

MEMORANDUM

CITY OF GRAND RAPIDS

Date: April 5, 2007

To: Kurt F. Kimball
City Manager

From: Gregory Sundstrom
Chief Services Officer

Patrick J. Bush
Public Works Director

Subject: Emerald Ash Borer Infestation

There has been a recent development with an Emerald Ash Borer infestation in City that calls for immediate attention. City staff is requesting to discuss the attached *Action Plan to Address the Emerald Ash Borer Infestation* with the City Commission at their April 10, 2007, meeting.

cc: Darrell VanderKooi, Assistant Public Works Director
Bob Paasche, Forestry Supervisor

attachment

**City of Grand Rapids
Action Plan to Address the
Emerald Ash Borer Infestation**

April 5, 2007

Action Plan to Address the Emerald Ash Borer Infestation
City of Grand Rapids Streets and Sanitation Department
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The Emerald Ash Borer, a small pest from southeast Asia is threatening the beautiful ash trees that line streets in the City of Grand Rapids. City staff has been tracking this threat to ash trees since the Emerald Ash Borer entered this country a decade ago. Unfortunately, attempts to quarantine the infestation in southeastern Michigan and in the City of Wyoming have largely been unsuccessful. Consequently, the City of Grand Rapids has developed a plan to prepare for the Emerald Ash Borer infestation in our City.

There are approximately 7,000 ash trees in the City's right-of-ways contributing to our urban tree canopy. This represents approximately 15% of all street trees. Consequently, to address this infestation will require a significant City effort. City staff has worked with officials from the State of Michigan and the United States Forestry Service to understand the best management practices to effectively deal with the Emerald Ash Borer. Unfortunately similar to the Dutch Elm disease that killed nearly the entire Dutch Elm tree population in the United States, an effective method to stop the damage caused by the Emerald Ash Borer is not know at this time. Consequently, the City is planning to address an unmitigated Emerald Ash Borer infestation with the removal and replacement of ash trees with other tree varieties capable of thriving in an urban environment.

Last September, City staff updated the City Commission on the Emerald Ash Borer infestation in Kent County. City staff briefly outlined a ten-year plan that would remove and replace all ash trees at a cost of \$7 million to \$12 million. Unfortunately, with the recent detection of the Emerald Ash Borer deep inside of our City, City staff has been forced to revised their plan and move away from proactively removing and replacing ash trees on a rotating basis over a ten-year period toward a reactive plan to mitigate the recent outbreak.

Following is an outline of the proposed action plan to address the Emerald Ash Borer Infestation in our City. Included is a proposed tree replacement program, alternatives for addressing Emerald Ash Borer infestation, and the proposed action plan to address the Emerald Ash Borer infestation.

Tree Replacement Program

City staff conducted a feasibility review of reestablishing and operating a municipal tree nursery. The review evaluated land requirements, staff and equipment requirements, operational requirements, and an economic review. Research by staff included a review of current best management practices, available reference materials, and consultation with Michigan State University and the Michigan Department of Natural Resources.

The City's Forestry Division currently plants 500 trees annually to maintain its tree canopy. Additionally, the replacement program associated with removal of ash trees could require 700 trees per year, totaling 1,200 trees per year.

With four to six years required for tree maturation from initial tree planting to harvesting for replanting in the field, a site of eight to twelve acres would be required for a municipal tree farm to provide sufficient trees for the City's maintenance and ash tree replacement program. The sites considered for this review were properties currently owned by the City or other governmental agencies, including Richmond Park, Greenwood Cemetery, Indian Trails Golf Course, and several Grand Rapids Public School properties, including Blandford Nature Center and their former Shawmut Hills tree farm. None of these sites resulted in a viable option for a nursery operation that would meet the City's requirements.

In reviewing various alternatives for operating a municipal tree farm, Forestry Supervisor Bob Paasche has developed a unique proposal for a decentralized pilot tree farm program. The pilot program would plant several one-inch diameter trees of several different species at various locations throughout the city. These locations could include parks, cemeteries, vacant City-owned lots, and potentially City/School properties. The City would select locations with the potential for the trees to mature with minimal maintenance attention, considering irrigation and pesticides requirements, as well as, locations with varying soil and shade conditions to support the widest possible variety of species. The City would log the locations of the plantings and periodically monitor the trees for health and maintenance. As the trees mature, the City would relocate the trees throughout the City to replace ash trees. City staff anticipates that the pilot program could produce at least 50 trees per year at a cost less than contract prices. Consequently, the City will plant a variety of trees throughout the City in parks, cemeteries, and other locations that it can later harvest to assist with tree replacements for removed ash trees.

Alternatives to Addressing Emerald Ash Borer Infestation

Streets and Sanitation Department staff has been working to develop alternatives that could be used to form the City's long-term plan to respond to the pending Emerald Ash Borer infestation. Over the past year, it has become apparent that the plans developed by the State of Michigan for containment of the Emerald Ash Borer in southeastern Michigan will not protect our City from eventual infestation. Because the Emerald Ash Borer has no known predators or safe eradication methods, choices for addressing the pest are limited to slowing the spread to new ash trees by removing their food supply—ash trees.

The first step in this process was to conduct an inventory of ash trees within the City's right-of-ways. City staff completed the inventory, locating 6,995 ash trees within street right-of-way. The Parks and Recreation Department recently received a grant to inventory ash trees in parks, cemeteries, and other city owned properties, of which City staff estimates that there are 1,000 to 3,000 additional ash trees.

Alternative One

Ash trees can be treated with pesticides to help protect them from infestation. There are currently three techniques for chemically treating ash trees: ground injection, trunk injection, and spraying. Each of these procedures has a success rate of approximately 30% to 40%. A combination of treatments improves the success rate. Each treatment costs approximately \$100 per tree per year. If the City chose to undertake a treatment program with only one type of treatment, it would cost approximately \$700,000 per year. This would be an ongoing annual cost. As this approach would likely still see 60% to 70% of the City's ash trees eventually perish, the ongoing annual costs to apply pesticides would eventually decrease as Emerald Ash Borers infest additional ash trees. However, as treatment costs decreased, the City would initiate a tree removal and replacement program. If 60% to 70% perish under a pesticide program, it could cost an additional \$5 million to \$7 million to remove and replace the infested ash trees.

Unfortunately, pesticide treatments require significant amounts of pesticide, at \$2.50 to \$3.00 per gallon. The pesticide manufacturer recommends one gallon of pesticide for every inch of tree diameter. Treating street trees with this method would require 273,000 gallons of pesticide be put into the ground each year. Research by Michigan State University does not recommend a pesticide treatment program for public street trees. With the relatively low effectiveness, perpetual costs of reapplication, and the potential environmental impacts of ongoing pesticide applications, a treatment program would not be cost effective or environmentally sensitive solution.

Applying pesticides and also removing and replacing up to 70% of the ash trees that eventually perish might cost \$12 million to \$15 over ten years. The City could save some ash trees, but it would use over 1.5 million gallons of pesticides. City staff rejects this alternative as too costly, marginally effective, and unfriendly to our environment.

Alternative Two

Seeking to find the least costly alternative, the City could choose to ignore the Emerald Ash Borer infestation, and simply remove trees as they perish. If the City did not replace the trees, and if the City redirected all Forestry staff to remove ash trees, then the City could accomplish this alternative within existing resources. Under this alternative, the City would reallocate resources from existing maintenance and planting programs to the removal of infested ash trees. Depending on the speed of the infestation, there could be several years when the City would allocate all Forestry resources to tree removal only. Following the removal of all public infested trees throughout the City, the City could begin a replanting program. However, without additional resources the removal and replacement period could be up to twenty years.

Although the City could accomplish this alternative within existing resources, it assumes maintaining staffing resources at existing levels over the next ten to twenty years. It also assumes that the City and citizens could coexist with dying and dead public trees in parkways in front of their homes and businesses until the City were able to remove them, and further that they could patiently wait several years until the City were able to replant a new tree. Finally, this alternative also assumes that the City

Forestry staff only focused on tree removal for several years and then on tree replacement for several more years, without any focus on maintaining the current non-ash tree canopy in our City. From a practical point of view, this seems like an unreasonable set of assumptions. City staff rejects this alternative as being impractical, unreasonable, unfriendly to citizens, and irresponsible to managing our tree canopy.

Alternative Three

The City could develop a proactive remove and replace program of all public ash trees. Under this program, the City would program all ash trees for removal and replacement on a rotating basis on a ten-year schedule to minimize the impact on tree canopies. The average cost to remove and replace an ash tree is \$1,000 to \$1,200 per tree. With a ten-year program, the annual cost of a program would be \$700,000 to \$1.2 million per year. Over ten-years, the City would remove and replace all public ash trees at a cost of approximately \$7 million to \$12 million. City staff favors this alternative as being most cost-effective.

Considering the three alternatives, the City Commission selected the third option and directed staff to proceed with additional planning.

Update on the Emerald Ash Borer Infestation

Unfortunately, City staff recently found signs of Emerald Ash Borer infestation in ash trees on Shawnee Drive SE. Streets and Sanitation Department staff reviewed the area with Michigan Department of Agriculture staff and confirmed the presence of the Emerald Ash Borer infestation. They also found signs indicating the infestation is occurring in neighboring areas. Unfortunately, the Shawnee Drive area is over three miles from the area where the Emerald Ash Borer was found in the City of Wyoming near the City's corporate limit at Eastern Avenue SE and 44th Street SE. This is the first known presence of the Emerald Ash Borer within the City of Grand Rapids. It is also apparent that the Emerald Ash Borer has been present in the trees on Shawnee Drive SE for several years prior to our recent discovery. This is alarming because the City's working assumption was that the Emerald Ash Borer infestation would spread across the City at a rate of one mile per year beginning at our southern border, taking ten years to cover the City.

Staff from the United States Department of Agriculture who have dealt with Emerald Ash Borer infestation in southeastern Michigan recommend removing and chipping all ash trees showing signs of infestation as soon as possible. The primary reason that time is of essence is because removal of the infested ash trees prior to adult ash borers emerging in June should limit the further spread of the infestation.

2007 Action Plan to Address Emerald Ash Borer Infestation

The City's action plan to address Emerald Ash Borer infestation is proactive with plans to start a remove and replace program in FY2008. Unfortunately, the City should modify this plan to remove infested trees in the Shawnee Drive neighborhood.

Due to the recent outbreak, City staff proposes to undertake a monitoring program in conjunction with a limited remove and replace program. The remove and replace program would target areas bordering the known areas of infestation. Damaged ash trees or ones determined to be more susceptible to infestation would receive priority for this program.

Addressing the Recent Outbreak

Currently City staff has compiled an inventory of infested ash trees in the Shawnee Drive neighborhood. City staff is determining how much funding will be required to address this outbreak. Since there are no dedicated resources for the Emerald Ash Borer in FY2007, City activities will concentrate on ash infested tree removal only at this time. If the City Commission approves the resources requested in the FY2008 budget for addressing the Emerald Ash Borer infestation, the City should be able to begin replacing removed trees either this fall or in the spring of 2008.

If the City finds additional areas of Emerald Ash Borer infestations this Spring, the number of ash trees requiring removal may exceed our current resources. If this is the case, then additional resources may be necessary to accomplish the removal of infested trees. In the worst-case scenario, the City would allocate all resources to removal, leaving the task of replacement to follow the removal of all infested trees.

Public Awareness

The City is planning a neighborhood meeting in the Shawnee Drive neighborhood. Working with neighbors, the City will inform citizens of the importance of a quick response to the Emerald Ash Borer infestation. The City will share with citizens its work plan to remove street trees and encourage citizens to address their private trees.

City staff has been searching for ways to assist citizens with their private ash tree infestations. The State of Michigan offers technical assistance and State contracts for tree removal, but unfortunately, this is limited to southeastern Michigan counties. City staff will be seeking to have Kent County included in this State offering. If the State is unwilling to offer assistance, City staff will bid contracts for tree removal and replanting, from which citizens could purchase their desired services.

Funding

To undertake this Emerald Ash Borer program, City staff requested an appropriation in FY2008 for \$500,000. The City would use these funds to remove infested public ash trees. The Streets and Sanitation Department would use existing Forestry resources to inform citizens of the Emerald Ash Borer infestation and replace trees as funding permits. If funding remains, the City would return to its proactive plan to selectively remove and replace trees on a ten-year plan.

This level of effort would continue until the ash tree inventory is reduced to minimal levels or until the infestation becomes widespread and all resources would be required to remove infested trees. If the infestation occurs at a rapid rate, then additional funding may be necessary to ensure public safety.

Additionally, the City continues to seek assistance and funding from the State of Michigan and the Federal government. The City will be seeking grant funding for tree replacement for both trees on City and private property.

Long-Term Action Plan

Assuming that the City can address the recent outbreak in the Shawnee Drive neighborhood within available resources, then City staff would return to a proactive ten-year approach to selective ash tree removal and replacement. Prioritizing neighborhoods adjacent to known infestations, followed by neighborhoods with significant concentrations of ash trees, the City will remove ash trees in rotation to avoid a clear cutting of all ash trees in a neighborhood. When the City removes ash trees, they would replace them with a variety of other species of trees. Unfortunately, the replacement trees will be far less mature. Over a ten-year period, if Emerald Ash Borer infestations spread slowly, then the City could continue to proactively remove and replace trees in rotation until all ash trees have been replaced.

The Emerald Ash Borer infestation is not a crisis that will likely result in public health issues or deaths; nevertheless, it could have a devastating affect on City neighborhoods. With a little luck, proactive removal and replacement, and steady funding, the City should be able to weather this pest and return to its Tree City USA status.

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