are proposed for residential development the subdivider must prepare a tree saving plan. This plan must be satisfactory to the City forester for the approval of council. Council may require that the approved tree saving plan be registered on the title of each lot.

Policy 2.6.4 has been adopted to protect existing street trees wherever possible, and to provide for the replacement of street trees which have been removed. Under this policy the City may prepare and adopt plans and programs to encourage or facilitate the development and maintenance of an effective street tree system for the City.

Stormwater Management Practices, within the Moffat Creek Watershed, are governed by Policies in Section 2.6.5 which require effective storm water management for the control of flooding, erosion and sedimentation in the Grand River, Speed River and their tributaries. This section also regulates development or redevelopment of lands lying lower than the Regulatory Floodline as determined by the GRCA. Other specific stormwater management policies and guidelines are set out in The City of Cambridge *Stormwater Management Policies and Guidelines* document, 1994. These Policies and Guidelines have been considered in this Watershed Study and will need to be further considered in the Storm Water and Drainage Studies which are required for Draft Plan approval.

Policy 2.6.6, Flood Plain Management, deals with Special Policy Areas and Flood Plains Outside the City Centre. These Special Policy Areas are not within the Moffat Creek Watershed. The policy pertaining to Flood Plains outside the City Centre applies to the lands within the Moffat Creek Watershed and addresses those lands which have been mapped by the GRCA as being within the regulatory floodline. The Policy requires the conservation of these lands.

3.4.4 Township of North Dumfries Official Plan

The Township of North Dumfries Official Plan places Moffat Creek and its associated wetlands within a Restricted Land Use designation. Section 13.3 of the Official Plan acknowledges the ESPA's as protected areas and states that development adjacent to these areas may be permitted only after evaluation by an EIS. One Environmentally Sensitive Policy Area # 68 located south of the Moffat Creek Watershed has been identified (Map 4.10)

The Township of North Dumfries Official Policy Plan Policy 8.1.10 pertains to Woodlot Preservation. This policy states that the "Township will promote and encourage forestry" and will "encourage the proper utilization and management of woodlots".

Section 13.2.5 requires the Township to protect identified major groundwater aquifers and surface recharge areas from developments which would jeopardize the future usefulness of these areas of water sources". The hydrogeological study in this Watershed report considered groundwater aquifers and recharge areas.

Section 11 "Sand and Gravel" of the Plan addresses aggregate resources. However, the Watershed does not exhibit any significant aggregate resources.

Beverly Amendment

The Township of North Dumfries Beverly Amendment No. 11 Section 13.5 titled "Wetlands" states that:

"It is the intent of the Council of the Corporation of the Township of North Dumfries to implement the Provincial Wetlands Policy Statement"

The Township has adopted definitions, categories, and requirements from the Provincial Wetlands Policy for the preparation of an EIS. These requirements and definitions have been set out in Section 13 of the Amendment. In addition, the Township has stated in Section 13.5.12 that they may use any one of or all of ten documents listed ranging from Official Plan Policies to the Environmental Protection Act to protect and preserve Wetland Areas. Provincially Significant Wetlands in the Moffat Creek Watershed are recommended as non-developable or conservation areas.

Through this amendment, the Township is also permitting the creation of non-farm residential lots in the Beverly area of the Township. It is estimated that the criteria for lot creation would, ultimately, permit 150-200 new lots to be created. Of this potential, 30 to 35 fall within the Moffat Creek Watershed (Planning and Culture Dept., Regional Municipality of Waterloo).

3.5 WATERSHED PLAN GOALS AND OBJECTIVES

Because the Watershed Plan crosses temporal and spatial boundaries of property ownership and responsibility, the developer cannot be made responsible for an existing owner's land use decisions or for education and other forms of encouragement within the community. A number of programs are and have been the responsibility of government and, because of factors of time and space, need to continue to be the responsibility of government. As well, given the time line for development within the Watershed, policy will evolve. The responsibility for changing behaviour, if it is necessary, must rest with those modifying the Policy.

The Legislation and Policies described previously have been used to identify goals and objectives associated with the Watershed Plan.

Seven goals are identified for the Moffat Creek Watershed. These goals will be elaborated through associated objectives, which in turn will be achieved by

implementing specific policies and best management practices (B.M.P.'s). Performance targets will be recommended for compliance and monitoring.

The purpose of the Watershed Plan is:

- To promote an ecosystem approach to environmental planning in the watershed;
- To foster early integration of environmental and ecosystem considerations in the preparation of plans;
- To assist municipal and government agencies, consultants and the development industry to understand the needs of the watershed; and
- To enhance the efficiency and effectiveness of the land use plan preparation and review process.

The Goals of the Moffat Creek Watershed Plan are:

GOAL 1:

To minimize the threat to life and the destruction of property and natural resources from flooding and to preserve or reestablish natural flood plain hydrologic functions.

Objective 1.1:

To control runoff from rural, developing, and urban areas without increasing the frequency or severity of flooding, thus minimizing risks to life and property.

Objective 1.2:

To adopt land use controls and performance standards as appropriate and to protect the integrity of flood plains.

GOAL 2:

To minimize the destruction of property and natural resources from erosion and to preserve or reestablish natural flood plain hydrologic functions.

Objective 2.1:

To control runoff from rural, developing, and urban areas thus minimizing risks to life and property and to control erosion of soils from developing areas to minimize sedimentation in Moffat Creek.

Objective 2.2:

To adopt land use controls and performance standards as appropriate and to protect the integrity of the Creek.

GOAL 3:

To restore, enhance and protect the surface water quality and associated aquatic resources and water supplies so that the Watershed objectives for fish and wildlife, recreation, and aesthetics can be met. To restore, protect, and enhance the fisheries potential of Moffat Creek.

Objective 3.1:

To minimize erosion and prevent sedimentation of waterways.

Objective 3.2:

To control stream bed and stream bank erosion which is not the result of the natural stream process.

Objective 3.3:

To maintain or enhance fishery habitat.

Objective 3.4:

To prevent further pollution and contamination of the Creek and to restore and enhance water quality.

GOAL 4:

To protect, restore, and enhance groundwater quantity and quality and to identify and maintain the function of groundwater recharge areas.

Objective 4.1:

To protect water quality.

Objective 4.2:

To implement land use controls where there is potential impact on groundwater quality/quantity.

Objective 4.3:

To practice storm water recharge of aquifers where appropriate.

Objective 4.4:

To minimize the impact of point-source pollution within the watershed.

GOAL 5:

To conserve, restore, and enhance the natural areas resources of the Watershed and to enhance the potential for wildlife and birds.

Objective 5.1:

Maintain essential ecological processes and genetic diversity.

Objective 5.2:

To achieve an environmental continuity of open green space linkages extending into urban and rural areas along the water course and into adjacent areas.

Objective 5.3:

To ensure that environmentally sensitive areas, wetlands and woodlots are protected from the adverse impacts of development.

Objective 5.4:

To establish an effective monitoring system for long term maintenance of the Natural Heritage System.

GOAL 6:

To restore, protect, develop, and enhance the cultural, natural, recreational and visual amenities of rural and urban stream corridors.

Objective 6.1:

To ensure that environmental concerns and constraints are fully considered and decisions made are consistent with the needs of the Moffat Creek ecosystem approach to planning.

Objective 6.2:

To ensure that the recreational, aesthetic qualities and visual amenities of the creek corridor are considered and developed in a manner which is integrated with and complementary to the aesthetic, cultural, natural and recreational resolve of the surrounding urban and rural communities.

GOAL 7:

To minimize the long-term public operating and maintenance costs.

Objective 7.1:

To ensure that the recommendations of the Watershed Plan consider the long-term public operating and maintenance costs.