Virginia Association of Counties

# ACHIEVEMENT AWARDS

## SUBMISSION FORM

All submission forms must include the following information. Separate submission forms must be turned in for each eligible program. **Deadline: Friday, April 3, 2026.** Please include this submission form as the first page of your electronic entry. Contact **Gage Harter** with any questions.

### PROGRAM INFORMATION

**County:** Henrico County

**Program Title:** Vector Surveillance and Control Elementary Education Outreach Program

**Program Category:** Health and Human Services

### CONTACT INFORMATION

**Name:** Wes Robertson

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### SIGNATURE OF COUNTY ADMINISTRATOR OR DEPUTY/ASSISTANT COUNTY ADMINISTRATOR

**Name:** Monica Smith-Callahan

**Title:** Deputy County Manager for Community Affairs

**Signature:** Monica Smith-Callahan

**Program Overview**

Henrico County's Vector Surveillance and Control (VSC) team revitalized its Integrated Pest Management strategy by launching a formalized, themed elementary outreach program. Designed for the county's youngest residents, the initiative builds foundational knowledge to empower students to protect themselves against insect-borne diseases using core school-based curricula. The program addresses a critical multi-year void created by the COVID-19 pandemic, during which in-person safety messaging was halted, leaving young children without vital "Fight-the-Bite" education.

The framework featuring rotating themes like the "Mighty Mosquito Mission" and "Mighty Mosquito Mystery" aligns with Virginia Standards of Learning (SOL) for grades K-4, focusing on life cycles, habitats, and morphology. Through 30-minute interactive sessions involving live larvae observations and signature "disguise" headband crafts, students learn to identify and eliminate standing water at home. By moving away from passive lecture models toward tactile and kinesthetic learning, the program ensures high conceptual retention and active student participation.

Since its pilot launch in the Spring of 2023, the program has demonstrated significant scalability, growing from an initial three-school pilot to a year-round fixture reaching 21 schools for the 2024/2025 cycle. The VSC team utilizes GIS mapping to target historical mosquito "hot spots," ensuring that high-risk neighborhoods receive coverage and public

health protection first. This strategic expansion has allowed the program to establish deep institutional roots within Henrico County Public Schools (HCPS) as a recurring cornerstone of the county's public health efforts.

Ultimately, the program transforms students into "Mini Agents," creating a "Force Multiplier" effect that extends the reach of VSC into residential areas that are otherwise difficult to monitor. By training thousands of students to identify and eliminate breeding sites on private property, the county has fostered a long-term behavioral shift and enhanced community-wide resilience against vector-borne illnesses. This innovative, low-cost model empowers the next generation of residents to become proactive advocates and front-line protectors of public health.

**Problem/Challenge/ Situation Faced by Locality**

For Henrico County, mosquitoes represent a persistent public health concern, carrying diseases like West Nile virus that remain present in local populations every year. Effective management requires a robust Integrated Pest Management (IPM) approach that balances surveillance with high-impact education. Historically, VSC outreach was “fragmented and infrequent,” a gap exacerbated by the COVID-19 pandemic when in-person school activities were halted for nearly two years.

As a small department, VSC lacks the staffing to inspect every residential space in the County. Sustainable action cannot be achieved through chemical treatment alone; it requires community-wide understanding of mosquito behavior. By targeting elementary

students, the program identified a unique opportunity to empower young residents to serve as messengers, bringing awareness home and extending VSC's reach into neighborhoods that could not otherwise be adequately monitored.

**How the Program was Carried Out**

This program serves as a model for other localities by achieving high-impact results through a lean, resourceful operational model. While many large-scale initiatives require dedicated departments, this is executed by just three to four specialists. It utilizes Data-Driven Strategic Targeting by overlaying mosquito surveillance with GIS-based population data to prioritize schools in high-risk neighborhoods.

The program also features an innovative Biennial Rotation Model. To prevent academic fatigue and ensure students do not see the same presentation twice as they progress through grades, the curriculum rotates themes (e.g., “Mystery” vs. “Mission”). This sustains long-term relationships with student bodies and builds scientific trust within the community through multimodal engagement, including tactile, auditory, and creative learning paths.

Implementation began with a comprehensive evaluation of past efforts to ensure alignment with Virginia’s Science SOLs, providing immediate value to educators. Following a pilot in Spring 2023, the program transitioned from a seasonal activity to a year-round pillar of the county’s health strategy.

The curriculum follows three interactive segments: Scientific Observation (analyzing anatomy), Life Cycle Exploration (observing live metamorphic transitions), and Actionable Solutions (identifying standing water). By expanding from a K-2 foundation to include grades three to four, the team adapted materials to include advanced discussions on biosystems, ensuring age-appropriate complexity across all elementary levels

**Financing and Staffing**

The program is strategically funded through the Henrico County General Fund within the Department of Public Works (DPW) annual budget. By utilizing regularly employed VSC staff and existing infrastructure, the county maximizes efficiency without supplemental tax levies.

The total annual program cost is $32,702.66. Personnel costs account for $30,597.48, representing 369 dedicated staff hours. The remaining $2,105.18 covers all essential educational and craft supplies, such as paper, pipe cleaners, and stickers. This model leverages internal expertise and modest material investments to provide comprehensive outreach at a low per-resident cost.

**Program Results**

The program has demonstrated remarkable growth, expanding from a three-school pilot to reaching over 1,800 students at 14 schools by the end of the 2023-2024 academic year. By 2026, the model has empowered a total of 9,987 students to become "Mini Agents".

The strategic use of GIS mapping ensured that this expansion prioritized the highest-risk neighborhoods. Feedback confirms a significant behavioral shift: students are actively identifying and eliminating standing water in their own living spaces. This "Force Multiplier" effect has deployed an army of residential inspectors across the county, achieving source reduction on private property that would be impossible for VSC to monitor manually.

**Executive Summary**

Henrico County's Vector Surveillance and Control (VSC) team revitalized its Integrated Pest Management strategy through a themed elementary outreach program. Designed to protect young residents from insect-borne diseases, the initiative fills a public health gap left by the COVID-19 pandemic. By aligning curriculum with Virginia Standards of Learning (SOL) for grades K–4, the program provides academic value while teaching mosquito biology and habitat.

The program uses a rotating framework featuring the "Mighty Mosquito Mission" and "Mighty Mosquito Mystery" to ensure long-term engagement. During interactive 30-minute sessions, students observe live larvae and create "disguise" crafts to reinforce morphological identification. This kinesthetic approach empowers students to identify and eliminate standing water at home.

Since its 2023 pilot, the program has leveraged GIS mapping to prioritize historical "hot spots" and high-risk neighborhoods. Now a year-round pillar of Henrico's public health strategy, the initiative has empowered nearly 10,000 students to act as "Mini Agents" and

residential inspectors. This "force multiplier" achieves source reduction on private property that traditional staffing cannot reach. With a 100% educator satisfaction rate and a low-cost model, the program serves as a sustainable template for localities seeking to improve public health through creative community engagement.