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A 1.0 INTRODUCTION

A 1.1 Background

The Hespeler West subwatersheds lie in the northern sector of the City of Cambridge and comprises the lands drained by East, Middle and West Creeks. The total area of the subwatersheds is approximately 990 ha including areas draining directly to the Speed River. The area is generally bounded by the Speed River to the south, Fountain Street to the west, Regional Road #24 to the east and Kossuth Road to the north (see [Figure A 1.1.1](#)). The area north of the Speed River, north and east of the Toyota Motor Manufacturing Canada plant and west of Hespeler Road (Regional Road #24) is designated for a mixture of industrial, suburban residential, agricultural and open space land uses. Generally lands south of Maple Grove Road (Regional Road #38), and land along Fountain Street (Regional Road #17) are within the City's Urban Boundary. Section A 2.2 provides a more detailed description.

Development pressure in the subwatersheds necessitated the preparation of a Subwatershed Study in order to comply with provincial, regional and municipal planning documents and to ensure that development would proceed in an environmentally sustainable manner.

To aid in proper referencing to the various streams and ponds, which are referred to throughout the document, reference should be made to [Figure A 1.1.2](#), Watershed Streams and Ponds.

A 1.2 Goal

The goal of the Hespeler West Subwatersheds Study, as per the Study Terms of Reference (**Appendix A**), is to protect, maintain and enhance the ecological processes

and functions and significant natural features of the subwatersheds in a way that is environmentally sound and socially and economically sustainable.

A 1.3 Study Team

A Study Team consisting of a partnership of consultants and agencies has completed the Hespeler West Subwatersheds Study. [Figure A 1.3.1](#) details the Study Team and responsibilities.

A 1.4 Report Structure

This report has been organized into 4 distinct sections, in part reflecting the chronological progress of the study and in part the proper presentation of information in a logical format.

The first section, Introduction, discusses the organization of the study itself, provides the history of the Hespeler West subwatersheds, discusses the planning context of the subwatershed area, the objectives and goal of the study, and summarizes the public input into the process.

Section B presents the detailed investigations that were undertaken by the Study Team.

Section C analyzes the various opportunities and constraints that are present in the subwatershed and develops a series of management alternatives. A preferred management alternative is chosen, based on public input, agency criteria and the subwatershed needs.

Section D, Management Strategy, summarizes the ultimate management strategy for the Hespeler West subwatersheds. A Monitoring Plan and an Implementation Plan are presented. Requirements for future studies are presented.



Section E lists the references used in the preparation of this document.

Various appendices support the Subwatershed Plan.

All air photography used as a base for Maps and Figures in this study was flown in April 2000.

A 1.5 Subwatershed Planning

Subwatershed planning uses watersheds and subwatersheds as the biophysical basis for planning and management. It is the preferred resource management approach to analyzing ecosystems. Watershed planning considers the complexity, biodiversity, and inter-connections within natural systems taking into account the dynamic nature and finite capacities of ecosystems. It has environmental, social and economic benefits.

From *Watershed Planning Initiative - Final Report* (Ministry of the Environment, 1997), the objective of watershed planning is to provide decision-makers with a broad understanding of ecosystem function and status, and to develop recommendations for appropriate resource management in the watershed. This will allow relevant ecosystem considerations to be integrated into land use planning decisions and allow for better-informed resource use decisions to be made.

The process of watershed planning determines targets and objectives prior to the adoption of official plans or land use decisions and allows for informed decision-making. Key to subwatershed planning is the balanced approach to ensuring that environmental, social and economic issues are addressed. Subwatershed planning is an evolving process and forms part of the process known as Adaptive Environmental Management. *Subwatershed Planning* (MOE & MNR, 1993) states that subwatershed planning is undertaken for:

- Environmental protection and pollution prevention.
- Better planning.
- Infrastructure guidance.
- Streamlined approvals.
- Savings.
- Public involvement.
- Credibility of participating agencies.
- Enhanced economic viability.

This document also notes that subwatershed plans will:

- Identify the location, aerial extent, present status, significance and sensitivity of the existing natural environment within the subwatershed;
- Establish goals and objectives for management of the subwatershed;
- Identify environmentally sensitive or hazard lands, and recommend, with reason, appropriate environmental management practices;
- Identify lands where development may be permitted, provided it is designed to ensure that ecological functions are protected and maintained;
- Provide directions for the screening and selection of best management practices for the subwatershed;
- Address cumulative impacts of changes to the subwatershed on the natural environment;
- Integrate disciplines, policies, mandates, and requirements of all agencies and interests;
- Provide direction, consistency and uniformity of conditions of approval;
- Promote public participation;
- Establish an implementation strategy;
- Outline requirements for monitoring programs and information updates; and
- Provide technical information for the completion of community plans and subdivision designs.



The Government of Ontario has issued the Provincial Policy Statement (1997), which requires municipalities (upper and lower tier) to provide proper planning and environmental considerations. Legislation, such as the Planning Act, the Conservation Authorities Act, and the Environmental Assessment Act, ensure that these policies are implemented.

Land Use Patterns, Sub-section 1.1.1 e) recommends that a “coordinated approach should be achieved when dealing with issues which cross municipal boundaries, including ecosystem and watershed related issues”.

Section 2 of the Provincial Policy Statement provides specific policies dealing with natural heritage features and areas including wetlands, aquatic and terrestrial habitat, as well as water quality and quantity. Natural features diversity and the natural connections between them should be maintained, and improved where possible. Effective subwatershed planning will satisfy these policies.

The Provincial Policy Statement contains other specific policies regarding Agriculture, Mineral Resources, Cultural Heritage and Archeological Resources that may also pertain to the study area. Policies specific to land use and development as well as public health and safety are included in the PPS document. Their implications are most commonly included in Regional and City Official Plan documents and subsequent land use planning processes.

The Regional Municipality of Waterloo (the Region) has recognized the importance of watershed planning by including a subsection of Chapter 3 - “Environmental Planning” on the topic. Subsection 3.1 - “Watershed Planning” contains eight policies regarding the completion of watershed plans including direction on amending land use planning documents based on the results of watershed plans. The Region’s priority in such studies will be regarding the preparation of recommendations related to:

1. Protection and management of groundwater resources;
2. Surfacewater quality;
3. Identification, protection and management of environmental preservation areas, environmentally sensitive policy areas and regionally significant natural corridors; and
4. The implications of development opportunities on the provision of regional infrastructure.

Portions of watershed studies that deal specifically with Regional interests (as identified above) will be approved by the Region prior to the adoption of area municipal official plan amendments or approval of area municipal implementation plans that implement the recommendations of the study (Policy 3.1.5).

The City of Cambridge is conducting the Hespeler West Subwatersheds Study in order to comply with its official planning documents. Policy 6.2.1 of the Cambridge Official Plan titled “Subwatershed Studies and Plans” details the requirements of the city and the priorities for such studies. Study components are listed in Section 6.2.1.4.

The City also requires that a subwatershed study contain a comprehensive environmental impact statement (Section 6.2.1.5) that provides sufficient analysis to formulate general parameters for development through the Official Plan and other means of land use regulation. This section also stipulates that where feasible, the study will fulfill, in whole or part, the Environmental Assessment Act requirements for major infrastructure works located within that subwatershed. It has been decided that, due to the complex nature of servicing needs in the three subwatersheds, servicing EAs will be done at the community plan stage.

Other relevant sections regarding the natural environment system within the Official Plan include water resources





protection (6.2.2), floodplain planning (6.2.3), stormwater management (6.2.5), fish habitat restoration and protection (6.2.6), and vegetative management (6.2.7). These policies have been considered in the completion of the subwatershed study.

A 1.6 Study Process

An interdisciplinary Consultant Team conducted the Hespeler West Subwatersheds Study in three phases, as described below (also see [Figure A 1.6.1](#)).

PHASE 1 INITIATION

Step 1: Background Information

Collection and review of existing physiographic, hydrologic, hydrogeologic, natural features and land use information. Synthesis, interpretation and integration of existing information. Production of a base plan map for the subwatershed, which is current and correct. Preliminary description of the ecosystem functions and linkages.

Step 2: Issue Identification

Refinement of issues and problem statements. Refinement and prioritizing of goals and objectives. Identification of data deficiencies. Familiarization of the Steering Committee with existing database and watershed characteristics. Field monitoring initiated. Revised work plan based on information gathered to date. Initial contact with landowners, special interest groups and directly affected parties. Public meeting.

PHASE 2 STUDY AND REFINE

Step 3: Detailed Study

Commencement of base line data gathering and detailed study, inventory, and analysis addressing hydrology (model determined in consultation with the City and the GRCA), flooding, erosion, hydrogeologic and baseflow characteristics, Fish Habitat, natural environment and surfacewater quality. Review of existing and proposed trail linkages. Production of a seasonal and annual water budget. Understanding of the relationship between the biophysical aspects of the subwatershed and the existing and potential land use. Identification of opportunities and constraints.

Step 4: Targets

Establishment of the targets necessary to achieve the objectives. Investigation and develop various management plans, which include practices and measures to meet watershed objectives and targets.

Step 5: Alternatives and Recommended Plan

Evaluation of alternative management plans. Recommendation of the preferred Subwatershed Plan for Hespeler West. Public meetings to receive input.

Step 6: Implementation and Monitoring Plans

Preparation of the Implementation Plan and long term Monitoring Plan with specific time frames and responsible parties.



PHASE 3 STUDY FINALIZATION

Step 7: Final Plan/Presentation to Council

Production of the final Hespeler West Subwatersheds Plan, including an Executive Summary, the Implementation and Monitoring Plans. Presentation to Cambridge Council (and potentially Regional Council) at a public meeting for approval.

A 1.7 History of Hespeler West Subwatersheds

As with much of the Region of Waterloo, the Hespeler West subwatersheds were part of the lands granted to the Six Nations of the Iroquois by the British Crown in 1784. It was through the efforts and negotiations of their leader, Joseph Brant, that the people of Six Nations were granted a tract of land six miles in depth on each side of the Grand River from its mouth to its source. That year, Brant led his tribes from their lands in the Mohawk valley of upper New York State to the Grand River Basin. The tribes of the Six Nations were Cayuga, Mohawk, Oneida, Onondaga, Seneca and Tuscarora. Brant later sold 90,000 acres to a land development group, Richard Beasley and his partners. These developers eventually sold much of the land to Pennsylvania Mennonites who began to settle the area. In fact, the original landing place was at the confluence of the Speed and the Grand Rivers, and the Hespeler West area was one of the first places settled by the Mennonites.

While much of the Hespeler West area was used for farming, the area along the Speed River was ideal for various types of mills that relied on waterpower for energy in the particular process (e.g., sawmills, foundries, woolen mills and grist mills). With the arrival of the railroad, the Village of Hespeler was incorporated in 1859. The village was named after Jacob Hespeler, a chief industrialist and businessman. The village continued to rely heavily on the

textile industry, with one factory, Dominion Woollen and Worsteds (formerly owned by the Forbes family), employing 1,500 people in a population of 3,000. In spite of the jobs available in the nearby town, those who lived on the land west of Hespeler earned their income through farming.

For most of the last two centuries, the Hespeler West subwatersheds area was predominantly inhabited by the Mennonites from Pennsylvania. Much of the land was passed on for generations within the families of the original landowners. Some of the well known names of the original settlers include Clemens, Witmer, Cook, Snyder, Markle and Hagey. Earlier in the twentieth century, the railway from Preston to Kitchener crossed the road by the Hagey farm and was known as "Hagey's Crossing." The Hagey farm stayed in the family until it was purchased by the City of Cambridge for the construction of the Toyota plant.

Two Mennonite churches were constructed in the area. Wanner Mennonite Church still exists in its original location on the corner of Maple Grove Road and Beaverville Road. Hagey Mennonite Church was originally constructed on the west side of Fountain Street just north of Preston. After a fire destroyed the church in 1953, a new church was built on Concession St. in Preston and is now known as Preston Mennonite Church. The original Hagey Church Cemetery can be found just north of Highway 401 on Fountain Street. A United Church was also built by a group of Mennonites who wanted a more evangelical focus in their church-life. Zion United Church still exists on Speedville Road just north of Maple Grove Road.

Infrastructure for the area was, of course, limited at first. The first bridge across the Speed River was built in the 1850s. Before the bridge existed, goods were hauled by horses and wagons that could ford the river, and a well-traveled stage-coach route existed between Preston and Guelph. The exact route is debated, but it seems most likely that the route crossed the river at Speedville and





followed higher ground northeast to Wanner Mennonite Church and on to Fisher Mills.

The village of Fisher Mills remained an economically viable community for most of the last two centuries and has been important to the Hespeler West area. The coming of the railways often led to the demise of off-line villages like Fisher Mills. Nevertheless, this adaptable community had its greatest boom years in the 1850s during the construction of the Main line of the Grand Trunk Railway from Montreal to Sarnia. Due to the lack of bridges, horses and wagons still transported goods in the area. The Great Western Railway brought supplies to Galt, which were transported from Galt to Breslau, Shantz Station, Mosboro and further eastern points. The teams coming through the village brought plenty of business to its two hotels and blacksmith's shop. A general store could also be found in the village (Snyder, 1954).

As the name implies, Fisher Mills was centred around the dam and the mill. The dam is fed by Chilligo Creek (an adjacent subwatershed). This stream was named by Canada's First People long before the area was settled by Europeans. In addition to its intended purpose, the dam became a popular swimming hole for people from surrounding areas, including Hespeler. A sawmill, which was generally the first thing built in such a village, was constructed by either Micheal or Joseph Fisher. The dam was built to accommodate a new flour mill. In 1864 the mill was purchased by Aaron and John Clemens who added a stave and heading mill. In 1882 the mills were taken over by Aaron Clemens who ran them for six years until he died. In the 1890s, new owners decided to dismantle the 3 ½ story flour mill and move it and its entire equipment to Birtle, Manitoba. Joseph S. Shantz and A. B. Snyder purchased the old mill site. They operated the saw mill and built a feed grinding mill on the foundation of the old mill. Only a year after, Mr. Shantz became the sole owner and he later added a cider and apple butter mill (Snyder, 1954).

Joseph's son A. J. Shantz operated the feed mill until 1970 when it was purchased by Howard Cressman. The saw mill was no longer operated by this time, but the feed mill was operated by Mr. Cressman until 1990 when it was finally closed down.

Snyder's Potato Chips was another business local to the Hespeler West area. Located on Beavertdale Road, it employed many people in the area. The potato chip industry took advantage of the area's light soil that was adaptable for potato culture. The O.A.C. experimental potato farm was also located in this area (Snyder, 1954). Snyder's is no longer in business, and the facility is currently used by a motorcycle dealership, Performance Cycle.

Kossuth is a village that has only a few remnant buildings left standing, yet it was at one time a significant place in the Hespeler West area. The village was named after Louis Kossuth, a great Hungarian liberator and national hero. A group of Hungarians have erected a plaque in his honor that reads, "An immortal hero of Hungarian freedom and an apostle of world democracy whose ideals inspired the founders of this settlement and were revived in the contemporary Hungarian revolution." Kossuth's name and work was an inspiration to the Pennsylvania Dutch people who established the village.

While it was at one time a thriving little village, Kossuth was smaller than Fisher Mills and the only remnants are the old schoolhouse and a few houses. At one time the community businesses and houses were spread along Kossuth Road from Beavertdale Road to Speedsville Road. A hotel was located on the north side of the road. Also found in the village were a cobbler's shop, a blacksmith shop, post office and a pottery. One previous resident, Lloyd Hagey, remembers that the cobbler made good boots and shoes, and many people wore them. Today the





Beaverdale Golf and Country Club can be found next to the old Kossuth schoolhouse.

Idylwild Park was a unique feature located near the Speed River. Operated by the Canadian Pacific Railway, the park was only accessible by the electric rail line that carried passengers between Preston and Hespeler. A separate steam line carried freight and ran parallel on the other side of the river. The park featured a couple of footbridges and a concession booth, and possibly a ball diamond—or at least a field big enough for the game. It was a popular place for company picnics and other such events.

Some of the area has a fairly thin layer of topsoil covering a very sandy soil underneath. The sand has proven to be a valuable resource and has been excavated for various purposes. In the 1950s Marshal Lasby excavated sand on the west side of Speedsville Road. As the owner of Preston Sand and Gravel, he supplied sand for plastering and cement work. Before Lasby, the site was owned by a man by the name of Bauman—a common Mennonite name. Today this resource continues to be excavated on a much larger scale by Arriscraft International Inc. (Arriscraft), earlier known as Angelstone.

Arriscraft had its beginnings in 1926 when Edward B. Ratcliffe (*I*) obtained patents for manufacturing a high quality building stone using a molded concrete process. That year he founded Bartonville Rock Stone Ltd., and in 1949, Edward B. Ratcliffe (*II*) founded Angelstone. The plant was on Parkdale Avenue in Hamilton and supplied thousands of buildings in Canada. In 1956, the company developed a new high-pressure calcium silicate process. The Hamilton plant was unable to keep up with production that year, and in 1957 the Cambridge plant was started. In 1983, Angelstone Limited was renamed Arriscraft in recognition of its expanded product line. Today they manufacture a variety of building stone and brick that is sold in Canada and the United States. The company also

quarries in the Bruce Peninsula under the division named Adair Marble Quarries, sending the marble blocks to Cambridge for processing. Arriscraft now employs about 200 people, and sand extraction continues near the plant's location on the east side of Speedsville Road. Sand has also been excavated along Beaverdale Road, including the site of a residential subdivision south of Maple Grove Road developed by Arriscraft when they finished excavating sand on the property (Windsor Publications, 1987).

The region between Hespeler and Kitchener was governed by Waterloo Township until it was split up in a municipal amalgamation. The former township was divided and added to Woolwich Township, the City of Waterloo, the City of Kitchener and the City of Cambridge. The Hespeler West subwatersheds became part of the newly formed City of Cambridge in 1973.

Since then, the region has gradually experienced development pressure. For example, the Arriscraft subdivision on Beaverdale Road appeared in the late 1980s. It was given the name "Idylwild," most likely in reference to the aforementioned park along the electric railway that went by the same name. The first phase of Idylwild was approved for a privately serviced development in early 1987. The second phase, developed in partnership with Hunt Club Valley Inc., was approved in March 1990. While it was originally intended that residents would have private wells, water quality proved to be inadequate, prompting the installation of a City watermain to supply water to the entire subdivision.

When the region was still governed by Waterloo Township, the Ontario government formed the Ontario Land Corporation (OLC) and began a new program to buy land for future planned urban community. Anticipation of urban development was raising the price of land and it was feared that housing would no longer be affordable. The government intended to buy land and make it available for





development at lower cost. The area from Middle Block Road south to Highway 401 was the area chosen for this particular land holding, encompassing most of the Hespeler West Study area. Developers opposed this initiative, and persuaded Waterloo Region to resist and try to slow it down. Eventually the program was halted.

Local landowners did not receive the OLC very well. Some didn't mind selling because the price seemed reasonable. Others resisted as long as they could, but eventually sold knowing the government would eventually exercise its authority to purchase the land. For many, it was the end of a tradition of passing land through generations of family members. Some people left while others have stayed on the land by leasing from the government. Larry Markle rents land that has been in his family for over a hundred years. His grandfather passed it on to his father and uncle who sold it to the OLC. Larry has also rented additional land for the past 35 years. Gerald Hoffstetter purchased land on the corner of Maple Grove Road and Fountain Street in the late 1940s. Thirty-four years ago, the OLC purchased his land for about \$1,500 an acre. He recalls that he resisted for a long time, and was eventually the last one to sell. Thirty years later, his son re-purchased 116 acres of the land.

Today much of the land is still farmed. Some is rented and some has been purchased back from the government. The University of Guelph uses some of the land on the north-east section for agricultural research, and some land on the west side has already been used for industrial development. The Toyota plant is the largest industry in the area, the land having been purchased by the City of Cambridge and quickly made available to welcome this major source of employment. The Loblaws grocery distribution facility arrived more recently and falls within the study area on the northeast corner of Maple Grove Road and Fountain Street. Arriscraft is operating on Speedsville Road and continues to excavate sand in the area. There

are also some newer rural residences within the subwatersheds. The area continues to experience development pressure for both industry and residential land uses.

Others have written about the history of Hespeler, though little can be found on the area west of the town. Most of the history specific to the study area was obtained in conversation with past and current local residents. These residents include, Richard Schiedel, Howard Cressman, Larry Markle, Lloyd Hagey, George Schiedel and Gerald Hoffstetter. Bill O'Krafka from The Company of Neighbours and Jim Quantrell of the City of Cambridge Archives were also consulted. For more detailed information on the early history of the Grand River Watershed, refer to the following website:<http://collections.ic.gc.ca/copper/low/humanhist.htm>. For more information on the town of Hespeler, reference should be made to various publications by City Archivist Jim Quantrell and the website www.thecompanyofneighbours.com.

Other Sources:

- "Cambridge, The Making of a Canadian City." Windsor Publications, 1987.
- "Hungarians to Honor Memory of Kossuth." Unidentifiable newspaper article.
- Snyder, Lillian. "Fisher Mills Boasts Old History." The Evening Reporter, Galt, Ontario, September 18, 1954.

A 2.0 EXISTING POLICY FRAMEWORK

Both the Regional Official Policies Plan (Policy 3.1 Watershed Planning) and the City of Cambridge Official Plan (Policy 6.2.1 Subwatershed Studies and Plans) identify the need and priority of subwatershed planning. The formulation and development of the Hespeler West Subwatersheds Study has therefore been predicated on





this priority and implements the existing planning and environmental policy framework for the natural environment from these two Official Plans. The planning partners in subwatershed planning include the Regional Municipality of Waterloo, the City of Cambridge, the Grand River Conservation Authority (GRCA), the Ontario Ministry of Agriculture and Food (OMAF), Ontario Ministry of Natural Resources (OMNR) and the public.

A 2.1 Regional Municipality of Waterloo Official Policies Plan (ROPP)

The Regional Official Policies Plan (ROPP) for the Regional Municipality of Waterloo was adopted by Regional Council on May 11, 1995 and approved in part by the Minister of Municipal Affairs and Housing on December 19, 1995. No outstanding deferrals or referrals of the ROPP affect the area of the Hespeler West Subwatersheds Study.

The Hespeler West Subwatersheds Study area is located within two distinct Settlement Patterns as identified on Map No. 6 (Settlement Patterns) of the ROPP. The portion of the study area located south of Maple Grove Road, plus additional lands north of Maple Grove Road, east and west of Fountain Street (Regional Road #17) are designated as 'CITY URBAN AREA'. The remaining area north to Kossuth Road (Regional Road #31) is designated 'AGRICULTURAL RESOURCE AREA'.

Lands within the 'CITY URBAN AREA' have been designated in the ROPP to accommodate the majority of forecasted employment needs consistent with the Regional Employment Forecast and with the Regional Population and Household Forecast housing needs for the three urban municipalities (Cities of Cambridge, Kitchener and Waterloo) of the Region to the year 2016. The 'CITY URBAN AREA' settlement pattern provides for a wide range of urban serviced land uses and the specific land use designations are provided in the City of Cambridge Official

Plan to implement the employment and population/household forecasts of the ROPP to the year 2016.

Lands within the 'AGRICULTURAL RESOURCE AREA' primarily permit farming, mineral aggregate extraction and forestry. The ROPP further defines the Agricultural Resource Area lands in the study area (ROPP Map No. 3) as Prime Agricultural Areas. The range of agricultural activities within 'PRIME AGRICULTURAL RESOURCE AREAS' is limited to farming, on-farm business activities, and farm related non-residential uses. The introduction of new non-farm related uses is prohibited and farm related consents are limited.

Map No. 1, Natural Habitat Network, of the ROPP has not identified any areas within the study area as Environmentally Sensitive Policy Areas. Map No. 2, Provincially Significant Wetlands, has identified parts of the Speed River Floodplain as Provincially Significant Wetland.

Specific environmental policies within the Regional Official Policies Plan that relate to the subwatershed planning include:

Chapter 3.0 (Environmental Planning):

- a) Policy 3.2 – Environmental Impact Statements, provide direction on the type, content and specific requirements of such statements.
- b) Policy 3.3 – Biodiversity, provides support for the conservation and enhancement of the region's native biodiversity.

Chapter 4.0 (Region's Natural Heritage Network):

- c) Policy 4.2 – Environmental Preservation Areas (EPA), which relates to significant portions of habitat of Endangered Species or of Threatened





Species. There were no known Environmental Preservation areas located within the subwatershed nor were any found in the course of the study.

- d) Policy 4.3 - Environmentally Sensitive Policy Areas (ESPA), provides direction and criteria for identifying and managing ESPA locations. Existing ESPA are not found within the subwatershed as listed in Table 4.1 from the policy. New ESPA designations must fulfill environmental criteria listed in the policy.
- e) Policy 4.4 – Provincially Significant Wetlands (PSW), which supports provincial criteria for identification and management of these features.
- f) Policy 4.5 – Floodplains, that recognizes the criteria and management as stipulated by the GRCA and the Province.

Chapter 5.0 (Region's Natural Resources):

- g) Policy 5.2.1 – Sensitive Groundwater Areas, as identified and managed through implementation of the Region's Water Resources Protection Strategy.
- h) Policy 5.2.2 – Groundwater Discharge Areas, provides for the identification of Regional Environmentally Significant Discharge Areas (RESDA) where they are not already contained within ESPA, EPA, PSW or Regionally Significant Natural Corridors.
- i) Policy 5.4 – Woodland Resources, provides direction in order to conserve, protect and enhance woodlands.

Through Amendment No. 12 to the ROPP (approved December 2000 - Map No. 4) Water Resource Protection Areas, now called Wellhead Protection Area-Urban Point Source Sensitivity Mapping, the Region has identified Wellhead Sensitivity Protection Areas (see [Figure A 2.1.1](#)).

Wellhead Sensitivity Protection Areas, Sensitivity 3 and 4 are located around the existing Regional well located south of Maple Grove Road, west of Fountain Street. This Regional Well is located in the centre of these Sensitivity Areas, both of which are located within the 'CITY URBAN AREA'. Lands along the northerly limit of the study area south of Kossuth Road are identified as Sensitivity 4 for Regional wells to the northwest along the Grand River. Regional policies applicable to sensitivity areas would limit the range of new non-residential land uses.

ROPP Map No. 5 identifies the general location of Mineral Aggregate Resources. There are no areas identified as having a potential for aggregate extraction within the study area. This designation applies to lands where there is a high potential for aggregate extraction to occur due to the high quality of the identified deposits. These areas are to be protected from future land uses that would prohibit future extraction or be incompatible to extraction operations. There is, however, an existing aggregate operation north of the 401, east of Speedsville Road.

Community Core Areas, Regional Shopping Centres or Regional Power Centres have not been identified within the study area as indicated on ROPP Map No. 7, Commercial Structure.

Fountain Street (Regional Road #17), Maple Grove Road (Regional Road #38) and Kossuth Road (Regional Road #31) are identified as Regional Controlled Access Prohibited, as shown on ROPP Map No. 9, Existing, Planned & Proposed Roads. Any new access to these Regional Roads will be limited to meeting Regional Road Access requirements and approval of a Regional Road Access Permit.





A 2.2 City of Cambridge Official Plan

The City of Cambridge Official Plan was adopted by the City Council on September 22, 1997 and Regional Council approved the Official Plan subject to a series of deferrals and modifications on July 14, 1999 and issued the Notice of Decision on July 16, 1999. This Official Plan replaced the Plan approved May 10, 1983 and implements the approved Regional Official Policies Plan (ROPP). The City of Cambridge Official Plan provides more site-specific detail and policies that implement the broad based ROPP policies.

In accordance with Map No. 6 of the ROPP, Map 1 of the City of Cambridge Official Plan ([Figure A 2.2.1](#)) identifies City Urban Area, Agricultural Resource Area, Community Core Areas and Candidate Nodes. The area south of Maple Grove Road (Regional Road #38) plus additional lands north of Maple Grove Road, east and west of Fountain Street are identified as City Urban Area. The remaining area within the study area is identified as Agricultural Resource Area. The Community Core Area and Candidate Node designations do not apply to any lands within the study area.

On Map 15 ([Figure A 2.2.2](#)) General Land Use Plan, the study area has been designated primarily as Industrial, Residential and Agricultural, with areas of Open Space along the creeks.

The Class 2 Industrial District Designation applies to lands along the north side of Royal Oak Road west of Speedsville Road and the Arriscraft Plant east of Speedsville Road north of Highway 401. The Class 2 Industrial designation permits a wide range of industrial uses not requiring or benefiting from the visual exposure of being located by a highway corridor.

Lands designated as Residential Class 2 Suburban are located east and west of Speedsville Road south of Maple Grove Road and north of Speed River. Residential uses with this designation are limited to single detached residential. Other uses including commercial, accessory uses and agricultural and non-intrusive livestock operations are permitted, subject to specific criteria.

The remainder of the study area is designated as [Class 1 (Prime)] Agricultural Resource District, except for some smaller scattered areas designated as Open Space. The Agricultural Resource District applies to lands that have been identified as specialty crop lands or lands that fall within the Classes 1, 2 or 3 of the Canada Land Inventory. Lands with this designation are to be used for Agricultural purposes and any new form of non-agricultural development is to be prohibited.

Lands designated on Map 15 as Open Space have been identified as containing significant natural features, including Provincially Significant Wetlands, Regionally Environmentally Sensitive Policy Areas, Locally Significant Natural Areas, fish habitat, significant woodlots, significant wildlife areas, floodplain or conservation lands of the Grand River Conservation Authority.

Environmentally Sensitive Areas include areas surrounding East Creek, Middle Creek and West Creek as well as the floodplain of the Speed River. They have been designated as Class 1 (Significant Natural Features) Open Space District on Map 15 General Land Use Plan. These significant natural features that make up the Class 1 (Significant Natural Features) Open Space designation are shown on Map 8 ([Figure A 2.2.3](#)) Provincially and Locally Significant Wetlands and Map 9 ([Figure A 2.2.4](#)) Environmentally Sensitive Policy Areas and Locally Significant Natural Areas.



On Map 8 ([Figure A 2.2.3](#)), the wetlands in the floodplain of the Speed River have been identified as Classes 1, 2 and 3 (Provincially Significant) and those surrounding East Creek and Middle Creek have been identified as Classes 4, 5, 6 and 7 (Locally Significant). Note: Present wetland classification evaluated using MNR criteria refers to Provincially Significant Wetlands and Locally Significant Wetlands. The area surrounding West Creek, an area west of Fountain Street between Allendale Road and Middle Block Road, and an area along the east-west portion of Briardean Road have been identified as unevaluated wetlands.

Map 10 ([Figure A 2.2.5](#)) Floodplains identifies the Regulatory Storm floodplain of the Speed River and not those of East, Middle and West Creeks, as floodplain mapping was not available for the creeks at the time of completion of the Cambridge Official Plan. Map 13 ([Figure A 2.2.6](#)) Watercourses, Subwatersheds and Selected Fish Habitat Resources identifies Middle and West Creeks as Type 4 Warmwater Baitfish Streams and East Creek as a Type 1 Existing Coldwater Stream.

The northwest side of Hespeler Road (Regional Road #24) is identified on Map 6 Major Transportation Facilities And Hydro Corridors (not reproduced in this report due to map quality problems) for a proposed Freeway or Major Arterial Road. This is consistent with the ROPP Map No. 9. New access to this roadway would be restricted. The Provincial Highway Class Environmental Assessment under the Environmental Assessment Act was completed in October 1996. An Environmental Study Report consolidated the Study findings and conclusions.

The following maps of the Official Plan do not apply to the study area:

- Map 2 – Galt City Centre
- Map 3 – Preston Towne Centre

- Map 4 – Hespeler Village
- Map 5 – Candidate Areas in Transition
- Map 7 – Provincially Identified Former Waste Disposal Sites
- Map 11 – Preston and Hespeler Two-Zone Floodplain Policy Areas
- Map 12 – Galt City Centre Floodplain Special Policy Area
- Map 14 – Mineral Aggregate Resources Area

Map 14, Mineral Aggregate Resource Areas, does not identify any potential areas within the study area. However, there are resources identified in the area by the Ontario Geological Survey (OGS, 1998). In addition, the aggregate resource is confirmed by the presence of active extraction occurring within areas controlled by approved pit licenses under the Aggregate Resources Act. While the resource is not identified in the City of Cambridge Official Plan, it is recommended that the utilization of the sand and gravel deposits within the study area be investigated as part of the Community Plan and individual land development applications. The objective would be to utilize the aggregate resource as part of what has recently been called an "urban resource rescue" activity, avoid the sterilization of a known aggregate resource, and more accurately reflect Policy 2.2.2 and 2.2.3 of the Provincial Policy Statement.

Specific environmental policies within the City of Cambridge Official Plan that relate to the subwatershed include:

Chapter 6.0 (City's Natural Environment System):

- a) Policy 6.1 – Open Space System, provides a list of elements of the Open Space System including such features as significant natural features, floodplains, hazard lands and conservation areas. Direction is given on the identification of a Woodland Strategy and on natural corridors.





- b) Policy 6.1.2 – Provincially Significant Wetlands, supports the provincial identification and evaluation of PSW features.
- c) Policy 6.1.3 – Environmentally Sensitive Policy Areas (ESPA), supports the regional designation and provides direction on EIS requirements.
- d) Policy 6.1.4 - Locally Significant Natural Areas, outlines the criteria for identifying LSNA locations that are shown on Map 9 ([Figure A.2.2.4](#)). New LSNA designations must be an evaluated wetland or fulfill 3 of 12 environmental criteria listed in the policy.
- e) Policy 6.1.5 - Environmental Impact Statements, provides a definition for the completion of such a statement, the criteria and specific requirements. The significant natural features where this applies are identified in policy 6.1.1.2, Elements of the Open Space System.
- f) Policy 6.2.1 – Subwatershed Studies and Plans, provides overall guidance for the completion of such studies based on significance and sensitivity of environmental features and functions, priorities for development and funding availability.
- g) Policy 6.2.2 – Water Resource Protection, discusses the implementation of the Regional Water Resources Strategy in relation to both surface and groundwater resources.
- h) Policy 6.2.3 – Flood Plain Planning, highlights the criteria used by the GRCA and the Province in determining the extent of flood lands, the management criteria and management option.
- i) Policy 6.2.4 – Watercourses, provides the names of and the absence or inclusion of watercourses in the GRCA Registered Fill Lines. Development restrictions are discussed.
- j) Policy 6.2.5 – Storm Water Management, provides direction and reference to the City adopted Policies and Guidelines.
- k) Policy 6.3 – Fish Habitat Restoration and Protection, describes the ecosystem approach used for resource management including fish species that support similar Federal and Regional policies. Reference is made to GRCA as the DFO delegate in implementing fisheries management under the Fisheries Act.
- l) Policy 6.4 – Vegetative Management, provides for the protection, preservation and restoration of vegetative cover. Sub policies related to Tree Management Policies and Guidelines (Policy 6.4.1), Street Trees (6.4.2), and Biodiversity (6.4.3) are also included providing direction and approaches to meet the stated goals.

A 2.3 City of Cambridge Zoning By-law 150-85, as Amended

The City of Cambridge Zoning By-law 150-85, as amended, was approved by the Ontario Municipal Board on May 25, 1987. The study area is located within Maps B6 to B8, C6 to C10, D8 to D10 and E8 in the City of Cambridge Zoning By-law. [Figure A 2.3.1](#) is a consolidated version of these maps as provided by the City of Cambridge.

Most of the area north of Maple Grove Road is zoned A1 – Agricultural Use, which primarily permits farming. Areas along Middle Creek and East Creek are zoned OS1 – Open Space, which permits a number of open space type uses including environmentally significant areas, conservation areas, and environmentally sensitive areas recognized by the Regional Municipality of Waterloo. Several lots are



zoned RR1 Residential Use which permits rural non-farm-related dwellings in rural areas outside settlements. The area east of Fountain Street and North of Maple Grove Road is zoned M3 – Industrial Use which permits general industrial uses. One area near the intersection of Fountain Street and Middle Block Road is zoned M5 Industrial Use which permits transport uses. Two areas, one on Speedsville Road and another on Maple Grove Road, are zoned N1 – Institutional Use Class, which permits educational, government and non-profit community institutions, public hospitals, non-profit family crisis shelters, places of worship, children's care facilities and non-profit service or social clubs or fraternal societies.

The area south of Maple Grove Road is primarily a mixture of A1 and (E)A1 – Agricultural Use, R1 - Residential Use, which permits detached one-family dwellings at low density in areas where public water supply and sanitary sewage disposal facilities are not generally available, and two Industrial Use Classifications. One area on the north side of Royal Oak Drive is M2 – Industrial Use, which permits general industrial uses with no outdoor storage or outdoor operations. A large area on the east side of Speedsville Road is zoned (E)M6 – Industrial Use, which permits asphalt and concrete batching plants, and aggregate extraction. The (E)A1 Agricultural Use zoning is found in several areas along Speedsville Road and Royal Oak Drive. It permits aggregate extraction in addition to agricultural uses. A small area at the corner of Maple Grove Road and Briardean Road is zoned RR1 – Residential Use, which permits rural non-farm related dwellings in rural areas outside settlements. The corridors along East, Middle and West Creeks are zoned OS1 – Open Space.

A 2.4 Staging of Development

For all potential developable lands located within the City Urban Area of the Official Plan, City Council annually adopts a Staging of Development Report to identify the potential development areas, potential residential type and density, the infrastructure required to provide for the development and the logical sequence of development. The City utilizes this report for the review and allocation of fiscal (Capital Budget) and staffing resources. This report also provides guidance to the Region, School Boards, Hydro Electric Commission and the development industry for the allocation of their physical and financial resources in their business planning.

The Hespeler West Community Plan is identified within the Staging of Development Report and it is recognized that upon the completion of this Subwatershed Study that the community plan process would be initiated. Upon the completion of the Community Plan, it is anticipated that property owners will be initiating the submission of planning applications to implement the recommendations of the study.

A 2.5 Natural Heritage and Stream Policy Issues

A 2.5.1 Background

Various Federal, Provincial, Regional, Municipal agencies and Conservation Authorities are involved in planning approvals and have a broad framework of legislation governing land development, natural heritage and hazard and environmental issues in the Province of Ontario. [Figure A 2.5.1](#) details some of the legislation in effect that controls activities within or proximate to stream systems. It is not meant to suggest that this is all-encompassing but just the few pieces of legislation that are most commonly



encountered. Further investigation, specific to the application, should be conducted at the Community Plan and Plan of Subdivision stages of the planning process. Three specific policies are discussed in further detail in the following subsections.

A 2.5.2 Fish Habitat Policy

The principal legislation governing fish habitat is the Fisheries Act. This federal legislation states no person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat (Section 35(2)) without authorization by the Department of Fisheries and Oceans. As well, no person shall deposit or permit the deposit of any deleterious substance into water frequented by fish (Section 36(3)).

The Department of Fisheries and Oceans (1986) *Policy for the Management of Fish Habitat* has the objective of creating a net gain of habitat for Canada's Fisheries resources. The goals of the policy are:

1. Maintain the current productive capacity of fish habitats supporting Canada's fisheries resources, such that fish suitable for human consumption may be produced.
2. Rehabilitate the productive capacity of fish habitats in selected areas where economic or social benefits can be achieved through the fisheries resource.
3. Improve and create fish habitats in selected areas where the production of fisheries resources can be increased for the social or economic benefit of Canadians.

The guiding principle of Goal 1 is the **no net loss principle**, which requires that, if the productive capacity of a fish habitat is reduced, a compensating increase in fish

production must be made to occur. The hierarchy of preferences for applying this principle is as follows:

1. Maintain, without disruption, the natural productive capacity of habitats through re-design or mitigation.
2. If the former proves impossible or impractical, then compensation by either creating new habitat, or by increasing the productive capacity of existing habitat will be considered.

It should be noted that compensation may not be acceptable in some cases where the habitats in question are deemed especially important or sensitive. It should also be noted that an Authorization under the Fisheries Act triggers the Canadian Environmental Assessment Act, so that screening under this Act becomes necessary. Activities that alter fish habitat will be subject to Fisheries Act approval.

A 2.5.3 Natural Heritage System Policy

The classification of the Speed River Floodplain as a Provincially Significant Wetland (PSW) means that approval agencies must 'have regard for' the provisions of Section 2.3 of the Provincial Policy Statement (1997) which states:

- "2.3.1 *Natural heritage features and areas* will be protected from incompatible development.
- a) *Development and site alteration* will not be permitted in:
 - *Significant wetlands* south and east of the Canadian Shield...



- “2.3.2 *Development and site alteration* may be permitted on *adjacent lands* to a) and b) if it has been demonstrated that there will be no *negative impacts* on the natural features or on the *ecological functions* for which the area is identified.
- “2.3.3 The diversity of natural features in an area, and the natural connections between them should be maintained and improved where possible.
- “2.3.4 Nothing in policy 2.3 is intended to limit the ability of *agricultural uses* to continue.”

Development permitted within PSWs is limited to infrastructure such as roads and servicing, which is usually assessed under the provisions of the Environmental Assessment Act. Proposals for development on ‘adjacent lands’ (i.e., lands within 120 metres of the PSW) are subject to analysis in an Environmental Impact Statement (EIS) to determine whether negative impacts may occur if development proceeds, and to provide standards and strategies for the avoidance of impacts. With respect to the 120 metres ‘adjacent lands’ threshold identified in the Natural Heritage Manual (MNR 1999), this study has documented and analyzed the functions, attributes and linkages within the landscape of the subwatersheds in order to prescribe protection and enhancement measures that will apply as projected land use changes occur.

The majority of the Natural Heritage System in the subwatershed has previously been identified as Locally Significant Natural Areas (LSNA) as shown on Map 9 in the City of Cambridge Official Plan ([Figure A 2.2.4](#)). Section 6.1.4 of the Official Plan indicates that it is the policy of the City to preserve, protect and enhance all LSNAs, and any permitted development within or adjacent to an LSNA must

have regard for the preservation and enhancement of the LSNA.

A Comprehensive EIS, as represented by the present study, must result in the final determination of areas where development is prohibited and areas where development may occur subject to certain impact mitigation methods. Buffers or setbacks to minimize impacts must also be provided by the EIS. The scope of Provincial, Regional and City policies also requires consideration of enhancements to habitats and functions to ensure sustainability in a changing landscape. Any alteration of the recommended approach will require more substantive study of particular factors and functions in the areas in question.

A 2.5.4 Water Resource Policy

Approval agencies must ‘have regard for’ the provisions of Section 2.4 of the Provincial Policy Statement (1997) which state:

“2.4 Water Quality & Quantity

- 2.4.1 The *quality and quantity* of groundwater and surfacewater and the function of sensitive groundwater recharge/discharge areas, aquifers and headwaters will be protected or enhanced.”

The result of this study must provide insight into the stated functions of groundwater recharge/discharge areas. These results also comply with Regional and City land use policies.

A 2.5.5 Natural Hazard System Policy

Approval agencies must ‘have regard for’ the provisions of Section 2.4 and 3.1 of the Provincial Policy Statement (1997) which state:





“2.4 Water Quality & Quantity

“2.4.1 The *quality and quantity* of groundwater and surfacewater and the function of sensitive groundwater recharge/ discharge areas, aquifers and headwaters will be protected or enhanced.”

- b) new hazards are not created and existing hazards are not aggravated;
- c) no adverse environmental impacts will result;
- d) vehicles and people have a way of safely entering and exiting the area during times of flooding, erosion, and other emergencies; and
- e) the *development* does not include *institutional uses* or *essential emergency services* or the disposal, manufacture, treatment or storage of *hazardous substances*.”

“3. Public Health & Safety

“3.1 Natural Hazards

3.1.1 Development will generally be directed to areas outside of:...”

“b) *hazardous lands* adjacent to *river and stream systems* which are impacted by *flooding* and/or *erosion hazards*; and...”

“3.1.2 *Development and Site Alteration* will not be permitted within:...”

“c) a “floodway” (except in those exceptional situations where a *Special Policy Area* has been approved).

“3.1.3 Except as provided in policy 3.1.2, *development and site alteration* may be permitted in *hazardous lands* and *hazardous sites*, provided that all of the following can be achieved:

- a) the hazards can be safely addressed, and the development *and* site alteration is carried out in accordance with *established standards and procedures*;

A 2.5.6 Conservation Authority Policies

Conservation Authorities are unique in their role of managing water and natural resources on a watershed basis. Under the Conservation Authorities Act, the GRCA establishes and undertakes “programs designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal and minerals.” (*Conservation Authorities Act, RSO 1990, c. 27, s. 20.*) The GRCA works closely with its member municipalities to implement programs that improve water quality, maintain water supply, reduce flood damages, protect natural areas, educate the public and provide recreational opportunities. Two programs of note are the administration of the Fill, Construction and Alteration to Waterways Regulation and municipal plan input and review.

Under the Fill, Construction and Alteration to Waterways Regulation, permission must be obtained from the GRCA to:

- Construct any building or structure or permit any building or building to be constructed in a pond, swamp or in any area susceptible to flooding during a regional storm;





- Place or dump fill or permit fill to be placed or dumped in the areas described in Schedules whether such fill is already located in or upon such area, or brought to or on such area from some other place or places; or
- Straigten, change, divert, or interfere in any way with the existing channel or river, creek, stream or watercourse. (*Ontario Regulation 149 as amended by 69/93, 669/94 and 142/98*).

Permission may be granted by the GRCA if it can be shown that the proposed work will not affect the control of flooding or pollution or the conservation of land. Decisions on such activities are made in keeping with the Provincial Policy Statement. This regulation therefore provides an effective mechanism for managing Natural Hazards and Natural Heritage features.

The tools used to define areas regulated by the GRCA include Floodplain Mapping and Fill Line or Scheduled Area Mapping. Within the Hespeler West Area the GRCA has a registered Scheduled Area for the Speed River and its tributaries as well as Floodplain Mapping on the Speed River. This study will also generate additional floodplain mapping information that will assist in the administration of the regulation.

The Conservation Authority also has a role under the Planning Act with plan input and review. The GRCA is the lead commenting agency for natural hazards including floodplains, Great Lakes Shorelines, steep slopes and unstable soils, making sure that municipal policy documents and development proposals have regard to Section 3.1 of the Provincial Policy Statement. The Ministry of Natural Resources delegated this responsibility to the GRCA in 1995. The GRCA also provides planning advisory services to municipalities under Memoranda of Agreement. Through this service the GRCA provides comments on the potential environmental impacts of a

specific development proposal as well as advice on how the impacts can be avoided or reduced. Natural Heritage issues as well as Natural Hazard issues are addressed under this service

To support these programs, the GRCA has recently adopted a draft Wetlands Policy that expands on the Provincial minimum criteria for wetland protection. A 120-metre area of interest surrounding all wetlands has been proposed in which detailed studies will be required prior to any development taking place. Although finalization is not anticipated until Fall 2002, the intent is that this policy will eventually form the basis for municipal adoption and subsequent Official Plan amendments.

A 3.0 EXISTING INFRASTRUCTURE

The drainage area for the Hespeler West subwatersheds covers approximately 990 ha agricultural, open space, industrial, rural and suburban residential land and is generally bounded by the Speed River on the south, Beaverdale Road on the east, Kossuth Road on the north and Fountain Street on the west. The following is a brief description of the infrastructure that exists in the study area. More information will be obtained during the detailed study phase.

A 3.1 Sanitary Sewers

Sanitary drainage is supplied to the Toyota plant and the industrial subdivision northeast of the intersection of Maple Grove Road and Fountain Street. A 27 in. diameter sanitary sewer extends north along Fountain Street from Preston to Maple Grove Road where another sewer extends eastward along Maple Grove Road to Boxwood Drive (see [Figure A 3.1.1](#)) Automation Tooling Systems Inc. is located on the north side of Royal Oak Road. Water is supplied by a private well and sewage is pumped via a



private line to an 18 in. city sewer that extends a short distance eastward (from the Fountain Street Sewer) on Cherry Blossom Road. Arriscraft Corporation is a large masonry product industry on Speedsville Road. They supply their own water and sewer services, as there are no city services on Speedsville Road north of Highway 401.

A 3.2 Water Supply and Distribution

Currently, a residential subdivision along Beaverdale Road is supplied with municipal water via an 8 in. diameter watermain that exists along Beaverdale Road coming from Hespeler. The Toyota plant and the industrial subdivision northeast of the intersection of Maple Grove Road and Fountain Street are serviced with municipal water via an 18 in. diameter watermain that extends north from Preston along Fountain Street. A subdivision just north of Allendale Road is also serviced by a 300 mm diameter watermain that extends north of Maple Grove Road along Fountain Street. A 600 mm diameter watermain exists along Maple Grove Road to the west of Fountain Street, joining the aforementioned watermain at Fountain Street. From the same intersection (Fountain Street and Maple Grove Road) a 450 mm diameter trunk watermain has recently been installed along Maple Grove Road eastward to Beaverdale Road (see [Figure A 3.2.1](#)).

A 3.3 Stormwater Drainage System

Stormwater sewers exist along Maple Grove Road from the intersection of Maple Grove Road and Boxwood Drive westward. In addition, there are storm sewers along Boxwood which drain the remnant portion of West Creek subwatershed north of Maple Grove Road and there is a Municipal Drain, formally known as the Hunsperger Drain, located on portions of Middle Creek (see [Figure A 3.3.1](#)).

A 4.0 PUBLIC PARTICIPATION

The subwatershed planning processes require public consultation to ensure that all watershed, resident and stakeholder needs are incorporated into the study. The Hespeler West Subwatersheds Study included a full complement of public contact points to ensure that the study results and management alternatives were properly discussed and disseminated. The following key public contact points are noted and the corresponding advertisements and press articles are presented in **Appendix B** (Public Consultation):

1. On October 23, 2001, the Consultant Team, the Steering Committee and members of the Cambridge Environmental Advisory Committee (Hespeler West Subwatersheds Study Subcommittee) toured the study area.
2. The first Public Open House was held November 7, 2001 at the École Secondaire Père-René-de-Galinée (the new French High School). Notice of the meeting was published in the Record and local papers. Notices were also sent to individuals, land owners and interested public. Approximately 20 people attended the Open House where the study process was described and preliminary background material presented.
3. Subsequently, the first Community Workshop was held to discuss preliminary background information of the project on November 29, 2001 at the École Secondaire Père-René-de-Galinée. Notice of the meeting was published in the Record and local papers and flyers were direct mailed. Approximately 38 people attended the Workshop where consultants presented their part of the background study and information and visioning ideas were gathered from the public. In order to achieve more participation, three breakout groups



were formed such that each discussed a different subwatershed. Participants chose their group according to the watershed that was of greatest interest to them. The groups discussed four key questions to guide the group in providing information, raising issues in the watershed and discussing visions for the future. The groups then reassembled and presented their results to everyone. The workshop ended with a general question period.

4. The second Community Workshop was held at the École Secondaire Père-René-de-Galinée on June 26, 2002. Notice of the meeting was published in the Record and local papers and flyers were direct mailed. Approximately 30 people attended the Workshop where the Study Team presented the results and alternatives. The purpose was to discuss the results of the detailed studies and the various management alternatives. In order to achieve more participation, group discussion focused on the management alternatives and their visions for the various subwatersheds. The group discussed three key questions:

1. Are the Management Alternatives complete?
2. Do the Management Alternatives meet the Goals and Objectives of the Study? Do any of the others meet these G&O?
3. What is the preferred Management Alternative (i.e., what is the vision for the watershed)?

The workshop ended with an excellent discussion and a general question period.

5. Lastly, a second Public Open House was held on September 12, 2002 to present the Preferred Management Plan. Approximately 25 people attended the Open House to view the displays and ask questions.

6. A unique component of the study was a ½ day field trip with students of Jacob Hespeler Secondary School. Key members of the Consultant Team introduced the Environmental Studies students to a variety of concepts and practical applications of field assessments in stream morphology, aquatic species assessment, wetland species identification and habitat delineation, and stream flow. The field trip was very successful and students were further informed of the Hespeler West Subwatersheds Study process and goals. (Note: due to school programming issues, this is scheduled for October 7th, 2002.)

To assist in the dissemination of information to stakeholders, notices of the Public Meetings were also published on the PEIL website. Background material was also placed on the PEIL website. Eventually the draft and final document was placed on the PEIL website.

A 5.0 ISSUES AND OBJECTIVES

As a result of public consultation, agency comments and the investigations by the Study Team, the following issues have been identified for the Hespeler West subwatersheds and are to be addressed during the course of the study:

- a) Watercourse erosion potential.
- b) Fish Habitat: Status, potential, and management objectives (per the Grand River Fisheries Management Plan).
- c) Bridges, Dams and Ponds: Impact on Fish Habitat, current state of repair, long-term recommendations.
- d) Municipal Drains: Location and status of any existing municipal drains.



- e) Wellhead Protection: Implications on water quality and quantity from infiltrated stormwater runoff from development.
- f) Natural Habitat Network: Elements of a Natural Habitat Network as per the Regional Official Policies Plan.
- g) Woodlots: Protection of woodlots and vegetation management strategies.
- h) Wetland Protection – headwaters of Middle and East Creeks have been evaluated by MNR to be locally significant. There are several unevaluated wetlands in the West Creek watershed.
- i) Potential trail linkages (within the subwatershed and beyond) and interconnection of natural areas.
- j) Agricultural land classification and consideration for the lands north of the Urban Boundary.

As a result, the study will need to address:

1. The goal of the Hespeler West Subwatersheds Study (Section A 1.2);
2. General objectives laid out in provincial documents with respect to subwatershed study contents (Section A 1.5); and
3. The issues raised by the public (Section A4.0), agencies and the consultant team.

In achieving the above three items, the objectives of the Hespeler West Subwatersheds Study are:

OBJECTIVE 1 - AQUATIC RESOURCES

Objective 1.1
To identify protect, maintain and enhance aquatic resources.

Objective 1.2
To determine the impact of bridges, dams and ponds on fish habitat.

Objective 1.3
To determine the status, potential, and management objectives of East, Middle and West Creeks in accordance with the Grand River Fish Habitat Management Plan.

OBJECTIVE 2 – TERRESTRIAL RESOURCES

Objective 2.1
To identify protect, maintain and enhance terrestrial resources.

Objective 2.2
To identify, protect and manage Provincially Significant Wetlands, Environmental Preservation Areas, Environmentally Sensitive Policy Areas, Locally Significant Natural Areas, and Regionally Significant Natural Corridors.

Objective 2.3
To confirm wetland boundaries and the status of wetlands in the subwatersheds.

Objective 2.4
To assess and provide recommendations for future management of the agricultural lands within the subwatersheds.

Objective 2.5
To determine a preferred Natural Habitat Network and the elements of a Natural Habitat Network as per the Regional Official Policies Plan.

Objective 2.6
To determine appropriate woodlot and vegetation management strategies.

OBJECTIVE 3 - NATURAL HAZARDS

Objective 3.1
To minimize the risk to life and property due to flooding and erosion.

OBJECTIVE 4 - SURFACEWATER RESOURCES

Objective 4.1
To preserve natural hydrological systems.

Objective 4.2
To protect and manage surfacewater quality and quantity in order to ensure the future ability of Regional water-taking requirements and maintain the assimilative capacity of downstream wastewater treatment plants.

OBJECTIVE 5 - GROUNDWATER RESOURCES

Objective 5.1
To preserve natural hydrogeological systems.

Objective 5.2
To protect and manage the quantity and quality of groundwater resources.

Objective 5.3
To determine the implications on water quality and quantity





from infiltrated stormwater runoff from development.

OBJECTIVE 6 - THE RURAL AND URBAN ENVIRONMENT

Objective 6.1

To develop an ecosystem-based approach to land use planning and resource management in the subwatershed.

Objective 6.2

To produce an implementation and monitoring plan to guide future development in the subwatershed.

Objective 6.3

To determine and address the implication of development opportunities on the provision of infrastructure.

Objective 6.4

To determine the appropriate buffers from development and between development zones.

A 6.0 DESCRIPTION OF STUDY AREA

The Hespeler West Study area is an urbanizing portion of the City of Cambridge. This evolution of the landscape has transformed, and is transforming, parts of the subwatershed from primarily a forested landscape into: an agricultural landscape, an industrial setting, and parts to rural residential and hamlet settlements. These landscapes and associated development activities have impacted on various components of the subwatershed watercourses described as the West, Middle and East Creeks.

The Hespeler West subwatersheds comprise the East Creek, Middle Creek and West Creek which drain directly to the Speed River in the north part of the City of Cambridge.

The Hespeler West subwatersheds consist of approximately 60% sand and gravel, which is highly permeable. Rainfall on these areas contributes to groundwater recharge and baseflow within the subwatershed.

East Creek was impacted by the construction of Regional Road #24 that transects the historical course of the creek near the outlet into the Speed River. To accommodate the new alignment of Regional Road #24, a downstream portion of the creek was relocated to the west and channelized along the bottom of the roadway berm. Upstream, local residents have artificially constructed a channel through the wetland south of Mohawk Road. The original channel was likely to the south of Maple Grove Road. Throughout the East Creek subwatershed, drop structures and perched culverts associated with local roads create channel obstructions, especially to fish migration. Development in the subwatershed has been less intense than for West or Middle Creeks, with approximately 7% impervious areas at present. About 22% wooded area remains, while the rest of the watershed is used primarily for agriculture.

Currently, East Creek originates just north of Mohawk Road from two small branches, one of which begins at the University of Guelph irrigation pond. East Creek (2.8 km long) drains an area of approximately 160 ha.

Middle Creek was originally known as the Hunsperger Municipal Drain, which was constructed in approximately 1949. The construction, which occurred in stages, involved the excavation of a channel between Middle Block Road (upstream) and Briardean Road (downstream) through a wet area where no defined channel had previously existed (see [Figure A 3.3.1](#)). A significant portion of this channel was routed along Maple Grove Road as a roadside ditch. More recently, the reconstruction of Maple Grove Road involved relocating the portion of the ditch east of Speedsville Road to the south to accommodate the new roadway alignment. Development in the Middle Creek subwatershed has resulted in approximately 17% impervious coverage, while 18% remains wooded. The remainder of the subwatershed area is primarily agricultural.





Currently, Middle Creek is the longest creek (5.4 km in length), originating to the north of Middle Block Road just east of Fountain Street. Its two branches converge before flowing under Middle Block Road. Middle Creek drains by far the largest area of the three creeks with a total catchment area of approximately 585 ha.

The total subwatershed area for the three creeks is approximately 896 ha. In addition, 94 ha drains directly to the Speed River. The entire study area is 990 ha.

West Creek was impacted by the construction of the Toyota Manufacturing Facility between 1986 and 1988 that re-routed surfacewater around the property in roadside ditches and pipes along Maple Grove Road and Boxwood Drive. The original watershed was altered and runoff from the site now drains to the southwest through Riverside Park. A significant portion of the watershed area upstream of the Toyota site was diverted south to Riverside Park. The remaining upstream contributing area consists of portions of the Loblaw's industrial site and the entire Seaforth Creamery industrial site, which drain through underground pipes that outlet at the origin of the existing creek along Boxwood Road. Past in-stream modifications to West Creek include the construction by a resident of a small dam and drop structure immediately upstream of Royal Oak Drive, and construction of a dam immediately downstream of Royal Oak Road to create a ponding area. The dates that these modifications were performed are unknown. Overall, approximately 25% of the West Creek subwatershed area has become impervious (roads, buildings, parking lots, etc.) as a result of industrial and residential development. 13% of the subwatershed area remains wooded and the remainder consists of agricultural area and wetlands.

Currently, West Creek (1.3 km in length) originates at Boxwood Drive next to the Toyota Manufacturing facility at the terminus of the storm sewer system. West Creek drains an area of 151 ha.

