

Partnerships in Urban Forest Management – The Winnipeg / Manitoba Story **Martha Barwinsky, City Forester, City of Winnipeg**

Dutch elm disease (DED) was first detected in Winnipeg, Manitoba in 1975. For over 37 years, the City of Winnipeg has actively managed an integrated DED management program like no other city in North America. To this day, Winnipeg maintains the largest urban elm population in any North American city, currently estimated to be approximately 140,000 elm trees. At the onset of DED in Winnipeg, our elm population was estimated at 275,000 elm trees.

Winnipeg is a Canadian Prairie city with inherently low tree species diversity. Our total boulevard and park tree population is comprised of 27% elm (*Ulmus sp.*) and 34% ash (*Fraxinus sp.*). The American elm has long been recognized and revered as our best urban shade tree as it thrives as our only native elm and tolerates a wide range of urban stresses.

Approximately \$72.5M has been spent to date managing DED and preserving our still significant elm population. Average annual cost over the 37 years has been \$1.96M. The Province of Manitoba has contributed financially to DED management in Winnipeg via a cost-sharing agreement with \$23.9M since 1976. In 2012, Winnipeg's DED budget was \$3.77M of which the Province contributed \$1M. Without a long-term integrated disease management program, it is estimated that Winnipeg would have had as few as 10,000 elms remaining by 1992 at a cumulative cost of removal alone of approximately \$130.8M, and almost no elms remaining by 2002. More recent calculations estimate that if Winnipeg were to stop managing DED, removal costs alone may be as much as \$119M by 2028, and costs of tree planting may be as much as \$50.4M to replace 84,000 boulevard and park elms only. In addition to these direct costs, Winnipeg would suffer the loss of a valuable asset at an estimated current value of \$806 million for boulevard and park elms alone, and the loss of environmental, economic, social benefits and quality of life.

The success of Winnipeg's program is credited to those who identified the threat to our urban forest and the impact of the disease in our province well before DED was discovered in Winnipeg. These individuals were representatives from the cities of Winnipeg and Brandon and the Province of Manitoba, researchers, and citizens from our communities. The actions of this group of people resulted in the early establishment of long-term partnerships, provincial tree pruner and DED legislation, and the commitment to maintain an integrated pest management program to slow the spread of the disease and protect our urban forest.

These partnerships provide financial, operational, research, public awareness and education, and community support to the City of Winnipeg not just for DED, but for the protection and enhancement of our urban forest as a whole. Key participants include: The City of Winnipeg, Province of Manitoba, University of Manitoba, University of Winnipeg, Trees Winnipeg (formerly Coalition to Save the Elms Inc.), Trees Action Group (TAG), representatives of the arboriculture community and nursery industry, and the Canadian Food Inspection Agency (CFIA).

The main components of the DED management program have included the following practices: inventory, sanitation (elm firewood monitoring and disposal, surveillance of all elm trees, removal of diseased and hazard elms, native elm bark beetle control (*Hylurgopinus rufipes*), buffer zone management, tree health care (primarily pruning) fungicide injections in high value trees, reforestation, public education and research. The goal of the DED management program historically has been to confine elm losses due to disease to an average annual loss rate of less

than 2%. It should be noted that over 80% of elm losses and removals under the DED program have occurred and continue to occur on private property and primarily riverbank properties. More recently, the commitment to our urban forest has come to the forefront again as recent increases in elm losses to DED of over 3% generated great public concern and pressure to enhance our DED management practices. Concurrently, new research from the University of Manitoba in partnership with the Province of Manitoba, and at the behest of the City of Winnipeg, identified the added value of enhancements to our sanitation practices. The combination of the research findings and citizen action resulted in a significant increase in funding to enhance our DED program to increase the protection of our urban forest from DED.

The preservation of our elm population has become ever more important as we prepare for new invasive pests, particularly emerald ash borer (EAB). On the other hand, it is also necessary to increase the diversity of tree species in our urban forest for the long-term health and well-being of our communities – a challenging task in our harsh prairie climate. This dire need has created more partnerships with other stakeholders to develop and test other species and cultivars, and to implement tree diversity guidelines for new neighbourhoods as Winnipeg continues to rapidly expand.

Our long-standing partnerships are also aiding in our preparations for EAB. As our urban forests continue to encounter threats from additional and even more destructive invasive pests, the fostering of these long-standing partnerships and creation of new partnerships are critical in maintaining the quality of life we expect in our communities.