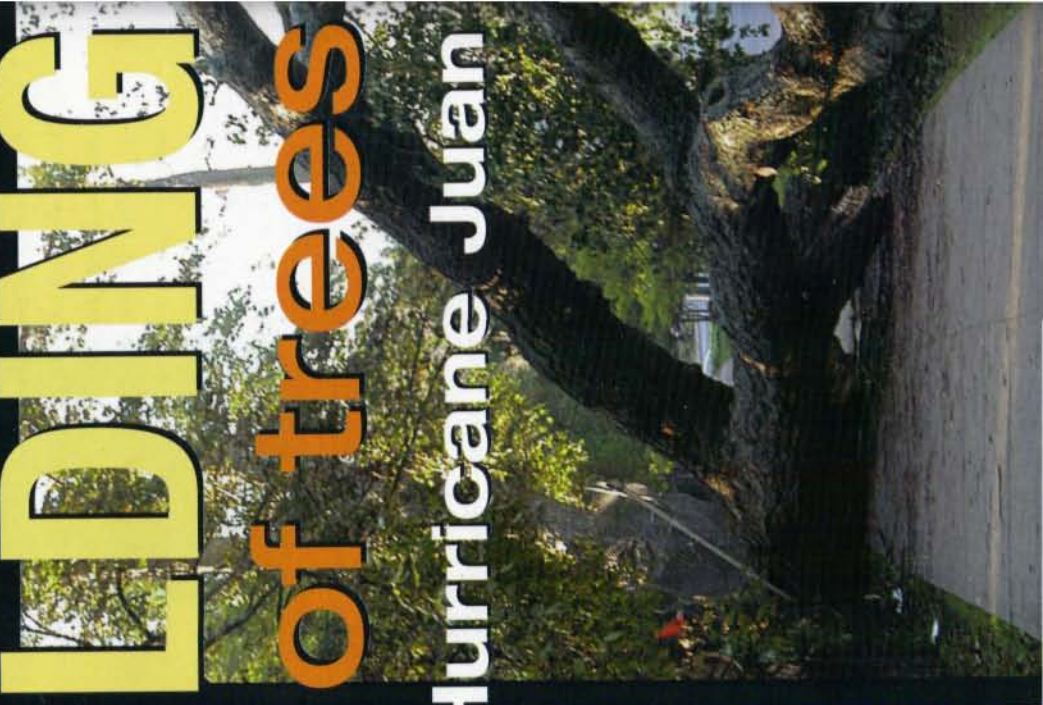
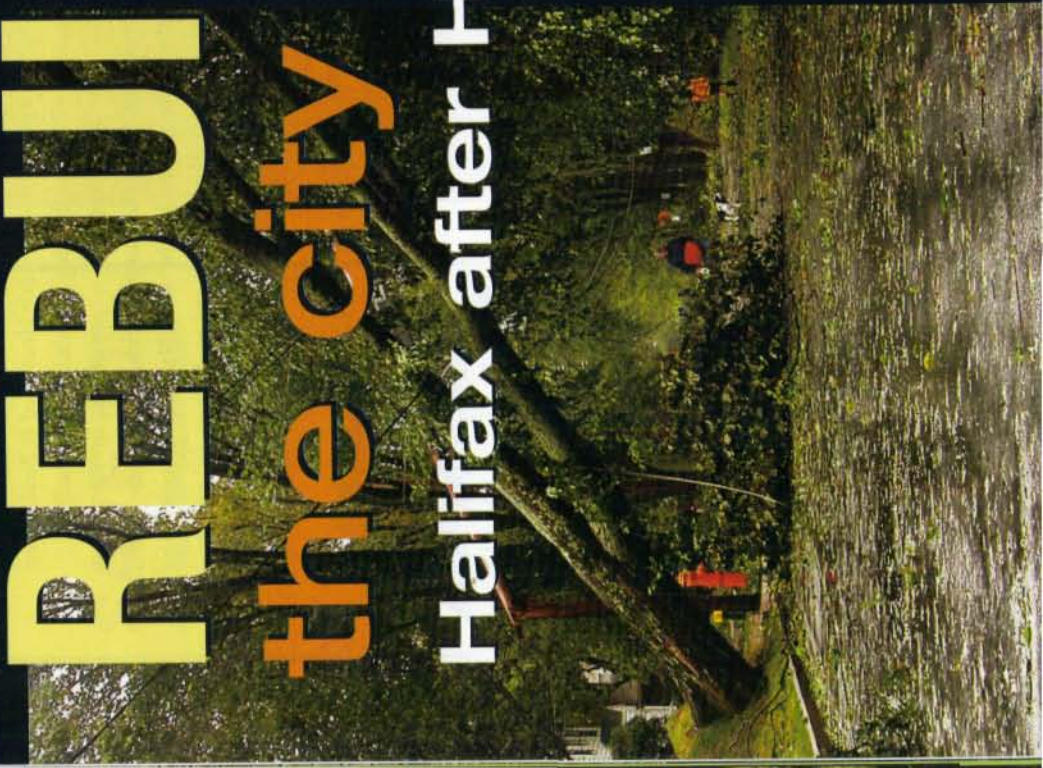


REBUILDING the city of trees

Halifax after Hurricane Juan



STORY BY WENDY MCMAHON

PHOTOS BY CHRIS GREEN

In the early hours of Sunday, September 29, 2003, meteorologist Peter Bowyer sat wide awake in his pitch-black house as it weathered the worst hurricane to hit the city of Halifax in over 110 years — Hurricane Juan. Fascinated, Bowyer watched the storm rip through the city from the safety of his home in the suburb of Lower Sackville, as his family slept through the howling winds and driving rain. His fascination turned to fear at around 1 a.m. as the eye of the hurricane passed over his house.

"You could hear what the wind was doing to the house.

Although the power was off, there was enough light for me to see what was happening to the trees in my backyard. Some of the trees were literally bending right over and touching the ground. That was scary," recalls Bowyer who is program manager with the Canadian Hurricane Centre located in the Halifax Regional Municipality (HRM) — made up of Halifax, Dartmouth, Bedford and Halifax County.

The category two hurricane blasted the city with winds so powerful they pulled over a million trees out of the ground by their roots or snapped them off at their trunks in just under three hours. Juan's destructive path tore through the core of the city leaving Canada's "City of Trees" powerless, in a state of emergency and practically treeless.

Although the Canadian Hurricane Centre had issued warnings about Juan for two days, residents woke the next morning to more severe damage than they ever expected. Streets were flooded, power lines were ripped from poles, the masts of sunken boats peaked from under the harbour's waters, and the city's boardwalk was slashed into splinters and shards of wood by wind and storm surges.

But what shocked residents the most was the massive damage inflicted on the city's trees.

"When we woke up the next morning, absolutely everything was covered in little bits of green because all the trees had been literally shredded by the wind," describes Bowyer. "It was like the leaves of all the trees were put through a big shredder and blown around like confetti.

With the driving winds and the rain, it stuck to everything. It was a bizarre thing to see."

Elm, maple and linden trees, some over a hundred years old, lay strewn across city streets, scattered over yards and leaning against houses. Some snapped off at their trunks while others were pulled out of the ground, exposing their roots and often taking huge pieces of sidewalks or entire sections of yards out with them.

This kind of tree damage was not expected from a marginal category two hurricane, says Bowyer. The Saffir-Simpson scale, which rates the categories of hurricanes based on wind strength from one to five, with five being the most severe, seems to have been inaccurate about this storm. The Saffir-Simpson scale describes the expected damage from a category two hurricane as causing "considerable damage to shrubbery and trees, with some trees blown down."

"We had a million trees come down in Halifax, and in Nova Scotia, we had a hundred million trees come down in less than three hours. I would

say that's *some* trees," quips Bowyer.

Bowyer says this highlights a problem with the Saffir-Simpson scale for Nova Scotia. He speculates it may be because of the city's latitude, the nature of the rooting system of the trees or even just a problem with this particular storm. The hurricane centre is now conducting research in an effort to figure out why the damage to the trees was so much greater than expected.

Another factor in Juan's explosive strike to the city's trees was that the section of the hurricane with the most violent winds swept directly over the city. As Bowyer explains, inside the middle of a hurricane, the winds are calm, but as you move to the eastern edge of the eye of the hurricane, suddenly the winds increase to the strongest they are in the entire hurricane. The winds in the eastern eyewall went right over Halifax whipping the city with 158 kilometre per hour sustained winds that gusted to 176 kilometres and even held peak gusts of 231 kilometres per hour for a second or two.



"This hurricane was a tree event. In terms of public spaces, it was the street trees, the urban forests and our parks that took the heaviest hit," says Peter Bigelow, Manager of Real Property Planning for the HRM.

Two of the city's most prominent and well-used parks, Point Pleasant Park and the Halifax Public Gardens, were completely devastated by Juan and had to be closed.

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With over a million visitors every year, Point Pleasant Park is one of the city's most prominent places for runners, dog walkers, picnickers and tourists. Bigelow describes the park as Halifax's version of Stanley Park in Vancouver.

"The oldest part of Halifax is on a peninsula, and Point Pleasant Park sits on the tip facing the Atlantic Ocean, so it's a very dramatic spot and it's much loved. I proposed to my wife there and so did hundreds of thousands of other people. It's a special place."

Unfortunately, the park was the initial point of contact when Juan hit Halifax. The winds tore down over 70,000 trees in the park, the majority of which were spruce trees between 70 and 100 years old. "It's a 180 acre park and 150 acres of it were forested. Now, 70 per cent of those trees are gone," says Bigelow.

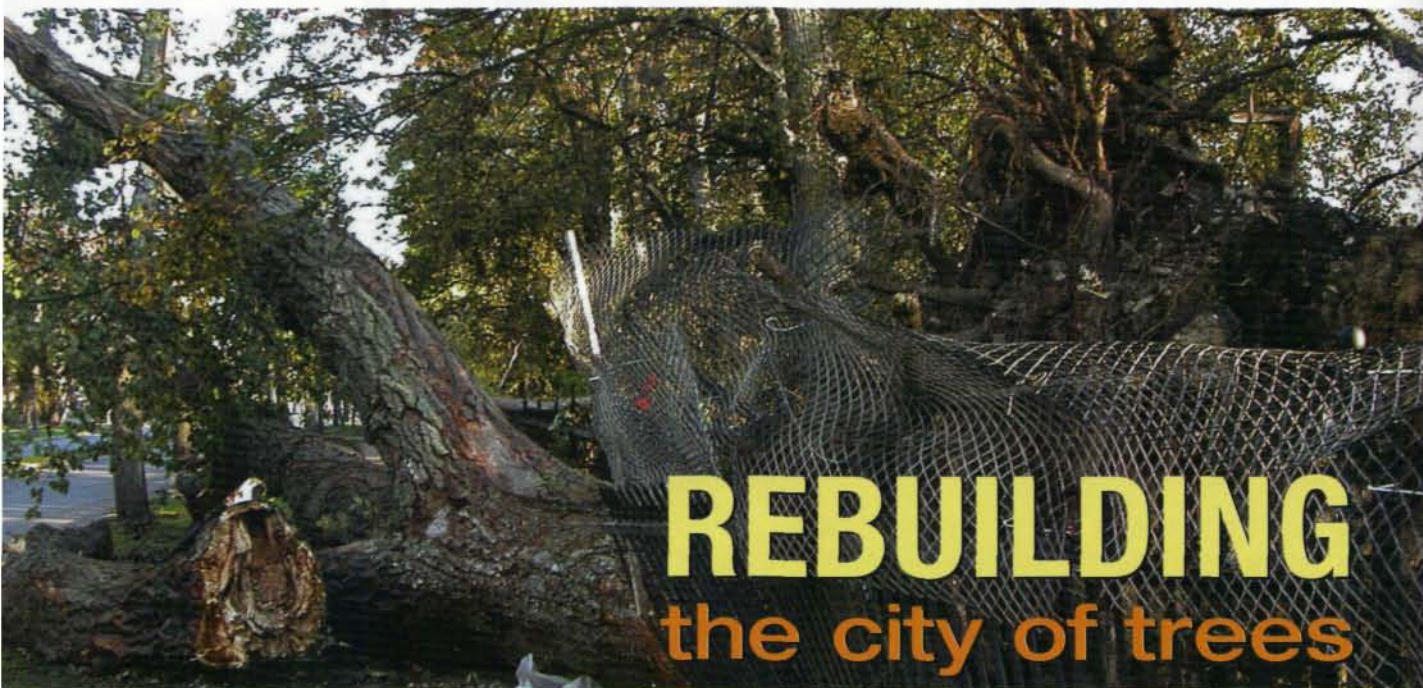
In contrast, only about 100 trees were uprooted and destroyed in the much smaller Halifax Public Gardens, but because the gardens mean so much to the city, the damage hit Haligonians hard. Founded in 1836, the gardens are located in the heart of downtown. The gardens are a national historic site and are recognized by many to be the finest example of Victorian public gardens in North America.

"The trees were carrying leaves when the hurricane hit and what is called a canopy or sail effect happened. Like a sail that pulls a ship along, the leaves catch the wind," explains John Simmons, Urban Forest Supervisor for HRM.

Most of the trees uprooted and blown over by this canopy effect were species not native to Halifax. Some of the trees were between 150 and 170 years old, standing over 150 feet tall and measuring 21 or 22 feet around the base.

"In some places, it was a domino effect. A very large tree would have blown over, its weight adding to another tree plus the winds would have carried the other tree down as well," says Simmons.

The damage caused in Point Pleasant Park and the Halifax Public Gardens was so devastating that it has



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spurred both residents and city officials to help out. Bigelow says donations of money, time and expertise from people hoping to help restore these parks has been overwhelming.

Robert Pace, Chairman of the Maritime Broadcasting System, realized how attached people were to the Halifax Public Gardens after hurricane Juan struck and decided to help. He knew that many patients from the nearby Queen Elizabeth II Health Sciences centre visited the park with

benches, the front gates and erosion issues have been neglected for years.

"We have a goal, and I think we can meet it. The only thing we can't do is grow the trees fast enough, but we're going to have beautiful landscaped gardens, and annuals and perennials."

Others who feel the same way have donated endless time and expertise. Sailors of Maritime Command removed

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relatives and friends to raise their spirits. So, Pace organized a radio-thon that was held Thanksgiving Sunday.

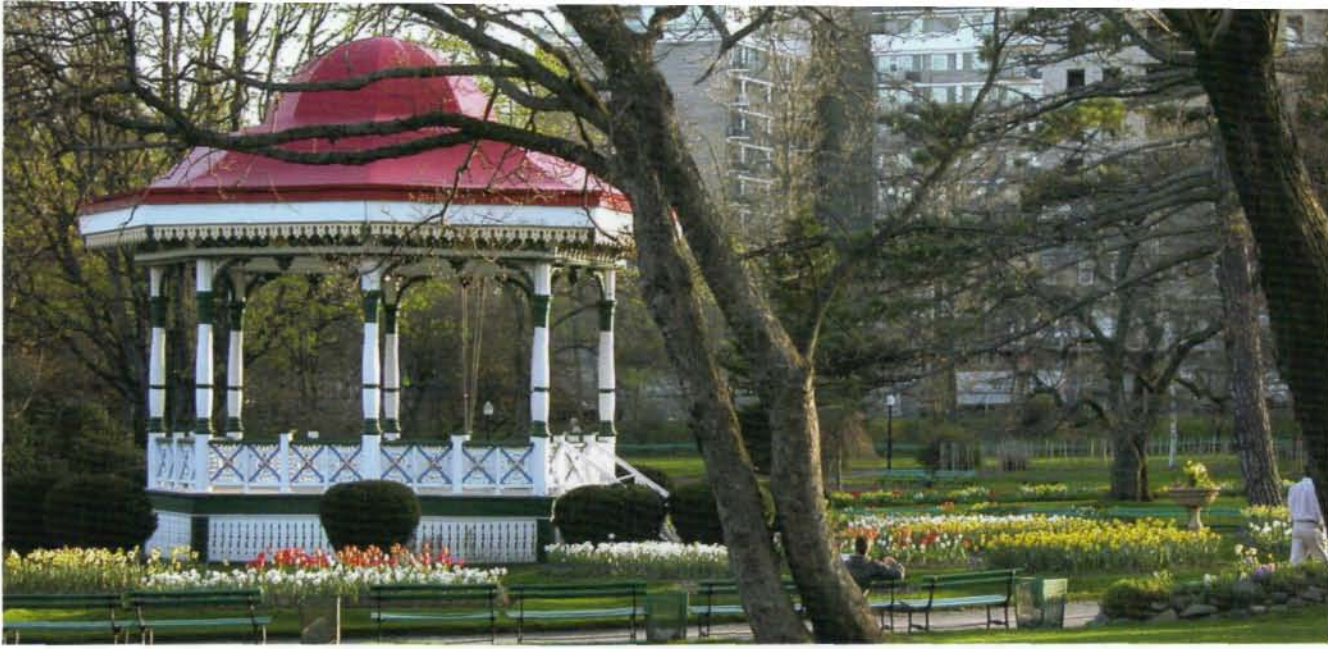
The event raised over a million dollars in one day — the largest sum raised by a radio-thon over a one-day period in Canadian history. From that event, he also created the Halifax Public Gardens Restoration Foundation.

First and foremost, the money raised through the radio-thon and renewal fund is being used to clean uprooted trees and other damage caused by Juan. But Pace and others have also decided to step in and restore the gardens to their original glory. While the plants in the gardens were always well cared for, things like the water supply, the park

60 to 70 park benches that were damaged, repainting and repairing them using wood donated by Irving Shipbuilding Inc. The refreshed benches were back in the gardens in time for its reopening on the first of this month.

A United States command ship recently visited the city and donated the time of about 30 sailors who, for one day, cleaned and repaired a section of the fence that surrounds the park.

In Point Pleasant Park, which reopened June 4th, remediation is complete and the restoration phase is now underway. Over the winter, cleanup crews removed massive amounts of wood fibre, tree trunks and brush, and have



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Although trees no longer fill the view from one pathway to the next, residents can once again picnic, enjoy the pathways and walk their dogs in Point Pleasant Park.

"We want people to get reacquainted with the park, and then we'll engage them in a public vote to decide how we're going to restore it," Bigelow says of the next steps.

"This is about growing back a park; it's not about building a park. The pace of our work is a long-term project — I don't expect to be the one to finish it."

Bigelow, who has been involved in every aspect of the Hurricane Juan cleanup, estimates the total cost of cleaning up the city after Juan will be close to \$16 million. When asked about the total cost of the next phase, which involves restoring the Halifax Public Gardens, Point Pleasant Park and the many other areas of the city damaged by Juan, Bigelow says he doesn't even want to take a guess, "God only knows," he laughs.

There is one thing Bigelow knows for sure. Although the City of Trees lost over a million of its leafy guardians to Hurricane Juan, more will return in their place, standing taller and stronger with the help of the people of Halifax. ✈

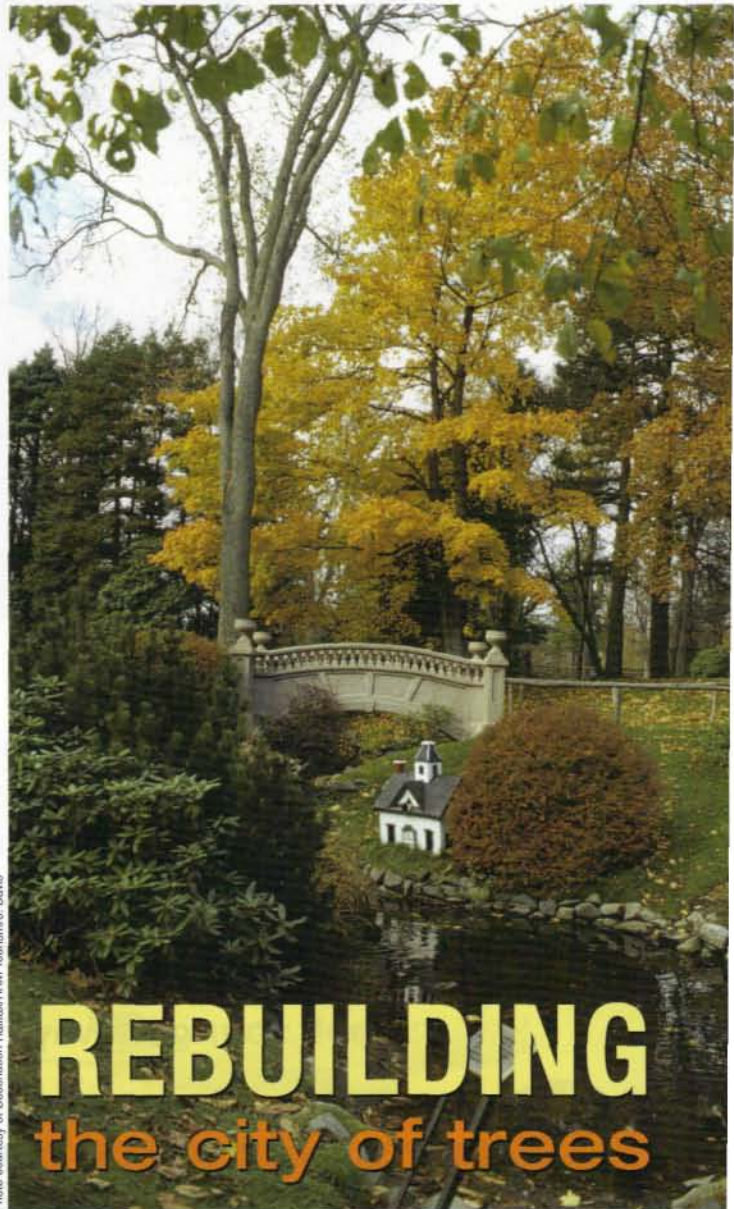


Photo courtesy of Destination Halifax/HRM Tourism/J. Davis

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