



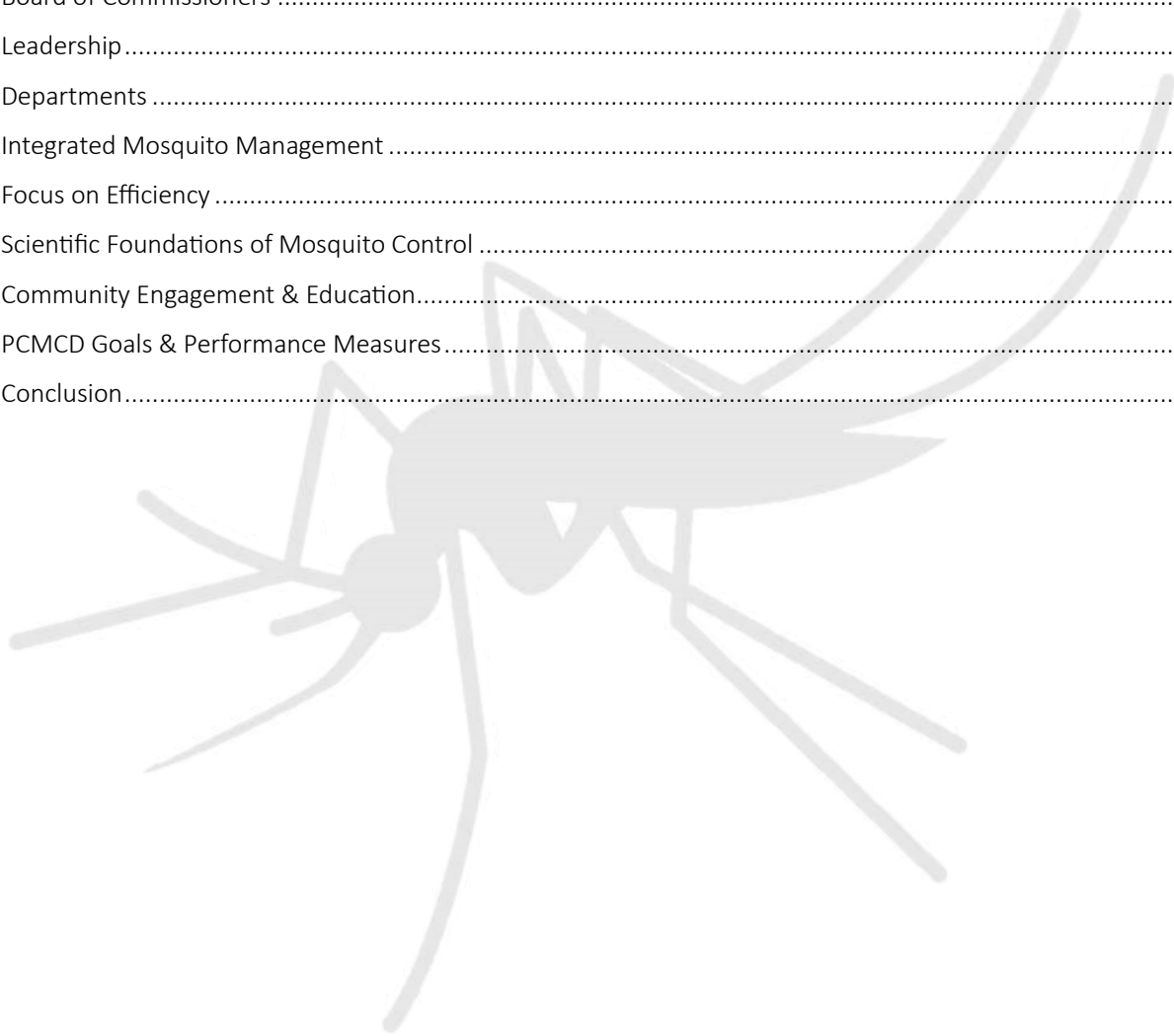
Strategic Plan



2025-2026

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Introduction

Welcome to the Pasco County Mosquito Control District (PCMCD) Strategic Plan for the 2025–2026 Fiscal Year. As stewards of public health and environmental responsibility, we approach this plan with a clear mission: to protect our community from the threats posed by mosquitoes while fostering a sustainable and resilient relationship with our environment. This Strategic Plan serves as our roadmap, guiding innovation, operational excellence, and meaningful collaboration to safeguard the well-being of Pasco County residents, their families, pets, and livestock.

In a landscape shaped by evolving environmental conditions, changing climate, and unprecedented human population growth, mosquito control has become increasingly complex. The burgeoning population not only amplifies the demand for mosquito control services but also heightens the urgency to expand and enhance our operations to combat emerging disease threats in a more urbanized environment. With changes in local climate, mosquito populations are becoming more persistent and widespread, including the introduction of invasive species and emerging disease threats.

PCMCD's legacy of proactive service, rapid response, and scientific rigor positions us to meet these challenges effectively. Through the integration of advanced science and technologies, evidence-based strategies, and community engagement, we aim not only to mitigate immediate risks but also to address the underlying factors contributing to vector-borne disease and ecological imbalance.

This plan reflects our collective dedication to adaptability, accountability, integrity, and public service. It establishes clear goals and performance measures that strengthen operational capabilities, foster innovation, and expand partnerships across sectors. By implementing these strategies, we will continue to lead in mosquito control, protect public health, and maintain the trust and confidence of the communities we serve.

As PCMCD navigates the complexities of 21st-century mosquito management, this Strategic Plan represents both a commitment and a call to action: to uphold our tradition of excellence while evolving to meet emerging challenges, ensuring that Pasco County remains a safe, healthy, and thriving community.

The execution of this strategic plan will require smart and thoughtful planning, clear and concise communication, and capable staff. This plan should be flexible to account for changes in the economic landscape and practicality of completion.



Adriane N. Rogers, M.S., CDM
Executive Director, Pasco County Mosquito Control District

Mission Statement

The Pasco County Mosquito Control District (PCMCD) is committed to protecting the health and well-being of the citizens of Pasco County through the prevention and control of mosquitoes and mosquito-borne diseases. Our goal is to control both pestiferous and disease carrying mosquito populations to a tolerable level in the safest, most economical manner, while using a variety of methods in such a way as to minimize potential effects on people, wildlife, and the environment.

Vision Statement

At the Pasco County Mosquito Control District, our vision is to uphold a community where integrity, accountability, and unwavering commitment to public service and quality education form the cornerstone of our operations. We are dedicated to upholding the highest standards of ethics and transparency in all our endeavors. Guided by a profound sense of environmental stewardship, we work to protect and preserve our natural ecosystems for future generations. Together, we forge ahead, embodying these principles in every action we take to safeguard public health and enhance the quality of life in Pasco County.

Core Values

Integrity

Integrity, as a core value, represents our commitment to act with honesty, transparency, and strong moral principles in every situation. Integrity fosters trust, accountability, and reliability, ensuring that decisions and actions are guided by ethics and respect for others. In our organization, integrity is foundational for building credibility, maintaining positive relationships, and ensuring long-term success.

Accountability

Accountability, as a core value, represents taking ownership and responsibility for our actions, decisions, and their outcomes. It involves being transparent about successes and failures, admitting mistakes, and making a genuine effort to correct them. Accountability fosters a culture of trust, reliability, and commitment, where individuals and teams are answerable for their roles and obligations.

Public Service

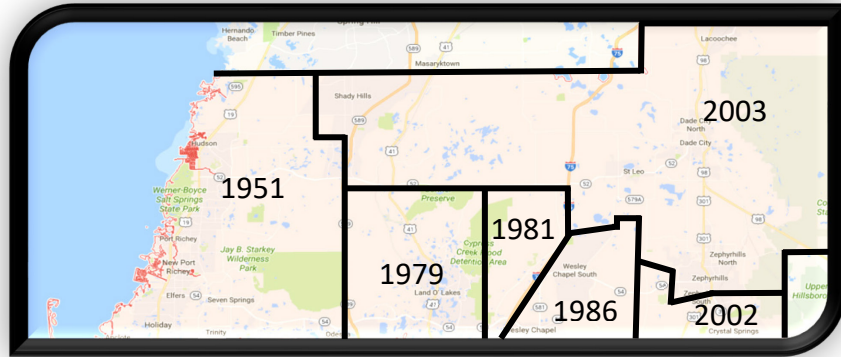
Public Service, as a core value, emphasizes our commitment to serving the community and contributing to the well-being of others. It involves placing the needs of the public above personal interests, ensuring that actions and decisions are made with the greater good in mind. Public Service fosters a sense of duty, compassion, and responsibility, encouraging individuals and organizations to work toward positive, lasting impacts on society.

Education

Education, as a core value, represents our commitment to continuous learning, growth, and the sharing of knowledge. It emphasizes the importance of fostering curiosity, critical thinking, and informed decision-making. Education promotes lifelong learning, empowerment through knowledge, and the belief that an informed society is key to progress and innovation.

History

The Pasco County Mosquito Control District (PCMCD) was created by the Pasco County Board of Commissioners as the result of a referendum vote in the summer of 1951 and established as the West Pasco County Mosquito Control District.



Picture 1: District expansion map within Pasco County, FL

The district expanded five times since its establishment. On each occasion in 1979, 1981, 1986, 2002, and 2003, the expansion process was initiated by petition at the grass roots level by the residents within a voting precinct that was adjacent to the district. Petitions were first presented to the 3-member Mosquito Control Board for approval and then to the Pasco County Board of County Commissioners for authorization via public meetings.

Originally, District personnel included three Commissioners plus one individual who drove a truck which was used to spray for adult mosquitoes. Within a few years, the district soon began applying pesticides to mosquito larvae and the Florida State Board of Health was providing the operation engineering and entomological support so that staff could ditch many of Pasco's coastal salt marshes and several nearby freshwater sites. Improvements were made to drain standing water, thus reducing mosquito production. Ditching and subsequent ditch cleaning was one of the district's major control efforts up through 1990.

During the past 30 years, the district has continued to develop larvicide and adulticide capabilities, and has focused on new technologies that use GPS guidance, improved formulations, and customized data management systems to assist in efforts to achieve the mission. There is also a focus on used tire removal and aquatic weed control, as they are both associated with producing mosquitoes.

The PCMCD employs approximately 50 cross-trained employees and an additional 10–15 part-time, seasonal staff. While historically the busiest period has been the summer months, global climate shifts are extending the length of time mosquitoes remain active in our region and expanding their geographic range. Warmer temperatures, changing rainfall patterns, and milder winters are creating favorable conditions not only for established species but also for invasive mosquito species moving into Florida.

The PCMCD is currently one of the recognized leaders in the mosquito control industry and often called upon for advice and assistance by other mosquito control programs.

District employees conduct year-round monitoring and control activities, maintaining more than 150 surveillance locations throughout Pasco County to monitor mosquito populations and disease risk. During peak activity seasons, staff perform extensive inspections, collect and identify specimens, and implement larval and adult control measures when thresholds are met. In the traditionally drier winter months—now increasingly active for some species—operations pivot toward staff training, continuing education, equipment maintenance and calibration, and site detection and access improvements to prepare for evolving seasonal and climatic demands.

Board of Commissioners

PCMCD is an Independent Taxing District governed by a board of three elected Commissioners. These positions are non-partisan, without political affiliation, and the Commissioners are elected "at large," meaning they are not representative of specific regions within Pasco County. Each Commissioner serves a four-year term, with two seats elected simultaneously and the third seat elected two years later. In the event of a board vacancy, the Commissioner of Agriculture from the Florida Department of Agriculture and Consumer Services (FDACS) will appoint a replacement to serve the remainder of the term.



Michael Cox
2021-Current



Randy Evans
2020-Current



Matthew Abbott
2007-Current

Leadership



Adriane N. Rogers, M.S., CDM - Executive Director

Agne Prasauskas – Research and Surveillance Director

Wayne Daniels – Aerial Operations Director

Jose Freundt – Finance Director, CDAP

Lindsay O'Reilly – Administrative & Talent Manager

Karen Mojica – Public Education Specialist

Maria Johnson – Community Engagement Director

Edwin Martinez – Network & Computer Systems Admin

Nick McFaul – Operations Director

Brett Hicks – Aquatic Herbicide Supervisor

CJ McCutcheon – Fleet Supervisor

Walter Michalski – Special Projects & Field Supervisor

Stelios Kalimnios – Larvicide Supervisor

Kyle Yager – ULV Supervisor

Vinny Dourado – Facilities Maintenance Supervisor

Jason Connors – Drone Pilot

Departments

Collaboration among all departments is crucial for achieving effective and comprehensive mosquito management. Each department, with activities ranging from field operations and entomology to fleet maintenance and public education, contributes specialized expertise that enhances the district's overall efforts. By working together, these departments create a coordinated and efficient approach, ensuring that every aspect of mosquito control is addressed, from prevention and surveillance to treatment and public engagement. This collaboration maximizes resource use, reduces the spread of mosquito-borne diseases, and ultimately protects public health.

Administration

The Administrative department oversees daily functions, communications, compliance, and record-keeping. Staff manage internal and external communications, respond to public inquiries, and support strategic planning. They ensure legal and regulatory compliance, coordinate office functions, and provide logistical support across all departments, enabling the district's mosquito control efforts to run efficiently and effectively.

Entomology

The Entomology department is key to the mosquito control strategy, conducting operationally applied research and surveillance to monitor mosquito species, habitats, and population trends. They collect and analyze samples to identify high-risk breeding areas, monitor for resistance development and collaborate with the operations departments to implement targeted control measures. This data-driven approach helps reduce mosquito populations and the risk of mosquito-borne diseases.

Finance

The Finance department manages the district's financial resources, overseeing budgeting, accounting, and financial reporting to ensure funds are properly allocated. They handle purchasing, contract management, grants, and funding, while ensuring compliance with regulations and best practices. By providing financial analysis and forecasts, the department supports decision-making and helps maintain the district's fiscal responsibility and operational sustainability.

Aerial Operations

The Aerial Operations department manages aircraft for wide-area mosquito control, applying larvicides, adulticides, and aquatic herbicides over large or inaccessible areas. They plan and execute missions based on surveillance data, coordinating with other departments to optimize treatment impact and minimize environmental effects while ensuring aviation regulations and safety standards are met.

Community Outreach & Public Education

The Community Outreach & Public Education department engages the public on mosquitoes, mosquito control, and mosquito-borne disease through educational programs, workshops, and campaigns, utilizing the district website, social media, flyers, brochures, school programs, community events, speaking engagements, and public forums. By educating residents and fostering involvement, this department supports mosquito control initiatives and encourages community action for improved health outcomes overall.

Fleet Maintenance

The Fleet Maintenance department ensures the district's vehicles and equipment, including trucks, boats, ATVs, and other mission equipment are in optimal condition for mosquito control operations. They perform regular inspections, preventive maintenance, and repairs to minimize downtime and support efficient treatments. By ensuring equipment reliability, they help the district respond quickly and effectively to mosquito populations.

Aquatic Herbicide

The Aquatic Herbicide department manages water bodies to prevent mosquito breeding by treating habitats like lakes, ponds, and marshes. They monitor water quality and vegetation, focusing on controlling aquatic plants that can harbor mosquitoes. By managing these environments, the department reduces mosquito breeding, protects public health, and preserves local ecosystems.

Human Resources

The Human Resources (HR) department manages the district's workforce, handling recruitment, hiring, onboarding, employee benefits, and performance evaluations. They oversee staff training, ensure compliance with labor laws, address employee relations, and promote a positive work environment. By supporting the district's personnel needs, HR helps maintain a skilled and motivated team dedicated to mosquito control and protecting public health.

Information Technology

The Information Technology department supports the district's operations by managing computer systems, networks, and software, ensuring they are secure and up to date. They handle data management, cybersecurity, and provide technical support, enabling effective mosquito control strategies and enhancing organizational efficiency.

Operations

The Operations department identifies mosquito breeding sites and implements control measures and treatment plans, such as larviciding and adulticiding, to reduce mosquito numbers. They respond to public service requests, address resident's concerns, and coordinate with other departments to ensure timely and targeted mosquito control. Their efforts are key to reducing mosquito populations, preventing disease spread, and protecting community health.



Picture 2: Scenic photo of applied-operational research project

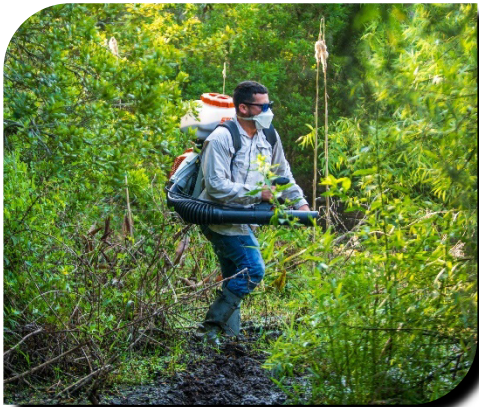
Integrated Mosquito Management

The PCMCD provides effective, science-driven mosquito control through an Integrated Mosquito Management (IMM) approach that targets the life cycle and behavior of local mosquito populations. This strategy combines surveillance, source reduction, aquatic plant management, biological controls, selective insecticide applications, and public education to achieve sustainable control.

Because mosquito populations can increase rapidly in response to rainfall, tidal activity, and shifting weather patterns, continuous monitoring is essential to mosquito identify species present and guide timely, effective interventions. When treatments are warranted, application methods are selected using real-time data and are tailored to mosquito species, activity levels, habitat type, and prevailing environmental conditions to maximize impact while minimizing unintended effects.

There over 47 mosquito species in Pasco County and many of those species differ in habitat utilization, behavior, and preferred bloodmeal source.

Organized mosquito control is necessary because mosquitoes are not only a nuisance as biting insects that diminish quality of life, but are also involved in transmitting diseases.



Picture 3: Field Technician conducting backpack larvicide application, photo by Denise Allen, Art You Adore

Controlling mosquitoes in the immature life stage (larval stage, larviciding) is PCMCD's preferred method of control because the larvae are often concentrated in large numbers and always found in aquatic habitats. If the larvae are successfully controlled in these confined areas, this prevents a major emergence of flying and biting adult mosquitoes. Larviciding is conducted by Field Technicians after performing surveillance to find where mosquito larvae are present. Once found, treatments are then conducted with the use of trucks, ATVs, lightweight equipment, and by hand unless access is limited, the area is hard to reach or too large to effectively treat by ground, or the timing of treatment is critical. In such cases, it is often necessary to use UAS/drones and/or helicopters to treat mosquito larvae.

Additionally, Wide Area Larvicide Spray (WALS) applications are performed in the early morning hours to target larval mosquitoes around people's homes. WALS combines high volumes of air with low volumes of liquid materials to treat a wide variety of larval habitats and access cryptic locations of potential disease-carrying mosquito species more efficiently. Larval control is one of the main aspects of the PCMCD's integrated approach to effectively manage mosquito populations.

Ultra Low Volume (ULV) applications are used to specifically target adult mosquitoes. Ground ULV treatments may be performed by Field Technicians with handheld equipment or from ATVs, while truck-mounted



Picture 4: Truck-mounted WALS application, photo by Denise Allen, Art You Adore

ULV systems are deployed in areas with adequate road access to provide targeted control during evening hours when mosquitoes are most active. For larger expanses or areas that are difficult to reach by ground, nighttime helicopter ULV applications are conducted to achieve wide-area control efficiently and effectively. Staff actively pursue pestiferous adult mosquito applications during the rainy season to reduce populations and protect public health.

Focus on Efficiency

The PCMCD takes pride in delivering mosquito control services to Pasco County residents in a cost-effective and self-sufficient manner, with minimal reliance on external sources. This approach has enabled the district to be highly responsive to residents' needs while achieving substantial cost savings over time. The following sections will showcase key areas of efficiency within PCMCD that have greatly enhanced its operations and contributed to its overall success.

Materials and Equipment Procurement

The PCMCD has a long-standing practice of purchasing equipment and supplies at substantial savings through Florida State Contract pricing, military surplus facilities like Starke, and utilizing government rates for computer and office supplies. Mosquito control products are acquired through competitive bidding to ensure the lowest cost for taxpayers. Vehicles are also purchased using state contract pricing, resulting in considerable savings. The district typically retires vehicles once they reach 100,000 miles and frequently receives a high return when surplus. Due to the excellent care PCMCD provides for its vehicles and equipment, they are often seen as prime auction purchases, yielding better-than-expected returns.

Equipment Design and Modification

The PCMCD is widely recognized as an innovator in the development of equipment for larvicide and adulticide applications. Rather than relying solely on costly, off-the-shelf equipment, the district designs and builds much of its own gear in-house for use on trucks, ATVs, and watercraft. This custom-built equipment is highly reliable, allows for rapid repairs, and ensures quick return to service. Numerous mosquito control programs across the U.S. have visited PCMCD to observe and replicate these designs. Critical parts and supplies prone to wear and tear are stocked on-site, enabling same-day repairs without waiting for purchase approvals or shipping.

Truck Modifications

The PCMCD's trucks are engineered to optimize both cab and utility body space for larvicide applications. The utility body houses a 250-gallon spray tank and a staff-designed injection system that precisely meters insecticide into the water flowing through the hose or front-mounted boom. This boom system allows inspectors to treat standing water without leaving the vehicle



Picture 5: Truck-mounted electric ULV application, photo by Denise Allen, Art You Adore



Picture 6: Larvicide truck spraying a ditch showing in-house design modification

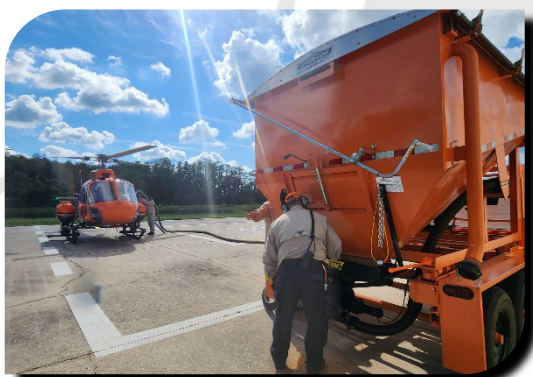
or requiring additional personnel, increasing efficiency and safety. Inspectors can adjust the nozzle's position using an internal switch and actuator arm while driving, minimizing interruptions during application. This setup is especially effective for treating roadside ditches and other accessible areas, maximizing both coverage and operational efficiency.

Aerial Application

The PCMCD uses helicopters and UAS/drones to conduct aerial mosquito control operations that are safe, strategic, and highly effective. These aerial applications allow us to treat large areas quickly and efficiently based on real-time surveillance and scientific data. Certain mosquito habitats, such as remote salt marshes or widespread residential areas, can't be treated effectively with trucks or hand crews.

Treatment strategies are aligned with the mosquito's life cycle: applications for mosquito larvae prevent emerging adult mosquitoes by targeting them in standing water while adult treatments focus on flying, biting mosquitoes already active in the area. Each method uses a specific product and application setup. Larvicide application conducted via helicopter use granular or liquid products and treatments are conducted during the day at low altitudes. Adulticide applications conducted via helicopter dispense a fine mist from an altitude of approximately 300ft above the ground and are conducted during the evening hours after sunset.

To support fast-paced aerial operations, mission-related helicopter hoppers are refilled using a bulk auto-loading system. This advanced equipment streamlines refueling, reduces human handling of insecticide, and ensures the helicopter can return to the air quickly with properly calibrated material, reducing downtime and increasing treatment coverage with every mission.



Picture 7: Autoloader dispensing treatment material



Picture 8: Treatment material filling hopper on helicopter

Fuel Management Systems

The PCMCD has installed automobile, recreational, and aviation fuel tanks on its campus to enhance operational efficiency, reduce fuel costs, and increase independence from local suppliers. By storing fuel on site, the district can purchase in bulk, lowering overall expenses. This setup eliminates the need for staff to spend valuable time transporting fuel to helicopters, which also reduces helicopter run time. Additionally, the district has integrated a digital fuel monitoring and dispensing system, allowing for precise tracking of fuel usage, accurate reporting, and improved accountability. Having a secure, monitored fuel supply on site also provides a reliable resource during natural disasters, such as hurricanes, or other emergencies that might disrupt fuel availability elsewhere. In such situations, the district's fuel reserves could be shared with local emergency services, including Emergency Management or the Pasco County Sheriff's department, if needed.



Picture 9: Fuel tanks for fleet



Picture 10: Fuel tank for helicopters

Mosquito Control Delivery Systems

To perform precision ground applications for controlling adult mosquitoes in neighborhoods and communities, PCMCD utilizes truck-mounted electric Ultra Low Volume (ULV) spray systems. Each unit is equipped with an advanced flow control system that automatically adjusts insecticide output relative to vehicle speed, ensuring accurate and consistent application rates. These systems are highly effective for wide-area treatments in residential neighborhoods, where road access allows for systematic coverage.

Truck-mounted ULV applications are typically conducted during the evening hours when target mosquito species are most active, maximizing effectiveness while minimizing impact on non-target organisms. The flexibility of these vehicles enables technicians to cover large areas efficiently, making them a cornerstone of PCMCD's integrated mosquito management program. By incorporating GPS tracking and real-time monitoring, PCMCD ensures applications are conducted with precision, accountability, and adherence to federal and state regulatory requirements.

All-terrain vehicles (ATVs) equipped with ULV spray systems are an essential tool in controlling adult mosquito populations in challenging environments. They provide targeted treatment in areas that are difficult to reach with larger vehicles or where road networks are limited and dispersed. Outfitted with custom-built ULV spray equipment, these ATVs can maneuver through swamps, forests, and other rugged terrain where mosquitoes thrive. The mounted ULV system disperses a fine mist of insecticide, effectively reducing adult mosquito populations. Their compact size and agility enable inspectors to cover diverse landscapes thoroughly, ensuring treatments extend to otherwise inaccessible areas and strengthening the overall effectiveness of mosquito control operations.



Picture 11: ATV larvicide application

PCMCD staff have creatively converted standard weed eaters into cost-effective handheld ULV sprayers, providing a practical solution for treating adult mosquitoes in hard-to-reach areas. Each converted unit costs approximately \$450, compared to roughly \$4,000 for a commercial equivalent, resulting in a total savings of nearly \$50,000 across the 14 units currently in use.

These portable sprayers enable technicians to deliver precise, targeted applications around homes, gardens, campgrounds, and other locations inaccessible to larger vehicles, ensuring that high-risk areas receive effective mosquito control. This innovative approach enhances operational efficiency, strengthens coverage in challenging terrain, and exemplifies PCMCD's commitment to maximizing resources while maintaining high standards of public health protection.



Picture 12: Handheld ULV spray application



Picture 13: Aquatic herbicide application from airboat

Airboats play a vital role in mosquito management by enabling the treatment of aquatic vegetation that provides habitat for mosquitoes. Rather than targeting mosquitoes directly, these vessels are used to apply herbicides to invasive and nuisance vegetation in marshes, swamps, floodplains, and other aquatic environments where stagnant water and dense plant growth can create ideal mosquito habitats. Outfitted with specialized spray systems designed at PCMCD, airboats can efficiently disperse herbicides across large expanses of water and vegetation. Their shallow draft and powerful

propellers allow them to navigate through shallow, vegetated, or obstructed waters that conventional boats cannot access. By controlling aquatic vegetation, airboats help reduce mosquito breeding sites and contribute to the overall effectiveness of integrated mosquito management.

Amphibious vessels are highly versatile, all-terrain vehicles designed to operate in both wetland and terrestrial environments. At PCMCD, they are primarily used to apply herbicides for the management of aquatic vegetation in areas that are difficult to reach with traditional equipment. By reducing invasive or dense vegetation, these machines help eliminate habitats where mosquitoes thrive, indirectly lowering mosquito populations. Their ability to navigate rugged, uneven, and waterlogged terrain makes them invaluable for vegetation management in remote or inaccessible areas. Amphibious machines also support specialized mosquito surveillance efforts, allowing technicians to access sites that would otherwise be unreachable, further strengthening integrated mosquito management strategies.



Picture 14: Amphibious vessel conducting surveillance

Field Data Management & Technology Integration

The PCMCD has equipped all technician vehicles with tablets linked to an advanced data management system, significantly enhancing operational efficiency and decision-making. Through this software, technicians can access real-time resident service requests, record data from surveillance inspections, enter chemical application details to ensure regulatory compliance, and track their vehicle locations to support timely responses and accountability.

The system also supports operational planning by assisting with the pre-mapping of helicopter applications and providing post-application analytics to confirm that treatments were accurately delivered to targeted areas. Each morning, inspectors use the platform during planning meetings to review key operational data, including rainfall and weather patterns, mosquito trap counts, tidal information, pending service requests, and planned treatments.

This integrated approach streamlines field operations, fosters rapid information-sharing, and ensures that resources are deployed strategically. Residents frequently commend PCMCD for its responsiveness and quality of service, and the District remains committed to leveraging innovative technologies to uphold that reputation for excellence.

Workplace Flexibility & Cross-Training

The PCMCD's team of over 60 full and part-time employees is cross trained to handle multiple tasks, which boosts operational efficiency across the 765 square miles of Pasco County. Instead of assigning staff to a single role, employees are often reassigned to different tasks and areas as needed. Many staff members juggle multiple responsibilities, keeping them actively engaged in all aspects of district operations. During the winter months, field employees assist with equipment repairs and other projects in the shop, for example when mosquito populations are lower due to day weather. This multi-departmental approach ensures that the limited workforce is used effectively across various functions to accomplish the mission.



Picture 15: In-house truck modification for field data entry



Picture 16: Morning briefing to review field data

Scientific Foundations of Mosquito Control

Operational Mosquito Control Research

The PCMCD employs a team of entomologists and biologists dedicated to advancing mosquito control science and operational excellence. Through strategic collaborations with state universities, private industry, and government agencies, including the University of Florida, Florida A&M University, the University of South Florida, USDA, the Navy Entomology Center of Excellence, and the World Health Organization, the district drives applied research that directly enhances mosquito management practices.

The district's research programs focus on practical, science-driven investigations that enhance control strategies, including evaluating novel commercial products, testing advanced application techniques, and designing innovative insecticide and herbicide delivery systems. Many control products, treatment methodologies, and equipment now used widely across the United States and globally were initially developed, tested, or refined by PCMCD.



Picture 17: Entomology staff identifying mosquitoes under a microscope, photo by Denise Allen, Art You Adore

Mosquito-Borne Disease Monitoring

Protecting public health is at the core of PCMCD's mission. The district is responsible for monitoring arboviruses, which are viruses transmitted by mosquitoes. Currently, the district monitors for West Nile Virus, Eastern Equine Encephalitis, and St. Louis Encephalitis using sentinel chickens. Throughout most of the year, staff collect weekly blood samples from sentinel flocks housed in coops across the county. These samples are analyzed at the Florida Department of Health (FDOH) laboratory to detect any infections from disease-carrying mosquitoes. If a virus is found, the affected area is thoroughly inspected to locate and eliminate mosquito breeding sites and adult mosquitoes associated with the virus.



Picture 18: Entomology staff taking blood sample from sentinel chicken



Picture 19: Analyzing blood sample from sentinel chickens

The PCMCD also collaborates closely with the Pasco County Health Department and the FDOH to track other arboviruses not detected through sentinel chickens, including dengue, Zika, chikungunya, and malaria. With

dengue becoming increasingly endemic in Florida and global travel introducing additional disease risks, these efforts are critical for early detection and rapid response to prevent local transmission. Adult mosquitoes are collected and tested for virus at the Bronson Animal Disease Diagnostic Laboratory (BADDL), providing actionable data to guide interventions. With expanding urbanization, climate-driven changes in mosquito populations, and increasing global travel, it is critical that PCMCD staff remain vigilant, informed, and ready to implement rapid, science-based mitigation measures to protect public health.



Picture 20: Bloodfed Culex mosquito

Arboviral Detection & Response

When arboviruses are detected, PCMCD rapidly escalates both surveillance and control activities in the affected area. Mosquito advisories and alerts are issued to local agencies and community partners based on criteria established through the FDOH, and public messaging is coordinated to warn residents about elevated risks and encourage personal protective measures to prevent mosquito bites. This swift, coordinated response helps contain outbreaks early and protect the community from mosquito-borne disease threats.



Picture 21: PCMCD in the news warning citizens of the potential for mosquito-borne disease transmission

Mosquito Surveillance

Entomologists and field staff perform ongoing mosquito surveillance using a network of traps to monitor mosquito species presence, abundance, and behavior. Collected mosquitoes are identified to species in the laboratory, providing critical data to guide targeted larvicide and adulticide applications. To ensure continued efficacy of control measures, PCMCD routinely monitors mosquito populations for insecticide resistance using bioassays. This involves rearing field-collected eggs and larvae, exposing them to known insecticide concentrations, and comparing results to lab-reared reference populations. These insights inform adjustments to control efforts, ensuring operational strategies remain effective and adaptive.



Picture 22: Monitoring mosquitoes for resistance development



Picture 23: Mosquito collection from light trap



Picture 24: View of mosquito insectary

Mosquito Surveillance Tools

The PCMCD employs a diverse array of surveillance tools to monitor mosquito populations, assess species distribution, and guide control strategies. Staff utilize a variety of traps, including suction traps, CDC light traps, BG-Sentinel traps, rotator traps, and ovicups to monitor mosquito populations and eggs. Staff also



Picture 25: Rotator trap to identify times of peak mosquito flight activity

maintain passive suction traps designed and built in-house, which have been in use for over 30 years and replicated by other agencies.

Monitoring trends in trap collections across Pasco County allows staff to identify shifts in species presence, abundance, and behavior. Ovicup

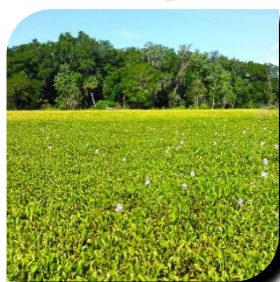


Picture 26: Rotator trap to identify times of peak mosquito flight activity

monitoring provides early warning of emerging populations, particularly for container-breeding species capable of transmitting dengue and other mosquito-borne viruses, while adult traps help determine vector activity and inform targeted larvicide or ULV adulticide applications. Together, this comprehensive surveillance toolkit allows the district to make data-driven decisions, optimize control efforts, and maintain effective, science-based mosquito management.

Aquatic Herbicide Applications

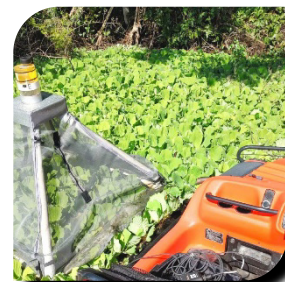
Controlling mosquito habitats is an integral part of PCMCD's science-based approach. The district's Aquatic Herbicide program focuses on controlling invasive and non-native aquatic weeds that create ideal breeding habitats for mosquito species, rather than applying herbicides for aesthetic purposes. Control efforts prioritize areas where dense vegetation, such as floating plant mats, prevents natural mosquito predators like minnows from accessing immature mosquitoes. By strategically targeting these habitats, the district reduces mosquito populations while maintaining ecological balance.



Picture 27 – Water Hyacinth

Aquatic herbicide applications are conducted using specialized equipment, including herbicide trucks, airboats, amphibious vessels, UAS/drones, and helicopters, allowing staff to reach both accessible and difficult-to-navigate water bodies. The rapid expansion of residential developments in previously unpopulated areas has increased the demand for aquatic weed control, requiring ongoing operational adaptation and monitoring.

The district's primary focus is on controlling two exotic floating weeds: Water Hyacinth (*Eichornia crassipes*) and Water Lettuce (*Pistia stratiotes*), which provide ideal breeding sites for certain mosquitoes that utilize the plants to get oxygen. Some mosquito species are associated with a variety of rooted aquatic plants, like cattails, along the edges of lakes, ponds, canals, and ditches. By controlling these plant species, PCMCD effectively reduces mosquito habitats, ultimately mitigating the risk of mosquito-borne diseases.



Picture 28 – Water Lettuce

Community Engagement & Education

Community Outreach

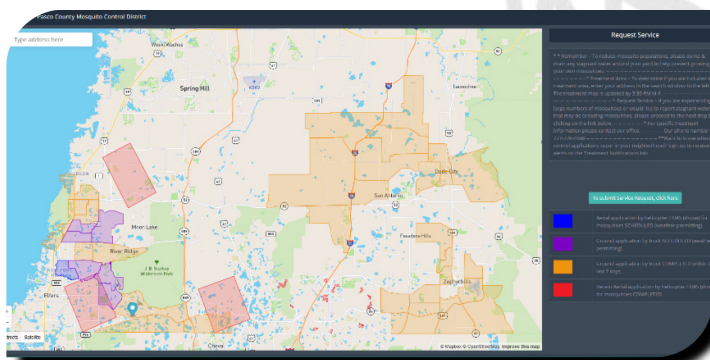
PCMCD actively engages with the community through public events, homeowner association and club meetings, civic organizations, county fairs, educational workshops and school programs, and state and national conferences. These touchpoints give residents meaningful opportunities to learn about mosquito biology, prevention, and the district's efforts to protect public health. Each interaction helps build understanding, trust, and collaboration between the district and the community it serves.



Picture 29: Pasco community members touring PCMCD facility

Online Service Requests

The PCMCD online service request form offers residents a fast, convenient, and accessible way to report mosquito problems and request assistance. Available 24/7, the platform allows users to submit detailed reports of mosquito activity without needing to call the office or visit in person. This streamlined communication enables staff to prioritize and respond quickly and effectively.



Picture 30: Snapshot of real time treatment map

Additionally, the district's website includes a real-time treatment activity map, giving the public transparent access to where and when treatments are occurring across the county. By making this process simple and visible, PCMCD improves its ability to address mosquito-related concerns promptly and reinforces public confidence in district operations.

Treatment Notification System

To further enhance transparency and public trust, PCMCD implemented a new Treatment Notification System in summer of 2025 that provides real-time alerts to residents before mosquito control treatments occur in their area. Community members can sign up to receive notifications via text message, email, or automated phone call, allowing them to stay informed about upcoming aerial or ground treatments. This system empowers residents to take personal precautions if desired and demonstrates the district's commitment to openness, accountability, and proactive communication.

Educational Trailer

The PCMCD's educational trailer is a mobile, interactive learning hub designed to spark curiosity and build public awareness about mosquito control and prevention. Equipped with engaging displays, videos, and hands-on activities, the trailer teaches visitors about mosquito biology, life cycles, and the risks of mosquito-borne diseases.



Picture 31: Inside view of PCMCD's Educational Trailer

Visitors can explore IMM strategies, such as surveillance, source reduction, larviciding, and adulticiding, and see live mosquito larvae, equipment demonstrations, and other interactive exhibits inside the trailer that were customized by PCMCD's talented craftsmen. The trailer is taken to schools, fairs, and community events throughout Pasco County, bringing science-based mosquito biology and control education directly to the public.

District Tours

The PCMCD offers behind-the-scenes tours that showcase how the district protects public health and manages mosquito populations. Visitors observe the science of mosquito control in action: from lab-based mosquito species identification and resistance testing to demonstrations of cutting-edge technologies like GIS mapping and drones, to viewing the specialized equipment used for ground and aerial treatments.



Picture 32: Public touring the fleet maintenance shop

These tours help participants understand how the district integrates surveillance, biological control, chemical treatments, and community outreach to prevent mosquito-borne diseases—while empowering them to contribute by reducing breeding sites around their homes and taking personal protective measures to reduce exposure to mosquitoes.

School & Summer Programs

The PCMCD offers free educational programming to all Pasco County schools to teach students and educators about mosquitoes and public health. Through interactive presentations, students learn to identify mosquitoes, explore their life cycles, and observe natural mosquito predators. They also gain insights into the diverse control methods used by the district.



Picture 33: PCMCD providing education in the classroom

In addition, students learn about mosquito-borne diseases, such as West Nile Virus, dengue, and Eastern Equine Encephalitis, and the personal protective measures they can take to avoid mosquito bites, like using repellent, wearing protective clothing, and eliminating standing water around their homes.

A central goal of this program is for students to share what they learn with their families, helping to spread awareness and promote community action. During the summer, PCMCD customizes the program for libraries, outdoor camps, and school-based camps, extending mosquito education to even more youth across the county.

PCMCD Goals & Performance Measures

These goals and performance measures will guide the PCMCD in maintaining its integrity, ensuring accountability, and delivering superior public service and education, all while controlling mosquito populations in an environmentally conscious manner and minimizing the risk of mosquito-borne disease transmission in Pasco County, FL.



Goal 1: Optimize Mosquito and Aquatic Weed Surveillance and Control Applications

Performance Measures:

1. Surveillance Coverage:

- Evaluate and expand mosquito and aquatic weed surveillance to ensure comprehensive coverage in newly developed and emerging residential areas, with a focus on regions and demographics at higher risk for mosquito-borne disease.
 - a) **Measure:** Evaluate the effectiveness of existing mosquito surveillance sites, including areas with aquatic weeds of concern, by analyzing historical data and adjusting trap locations, trap types, and monitoring schedules as needed to ensure optimized coverage and responsiveness.
 - b) **Measure:** Identify gaps in surveillance related to new development or higher-risk areas and implement additional sites to maintain adequate county-wide surveillance.
- Evaluate and implement new mosquito surveillance techniques.
 - a) **Measure:** Assess emerging surveillance technologies and methodologies for potential adoption to enhance data quality, coverage, and responsiveness.
 - b) **Measure:** Implement new surveillance techniques as appropriate, documenting improvements in area coverage and efficiency.
 - c) **Measure:** Regularly review and update surveillance protocols to ensure they remain aligned with best practices and operational needs.
- Maintain high accuracy rate in species identification of mosquitoes collected in the field through rigorous training and proficiency testing for entomology and field staff.
 - a) **Measure:** Perform assessment tests annually to ensure a high level of adult mosquito identification accuracy in entomology staff.
 - b) **Measure:** Perform assessment tests annually to ensure a high level of larval mosquito identification accuracy to genus level in field staff and plant ID for Aquatic technicians.
 - c) **Measure:** Provide weekly “Mosquito of the Week” training sessions for all staff, focusing on species biology, behavior, and identification to strengthen field expertise and applied knowledge.

2. Control Efficacy:

- Evaluate and advance mosquito and aquatic weed control strategies, products, and equipment to strengthen PCMCD’s IMM program.
 - a) **Measure:** Conduct science-based evaluations of new control products, equipment, and methodologies to assess effectiveness, safety, and suitability for operational integration.
 - b) **Measure:** Regularly evaluate cornerstone control strategies and District equipment, optimizing methods and tools while incorporating previously vetted advanced technologies to enhance precision, effectiveness, efficiency, and environmental stewardship.
 - c) **Measure:** Document and implement operational improvements that achieve measurable gains in application efficacy, cost savings, or safety performance.
- Ensure all control equipment is properly calibrated, meets pesticide and herbicide label requirements, and adheres to federal and state regulations, while operating efficiently and effectively.

- a) **Measure:** Perform flowrate, deposition, droplet characterization, and any additional maintenance-related testing on all control equipment once annually, based on label requirements. Modifications to or repairs of equipment may require additional calibration and testing as needed.
- Monitor and assess pesticide resistance in mosquito populations, considering species and geographic distribution, to guide effective control strategies.
 - a) **Measure:** Annually evaluate resistance profiles of mosquito populations for adulticide products in use.
- Implement UAS/Drone Program.
 - a) **Measure:** Secure FAA Certificate of Authorization (COA) to conduct operational flights in compliance with federal aviation regulations and register equipment with Florida Department of Agriculture and Consumer Services (FDACS).
 - b) **Measure:** Develop and adopt UAS/drone operator and visual observer guidelines.
 - c) **Measure:** Train designated staff in safe UAS/drone operation with emphasis on safety, regulatory compliance, and operational efficiency.
- Expand aquatic weed management practices.
 - a) **Measure:** Incorporate in-water aquatic herbicide applications to target floating vegetation and invasive aquatic weeds of concern.
 - b) **Measure:** Train field staff in safe application methods for in-water applications and monitor treatment sites to evaluate efficacy.

Goal 2: Strengthen Integrity and Accountability in Operations and Decision-Making

Performance Measures:

1. Transparent Reporting:

- Optimize year end reporting system detailing mosquito surveillance data, control activities, and outcomes to performance measures described in the District's Strategic Plan.
 - a) **Measure:** Publish PCMCD FY 2024/2025 Year End Report to document outcomes to performance measures on District website and distribute through local community partners by December 1, 2025.
- Refine and implement PCMCD's Strategic Plan for fiscal year 2026-2027 as needed.
 - a) **Measure:** Update and publish Strategic Plan on District website including refined priorities for the upcoming fiscal year.
 - b) **Measure:** Meet with District leadership quarterly to review and track progress of performance measures.
- Continue to enhance Board Meeting Packets by adding operational and administrative data and post packets to District website.
 - a) **Measure:** Use PCMCD data management systems to create reports and visual aids of pertinent data to share with the Board and public regarding District operations to enhance the comprehensiveness of Board Meeting Packets.
 - b) **Measure:** Ensure all regularly scheduled Board Meeting Packets are posted to District website at a minimum of 1 business day prior to each regularly scheduled Board Meeting.
- Enhance transparency by posting Board Meeting videos on District website and social media.
 - a) **Measure:** Post videos of each PCMCD Board Meeting to District website and social media within 5 business days.

- Optimize use of data visualization tools to enhance operational briefings, improving efficiency and streamlining decision-making.
 - a) **Measure:** Leverage data management systems to create clear visual aids for morning field briefings.
- 2. Strengthen ethical, financial, and operational compliance:
 - Evaluate audit requirements and select qualified firm to perform annual audit.
 - a) **Measure:** Issue an RFQ and select a new auditing firm.
 - Develop standard operating procedures (SOPs) and guidelines for financial, administrative, and operational processes aligned with best management practices to enhance consistency, efficiency, and accountability.
 - a) **Measure:** Establish and maintain a centralized system for version control of all public-facing and internal staff documents to ensure accuracy, consistency, and accessibility.
 - b) **Measure:** Administration: Develop and approve SOPs and procedural guidelines for Finance, Administration, Human Resources, IT management, and Outreach/Education functions.
 - c) **Measure:** Operations: Develop and approve standard guidelines for core operational departments, including Larvicide, Aquatic Herbicide, ULV, UAS/Drone, and Fleet Maintenance.
- 3. Enhance operational training, safety protocols, and professional development for all staff:
 - Prepare staff for required licensure and ongoing professional development.
 - a) **Measure:** Provide role-specific guidance and education to support employees in obtaining Applicator Licenses through FDACS and any additional position-required certifications.
 - b) **Measure:** Ensure all employees complete continuing education necessary to maintain required licensure and certifications.
 - Conduct comprehensive staff training.
 - a) **Measure:** Conduct annual, District-wide training covering operational, administrative, safety, scientific, and outreach/education topics.
 - b) **Measure:** Provide department-specific recurring training for field staff every 4-6 months to reinforce skills and ensure compliance with established protocols.
 - Promote cross-department knowledge and emergency preparedness.
 - a) **Measure:** Implement cross-training programs during the winter months to ensure employees understand roles across departments and can provide adequate back-up support.
 - b) **Measure:** Regularly review and update Emergency Response Plans, including Aviation, Administration with IT Management, Fleet, and Mosquito-Borne Disease Response, to maintain staff readiness and operational continuity.
- 4. Performance Evaluation:
 - Update and implement employee performance evaluation system based on clear, measurable objectives.
 - a) **Measure:** Complete annual performance reviews, with at least 90% of staff meeting or exceeding expectations.
 - b) **Measure:** Implement a 90-day probationary review for all new hires and promotions to ensure effective onboarding and alignment with role responsibilities.
- 5. Asset Management:

- Maintain centralized repository for digital credentials.
 - a) **Measure:** Ensure all subscriptions, accounts, and system logins are established/updated through administrative emails and documented in a centralized, secure repository.
 - b) **Measure:** Store passwords and access information in a single, secure location accessible to authorized staff to prevent dependency on any individual.
 - c) **Measure:** Review and update the repository regularly to ensure accuracy, security, and continuity of access.
- Develop and maintain employee asset tracking system.
 - a) **Measure:** Develop and implement a comprehensive and centralized process for managing the lifecycle of all employee-assigned assets.
- 6. Enhance Service Improvement:
 - Evaluate operational and customer service processes to identify opportunities for improvement and increased efficiency.
 - a) **Measure:** Collect and review feedback from staff, residents, and key stakeholders to identify areas for service enhancement.
 - Meet with Pasco County Legislative Delegation members to inform them of District activities, gather input, and identify opportunities to improve services.
 - a) **Measure:** Conduct meetings with at least four delegates to provide updates on public health initiatives, mosquito control efforts, and potential areas for service enhancement.

Goal 3: Proactively Address Mosquito-Borne Disease Risk

Performance Measures:

1. Mosquito-borne disease response:
 - Maintain and execute disease response protocols.
 - a) **Measure:** Initiate contact with the reporting agency immediately upon notification of the suspicion of mosquito-borne disease presence.
 - b) **Measure:** Collaborate with the Florida Department of Health, Pasco County Health Department, and/or FDACS Animal Industries to coordinate surveillance and control efforts as needed.
2. Rapid mobilization and field response:
 - Deploy staff and interventions promptly to limit disease transmission and protect public health.
 - a) **Measure:** Mobilize appropriate departmental staff within 1 business day of notification and complete initial intervention measures within 5 business days.
 - b) **Measure:** Conduct site assessments, distribute educational materials, and implement targeted surveillance and treatment plans specific to the disease and mosquito vector, following District-established protocols for the prescribed duration.

Goal 4: Increase Public Knowledge on Mosquito Control & Mosquito-Borne Disease

Performance Measures:

1. Mosquito control and mosquito-borne disease outreach and education:
 - Enhance public outreach and education on mosquitoes, PCMCD's IMM efforts, and to raise awareness of mosquito-borne diseases, preventive practices, and PCMCD mitigation efforts.

- a) **Measure:** Conduct/participate in a minimum of 100 educational presentations, workshops, school programs, or community events annually.
- b) **Measure:** Conduct annual outreach campaigns and track engagement metrics, such as social media interactions and website traffic to evaluate reach and effectiveness.
- c) **Measure:** Proactively communicate disease situations, potential risks, and District response actions using multiple channels, including social media, local media outlets, and resident notification system.
- Review and update educational and outreach materials to ensure accuracy, clarity, and alignment with current IMM and mosquito-borne disease prevention guidance.
 - a) **Measure:** Perform an annual review of all district-wide educational and outreach materials, including printed, digital, and display content.
 - b) **Measure:** Regularly review and update messaging for each mosquito-borne disease threat, maintaining materials on file for future reference and rapid deployment.
- Create and sustain collaborative relationships with community, educational, and health partners to enhance public understanding of mosquito control and prevention practices.
 - a) **Measure:** Collaborate with Safety Town to build and maintain a mock backyard display demonstrating effective mosquito prevention strategies.
 - b) **Measure:** Partner with Pasco County Schools and the Energy and Marine Center (EMC) to review and update static displays bi-annually, ensuring materials are relevant, accurate, and engaging.
 - c) **Measure:** Identify and establish new collaborative opportunities with local organizations to expand interactive educational outreach and community engagement.
 - d) **Measure:** Host annual tire amnesty event with local partners to reduce mosquito breeding habitats while engaging the community in prevention efforts.
 - e) **Measure:** Plan and execute a community celebration marking the 75th anniversary of PCMCD services, highlighting the District's history, achievements, and ongoing public health initiatives.

Goal 5: Prioritize Essential Campus Improvements

Performance Measures:

1. Pursue deferred campus improvements:
 - a) **Measure:** Address and implement deferred campus improvements to ensure operational efficiency, safety, and regulatory compliance.
 - b) **Measure:** Identify and implement deferred campus improvements that can be completed in-house without permitting, such as routine maintenance, landscaping, signage, and minor facility upgrades, to maximize use of existing cash reserves.
 - c) **Measure:** Engage a qualified Architect/Engineer and General Contractor through formal procurement processes to plan, design, and oversee deferred campus improvements.
 - d) **Measure:** Execute contracts, mobilize construction crews, and initiate work in accordance with deferred campus improvement plans and schedules.
 - e) **Measure:** Develop a control movement area (CMA) around the helipad to enhance safety and operational efficiency.
2. Increase sustainability efforts and reduce environmental impact:

- Foster a culture of sustainability across campus operations and facility improvements.
 - a) **Measure:** Reduce paper waste by transitioning to digital processes and encouraging staff awareness of paper use.
 - b) **Measure:** Improve water conservation by installing water-saving fixtures and promoting staff awareness of water use.
 - c) **Measure:** Upgrade lighting with energy-efficient LEDs, motion sensors, and increased use of natural light to reduce energy consumption.
- 3. Enhance adulticide product management and operational tracking:
 - Modernize operational tools to improve efficiency and oversight.
 - a) **Measure:** Implement a digital chemical dispensing and tracking system to monitor usage and ensure compliance with safety and environmental guidelines.



Conclusion

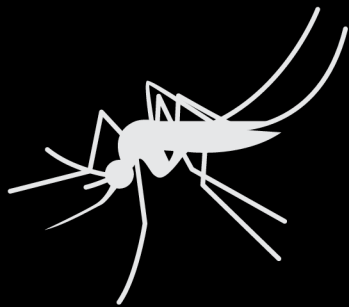
The Pasco County Mosquito Control District's Strategic Plan provides a clear and actionable roadmap to meet the evolving needs of our community. Grounded in a history of innovation, a reputation for rapid and reliable service, and an enduring commitment to excellence, this plan reinforces our central mission: protecting public health and improving quality of life. By upholding the values of integrity, accountability, service, and education, we will continue to strengthen operations and ensure PCMCD remains a leader in mosquito control.

With Pasco County experiencing rapid population growth and evolving environmental conditions, PCMCD faces increasingly complex challenges that require proactive and adaptive strategies. These realities demand sustained mosquito control efforts alongside continuous adaptation and operational improvement. The goals and performance measures outlined in this plan establish a framework for advancing our mission and deepening trust with the community we serve.

Looking ahead, PCMCD will continue to set the standard in mitigation and response to mosquito-borne diseases through ethical practices, transparent decision-making, responsive service, and proactive public education. With the dedication of our staff and the collaboration of community partners, stakeholders, and residents, we will protect and enhance the overall health of people, animals, and the environment across Pasco County.

This Strategic Plan is more than a roadmap, it is a call to action and a reaffirmation of our pledge to serve with integrity, accountability, and unwavering commitment to public health and community well-being.





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