

EXECUTIVE SUMMARY

Guelph's Termite Management Areas. Guelph has three Termite Management Areas encompassing nearly 900 properties on 50 blocks (Fig. 1). Red Zone blocks have known termite infestations while Blue Zone blocks are buffer areas.

Termite Management Progress. In 2008 important progress was made in gaining a better understanding of the distribution and intensity of termite active areas. Area-wide suppressive treatments utilized nematodes as a bio-control agent. As well, termite-specific strains of a pathogenic fungus were isolated, thus providing a second level of bio-control treatment for the coming season. Much progress was also made with habitat elimination through yard wood cleanup weekends. Progress in pole management was made with Guelph Hydro and Bell Canada. Accumulating evidence of persistent inactivity in several areas should allow us to begin reclassifying some inactive areas and start shrinking some Termite Management Areas by the end of 2009.

Termite Activity in Red Zone Blocks. An array of 3,000 monitoring traps is installed in the Red Zone blocks. Traps were inspected by two seasonal staff seven times during the 2008 season from May through October. Termites were discovered in Sector 12 in July, thus converting from a Blue to a Red Zone block. Of the 20 Red Zone blocks, six blocks had no detectable trap activity and another six blocks had fewer than 10,000 termites trapped. Of the remaining eight blocks, five had moderate termite populations in the range of 15,000 to 38,000 termites trapped, and three blocks had large populations in excess of 100,000 termites trapped. The total number of termites trapped during the 2008 season was 705,261 (Fig. 2). Most of the blocks that were previously treated using the Trap-Treat-Release method during the period from 1999-2001 remain inactive or strongly suppressed. Current activity in the Woolwich Termite Management Area is mostly in the blocks north of Tiffany St. (Fig. 3). The Windermere Management Area remains eradicated over most of the formerly infested area, with activity found on only one property (Fig. 4). The Emma-Pine Management Area, discovered in 2007, remains quite active (Fig. 5).

Approved Mulches. Laboratory tests were conducted to evaluate termite feeding preferences on a variety of mulch products. Only those mulches which are not consumed were approved for use. This information was disseminated to termite area residents, local landscaping and nursery companies, and posted on the City's termite web site.

Yard Wood Cleanup Weekends. Three yard wood cleanup weekends were organized. The first was held in the area north of Tiffany from August 1-6 and resulted in the removal of 18 bins and about 30.25 tonnes of yard wood. The second cleanup weekend was for the south of Tiffany area, with removal of 13 bins and about 26.5 tonnes of yard wood. The third cleanup weekend was held in the Windermere area, with removal of 4 bins and about 5.5 tonnes of yard wood. A total of 35 bins and 62.25 tonnes of yard wood were removed, thus greatly reducing the nesting and feeding habitat available for termite survival and expansion. More targeted cleanups are planned in 2009.

Field Treatments with Entomopathogenic Nematodes. Entomopathogenic nematodes (parasitic roundworms) were used for area-wide bio-control treatments aimed at termite population suppression. A commercial preparation of *Heterorhabditis bacteriophora*

was selected for field treatments. Residents of 129 properties with active traps or near active traps were contacted and asked to sign a consent form for nematode treatment (Fig. 6). Nematode treatments were conducted from September through October on 98 properties. Ongoing spring and fall treatments with nematodes are planned in 2009.

Entomopathogenic Fungus Isolated. In 2008, we successfully isolated, from local termites, two strains of the insect-specific fungus, *Metarhizium anisopliae*, the causative agent of green muscardine disease. This will allow us to utilize an additional, safe and environmental, bio-control agent for termite population control. The number of culture plates has been scaled up in anticipation of field treatments in 2009.

Treatment of Poles, Posts and Retaining Walls. Permanent wood infrastructure includes telephone poles, hydro poles, fence posts, road guard posts, park posts, and other items. Working with Bell Canada, the three Bell poles in the Emma-Pine area were replaced and the new poles were fitted with Termi-Mesh™ stainless steel pole socks. New policies have been established for Guelph Hydro operations with respect to pole inspections and management in the termite management areas. During 2008, Guelph Hydro treated poles on 65 termite management area properties. Further pole treatments are planned in 2009.

Tree and Stump Removals. Six large city trees or stumps have been removed by the Operations Department, all from the area north of Tiffany St. Four of these were known to be termite infested. One large city tree stump was removed at the Emma-Pine area. At least eight other large mature trees or stumps, on private property, most of which were known or suspected to be termite infested were removed at the owner's expense. A dozen or so other trees with superficial shelter tubes were sprayed.

Real Estate Inspections and Disposal Permits. Indoor termite inspections are required for real estate transactions of properties in the termite management areas. Forty real estate inspections were made during 2008. In addition to organized yard wood clean up weekends, residents in termite management areas are also able to dispose of yard wood and demolition debris by obtaining a disposal permit. During 2008, 128 disposal permits were issued.

Grant Proposal. A grant proposal entitled "Area-wide Management and Eradication of Invasive Subterranean Termite Infestations" was submitted to the Invasive Alien Species Partnership Program (IASPP) of Environment Canada. The amount requested for supplies and equipment was \$22,398.00. Confirmation of funding support is expected soon.

Plans for the 2009 Season. This report will be web posted in early May. Seasonal staff will start work on May 11th. Annual meetings with residents have been scheduled for May 20-21. The plan for the 2009 season includes ongoing population monitoring, suppressive treatments, and habitat elimination. Suppressive treatments with bio-control agents including nematodes and/or fungal pathogens will continue. As well, Trap-Treat-Release with an alternative chemical is planned pending experimental permit approval from the Pest Management Regulatory Agency.

Figure 1. Guelph Termite Management Areas.

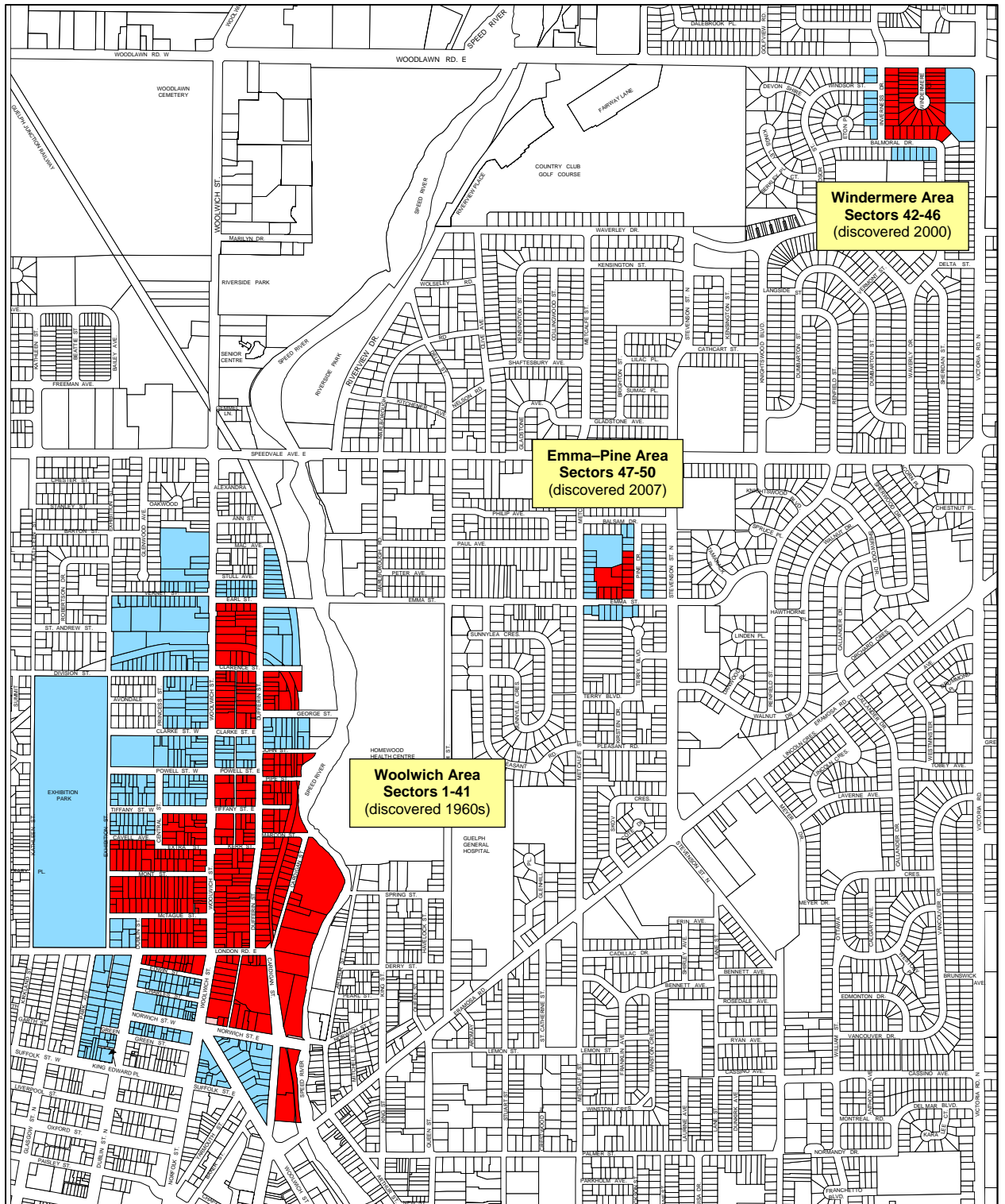


Figure 2. Termites Trapped by Year and Sector (1999-2008).

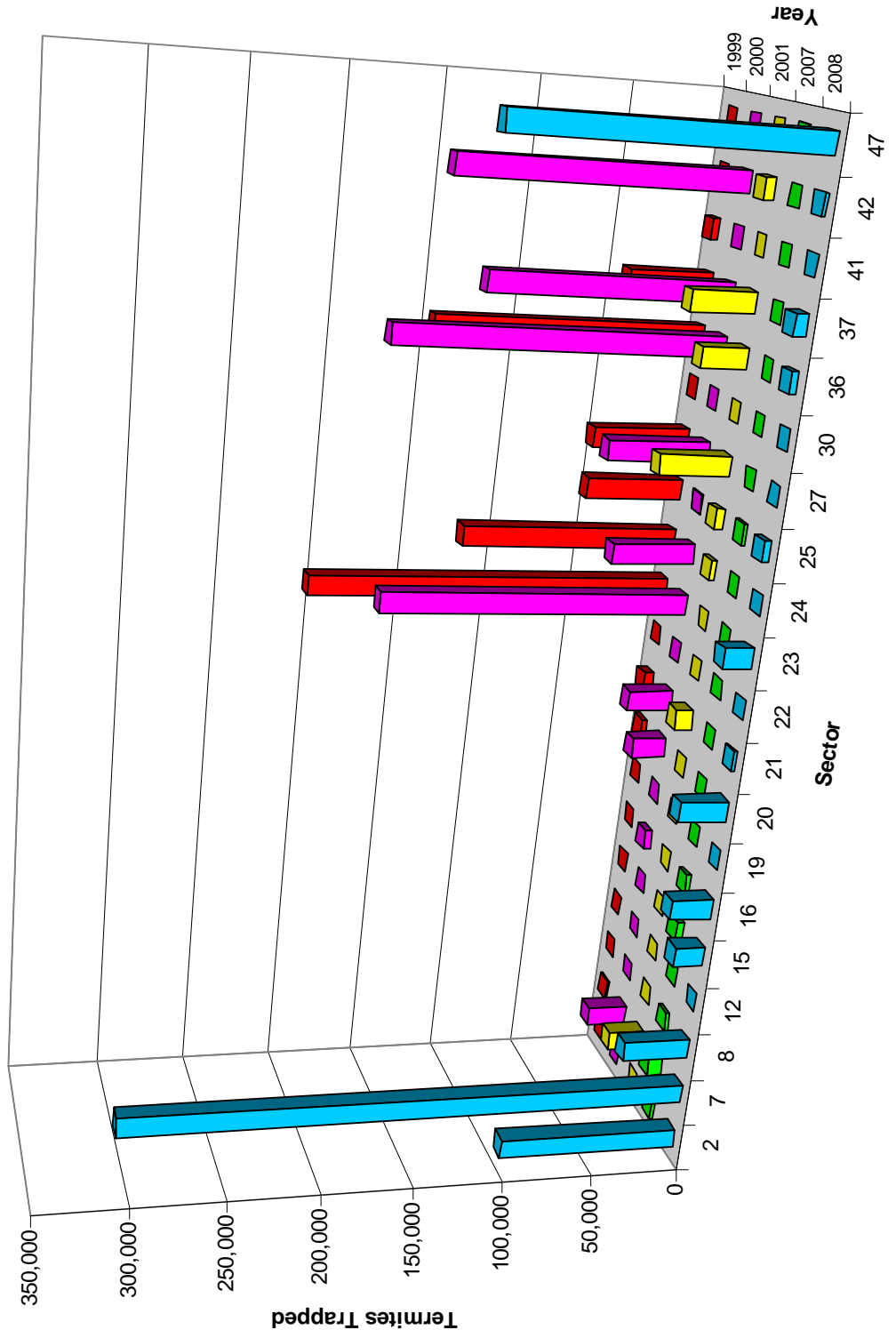
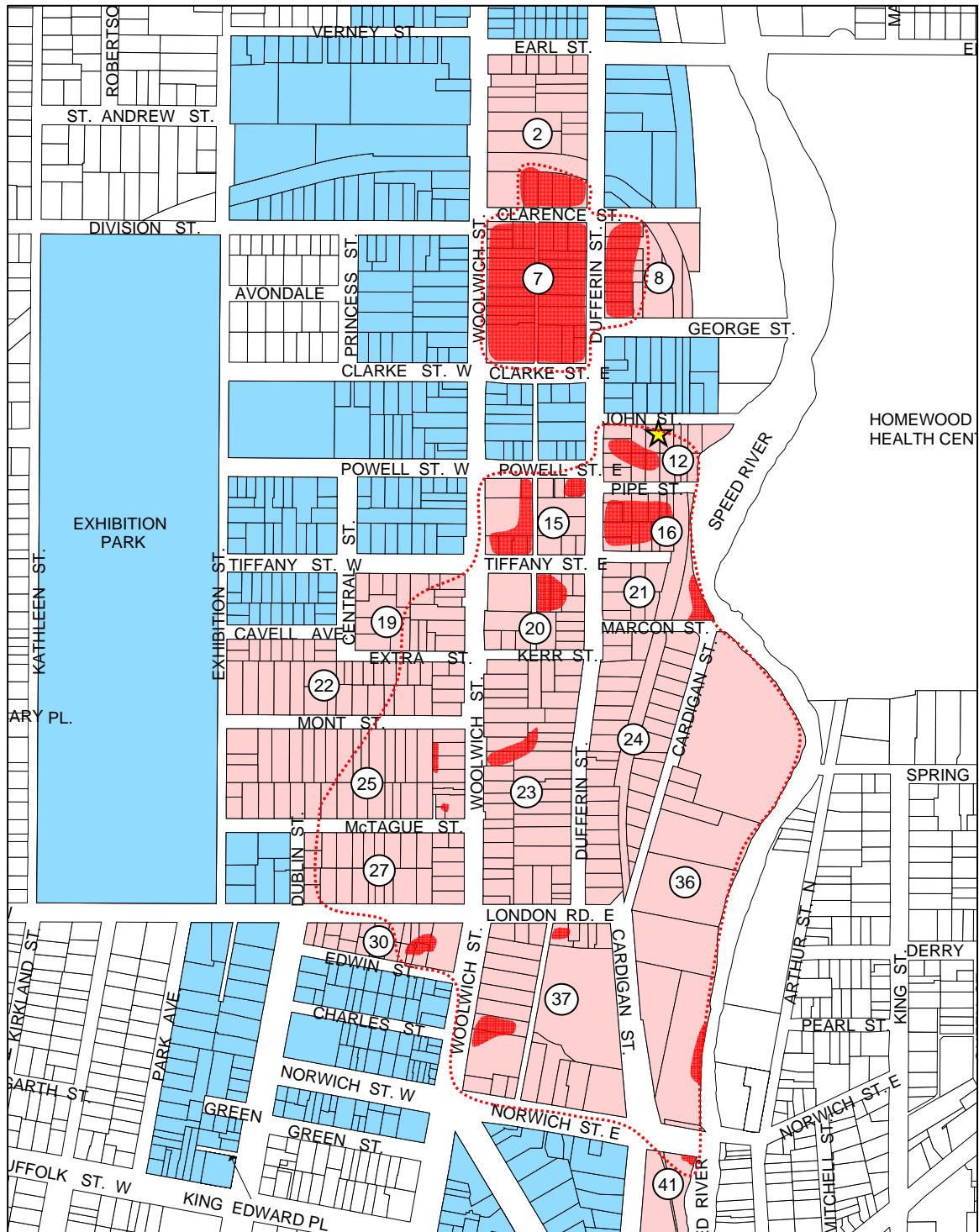


Figure 3. Areas of Identified Termite Activity in Sectors 2-41 in 2008.







-  Areas of identified termite activity in 2008.
-  Newly active block in 2008.
-  Red Zone sector numbers.
-  Maximum extent of infestation.

Figure 4. Identified Termite Activity in the Windermere Area in 2008.

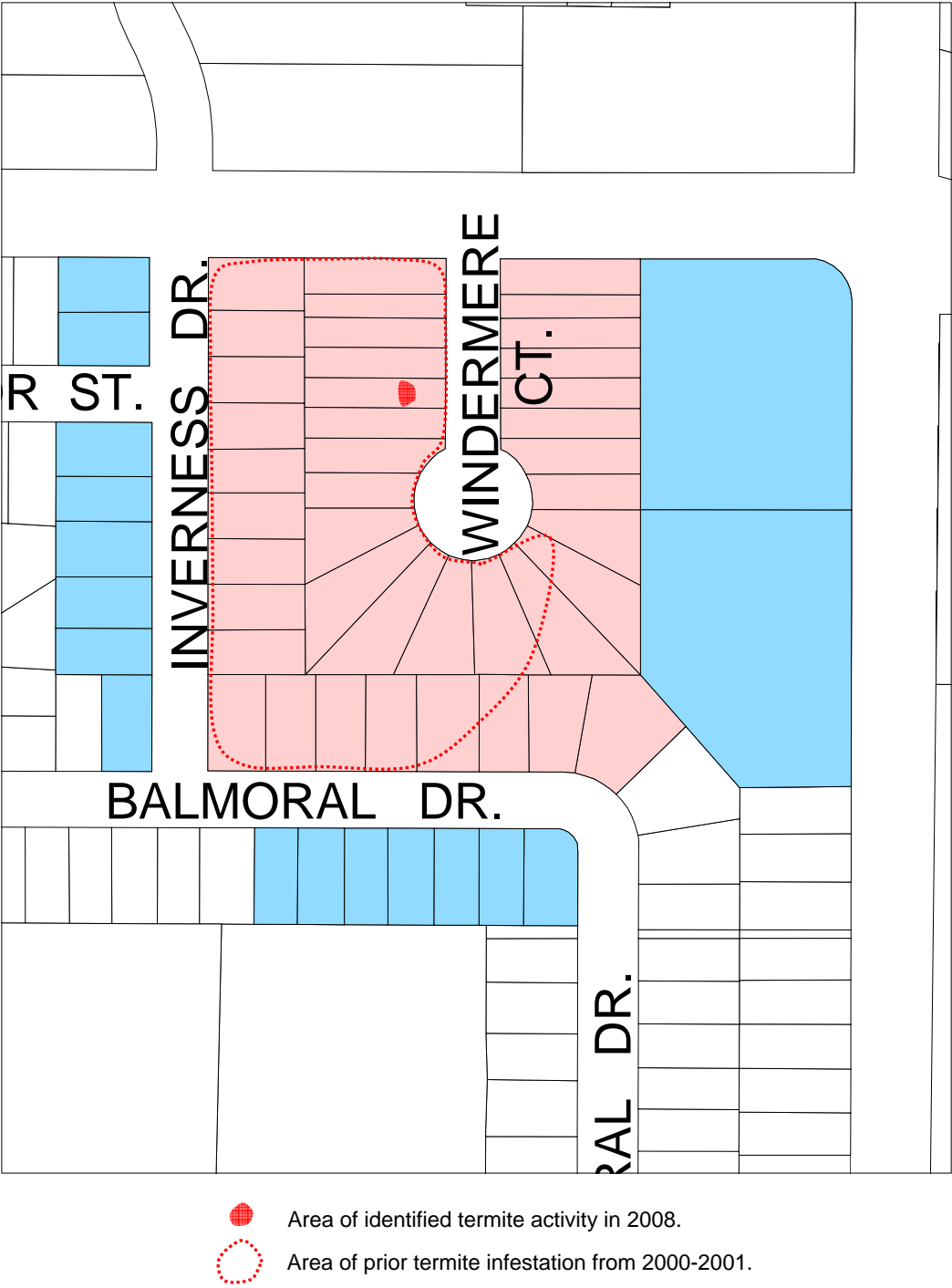
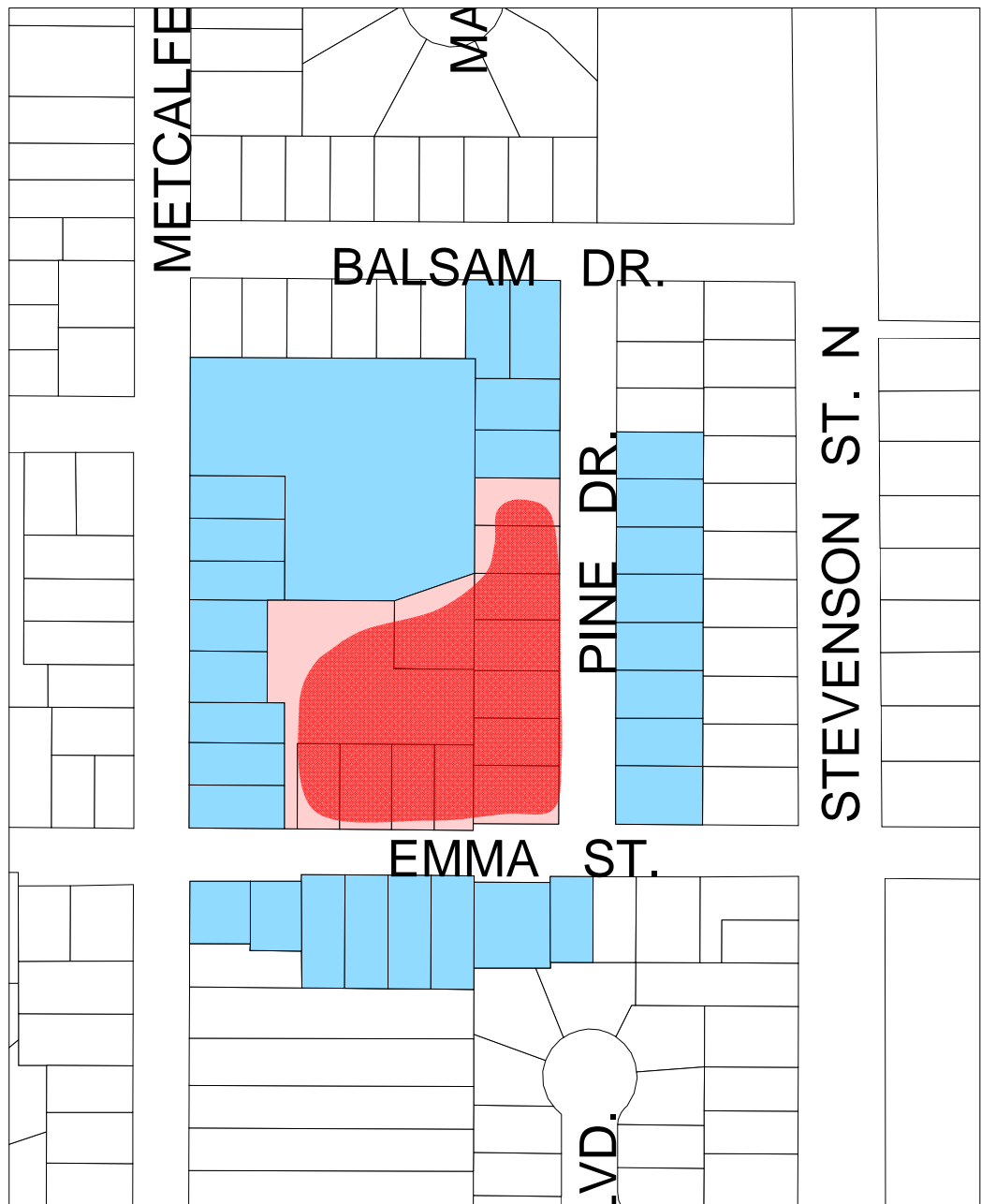
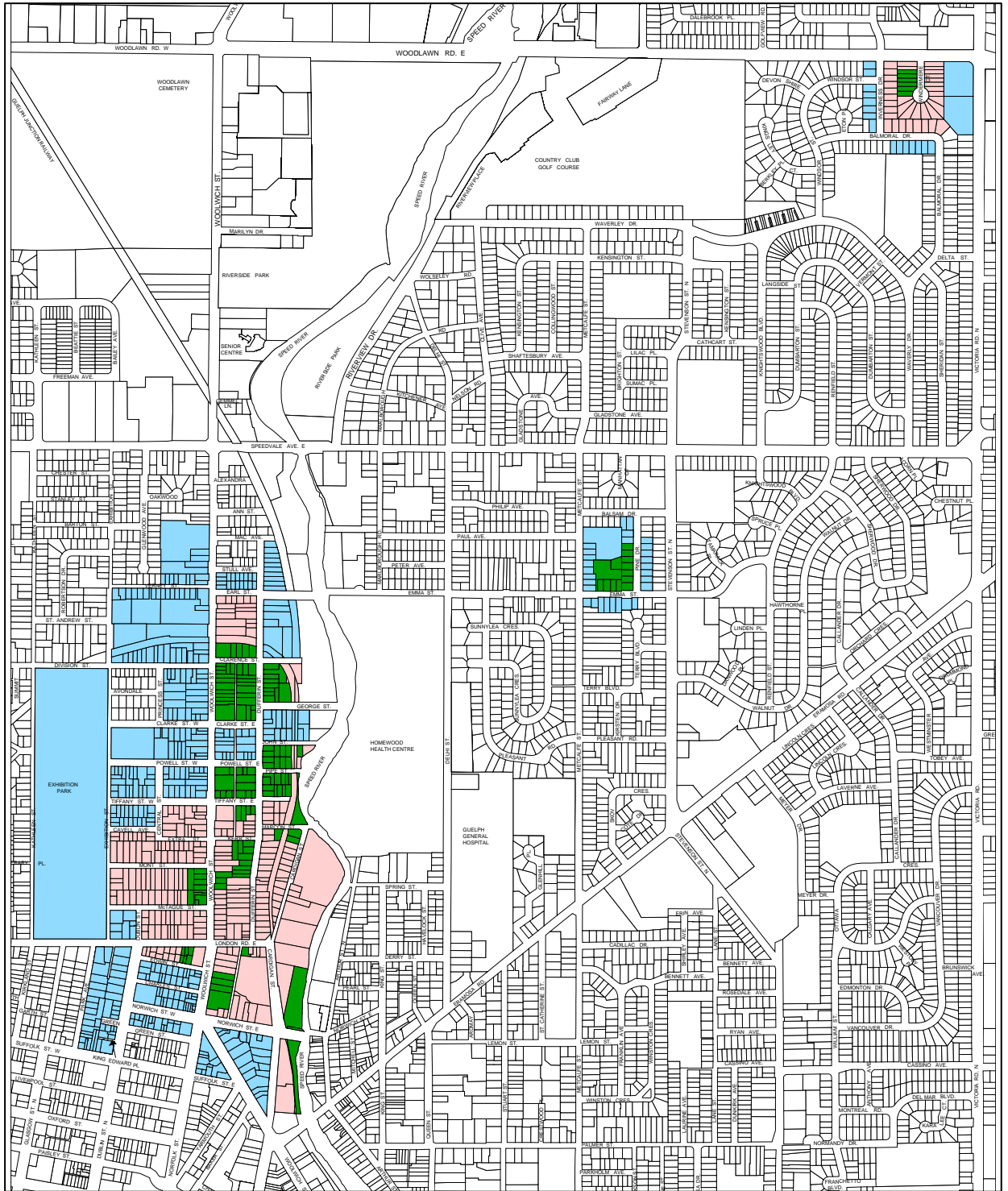


Figure 5. Identified Termite Activity in the Emma-Pine Area in 2008.



● Area of identified termite activity in 2008.

Figure 6. Nematode Treatment Areas



 Nematode Treatment Areas