IPM Training & Implementation in Schools (Inside & Out)

SITUATION	INPUTS	OUTPUTS		OUTCOMES – IMPACT		
		Activities	**Participation**	**Short** (knowledge)	**Medium** (practices)	**Long** (condition)
Problem and need: 1) Schools have indoor and outdoor pests resulting from poor management of landscapes and turf, poorly pest-proofed facilities and staff that lack training in these areas. Both indoor and outdoor environments can contribute to pest and pesticide exposure and risk 2) Many AZ schools rely mainly on pesticides for pest management and many perform scheduled pesticide applications irrespective of pest prevalence, based on recent stakeholder survey 3) School administrators are not aware of the benefits of IPM and its potential to address needs while also supporting achievement of other school district goals. 4) School staff are busy and need a holistic systems approach to pest management.	*What is invested:* 1) Our time and expertise: Assistant in Extension Nair; Leadership Team (expertise in Turf & Weed Management, Public Health IPM, Structural IPM, Environmental Horticultural and IPM Assessment); AiE for pesticide education 2) IPM Assessment Leadership Team to support evaluation 3) Staff time and in-kind support of partnering school districts 4) Travel expenses related to outreach education and school implementation programs 5) Leverage (grants) 6) Materials and consumables (printed materials and costs associated with the IPM workshops and demonstrations) 7) Regular communication between School IPM team members and their network of school contacts	*What is done:* 1) Implementation programs in 9 school districts delivering hands-on training and expertise to address indoor and outdoor pest management needs 2) Partner schools will serve as demonstration sites to support IPM training & adoption by other districts and pest management professionals 3) Create newsletters, publications, fact sheets with technical info to address key issues (delivered online, hardcopy, email) 4) Outreach and training targeting school decision-makers to increase awareness of IPM benefits from adopters' perspectives 5) Assessments to measure changes in awareness, knowledge and adoption of IPM. 6) Annual AZ school district survey to track statewide measurement indicators for IPM	*Who is reached:* School administrators, building and grounds maintenance staff, kitchen staff, school nurses, pest management professionals, pesticide applicators, landscapers and turf managers who work with schools	*Short term results* 1) Administrators: Increased awareness of the benefits and need for school IPM inside and out 2) School personnel and their contractors will increase knowledge and understanding of IPM and pesticide safety, including why pests occur inside and outside and how to reduce pests and pesticide risks with IPM **Potential Measures** 1) Staff interviews at partner schools will measure awareness and knowledge of IPM and its benefits, and specific technical knowledge at program initiation and then annually 2) Pre-post tests at trainings that will measure changes in IPM and pesticide safety knowledge	*Medium term results* 1) Adoption of IPM policies by more school districts 2) Adoption of pest prevention tactics both indoors and outdoors, including improved building maintenance, reducing pest conducive conditions, sound turf and landscape management **Potential Measures** 1) Annual School district survey will measure adoption of IPM policies and key IPM practices (including those related to pesticide use) statewide 2) Follow up interviews and annual program assessments at partner schools will measure pesticide use and changes in management practices	*Ultimate impacts* 1) Healthier school environments will result from reduced pest exposure and elimination of unneeded pesticide uses 2) Economic benefits possible through improved water use, preventative maintenance, and reduced chemical control and plant replacement costs 3) Reduced absenteeism due to asthma and other health problems related to pests **Potential Measures** 1) Staff interviews and annual program assessments at partner schools will measure achievement of program goals. We will track costs of pest management, pest occurrence, pesticide use, absentee rates, etc.

Assumptions: *(Beliefs, expectations, and principles that guide our work.)*

School districts will choose the pest management practices and grounds management techniques that are consistent with a working budget, effective management methods, and which do not detract from a healthy learning environment and other district goals.

Environment: *(Influential factors)*

1. *More than 50 published surveys and studies since 1994 have documented deficiencies in school pest management, including unmanaged pest infestations, unsafe and illegal use of pesticides, and unnecessary pesticide exposures to individuals.*
2. *By using high-level Integrated Pest Management (IPM), pest complaints and pesticide use in schools and other public buildings have been reduced by 71% to 93% with no long-term increase in costs.*
3. *With reduced budgets, resources and manpower have diminished. School districts inadequately maintain landscapes, athletic fields and playgrounds. Unfortunately proper pruning, irrigation, and appropriate fertilization of plants together with adequate mowing, irrigation, and fertilization of turf grasses are lacking. Substandard plant and turf grass management leads to trees, shrubs, and turf grasses becoming weak and susceptible to physical stress, weed, insect infestations, and/or disease infections. Weeds out compete weak turf grass and create uneven turf surfaces that lead to student injuries.*

How our Logic Model supports Outcomes and Impacts of the CPPM Logic Model:

- We increase knowledge and implementation of new IPM tools and tactics in school environments; for example, eliminating routine baseboard and perimeter sprays for arthropod control in favor reducing pest access and proactively monitoring for pests and treating with reduced-risk approaches (e.g., baits) on an as-needed basis.
- We will facilitate production of audience-appropriate IPM training materials for school IPM including traditional and web-based technologies, e.g., our monthly “Pest Press” School IPM Newsletter
- We participate in communication among the scientific community and among research, teaching and extension communities locally and regionally, through the Western IPM Center, WERA-1017 (IPM), WERA-060 (resistance management), Western School IPM work group and National School IPM steering committee and scientific collaborations with colleagues, presentations and discussions at regional and national scientific conferences to share information and expand potential impacts of our work.
- More sustainable IPM practices are adopted by school districts and their pest managers
- Cost-benefit ratios of adopting IPM are improved
- Human health, economic and environmental risks are reduced
- Outcomes and impacts of our school IPM programs will be measured in implementation programs and for our statewide Outreach program as indicated under Expected Outcomes and Assessment of our IPM Training and Implementation in Schools section of the proposal.