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NEIGHBORHOODS,
PLANNING & DEVELOPMENT
SERVICES DEPARTMENT

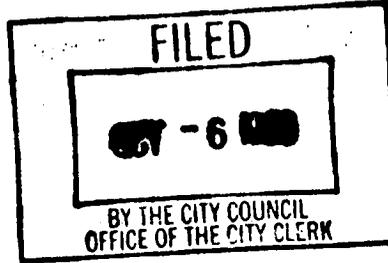
CITY OF SACRAMENTO
CALIFORNIA

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AREA 2

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September 17, 1998



City Council
Sacramento, California

Honorable Members in Session:

SUBJECT ELM LEAF BEETLE CONTROL PROGRAM FUNDED BY THE CALIFORNIA
DEPARTMENT OF PESTICIDE GRANT

LOCATION City-wide

RECOMMENDATION

This report is for information only and includes conclusions from the three year grant funded program and expected future elm leaf beetle control strategies.

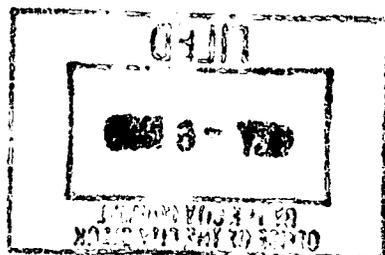
CONTACT PERSONS Martin Fitch, Trees Superintendent, 433-6258

FOR COUNCIL MEETING OF October 6, 1998

SUMMARY

This report provides information regarding the success of a collaborative project by the City of Sacramento Tree Services Division, the University of California Berkeley, and the Sacramento Tree Foundation to more efficiently control the elm leaf beetle. This project resulted in a reduction of pesticide application while utilizing less toxic pesticides and reducing the overall exposure of our environment to pesticides.

COMMITTEE/COMMISSION ACTION None



BACKGROUND

In 1996, the City's Tree Services division, in cooperation with the University of California, Berkeley Division of Biological Control and the Sacramento Tree Foundation, was awarded a three year grant from the State of California Department of Pesticide Regulation to develop alternative methods to control elm leaf beetles. The City has provided elm leaf beetle control for more than fifty years. In the "old days," materials such as arsenic, mercury, and DDT were used. Recently, Tree Services has used less toxic material and continues to search for better methods to address the perennial problem presented by the elm leaf beetle. Attachment A is a "Summary of Work to Date" prepared by Andrew Lawson and Don Dahlsten with the University of California, Berkeley. The conclusions drawn from this project will further the City's efforts to determine the most effective and environmentally friendly methods to control the elm leaf beetle. The monitoring techniques developed through the project and the advent of two new chemicals, imidicloprid and abemectin, have reduced the numbers of trees treated and the toxicity of pesticides used. The following table illustrates the progress of the project:

	1996	1997	1998
Elm tree population effected	3,775	3,775	3,775
Quantity of Pesticides Used (in units)	39,192	33,614	23,955
Labor Hours for Application	7,457	4,689	4,555
Number of trees treated	3,428	2,545	2,188
Labor Hours to Monitor	0	208	932
Cost	\$254,336	\$205,184	\$183,019

- ▶ Both the quantity of pesticides used and labor hours required for application decreased by nearly 40%.
- ▶ The number of trees treated decreased by 36%.
- ▶ The cost of the program decreased by more than \$71,000 -- a reduction of almost 30%.

FINANCIAL CONSIDERATIONS

The use of the techniques developed through this program has resulted in a significant savings to the Tree Services division. Although pesticide costs have increased, there was a saving of more \$71,000 through reductions in labor required to apply pesticides and the quantities of pesticides purchased. Tree Services has utilized this saving to increase the number of trees trimmed because tree trimming is one of our highest priorities. The current Tree Services operating budget only affords the ability to trim each City tree once about every eighteen years.

ENVIRONMENTAL CONCERNS

This report requests no actions that constitute a project as defined by California Environmental Quality Act (CEQA) guidelines.

POLICY CONSIDERATIONS

This report is for information only. Tree Services will continue to refine and enhance the techniques developed through the grant project and incorporate them into the City's ongoing Elm Leaf Beetle Control program.

MBE/WBE

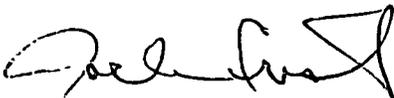
None. No goods or services will be purchased as a consequence of this report.

Respectfully submitted,



for Martin Fitch
Trees Superintendent

FOR INFORMATION ONLY:



WILLIAM H. EDGAR
City Manager



for Gary L. Little
Director, Area 2

Aug. 18, 1998

Integrated Pest Management of Elm Leaf Beetle in Sacramento - Summary of Work to Date

Andrew Lawson and Don Dahlsten, University of California, Berkeley

Background

- A method of sampling elms to predict damage had previously been developed - goal was to use this method to detect "hot spots" of beetle activity and concentrate control efforts on these areas, leaving uninfested areas untreated.
- Project began in 1995 with four sites managed with monitoring program.
- Sites were progressively expanded each year - 10 sites in '96, 10 larger sites in '97, and finally to half on the city in '98.
- Neighborhood services personnel did most of the monitoring in the second and third generations of '97 and all of the monitoring in '98.

Findings to date

- *Bacillus thuringiensis* (Bt) variety San Diego was used as an alternative treatment from 95-97. Two sprays applied one week apart were found effective at limiting ELB damage, but each generation may need to be treated.
- Efforts at establishing a biological control agent, *Oomyzus gallerucae*, have not been effective. The parasitoid has become established in the field and has even provided control within season, but has failed to overwinter.
- The monitoring program has proven very effective. By sampling trees at each generation egg peak we have been able to accurately predict damage and treat only these "hot spots". Only 10% - 15% of the trees in the monitoring areas have required treatment each year.
- In '97 and '98 the treatment in most sites has been a chemical injection of either Imicide or Vivid. Both of these treatments have been effective and are compatible with the monitoring program.
- Laboratory bioassays indicate there is no carry-over toxicity of either Avid or Imicide from one year to the next.
- The level of acceptable damage (treatment threshold) was decreased from 40% defoliation to 20% based on input from Neighborhood Services. Our field results suggest that injecting trees with egg population levels that may cause only moderate damage (20%-40%) may not result in significant differences in final damage level compared to untreated controls.