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MODEL TREE BYLAWS FOR CANADIAN MUNICIPALITIES

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MODEL TREE BYLAWS
FOR CANADIAN MUNICIPALITIES

J. SWAIGEN¹ AND J. W. ANDRESEN²

GREAT LAKES FOREST RESEARCH CENTRE
SAULT STE. MARIE, ONTARIO

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DEPARTMENT OF THE ENVIRONMENT

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FOREWORD

In 1978 the Great Lakes Forest Research Centre published a report entitled "Urban Tree and Forest Legislation in Ontario" by J.W. Andresen of the University of Toronto and J. Swaigen of the Canadian Environmental Law Association. The information presented in the report was obtained through a study commissioned by the Centre to provide baseline data on existing legislation in the province of Ontario that relates to urban trees and forests. As part of the study, the authors prepared two model bylaws which could be used by municipalities. One bylaw was for municipalities with populations over 100,000 and the other was for cities and towns with populations under 100,000. Since the submission of this initial report, the authors have revised the model bylaws in accordance with comments received from arborists, municipal leaders and urban foresters from across the country. It is hoped that these bylaws will be of use to municipal officials throughout Canada.

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Frontispiece. White elms once were familiar trees in the urban landscape of eastern Canada. City elms can be better managed and protected with bylaws that require removal of dead trees and permit inspection of trees suspected of being diseased.

ABSTRACT

This report was prepared in response to the needs of Canadian municipalities for adequate laws to protect publicly administered trees and forests, and is intended to assist both municipal councils and their solicitors. The bylaws have been designed for communities of two sizes: those with over 100,000 residents and those with a population between 500 and 100,000. The second bylaw, which serves the smaller communities, has been divided into core provisions and optional provisions to reflect the varying needs and resources of larger and smaller municipalities within the group. Formulation of local tree bylaws based on the models is explained in a detailed commentary supplemented by a subject index. Major topics covered are: tree-related duties and responsibilities of a parks department and municipal council; creation and duties of a municipal arborist or urban forester position; establishment of a tree committee and preparation of a master tree plan; efforts to promote public participation; and protection of trees during construction.

RÉSUMÉ

Ce rapport a été préparé en réponse aux besoins des municipalités canadiennes en matière de lois pour la protection des arbres et forêts qui sont sous administration publique. Il s'agit d'un instrument pouvant aider à la fois les conseils municipaux et leurs sollicitateurs. Les règlements ont été conçus en fonction de communautés de deux types: celles ayant une population dépassant 100,000 et celles ayant une population de 500 à 100,000. Le second règlement, qui s'applique aux petites communautés, a été divisé en dispositions obligatoires et facultatives, reflétant ainsi les divers besoins et ressources des petites et grandes municipalités comprises dans le groupe. La formulation des règlements locaux applicables aux arbres d'après les modèles est expliquée dans un commentaire détaillé complété par un répertoire. Les principaux points traités sont: les devoirs et responsabilités d'un conseil municipal et de son service des parcs relativement aux arbres, la création et les devoirs d'un poste d'arboriculteur municipal ou de forestier urbain, l'établissement d'un comité de protection des arbres et la préparation d'un plan central consacré aux arbres, les efforts en vue d'encourager la participation du public et enfin la protection des arbres durant les périodes de construction.

ACKNOWLEDGMENTS

Since the primary intent of this report is to provide guidance to municipal administrators and members of council, we relied heavily upon public employees and urban service personnel for their criticisms and reviews. We are gratified by the widespread interest that has been expressed in the provision of adequate tree conservation bylaws. In particular, we acknowledge the suggestions of the following: Martin F. Benum, Director, Winnipeg Parks and Operations Division; Mr. Rolland Cousineau, Chief of Planning, Metropolitan Montreal; Marc-A. Laurin, Chief, Division of Parks, City of Quebec; William Morsink, Urban Forester, Windsor, Ontario; Ray Nyroos, Head of Forestry, Edmonton Parks and Recreation; and Mary Smith, Islington, Ontario Ratepayers Group.

In addition we acknowledge the detailed comments provided by H.O. Brumpton, Commissioner, Parks and Recreation Department, city of Windsor; James D. Coats, Executive Vice-President, Ontario Forestry Association; Derek Coleman, President, Ecologistics Limited, Kitchener, Ontario; Marc Denhez, Counsel, Inuit Tapirisat of Canada, (formerly Legal Advisor, Heritage Canada); Dr. D.C.F. Fayle, Research Scientist, Forest Resource Group, Ontario Ministry of Natural Resources; Peter Lyons, Professional Forester, Friedrich Oehmichen, Faculté de l'aménagement, École d'architecture, Université de Montréal; Michael Smither, editor of *Municipal World* magazine; J. Soos, Forest Research Coordinator, Energy and Natural Resources Department, Government of Alberta (formerly municipal arborist with the city of Edmonton); David Starkey, Arborist, city of North York; Stanley B. Stein, Barrister and Solicitor; Shirley Strathy, Landscape Architect; and John Willms, Barrister and Solicitor.

Finally, we would like to express our appreciation for the financial support of the Imperial Tobacco Environment Program, the Laidlaw Foundation, and the Law Foundation of Ontario.

John Swaigen and John Andresen
January, 1980

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Cover photo: Courtesy of Mr. Nicholas Bechgaard, Tweed, Ontario.

1. HOW TO USE THE MODEL TREE BYLAWS

1.1. *Introduction*

The purpose of the primary model tree bylaw and its condensed adaptation is to establish a systematic regulatory approach to urban tree management. The bylaws take into account both the need for an overall planning and land-use management strategy for preserving the urban treescape and the need for a means of protecting individual trees from abuse.

After the original comprehensive bylaw had been reviewed by a number of administrators in charge of established tree programs, it was decided to provide an additional, abbreviated version. This second bylaw is further divided into basic provisions and optional provisions. The intent is to accommodate the smaller communities that are constrained by personnel and fiscal limitations. Municipalities with populations exceeding 100,000 would be well served by the comprehensive version, which remains the basic reference for all municipalities regardless of size. For simplification, several aspects of this version have been adapted for use by municipalities with a population between 500 and 100,000. Those with a population between 500 and 25,000 may disregard many of the optional provisions of our second bylaw. For very small communities, the arborist position may be deleted and the functions of the arborist may be carried out by some other municipal official. In all instances, however, regardless of municipality size, we advocate that one specified individual be in direct charge of tree planting and conservation, that adequate bylaws be passed to protect municipal and private trees, and that some form of tree committee be appointed. The following commentary elaborates on the features of the two bylaw versions and is presented for the reader's guidance.

Further assistance in preparing a tree bylaw can be obtained through the Executive Committee of the Ontario Shade Tree Council, Canadian chapters of the International Society of Arboriculture, the Canadian Forestry Service, or provincial natural resources or forestry agencies. Model arboricultural specifications that may be adapted to local conditions for inclusion in a tree bylaw are available from the Ontario Shade Tree Council.

1.2. *The Purpose and Philosophy of the Comprehensive Bylaw*

When we drafted this bylaw, our overriding consideration was to provide maximum protection for trees. Other important items such as the financial resources and personnel needed to implement such a bylaw were subordinated to this primary consideration, although we recognized their importance and took them into account by drafting an abbreviated version. We felt it was important to develop a comprehensive model which would assume adequate resources rather than one which provided

insufficient protection for trees on the assumption that adequate resources might not be immediately available.

The intention of the bylaw is not to create or to foster a tree worshipping cult. The bylaw does not make tree protection paramount over other public needs such as traffic safety, public health, and the provision of utilities. It attempts to redress a traditional imbalance among these needs (Andresen and Swaigen 1979), and to ensure that in planning for and implementing the plans for other municipal needs, their effects on the municipality's tree program will be taken into consideration.

1.3. *Putting the Bylaws to Use*

A municipality may consider various versions of the model bylaws when it is establishing or revising its tree protection bylaws. Municipal councils may adopt some provisions without adopting the whole bylaw, or they may want to add provisions to it.

The provisions we recommend provide a source of information that can be used as a guide in drafting a bylaw which will satisfy local needs. No one standard bylaw will apply to all municipalities. A municipal council planning to draft a tree bylaw should appoint a lawyer who is familiar with its own bylaws to review provisions of the model tree bylaws to ensure that they are within the municipality's powers and that they are consistent with other bylaws in force in the community.

Several of the general provisions may be beyond the powers of some municipalities. It may be necessary for a municipality to apply to the provincial government for enabling legislation before passing some provisions. For example, a limitation period of three years is provided for in section 41 because damage to trees may not be visible for some time; consequently, a lengthy period for laying charges appears to be necessary to deter activities resulting in such damage. In Ontario, however, the maximum limitation period a municipality may incorporate into its bylaws under the *Provincial Offences Act* is six months. Similarly, the model bylaws provide for a maximum fine of \$5,000. In other provinces, statutes may limit the fines under municipal bylaws to a lesser amount.

Powers available to municipalities may also vary from province to province and even within a single province. In Ontario, for instance, the powers available to most municipalities are set out in the *Municipal Act*; however, these powers are implemented by statutes such as the *Trees Act* and the *Plant Diseases Act*; moreover, some larger municipalities are governed by statutes other than the *Municipal Act* that provide them with additional powers.

1.4. *Limitations of the Model Bylaws*

1.4.1. Woodlot management: Although many of the provisions of the bylaws are useful for the protection of urban woodlots, they are intended primarily for the protection of individual trees and small groups of trees along streets and highways and in public parks. Consideration of proper woodlot management is best left to a separate study.

The master tree plan provided for in the bylaws need not be limited to trees growing on city streets. These bylaws emphasize open-grown, single trees. Some of the concepts in the bylaws such as the "drip line" and the establishment of protective distances are more applicable to these trees than to natural forest vegetation stands. Nevertheless, the tree program and master tree plan can be used to offer some protection to urban woodlots. Further protection of woodlots through additions to this bylaw or through policies or provisions in other provincial or municipal legislation may also be desirable.

1.4.2. Control of trees on private property: The bylaws touch on the planting and preservation of trees on private property only to the extent of providing positive incentives to the private landowner and to regulating his trees where they become a public nuisance to others. A comprehensive approach to the management of urban treescapes would require further regulation of private lands, including prohibitions against an owner removing trees on his own land. However, this is a highly controversial subject which raises cries of "confiscation of property" and "expropriation without compensation" from private owners and public officials alike. It is best left to separate legislation, perhaps as part of the land use planning process.

Until 1979, Ontario municipalities did not have the power to prohibit a landowner from removing trees on his property, except in very limited circumstances. These powers were broadened somewhat in recent amendments to the provincial *Trees Act*, but their application to urban open-grown, single trees is still limited.

1.4.3. Land use controls to protect trees: A third limitation of this bylaw is that it does not deal with all aspects of protection and preservation of trees during and after the process of developing lands. Municipalities may want to add provisions to their tree protection bylaws regulating treatment of trees through land use planning tools. Even where planning authorities require the preservation of trees during development, it is necessary to apply a blend of expertise to the design and construction of buildings to ensure that plans for preservation are carried out effectively. The conditioning of trees for development or changes in the surrounding landscape is so important and so frequently overlooked that it warrants a place in a model tree bylaw. Measures should be taken to ensure that trees are able to withstand changes in their habitat early in the planning process while

permits are pending. Pruning of roots and crowns, fertilizing, and perhaps watering, spraying, and cabling may be undertaken, depending on the season. Standards should be applied to construction sites, but they should be sufficiently flexible to provide effective protection for trees, since soil, water, temperature, exposure to light and wind, and other conditions and factors will differ from site to site. This kind of individual consideration is necessary in addition to the provisions in our bylaw for the protection of trees while construction is in progress. Another provision might include a requirement that existing healthy trees and woodlots be shown (to scale) on all plans, elevations and perspective drawings prepared for new subdivisions. Comprehensive regulation of this planning sequence was felt to be beyond the scope of this bylaw.

1.5 The Scheme of the Comprehensive Bylaw for Larger Municipalities

The comprehensive bylaw provides the municipality with the power to carry out a number of functions necessary for an integrated urban forestry program. The municipality may plant trees on public land, and in some cases on private land. It may maintain trees on public property and in some cases on private property, providing preventive care, trimming for better form and for avoiding interference with utilities, and treatment of diseases. Further, it may prohibit unauthorized destruction or abuse of trees on public, and in some instances, on private property. The municipality may deal with trees that constitute a hazard or a nuisance, and subject to certain safeguards it may remove unwanted trees.

1.5.1. The municipal arborist or urban forester: A municipal arborist is provided with broad powers and with corresponding duties. He is placed under a legal obligation to exercise his functions in a manner intended to promote a thriving tree program. His authority includes the supervision of a parks department or another department responsible for planting and maintaining trees in the municipality, the formulation of a master tree plan specifying the trees to be planted in various parts of the municipality, the formulation of a set of arboricultural specifications and guidelines to govern planting and maintenance of trees, the supervision and inspection of work sites when there is a possibility of injury to trees in the vicinity and consultation with other public authorities when their operations may result in harm to trees.

1.5.2. The tree committee: The bylaw attempts to bring to the tree program a variety of expertise, points of view, and interests by establishing a tree committee to assist the arborist and advise the municipal council. The duties of the tree committee include making an inventory of public trees, studying the urban forestry needs of the municipality, making recommendations for kinds of trees to be planted, disseminating information to the public, monitoring the progress of the tree program and reporting yearly to the council.

The committee should provide a measure of public participation and involve the community in many aspects of the tree program. It may also save the municipality money by providing free services, performing functions on a voluntary basis that otherwise might be performed by municipal staff. However, the tree committee should not be regarded as a substitute for qualified municipal personnel and adequate fiscal resources.

The functions of the tree committee are advisory only. It has no decision-making power.

1.5.3. The tree program: The bylaw provides not only for the planting of trees in the municipality, but also for their continued maintenance, protection and preservation after planting, and in some cases for their removal. These functions are subject to the development of an overall program designed to enhance the appearance of the municipality and further the welfare of the residents. The planting of trees is to take place in accordance with a master tree plan developed after consultation between the tree committee and the arborist and approved by the council after public scrutiny and discussion in public hearings. This plan may be amended from time to time by the council on the advice of the arborist in consultation with the tree committee and members of the public.

Trees are to be planted and maintained in accordance with a set of arboricultural specifications and practices which would reflect the best available technology and methodology designed to protect trees near work sites, and would reflect local needs and conditions. Together, these plans and specifications form a comprehensive tree program. The establishment of such a program would be preceded by an inventory of the state of the municipality's urban forestry resources. This would establish the baseline data needed to determine the municipality's needs and guide the municipality in designing its program. It would also provide an objective basis for measuring the success of the program over time (Andresen 1979).

Often the immediate needs of a municipality will require the establishment of an arboricultural section or department prior to completion of the planning program. In such cases, a small, well equipped crew capable of handling emergency situations and complex tree work should be set up. It is vital that this crew be headed by a person with both practical skills in the field and the ability to implement the plans discussed above. In addition, the leader should be able to supervise an expanding section or handle a small section plus an increasing number of contracted arborists. This option to contract or increase staff should be preserved as long as possible.

1.5.4. Written permits: Apart from provisions for communication, coordination and consultation, the key to carrying out the requirements of this bylaw effectively is a system of written permits. Those who undertake activities which may be injurious to trees must apply first to the arborist or the department for a permit. This ensures that potential problems will come to the attention of the arborist and that he will be provided with sufficient information to make a sound decision. It provides a mechanism for imposing clear and effective terms and conditions on the manner in which work is carried out. Without a system of written permits, enforcement of the bylaw will inevitably be haphazard. The permit system contemplates followup in the form of reporting any intended variations from the work authorized by the permit, inspections during the course of work and inspections of the finished work by the arborist, and legal sanctions for breaching conditions of permits.

1.5.5. Pruning of trees: Various provisions are made for trimming both public and private trees. The department is authorized to prune trees on public property or on private property when it is in the public interest; however, the primary responsibility for pruning private trees which overhang public land rests with the private owner.

1.5.6. Removal of trees: Public authorities are authorized to remove public trees or to order the removal of private trees when this is in the public interest; however, to avoid unnecessary depletion of the municipality's stock of mature trees, the bylaw contains provisions to encourage replanting or transplanting when trees have been removed and to encourage treatment of diseases or other undesirable conditions rather than removal of the trees.

1.5.7. Incentives to protect trees: The bylaw incorporates both the "carrot" and the "stick" approaches. It attempts to involve residents of the municipality and inform them about the realities of tree preservation through the establishment of an Arbor Day, the dissemination of information through the tree committee, and the involvement of the neighborhood in the decision-making process when trees are to be maintained or removed. By giving municipal officials the power to enter into agreements with and provide subsidies to private owners, the bylaw encourages the correction of conditions that made the tree a public nuisance rather than destruction of the tree. It encourages private owners to plant trees (and moreover to plant the most suitable trees in the most suitable location), and to maintain their trees in a healthy and attractive form. This "carrot" approach, which is intended to promote an awareness in private owners of the value to the community of trees on their land, is based on the understanding that trees in the municipal setting are a valuable community resource, whether on private or on public land.

1.5.8. Sanctions against injuring or destroying trees: Because the preservation of trees can often add to the cost of development, of providing and maintaining public utilities and public works, and of managing land, trees are vulnerable to abuse, and incentives alone will not provide sufficient protection. Strong sanctions are necessary as a deterrent to developers, vandals, public authorities, and others who would injure trees through ignorance, carelessness, or wilful disregard. The bylaw therefore gives municipal authorities responsible for its implementation and enforcement very broad powers to inspect activities that may be injurious to trees, to require the deposit of securities, to require remedial action to repair damage to trees and recover the costs of this work, to deal with public nuisances, and to punish those who carry out their activities in a manner that injures or may injure public trees.

1.5.9. Public participation--notice, objection and appeal: The bylaw also provides for substantial public participation in the form of notice to the owners and occupants of premises in the neighborhood of trees before the trees are maintained or removed, and the right of these residents to discuss the intended actions with officials before they take place. If they are still not satisfied after discussions, they may express their point of view to someone other than the authority intending to take the action they consider offensive, and try to convince a neutral body of their point of view.

These provisions do not imply a lack of competence or concern by municipal officials, utilities, or their contractors and subcontractors. This opportunity for consultation is a useful public education tool and should prove very effective in building trust between residents and their public servants by promoting understanding of what the public authorities are doing and why. Even though the vast majority of actions taken by public authorities to maintain or remove trees are probably necessary and well conceived, it is essential to keep the general public well informed. Ignorance breeds mistrust. Urban residents are frequently concerned about their neighborhoods and justifiably disturbed when, without knowing the reasons, they find the limbs of their trees pruned or roadside trees removed. Almost everyone knows of a case in which a mature tree near someone's home has disappeared overnight without warning or subsequent explanation. In some cases, the resident may have erroneously believed that he owned the tree. Cases are less frequent, but not unknown, in which municipal authorities have believed that a tree could not be saved, or that the cost of treatment was prohibitive, but an adjoining landowner disagreed and successfully treated the tree. There are also cases in which public authorities have unlawfully cut down trees on private property in the mistaken belief that they were on public property.

1.5.10. Coordination of decisions and activities affecting trees:

The comprehensive bylaw contemplates coordination of efforts, collection of information often not available to municipal officials, sharing of information, and coordination of decision-making. Operations which have traditionally been carried out by a variety of public authorities without coordination are now subject to scrutiny and consideration by the arborist, the parks department, the tree committee, the elected council, and in some circumstances, nearby residents.

1.6. Discussion of Individual Provisions

The following is a discussion of the individual provisions of the comprehensive bylaw, their interrelationships, and the considerations behind the policy choices they represent.

1.6.1. Interpretation--Section 2:

Most of the definitions in the interpretation section are self-explanatory. However, it should be noted that the definition of public land is broad. Traditionally, the protection of trees on different kinds of public land has often been dealt with in different statutes and bylaws. We perceived a need to consolidate these provisions into one bylaw. In Ontario, for example, most bylaws made under the *Municipal Act* for the protection of trees have been limited to trees in parks and on streets. Trees on other public lands sometimes are left unprotected by legislation. Anomalous situations arise in which, for example, the maximum fine for injuring a tree in a public park is \$100, but the maximum fine for injuring a tree on a city street is only \$25.

The definition of a "tree" traditionally excludes woody ground cover, shrubs and hedges, and may exclude such small ornamental trees as crab apples. An alternative approach taken in many Ontario municipalities is to define trees to include "all woody vegetation" or to include shrubs. Although we decided in this bylaw to focus on large trees, all the provisions of this bylaw can be extended to shrubs without further changes in their wording, simply by changing the definition of "tree" to include shrubs.

The "specifications" referred to in the interpretation section were intended to ensure that there is an objective and uniform set of standards for tree work. No such set of specifications has been drafted for this bylaw, as each municipality may wish to establish specifications to conform with its local needs. However, a model set of specifications is available from the Ontario Shade Tree Council. Section 42 provides wording which incorporates the specifications into the bylaw itself. The purpose of this is to ensure that any violation of the specifications is legally just as much an offence as any other breach of the provisions of the bylaw.

1.6.2. Qualifications of the arborist--Section 8: The question of the qualifications of the municipal arborist in Section 8 was a matter of controversy. Reviewers of the bylaw generally agreed that present municipal staff responsible for trees are often not sufficiently trained. Some suggested that qualifications of the municipal arborist should be even more stringent--for example, that in addition to providing that the arborist should hold a college degree or its equivalent, the bylaw should require that the degree be from "an accredited school". Others felt that a wider variety of channels for obtaining qualifications, such as courses given by commercial tree specialists, should be recognized. The question was raised whether such self-interested teachers would have the academic neutrality and independence required.

Others felt that no qualifications should be demanded because any attempted definition of such qualifications would be necessarily vague or ambiguous, or because small municipalities could not afford to demand such qualifications in their personnel. Nevertheless, it appeared advisable to provide some minimal standards in the interests of protecting trees, even though the standards might be somewhat flexible and imprecise.

1.6.3. The master tree plan--Sections 9(3) and 34: The arborist is responsible for formulating and recommending amendments to the master plan, but in doing so, he must consult with the general public. Section 9(3) is based on the assumption that he will also consult with the tree committee in developing this plan.

1.6.4. Outstanding or historic trees--Section 9(7): There was general agreement among the reviewers of this report that provision should be made for the recognition of historic trees. However, opinion varied as to whether the arborist should have a mandatory duty to place an identifying plaque on such trees and maintain them. Some reviewers felt the arborist would have insufficient resources to do this, while others felt that he should be required to do it, to ensure that this function was not lost among other priorities.

The arborist, of course, would have no right to enter private land, to place a plaque on any private tree, or to maintain the tree without the consent of the landowner. Experience has shown, however, that private owners are usually pleased to have such recognition given to their trees, provided that this imposes no financial obligations or restrictions on them. Public recognition might have some peripheral effect on the owner's treatment of the tree. In Niagara Falls, Ontario, for example, publicity given to the fact that a private owner was unable to afford treatment for a red oak tree, recognized as one of Canada's oldest specimens, led to the donation of money and the

provision of expert assistance by the Niagara Parks Commission School of Horticulture in treating the tree.

When the owner does not wish to preserve a historic tree on his property, however, there is little that the public can do to ensure the tree's protection. The *Ontario Heritage Act*, for example, which provides some limited protection to historic buildings, provides no similar protection to trees of historic significance. In England, on the other hand, local authorities, under the *Town and County Planning Act, 1968*, may place outstanding trees under a Tree Protection Order, and require owners to protect them.

1.6.5. The power of entry for enforcement officers--

Section 10(a): Municipal officials have frequently found that where the right to enter private property is not assured, tree protection, public health, safety, and environmental laws are difficult to enforce. With respect to this bylaw, which deals primarily with municipal property, power of entry is required to deal with trees on private property which may become public nuisances. While some commentators expressed alarm at the potential interference with civil liberties, privacy, and private property rights, others supported a limited power of entry, provided that entry into a dwelling was not permitted. The authors feel that a right of entry is necessary for proper enforcement of the bylaw, and that requiring an enforcement officer to obtain a warrant before entry would involve unjustifiable delay and red tape.

Power of entry should, however, be limited: it should be no broader than is necessary for ensuring enforcement of the laws mentioned in paragraph 1 of this section. The power of entry described in this bylaw is consistent with similar powers granted by other existing and proposed federal and provincial legislation in analogous circumstances.

1.6.6. The tree committee--Section 14: The need for a tree committee as well as

the composition and role of such a committee evoked a variety of responses from reviewers. The occasional reviewer felt that a tree committee involving members of the public would unduly interfere with the administration of the bylaw by municipal officials. However, most reviewers either reacted favorably towards the idea of a tree committee or made no comment about it. On balance, the authors felt that a tree committee would be a valuable component of an effective tree protection system.

The size of the tree committee provided for in the comprehensive bylaw--ten members--was chosen because it permits the committee to incorporate a variety of interests. There is no magic in the number ten, and alternative versions of the bylaw have not set out a specific number of members or a specific composition. The size and composition

should be looked at as guidelines rather than as requirements. Municipalities may wish to vary the numbers and types of members to suit local conditions.

As envisioned, the committee is a purely advisory body. To give it any decision-making powers or a role in hearing and determining appeals from decisions made by the arborist could create legal problems, in view of the restricted power municipal councils may have to delegate authority. Opinion by commentators was divided on whether such citizens' committees should be given more than an advisory role. There appears to be some merit in delegating certain decisions to such a committee.

Nothing has been said about payment of members of the tree committee. It is contemplated that members of the public will in most cases serve on a voluntary basis without pay, but will be eligible for reimbursement of legitimate expenses.

1.6.7. Prohibited activities--Section 16: Provision has been made for numerous and broad prohibitions against activities which may injure public trees. In our opinion, this is necessary to cover the many kinds of activities that may injure trees. A draft bylaw that has been considered in one Ontario town goes even further. It would prohibit anyone from permitting a dog to urinate in the vicinity of a public tree. The forester who drafted the bylaw has pointed out that although the inclusion of a section dealing with dogs using trees as fire hydrants may seem silly, repeated urination by dogs on trees can cause gradual poisoning of young trees and bark damage on older trees. In some cities, notably New York, this problem has necessitated special tree guards to protect trees from dogs.

Some reviewers have suggested that the prohibitions may be unenforceable because they are so broad. For example, there is no question that a prohibition against "any gaseous, liquid or solid substance which is harmful or toxic to public trees" coming into contact with those trees is broad. However, while *vagueness* causes statutory provisions to be unenforceable, *broadness* does not. Environmental laws like the federal *Fisheries Act*, the Ontario *Water Resources Act*, and the Ontario *Environmental Protection Act* have been widely criticized for their subjectivity or their nuisance standards. In particular, section 14 of the *Environmental Protection Act* which provides:

- 14(1) Notwithstanding any other provision of this Act or the regulations, no person shall deposit, add, emit or discharge a contaminant or cause or permit the deposit, addition, emission or discharge of a contaminant into the natural environment that,

- (a) causes or is likely to cause impairment of the quality of the natural environment for any use that can be made of it;
- (b) causes or is likely to cause injury or damage to property or to plant or animal life;
- (c) causes or is likely to cause harm or material discomfort to any person;
- (d) adversely affects or is likely to adversely affect the health of any person;
- (e) impairs or is likely to impair the safety of any person; or
- (f) renders or is likely to render any property or plant or animal life unfit for use by man.

has been widely criticized for its broadness and vagueness. However, the courts have consistently upheld Section 14 and similar provisions of this Act and other environmental protection statutes, and such provisions have proven very useful to enforcement agencies.

1.6.8. Native versus exotic trees--Sections 18(10) and 4(2): With regard to planting and replacement programs, the bylaw suggests that where a native species is as suitable as or more suitable than an exotic one, preference should be given to native species. This is not a mandatory requirement, but a guideline. It gives the responsible authorities discretion to choose trees according to their merits on a site-specific basis. The bylaw recognizes not only that many foresters and members of the public prefer native species but also that, in some cases, exotics may be less susceptible to the effects of air and soil pollution and disturbance of their surroundings, and therefore better adapted to the urban environment. The manner in which these provisions are worded represents a compromise between the opinions of reviewers who felt strongly that authorities should be required to plant native trees and of those who felt strongly that native trees are inappropriate to the urban setting.

1.6.9. Pruning and other maintenance of public trees--Section 27: We have provided for notice to "owners and occupants of land in the vicinity" of the intention to prune or otherwise maintain trees. It is difficult to determine just who should get notice. In densely populated areas, particularly where there are numerous high-rise apartments, it would be difficult to give adequate notice individually to every tenant of every building in the vicinity. On the other hand, it may be desirable to

give notice to local ratepayer groups and other special interest groups in addition to residents. By the wording we have chosen, we have left the municipality some discretion as to who should be notified, instead of setting out an inflexible formula, although it may be necessary for each municipality to state whom it will give notice to in order to avoid an attack on the section for vagueness.

A few reviewers objected to any notification when trees are to be removed or maintained because they felt it would cause undue delay to municipal departments. Most reviewers, however, either welcomed the notice provisions or were neutral. Of those who objected to notice provisions, some felt that prior notice was justified for removal, but not for routine maintenance. In the second version of the bylaw, we have required notice before removal but not before routine maintenance. In the comprehensive model, however, we have required notice before routine maintenance as an additional precaution to protect trees. There are examples of spraying trees with a pesticide which can cause an illness in some resident, and in other cases there can be an unnecessary overlap in maintenance by uncoordinated public authorities. We have been advised of one situation in which the same trees have been trimmed by Ontario Hydro, a few days later by Bell Canada, and a few days later by the municipal officials.

1.6.10. The limitation period: The usual limitation period for laying charges for breach of a municipal bylaw in Ontario is only six months. This is often too short a period for damage resulting from soil compaction, root decay, lowering of the water table, or flooding to become apparent. Three years is suggested as a more reasonable limitation period under such circumstances.

1.7. Discussion of the Tree Bylaw for Smaller Municipalities

In this version, many of the functions and regulations which were mandatory in the primary, comprehensive model are optional. As indicated in the *Introduction (1.1)*, municipalities with populations between 500 and 100,000 are often denied enforcement of their bylaws by personnel and fiscal limitations. To compensate for these municipal limitations the arborist's powers are just as broad, but he is given fewer binding obligations and more discretion. The permit system, which would require extensive paper work, is replaced by a system in which the arborist may consent orally to work. Notice to the public is still required before trees are removed, but not before they are pruned or otherwise maintained. Requirements are dropped for such items as the inventory of trees before preparation of the master tree plan.

This bylaw is designed for adaptation by communities and municipal governments with populations ranging from 500 to 100,000: some or all of the optional sections (shown in italics) may be deleted.

Municipalities of this size comprise most of the smaller settlements in Canada. For example, there are some 720 towns, villages and townships in Ontario within this population bracket. Hence, about 90 percent of Ontario's 832 municipal governments would find this version of the by-law of interest. A similar pattern of numerous small communities and relatively few urban centres with large concentrations of people is found throughout Canada. The larger municipalities usually have adequate resources to administer tree programs, but it is in the smaller communities that the most flexibility is needed. Thus, in smaller municipalities which cannot afford to hire a qualified arborist or establish a tree committee, other municipal personnel such as public works crews or highway and road workers will have to tend to tree needs.

1.8. The Need for Caution in Implementing Various Provisions of the Model Bylaw

Those drafting a bylaw for a particular municipality should be aware that the bylaws presented, particularly the comprehensive version, represent an ideal--an ideal that requires money and time to implement. Care should be taken that the bylaw proposed is not too expensive to implement or politically unsuitable for the time and place.

Municipalities with existing tree bylaws have sometimes found that it takes time to change the public and political mind. Often a basically good but general bylaw will be passed (where a complex one would be defeated), but when it is implemented its shortcomings are revealed. Time will determine what your community needs in the way of refinements, and the model bylaws will be useful when the necessary changes are being drafted.

When using these bylaws as a basis for discussion of possible provisions for your municipal bylaw, you should keep in mind the following points.

- Drafters of a municipal bylaw usually start from the provincial enabling legislation and try to establish provisions that comply with and do not go beyond the powers given the municipality. Because this bylaw is not based on a particular set of provincial enactments, it may be difficult to fit it into the framework of existing enabling legislation.

- Because the model bylaws are meant to be an educational tool as well as a legislative model, they contain detail which usually will be left out of bylaws drafted by a municipal solicitor. Such bylaws often provide a skeletal framework to be fleshed out by policies and practices developed over time, and their language may be more "legalistic" than that of the model bylaws, which attempt to maintain a balance between legal jargon and language intended to explain and clarify the intent of the bylaw for the layman.

- An attempt has also been made to express current concepts of good urban forestry practices in the bylaws themselves, particularly in the comprehensive version, rather than leave them to operating manuals or informal policies. In this sense the bylaws represent a style of expression foreign to current skeletal bylaws and could be viewed as hybrids between a manual and a bylaw.

- Finally, it should be noted that the view presented here as to how a municipal council might ideally administer its urban forestry program is subject not only to economic and political considerations but also to legal limitations.

Municipalities can only enforce the power given to them by the provincial governments. In many cases the authority delegated to a municipal council may be unduly limited by outmoded legislation, and its power to delegate authority further in a rational manner may be severely circumscribed. The courts may not allow councils to make general policies that are to be developed in detail on a case-by-case basis or to give employees, committees, or independent agents responsibility for detailed policy formulation or implementation.

Therefore, the extent to which the division of labors and responsibilities suggested here can be implemented under existing legislation may be a factor limiting the ability of municipal councils to implement these bylaws in their present form.

2. MODEL TREE BYLAW
FOR CANADIAN MUNICIPALITIES WITH POPULATIONS OVER 100,000

Preamble

A bylaw regulating the planting, maintenance, protection, preservation, and removal of trees on and adjacent to public streets, parks and other public land within the municipality; establishing the office of a municipal arborist, a parks department, and a tree committee as the agencies for implementing and enforcing its provisions; providing for the elimination of public nuisances; providing for the issuing of permits for work which may affect public trees; and prescribing penalties for violations of provisions.

Whereas the council of the corporation has authority to pass bylaws relating to public trees under section (number of section) of the (name of statute) Act, the council of the corporation of (name of municipality) enacts as follows:

1. Title: This bylaw may be cited as "The Tree Bylaw".
2. Interpretation: "Arborist" means the "municipal arborist", "commissioner", "urban forester", "tree warden", or other person or his delegate assigned by council to implement and enforce the provisions of this bylaw.

"Barrier" includes any fence, box, frame, guard or other device placed on, around or near a tree for the purpose of protecting it from injury or harm.

"Committee" means the tree committee.

"Department" means the department of "Parks", "Parks and Recreation", "Forestry", or other department designated by council to have primary jurisdiction over public trees.

"Drip Line" means the outer boundary of an area on the surface of the ground that corresponds to the outer edge of the crown of a tree.

"Grant" includes a loan or guarantee of a loan.

"Maintenance of trees" includes replanting, replacement, pruning, cabling, spraying, irrigation, fertilization, repair and treatment of wounds.

"Master Tree Plan" means a plan specifying the species of trees to be planted on each of the streets and other public land in the municipality, and their locations.

"Person" includes any individual, association, corporation, contractor, commission, public utility, firm, partnership, or organization of any kind, or their agents or employees.

"Private Land" means any land other than public land.

"Public Land" means any park, street, highway, and any other land owned, leased or otherwise vested in or controlled by the municipality or by any local board thereof.

"Public Tree" means a tree any part of the trunk of which is on public land.

"Specifications" means the arboricultural specifications, guidelines, and standards of practice adopted by the municipality.

"Tree" means any woody plant of a species which at maturity is usually over five metres¹ in height, having one or more self-supporting trunks and including the roots, branches, trunk, crown or any part thereof.

"Tree Program" means a program designed to enhance the appearance of the municipality and further the welfare of the residents by the planting, maintenance, protection and preservation of public trees, including the establishment and implementation of the master tree plan and the specifications.

"Utility" includes the facilities for energy, communications and transportation, the provision of those facilities, and the persons responsible for their provision and maintenance, whether the facilities are publicly or privately owned.

"Work" includes any activity on public land or private land that may injure any public tree, and without limiting the foregoing, may include the installation and maintenance of utilities, the paving or repairing of roads, sidewalks or boulevards, the construction, demolition or replacement of any structure, excavation, landscaping activities, snow removal and grounds maintenance.

¹ S.I. units used throughout this bylaw may be converted to English units by using the table in Appendix I.

3. Establishment of a Department of Parks, Municipal Arborist, and a Tree Committee: A department to be known as the parks department, a position to be known as the municipal arborist, and a tree committee are hereby established.

4. Authority and Duties of the Council: 1) The council shall carry out a program designed to enhance the appearance of the municipality and further the welfare of the residents by the planting, maintenance, protection and preservation of public trees, including the establishment and implementation of the master tree plan and the specifications, known as the Tree Program.

2) The council shall adopt by bylaw a master tree plan, in which native species shall be given preference over exotic species where a native and an exotic species are equally suitable, and a set of specifications.

5. Agreements with Private Owners in the Public Interest: 1) The council may give grants or other assistance to landowners to encourage the planting, preservation, protection, maintenance, or removal of trees, the prevention or treatment of disease, or the correction of a condition in relation to trees on public or private land that constitutes a public nuisance, and to discourage the destruction, mistreatment or neglect of trees on private land.

2) The council may enter into agreements with the owners of public or private land for the planting, maintenance, protection, preservation, and removal of trees on public land or on private land within 2.5 metres of any public land when this is in the public interest, and for carrying out any order by the municipality at the request of the person responsible for carrying out the order. Any such agreement may be made subject to such terms and conditions as the council considers proper, including those relating to the cost of transplanting any tree removed or planting a tree of similar value in the same location or in any other location in the municipality and to the deposit of adequate security with the department;

PROVIDED that no agreement for maintenance, protection or preservation of trees be for a term of less than 20 years.

3) The council may cause an agreement to be registered in the proper registry or land titles office, and thereupon such agreement is binding upon, and to the benefit of, every successor-in-title to such owner during the term of the agreement.

6. The council, on the advice of the arborist, may amend the plan or specifications at any time that the circumstances make it advisable.

7. Arbor Day: The council shall establish an annual Arbor Day to encourage the residents to be aware of and appreciate the contribution of trees to the quality of life in the municipality.

8. The Municipal Arborist: The arborist shall be trained and skilled in the theory and practice of municipal arboriculture, and wherever possible shall hold a college degree or its equivalent in arboriculture, ornamental or landscape horticulture, urban forestry, or another closely related field.

9. Powers and Duties of the Municipal Arborist: 1) The municipal arborist shall supervise the department in the implementation and enforcement of the provisions of this bylaw, and in his absence, these duties shall be the responsibility of a qualified alternate designated by the council.

2) In carrying out his duties pursuant to this bylaw, the arborist shall have regard to the safety of the public, and shall attempt to preserve rather than remove diseased, infected, or injured trees wherever this is possible and expedient, and to preserve the aesthetics and environmental functions of public lands and lands adjoining public lands.

3) The arborist shall recommend to the council for its approval, with the advice and assistance of the tree committee, a tree program, including a master tree plan and specifications, having regard to the needs of the residents of the municipality for safety, the presentation of aesthetic values, noise and pollution control, recreation, and protection of wildlife, water, and soil.

4) The arborist shall consider existing and future structures, utilities, and environmental factors when recommending a species for any public land, and generally when carrying out his duties pursuant to this bylaw, and may designate species as suitable or unsuitable on the basis of these considerations.

5) The arborist may issue permits as provided in this bylaw.

6) The arborist shall supervise or inspect, or shall delegate persons who shall supervise or inspect, all work done under any permit issued pursuant to this bylaw.

7) Outstanding or
Historic Trees. The

arborist may designate individual trees or groups of trees as outstanding trees on the basis of species, age, size, historic importance or any combination of these factors. With the owner's consent, the arborist may identify such trees by a plaque or other suitable method and should make every effort to provide them with full care and protection.

8) The arborist
shall determine the

monetary value of any tree according to the current Shade Tree Evaluation Procedure of the International Society of Arboriculture for any purpose in this bylaw, or where another evaluation is more suited to local needs, by that formula. In Ontario, the arborist shall use the Shade Tree Evaluation Procedures of the Ontario Shade Tree Council.

9) Planting of Trees
on Private Property

by the Municipality. The arborist shall supervise the carrying out of any agreement made pursuant to section 5.

10) Cooperation with
Other Municipal

Departments. The arborist shall ensure that all public trees are maintained and all work is done in accordance with the provisions of this bylaw and the tree program, and in a manner which will encourage the development and retention of a healthy, attractive and safe form for public trees.

The arborist shall review and comment on, prior to final approval, all permits, plans and programs for sewers, lighting, water supply and other utilities, paving, subdivision of land, and any other permits, plans or programs that may result in injury to or removal of trees.

The arborist and the officers and employees of other municipal departments, boards and agencies, including the authorities responsible for public works, planning, roads and transportation, street lighting and parks, and the police department and fire department, shall cooperate in planning for the present and future amenities of the municipality when the activities of such authorities may affect public trees.

11) With the consent
in writing of the

council, the arborist may delegate in writing any of his powers or duties under this bylaw to any officer or employee or any class thereof in the department.

Any act performed by a delegate pursuant to a valid delegation has the legal force of an act performed by the arborist.

In any proceedings, the evidence of any witness that he acted pursuant to a valid delegation is sufficient proof of validity of the delegation in the absence of evidence to the contrary.

10. (1) For the purposes of enforcing this bylaw, including any order or any term or condition of a permit, the arborist may, between sunrise and sunset, without a warrant and upon producing the proper identification if requested by any person on the premises, enter any private or public land or premises other than a building to make an investigation, and may make or require to be made any examination, test, photograph and inquiry as may be relevant to the subject matter of the investigation, and may remove samples or specimens required for the purpose of analysis to determine whether any tree is diseased, infected or otherwise injured.

(2) Where the arborist takes a sample or specimen and has not divided the sample into two parts, a copy of any report on the sample shall be given to the person for whom the sample was taken.

11. For the purposes of this bylaw, the arborist may, where his consent is required, order any person to furnish a bond, cash deposit or other security in an amount which, in his opinion, is sufficient to cover any injury to trees which may result from that person's activities or work.

12. The arborist may inspect any construction, demolition, excavation or grading site for which there is any term or condition in a subdivision agreement or building permit relating to trees. The arborist shall report violations of the agreement or permit to the building commissioner and the tree committee.

13. Duties of the Department: 1) The department shall, under supervision of the arborist, implement and enforce the provisions of this bylaw.

2) The department shall follow and enforce the specifications and shall implement the tree program in accordance with the specifications.

14. The Tree Committee: 1) The tree committee shall consist of no fewer than 10 members, including:

- (a) the arborist or his delegate;
- (b) the parks commissioner or his delegate;
- (c) the municipal engineer or the commissioner of public works or his delegates;
- (d) a representative of a local horticultural society, a utility or the Public Utilities Commission;

- (e) one elected member of the municipal council; and
- (f) five ratepayers of the municipality appointed by the council.

2) The five members appointed by the council shall be appointed for terms of two years and shall serve until their successors are duly appointed and approved by the council. Vacancies caused by death, resignation, or otherwise shall be filled for the unexpired term in the manner in which original appointments are made.

3) Within a reasonable time after its appointment, the committee shall meet and elect a chairman from among its members, and provide for the adoption of rules and procedures and for the holding of regular and special meetings as it deems advisable and necessary to perform its duties, provided that the committee shall meet not less than six times yearly and in addition shall meet at the request of any three members.

15. Duties of the Tree Committee: The committee shall advise the council on all matters pertaining to this bylaw.

The duties of the committee shall include the following:

- (a) to make an inventory of public trees within the municipality, with information about the species and cultivar, age, size, location and condition of such trees;
- (b) to undertake such studies in connection with the tree program as the council may request;
- (c) to recommend the species and cultivars of trees to be planted on public land within the municipality and parts thereof;
- (d) to assist the council, the officials of the municipality, and the inhabitants in disseminating information about the selection, planting, preservation, maintenance and removal of public trees and trees on private land, and from time to time to advise the council as to desirable legislation, policies and activities to enhance the tree program;
- (e) to report yearly in writing to the council on its activities and on the state of the tree program by: outlining the extent of planting, protection, preservation, maintenance and removal of public trees during the year; stating whether the municipality achieved a net gain or net loss in the number and

quality of public trees during the year; outlining the extent to which trees planted in previous years have survived and have maintained a satisfactory rate of growth and state of health during the year; stating the probable causes of any significant loss or of less than optimal growth of such trees; and making recommendations as to remedies for or methods of preventing loss, poor health, or poor growth of such trees.

- (f) to recommend grants or other assistance to owners of private land for any purpose set out in Section 5.

16. Prohibited Activities: 1) No person shall, without first obtaining a written permit from the arborist, cause or permit any activity which may injure any public tree.

2) Notwithstanding the generality of the provisions of subsection (1), the following are hereby declared to be activities which, in the opinion of council, are objectionable or may injure any public tree, and are hereby prohibited; and no person, without first obtaining a written permit from the arborist, shall cause or permit any such activities.

(a) removing, spraying, fertilizing, pruning, disturbing, cutting above or below ground, or altering in any other way, any public tree;

(b) depositing, placing, storing, or maintaining on public or private land any stone, brick, sand, concrete, soil or other materials or equipment which may impede the free passage of water, air, or nutrients to the roots of any public tree;

(c) marking, breaking, removing bark from, or in any other way defacing any public tree;

(d) fastening any sign, bill, notice, wire, rope, nail or other object to or around or through any public tree in any manner, except a plaque or other identification of an outstanding tree pursuant to section 9(7).

(e) fastening any sign, bill, notice, wire, rope, nail or other object to or around or through the stakes, posts, guards, or barriers which support or protect any public tree, except a plaque or other identification of an outstanding tree pursuant to section 9(7).

(f) causing or permitting any gaseous, liquid or solid substance which is harmful or toxic to public trees to come in contact with them;

(g) causing or permitting the heat from any fire or other source of heat to come in contact with a public tree;

(h) raising or lowering the grade level or altering the drainage pattern in a manner which may interfere with access of water, air or nutrients to any public tree;

(i) attaching any material to or leaning any material against any public tree when work is being done in the vicinity;

(j) removing or interfering with any barrier on, around, or about any public tree;

(k) closing, covering, obstructing, or otherwise interfering with any open space within a barrier around a public tree in a manner that may interfere with access of water, air or nutrients to the tree;

(l) causing or permitting any excavation, soil disturbance or compaction within the drip line of any public tree;

(m) excavating any ditches, tunnels, or trenches, laying any walkway or driveway or paving within a distance of 0.5 metres from the surface (at breast height) of the trunk of any public tree for every 5 centimetres of diameter of the trunk at breast height.

(n) causing or permitting electric current carried by any wire to come into contact with any public tree.

3) No person shall, without first obtaining a written permit from the arborist, plant any tree on public land.

17. Protection of Trees During Work: 1) In addition to any other protection:

(a) Any person responsible for work near a public tree shall, before work begins, protect the tree with a substantial barrier not less than 2 metres high and 2 metres square, or at a distance of 0.5 metres from the base of the trunk for every 5 centimetres in diameter at breast height (DBH) of the trunk, whichever is greater. All building material, soil, and other debris shall be kept outside the barrier. Segments of the barrier shall be attached to each other, and not to the tree.

(b) The person responsible for the work shall erect any additional barrier necessary in the opinion of the arborist to ensure the effective protection of any public tree, and shall maintain the barrier in good condition so that it can perform its function adequately.

(c) All below-ground electrical, water, sewer, gas, telephone or other utility installations within 3 metres of the trunk of any tree must be tunnelled at a depth of not less than 1 metre below the surface of the ground if the trunk of the tree is more than 20 centimetres DBH, or at a depth to be determined by the arborist if the trunk is less than 20 centimetres DBH.

(d) All permits issued for the installation, maintenance, repair, removal or replacement of utilities where such installations may affect public trees shall be certified by the department. When a permit is issued to a utility to trim public trees or to do other work affecting public trees, the work shall be limited to the actual necessities of the service of the company and such work shall be done in a neat and workmanlike manner and in accordance with the specifications. The department may, if necessary, assign an inspector to supervise the work, and the cost of such supervision shall be charged to the utility.

2) Movement of Structures

(a) Every person who intends to move any building or other structure more than 3 metres wide or 4 metres high, measured from the surface of the roadway, on any highway, park or other public land within the municipality shall give notice in writing to the department at least 7 days before the date of moving, and shall obtain a permit from the arborist in addition to any permission required from any other public authority.

(b) Such notice shall contain the date and time proposed for moving the structure, the proposed route, and an undertaking that the person shall not damage any tree.

(c) Every such person shall be responsible for all costs for

- (i) repair of any injury or damage to trees, and
- (ii) supervision and inspection during and after moving operations.

18. Permits Required: 1) Any person requiring a permit pursuant to this by-law shall make application at the office of the arborist or at any other place within the municipality designated by the arborist not less than 7 days before the time the work is to be done.

2) The application shall contain any information the arborist considers necessary to make a fair determination of whether a permit should be issued.

3) The arborist, after considering an application for any permit, may issue a permit.

4) The arborist may:

(a) refuse to issue or renew a permit.

(b) suspend or revoke a permit; or

(c) impose, alter or revoke any terms and conditions in a permit, where,

(i) the activity or work does not comply with this bylaw or any other law, or

(ii) he considers upon reasonable grounds that the activity or work is not in the public interest or may result in injury to a public tree.

5) The applicant may within 10 days appeal any decision of the arborist made pursuant to subsection (4) to the council or a committee designated by the council, and any other person specified by the council or its committee shall be parties.

6) Every permit shall be in writing and shall contain a definite expiry date.

7) In addition to any other conditions, every permit shall state in writing, and its validity shall be subject to, the following conditions:

(a) All work shall be completed within the time and in the manner specified in the permit;

(b) All activities authorized by the permit shall comply with the tree program, including the specifications and the master tree plan, except for exemptions authorized by the arborist in a schedule attached to the permit.

8) Every permit shall describe the activity or work to be done and the methods to be used, shall specify the species and cultivar, size, nursery grade, and location, of any tree which may be affected, and shall briefly specify the method of planting, maintaining, protecting, or preserving all trees which may be affected.

9) As a condition of any permit to remove any public tree, the arborist may require the person to whom the permit has been issued to plant one or more trees of a type and size and at a location or locations specified in the permit within a time specified by the department from the date of issuance of the permit.

10) Where such a person is required to plant trees, he shall plant native species in preference to exotic species wherever possible and expedient, and when the trees are replacements for public trees that have been removed, the value of the trees planted should be no less than the value of the trees removed.

11) If any of its terms or conditions are violated, a permit becomes void upon the violation, and any work done pursuant to a void permit which would have been an offence under this bylaw if done without a permit is an offence.

12) The person to whom a permit has been issued shall restore the affected area as nearly as possible to its original condition or to a condition favorable to the preservation of trees.

13) The person to whom any permit has been issued shall, within five days of completion of the activity or work described in the permit, give notice of the completion to the arborist and permit him to inspect the site.

19. Sections 16 to 18 do not apply to any case of emergency or immediate necessity where work is done to protect the life, health, safety or property of the public.

20. Duties of the Private Landowner or Occupant: The owner, occupant or person in charge of land or trees subject to an agreement shall not cut or remove any trees except in accordance with the agreement.

21. Every owner of any tree overhanging public land shall prune the branches so that there shall be a clear space of not less than 4.25 metres above the surface of any street or highway, and not less than 2.5 metres above the surface of any sidewalk.

22. Public Nuisance from Trees on Private Land: The department may declare to be a public nuisance any tree on private land which unduly interferes with the use of any public land, creates a hazard to the life, health, safety or property of the public, or is a source of disease or any causal organism of a disease which may endanger the health of other plants.

23. Where a tree is declared a public nuisance, the arborist may order the owner, tenant, occupant, or person in charge of the land containing the tree

(a) to disinfect any plants, land, building, vehicle or container;

(b) to treat, repair or remove the tree; or

(c) otherwise eliminate the condition creating the public nuisance in such a manner and within such a period of time as the order requires.

24. Every order under section 23 shall be in writing and be delivered to the owner, tenant, occupant, or person in charge of the land or sent by registered mail to his last or usual place of residence, and shall specify that if the public nuisance is not treated and the conditions corrected or removed in the manner or within the time specified in the order, the municipality may proceed with the treatment or removal of the nuisance at his expense, and shall notify him of his right to appeal the order and of the manner in which to appeal.

25. (1) Within 10 days of delivery of the order, the owner, tenant, occupant, or person in charge of the land may appeal the order to the council or a committee designated by the council on the grounds that its requirements are unsuitable or unnecessary, and the council or committee shall hold a hearing. At this hearing the person appealing, the arborist, and any other person specified by the council or committee are parties and may give evidence, call witnesses, appear by counsel, and cross-examine witnesses.

(2) Any party may appeal the decision of the council or committee within ten days to (the municipal or environmental board of the province) and the decision of the board shall be final.

26. The municipality shall encourage the correction of the conditions creating a public nuisance rather than the removal of trees wherever practical, and the council and the committee shall implement the provisions of section 5 and section 15(f) to achieve this purpose where expedient.

27. Pruning and Maintenance of Public Trees: The department may prune, fertilize, repair, cable, spray or otherwise maintain all public trees in accordance with the specifications two clear days after written notice has been given to owners and occupants of land in the vicinity, subject to the requirements of Section 32.

28. Removal, Replanting and Replacement of Public Trees: Where any public tree has interfered or may interfere with any work, or where by reason of damage or disease or for any other reason it has endangered or may endanger any person or property, the department may, in accordance with the specifications and after seven days' notice to owners and occupants of land in the vicinity, do anything to prevent, eliminate, remove or repair the interference or danger, subject to the requirements of Section 32, provided that in carrying out such work all reasonable efforts shall be made to preserve and protect the tree.

29. The department may, upon the request of an owner or occupant of adjoining land, or upon the request of the arborist when the latter is satisfied that such trees are not suitable to their location, and after seven days' notice of the intended removal to owners and occupants of land in the vicinity, remove healthy public trees of species designated unsuitable by the arborist, subject to the requirements of Section 32.

30. When public trees are removed, the department shall replace them whenever possible with suitable trees in the same location. If conditions prevent replacement in the same location, this requirement will be satisfied if the same number of the same size and species or of a more suitable size or species as provided for in the master tree plan are planted in an attractive manner on the adjoining property or in some other suitable location.

31. If it is necessary to remove a healthy public tree, reasonable efforts shall be made, where practical, to transplant it to another location within the municipality rather than destroy it.

32. Public Participation: 1) Pursuant to sections 27, 28, and 29, the public shall be advised

(a) by posting a notice upon or adjacent to the subject tree or trees in such a manner as not to injure the tree or trees, and

(b) by mail or by hand delivery of a notice to the owner or occupants of every building within 300 metres of the trunk of the tree as ascertained from the municipal assessment rolls.

2) Every such notice shall contain a description of the work to be done on the tree, the reasons therefor, its probable effects on the health and appearance of the tree, the date or dates on which the work is to be done, the right of any ratepayer to make objections thereto, the name, address, and telephone number of the person to whom he should address the objections, and his right, if any, to a public hearing.

3) If, within the time period specified in this bylaw, objections are received, the arborist shall consider them and may meet and hold discussions with the objectors. If, at the expiry of the period for objection, no objections have been received, or all objections have been withdrawn, the department may do the work on the tree specified in the notice.

4) If, at the expiry of the said time period, any objection remains, the objector may within ten days require the council or a committee designated by the council to hold a public hearing and make a decision. The arborist, any person who has objected in writing, and any other person specified by the council or its committee, are parties to the hearing, and may give evidence, call witnesses, appear by counsel, and cross-examine witnesses.

33. Exemption: Notwithstanding any provision for public participation, notice or consent in this bylaw, where a tree upon investigation appears to the arborist to be in a condition creating an immediate hazard to any person or property, the department may remove it or do other work to it, after making reasonable efforts to notify the owner or occupant of the property, without any written notice, consent or hearing.
34. The arborist in preparing the master tree plan or considering amendments thereto shall
- (a) consult with other municipal departments, utilities, and other public authorities whose activities may affect the plan, and
 - (b) hold public hearings and publish information for the purpose of obtaining the participation and cooperation of the inhabitants of the municipality.
35. Enforcement: No person shall hinder or obstruct the arborist, his delegate or any representative of the department in the course of his duties, or furnish him with false information or refuse to furnish him with information.
36. Any person who causes or permits any activity which injures or may injure any public tree shall forthwith notify the arborist.
37. Where any person, in contravention of any provision of this bylaw or by failure to comply with an order or any term or condition of a permit, injures or damages any land, water, property, or plant life, the arborist, where he is of the opinion that it is in the public interest to do so, may order that person to do all things and take all steps necessary to repair the injury or damage.
38. Where a person to whom an order or permit is directed or issued under any section of this bylaw does not comply with the order or permit, the arborist may cause the necessary work to be done and charge that person with the cost thereof, which may be recovered with costs in any court of competent jurisdiction.
39. Any sum due to the municipality in connection with the enforcement of this bylaw may be added by the clerk to the collector's roll and be collected in the same manner as municipal taxes.
40. Penalty: Except as otherwise provided in this bylaw, every person, whether as principal or agent, or an employee of either of them, who contravenes any provision of this bylaw, or fails to comply with an order or any term or condition of a permit made or issued under this bylaw, is guilty of an offence, and on summary conviction is liable to a fine of not more than \$5,000 or to imprisonment of not more than 90 days, or to both a fine with or without costs and imprisonment.

41. Limitation Period: Proceedings to enforce any provision of this bylaw, or any order or any term or condition of a permit, may be instituted within three years of the time that the subject of the proceedings arose.

42. Incorporation of the Master Tree Plan and the Specifications:

The master tree plan and specifications² for the municipality of _____ are appended to, and form part of, this bylaw.

43. Validity: Should any provision of this bylaw be declared by any court to be invalid, the same shall not affect the validity of the bylaw as a whole, or parts thereof, other than the provision(s) declared to be invalid.

² The purpose of this section is to ensure that the plan and specifications, once adopted by the council, are legally enforceable. It is contemplated that each municipality would prepare its own plan and specifications and make them part of the bylaw using a clause similar to this one.

3. MODEL TREE BYLAW
FOR CANADIAN CITIES AND TOWNS WITH POPULATIONS
BETWEEN 500 AND 100,000

Preamble

A bylaw regulating the planting, maintenance, protection, preservation, and removal of trees on and adjacent to public streets, parks and other public land within the municipality; establishing the office of a municipal arborist, a parks department, *the tree committee*, as the agencies for implementing and enforcing its provisions; providing for the elimination of public nuisances; providing for the giving of consent for work which may affect public trees; and prescribing penalties for violations of provisions.

Whereas the council of the corporation has authority to pass bylaws relating to public trees under section (number of section) of the (name of statute) Act, the council of the corporation of (name of municipality) enacts as follows:

1. Title: This bylaw may be cited as "The Tree Bylaw".
2. Interpretation: "Arborist" means the "municipal arborist", "commissioner", "urban forester", "tree warden", or other person assigned by council to implement and enforce the provisions of this bylaw, or his delegate.

"Committee" means the tree committee.

"Department" means the department of "Parks", "Parks and Recreation", "Forestry", or other departments designated by council to have primary jurisdiction over public trees.

"Drip Line" means the outer boundary of an area on the surface of the ground that corresponds to the outer edge of the crown of a tree.

"Grant" includes a loan or guarantee of a loan.

"Maintenance of trees" includes replanting, replacement, pruning, cabling, spraying, irrigation, fertilization, repairs and treatment of wounds.

"Private Land" means any land other than public land.

"Public Land" means any park, street, highway, and any other land owned, leased or otherwise vested in or controlled by the municipality or by any local board thereof.

"Public Tree" means a tree any part of the trunk of which is on public land.

"Specifications" means the arboricultural specifications, guidelines, and standards of practice adopted by the municipality.

"Tree" means any woody plant of a species which at maturity is usually over 5 metres³ in height, having one or more self-supporting trunks and including the roots, branches, trunk, crown or any part thereof.

"Tree Program" means a program designed to enhance the appearance of the municipality and further the welfare of the residents by the planting, maintenance, protection and preservation of public trees, including the establishment and implementation of the master tree plan and the specifications.

"Utility" includes the facilities for energy, communications and transportation, the provision of those facilities, and the persons responsible for their provision and maintenance, whether the facilities are publicly or privately owned.

"Work" includes the installation and maintenance of utilities, the paving or repairing of roads, sidewalks or boulevards, the construction, demolition or replacement of any structure, excavation, landscaping activities, snow removal, and grounds maintenance.

3. Establishment of a Department of Parks, and Office of Municipal Arborist, and a Tree Committee: A department to be known as the parks department, an office to be known as the office of the municipal arborist, and a tree committee are hereby established.

4. Authority and Duties of the Council: 1) The council shall carry out a program designed to enhance the appearance of the municipality and further the welfare of the residents by the planting, maintenance, protection and preservation of public trees, including the establishment and implementation of the master tree plan and the specifications, known as the Tree Program.

2) Assistance to private owners in the public interest--

The council may give grants or other assistance to landowners to encourage the planting, preservation, maintenance or removal of trees, the prevention or treatment of disease, or correction of a condition in relation to trees on public or private land that constitutes a public nuisance, and to discourage the destruction, mistreatment or neglect of trees on private land.

³ See footnote¹ on page 17.

3) *The council may in the public interest, and for carrying out any order by the municipality at the request of the person responsible for carrying out the order, enter into agreements with the owners of public or private land for the planting, maintenance, protection, preservation, and removal of trees on public land or on private land within 2.5 metres of any public land, and any such agreement may be made subject to such terms and conditions as the council considers proper.*

4) The council, on the advice of the arborist, may amend the plan or specifications at any time that the circumstances make it advisable.

5. Arbor Day: The council may establish an annual Arbor Day.

6. The Municipal Arborist: The arborist shall be trained and skilled in the theory and practice of municipal arboriculture.

7. Powers and Duties of the Municipal Arborist: 1) The municipal arborist shall assist the department in the implementation and enforcement of the provisions of this bylaw.

2) The arborist shall recommend a tree program to the council for its approval, and shall be responsible for implementing it, *with the advice and assistance of the tree committee*, having regard to the needs of the residents of the municipality for safety, the preservation of aesthetic values, noise and pollution control, recreation, and protection of wildlife, water and soil.

3) The arborist shall prepare and submit to the council for its approval a master tree plan specifying the species of trees to be planted on each of the streets and other public land in the municipality.

4) The arborist shall prepare the specifications and submit them to the council for its approval.

5) The arborist shall consider existing and future structures, utilities, and environmental factors when recommending a species for any public land, and when carrying out his duties pursuant to this bylaw, and may designate trees as unsuitable on the basis of these considerations.

6) Where the consent of the arborist is required, it may be given orally or by written permit.

7) Outstanding or Historic Trees. *The arborist may designate public trees as outstanding trees on the basis of species, age, or historic importance. The arborist may identify such trees by a plaque or other suitable method and shall make every effort to provide them with care and protection.*

8) The arborist shall determine the value of any tree according to the current shade tree evaluation procedure of the International Society of Arboriculture⁴ for any purpose of this bylaw.

9) Planting of Trees on Private Property by the Municipality. *The arborist shall supervise the carrying out of any agreement made pursuant to Section 4.*

10) a) Cooperation with other Municipal Departments. The arborist may review and comment on, prior to final approval, all permits, plans and programs for sewers, lighting, water supply and other utilities, paving, subdivision of land, and any other permits, plans or programs that may result in injury to trees.

b) The arborist and the officers and employees of other municipal departments, boards and agencies, including the authorities responsible for public works, planning, roads and transportation, street lighting and parks, and the police department and fire department, shall cooperate in planning for the present and future amenities of the municipality when the activities of such authorities may affect public trees.

11) For the purpose of this bylaw, the arborist may, where his consent is required, order any person to furnish a bond, cash deposit or other security in an amount which in his opinion is sufficient to cover any injury to trees that may result from that person's activities.

⁴ Where there is a set of procedures adapted to local needs, the arborist may wish to substitute these procedures. For example, in Ontario, the shade tree evaluation procedure of the Ontario Shade Tree Council may be substituted.

12) The arborist may inspect any construction, demolition, excavation, or grading site for which there is any term or condition in a subdivision agreement or building permit relating to trees. The arborist shall report violations of the agreement or permit to the building commissioner *and the tree committee.*

8. Duties of the Department: 1) The department shall, with the assistance of the arborist, supervise, implement and enforce the provisions of this bylaw.

2) The department shall formulate, follow and enforce the specifications and shall implement the tree program in accordance with the specifications.

9. The Tree Committee: *The tree committee shall consist of no fewer than ___ members, including one or more of following: the arborist, the parks commissioner, the municipal engineer, the commissioner of public works, the public utilities commissioner, or their representatives, representatives of the local horticultural society, representatives of utilities, elected members of the municipal council and ratepayers of the municipality appointed by the council.*

10. Duties of the Tree Committee: *The committee shall:*

(a) *advise the council on all matters pertaining to the bylaw;*

(b) *undertake such studies in connection with its tree program as the council may request;*

(c) *provide information to the public about matters pertaining to the bylaw and the tree program;*

(d) *from time to time advise the council as to desirable legislation, activities and policies whereby the municipality may enhance the tree program;*

(e) *report yearly to the council on its activities and the state of the tree program, including the extent of planting, protection, preservation, maintenance, and removal of public trees during the year;*

(f) *recommend the giving of grants or other assistance to owners of private land for any purpose set out in Section 4.*

11. Prohibited Activities: 1) No person shall, without first obtaining the consent of the arborist, cause or permit any activity which may injure any public tree.

2) Notwithstanding the generality of the provisions of subsection (1) the following are hereby declared to be activities which in the opinion of council are objectionable or may injure any public tree, and are hereby prohibited, and no person, without first obtaining the consent of the arborist, shall cause or permit such activities.

(a) removing, spraying, fertilizing, pruning, disturbing, cutting above or below ground, or altering in any other way, any public tree;

(b) depositing, placing, storing, or maintaining on public or private land any stone, brick, sand, concrete, soil or other materials or equipment which may impede the free passage of water, air, or nutrients to the roots of any public tree;

(c) marking, breaking, removing bark from, or in any other way defacing any public tree;

(d) fastening any sign, bill, notice, wire, rope, nail or other object to or around or through any public tree in any manner, *except a plaque or other identification of an outstanding tree pursuant to section 7(?)*.

(e) fastening any sign, bill, notice, wire, rope, nail or other object to or around or through the stakes, posts, guards, or barriers which support or protect any public tree, *except a plaque or other identification of an outstanding tree pursuant to section 7(?)*.

(f) causing or permitting any gaseous, liquid or solid substance which is harmful or toxic to public trees to come in contact with them;

(g) causing or permitting the heat from any fire or other source of heat to come in contact with a public tree;

(h) raising or lowering the grade level or altering the drainage pattern in a manner which may interfere with access of water, air or nutrients to any public tree;

(i) attaching any material to or leaning any material against any public tree when work is being done in the vicinity;

(j) removing or interfering with any barrier on, around, or about any public tree;

(k) closing, covering, obstructing, or otherwise interfering with any open space within a barrier around a public tree in a manner that may interfere with access of water, air or nutrients to the tree;

(l) causing or permitting any excavation, soil disturbance or compaction within the drip line of any public tree;

(m) excavating any ditches, tunnels, or trenches, laying any walkway or driveway or paving within a distance of 0.5 metres from the surface (at breast height) of the trunk of any public tree for every 5 centimetres of diameter of the trunk at breast height.

12. Protection of Trees During Work: 1) In addition to any other protection:

(a) Any person responsible for work near any public tree shall protect the tree, before work begins, with a barrier sufficient to ensure the protection of the tree and shall maintain the barrier in good condition so that it can perform its function. Segments of the barrier shall be attached to each other and not to the tree. All building material, soil and other debris should be kept outside the barrier.

(b) All below-ground utilities shall be installed by tunnelling at a depth and in a manner which will prevent or minimize injury to trees.

(c) When a utility trims public trees or does other work which may affect them, the work shall be limited to the actual necessities of the service of the utility, and shall be done in a neat and workmanlike manner and in accordance with the specifications. The department may assign an inspector to supervise the work and the cost of such inspection shall be charged to the utility.

2) Movement of Structures

(a) Every person who intends to move any building or other large structure on any highway, in any park, or on other public land within the municipality shall give notice in writing to the department and shall obtain the consent of the arborist in addition to any consent required from any other public authority.

(b) Such notice shall give the date and time proposed for moving the structure, the proposed route, and an undertaking that the person shall not damage any tree.

13. Unless the arborist specifies otherwise, his consent shall be subject to the following conditions:

(a) All work shall be completed within the time and in the manner specified by the arborist and shall comply with the tree program.

(b) Where consent is given to remove any public tree, the person to whom consent was given may be required to plant one or more trees of the type and size, at a location or locations, and within a time specified by the arborist.

(c) The person given consent shall restore the affected area to a condition satisfactory to the department.

(d) In the event that any of the conditions is violated, the consent of the arborist is deemed to be withdrawn and any further work which would have been an offence under this bylaw, if done without consent, is an offence.

14. Sections 11 to 13 do not apply in any case of emergency or immediate necessity where work is done to protect the life, health, safety or property of the public.

15. Duties of the Private Landowner or Occupant: *The owner, occupant or person in charge of land or trees subject to an agreement shall not cut or remove any such trees except in accordance with the agreement.*

16. *The owner of any tree overhanging public land shall prune the branches so that there shall be a clear space of not less than 4.25 metres above the surface of any street or highway, and not less than 2.5 metres above the surface of any sidewalk.*

17. Public Nuisance from Trees on Private Land: The department may declare to be a public nuisance any tree on private land which unduly interferes with the use of any public land, creates a hazard to the life, health, safety or property of the public, or is a source or cause of any disease which may endanger the health of other plants.

18. Where a tree is declared a public nuisance, the arborist may order the owner, servant, occupier, or person in charge of the land containing the tree

(a) to disinfect any plants, land, building, vehicle or container;

(b) to treat, repair or remove the tree; or

(c) to eliminate the condition creating the public nuisance in such a manner and within such a period of time as the order requires.

19. Every order under section 18 shall be in writing and be delivered to the owner, tenant, occupant or person in charge of the land or sent by registered mail to his last or usual place of residence, and shall

specify that if the public nuisance is not treated and the conditions corrected or removed in the manner or within the time specified in the order, the municipality may proceed with the treatment or removal of the nuisance at his expense, and shall notify him of his right to appeal the order and of the manner in which to appeal.

20. (1) Within 10 days of delivery of the order, the owner, tenant, occupant, or person in charge of the land may appeal the order to the council or a committee designated by the council on the grounds that its requirements are unsuitable or unnecessary, and the council or committee shall hold a hearing. At this hearing the person appealing, the arborist, and any other person specified by the council or committee are parties and may give evidence, call witnesses, appear by counsel, and cross-examine witnesses.

(2) Any party may appeal the decision of the council or committee within 10 days to (the Municipal or Environmental Board of the province), and the decision of the board shall be final.

21. *Wherever practical, the municipality shall encourage the correction of the conditions creating a public nuisance rather than the removal of trees, and for this purpose the council shall implement the provisions of Section 4 where necessary to achieve this purpose.*

22. Trimming and Other Maintenance of Public Trees: The department may maintain all public trees in accordance with the specifications without prior notice to owners and occupants of land in the vicinity.

23. Removal, Replanting and Replacement of Public Trees: 1) Where any public tree has interfered or may interfere with any work, or by reason of damage or disease or for any other reason has endangered or may endanger any person or property, the department may, in accordance with the specifications, do anything to prevent, eliminate, remove, or repair the interference or danger, provided that in carrying out such work it makes all reasonable efforts to preserve and protect the tree *provided that, if removal of the tree is intended, seven days' notice will be given to owners of adjoining lands.*

2) *When such public trees are removed, the municipality shall make reasonable efforts to replace them with similar trees in the same location or, if this is impractical, shall plant more suitable trees in the same location, on adjoining land, or in some other suitable location.*

24. (1) The department may, upon the request of an owner or occupant of adjoining land, or upon the request of the arborist, after the latter has satisfied himself that such trees are not suitable to their location or that their removal is not contrary to the public interest, *and after giving 7 days' notice of the intended removal to owners and occupants of land in the vicinity*, remove healthy public trees subject to the requirements of section 27.

(2) If it is necessary to remove a healthy public tree, reasonable efforts shall be made, where practical, to transplant it to another location within the municipality rather than destroy it.

25. Public Participation: 1) Pursuant to sections 23 and 24, every notice shall contain a description of the work to be done on the tree, the reasons therefor, its probable effects on the health and appearance of the tree, the date or dates on which the work is to be done, the right of any ratepayer to make objections thereto, the name, address, and telephone number of the person to whom he should address the objections, and his right, if any, to a public hearing.

2) If, within the time period specified in this bylaw, objections are received, the arborist shall consider them and may meet and hold discussions with the objectors. If, at the expiry of the period for objections, no objections have been received, or all objections received have been withdrawn, the department may do the work on the tree specified in the notice.

3) If, at the expiry of the said time period, any objection remains, the objector may within ten days require the council or a committee designated by the council to hold a public hearing. The arborist, any person who has objected in writing, and any other person specified by the council or its committee are parties to the hearing, and may give evidence, call witnesses, appear by counsel and cross-examine witnesses. The decision of the council or its committee shall be final.

26. Exemption: Notwithstanding any provision for public participation, notice or consent in this bylaw, where a tree, upon investigation, appears to the arborist to be in a condition creating an immediate hazard to any person or property, the department may remove it or do other work to it after making reasonable efforts to notify the owner or occupant of the property, without any written notice, consent or hearing.

27. The arborist in preparing the master tree plan or considering amendments thereto shall:

(a) consult with other municipal departments, utilities, and other public authorities whose activities may affect the plan, and

(b) hold public hearings and publish information for the purpose of obtaining the participation and cooperation of the inhabitants of the municipality.

28. Enforcement: No person shall hinder or obstruct the arborist, his delegate or any representative of the department in the course of his duties, or furnish him with false information or refuse to furnish him with information.

29. Any person who causes or permits any activity which injures or may injure any public tree shall forthwith notify the arborist.

30. Where any person in contravention of any provision of this bylaw or by failure to comply with an order or any term or condition of a consent injures or damages any land, water, property, or plant life, the arborist, where he is of the opinion that it is in the public interest to do so, may order that person to do all things and take all steps necessary to repair the injury or damage.

31. Where a person to whom an order or permit is directed or issued under any section of this bylaw does not comply with the order or permit, the arborist may cause the necessary work to be done and charge such person with the cost thereof, which may be recovered with costs in any court of competent jurisdiction.

32. Any sum due to the municipality in connection with the enforcement of this bylaw may be added by the clerk to the collector's roll and be collected in the same manner as municipal taxes.

33. Penalty: Except as otherwise provided in this bylaw, every person, whether as principal or agent, or an employee of either of them, who contravenes any provision of this bylaw, or fails to comply with an order or any term or condition of a permit made or issued under this bylaw, is guilty of an offence and on summary conviction is liable to a fine of not more than \$5,000.

34. Incorporation of the Master Tree Plan and the Specifications:

The master tree plan and specifications⁵ for the municipality of _____ are appended to, and form part of, this bylaw.

⁵ The purpose of this section is to ensure that the plan and specifications, once adopted by the council, are legally enforceable. These have not been drafted for the purpose of this model bylaw. It is contemplated that each municipality would prepare its own plan and specifications and make them part of the bylaw using a clause similar to this one.

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- Andresen, J.W. and J. Swaigen. 1978. Urban tree and forest legislation in Ontario. Dep. Environ., Can. For. Serv., Sault Ste. Marie, Ont. Report O-X-282. 97 p.
- Hook R., *Ed.* 1979. Arboriculture specifications. Ont. Shade Tree Council, Concord, Ont. 32 p.

APPENDICES

APPENDIX I

Selected SI units and their English equivalents.

SI Units	Yard/Pound Equivalents
Length	
1 cm (centimetre)	= 0.393 701 inch
1 km (kilometre)	= 0.621 371 mile
1 m (metre)	= 0.049 709 7 chain (or 22 yd)
1 m (metre)	= 3.280 84 feet
1 m (metre)	= 1.093 61 yards
Area	
1 cm ² (square centimetre)	= 0.155 000 square inch
1 ha (hectare)	= 2.471 05 acres
1 km ² (square kilometre)	= 0.386 102 square mile
1 m ² (square metre)	= 0.247 105 mil-acre
1 m ² (square metre)	= 10.763 9 square feet
1 m ² (square metre)	= 1.195 99 square yards
Volume or Capacity	
1 L (litre)	= 0.219 969 gallon
1 m ³ (cubic metre)	= 35.314 7 cubic feet
1 m ³ (cubic metre)	= 1.307 95 cubic yards
1 m ³ (cubic metre)	= 0.353 147 cunit (or 100 ft ³ of solid wood)
1 m ³ (stacked) (stacked cubic metre)	= 0.275 896 cord (or 128 stacked ft ³)
Mass or Weight	
1 g (gram)	= 0.035 274 0 ounce (avoirdupois)
1 kg (kilogram)	= 2.204 62 pounds (avoirdupois)
1 t (tonne)	= 1.102 31 tons (or 2,000 lb)
Ratios	
1 kg/m ³ (kilogram per cubic metre)	= 0.062 428 0 pound per cubic foot
1 km/L (kilometre per litre)	= 2.824 81 miles per gallon
1 m ² /ha (square metre per hectare)	= 4.356 00 square feet per acre
1 m ³ /ha (cubic metre per hectare)	= 14.291 3 cubic feet per acre
1 m ³ (stacked)/ha, (stacked cubic metre per hectare)	= 0.111 651 cord per acre
1 t/ha tonne (per hectare)	= 0.446 090 ton (or 2,000 lb) per acre

APPENDIX II

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