



CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

OFFICIAL NOTICE PLEASE READ IMMEDIATELY

PROCLAMATION OF AN EMERGENCY PROGRAM AGAINST THE ASIAN CITRUS PSYLLID AND THE HUANGLONGBING DISEASE

On March 30, 2012, the United States Department of Agriculture (USDA) confirmed the presence of the causative bacterial agent of the citrus disease huanglongbing (HLB) from citrus tree tissue and insect vectors collected in the community of Hacienda Heights, Los Angeles County. HLB is a devastating disease of citrus worldwide and is spread through feeding action by populations of the Asian citrus psyllid (ACP), *Diaphorina citri* Kuwayama.

In order to determine the extent of the infestation, and to define an appropriate response area, additional survey took place for several days over a one-square mile area, centered on the detection site. The results of this additional survey indicated that the infestation is sufficiently localized to be amenable for effective implementation of the California Department of Food and Agriculture's (CDFA) current ACP and HLB emergency response strategies, which include treatment and removal of the infected host plant.

This is the first known detection of HLB in California. HLB originated in Asia, and is considered the most devastating disease of citrus in the world. Symptoms of HLB include yellow shoots with mottling and chlorosis of the leaves, misshapen fruit, fruit that does not fully color, and fruit that has a very bitter taste making it unfit for human consumption. The bacterium that causes the disease, namely *Candidatus Liberibacter asiaticus*, blocks the flow of nutrients within the tree, causing the tree to starve to death. There is no cure, and trees infected with the disease will die.

Emergency action is needed to protect California from the negative environmental and economic impact HLB-infected ACP and HLB will cause, should they be allowed to remain in this area and spread. The emergency program is based on recommendations developed in consultation with the California HLB Task Force, the United States Department of Agriculture, the Primary State Entomologist, and the Primary State Plant Pathologist. Based on these recommendations, the program includes insecticide treatments to control all life stages of ACP and removal of all HLB-infected trees within 800 meters of each detection site. Pursuant to Sections 5401-5405 and 5761-5763 of the Food and Agricultural Code (FAC), the Secretary is mandated to: thoroughly investigate the existence of the pest; determine the probability that the pest will spread; adopt regulations as are reasonably necessary to carry out the provisions of this code (Title 3 of the California Code of Regulations; Section 3591.21); abate the pest from the established treatment area; and, prevent further economic damage.

In accordance with integrated pest management principles, CDFA has evaluated possible eradication methods and determined that there are no biological or cultural control methods that are effective to eradicate HLB-infected ACP and HLB that allow CDFA to

meet its statutory obligations. To comply with FAC mandates, the treatment plan for ACP eradication in Los Angeles County is as follows:

- Tempo® SC Ultra (containing cyfluthrin), a contact insecticide for controlling the adults and nymphs of ACP, will be applied to the foliage of host plants.
- Merit® 2F or CoreTect® (containing imidacloprid), a systemic insecticide for controlling the immature life stages of the ACP, will be applied to the soil underneath host plants.

Treatments will be repeated as per label instructions, for a minimum of two years beyond the last HLB-infected ACP and/or HLB detected. Both insecticides are applied from the ground using hydraulic spray equipment.

- HLB-infected host plant removal – All host plants found to be infected with HLB will be removed and destroyed using mechanical means in order to stop the spread of the disease. Stumps may be physically removed or may be treated with Roundup® (containing glyphosate) in order to prevent re-sprouting.

Public Information:

Residents of affected properties will be invited to a public meeting where officials from CDFA, the Department of Pesticide Regulation, the Office of Environmental Health Hazard Assessment, and the Los Angeles County Agricultural Commissioner's Office will be available to address residents' questions and concerns. Residents are notified in writing at least 48 hours in advance of any treatment in accordance with FAC Section 5779. After treatment, completion notices are left with the residents detailing precautions to take and post-harvest intervals applicable to the citrus fruit. Please contact CDFA's toll-free telephone number at 800-491-1899 and staff will be able to assist with any questions related to this project. This telephone number is also listed on all treatment notices.

PROCLAMATION OF AN EMERGENCY PROGRAM
REGARDING THE ASIAN CITRUS PSYLLID AND HUANGLONGBING

On March 30, 2012, the United States Department of Agriculture (USDA) confirmed the presence of the causative bacterial agent of the citrus disease huanglongbing (HLB) from citrus tree tissue and insect vectors collected in the community of Hacienda Heights, Los Angeles County. HLB is a devastating disease of citrus worldwide and is spread through feeding action by populations of the Asian citrus psyllid (ACP), *Diaphorina citri* Kuwayama. Based on the survey data, pest biology, information from California's Huanglongbing Task Force, recommendations provided to me by the Department's Primary State Entomologist and Primary State Plant Pathologist, and experience gained from the United States Department of Agriculture's (USDA) control efforts in the southeastern United States, I have determined that an infestation of HLB-infected ACPs and of HLB exists.

This is the first known detection of HLB in California. HLB originated in Asia, and is considered the most devastating diseases of citrus in the world. Symptoms of HLB include yellow shoots with mottling and chlorosis of the leaves, misshapen fruit, fruit that does not fully color, and fruit that has a very bitter taste making it unfit for human consumption. The bacterium that causes the disease, namely *Candidatus Liberibacter asiaticus*, blocks the flow of nutrients within the tree, causing the tree to starve to death. There is no cure, and trees infected with the disease will die.

ACP is an exotic insect that is originally from Asia. It has been introduced into Central and South America, the Caribbean, and Mexico. In the United States, ACP has been found in Alabama, Arizona, Florida, Georgia, Hawaii, Louisiana, Mississippi, South Carolina, Texas, and California (San Diego, Orange, Los Angeles, Imperial, Riverside, San Bernardino, and Ventura counties). ACP feeds on members of the plant family Rutaceae, primarily on *Citrus* and *Murraya* species, but is also known to attack several other genera. The psyllids cause direct injury to their host plants via the withdrawal of large amounts of sap as they feed and via the production of large amounts of honeydew, which coats the leaves of the tree and encourages the growth of sooty mold, blocking sunlight from reaching the leaves. However, the most serious damage caused by ACP is due to its vectoring the bacterium that is the causal agent of HLB.

Under my statutory authority, as Secretary of the California Department of Food and Agriculture (CDFA), I have decided, based upon the likely environmental and economic damage that would be inflicted by this detection of HLB and infestation of ACP, that it is incumbent upon me to address this threat. These pests present a major threat to citrus grown within the State. California is the top citrus-producing state in the U.S., with total production valued at over \$1.8 billion. Additionally, the establishment of ACP in California would increase the need for pesticide use by commercial and residential citrus producers, as well as require enforcement of quarantine restrictions. In a recent study in Florida, the presence of HLB increased citrus production costs by 40 percent (Irey et al. 2008). It is estimated that over the last five years in Florida, HLB has caused the loss of over 6,600 jobs, over \$1.3 billion in lost revenue to the citrus industry, and the loss of over \$3.6 billion in total economic activity (Hodges and Spreen 2012). Because HLB has been detected in

Los Angeles County, the establishment of ACP in California will pave the way for HLB to spread throughout the state. HLB would have severe consequences to both the citrus industry and to the urban landscape via the decline and the death of citrus trees.

My duty to act, and this decision, is based upon authority set forth in Sections 24.5, 401.5, 403, 407, 408, 5401-5405, and 5761-5764 of the Food and Agricultural Code (FAC) authorizing and mandating the Secretary to: thoroughly investigate the existence of the pest; to determine the probability that the pest will spread; to adopt regulations (Title 3 of the California Code of Regulations, Section 3591.21) as are reasonably necessary to carry out the provisions of this code; to abate the pest from the established eradication area; and, to prevent further economic damage. In order to determine the extent of the HLB infestation, and to define an appropriate response area, additional survey occurred for several days over a one-square mile area, centered on the detection site. The results of this additional survey indicated that the infestation is sufficiently localized to be amenable for effective implementation of CDFA's current ACP and HLB emergency response strategies, which include treatment. Emergency action is needed to protect California from the negative environmental and economic impact HLB-infected ACP and HLB will cause, should they be allowed to remain in this area and spread. The enclosed project plan describes the actions that are necessary to mitigate the spread of HLB.

This decision, to proceed with a treatment program, is based upon a realistic evaluation that it may be possible to address the threat posed by HLB-infected ACP and HLB using currently available technology in a manner that is recommended by California's HLB Task Force. Treatment needs and environmental conditions are outlined in the attached work plan. In making this decision, CDFA has evaluated possible eradication methods. In accordance with integrated pest management principles, the following is a list of the options that I have considered for the eradication of the HLB-infected ACP and HLB infestation: 1) mechanical controls; 2) biological controls; 3) mass trapping; 4) cultural controls; and 5) the application of pesticides by ground equipment.

Based upon input from my professional staff, including memorandums from the Primary State Entomologist and Primary State Plant Pathologist, and the input of experts familiar with HLB and ACP, I have concluded that there are no biological, or cultural controls that are effective to eradicate HLB-infected ACP and HLB that allow CDFA to meet its statutory obligations. To eradicate these pests from this area, I am ordering ground applications of pesticides be made to all ACP hosts within an 800-meter radius around the detection site and the removal of all HLB-infected trees. If additional HLB-infected ACP and/or HLB are detected in the survey area, the treatment area may expand to an 800-meter radius around any additional infested properties. A description of the alternative treatment methods considered for ACP and HLB, and methodologies chosen, is contained in the attached work plan.

Sensitive Areas

The treatment area has been reviewed by consulting the Department of Fish and Game's California Natural Diversity Database for threatened or endangered species. Mitigation measures will be implemented as needed. CDFA also consults with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service when rare and endangered species are located within the treatment area. CDFA will not apply pesticides to bodies of water or undeveloped areas of native vegetation. All treatments will be applied to residential properties, common areas within residential developments, and other non-commercial properties.

Treatment Plan

The proposed project area encompasses those portions of Los Angeles County which fall within an approximate one-square mile area around each property in which HLB-infected ACP and/or HLB have been detected. Activities will occur until negative survey data indicates that HLB is no longer present. At a minimum, this will be for a period of at least two years past the date of the last detection of HLB-infected ACP and/or HLB. The two year period is necessary to allow bacteria titers in any undiscovered asymptomatic HLB-infected host plants to build up to a detectable level. A map of the detection site with the project boundaries and the proposed treatment work plan is attached. In summary form, the treatment plan consists of the following elements:

1. ACP Monitoring. Yellow panel traps will be placed within an 800-meter radius around the detection site(s) to delimit and monitor post-treatment ACP populations. Traps will be placed at a density of 100 traps per square mile and will be serviced on a regular schedule, generally once every two weeks.
2. ACP and HLB Visual survey. All host plants will be inspected for ACP and for HLB symptoms within an 800-meter radius around the detection site(s), at least twice a year. ACPs and HLB-symptomatic plant tissue will be collected and forwarded to the CDFA Plant Pest Diagnostic Center (PPDC) for identification and analysis.
3. HLB Disease testing. All collected symptomatic host tree tissues and ACP life stages will be tested by the PPDC for the presence of HLB.
4. ACP Treatment. All properties within the treatment area will be treated according to the following protocol to control ACP: 1) Tempo® SC Ultra (containing cyfluthrin), a contact insecticide will be applied to the foliage of host plants to control existing ACP adults and nymphs; 2) Merit® 2F or CoreTect® (containing imidacloprid), will be applied to the soil beneath the drip line of host plants to protect the plant from reinfestation. Treatments will be repeated as per label instructions, for a minimum of two years beyond the last HLB-infected ACP and/or HLB detected. Both insecticides will be applied by ground using hydraulic spray equipment.

5. HLB-infected host plant removal. All host plants found to be infected with HLB will be destroyed in order to stop the spread of the disease. Infected host plants will be removed and destroyed using mechanical means. Stumps may be physically removed or may be treated with Roundup® (containing glyphosate) in order to prevent re-sprouting.

Public Information

Residents of affected properties are invited to a public meeting where officials from CDFA, the California Department of Pesticide Regulation, the Office of Environmental Health Hazard Assessment, and the County Agricultural Commissioner's Office will be present to address residents' questions and concerns. Residents are notified in writing at least 48 hours in advance of any treatment in accordance with FAC Section 5779. After treatment, completion notices are left with the residents detailing precautions to take and post-harvest intervals applicable to the citrus fruit.

Public information concerning the HLB/ACP project will consist of press releases to the public and direct notification of project developments to concerned local and State political representatives and authorities. Press releases are prepared by CDFA's information officer and the county agricultural commissioner, in close coordination with the project leader responsible for treatment. Either the county agricultural commissioner or the public information officer serves as the primary contact to the media.

If you have any questions related to this program, please contact the CDFA Toll-Free Hotline at 1 (800) 491-1899.

Attachments

**INTEGRATED PEST MANAGEMENT ANALYSIS OF ALTERNATIVE TREATMENT
METHODS TO ERADICATE THE HUANGLONGBING/CITRUS GREENING PATHOGEN,
Candidatus Liberibacter asiaticus
April 2012**

Below is an evaluation of alternative treatment methods to eradicate the Citrus Greening/Huanglongbing (HLB) pathogen, *Candidatus Liberibacter asiaticus* (Las) which have been considered for treatment programs in California.

A. MECHANICAL CONTROL

Host Removal: including stump destruction.

All host plants found to be infected with HLB will be destroyed in order to stop the spread of the disease. Infected host plants will be removed and destroyed using mechanical means. Stumps may be physically removed or treated with Roundup® (containing Glyphosate) in order to prevent re-sprouting.

Root-grafted trees. In situations where the root systems of an infected tree and an adjacent tree of the same species are likely to have come into contact, such as where the two trees have overlapping canopy drip lines and root zones, trenching to a minimum depth of 24 to 30 inches between root-grafted trees to sever root-to-root contact, should be done to prevent the spread of the pathogen into the adjacent tree via grafted roots.

B. CULTURAL CONTROL

Cultural Control. Cultural controls involve the manipulation of cultivation practices including host selection to reduce the prevalence of pest populations. After an infected tree is removed, avoid replanting citrus and other Asian citrus psyllid (ACP) or HLB hosts on the same property. In addition, closely monitor remaining citrus on the property for the presence of ACP and for development of HLB symptoms. Immediately notify the California Department of Food and Agriculture (CDFA) or the County Agricultural Commissioner should symptoms develop, so sampling and testing of the newly symptomatic trees may be conducted. There are no citrus species currently known to be immune to HLB, so replanting with resistant citrus hosts is not an option.

C. BIOLOGICAL CONTROL

Microorganisms. There are no known biological controls currently available to eradicate the HLB pathogen from infected trees.

D. CHEMICAL CONTROL

Stump Treatment. A number of herbicides are used to kill stumps and root systems to prevent re-sprouting. Roundup®, which is a formulation of Glyphosate, is labeled for this application on citrus in California, using a 50% to 100% application to the cambium of the freshly cut stump. However, the herbicide moves systemically to kill the stump and roots of the infected tree. In situations where the root systems of an infected tree and an adjacent tree of the same species are likely to have come into contact, such as where the two trees have overlapping canopy drip lines and root zones, trenching between root-grafted trees to a minimum depth of 24 to 30 inches to sever root-to-root contact should be done to prevent movement of the herbicide from the infected stump and root system to the adjacent tree via the grafted roots. This action would

also have the added benefit of reducing the risk of future movement of the pathogen from the roots of the infected tree to the adjacent root-grafted tree.

Foliar Treatment: For protection of remaining citrus against the possible ACP vector dispersal caused by the tree removal process.

Because host removal could promote dispersal of female Asian Citrus Psyllids (ACP) in search of hosts outside of the treatment area, insecticide treatment of the infected plants should be done prior to host removal.

A number of contact insecticides have been researched for use against ACP elsewhere, particularly in Florida. The following types have been considered for use by CDFA; based on a combination of effectiveness against ACP, worker and environmental safety, and California registration status.

PyGanic®, an organic formulation of a pyrethrin, is registered for use on all host plants. However, PyGanic® alone is not effective in eradicating ACP. Researchers recommend that piperonyl butoxide, a synthetic insecticide synergist be combined with PyGanic® to enhance its effectiveness. Without piperonyl butoxide, environmental conditions may degrade the PyGanic® before an effect on ACP can occur. Piperonyl butoxide is not a certified organic substance; therefore, combining piperonyl butoxide with PyGanic® negates the organic certification. The Environmental Protection Agency classifies piperonyl butoxide as a group C carcinogen, a possible human carcinogen. For these reasons, PyGanic® is not an effective treatment against ACP.

Sevin® SL is a formulation of carbaryl which may be applied to the foliage of all host plants. Sevin® SL is effective against ACP. Sevin® SL is a wide-spectrum carbamate insecticide which controls hundreds of insect species, including beneficial insects. Sevin® SL requires an extended pre-harvest interval, which is not compatible with residential fruit-growing practices. For this reason, Sevin® SL is not the foliar insecticide of first choice for residential treatments. However, it remains a treatment option in particular situations where the preferred insecticide for foliar treatment, namely Tempo® SC Ultra, temporarily cannot be used because of label restrictions on annual usage amounts per property.

Tempo® SC Ultra is a formulation of cyfluthrin which may be applied to the foliage of all host plants. Tempo® SC Ultra is effective against ACP. Tempo® SC Ultra is a wide-spectrum synthetic pyrethroid insecticide which, like Sevin® SL, controls hundreds of insect species, including beneficial insects. Tempo® SC Ultra is preferentially used over Sevin® SL by CDFA because it has no pre-harvest interval, which makes it compatible with residential fruit-growing practices.

The chemical treatment program used by CDFA for control of ACP, *Diaphorina citri* (Hemiptera: Psyllidae), targets multiple life stages. A contact insecticide is used for an immediate control of adults in order to prevent spread, and a systemic insecticide is used to control developing nymphs and to give the plant long term protection from re-infestation. The contact insecticide preferentially used contains the synthetic pyrethroid cyfluthrin, while the systemic insecticide contains the synthetic neonicotinoid imidacloprid. Both products have been shown to be effective against ACP elsewhere, notably in Florida. The California Huanglongbing Task Force, a joint government, university, and industry group formed in 2007 to provide guidance to CDFA on matters pertaining to ACP and huanglongbing, has endorsed the use of these chemicals in CDFA's treatment program.

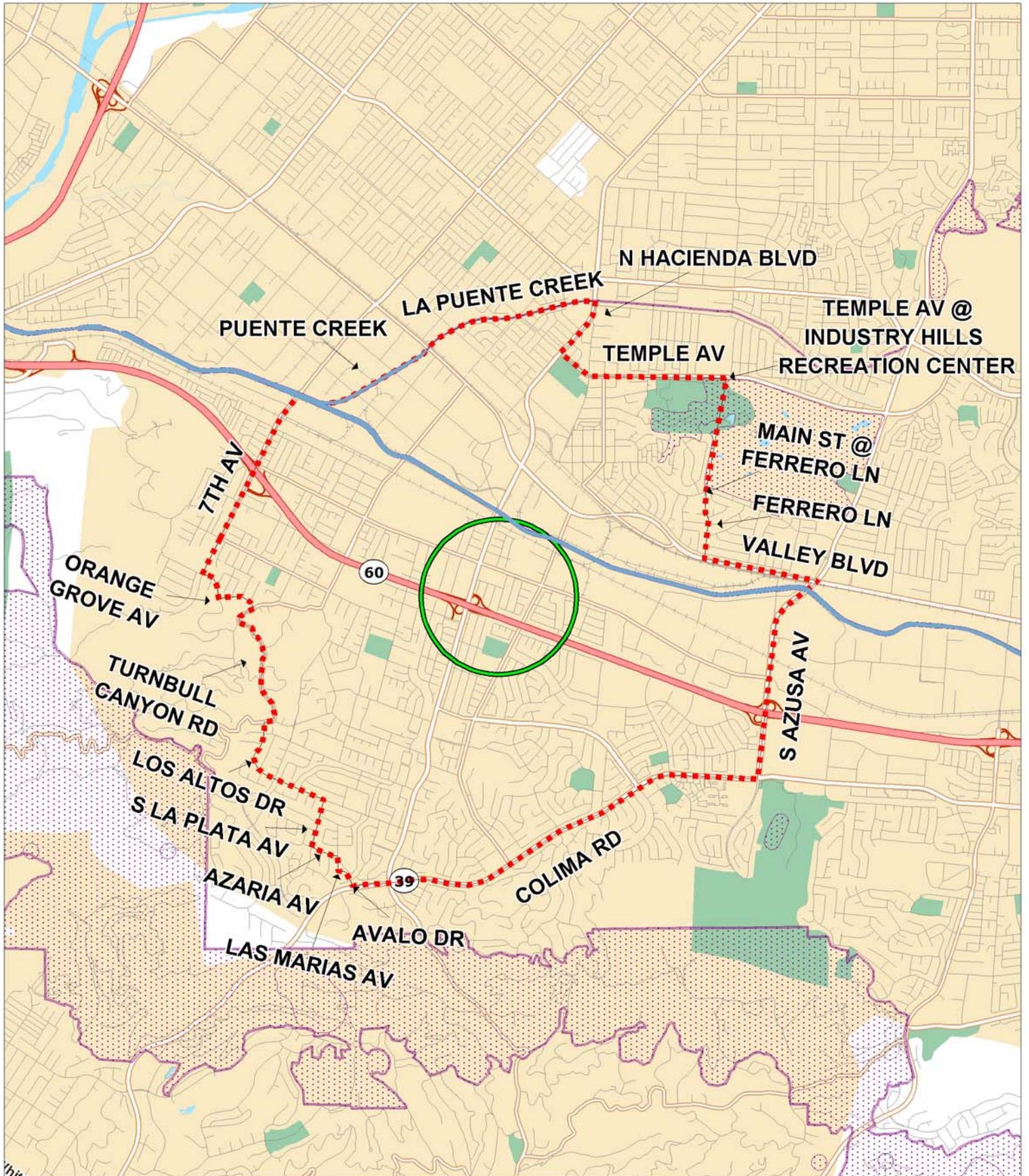
F. RESOURCES

Grafton-Cardwell, Elizabeth E., K. E. Godfrey, M. E. Rogers, C. C. Childers, and P. A. Stansly. 2006. Asian citrus psyllid. University of California, Division of Agriculture and Natural Resources Publication 8205. 8 pp. <http://www.anrcatalog.ucdavis.edu/pdf/8205.pdf>

Noling, J.W. 2011. Citrus Root Growth and Soil Pest Management Practices. University of Florida Institute of Food and Agricultural Sciences Extension document ENY617 6 pp. <http://edis.ifas.ufl.edu>

Rogers, M. E. and P. A. Stansly. 2009. Biology and Management of the Asian Citrus Psyllid, *Diaphorina citri* Kuwayama, in Florida Citrus. University of Florida Cooperative Extension Service, ENY-739. 7 pp. <http://edis.ifas.ufl.edu/pdf/IN/IN66800.pdf>.

ASIAN CITRUS PSYLLID
HACIENDA HEIGHTS, LOS ANGELES COUNTY
2012



MAXIMUM PROGRAM BOUNDARY



PROPOSED 800M GROUND TREATMENT AREA



SENSITIVE ENVIRONMENTAL AREA / TREATMENT MITIGATIONS IN PLACE