CISAC ISHB Subcommittee Needs Assessment Summary

July 18th 2025

SUMMARY OF SURVEY, DETECTION, and RAPID RESPONSE NEEDS:
Total: 8.7 - 9.7M / year

1. **Cost-benefit analysis for tree removal fund versus do nothing** **no budget**
2. **Continuing trapping and detection program** **($1.6 M/year)**
    a. More funds for personnel for enhanced visual detection
    b. Second screening of traps as quality control
    c. LA County put out 2400 traps - helpful but need to depend on visual survey
    d. Program about to start $800,000 does not include all counties
3. **Trapping and surveying coordinator** **(~$150,000/year)**
    a. Oversees monitoring and success planning within a rapid response program
    b. Oversees evaluation of program goals and objectives
    c. Curating and augmenting map database
    d. Training stakeholders
    e. Liaison with stakeholders
4. **Contractor service for CEQA compliance and Permitting process** - seed fund **($100,000)**
    a. Consultant partnership? E.g., RCD, consultant agency for CEQA
5. **Tree removal program** as a control measure (tree removal fund) **($6-7 million)**
    a. How many trees do you expect to be removed over the next year?
        i. San Jose: 20 street trees/year 1,000 amplifier trees in Coyote Creek
            1. Costs $3,000 to remove medium size tree (15-20 in DBH) and dispose properly
        ii. Santa Cruz: 20-30 on Zayante trail + hazard trees
            1. $5,000/tree because of location, risk, accessibility
            2. Interested in using a carbonator (hot chipping container that turns logs to dust) to reduce costs
    b. What would that cost?
        i. In LA $2,000 on average/tree
        ii. Need a tub grinder strategically in different locations throughout the state **($1,000,000 + maintenance)**
6. **Tree replacement program** (tree replacement fund) **(~$760,000/year)**
    a. Need to replace 3-5 trees for every tree removed (in riparian zones)
        i. $35,000/acre + $4,000/acre/year for maintenance (~17 acres in Sta Clara Co **$660,000/year**)
        ii. Possibility for contract grows for tree species of interest
    b. For street trees, 1-1 replacement
        i. 3 years establishment watering $1000/tree, including the cost of the 15-gallon plant ($500)
    c. Monitoring requirement

i. Involves a consultant to do the work

7. **Diagnostics of beetles and fungi ($100,000?)**

SUMMARY OF OUTREACH AND EDUCATION NEEDS

Total: ~ $1-2 M / year (missing many estimates)

Excluding border station signage and CISAC newsletter

1. **Statewide Tree Pest Expert Outreach Coordinator.** Personnel + travel: **$190,000/year**
    a. Educate Ag commissioners, agencies, residents,tree care companies, etc. on ISHB and other tree pests.
    b. Workshops, printed materials, social media, mass media, mailers, etc.
    c. New educational materials
        i. Field guide that includes GSHB
        ii. Guidelines on replanting program - what to replant and where
        iii. Management matrix for riparian habitats
    d. Evaluate efficacy of outreach and education program
2. **Regional Coordinators** (Part-time - Southern and Northern California) Personnel + travel **$150,000/year total** ($75,000 each)
    a. Liaison between stakeholders in the region and statewide coordinator
    b. Meet with affected communities for ISHB engagement activities
    c. Coordinate specific master gardener activities and participatory science programs in the region
3. **Discretionary Funds (for coordinators) $100K - 1M/year (missing budget figures)**
    a. San Jose could spend $1M on an outreach campaign (including outreach contractor)
    b. Last budget was $80,000/year, and we could not spend it all (but that was during COVID)
    c. Use includes:
        i. Outreach Materials (handouts, banners, door hangers, etc.)
            1. Door hangers were $1/door including material and people but stopped using them because were unreliable
            2. Partner with Tree People, CCC could be an option to reduce costs
        ii. Bill boards **$500-$40K** depending on location and duration
        iii. Workshops: **$10,000/year**
        iv. Social Media messaging (by Zipcode): **no budget -** Sherry Shook will get back with report on FB costs
        v. Translations **no budget**
        vi. Website redesign for better public engagement - **no budget**
4. **Public relations and public outreach group** to help with new types of communication **(no budget)**
    a. Artist (for door hanger and mailers, etc.)
5. **ISHB ID Kits** (~$45 ea) **$11.250** for 250 kits
    a. Field Guide including GSHB (printing costs) $10/ea

    b. **Beetle specimens (collecting)**
    c. **Dried infested wood (PSHB/KSHB/GSHB)**
    d. **Pen ($0.33/ea)**
    e. Small cardboard box
    f. Bag
    g. DSH tape ($5-$10/ea)
    h. **Chisel $15/ea**
    i. Hand lens ($1,200 if order 250)
6. **Promotional items** for public engagement (Pens, hand lenses, tattoos, postcards, stickers) **(no budget)**
7. **Asynchronous sharing and collaborating platform** (alternative to Collaborative Tools)
    a. Slack? Shannon will look into costs **(no budget)**
    b. Would be useful - post shared documents
    c. Because of record retention rules, files get deleted on Teams with City
8. **Focus groups** regarding websites and outreach materials **$100K?**
9. **Signage at border stations** (**$1M**) for one station at Truckee - can be used on multiple pests (**is this beyond the scope of the ISHB subcommittee?**)
10. **CISAC quarterly public-facing newsletter** (outreach contractor) (ISHB and other pests) (**is this beyond the scope of the ISHB subcommittee?**) (**$45K - $1M**)

GREENWASTE AND FIREWOOD AS PATHWAYS SUMMARY

No budget

Needs that were identified

1. Support to regulate firewood at county level?
    a. Facilitate communication between counties about firewood movement
        i. Technology and facilities and coordinating with outreach coordinator
    b. The kind of support needed and associated costs were not identified.
2. Legislation to empower entities to enforce movement of wood?
    a. Need to conduct an economic analysis for regulation.
3. Firewood might need to be explored in a broader context besides this subcommittee - need to convey to CISAC that this is a strong interest of the ISHB subcommittee.
4. Work with LEAs to identify greenwaste facilities and gain access for trapping and visual inspection, and flow of infested host waste material.
    - If we have a survey coordinator (from the Survey Response component) this is definitely a need to implement (approval from LA, Orange, Santa Cruz, County - Santa Clara County Ag commissioner not present at April 24 meeting, but expressed interest in this effort for the county)
        - Needs: PI +/or survey coordinator to lead efforts
    - Included in research project #2 (ranked 7th).

RESEARCH SUMMARY

The Research Working Group of the CISAC ISHB Subcommittee was tasked with identifying and prioritizing research projects addressing the invasive shot hole borers (ISHB) that have become established in California. As a group, we developed and provided justifications for those projects and estimated the length and costs associated with each. After reviewing each research project justification and objectives, stakeholders ranked their top 5 priorities by project number on July 17th. The results of that ranking are below:

Rank	Project	Cost	Vote	Project Description
1	9	$540,480	14	Prospecting and testing endophytic biocontrol agents for Fusarium dieback management (Control)
2	12	$757,500	13	Expanding foreign exploration for biological control agents of ISHB in Southeast Asia (Control)
3	1	1,161,582	12	Model establishment and spread of FD-ISHB over space and time (Epidemiology)
4	20	$277,700	9	Evaluating treatment thresholds for ISHB-FD management in urban trees (IPM)
4	3	$98,210	9	Strategic tree selection to slow FD-ISHB spread in California landscapes (Epidemiology)
4	14	$340,600	9	Plant-based and biorational treatment strategies for managing FD-ISHB in water-sensitive landscapes (Control)
5	2	93,210	8	Assessment of ISHB dispersal risk through green waste handling and management (Epidemiology)
6	18	$323,000	7	A portable diagnostic tool for early detection of FD-associated *Fusarium* species and their beetle vectors (Monitoring)
7	5	$372,880	5	Determining the reproductive host potential of agricultural species for ISHB (Biology)
7	7	$76,260.00	5	Uncovering bacterial–fungal interactions in the mycangia of ISHB (Biology)
7	8	$218,379	5	Defining the host range of *Euwallacea interjectus* to protect California's urban and natural forests (Biology)
7	16	$38,000	5	Assessing ISHB viability in composted mulch from infested plant material (Control)
8	4	$244,212	4	Effects of nutrient and water availability on the severity of FD–ISHB infestations in California (Biology)
9	10	$382,200.00	3	Harnessing the rhizosphere for sustainable management of FD–ISHB (Control)
9	13	$198,300	3	Locally systemic fungicides for the management of FD–ISHB (Control)
9	15	$186,000	3	Push-pull trap strategies for ISHB-FD control (Control)
10	17	$160,000	2	AI-assisted identification and quantification of *Euwallacea* beetles from monitoring trap images (Monitoring)
10	21	$318,987	2	Bioeconomic modeling of ISHB control (Social)
11	19	$196,500	1	Trap optimization for the greater shothole borer (Monitoring)
11	22	$70,000	1	Identifying barriers to local firewood use: A behavioral analysis to inform outreach and policy (Social)
12	6	$228,779	0	Investigating host preference plasticity in invasive shothole borers (Biology)
	11			
	Top Three	**$2,459,562.00**		
	Top Six	**$3,176,072.00**		
	Top 12	**$4,297,801.00**		
	All 22	**$6,282,779.00**		