

A Report to the Cook County Board of Commissioners

An Assessment of Mosquito Abatement Activities Across Suburban Cook County



Cook County DEPT. of
Public Health

A division of Cook County Health

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Acknowledgments

This report was prepared by the Cook County Department of Public Health (CCDPH) with support from the University of Illinois Chicago Institute for Healthcare Delivery Design in response to Cook County Board of Commissioners Resolution 25-3114, which directed CCDPH to conduct an assessment of mosquito abatement activities across suburban Cook County and deliver recommendations to the Cook County Board President and Board of Commissioners. This assessment is based on information collected between January and May 2026 and may not reflect recent changes in practices.

CCDPH appreciates the participation of the four Mosquito Abatement Districts (Districts) assessed in this report for their active and meaningful engagement throughout this assessment. Each District demonstrated a commitment to transparency, in providing information for this process, sharing operational and financial data, participating in qualitative interviews, and facilitating conversations with their respective Boards of Trustees. This report would have been substantially less actionable without their willingness to submit data for analysis and their openness to candid dialogue.

CCDPH also wishes to acknowledge the many stakeholders across the broader mosquito abatement ecosystem in Cook County whose transparency and participation enriched our understanding of the mosquito abatement landscape. Their insights were invaluable in shaping the findings and recommendations presented here. CCDPH further thanks its staff for supporting the assessment.



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Executive Summary



Illustration/CDC.gov

Executive Summary

In September 2025, the Cook County Board of Commissioners passed Resolution 25-3114 directing the Cook County Department of Public Health (CCDPH) to conduct a comprehensive assessment of mosquito abatement activities across suburban Cook County and to recommend reforms related to governance and service consistency.

The prevention and mitigation of vector-borne disease is core to public health. The Chicago Metropolitan Area has long been affected by vector-borne disease, from malaria in the 1920s to West Nile virus (WNV) today. Climate change is raising the stakes, with warming temperatures extending the mosquito season and milder winters enabling the northward expansion of disease-carrying species.

SCOPE AND APPROACH

This report assesses the organization and governance, operations, and financial practices of the four Mosquito Abatement Districts (Districts) serving suburban Cook County: Desplaines Valley (DVMAD), North Shore (NSMAD), Northwest (NWMAD), and South Cook County (SCCMAD). The assessment also examines the broader ecosystem of mosquito abatement across Cook County with particular focus on consistency of service.

The assessment draws on over thirty in-depth stakeholder interviews and observations, analysis of financial and operational data submitted by each of the four Districts, comparative analysis against best practices in integrated mosquito management, and review of other relevant records.

BACKGROUND

The mosquito abatement ecosystem in Cook County is complex, with many different public and private entities providing mosquito abatement services at different levels of comprehensiveness. Mosquito Abatement Districts are independent, special-purpose units of government. They are authorized by state law to surveil and monitor ticks as well as surveil, monitor, and exterminate mosquitoes and rats. They are governed by a five-person Board of Trustees appointed for four-year terms by the Cook County President with the advice and consent of the Cook County Board. The four Districts vary in geographic size and population. CCDPH is one of the certified local public health departments operating in suburban Cook County, conducting vector control through a private contractor in areas other than those served by another certified local health department and limiting its activities in communities where other vector control activities are taking place. Other local health departments, municipalities, and private organizations also conduct or contract out for mosquito abatement services.

Executive Summary

Vector control is critical to public health because vectors such as mosquitoes and ticks can carry and transmit diseases to humans. Modern mosquito abatement has evolved into a science-driven discipline grounded in surveillance, a prevention-first approach, and stewardship of the environment. Effective mosquito control programs now follow the model of Integrated Mosquito Management (IMM), which uses multiple evidence-supported methods to prevent and control both nuisance mosquitoes and disease-carrying mosquitoes. Key activities include surveillance, insecticide application, biological control, source reduction, public education, and resistance testing (CDC 2024a).

SUMMARY OF FINDINGS

The four Districts deliver essential, science-driven vector control services, with some variation in capacity and alignment with best practices.

Broadly, all four Districts operate evidence-driven IMM programs grounded in deep, place-specific knowledge of local mosquito populations, environmental factors, and community relationships built over decades. With some variation in practice, all conduct the core surveillance and control activities considered best practice by the American Mosquito Control Association (AMCA), including larval and adult surveillance, viral surveillance, source reduction, larval and adult control, and public education.

Districts vary in workforce size and technical expertise, such as credentialed entomologists and dedicated laboratory and GIS personnel. In alignment with best practices, DVMAD, NSMAD, and NWMAD use institutionalized action threshold policies and rarely deploy adulticide except in response to disease threats; SCCMAD relies more on adulticide treatment as requested by the community, and has a less defined action threshold policy. Districts also vary in the maturity of newer functions such as tick surveillance and resistance testing, which are important to combating emerging threats. Approaches to public-facing service infrastructure, extent and proactiveness of community outreach, and accessibility differ by District as well.

District administration and governance depend on staff leadership and quality of oversight during challenges.

Districts generally act transparently regarding their operations, finances, and Board activities; SCCMAD has had some transparency gaps but is actively working to improve its practices. Boards of Trustees rely heavily on the expertise of District staff. Board vacancies, exacerbated by the difficulty of finding prospective Trustees, can erode timely decision making, community engagement, and accountability.

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Districts' budgets and actual expenditures have similar compositions. The largest category of expenses for all Districts is personnel, which comprises 52 to 65% of Districts' total actual expenditures. Districts spend about 10-18% of their total expenditures on professional services, and 9-35% of their budgets on supplies. SCCMAD has the lowest operating budget per capita and per square mile, followed by NWMAD, DVMAD, and then NSMAD. Districts vary in timeliness of budget adoption. All four Districts have cash reserves and differ in investment strategy.

Due to the fragmented landscape of mosquito abatement operators, there are differences in consistency of service between Districts and non-District areas.

While there is some variation in practices across Districts, due to their specialized focus, dedicated tax levy, and accumulated expertise, the differences in mosquito abatement between Districts are smaller than the differences in mosquito abatement between District and non-District territory. Residents living within District territory receive a more comprehensive and responsive suite of services than residents living outside of District areas, particularly in terms of source reduction, evidence-driven vector control, reliance on adulticide, insecticide resistance strategy, tick surveillance, and transparency. This finding is consistent with a national assessment of vector control programs comparing the capabilities of Mosquito Control Districts with health departments and other programs. Because the threat posed by mosquitoes crosses jurisdictional boundaries, differences in service affect neighboring communities.

Outside of viral surveillance, coordination across Districts, CCDPH, municipalities, the Forest Preserves, and other ecosystem partners relies heavily on personal relationships rather than institutionalized processes. Opportunities exist to strengthen preparedness for an outbreak of vector-borne disease.

Many opportunities within the current system could be resolved through improved coordination, strengthened Board governance, and concerted alignment with best practices in IMM.

Improving mosquito abatement in Cook County is increasingly important due to evolving and growing threats, including invasive mosquito species that carry new diseases, lengthening mosquito seasons, insecticide resistance, and disease-carrying ticks. Significant improvement appears to be possible through concerted efforts to address identified areas of opportunity under current authority and structure, bolstered by Board-level commitment and mutual support and coordination across vector control programs. CCDPH's vector control program is lean, especially as it relies on an external private contractor; CCDPH would require additional resources to fully implement recommendations for improvement.

SCENARIOS

This assessment identified eight possible scenarios for reforming mosquito abatement in suburban Cook County, including several that would require majority votes from one or more District Boards, and one through which the County could unilaterally dissolve three of the four Districts. The November 2025 dissolution and annexation of the areas served by the Southlake Mosquito Abatement District (SLMAD) provides insights into the realities of reform, including findings that annexation into another District would provide a higher level of service at a lower total cost than continuing to contract with a private vendor, and affected municipalities preferred a unified and evidence-driven approach to managing vector control.

- **Scenario A:** Current State
- **Scenario B:** High-Impact Improvements
- **Scenario C:** Existing Districts Annex Non-District Areas in Suburban Cook County
- **Scenario D:** Consolidation of Underperforming District(s) into Cook County
- **Scenario E:** Annexation of Underperforming District(s) into Higher-Performing District(s)
- **Scenario F:** Total Consolidation of All Districts into Cook County
- **Scenario G:** All Districts Combine into a Single District
- **Scenario H:** County-Initiated Dissolution of Districts

This assessment recommends pursuing Scenarios B and C in combination. Scenario B would improve organizational performance and strengthen governance, and Scenario C would increase consistency of service across the County by extending District-level service to areas without IMM. Together, they would support consistency of service, preparedness against emerging threats, and more effective mosquito surveillance and control while preserving the current operational capacity and local knowledge held by the Districts. The possibility of additional structural reforms may continue to encourage improvement among Districts.

RECOMMENDATIONS FOR IMPROVEMENTS

This assessment presents high-impact improvements for systems-level actions to improve mosquito management across suburban Cook County. Many recommendations are enabled by improved coordination and ongoing dialogue across the Districts, CCDPH, and other local health departments and vector control programs, and successful outcomes depend on participation from stakeholders across the mosquito abatement ecosystem. The recommendations span eight areas:

- **District Boards**

- Collaborate to recruit and appoint qualified District Trustees in a timely manner.
- Create expectations of active review of Trustee performance prior to timely reappointment.
- Share materials and best practices for onboarding new Trustees across Districts, and explore collaboratively developing new educational materials.

- **Coordination**

- Convene quarterly meetings with CCDPH, other LHDs, Districts, and interested municipal vector control officials.
- Align on and clarify discrepancies in mosquito abatement boundaries across the Districts, City of Chicago, and Cook County.
- Engage municipal governments in suburban Cook County to encourage education and adoption of best practices in IMM.
- Engage municipalities outside of Districts annually to assess control and surveillance plans and inform CCDPH vector control coverage areas and strategy.
- Establish and follow standard practices for notifying neighboring Districts as well as relevant County and municipal government entities of upcoming treatments.
- Share timely updates regarding resistance and efficacy testing results across Districts, CCDPH, and other vector control programs within Cook County.
- Align across Districts and the Forest Preserves on use of the U.S. Fish and Wildlife Service framework for mosquito management on federal wildlife refuges.

- **Education & Outreach**

- Convene relevant stakeholders to organize shared continuing education and training, especially focusing on new and emerging threats.
- Coordinate across CCDPH, the Districts, and municipal health officials to promote public education around personal mosquito and tick protection.
- Create a County webpage that provides a one-stop-shop for vector control information for residents.

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- **Budget**

- Ensure that Districts comply with state law with regard to the timely passage of budget ordinances, and encourage Districts to pass budget ordinances before the start of their fiscal year where possible.
- Explore opportunities to optimize District asset management.

- **Preparedness**

- Collaborate to strengthen surveillance through human case data.
- Work with stakeholders to consider an updated emergency preparedness plan for vector-borne disease outbreaks.
- Integrate vector-borne disease risks and considerations into relevant natural disaster preparedness planning and response.

- **Surveillance**

- Fully implement and institutionalize tick surveillance as an ongoing function in vector control programs across Cook County.
- Engage the Forest Preserves in broader strategic planning and surveillance discussions to provide ongoing visibility into trends and emerging threats, including around ticks.

- **Treatment**

- For organizations that don't already have them, develop written action threshold policies to support consistent IMM practices.
- Continue to identify opportunities to align abatement strategies with IMM best practices.

- **Source Reduction**

- Explore opportunities to support tire collection initiatives to reduce breeding habitats.

These recommendations are the substance of Scenario B, as the “high-impact improvements” through which the existing system could be strengthened without changes in structure. While additional resources would be needed for optimal implementation of all recommendations, all can be accomplished with current authorities and move forward in parallel with any longer-horizon annexations arising from Scenario C.

Introduction



Illustration/CDC.gov

Introduction

This report offers a system-level assessment of mosquito abatement services across suburban Cook County, Illinois, with a focus on the four Mosquito Abatement Districts (Districts). The Districts are independent special Districts established for the specific purpose of conducting surveillance and control activities against mosquitoes and other disease vectors. They aim to prevent mosquito-borne disease, decrease nuisance bites, and protect well-being in communities across the county.

On September 18, 2025, the Cook County Board of Commissioners approved Resolution 25-3114, the *Resolution Calling for Evaluation and Reform of Cook County Mosquito Abatement Districts*. The resolution directed CCDPH to conduct a comprehensive assessment of mosquito abatement activities across suburban Cook County, including but not limited to the four Mosquito Abatement Districts, and to make recommendations regarding improvements and governance to ensure consistency of services. The resolution further directed stakeholder engagement with local public health departments, academic institutions, the Cook County Department of Environmental Sustainability, the Districts, and the Forest Preserve District of Cook County.

The resolution references several drivers for the assessment, including concerns regarding the uniformity of IMM capabilities and practices across Cook County, a 2021 Office of Inspector General report finding testing and control deficiencies at one District, growing vector-borne disease threats from climate change, and a 2025 report from the Civic Federation advocating for dissolution of the Districts as part of its ongoing efforts to consolidate local government entities in Illinois.

“The real strategic driver here is climate change and the resultant increased risk of vector-borne diseases, not limited to WNV. We must ensure the entire public health system can flex and scale in the face of this emerging threat, and that all partners involved in vector control work together collaboratively and coordinate closely.”

— Dr. Kiran Joshi, Chief Operating Officer of CCDPH

CCDPH is guided by a vision for the future in which suburban Cook County has a more coordinated, comprehensive mosquito abatement system that can respond quickly to public health threats. The recommendations suggested by this report aim to make mosquito abatement services in Cook County more prevention-focused, equitable, transparent, and prepared for emerging public health threats, including insecticide resistance, ticks, and novel vector-borne diseases. In this future, the system uses data more effectively to protect human health through a high-performing network of mosquito abatement partners working toward a shared goal of zero vector-borne disease; services are more easily navigable by the public they serve; and residents know whom to contact, what to expect, and how their tax dollars are working to protect their health.

SCOPE AND APPROACH

The purpose of this report is to produce an objective, comprehensive assessment of current mosquito abatement services, funding and operations, governance, workforce, and performance across the four Districts serving suburban Cook County, including their alignment with best practices; evaluate gaps and disparities countywide; and identify options for reform and recommendations for improvements.

The assessment is organized as an analysis of mosquito abatement activities across suburban Cook County as well as of organization, governance, operations, and finances across the four Mosquito Abatement Districts. Where available and appropriate for comparison, information about CCDPH's vector control program is also provided as context. Research conducted includes analysis of publicly available materials, self-reported data and other information from the Districts, in-depth interviewing, observation of public events and in-person visits, review and comparative analysis of best practices, analysis of District budgets and financial practices, and cost-benefit modeling of examined options for reform.

The assessment relied on voluntary participation from the Districts and other stakeholders, including self-reported data that were not verifiable through other sources. Findings reflect the information available at the time of the assessment and are not intended to represent a formal legal or financial audit of any entity included in this assessment.

As part of qualitative research and data validation, over 30 in-depth interviews and observations were completed in the months of February, March, and April 2026 alongside additional insight-gathering efforts. To enable stakeholders to speak honestly, opinions expressed in interviews were treated as confidential; permission for attribution was requested for all quotes directly cited in this report. A wide variety of stakeholders provided input into this assessment, including but not limited to:

- Cook County Department of Public Health
- Cook County Health (CCH)
- NWMAD Trustees and Staff
- NSMAD Trustees and Staff
- DVMAD Trustees and Staff
- SCCMAD Trustees and Staff
- Former Southlake Mosquito Abatement District (SLMAD) Leader
- Civic Federation
- Cook County Department of Environment and Sustainability (DES)
- Forest Preserve District of Cook County
- Illinois Department of Public Health
- Private Mosquito Control Providers
- City of Chicago
- Municipalities and Townships in Suburban Cook County
- Additional Experts

Introduction

Financial analysis was based primarily on Districts' recent audited comprehensive financial reports (ACFRs), supplemented by budget ordinances and District-provided transaction-level data. Where possible, the analysis relies on adopted budget figures from the audited report as a direct comparison to audited actual expenditures. To enable consistent comparisons across Districts, available budgeted and actual line items were coded to one of 11 major categories, and one of 26 sub-categories. In a few cases, major equipment purchases were recategorized as capital outlay to allow for clean comparison across Districts.

This assessment began in January 2026. The team conducting this assessment brought a range of expertise to the process, including a medical entomologist and individuals with experience in public health, government administration, design, strategy, and municipal budgets and finances.

WHY MOSQUITO ABATEMENT MATTERS

Vectors such as mosquitoes and ticks can carry and transmit diseases, including those caused by parasites, bacteria, or viruses, to humans and animals. The work of vector control programs is a cornerstone of the One Health approach, a framework recognized by the CDC and health systems worldwide that treats human health, animal health, and environmental health as fundamentally interconnected (CDC 2025). Vectors sit at the intersection of all three, moving pathogens between animals and people and responding to ecological conditions. Through the One Health lens, mosquito abatement is critical public health infrastructure, and not just a nuisance management program.

The public health stakes in Illinois are significant. The CDC considers Illinois "vulnerable" to vector-borne diseases (Rosenberg et al. 2018), and the state ranks alongside California, Texas, and Arizona for the highest numbers of human WNV cases in the country (McDonald 2021). The Chicago Metropolitan Area has a longstanding public health history with mosquito-borne disease, from malaria in the early twentieth century to WNV today, and the region's wetland geography continues to support both mosquito populations and disease transmission. Tick-borne illness is rising in parallel: cases in North America have more than doubled in the last twenty years (Eilbert and Matella 2024). Because there are no vaccines for the major mosquito-borne diseases circulating in Illinois, prevention depends almost entirely on organized vector control.

Introduction

“With a changing climate, we’re going to have emerging threats in the next five, ten, fifteen years. We’ve seen a significant growth in *Aedes aegypti* mosquitoes since we started looking closely at that in 2016 when there was the Zika virus outbreak. So we know that there are new vectors coming in. Ticks are one area that I’m very concerned about. We’ve seen steady growth in Lyme disease cases over the last decade, and we don’t really have a strong infrastructure for tick surveillance ... that’s an area where I think we’re going to need a more coordinated surveillance strategy, growing into the future with adaptability for whatever threats might come out that we don’t even know about right now.”

— CCDPH Staff Member

New challenges are emerging. Scientists anticipate that climate change will result in increased vector-borne disease burden, enabling species that were once unable to survive in Cook County to do so. Warmer temperatures accelerate mosquito development and breeding cycles, expanding population sizes during the active season. Current climate modeling indicates that the U.S. mosquito season could lengthen by up to two months by 2050 (Ansari 2026). Meanwhile, milder winters and earlier springs are lengthening the active mosquito season. Perhaps the most consequential climate-driven shift for Cook County is the northward expansion of mosquito species that previously could not survive Illinois winters. One example cited by several Districts in interviews was the Asian tiger mosquito. A carrier of dengue fever, Chikungunya, and Zika, the Asian tiger mosquito (*Aedes albopictus*), is significantly expanding its range in the United States over the next few decades, including into Illinois, primarily due to warming winter temperatures.

“Since the WNV outbreak in the early 2000s in Illinois, mosquito control has changed to more of a focus on *Culex* mosquitoes [carriers of WNV], and the season has grown longer as the risk for WNV continues to move further into September and October ... The continuous need for public health interventions has increased, particularly with [approximately] 150 WNV cases in 2025.”

— George Balis, Midwest Regional Manager and Entomologist, Clarke

Another challenge in vector control is insecticide resistance. Cook County mosquito populations, particularly the *Culex* species that transmit WNV, have developed resistance to most of the limited set of products available on the market. Districts reported that the small handful of effective compounds has narrowed further over time and that even product rotation, long recommended as a resistance-management strategy, may be losing value in certain contexts. Resistance pressure is not uniform across the region: thoroughness of treatment, geography, and the genetic diversity of local mosquito populations all shape how quickly resistance develops. Response to detected resistance involves routine resistance testing, in-house and collaborative laboratory work, and adjustments to larvicide selection mid-season when monitoring detects reduced efficacy. District staff raise the broader concern that the pipeline of available, effective active ingredients is thin, and losing any one product meaningfully constrains the remaining toolkit.

This combined threat of new invasive species expanding into the region and increases in insecticide resistance makes this a critical moment to assess and examine opportunities to strengthen vector control, including mosquito abatement, in Cook County.



Overview of Mosquito Abatement Districts

Illustration/CDC.gov

Overview of Mosquito Abatement Districts

HISTORY

The four Districts serving suburban Cook County today are the product of the Illinois Mosquito Abatement District Act, passed by the General Assembly in 1927 (70 ILCS 1005). This law enabled residents of any contiguous territory of at least 300 people not already in a District to petition their circuit court, trigger a public referendum, and with a simple majority vote, create an independent, property-tax-funded government devoted solely to mosquito control (70 ILCS 1005/1). NSMAD and DVMAD were created that same year in 1927. SCCMAD was established in 1953 and became operational in 1955. NWMAD was organized by referendum in 1956 across eight rapidly suburbanizing northwest Cook County townships. Nearly a century later, those founding conditions have changed substantially, but the governance structures they produced remain.

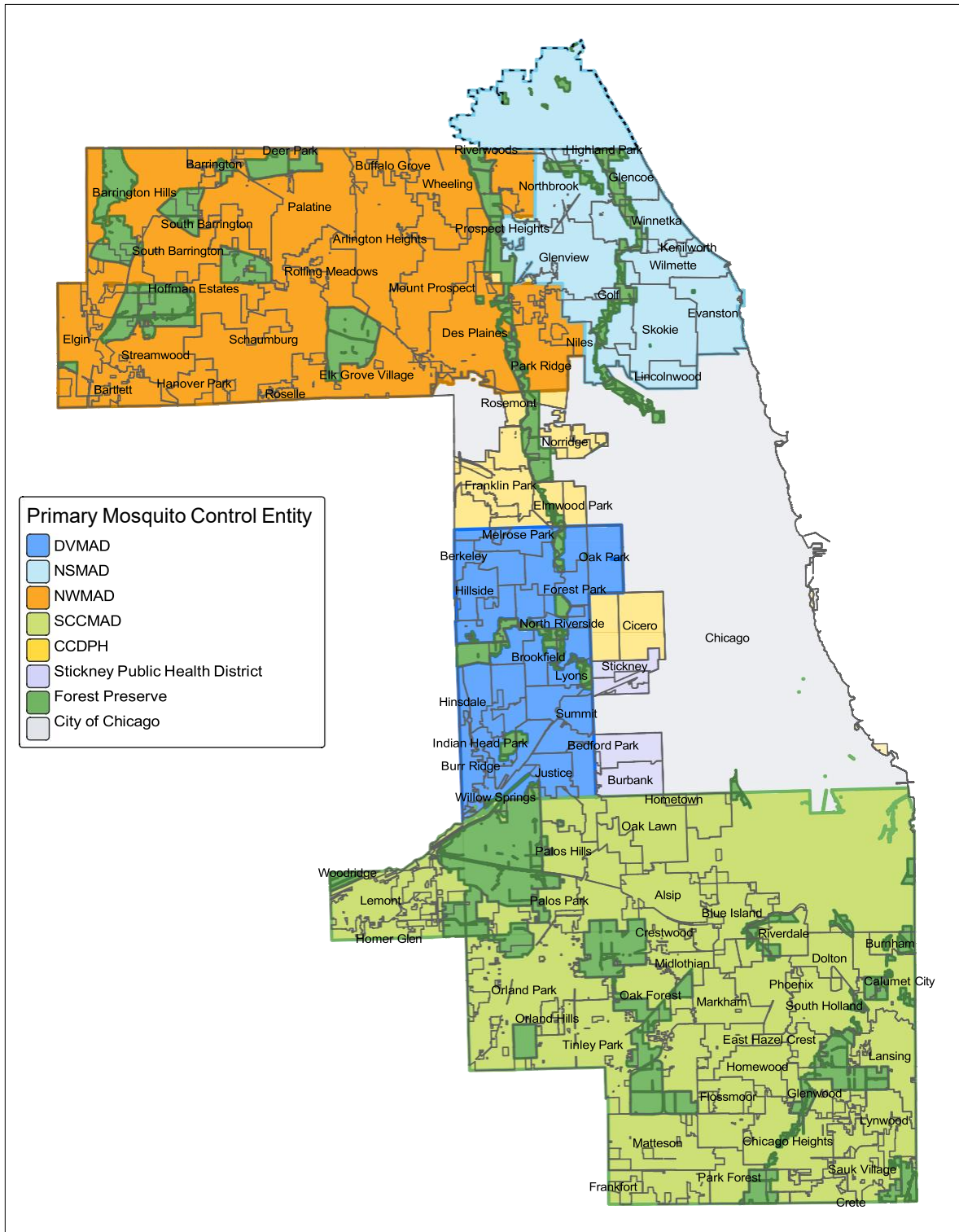
TERRITORY

All four Districts in suburban Cook County operate under the same mandate and share a common approach to mosquito abatement, but they are independent entities with distinct infrastructure, resources, operations, and contexts.

District	Year Established	Square Miles	Population
Desplaines Valley	1927	77	370,000 Residents (per 2024 Annual Report)
North Shore	1927	97	390,000 Residents (per 2025 Annual Report)
Northwest	1956	242	800,000 Residents (per website)
South Cook County	1953 (operational in 1955)	340	1,679,000 Residents (per 2024 Annual Report)

Overview of Mosquito Abatement Districts

The following map highlights the boundaries of the four Districts, including areas annexed through the end of 2025.



Overview of Mosquito Abatement Districts

The four Districts do not cover all of suburban Cook County, and NSMAD covers some territory in Lake County. As presented in the map, some portions of the County, including areas served by Stickney Public Health District, Leyden Township, and others, fall outside District boundaries. Overlapping District, County, and municipal jurisdictions result in a patchwork of different mosquito management operators providing services directly or through private contracts (which are sometimes narrowly tailored to insecticide treatment rather than comprehensive vector control). CCDPH is the certified local public health department for suburban Cook County, except for those regions served by another certified LHD, including Evanston, Skokie, Oak Park, and Stickney Township. Fifteen cities, villages, and townships not within District territory were sent an inquiry regarding current mosquito abatement activities, of which 10 responded; two reported conducting surveillance, and four reported applying insecticide-based treatment. Municipal governments were mixed in whether they conducted activities directly or contracted with a private vendor. These differences can result in inequities in service across the County as residents of communities without comprehensive vector control programs do not have the same access to proactive, science-driven mosquito management. Within and outside of Districts, they can also increase the risk of duplicative treatments and insecticide resistance when not carefully coordinated.

District boundaries have remained largely unchanged in recent decades; Districts have occasionally annexed small neighboring areas. In 1990, DVMAD annexed a small area in the southwest corner of its current territory. In 1992, NWMAD passed an ordinance to annex a portion of Park Ridge. In 2003 and 2005, NWMAD passed ordinances to annex two different pockets in Niles. In 2015, NSMAD annexed a portion of Glenview through a resident petition. In 2024, the Illinois legislature amended the Mosquito Control Act to allow Districts to annex territory that would become coterminous or nearly coterminous with a municipality in which the District already predominantly operates (Illinois General Assembly, Public Act 103-0932). NSMAD annexed two new areas in 2025 using this new legal pathway: a portion of Glenview, and territory in Lake County previously covered by the Southlake Mosquito Abatement District.

There are several areas where current District service activities and 2025 public files with District boundaries used for property tax purposes do not appear to align. Official District boundaries determine which Cook County residents pay taxes to a District. For residents of a District, Cook County levies specialized annual property taxes in addition to general property taxes, and the County returns these specialized funds to the District. Currently, public boundary files do not appear to capture NSMAD's 2025 territorial expansion, nor NWMAD's 1992, 2003, or 2005 annexations. These boundaries correspond with 2025 property tax bills in that District property taxes do not appear to be levied in some areas that Districts now serve. There are other similar areas of ambiguity in areas without residing taxpayers which therefore cannot be checked against actual property tax bills.

Overview of Mosquito Abatement Districts

For example, the County's record of SCCMAD's territory includes several vacant lots north of its 87th Street boundary in Chicago. Additionally, although there is not ambiguity in the boundaries, SCCMAD and the City of Chicago both provide some services in SCCMAD's territory in the southernmost portion of Chicago bounded to the North by 87th Street, which they aim to coordinate. Ultimately, any ambiguity or misalignment between actual service areas and official boundaries creates the potential for duplicative service provision or inadvertent lack of service.



Example of an isolated lot in the City of Chicago considered part of SCCMAD in Cook County's 2025 District Boundaries

Overview of Mosquito Abatement Districts

AUTHORITIES AND OBLIGATIONS

Mosquito Abatement Districts are independent, special-purpose units of government. Their authority is established in Illinois state law by the Mosquito Abatement District Act (70 ILCS 1005). Key applicable provisions are summarized below.

Establishment (70 ILCS 1005/1-1005/3)

New Mosquito Abatement Districts may be established by referendum. A District may be organized from any contiguous territory with at least 300 inhabitants that is not already part of an existing District. At least 5% of legal voters within the proposed District must file a petition with the county circuit court (including representation from any city, village, incorporated town, or unincorporated area included in the proposed territory), which then holds a notice hearing on its necessity and boundaries within specified timelines. Based on the hearing, if the court determines the District necessary, it certifies the question to election officials for proposal to voters within the proposed territory as a referendum. If a simple majority of voters are in favor, the District is established.

Governance (70 ILCS 1005/5-1005/6)

Districts are governed by a Board of Trustees (Board) with five members. Trustees are appointed by the Board of Trustees of the township, the presiding officer of the county board with advice and consent of the board (as is the case for Districts operating within Cook County as discussed by this report), or the governing body of the municipality where it is wholly located. If a District spans more than one county, Trustees are appointed proportional to the number of District residents in each county relative to the total District population. Trustees must be legal voters in the District and must serve without compensation.

Trustees serve four-year terms intended to stagger in two groups. They serve until their successors are appointed and qualified. Should a vacancy occur, a successor must be appointed to fill the remainder of the unexpired term. Annually at their first meeting in December, the Board of Trustees must elect a president, secretary, treasurer, and any other necessary officers from their members.

All Board meetings must be open to the public, and the Board must publish the time and place of its regular meetings. A majority of the Board constitutes a quorum. The Board must maintain a record of Board proceedings open to inspection by District residents.

Per 70 ILCS 1005/8, any District Trustee or designee that fails to comply with the requirements of the Mosquito Abatement District Act is guilty of a Class A misdemeanor.

Overview of Mosquito Abatement Districts

Powers (70 ILCS 1005/7 - 1005/8)

The Mosquito Abatement District Act empowers District Boards of Trustees to “take all necessary or proper steps for the surveillance and monitoring of ticks and the surveillance, monitoring, and extermination of mosquitoes and rats” within the District (70 ILCS 1005/7). Subject to the control of circuit courts and state-level executive agencies (such as IDPH), and as long as they are exercised in a manner that is consistent with the broader home rule powers, public safety ordinances, or environmental regulations of impacted cities, villages, or counties, Boards are empowered to exercise the following additional powers as necessary and proper for fulfilling the objectives of the Mosquito Abatement District Act:

- Abate stagnant pools of water and other breeding places for mosquitoes and rats;
- Purchase supplies and materials;
- Employ labor and assistants;
- Build, construct, repair, and maintain levees, cuts, canals, or channels;
- Acquire lands, rights of way, easements, property, or material by purchase, condemnation or other lawful means; and
- Make contracts to indemnify or compensate any owner of land or other property for any injury or damage necessarily caused in exercising these powers.

Districts may sell real estate by a three-fourths vote of the Board; sales must follow certain procedures around publication and consideration of bids.

Taxing Authority (70 ILCS 1005/9-1005/9.5)

Districts may levy and collect a general tax on property in the District. The aggregate amount of taxes levied for one year may not exceed 0.025% (or the limitation in effect on July 1, 1967, whichever is greater), as equalized or assessed by the Department of Revenue. The District Board determines and certifies the amount of the tax. If the District is located in more than one county, the amount to be levied is proportionally based on the value of the taxable property within the District in each county. Taxes are levied at the same time and in the same manner as existing taxes, as practicable.

If a municipality within a District provides comparable mosquito abatement services and levies a tax to fund those services, the municipality must pay the District the amount collected in the relevant area within the District, and the District must reduce taxes on that area equal to the amount received from the municipality.

A District may allocate up to 0.5% of the total equalized assessed value of real property in the District to a “Capital Improvement, Repair or Replacement Fund”.

Overview of Mosquito Abatement Districts

Cooperation with IDPH (70 ILCS 1005/8)

District Boards must advise and cooperate with IDPH. They must also submit an annual report of work done and results obtained by January 1st of each year. As part of their cooperation, Districts must “conduct routine surveillance of Department-identified vectors to detect the presence of vector-borne diseases of public health significance,” (70 ILCS 1005/8). Districts must provide timely notice to a Forest Preserve or conservation District when accessing land for required surveillance. Surveillance activities must be conducted in accordance with the U.S. Centers for Disease Control and Prevention (CDC) mosquito abatement and control guidelines. Surveillance must also include areas reporting disease in humans.

Districts must report positive mosquito, tick, or vector samples with specified arboviral or bacterial infections (including WNV, St. Louis encephalitis, Eastern equine encephalitis, and other vector-borne diseases) to the local certified public health department and to IDPH within 24 hours of receiving the positive report.

Changes to District Territory (70 ILCS 1005/10-1005/13)

Dissolution

A District may be dissolved through the same process of petition, hearing, and majority-vote referendum used to establish a District. If dissolved, Trustees must immediately “wind up the affairs” of the District and may continue to levy taxes to pay debts, obligations and liabilities as well as closing expenses. All property of the District must be sold, and any remaining excess after District liabilities are resolved must be paid to school districts in the District.

Annexation or Consolidation of a District (70 ILCS 1005/11.5)

By a majority vote of the Board of Trustees, a District may be annexed to another contiguous District, consolidated into a coterminous municipality, or consolidated into the township or county in which the District sits. The governing authorities of the receiving governmental unit must agree by resolution to accept the functions and jurisdiction of the relevant territory, upon which all rights, powers, duties, assets, property, liabilities, indebtedness, obligations, bonding authority, taxing authority, and responsibilities of the District are then assumed by the governmental unit. Employees of the former District will be transferred to the governmental unit, which then exercises rights and responsibilities with respect to the employees. The status and rights of the employees of the former District under any applicable contracts or collective bargaining agreements, historical representation rights, or any pension, retirement, or annuity plan will not be affected.

Overview of Mosquito Abatement Districts

Annexation of Territory into a District (70 ILCS 1005/10)

Adjacent and contiguous territory that is not part of another District may be annexed into a District. There are two pathways by which this can be done:

- Following a petition signed by a majority of legal voters and the owners of more than half of taxable property in the territory, a District's Trustees may annex the territory by resolution. The resolution must be published in a newspaper with information about the petition process to request a referendum on the resolution and the prospective date of the referendum; the resolution is effective 30 days after publication unless a referendum is requested by 10% or more of registered voters. Alternatively, the question may be directly voted on at a regular election, with a majority of votes in favor resulting in annexation.
- If a District operates within territory predominantly in one or more municipalities that would become coterminous or nearly coterminous with the municipality or municipalities upon annexation of additional territory within those jurisdictions, the District may annex the additional territory by ordinance. The ordinance must be published in at least one newspaper of general circulation with information about the petition process to request a referendum on the resolution and the prospective date of the referendum. The ordinance is effective 30 days after publication unless a referendum is requested by 10% or more of registered voters. Alternatively, the question may be directly voted on at a regular election, with a majority of votes in favor resulting in annexation. Territory may not be annexed by this pathway if it would expand the District's boundaries into a county the District does not already serve.

Other Territorial Changes (70 ILCS 1005/13)

Owners of land with one or more tracts on the border of a District may have it disconnected by petition and hearing in certain circumstances that do not adversely affect the District and its performance.

Overview of Mosquito Abatement Districts

Other Applicable Laws and Compliance Obligations

Districts are subject to other state laws governing the conduct of local governments, including laws related to financial reporting, prompt payment, eminent domain, ethics and whistleblower protection, travel reimbursement, open meetings and information transparency, sexual harassment policies, prevailing wage standards, and local government efficiency.

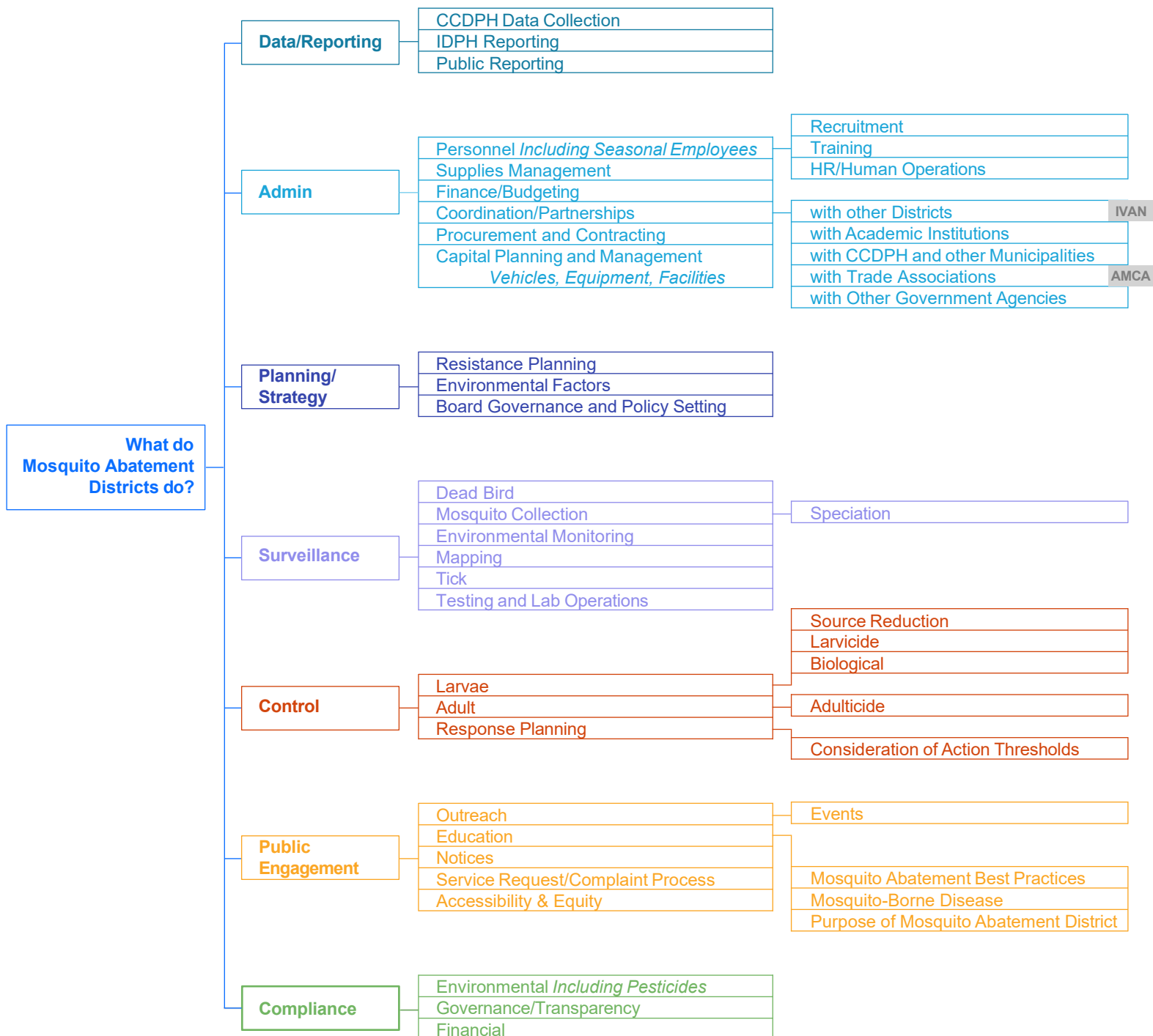
Mosquito Abatement Districts must also comply with laws impacting vector control operations. Districts must comply with provisions of the Illinois Pesticide Act (415 ILCS 60) related to pesticide use and pesticide safety, permitting, applicator licensing, and recordkeeping. Under the Pesticide Application on Rights-of-Way Notification Act (415 ILCS 61), units of local government, including Districts or their contractors, must provide written notice to the public of pesticide application at least 24 hours in advance. Beyond statutory obligations, Districts must also comply with environmental permitting requirements in accordance with their pesticide use.

CCDPH is separately empowered by Cook County and state law to conduct its vector control program within its jurisdiction, including through delegated authority from the state Vector Control Act to investigate, monitor, and respond to public health threats related to vector-borne disease (410 ILCS 95/8). As a certified local public health department, and as delegated by IDPH, CCDPH is required by state law to investigate infectious disease and adopt measures to stop its progress as well as to consult with other private and public health agencies within its jurisdiction in the development of local plans for efficiently delivering health services (55 ILCS 5/5). CCDPH is further authorized by the Cook County Ordinances to exercise enforcement authority with regard to public nuisances (such as those that could contribute to vector habitats).

Overview of Mosquito Abatement Districts

SERVICES AND ACTIVITIES

The full scope of a District's activity spans seven domains: data/reporting, administration, planning/strategy, surveillance, control, public engagement, and compliance. Combined, these responsibilities create a year-round public health operation that delivers IMM.



Overview of Mosquito Abatement Districts

Surveillance

Surveillance is the foundation of mosquito abatement practices. In addition to surveilling potential sources for eggs, larvae, and pupae, each District uses a network of traps to monitor adult mosquito populations during the mosquito season. Trapped mosquitoes are identified by species and tested for viruses in on-site laboratories. Nationally, an increasing number of vector control programs, including most Districts, have expanded their surveillance to include ticks. Surveillance also includes environmental monitoring. This real-time, local surveillance infrastructure enables data-driven decision making and interventions.

Control

Mosquito control includes source reduction, biological control, and chemical control. Source reduction involves eliminating breeding habitats, such as by removing discarded tires and containers and draining areas of standing water. Biological control uses natural predators like fish or other organisms like bacteria to target mosquitoes. Larvicides, including bacterial larvicides, insect growth regulators, and suffocating oils and films, are applied to control mosquito larvae without harming other organisms. Adulticides, including barrier treatments and traditional spraying, are applied to control adult mosquitoes on direct contact by disrupting the nervous system. Larval control is more effective and cost-efficient than adult control because mosquitoes are concentrated and immobile in their larval stage, and insecticide application can be more targeted.

NSMAD Executive Director Mark Clifton emphasized the value of upstream prevention and larval control rather than relying solely on reactive, adulticide-driven intervention: *“If people experience mosquitoes, they start calling, they want [adulticide] spraying. We don’t want to have to spray, especially if we can minimize or avoid it by acting proactively. We prefer to use spraying as a data-driven public health intervention when there is a definable disease prevention benefit.”* Vector control programs should use defined protocols to determine when adulticide is warranted, which thresholds trigger different levels of response, and how to coordinate adult control operations with neighboring programs when necessary.

Public Engagement

Public engagement encompasses outreach, education, service requests and intake, treatment notices, and other communications. Effective public engagement is essential for source reduction and personal protective efforts.

Overview of Mosquito Abatement Districts

Administration

Administration includes functions that make field operations possible: personnel management, including the recruitment and training of seasonal staff; supplies management and procurement; finance and budgeting; capital planning and management of vehicles, equipment, and facilities; and coordination with other stakeholders in the mosquito abatement ecosystem. In Cook County, Districts coordinate with other Districts, CCDPH, other LHDs, municipal public health and public works departments, experts and associations such as the AMCA, and, in some cases, academic institutions. These coordination relationships enable Districts to share surveillance data, align best practices, access research partnerships, and navigate regulatory changes that affect their operations.

Data

Vector control programs collect and maintain data on operations including trap counts, species composition, disease test results, and treatment activities. In Cook County, Districts share key mosquito and virus surveillance information with local partners and CCDPH, which aggregates results across the region for sharing across Districts and reporting to IDPH in accordance with state public health requirements. Districts also communicate data to the public, often through weekly reports, risk indices, and maps that show where WNV has been detected and what the current risk level is. Data capabilities enable Districts to track trends, make evidence-based control decisions, and give residents the information they need to protect themselves.

Planning and Strategy

Planning and strategy encompass the future-facing decision making that enables Districts to leverage resources and respond to changing conditions and emerging threats. The Board of Trustees, which traditionally helps establish District priorities, approve budgets, and set operational policy, plays a critical role in planning, strategy, and oversight.

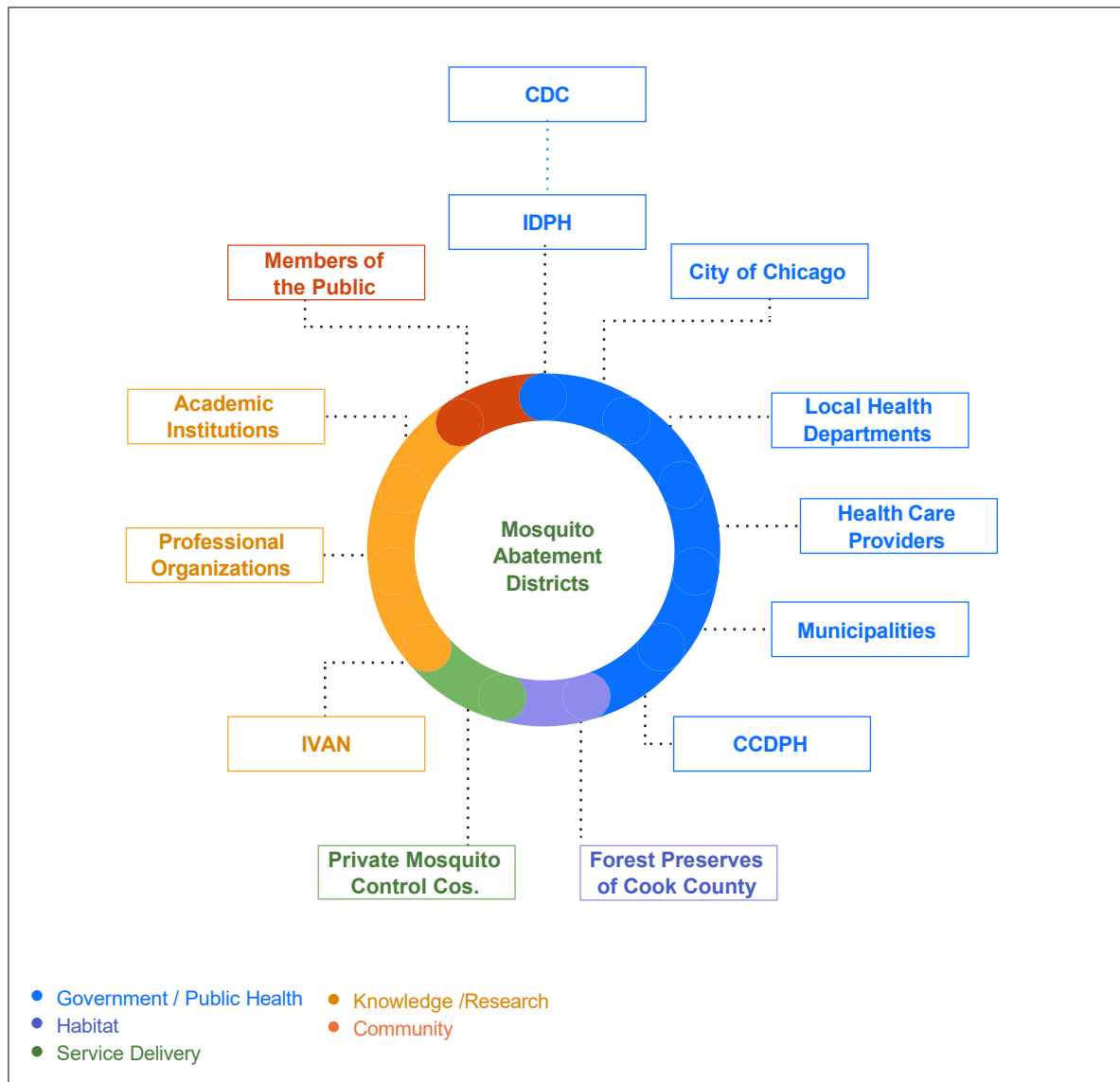
Compliance

Compliance includes internal practices and controls to ensure that operations align with legal requirements and organization policies, including environmental standards, governance and transparency standards such as public meeting requirements, public health requirements including reporting to IDPH, and financial standards such as audit requirements.

Overview of Mosquito Abatement Districts

THE MOSQUITO ABATEMENT ECOSYSTEM IN COOK COUNTY

The mosquito abatement ecosystem of Cook County is complex and involves many different stakeholders. This graphic helps explain the various players in the Cook County mosquito abatement ecosystem, and how they interact with the Districts:



The Mosquito Abatement Districts

As previously described, the four Districts are independent special Districts that focus on mosquito surveillance and control. Each operates its own mosquito management program.

Overview of Mosquito Abatement Districts

IDPH

IDPH is the statewide regulatory body for mosquito abatement in Illinois. It collects and aggregates surveillance data and provides technical support. IDPH does not directly fund, operationally control, or enforce performance of Districts. The Districts are required by law to submit annual reports to IDPH and to advise and cooperate with the department (70 ILCS 1005/8). IDPH runs a statewide database that collects mosquito surveillance test results from the Districts, county health departments, and other public agencies. This is the central infrastructure for surveillance of WNV. In terms of direct support for mosquito abatement, IDPH delegates to and provides grants to certified LHDs to conduct vector surveillance and control; provides vector control training for public health departments (which Districts are welcome to attend); and consults on best practices. IDPH also runs its own traps across the state, including within Cook County.

Local Health Departments (LHDs)

Three LHDs, Evanston, Oak Park, and Skokie, exist within District territory and conduct supportive activities such as public education. Stickney Public Health District directly applies larvicide and adulticide and provides public outreach and information in Stickney Township. Other LHDs include the Chicago Department of Public Health (CDPH) and CCDPH. LHDs focus on preventing vector-borne disease rather than conducting mosquito abatement (including against nuisance mosquitoes) more generally. All Districts send weekly service reports to local public health department contacts throughout mosquito season and coordinate on disease response as necessary.

Cook County Department of Public Health (CCDPH)

CCDPH is the certified LHD for suburban Cook County, except for those regions served by another certified LHD. As part of its vector control function, CCDPH provides mosquito surveillance and control services through a contract with a private vendor. CCDPH focuses services on areas of suburban Cook County where Districts or other governmental mosquito abatement operators are not operating, although some surveillance is conducted in areas of overlapping activity. CCDPH also aggregates WNV data for suburban Cook County into a public surveillance report. CCDPH also receives reports of human cases of WNV and other vector-borne diseases, which they share with Districts.

Overview of Mosquito Abatement Districts

City of Chicago

CDPH contracts with a private vendor to provide vector surveillance and control services in the City of Chicago. SCCMAD serves the portion of Chicago south of 87th Street; CDPH still provides some services there in coordination with SCCMAD. Other Districts also coordinate with CDPH regarding treatment plans and resistance testing, especially focusing on shared boundaries.

Health Care Providers

Health care providers detect and treat vector-borne disease, and report incidence of such diseases. They generate human case data for diseases like WNV.

Municipalities

Some municipalities are served by Districts; some operate their own mosquito abatement, often through private vendors; and some rely on the LHDs that serve their territory. The Districts coordinate with municipalities on activities including surveillance updates, spraying notifications, complaint routing, and nuisance enforcement. For example, some municipalities share public health notices on behalf of the Districts and route complaint calls to them.

Forest Preserves of Cook County

The Forest Preserve District of Cook County (“Forest Preserves”), is a special District that manages lands for preservation. Its territory, which is represented within every District, includes areas with characteristics of mosquito breeding habitats. The Forest Preserves prioritize conservation and focus on minimizing inorganic chemicals in natural areas while acknowledging some level of vector control can be necessary for public health. Districts have varying levels of collaboration and data sharing with the Forest Preserves, and report that differences of position can occur regarding surveillance and control planning. Forest Preserves volunteers also sometimes have conflict with District staff undertaking operations due to perceived environmental concerns. In Forest Preserves territory, Districts conduct mosquito and tick surveillance and apply larvicide only as necessary. Nature preserves are protected areas within the Forest Preserves that focus on endangered and threatened species. Districts cannot conduct any control operations inside nature preserves. The Forest Preserves conduct wildlife surveillance to test for zoonotic diseases, which can provide sentinel insight into vector-borne disease risk to humans. Forest Preserves Deputy Director of Resource Management Izabella Redlinski stated that it is a shared responsibility to *“figure out that place where public health and conservation meet, and how we can manage for both in a way where we are not affecting our very limited natural areas.”*

Overview of Mosquito Abatement Districts

“The Forest Preserves is a challenge. It’s not their fault. They have a mission and we have a mission. They are focused on natural preservation and we are focused on public health. Finding the right balance between the two missions can be challenging. I think with communication and collaboration, we can achieve both missions.”— District Employee

Illinois Vector-disease Abatement Network

Illinois Vector-disease Abatement Network (IVAN) is a membership organization of suburban Cook County Districts founded in 2025 with a focus on advancing evidence-based practices to prevent vector-borne disease and organizing around advocacy and policy priorities. Members must meet requirements around good governance, excellence in mosquito abatement, and transparency. DVMAD, NSMAD, and NWMAD are members; SCCMAD has been invited but currently manages its working relationships independently.

Professional Organizations

District staff engage with professional associations in mosquito abatement and public health such as AMCA and the Illinois Mosquito and Vector Control Association, which hold conferences, provide professional development, and enable sharing of best practices.

Private Mosquito Control Companies

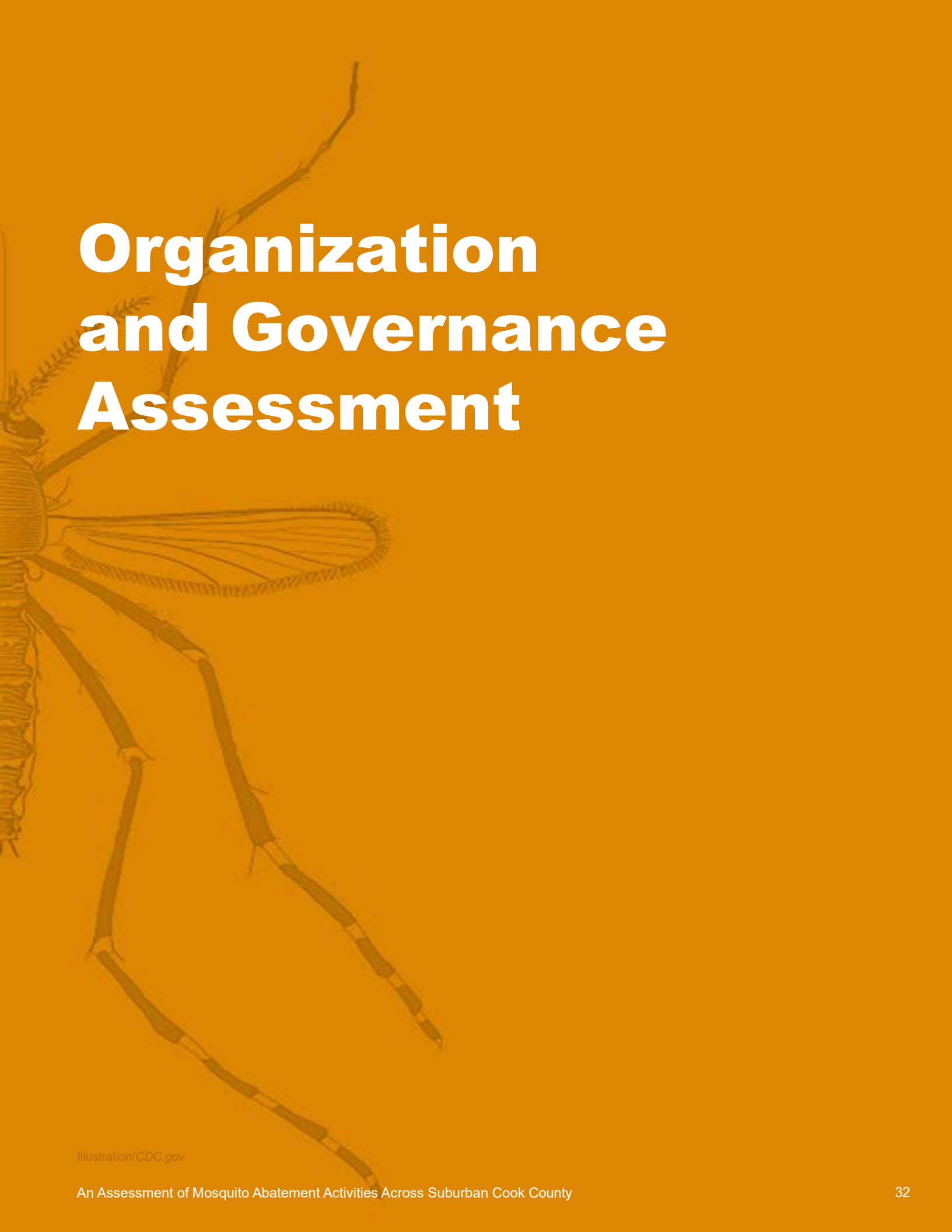
Private mosquito control companies operate in Cook County as contractors for LHDs such as CCDPH and CDPH as well as some municipalities outside of Districts. The scope and comprehensiveness of services provided varies by contract. Some businesses, local organizations, and residents also contract with private, residential-focused companies for one-off insecticide treatments, largely focused on reactive adulticide spraying.

Academic Institutions

Some Districts collaborate with academic institutions on research projects related to data collection, insecticide resistance, novel control products, and additional vectors like ticks and rats, as well as training new entomologists.

Members of the Public

Cook County residents are the beneficiaries of vector control and mosquito abatement services. They submit service requests, receive public notifications about spraying, and may engage with the Districts at community events and District Board meetings. They may also take individual actions to reduce potential mosquito habitats and protect themselves from mosquitoes and ticks.



Organization and Governance Assessment

Illustration/CDC.gov

Organization and Governance Assessment

The Districts share a common statutory mandate but are not identical organizations. Each District has its own organizational characteristics, influenced by the unique geography, ecology and communities it serves. Districts differ in terms of workforce, governance, public engagement, and transparency. This section examines the organizational structure of each District and how each District operates.

Structure and Staffing

The four Districts differ meaningfully in both size and composition of their workforces, which are shaped by their distinct geographies, service areas, and the priorities of each District. NSMAD and NWMAD are well-staffed with scientific and technical expertise, which reflects their investment in research and data-driven operations. SCCMAD, which covers the largest geographic area of any District, has a robust operations staff to manage the scale of their service delivery. DVMAD which covers the smallest geographic area, operates with a lean team of five cross-trained, full-time employees.

“Because the team is so small, everyone wears multiple hats ... if one person goes on vacation, we all have to be able to cover their responsibilities.”— Bob Holub, DVMAD District Manager

All Districts described how team members often cover tasks outside their primary roles and perform the responsibilities of others on leave. These contingencies are necessary due to the small staff sizes across the system, and are especially pronounced at DVMAD, where each team member has a role essential to day-to-day service delivery.

Staffing levels have remained relatively stable in recent years. Full-time staff grew by one position each at NWMAD and NSMAD from 2024 to 2025, while DVMAD held steady and SCCMAD lost one full-time staff member. All four Districts anticipate similar staffing levels in the coming year. Staffing sizes tend to be associated with the size of each District’s geographic area.

NSMAD, DVMAD, and NWMAD all follow a year-round schedule, with some staff working 6 days a week during mosquito season. Most SCCMAD full-time staff follow either 9-month or 10-month time schedules; 10-month staff condense 12 months of working hours into 10 months out of the year, centered around the mosquito season.

Organization and Governance Assessment

District Workforce Size

District Workforce Size		
District	# Full Time Staff	# Seasonal/Temp Staff
DVMAD	5	Up to 16
NSMAD	8	Up to 20
NWMAD	15	Up to 50
SCCMAD	31	Up to 15

Seasonal Staffing

The seasonal staffing model is a cornerstone of District operations, providing the capacity needed to meet the higher workload of mosquito season without carrying the labor cost year-round. Multiple Districts highlighted that seasonal staffing can serve as employment pipelines for young people interested in careers in science and public health.

All four Districts described significant challenges in recruiting and retaining seasonal staff. Three Districts described seeking as many temporary staff as they are able to hire. Districts reported struggling to offer wages competitive enough to attract and retain workers for physically demanding outdoor work with current budgets. Some Districts have responded by raising wages to improve their applicant pool. DVMAD, for instance, raised their seasonal wage to \$20 per hour to attract committed candidates and exercise more selectivity in hiring.

Two Districts also described the need to intentionally overhire at the start of the season to account for expected attrition. Many seasonal employees are high school or college students whose schedules don't allow them to stay for the full season. Building in buffer capacity helps ensure operations can continue even when staff turn over mid-season.

Organization and Governance Assessment

Executive Leadership and Governance

Executive Leadership/Governance				
Function	DVMAD	NSMAD	NWMAD	SCCMAD
Board Governance	Board of Trustees	Board of Trustees	Board of Trustees	Board of Trustees
Executive Leadership	District Manager	Executive Director	Director	Interim Executive Director
Additional Management	Director of Field Operations/ Assistant Manager	Internal Operations Manager	Assistant Director	Assistant Director

All four Cook County Districts share a common governance structure. As previously described, each is led by a Board of Trustees appointed by the Cook County Board President with the advice and consent of the County Board of Commissioners. The Trustees in turn, pursuant to 70 ILCS 1005/6, elect a Board President from amongst the Trustees, along with a Secretary and Treasurer. Within this shared framework, the Districts then differ in how they have structured their executive leadership and the depth of their management layers.

Mosquito abatement is a specialized field, and stakeholders interviewed across the system consistently emphasized that effective District leadership requires scientific fluency. NSMAD Executive Director Mark Clifton noted that Districts used to be run in a public works style focused on draining swampy areas and routine spraying, but as they have become science and data-driven public health agencies, an additional level of expertise is required.

“The mission of NWMAD is to manage mosquitoes so people can enjoy the outdoors without nuisance or disease risk ... we want to use science, data, and public education to manage mosquito populations.”— Patrick Irwin, NWMAD Assistant Director and Entomologist

DVMAD, NSMAD, and NWMAD are led by individuals with deep professional roots in mosquito abatement. DVMAD and NWMAD’s executives have each served their Districts for many decades, and NSMAD’s executive is a scientific expert in vector control. SCCMAD is led by a relatively new Interim Executive Director.

Organization and Governance Assessment

Leadership Backgrounds				
	DVMAD	NSMAD	NWMAD	SCCMAD
Leadership Title	District Manager	Executive Director	Director	Interim Executive Director
Year Appointed	1980	2018	2019	2025
Background and Relevant Experience	Has served DVMAD since 1972 in various roles spanning all District functions before being hired as Manager; background in engineering and physics.	PhD in biology, background in entomology and research; previously served as Director of Research for a Mosquito Abatement District in Florida.	Previously served as NWMAD Mechanic, Assistant Director, and Chief of Internal Services. Works closely with the Assistant Director and Entomologist, who provides scientific leadership.	Most recently worked as a consultant to schools and businesses; background in school board strategy.

Currently, all four Districts have leadership who work year-round. Multiple Districts shared the importance of District leadership adhering to this schedule, as it enables leadership to have capacity to not only manage day-to-day operations of the District, but to engage in the strategy and planning work that helps prepare for emergencies and improve service. District leadership cites the winter months as especially productive for long-range planning, infrastructure maintenance, research, and strategy development. They share that leadership work would be difficult to compress into a shortened season.

Several District leaders highlighted the importance of being deeply familiar with the geography, ecology, and culture of their region. NSMAD Executive Director Mark Clifton stated, “Each District has different geography. Our research is specialized to our region ... there’s a difference between being able to provide mosquito control on paper and knowing local needs.” DVMAD District Manager Bob Holub shared this sentiment, stating “*There is individuality — each District has unique terrain and problems. It’s important to be a self-governing entity that has individual expertise so services can be responsive and impactful.*”

Organization and Governance Assessment

Scientific Expertise

NWMAD and NSMAD stand out for their investment in professional entomological expertise. Both have entomologists as full-time staff who drive surveillance strategy, product evaluation, and resistance monitoring, as well as research that informs District operations and contributes to the broader advancement of vector control science. All the Districts have some form of entomology experience, including through specially trained biologists and SCCMAD's recent engagement of an infectious disease epidemiology consultant. All four Districts have biologists on staff. All Districts have some form of laboratory staff in house, at different levels of staffing. Some of these laboratory staff also perform entomology functions.

Scientific/Technical Expertise				
Function	DVMAD	NSMAD	NWMAD	SCCMAD
Entomology	District Manager with entomology background	Entomologist & Research Entomologist	Entomologist & Assistant Entomologist	Contracted Epidemiologist
Laboratory	Biologist & Lab Staff	Vector Biologist & Lab Staff	Assistant Entomologist/Lab Supervisor & Lab Staff	Lab Biologist & Lab Staff
GIS	Director of Field Operations	GIS Manager	GIS Field Supervisor	GIS Manager

GIS capacity also varies meaningfully across the Districts. NWMAD, NSMAD, and SCCMAD all have dedicated GIS staff. At DVMAD, which has the smallest staff, GIS responsibilities are absorbed by the Director of Field Operations, another example of the cross-functional staffing model that characterizes the District's operations.

District expertise is leveraged by players across the mosquito abatement ecosystem. CCDPH's vector control team does not have entomologists on staff and sometimes engages with the Districts, particularly NSMAD and NWMAD, for technical guidance.

"I really respect the knowledge that [the Districts] have. Anytime I have a question about a vector, about a pattern we're seeing or just something I don't understand, I know that I can go to [the Districts].....I always feel supported in that way to have that kind of really in-depth expertise through the entomologists there."— CCDPH Staff

This dynamic illustrates the system-wide value of the scientific expertise within the Districts, and the risk that any related gaps may carry consequences for the County's broader public health capacity.

Organization and Governance Assessment

Board of Trustees

As with any government entity, good governance is critical to effectively and efficiently delivering public services. Implementing a structured system of policies and processes supports ethical, consistent, and accountable operations. As previously discussed, each District is governed by a Board of Trustees whose members are appointed by Cook County (and, in the case of NSMAD, one seat by the Lake County Board). Boards are empowered to hire staff to carry out their mission, and all four Districts have an Executive Director and permanent staff with responsibility for administering the organization on a day-to-day basis.

NWMAD Board President Dan Ansani stated, *“The duty and the function of the Board is to oversee the operation of the District, including compliance with statutes, budgets, and purchasing. The Director and Assistant Director/Entomologist provide the knowledge and expertise since the Board isn’t here on a daily basis.”* He highlighted three key activities of the Board in overseeing operations: overseeing the budget, getting the right people in the right positions, and providing oversight of what the District is doing.

Boards are intended by statute to have five Trustees, although there are frequent vacancies and gaps between appointments. Two Boards, DVMAD and SCCMAD, currently have vacancies. Current Board membership is as follows:

	DVMAD	NSMAD	NWMAD	SCCMAD
Current Board Members (of 5)	3	5	5	4
Vacancies	2	0	0	1
Board Meetings Held in 2023/24/25	4/4/4	11/11/11	13/13/13	14/14/14

Boards meet with different levels of frequency. NWMAD and SCCMAD meet roughly monthly, NSMAD meets roughly bimonthly, and DVMAD meets quarterly. Current Trustees and District staff report that especially for Boards with fewer Trustees, reaching quorum can be difficult when scheduling around working professionals’ obligations. Board meeting agendas frequently include staff updates and Board votes on matters such as surveillance and control operations, administration and finance (including the budget and appropriation ordinance), and personnel.

Organization and Governance Assessment

Board Trustees have a variety of occupations, although prior experience with vector control is rare. Professional backgrounds of current Trustees include public works, writing, financial analysis, teaching, environmental management, law, local business management, local government and public administration, and consulting; several Trustees are retirees. Most Trustees serve on other local boards, and several are current local elected officials. There is one Trustee who is a professional entomologist serving on NWMAD's Board; several Trustees and District staff mentioned the value and rarity of his ability to provide expert input on matters such as pesticide selection and strategy.

“You need some Trustees with fiscal knowledge ... and people who have some expertise in communicating with the community, because that’s a huge part of what Districts do. You also need people who understand biology or have an ability to get comfortable with it.”

— NSMAD Trustee Kathryn Calkins

Trustees universally suggested that a diversity of experience on District Boards can be helpful, such as a mix of backgrounds in community outreach, law, management, and environmental science or advocacy. When asked about capabilities or backgrounds that would be helpful specifically in serving on a District Board, multiple current Trustees suggested that having Board members comfortable with science, budgeting, or community relations would help them perform better, although willingness to learn was the most important attribute. Several longtime Board members highlighted Board stability and consistency as a critical determinant of Board success, especially given the steep learning curve for the vast majority of Trustees who are new to mosquito abatement. Every Board has a mix of at least one Trustee with more than a decade of service and at least one Trustee appointed within the two years.

Several Trustees and District staff recommended that Districts and Cook County collaborate on educational materials and/or training for new Trustees, as well as materials for prospective Trustees to learn more about what the Districts and Boards do.

“There’s nothing there for the education of the Trustees. They don’t come in knowing much about this. They think about their own context, but there’s a lot to [mosquito abatement]. They are trying to be a good citizen.” NSMAD Executive Director Mark Clifton

Because of the technical nature of vector control and the volunteer status of Board Trusteeship, all Trustees and District staff described an executive or staff-driven model of governance where Executive Directors and key staff are active in shaping Board agendas, developing budget proposals, and developing strategic plans. Trustees consistently described their roles as overseeing high-level operations of the District, including budgets, compliance, and purchasing, with reliance on the knowledge and expertise of District staff.

Organization and Governance Assessment

“Our primary concern is managing the budget and using the funds expeditiously and properly... a couple of years ago, we were charged with doing tick surveillance. That was something new we hadn’t budgeted for, and yet we had to fit that into our budget... This year, we passed a budget... with zero increase. We felt there was a duty to keep within the current budget ... so if we can meet our budgetary needs and not have any excess monies, we try to do that.”— NWMAD Board President Dan Ansani

With varying approaches, all Boards appear to be active in conducting community outreach and developing local partnerships. For example, NSMAD’s Board has been involved in initiating a collaboration with Lincoln Park Zoo to test new rat control methods, improving language access for District communications, and building connections with local environmental groups. Other Board members report personally helping to educate neighbors and facilitating relationships with municipalities within the Districts. One Trustee reflected that Trustees are often best able to serve the District beyond meetings through outreach and relationship-building activities because they often have civic backgrounds. Several Trustees noted that living in the Districts creates indirect accountability to the community. For example, DVMAD Board President Reatha Henry said that she shares information about the District when she’s out in the community, especially when people see District trucks or staff. Community members will call her expecting her to help resolve their mosquito concerns. *“There is local accountability, and the workers care.”*

“Local control is much better — these are our neighbors and ourselves, there’s more at stake. In terms of being able to provide responsiveness, there is a lack of community trust because when they call the County about other services, they often feel like they can’t reach them, or they don’t know them.”
— District Employee

Because of the staff-driven model of governance, hiring District executives appears to be a consequential responsibility of the Board that is key to enabling a science-based approach. Best practices for governance of Mosquito Abatement Districts may be informed by best practices for municipal governments with an elected council and empowered city manager. The Institute for Local Government, a California-based non-profit created to support good government at the local level, describes the “policy/administration dichotomy” as working most effectively when the council body focuses on the big picture of policy development while staff focus on policy implementation and service delivery; and that an effective and mutually supportive working relationship increases the likelihood of effectively coordinated roles and successful management (Duggan 2017).

NSMAD Director Mark Clifton attributes NSMAD’s improvement over the last two decades to transformative, science-driven leaders as well as the support of the local Cook County Board Commissioner for the Cook County President’s appointment of strong Board members. All Districts have ethics policies that Trustees and District staff must follow. Districts approach travel reimbursement for District Trustees differently.

Organization and Governance Assessment

DVMAD makes a flat travel reimbursement for Board meeting attendance as applicable. NSMAD Trustees are subject to the same travel reimbursement policy as District employees. NWMAD makes a flat reimbursement for official Trustee expenses, including travel; NWMAD uses the federal General Services Administration rates for Trustee conference travel reimbursement. SCCMAD discontinued its payment for attendance of regular Board meetings; Trustees may be reimbursed for attending other official events such as a conference using the same travel expense policies as employees.

Board Appointments

To be appointed to a Mosquito Abatement District representing Cook County, prospective Trustees must be presented by the Cook County Board President and confirmed by the Board. Individuals may request to be considered by the Office of the Cook County Board President by submitting a nomination application. The application form is not specific to Mosquito Abatement Districts and is used across the 36 boards and commissions for which the President has appointment authority. Trustees and District staff from one District strongly emphasized that the complexity of the form and nomination process have discouraged applicants, and may require information beyond what is necessary for a volunteer position. Districts universally report being uninvolved in recruiting Trustees.

The clearest and most significant challenge to good governance of the Districts is maintaining fully appointed Boards with high-performing Trustees. Across all Districts, the most consistent, strongly held feedback by Trustees and staff on any topic was the challenge of preventing vacancies through timely appointments to District Boards. Currently, two Boards have vacancies. Recently, DVMAD operated with only two Trustees for several years while awaiting additional appointees. They have not had a full slate of Trustees since 2013. Districts share that they notify the County of vacancies and when terms are near expiration.

Delays in filling Board vacancies have multiple potential causes. One Cook County official shared that it is difficult to recruit applicants for open appointments on Mosquito Abatement District Boards, which is aligned with the observations of District staff. A Trustee from one District suggested that the volunteer nature of Trusteeship and lack of reimbursement for costs such as travel costs was a disincentive. District staff also suggested that the appointment process can be long and complex.

Districts have compensated for a restricted pipeline of new Trustees in several ways. Because Trustees serve until their four-year terms expire and until their successors are in place, many Trustees continue to serve while their reappointments are pending, and reportedly longer than some intended. One District leader shared an example of a dedicated Trustee who had intended to leave the Board for personal reasons and given notice to the County, but who continued to serve for several years out of a sense of responsibility to his community because no replacement had been identified.

Organization and Governance Assessment

Another District leader shared that they had previously been contacted by a County official asking about the current Board membership, suggesting that the practice of Trustees serving after their terms officially expire leads to confusion and uncertainty about actively-serving Trustees. Although Board terms are intended by statute to be staggered so as to maintain continuity and experience, difficulty filling open positions has led to appointments being made outside of the cycle outlined in statute.

Trustees' ability to continue serving until replacements are appointed can create limited accountability for poor performance when it occurs. The Illinois Mosquito Abatement District Act currently does not provide explicit authority to remove poorly-performing Trustees beyond declining to reappoint existing Trustees, although the Local Volunteer Board Member Removal Act (50 ILCS 60) may be used to remove volunteer Board members for misconduct, official misconduct, or neglect of office.

TRANSPARENCY

Public access to operational and financial information is an important component of District transparency and accountability. As a part of this assessment the four Districts were reviewed to evaluate what information is publicly available to residents, including District operations, governance, and finances.

Operation and Financial Information Available Online				
	DVMAD	NSMAD	NWMAD	SCCMAD
2025 Operations Report	Yes	Yes	Yes	Yes
Past Operations Reports	Yes	Yes	Yes	Yes
Board Meeting Minutes	Yes	Yes	Yes	Yes
Schedule of Upcoming Board Meetings on Website	Yes	Yes	Yes	No
Tax Levies	Yes	Yes	Yes	No
Annual Comprehensive Financial Statements (ACFR)	No	Yes	Yes	No
Budget and Appropriations Ordinance	Yes	Yes	Yes	No

Organization and Governance Assessment

All four Districts publish current operational reports describing mosquito surveillance and control activities. Each District also provides the archived reports from years past, which enables residents to look at historical performance. Similarly, Board meeting minutes are available on all four District websites, which allows members of the public to review the decisions considered and made. DVMAD, NSMAD, and NWMAD publish information about upcoming meetings; currently, SCCMAD doesn't provide a meeting schedule with specific dates on its website. SCCMAD does post its meeting schedule on the front door of its building, which may be less accessible for residents. While members of the public rarely attend these District board meetings, having the ability to do so is an important component of accountability and transparency.

Variation also exists in transparency of the financial information available on District websites. All Districts except SCCMAD publish property tax levies and budget and appropriation ordinances. This information helps members of the public understand how mosquito abatement services are funded and how Districts spend taxpayer dollars. NWMAD and NSMAD directly publish their ACFRs, which offer the public a detailed and independently audited view of a District's revenues, expenditures, assets, and liabilities; DVMAD links to the online portals for the Illinois State Comptroller and Office of the Cook County Treasurer for access to its financial information. SCCMAD also does not directly publish its ACFR, and its ACFR and most recent audit are not available through other online portals due to their delays in submission.

Overall, operational transparency is fairly consistent across the four Districts; there are several areas of opportunity for SCCMAD to improve Board transparency and financial transparency relative to the other Districts. SCCMAD shared that it intends to post its Board Meeting Calendar and full budget ordinance on its website moving forward.

EMERGENCY PREPAREDNESS

None of the four Cook County Districts currently maintains a comprehensive, written emergency operations plan, although some have continuity plans or action threshold policies that consider emergency situations. Staff from multiple Districts identified the absence of a current state-level vector-borne disease preparedness and outbreak response plan as an area of opportunity, noting that the last update was in 2004 and lacked District input. The 2004 plan focused especially on local public health departments and did not reflect other actors across the mosquito abatement ecosystem as fully. As mosquito-borne disease outbreaks would be likely to cross District boundaries, and a large-scale event would require rapid coordination among all players involved in vector control, including the Districts, CCDPH, CDPH, other LHDs, IDPH, and neighboring jurisdictions. The current patchwork of relationships and individual District practices may struggle to deliver that coordination under pressure.

Organization and Governance Assessment

Because vector-borne disease can occur even in areas with effective vector control programs, especially amid evolving risks, careful planning can preemptively address identified barriers to disease response such as the limited capacity of individual programs, inadequate coordination across jurisdictional boundaries and program service areas, and public communication challenges (Moise et al. 2018). While Districts should consider developing their own emergency plans, a coordinated emergency plan that brings together stakeholders across the ecosystem, whether at the County or State level, could improve cross-sector preparedness.

“It’s probably not a matter of if an emergency happens, but when it’s going to happen ... it can help us avoid the pain of Dallas in 2012, of the Zika outbreak in Miami in 2016. There’s a lot of things we can do to prepare, and we don’t need to reinvent the wheel.”

— Patrick Irwin, NWMAD Assistant Director and Entomologist

PUBLIC ENGAGEMENT AND COMMUNICATIONS

Public outreach is a key component of IMM, which highlights the importance of the participation of informed community members in mosquito abatement practices (American Mosquito Control Association [AMCA] 2021). Proactive public outreach is especially important because public awareness of Districts and their activities is generally low. Stakeholders across the County ecosystem consistently described mosquito control as “invisible” to the public. When programs are functioning effectively and there are not urgent health crises, residents may not notice the preventive work being performed. As a result, awareness of District activities often remains very limited unless mosquito populations become very noticeable, or a public health concern like WNV draws attention.

Certain abatement-related issues are more commonly raised as public concerns. These include mosquito spraying activities, potential health or environmental impacts of mosquito control products, and use of taxpayer funds to support vector control. In interviews with District staff and Trustees, as well as a review of online discourse regarding District activities, adulticide spraying activities, in particular, emerged as a topic of particular public concern. Because spraying is visible to the public, it can generate questions from residents who otherwise might not be familiar with the existence of the Districts. This low baseline awareness, combined with the importance of actions individuals can take to protect against vector-borne disease, makes proactive engagement infrastructure especially important.

“Mosquito Abatement Districts are often viewed as spray companies, which in the case of NSMAD isn’t true; I joined [the Board] to help change that point of view ... this public health mission can be accomplished in an environmentally friendly way.”— NSMAD Trustee Kathryn Calkins

Organization and Governance Assessment

This assessment reviewed each District's public-facing engagement infrastructure across four domains:

- Service Requests and Complaint Intake
- Public Threat Information
- Community Events
- Accessibility and Equity Signals

Service Requests and Complaint Intake

All four Districts offer websites that allow members of the public to contact them. The clarity and accessibility of these intake pathways vary across the Districts, as does the overall digital maturity of each District's website; while still functional, DVMAD's website is less digitally mature. All four Districts share essential information about their operations on their websites, including information about mosquitoes, surveillance, public health concerns, and education about prevention.

For intaking service requests, NWMAD and NSMAD have dedicated complaint/service intake forms; DVMAD and SCCMAD offer general contact forms, through which DVMAD invites service requests. All four Districts accept inquiries by phone. NWMAD offers a "Help Center" on its website with a clearly structured service request system, as well as office contact information. NSMAD also uses clearly defined web-based service request tools and telephone information. It also allows members of the public to request a follow-up, and uses an ArcGIS-powered submission form to integrate with internal data systems. These practices align with customer service best practices by differentiating service requests from general inquiries, and providing categories for common requests. DVMAD has a general contact form and states that service requests can be submitted through this form. SCCMAD has a general contact form, though it generally relies on phone-based service requests.

One way to improve clarity for the public is to offer clearly differentiated intake channels (service request vs. contact us/general inquiry), with multiple contact options available so members of the public can outreach in the way that works best for them. In public materials, none of the Districts shared how quickly they would respond, which is a shared opportunity. A best practice in customer service is to share an estimated response window so the public knows what to expect.

Organization and Governance Assessment

Service Request Intake				
	DVMAD	NSMAD	NWMAD	SCCMAD
Web-based general contact form	Yes	Yes	Yes	Yes
Separate web-based service request form	No (refers to contact form)	Yes	Yes (Help Center)	No
Posted turnaround time for service requests	No	No	No	No
Volume of complaints/ service requests in 2025	15	208	86	154
Complaints per 1,000 residents	0.041	0.533	0.108	0.092
Common reasons for contact	Standing water, nuisance mosquitoes	Nuisance mosquitoes, standing water	Standing water, nuisance mosquitoes	Nuisance mosquitoes, spraying for events

The Districts vary widely both in terms of the volume of service requests they receive and the focus of those service requests. Many factors affect the volume of requests, including how easy it is to file a request, public awareness of the District, and demographic and geographic influences.

SCCMAD receives many more requests for spraying before events than the other Districts, potentially because of past willingness to spray and resulting community expectations. The Districts that don't regularly spray for events tend not to receive these requests. At times, SCCMAD gets requests from multiple people to spray for the same event. This may highlight an opportunity for education around the benefits of a comprehensive IMM approach and when it is appropriate to spray adulticide.

Organization and Governance Assessment

Based on reviews of service requests and interviews with staff from Districts and neighboring municipalities, geographic differences in public views on spraying emerged. Qualitatively, individuals calling from more northern communities tend to be more concerned about the impact of spraying on the environment, beehives, and human health. Residents of more southern communities tend to call to request spraying for events, demonstrating a unique challenge for SCCMAD in demonstrating visible value to taxpayers while following best practices in IMM to protect public health and minimize insecticide resistance and environmental impact. SCCMAD Trustee Jon Currin shared that when SCCMAD staff respond to requests for spraying to address adult mosquitoes at events or individual residences, they will respond to the request but *“also educate on how individuals can reduce risk factors themselves, such as draining areas where mosquito eggs can be laid.”* SCCMAD employees similarly described how they have undertaken a concerted effort to improve education when residents call with service requests, including about solutions that prevent the need for adulticide such as identifying and emptying sources of standing water; staff believe they have seen decreased service calls as a result.

CCDPH also receives service requests through a CCDPH complaint form for unincorporated areas of Cook County that accepts nuisance complaints regarding pests and standing water, among other options, as well as by phone. Of the 685 complaints filed with CCDPH in 2025, only 3 directly mention mosquitoes, and six additional complaints were mosquito-related (standing water, etc.). Complaints clustered from June to September, aligning with peak mosquito season. All but two of these complaints were passed to the corresponding municipality, and the remaining two were handled directly by a CCDPH inspector and Pool Program Manager. Based on a review of complaint data from 2017 through 2025, mosquito-related complaints made up less than 11 complaints per year, peaking in 2019. This shows that members of the public do not typically rely on CCDPH for mosquito-related complaints.

The existence of many different mosquito abatement operators, including the Districts, LHDs and municipal governments, and privately hired vendors, can complicate public understanding of vector control activities and where they should direct concerns.

Organization and Governance Assessment

Public Threat Information

Districts communicate public threat information, especially focusing on WNV surveillance, through their websites and social media channels during the mosquito season. The frequency and clarity of these updates vary significantly across the Districts. The below table describes their activity in the 2025 mosquito season.

Public Threat Information				
	DVMAD	NSMAD	NWMAD	SCCMAD
Provides constituent information on threat level during mosquito season	Yes (via Facebook, weekly reports)	Yes (weekly reports, real-time mosquito surveillance dashboard)	Yes (weekly reports, Personal Protection Index on website)	Yes (weekly reports)
Update frequency	Weekly	Real-time	Daily	Weekly
Social media platforms used	Facebook	Instagram	Facebook, Instagram, LinkedIn	Facebook
Social media posting frequency	2-3x per month	2-3x per month	2-3x per month	Weekly during season, starting in July 2025

Social media is a way to communicate real-time updates and risk information to the community. Maintaining a social media presence can help Districts engage with the public and provide vital public health information. Frequent, consistent posting can educate community members about the operations of the Districts, share information about risk and risk reduction, and help community members understand what the Districts are and how to interact with them.

Community Events

Community outreach and engagement are core components of IMM (AMCA 2021). Districts vary across three distinct dimensions of community event practice: whether they announce events to the public ahead of time, whether they offer a way for community organizations to request District attendance at events, and whether they document the events they attend.

Community Events				
	DVMAD	NSMAD	NWMAD	SCCMAD
Website channel to request event attendance	No	Yes	Yes	No

Announcing events ahead of time is the primary way the public learns about opportunities to engage directly with the Districts, whether at booths, fairs, or private events. All four Districts attend community events, but the extent to which they publicize attendance in advance is unclear from publicly available materials, and this is a gap across the system. These events are attended by staff members, and may also be attended by Board members. Without advance notice, community members who would otherwise attend may not be able to plan to do so.

Requesting event attendance is another way for the public to engage. NSMAD and NWMAD offer community members the ability to request participation in events directly through their websites, which is a meaningful accessibility feature for community organizations, schools, and neighborhood groups that want to invite representatives from their District. DVMAD and SCCMAD do not offer this web-based channel, which means an interested community partner must know who to call or email or use general contact information.

Strengthening attendance and visibility at public events is part of a broader set of public engagement strategies that the Districts could pursue. Multiple Districts noted that they would appreciate Cook County partnership to expand reach when in public education. While there are local considerations for mosquito abatement, the public health messaging and source reduction education is the same, and could be amplified by the County.

Documentation serves as a public record of District activity and enables the Board, oversight bodies, and the public to verify what a District claims about its community engagement. NSMAD and DVMAD document events in their annual reports, and NWMAD publicly lists attendance at 16 or more community events in 2025. SCCMAD discusses events in its newsletter and shows photos on its website.

“At the end of the day, for community engagement, there’s no cheat code ... it’s time, effort, and people, and those are really hard to come by. You need to give it the time that it takes. You need to reach out to people multiple times. You need to give them multiple opportunities to participate ... I recognize that particularly for small units of government that don’t have a lot of staff or resources, those are really hard things to do.” Brian Daly, DES Program Manager

Public Board Meeting Engagement

Board meeting attendance is one specific way for members of the public to engage with their Districts. Board meetings are open to the public. One longtime District staff member said they could count on one hand the number of people that had attended a Board meeting at one time, except when the District was selling an asset. Low Board meeting attendance reflects, at least in part, low awareness that the meetings are happening.

Accessibility and Equity Signals

As publicly funded units of local government, Districts can best serve their communities by ensuring that their websites are equitably accessible to all residents, including those who speak other languages or who may access technology using alternative methods due to disability. The recognized standard for digital accessibility in the public sector is the Web Content Accessibility Guidelines (WCAG) 2.1 at Level AA. In April 2024, the U.S. Department of Justice issued a final rule under Title II of the Americans with Disabilities Act (ADA) establishing WCAG 2.1 Level AA as the accessibility standard for state and local government websites and mobile applications; as units of local government, the Districts fall within Title II’s scope (U.S. Department of Justice 2024). WCAG 2.1 AA is organized around four principles; that content be perceivable, operable, understandable, and robust. This means information must be available to users relying on screen readers, keyboard navigation, and other assistive technologies.

	DVMAD	NSMAD	NWMAD	SCCMAD
Website adheres to WCAG 2.1 Level AA	No (working toward ADA compliance)	No	Yes	No
Written commitment to plain language	No	No	Yes	No
Non-web-based information is provided in other languages	No	Yes (per Resolution 2026-01, with QR codes linking to digital versions)	No	No

NWMAD describes its commitment to accessibility with their website, adhering to WCAG 2.1 Level AA standards. It has a written commitment to plain language writing, an accessibility best practice. It offers a vulnerability disclosure policy and allows the reporting of vulnerabilities, with a commitment to a response within 3 business days. It also presents both an accessibility statement and a complaint form specifically for accessibility-related complaints. The other Districts have no similar written policies for web accessibility. DVMAD shared that its website is currently being updated for Americans with Disabilities Act (ADA) compliance and is nearly complete.

Staff from multiple Districts reported that they are working on or already have developed materials in other languages, although these materials were not readily available on the District websites. NSMAD is the exception as it recently adopted Resolution 2026-01, Recognizing and Embracing Linguistic Diversity in the North Shore Mosquito Abatement District. This resolution directs staff to incorporate language access considerations into all communications. All materials are made available online, where they can be translated using widely available tools. Printed materials include QR codes linking to these digital versions to facilitate translation. In addition, the District's website can be translated into 81 languages. Given the diversity of the District, including a wide range of Asian and European languages and no single predominant second language, NSMAD chose to emphasize broad accessibility rather than focusing on a specific language. This approach could be leveraged by other Districts.

Operations Assessment

Illustration/CDC.gov

Integrated Mosquito Management: A Science-Driven Discipline

The practice of mosquito abatement has evolved significantly since the Districts were initially created nearly a century ago. In the early and mid-20th century, mosquito control was largely considered a public works function focused on draining standing water and, as adulticide technology advanced, spraying adulticide intensively across service areas to reduce adult mosquito populations. The widespread use of dichloro-diphenyl-trichloroethane (DDT) following WWII exemplifies this era, where chemical tools were powerful and inexpensive, with limited understanding of impact on ecology, human health, and mosquito resistance (US EPA 2024).

Several factors led this model to shift fundamentally. First, adulticiding, particularly broad-area spraying, can cause unintended environmental and public health consequences. When inappropriately applied, adulticide can harm non-target insect populations such as pollinators and disrupt local ecosystems, adversely affecting public health. Secondly, it can generate insecticide resistance, which is an increasing concern. When mosquito populations are repeatedly exposed to the same chemical agents, resistant individuals survive and reproduce, gradually undermining the effectiveness of chemical control.

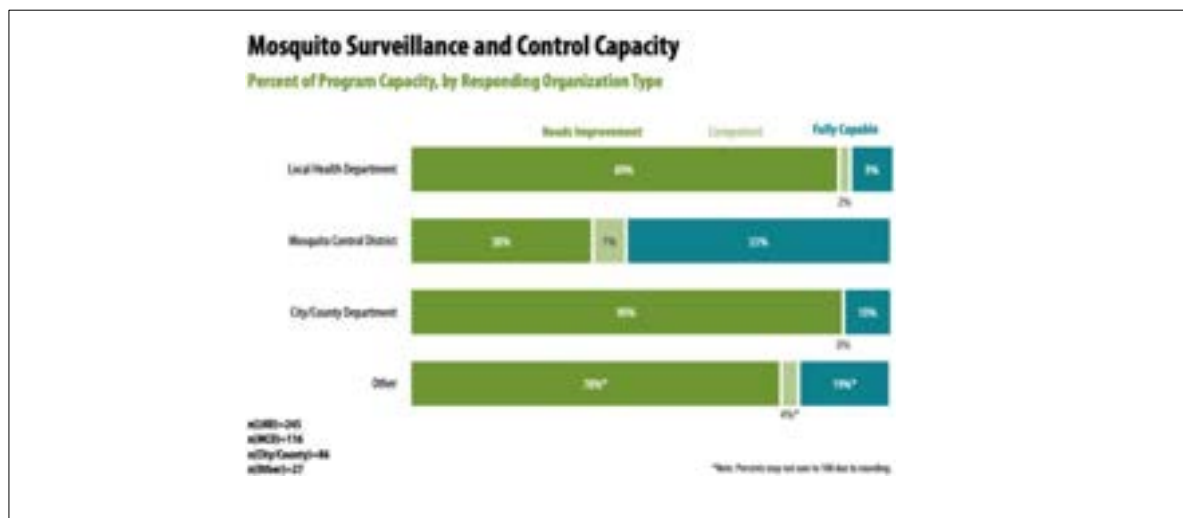
Modern mosquito abatement is now a science-driven discipline grounded in surveillance, a prevention-first approach, and stewardship of the environment. Effective mosquito control programs now follow the IMM model. IMM uses multiple evidence-supported methods to prevent and control both nuisance mosquitoes and disease-carrying mosquitoes that spread viruses like West Nile and dengue fever. The AMCA defines IMM as a combination of methods to control mosquitoes that is based on an understanding of mosquito biology, the mosquito life cycle, and the way mosquitoes spread parasites and viruses. The CDC definition of IMM also integrates ongoing evaluation as a core component, including monitoring effectiveness of control efforts (CDC 2024a).

“Viewing abatement as a simple utility — ‘turn it on, turn it off’ — is an outdated and dangerous framing given the biology and narrow product options.”— NSMAD Executive Director Mark Clifton

This assessment is informed by nationally established best practices, including the AMCA manual *Best Practices for Integrated Mosquito Management* (2021), a CDC-funded resource to help establish and train mosquito abatement programs. This assessment also references best practices and core capabilities identified by the CDC and NACCHO.

Operations Assessment

In 2023, NACCHO conducted an assessment of mosquito control capabilities with over 474 responding vector control programs across the United States. The assessment found substantial opportunities for improvement across all programs, with just 24% of vector control programs identified as fully capable or competent and 76% identified as needing improvement (National Association of County and City Health Officials [NACCHO] 2023). The assessment also found that “[m]osquito control districts are more likely to be able to perform all ten capacities than other responding programs” such as LHDs (NACCHO 2023). This finding provides context for differences in mosquito management and service levels observed between areas served by the Districts and those served by other operators with less targeted focus and resources for vector control.



Source data: NACCHO 2023

Surveillance

Proactive mosquito surveillance is the foundation of IMM (AMCA 2021). Surveillance enables Districts to understand the quantity, species, locations, and disease risk of mosquito populations. Each of these metrics is a key factor in mosquito control decisions. While Districts and other vector control programs monitor different life stages, identifying numbers and species of mosquito larvae and adults provides the most immediate information to identify neighborhoods at risk and activate control operations as necessary (AMCA 2021). Districts additionally test samples of adult mosquitoes for the presence of WNV and increasingly conduct tick surveillance activities as part of core vector control functions. As described below, Districts use different tools and protocols to execute each type of surveillance.

Operations Assessment

Larval Surveillance

All four Districts survey larval populations to identify and monitor locations where mosquito populations exist and lay larvae. This surveillance complements Districts' larvicidal control activities, as detailed in a later section. Larval surveillance is also a key component in identifying insecticide resistance; surveying areas weeks after treatment helps Districts evaluate the efficacy of particular insecticides.

To conduct larval surveillance, all four Districts identify mosquito breeding sites on an ongoing basis and undertake the most common method for sampling larvae, "dipping" to collect larvae from a water source such as a tire or pond. District laboratory staff then assess the species, development stages, and population density of the larvae captured in the sample.

Adult Surveillance

All four Districts conduct adult surveillance to monitor adult mosquitoes, which is necessary to understand local populations and inform control strategies. Districts in suburban Cook County generally use three types of traps to sample adult mosquito populations: light traps, BG-Sentinel traps, and gravid traps. These traps have different mechanisms and are used for different purposes. Districts also use samples collected through gravid traps to conduct virus surveillance.

Identifying Mosquito Species and Quantifying Populations

Vector control programs use samples from light traps and Sentinel traps to assess the species of mosquito present in a given area and to determine the relative concentrations of the mosquito population, known as "abundance." Identifying counts of specific species is essential to the Districts' and other vector control programs' public health mission as different mosquito species carry different diseases. Identifying a "problem" species in terms of disease risk is an important first step to developing effective surveillance strategies as mosquito species have different preferred habitats and behaviors (AMCA 2021). In Cook County, mosquito abatement programs' surveillance strategies are especially focused on quantifying *Culex* mosquitoes because they carry WNV. All Districts identify species using mosquito identification keys, including information on regionally present species. These capabilities are not universal; more than half of vector control programs evaluated in the 2023 NACCHO evaluation lacked competency in performing routine surveillance and species identification.

In addition, Districts report paying careful attention to the emergence of new or invasive species, which can carry diseases novel to the Chicago region. Districts are closely following the recent introduction of *Aedes albopictus* mosquitoes to Cook County, a species which can carry dengue, Chikungunya, and Zika. NWMAD Assistant Director and Entomologist Patrick Irwin noted the local spread of *Aedes albopictus*, stating that it is already showing up in complaint calls as it bites aggressively during the day.

Operations Assessment

“I am concerned with *Aedes albopictus* [Asian tiger mosquito]. It’s the worst of the worst for disease spreading. They should not survive the winters up here, but they have become adapted to it. Every one of our traps has picked them up already.”— Bob Holub, DVMAD District Manager

Vector control programs also track trends in mosquito populations by counting the number of mosquitoes in samples from the same sites throughout the mosquito season. In mosquito management, these metrics are used as an indicator of disease risk; the risk of disease transmission is a function of what portion of mosquitoes are carrying a certain disease and how many mosquitoes exist in a defined area. As described in the Action Thresholds section, Districts use these abundance and viral infection metrics to determine when insecticide treatment or other interventions are appropriate.

Districts in suburban Cook County primarily use light traps, which collect a variety of mosquito species and other insects, for species identification and measuring mosquito abundance. Light traps require an electricity source and therefore may not run every night, in addition to requiring electricity arrangements with property owners hosting the traps. The table below summarizes the number of light traps each District used during the 2025 season. SCCMAD plans to add an additional 6 light traps for the 2026 season.

Light and Sentinel Traps (2025)					
	DVMAD	NSMAD	NWMAD	SCCMAD	CCDPH
Number of light traps	8	9	8	4	0
Nights run per week	7	4	6	4	N/A
Frequency of collection per week	5*	1	5	1	N/A
Number of Sentinel traps	1	0	0*	0	25

*DVMAD has altered their light traps to make individual, unattended collections over the weekend. This allows the District to identify individual daily trap counts for Saturdays and Sundays.

DVMAD and CCDPH additionally use BG-Sentinel traps, which mimic human scents and are traditionally used to monitor mosquito species and abundance; modified versions can also be used for virus surveillance.

Operations Assessment

Testing for WNV

Gravid traps are used to monitor and collect *Culex* mosquitoes (which carry WNV), enabling virus surveillance through testing samples. As gravid mosquitoes (females which have taken a blood meal and are preparing to lay eggs) are most likely to carry WNV, vector control programs target these mosquitoes for disease testing. All four Districts and CCDPH place and maintain gravid traps, which use water to attract adult female *Culex* mosquitoes.

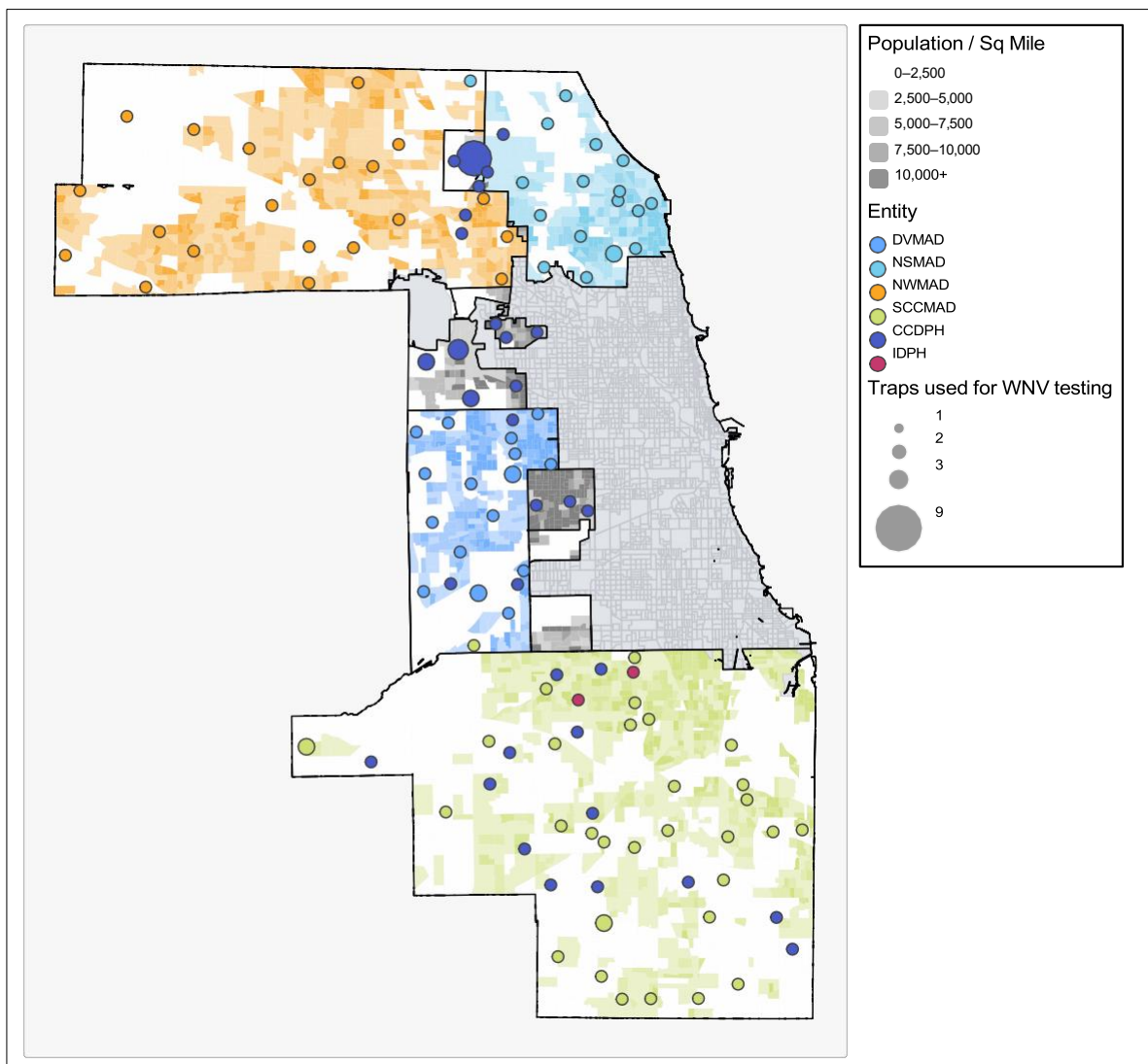
The table below describes gravid trap counts and collection frequency for each of the Districts and for CCDPH over the 2025 mosquito season. DVMAD has the highest trap density, and SCCMAD has the lowest trap density by area. It is important to consider trap placement and District terrain alongside trap density, particularly for gravid traps. Differences in territorial characteristics can influence the feasibility and appropriateness of trap volume and placement. For example, a large portion of SCCMAD and NWMAD's territory is Forest Preserve land where there are no residents and where Districts are much less likely to place traps for reasons detailed below. Several Districts plan to increase their trap counts for the 2026 season. Notably, SCCMAD plans to add 10 more gravid traps in the next season.

Gravid Traps (2025)					
	DVMAD	NSMAD	NWMAD	SCCMAD	CCDPH
Number of gravid traps	18	19	29*	38	45
Frequency of collection per week	5	3	5	2	3
Number of gravid traps, compared to total District area	1 trap per 4.3 sq miles	1 trap per 5.1 sq miles	1 trap per 8.3 sq miles*	1 trap per 8.9 sq miles	Traps are deployed in District and non-District areas
Number of gravid traps, compared to non-Forest Preserve District area	1 trap per 3.9 sq miles	1 trap per 3.3 sq miles	1 trap per 6.7 sq miles	1 trap per 7.8 sq miles	Traps are deployed in District and non-District areas
Number of gravid traps per capita	1 trap per 20,556 people	1 trap per 17,368 people	1 trap per 27,586 people	1 trap per 44,172 people	Traps are deployed in District and non-District areas

* Additional traps are often used for research and resistance testing.

Operations Assessment

All four Districts have maintained relatively consistent gravid trap locations, supporting reliable tracking of mosquito population fluctuations and virus monitoring over time (NACCHO 2021). Although it is important to collect samples from multiple locations, more traps do not necessarily translate to better surveillance. Traps' geographic locations, Districts' collection and testing practices, and Districts' analysis often matter more than the total number of traps. Differences in territorial characteristics can influence the feasibility and appropriateness of trap volume and placement. As *Culex* mosquitoes prefer human population centers, trap placement is recommended in areas with higher population densities to strengthen surveillance (Chakravarti et al. 2026). Districts may be choosing to place additional traps in areas with low population densities that have other risk factors, like flood plains or high historical rates of WNV.



Source data: CCDPH-provided sampling location data

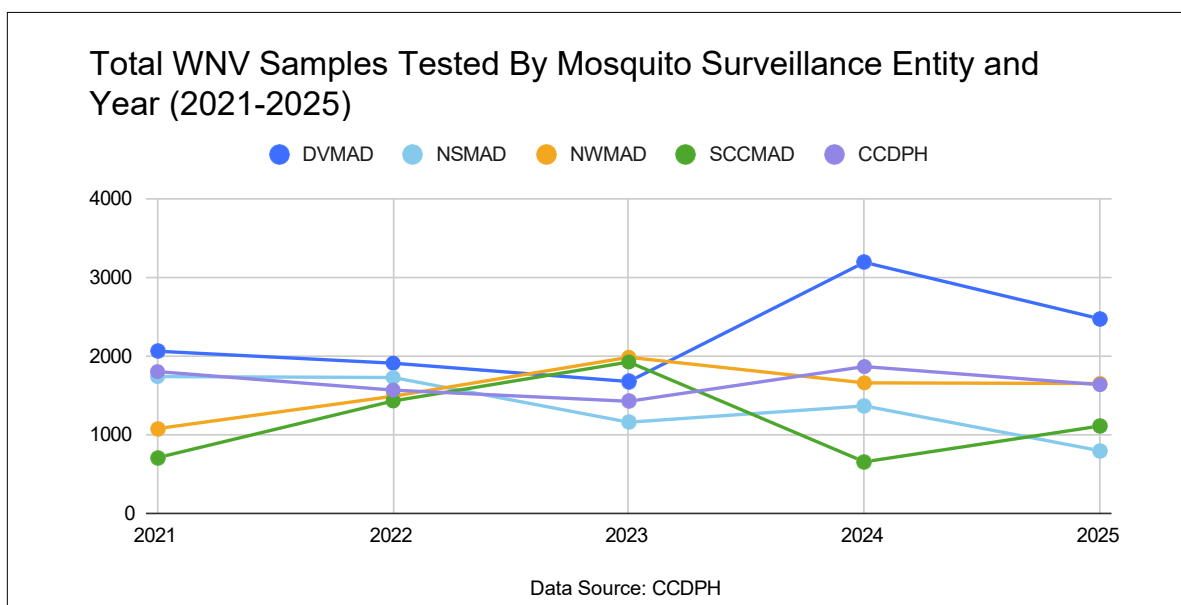
Operations Assessment

Approximate Locations of Traps used for WNV Testing (2025)

The previous map depicts where Districts, CCDPH, and IDPH collected samples from gravid traps for WNV testing in 2025. More darkly shaded areas correspond to areas with higher population density. Districts generally appear to place gravid traps near areas with high population densities. One exception is reflected in the southernmost area of the City of Chicago south of 87th street, which is included within SCCMAD's levied territory; in 2025, SCCMAD had one trap inside the boundaries of the City of Chicago, and the City of Chicago had several gravid traps south of 87th Street within SCCMAD's boundaries.

As depicted in the map, CCDPH collects samples from traps in non-District areas. CCDPH also collected samples from within each District's borders, including 3 locations in DVMAD, 2 locations in NSMAD, 2 locations in NWMAD, and 13 locations in SCCMAD. IDPH collected samples from 2 locations, both within SCCMAD's boundaries.

DVMAD and NWMAD collect samples from their gravid traps 5 times a week, NSMAD and CCDPH collect samples 3 times a week, and SCCMAD collects samples twice a week. DVMAD, NSMAD, and NWMAD test samples within 24 hours, and SCCMAD generally tests samples within 48 hours. Timely testing of samples helps prevent virus degradation, which can compromise the integrity of testing results. After testing, all Districts publicly post summaries of test results, including for WNV, at least weekly. Providing recent surveillance information helps residents make decisions about their level of risk and actions for personal protection. Total samples by entity, depicted below, are a function of sampling frequency and number of gravid and Sentinel traps.

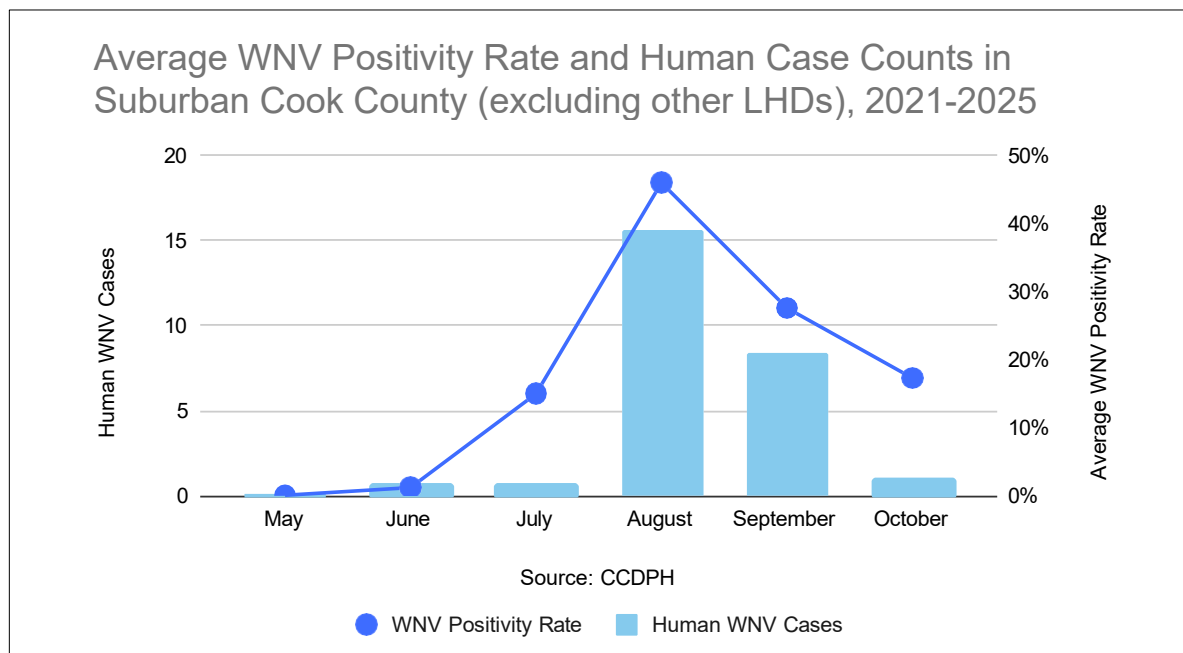


Operations Assessment

There are two widely accepted WNV testing methods: Reverse transcriptase polymerase chain reaction (PCR) and Rapid Analyte Measurement Platform (RAMP), a protein antigen-based assay. PCR testing is considered the gold standard of testing because it is highly sensitive; the per-test cost is also lower, although startup costs for initial equipment and setup can be high relative to RAMP testing. RAMP produces results more quickly but can produce more false positives, requiring confirmation through PCR testing (Burkhalter et al. 2014). DVMAD and NSMAD exclusively use PCR testing, NWMAD currently uses both methods and is transitioning to PCR, and SCCMAD uses RAMP testing. SCCMAD staff reported openness to transitioning to PCR but were concerned by the upfront cost of new equipment.

Human Case Surveillance

Ultimately, the goal of surveillance activities is to mitigate transmission of vector-based diseases, including WNV. For this reason, the count of human WNV cases is both an outcome and an indicator of future WNV transmission risk. For suburban Cook County, trends in WNV positivity rate generally correspond with human WNV case data; spikes in positivity rate are shortly followed by spikes in human cases. All four Districts track human case data and consider locations and trends as part of their surveillance and control strategies. Staff from all four Districts shared appreciation for CCDPH increasing the speed of notification of human cases; human case data is inherently a lagging indicator, but improving recency helps mosquito abatement programs get ahead of problem areas.



Operations Assessment

The previous graph depicts the average number of reported human WNV cases by month in suburban Cook County, excluding jurisdictions served by other LHDs (Evanston, Skokie, Oak Park, and Stickney Township). The line and right axis display the average WNV positivity rate across all Districts. As expected, the human case count lags behind spikes in WNV positivity rates. Note that reported WNV cases, as depicted here, are inherently an undercount of total WNV cases. Most WNV infections are asymptomatic, and many health care providers fail to correctly diagnose even symptomatic WNV.

Human WNV case rates are impacted by access to health care and local health care providers' familiarity with WNV, conditions in neighboring areas, and environmental risk factors such as number of catch basins and residential water use. Based on research in the Chicago metropolitan area, including suburban Cook County, there is likely underreporting of WNV human cases in socioeconomically disadvantaged communities (Chakravarti et al. 2026), which could contribute to inequities in responsive control efforts. For these reasons and because of difficulty determining where an individual contracted WNV, a comparison of human cases across Districts would not provide a clear indicator of effectiveness of abatement services.

Ticks

As previously introduced, ticks have become an increasingly important concern for public health agencies as the incidence of tick-borne diseases has risen significantly nationwide. According to the CDC, these diseases are the fastest-growing vector-borne illnesses in the country, with reported cases more than doubling between 2004 and 2019 (Rosenberg et al. 2018). Lyme disease is the most common tick-borne illness, with over 89,000 cases reported in 2023 and an estimated 476,000 individuals diagnosed and treated annually in the United States (CDC 2024c).

This national trend is reflected in Illinois, where tick populations (particularly blacklegged ticks, also known as deer ticks) have expanded geographically, contributing to an increase in Lyme disease cases. In 2021, 540 cases were reported, with continued transmission spanning multiple counties (IDPH 2023). In Cook County specifically, the incidence rate was 3.3 cases per 100,000 population in 2021 (IDPH 2023). NWMAD Trustee and Public Health Biologist Dr. Justin Harbison noted the spread of Lyme disease across the Midwest: *"You had the Northeast cluster of cases, and then we had the upper Midwest, like Wisconsin and Minnesota. Now we are starting to see Lyme disease come south."*

Districts have also identified the spread of the Lone Star Tick and Asian Longhorned Tick, which carry other diseases. In recognition of these growing risks, the Illinois Mosquito Abatement District Act was amended to authorize Districts to conduct surveillance on ticks, effective January 1, 2025.

Operations Assessment

Three Districts, DVMAD, NSMAD, and NWMAD, conduct regular surveillance of ticks:

- DVMAD continues to develop its tick surveillance program, including protocols. In 2025, they conducted 5 tick drags, collecting mostly deer ticks and some dog ticks.
- NSMAD began conducting tick surveillance in 2019 and started a routine active surveillance program in 2024. NSMAD drags every month of the active tick season, with 13 sentinel sites over a variety of habitats. In 2025, mostly dog ticks and some deer ticks were collected. Residents can report ticks to NSMAD for help identifying the tick, and NSMAD provides online resources on ticks and tick prevention.
- NWMAD also launched its full-scale tick surveillance program in 2024. In 2025, species collected included deer ticks, dog ticks, two rabbit tick nymphs, and one Lone Star Tick nymph. Pathogen testing found that 44% of adult ticks and 19% of nymphs were positive for the bacteria that causes Lyme disease. NWMAD provides online resources about ticks and tick prevention.

SCCMAD does not currently conduct regular tick surveillance. SCCMAD staff reported appreciation for the growing threat posed by ticks but expressed concern related to cost and current bandwidth of mosquito operations.

Tick surveillance is especially important because tick control options are very limited (particularly in terms of effective pesticides), although strategies for personal protection and environmental management exist. Staff at the three Districts conducting regular tick surveillance emphasized the importance of public education regarding steps individuals can take to protect themselves, especially as risks increase.

Because tick surveillance is a relatively new function for Districts, it may be especially valuable to explore knowledge-sharing and possibly resource-sharing. NWMAD Assistant Director and Entomologist Patrick Irwin welcomed County involvement in coordination and public engagement to address the growing threat of ticks: *“In the past 4 years, we [NWMAD] have become the edge of the invasion for deer ticks moving down from Wisconsin and other species moving up from southern Illinois. Half the calls we get are about ticks.”*

MOSQUITO CONTROL

Mosquito control involves comprehensively using surveillance and other data to plan and execute a response. Vector control programs use upstream actions such as source reduction and environmental manipulation as well as insecticides to address larvae and adult mosquito populations, guided by action thresholds and considering risks from insecticide resistance. None of the four Districts currently use biological control methods, such as the use of microbes or predators.

Source Reduction

All four Districts engage in source reduction to eliminate or mitigate sites where mosquitoes may lay eggs, such as emptying containers with standing water in response to complaint calls, encouraging residents to cover rain barrels, and addressing discarded tires where standing water can accumulate. Because larval source reduction prevents breeding, it is often considered the single most effective means of mosquito control. Districts capture data on source reduction activities in different ways, complicating direct comparison.

Tire collection practices vary across the four Districts. DVMAD, NSMAD, and NWMAD participate in the Illinois Environmental Protection Agency's (EPA's) Used Tire Program, which funds a contractor to remove and dispose of tires. In April through June 2023, for example, the three Districts together accounted for roughly 12.18 tons of tires removed, demonstrating the value of used tire collection as a source reduction tactic (Illinois EPA 2023). NSMAD and DVMAD also operate ongoing tire collection programs, including collection of tires from residents and abandoned tires in the field. DVMAD is registered with EPA as a Tire Storage Site, enabling it to exceed the 250-tire storage limit, as well as a licensed waste tire hauler.

SCCMAD does not currently collect tires within its territory, expressing interest and need but noting concerns about reliability of disposal partners. SCCMAD staff internally track the locations of collections of long-abandoned tires, which are sometimes collected by the City of Chicago or other municipal governments. SCCMAD reports a challengingly high volume of discarded tires within the District due to the presence of industrial businesses, abandoned properties, and dumping from other areas of the County.

Action Thresholds

An action threshold is the point at which pest populations or another condition requires intervention (Aryaprema et al. 2023). In IMM, an action threshold can involve specific levels of mosquito abundance or virus circulation at which control measures should be implemented (Aryaprema et al. 2023).

Operations Assessment

Action thresholds help determine both the need for action as well as the timing of control activities to maximize effectiveness while minimizing unnecessary insecticide use, enabling a proactive response before a vector-borne disease spreads further. It is best practice for action thresholds to be established prior to surveillance operations, with collected surveillance data then analyzed against action thresholds to determine the appropriate response (AMCA 2021). Action thresholds should remain flexible enough to adapt to future changes and respond to the different circumstances in which they may be applied, such as different species, locations, or weather conditions (Aryaprema et al. 2023).

All four Districts and CCDPH use the action thresholds concept, but with different degrees of institutionalization and specificity. DVMAD, NSMAD, and NWMAD have written action thresholds for larval control and adult control. SCCMAD has thresholds, though they are not written policies. CCDPH's contractor defers to staff judgment on when to initiate treatment.

The tables below broadly summarize DVMAD, NSMAD, and NWMAD's threshold policies. Additional action thresholds and details exist beyond those listed below, and all three Districts' policies emphasize that institutional experience and professional judgment may be required to navigate unique conditions.

Action Thresholds for Larval Control*	
District	Action Threshold for Insecticide Use
DVMAD	Open water sources: 1+ larvae or 5+ pupae per dip Street and off-road catch basins: Appearance of egg rafts or larvae in a sampling of basins
NSMAD	1-5 larvae per dip in standing water and containers holding water Other factors including weather or environmental conditions, rainfall, temperature and precipitation changes, and inspection of catch basins and other known sources for breeding and larval activity
NWMAD	Aboveground Aquatic Sites: >1 larvae per dip Catch Basins: All treated pre-emptively due to the high probability of <i>Culex</i> production in stormwater systems Treatments are triggered based on site-specific surveillance data.

Operations Assessment

Action Thresholds for Adult Control*	
District	Action Threshold for Insecticide Use
DVMAD	Adult mosquito spraying is not conducted in response to “nuisance” mosquitoes due to low effectiveness For contingency adult mosquito control measures in response to high levels of viruses detected in vector mosquitoes, triggers include positive mosquito pools (including based on Vector Index exceeding 3.0); surrounding area data; dead birds; time of season; equine cases; human cases; and other secondary triggers
NSMAD	WNV positive mosquito pool resulting in an infection rate $\geq 5/1000$ WNV, SLE, EEE, or other vector/mosquito-borne virus positive human, bird, or other animal reported within the District or its border High count or significant increase of public health risk mosquitoes in trap collection (daily average greater than 45 mosquitoes per trap for ≥ 2 weeks) High count or significant increase of nuisance mosquitoes in trap collection (daily average greater than 25 mosquitoes per trap) Other factors, including resident complaints and weather Separate threshold exists for barrier-based pesticide application
NWMAD	Nuisance Mosquitoes: A single New Jersey light trap (NJLT) collecting >35 nuisance mosquitoes for 3 consecutive days WNV Vectors: Vector Index > 1 with an upward trend in vector activity

* Key comparable information is included in the table above; additional details exist in Districts' policies.

Thresholds for larval control in water sources is roughly comparable for the Districts with written action thresholds. Thresholds for adult control differ more substantially, with DVMAD not using nuisance-based triggers while NSMAD and NWMAD do, and NSMAD incorporating many additional threshold factors. All three Districts use thresholds directly or indirectly based on infection rate, with DVMAD and NWMAD relying on a calculated Vector Index. The Vector Index reflects how many infected mosquitoes exist in a given area by multiplying the number of mosquitoes collected by the infection rate (Jones et al. 2011).

“When you have a high abundance and high infection rate you get a high vector index. When vector index is high, you see people getting sick. You can’t control the infection rate of mosquitoes because that’s biology, but you can control their abundance and prevent illness.”

— NSMAD Executive Director Mark Clifton

Operations Assessment

As mentioned previously, SCCMAD does not have a written action threshold policy, but reports using mosquito counts to trigger responses within 24 hours to the area of collection, including 100 mosquitoes as a “yellow” threshold and 200 as a “red” threshold. SCCMAD surveillance also includes calculation of the Vector Index as another indicator of risk.

Insecticide Use

Routine mosquito control uses two general classes of insecticide products: larvicides to control larvae, and adulticides to control adult mosquitoes. In IMM, larvicide and adulticide use “must be based on data” and not solely based on weather or frequency (CDC 2024a). As introduced previously, modern mosquito abatement has shifted from focusing predominantly on adulticide to using larvicide preventively and adulticide as needed. For example, NSMAD reports that 90% of its activities focus on larval control, targeting mosquitoes before they can fly, bite, or breed.

Larvicides exist in different forms which can be tailored to different populations and use cases. All four Districts apply larvicide each year to catch basins (that is, drain systems collecting runoff and stormwater) and non-catch basin sources, such as ponds, ditches, swamps, and other sites with standing water that could produce mosquitoes. Below is a table with treatment information for catch basins; exact treatment schedules can vary within Districts based on need. Districts varied in frequency of larvicide application, which can be influenced by pesticide selection (some pesticides must be reapplied more frequently than others) as well as need for additional larval control based on data. Districts’ frequency of application also depends on local insecticide resistance; many pesticides have shorter effective durations in areas with higher levels of resistance.

2025 Catch Basin Treatment Information			
	Total Catch Basins	Treated	Treatment Information
DVMAD	Over 42,000 in on-road areas and over 7,200 in off-road areas	All	3 rounds for on-road catch basins, 2 rounds for off-road catch basins
NWMAD	80,000	66,267	1-2 rounds per basin
NSMAD	Over 40,000; additional basins being mapped	All	2-3 rounds
SCCMAD	~100,000	90,000	1 round

Operations Assessment

Data-driven use of adulticides is part of IMM. When used correctly, the adulticides available today are less hazardous than DDT and other powerful pesticides used in the past and can serve as a valuable tool in disease prevention and nuisance mitigation. Adulticides are often applied in a less targeted way and can carry greater risks to the environment and human health than larvicides. Adulticides also help with immediate reductions in adult populations but do not decrease the emergence of new adults or address underlying risk factors.

Districts differ in their use of adulticides. Although NSMAD and NWMAD have nuisance-based thresholds for adult mosquito control, in practice, DVMAD, NSMAD, NWMAD, and CCDPH very rarely deploy adulticides; and, when they do, apply it based on threats of vector-borne disease. SCCMAD uses adulticide more frequently in response to nuisance mosquitoes, such as barrier control prior to community events. As previously referenced, multiple stakeholders suggested that communities within SCCMAD expect and request these on-demand adulticide services, and SCCMAD employees report providing increased education regarding options for upstream prevention.

“IMM programs utilize public health pesticides in a targeted manner after surveillance results provide objective evidence that they are required according to established intervention thresholds, and only after the potential public health benefits have been evaluated ... The intervention methods are identified and used in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment while effectively managing mosquito populations.”

— American Mosquito Control Association, *Best Practices for Integrated Mosquito Management* (2021)

In IMM, pesticide product selection is based on species of concern, efficacy, potential for insecticide resistance, cost, specificity to the intended target, and regulatory requirements, as well as environmental compatibility (AMCA 2021). Variation in pesticide selection is therefore expected across Districts due to differences in environmental conditions and risk factors, local mosquito populations, and known insecticide resistance. Using multiple types of pesticide products can reflect product rotation to prevent resistance. Districts' insecticide products are listed in Appendix III: Insecticide Usage by Districts; selection and purchase of a product do not necessarily indicate use.

Larvicide strategies reflect shared practices and some differences, likely driven by local resistance patterns. All Districts list some form of Altosid, which contains an insect growth regulator called methoprene that has low toxicity for humans and pets. SCCMAD, which lists more Altosid products, currently shows the lowest resistance, while NSMAD and NWMAD have the highest detected methoprene resistance levels. To slow further resistance development and in alignment with best practices, NSMAD and NWMAD also use other larvicides with different active ingredients.

All Districts also use surface oils such as BVA 2 and Golden Bear, which are economical and particularly effective in catch basins, which are major sources of *Culex* mosquitoes in Cook County. According to Azelis, a manufacturer of these surface oils, the oils break down within a few days and can be flushed out by rain, requiring reapplication and associated costs. All Districts and CCDPH also use some form of Spinosad-based Natular products, which use a unique mode of action but are more expensive. DVMAD, NSMAD, and NWMAD use the 30-day product and/or extended release tablets; SCCMAD uses Natular SC, which is formulated for use in deep water and industrial lagoons polluted with animal waste. Natular SC has lower upfront costs compared to the 30-day product but may require more frequent application than extended-release.

Adulticide use also varies according to resistance patterns and target species. All the adulticides reported by the Districts contain Type I or Type II pyrethroids or etofenprox. NSMAD and NWMAD, which have the higher rates of detected methoprene resistance, purchase pyriproxyfen (an insect growth regulator) and microbial insecticides, such as SumiLarv, VectoBac, VectoLex, VectoMax, and VectoPrime. These products are sold by the same manufacturer, and purchasing multiple products with different modes of action from a single vendor can be more convenient. DVMAD and SCCMAD also purchase these products.

SCCMAD reports using Cyzmic, a low-cost adulticide containing a Type II pyrethroid, and Permasease, which contains permethrin. SCCMAD may wish to consider conducting adult bioassays with their adulticide products and single active ingredients to determine whether additional adulticides, such as one that is not a Type II pyrethroid, is warranted to delay the emergence of resistance (Breckenridge et al. 2009).

All Districts have standardized protocols to notify the community of upcoming adulticide applications, which supports compliance with the recently effective Illinois Pesticide Application on Rights-of-Way Notification Act (415 ILCS 61). All Districts also maintain awareness of active local beehives to prevent disruption to pollinators. Multiple District staff reported appreciating partnerships with municipalities to help inform the public and welcomed more partnerships and centralized ways to provide notice of pesticide application and related public health messages.

Insecticide Resistance

Insecticide resistance is a critical component of an IMM program. Mosquitoes can become resistant to insecticides when the same product is used over time. Resistance can occur in degrees, with partial or full resistance. Routine monitoring of resistance is best practice to provide baseline data for planning and pesticide selection, detect resistance early to enable timely management, and understand the effectiveness of control strategies and potential causes of any control failures (CDC 2024a).

Operations Assessment

IMM involves mitigating resistance by “using insecticides rationally, monitoring pesticide resistance routinely, rotating to different classes of pesticides when available, and managing insecticide-resistant populations through better coordination among mosquito control programs, insecticide manufacturers, state agencies, and other stakeholders,” (AMCA 2021). Timely resistance testing and response to results is critical because *Culex* populations in the Chicago region’s stormwater catch basins can develop resistance rapidly under repeated larvicide use (Lopez et al. 2025).

All four Districts are conscious of insecticide resistance and actively consider available resistance information in making product selection decisions, as demonstrated by the variety of products listed. All four Districts described making product selection changes in response to insecticide resistance. Additionally, all Districts are familiar with the strategy of rotating products to mitigate resistance and conscientiously deploy rotation and/or stacking approaches.

All four Districts also participate in resistance-related research, with NSMAD frequently leading investigations. In Cook County from 2023—2024, NSMAD detected significant and widespread resistance to methoprene and *Lysinibacillus sphaericus*, which is used as a microbial larvicide. As previously referenced, research has detected methoprene resistance in *Culex* mosquitoes in catch basins, with the problem greater in NSMAD and NWMAD and lower in SCCMAD. NSMAD also serves as a regional training site for insecticide resistance work and participates in research related to testing potential new insecticide products. DVMAD, NSMAD, and NWMAD actively expressed particular concern about the threat of diminishing availability of effective product options due to insecticide resistance. If SCCMAD begins to detect increasing resistance in *Culex* vectors, they may wish to consider alternative larvicide products.

Because of the dynamism of resistance even within a single mosquito season, testing in alignment with CDC-recommended procedures should be conducted at least annually and before a product is first used (AMCA 2021). All four Districts monitor the effectiveness of treatment in the field and conduct some degree of resistance testing in their labs. NSMAD, DVMAD, and NWMAD provided their protocols and schedules that indicate formal resistance testing programs are conducted routinely.

“Our District now has resistance to nearly every available product. There are only 5-6 active ingredients on the market; some level of resistance extends across most of them ... levels of resistance in areas served by commercial contractors are largely unknown due to limited publicly available efficacy data. Reliance on narrow product portfolios without routine local testing may contribute to increased selection pressure and resistance to specific active ingredients.”

— District employee

Beyond reducing unnecessary pesticide applications, Districts face challenges monitoring and managing insecticide resistance due to the fragmentation of other entities conducting mosquito control operations in Cook County and neighboring areas, including municipal governments, commercial contractors, and private groups. While Districts informally share resistance information with one another, CCDPH and the Districts have little visibility into the products, frequency, and intensity of treatment used by other actors. Areas close to District boundaries, and in particular the portion of SCCMAD within the City of Chicago, present higher risks for lack of coordination affecting resistance mitigation strategies.

OTHER CAPABILITIES

Weather Surveillance

Weather is a key driver of mosquito population dynamics because environmental conditions such as temperature, rainfall, and humidity directly influence mosquito development, survival, and disease transmission. Environmental conditions such as precipitation and temperature must be monitored because they influence mosquito populations and disease risk, as exemplified by rapid increases in breeding sites due to standing water after storms or flooding (CDC 2024b). Multiple Districts' annual reports highlight the risks of early-season flooding leading to increases in nuisance mosquito populations, and warmer and drier conditions that favor *Culex* mosquitoes leading to increased WNV transmission risks later in the season.

As weather conditions directly shape both mosquito abundance and the urgency of control efforts, weather monitoring is an important input to the IMM principle that control actions should be data-driven and targeted, rather than routine or indiscriminate (CDC 2024a).

All four Districts engage in localized weather surveillance using their own equipment and external forecasting and reports to understand and anticipate trends in mosquito populations and to inform control strategies. Districts monitor factors including wind, rainfall, temperature, and weather events. Wind surveillance is particularly important to comply with rules around pesticide application (Mount, Biery, and Haile 1996). Weather is directly cited as a factor in the action threshold policies of the three Districts with written protocols.

Mapping

Visualization of the mosquito management environment enables Districts to interpret data to make evidence-based decisions (AMCA 2021). GIS is widely used in mosquito surveillance and control to map and analyze data such as geographic features of District territory, mosquito sources, test results, treatment and control information, and service requests.

Operations Assessment

NACCHO considers mapping, including linking operations data to spatial information for use in GIS, an enhanced activity rather than a baseline activity for mosquito control and abatement; and considers use of GIS software an even more advanced activity (NACCHO 2021).

All four Districts use GIS software to support their programs. NSMAD and NWMAD use FieldSeeker GIS software, which SCCMAD is in the process of implementing as part of its digitization process. NSMAD has a notably advanced implementation of FieldSeeker, with linkage across different data types and integration into dashboards to guide strategy and field operations. DVMAD uses open-source GIS software. Districts vary in their use of tablets in the field with which they can immediately enter data into the GIS software versus maintaining paper records and digitizing it later.

Maps and visualizations maintained through GIS software can also be used to inform the public. For example, NWMAD publishes interactive maps to provide residents with information about upcoming adulticide spraying, and CCDPH's WNV dashboard includes a map of mosquito activity by trap.

Collaboration

To varying degrees, all four Districts interact with each other and with other governmental and nongovernmental partners. Longer tenures enable deeper relationships across certain District staff, who are more likely to share information. All four Districts expressed a willingness to exchange best practices and provide technical advice with one another. Districts also vary in their relationships with municipalities within and neighboring their territory.

The Districts and CCDPH participate in a data sharing arrangement for WNV surveillance data, facilitated by CCDPH. Multiple District staff reported appreciation for coordination and communication with CCDPH's data team. One District staff member expressed a desire for more real-time data exchange on a shared platform in the future.

Stakeholder reflections on current collaboration practices suggest expanded opportunities for collaboration in surveillance and control activities. Multiple District staff also expressed a desire for expanded, timely data and information sharing beyond WNV surveillance. All four Districts recognized the value of sharing information about insecticide use, including product, location, and timing. Mosquito control programs often aim to align insecticide applications to maximize effectiveness. Sharing information about such treatment plans appears to happen in a more ad hoc manner, based more on individual relationships than formal arrangements. One District employee was appreciative of Districts sharing resistance data but wished for quicker and more reciprocal sharing.

Research

Publishing research is not a standard IMM activity, but can provide valuable insights by assessing the effectiveness of mosquito control and informing data-driven strategies. All four Districts have participated in local research, particularly around resistance testing, for which District staff have previously been listed as authors. NSMAD and NWMAD are unique in leading and substantially participating in research with national and international partners. NSMAD and NWMAD entomologists as well as the NWMAD Trustee who is an entomologist have authored numerous studies on topics including mosquito habitats and local mosquito populations, evaluation of mosquito control strategies, and mosquito resistance. Research appears to have material benefits for these Districts' operations, such as expanded surveillance through extra traps, access to specialized equipment, and access to advanced vector-borne disease testing, as well as actionably localized insights into mosquito populations.

NSMAD and NWMAD are also formal collaborators with the Midwest Center of Excellence for Vector-Borne Disease, which was established by the CDC in 2017 to help expand capacity in the U.S. to prevent and respond to emerging vector-borne diseases through applied research and training.

NSMAD provided a letter from the CDC National Center for Emerging and Zoonotic Infectious Diseases formally recognizing their continued collaboration on multiple projects addressing WNV in the United States. The letter acknowledges NSMAD's expertise and operational support for projects related to evaluation of novel control interventions against WNV vectors, modeling of intervention strategies on WNV vector abundance and pool positivity, and evaluation of early season mosquito control efforts. The letter also notes that Chicago's historically high levels of WNV provides an important setting for these real-world evaluations.

NATIONAL BENCHMARKS

A 2017 assessment of mosquito control capabilities in the United States estimated that there are over 1,900 vector control organizations, of which 20% are Mosquito Control Districts (NACCHO 2017). While mosquito control programs vary substantially in structure and local factors, comparative analysis of Districts recognized nationally and internationally for their performance may provide helpful context for advanced capabilities. These organizations include:

- Salt Lake City Mosquito Abatement District, Utah. (SLCMAD)
- Anastasia Mosquito Control District, Florida. (AMCD)
- Sacramento-Yolo Mosquito & Vector Control District, California. (SYMVCD)
- Collier County Mosquito Control District, Florida. (CCMCD)
- The Florida Keys Mosquito Control District, Florida. (FKMCD)

Operations Assessment

Outstanding Mosquito Abatement Districts are distinguished by their expertise and value-added capabilities, including innovation, strong infrastructure and programs, training, and publications. For example, SLCMAD and AMCD function as contract research organizations to assess new chemistries that could lead to new product options. AMCD is also recognized for its Disease Vector Education Center, the Arbovirus Workshop, and extensive hosting of foreign scientists. SYMVCD leverages its more than 2,000 square miles of urban, commercial, and agricultural land to assess products in the field. Each District also works closely with their regionally associated CDC Center of Excellence for Vector-Borne Diseases.

All five benchmark Districts prioritize addressing insecticide resistance and have active insecticide resistance monitoring strategies. For example, SLCMAD rotates larvicides, including products with Spinosad and methoprene, which have different modes of action. AMCD's team of ten scientists routinely conduct resistance testing and manage three insectaries, four laboratories, two greenhouses, three screened enclosures, multiple larval pools, a wind tunnel, and a laser laboratory. They partner with the U.S. Department of Agriculture, the Department of Defense, the CDC, and university partners. SYMVCD works with the CDC Pacific Southwest Center of Excellence for Vector-Borne Diseases to screen mosquitoes for resistance against two commonly used agents and has been a national leader in testing formulated products instead of single, unformulated active ingredients against field-collected mosquitoes. CCMCD responded to widespread resistance against pyrethroids by pioneering the use of the sterile insect technique. FKMCD has integrated novel, non-chemical methods, including Oxitec genetically modified mosquitoes and Wolbachia-infected males, to manage invasive *Aedes aegypti* resistant to pyrethroid insecticides.

The table below provides an overview of benchmark Districts' size, budget and population.

District	Square Miles	Annual Budget	Population
AMCD	609 (2025)	\$19,093,413 (2025)	Over 350,000 (2025)
CCMCD	730 (2025)	\$59,478,122 (2025)	Roughly 400,000 (2024)
FKMCD	124 (2025)	\$32,443,240 (2025)	81,708 (2022)
SLCMAD	111 (2025)	\$11,974,019 (2025)	186,440 (2021)
SYMVCD	2,013 (2025)	\$22,592,564 (2025)	1.84 million (2025)

Operations Assessment

All but one of the benchmark Districts has a higher budget per square mile than the four suburban Cook County Districts, and all five benchmark Districts spend more per capita than the Cook County Districts. These comparisons are qualified by the lack of consistent population information available and Districts often not spending all of their budgeted amounts.

These benchmark Districts also differ in level of transparency; some do not appear to publish the same level of information as the four Districts in suburban Cook County, which complicates comparisons of operational indicators. A high-level review of available action threshold information for the benchmark Districts suggests variation in action threshold policies, with more frequent inclusion of mosquito landing rate counts. Because benchmark Districts use different types of traps than the Cook County Districts due to different mosquito species and surveillance purposes, they are less directly comparable. All five benchmark Districts have a presence on multiple social media channels.

The benchmark Districts, which span three states, are also overseen by Boards of Commissioners or Trustees but with some differences in governance. For the Florida-based Districts, the District Commissioners are elected. For SLCMAD and SYMVCD, Trustees are appointed by each incorporated city and county in the territory. For Salt Lake City Mosquito Abatement District (SLCMAD), Trustees are appointed by the Salt Lake City Council. All of the benchmark District Boards have five authorized members except for SYMVCD, which has 13. All Board seats currently appear to be filled across the benchmark Districts.

Broadly, four common themes across the benchmark Districts appear to support outstanding performance, regardless of size or revenue. Districts need not be nationally recognized leaders to run capable and effective mosquito abatement programs.

- **A dedicated Board.** An engaged and committed Board of Trustees or Commissioners providing strategic guidance and an appropriate level of oversight. Many Cook County District Trustees meet this description, although lengthy Board vacancies and lack of accountability in cases of poor performance can undermine governance.
- **Alignment with IMM.** Strategic allocation of resources and organizational buy-in toward an evidence-based IMM approach. All four Cook County Districts engage in core mosquito management activities; in several domains, one or two Districts have opportunities to better integrate evidence-driven practices to combat emerging threats.
- **A scientific champion.** At least one dedicated entomologist or biologist who is empowered to strengthen programs and help communicate with the public. All Cook County Districts have an entomologist or biologist; two have dedicated entomologists who provide additional scientific and research capabilities.
- **Continuous improvement.** An ongoing process of reviewing data to assess performance and plan for improvement, modernization, and response to emerging threats. Cook County Districts are engaging in strategic planning and deliberate improvements and modernization, with some more aggressive than others in preparing for emerging threats.

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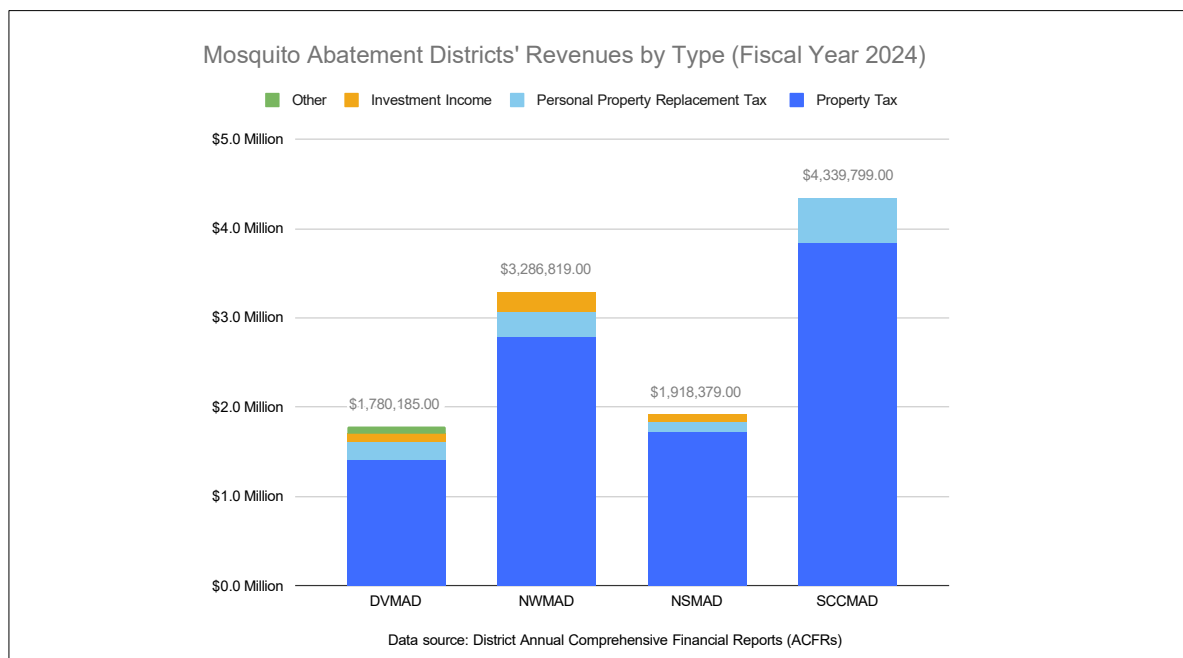
Illustration/CDC.gov

DISTRICT BUDGETING AND FINANCES

This section assesses Districts' revenues, assets, liabilities, budget process, financial practices and controls, and expenditures.

Revenues

Mosquito Abatement Districts primarily raise revenue through annual property tax levies, as they are authorized to do under the Mosquito Abatement District Act (70 ILCS 1005). Districts also receive revenue through Illinois's Personal Property Replacement Tax and investment income.



Property Tax Levies

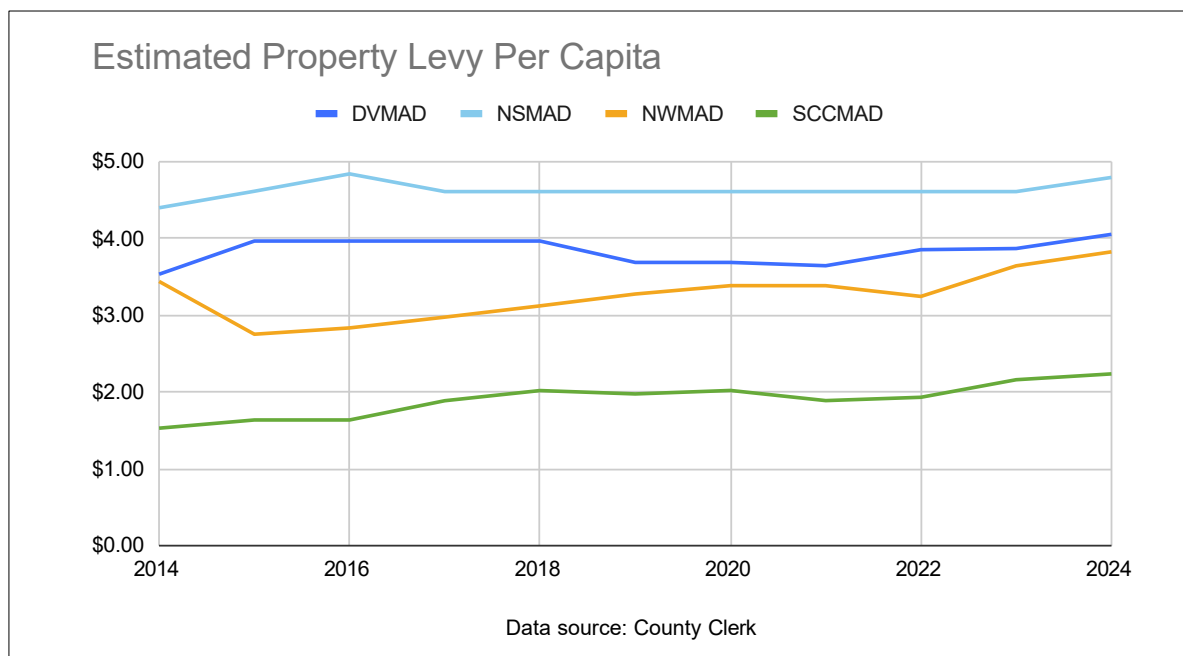
At the end of the calendar year, each District requests a specific property tax levy based on its expected expenditures for the next fiscal year. Districts file this levy ordinance with the Cook County Clerk, who will ultimately authorize a specific property tax extension. This tax extension is the requested levy, possibly adjusted for compliance with relevant state statutes. The District's property tax revenue consists of the portion of property taxes that the County actually collects and passes through to the District. If collection rates are lower than 100%, Districts receive less than their property tax extension.

Illinois Mosquito Abatement Districts' absolute property levies are capped by the Illinois Mosquito Control Act, but all Districts in Cook County are well below the statutory limit.

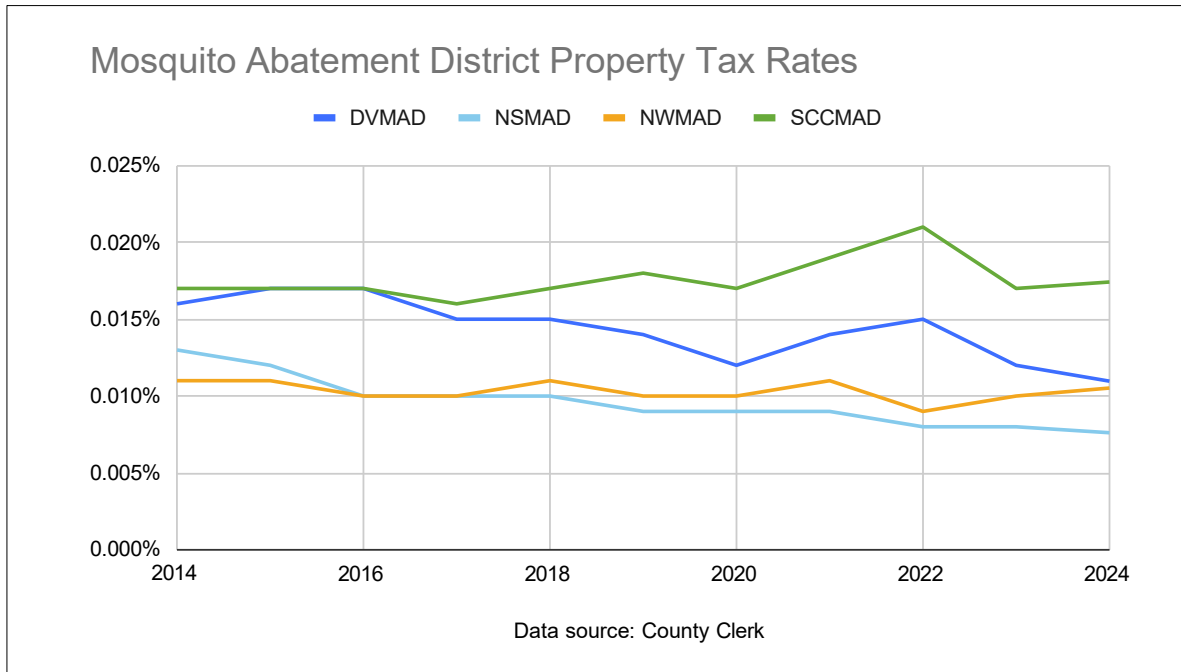
Finances and Fiscal Management Assessment

At the same time, the annual growth in District levies is limited by another statute: the Property Tax Extension Limitation Law, or PTELL (Illinois Compiled Statutes 35 ILCS 200). Because PTELL caps the growth of property tax extensions, a District can only request an annual property levy that is slightly above the level they requested in the previous year. This creates pressure on Districts to continuously grow their annual property levies; if a District were to significantly reduce their levy in one year, the District's maximum allowable levy for all subsequent years would also shrink substantially.

Under Illinois's property tax system, Districts and other local governments request a property tax levy, which is the total amount of revenue the District is requesting. The Cook County Clerk calculates the specific property tax rates Districts require to raise the total amount of property tax revenue the Districts are requesting. These calculated rates are a function of the requested levy and of the total property value in a given area. The following charts depict the property tax rates, and the property levies per capita for each District. Because property values vary substantially by District, levies and rates do not correspond. For instance, NSMAD has higher average property value than SCCMAD, so although NSMAD has a higher per capita property levy than SCCMAD, SCCMAD has a higher tax rate (Cook County Clerk 2026).



Finances and Fiscal Management Assessment



Personal Property Replacement Tax

Illinois discontinued taxes on personal property in 1979. In the intervening years, the state has instead imposed a tax on corporations, utilities, partnerships, and trusts; and shared that revenue with local government units. These taxes comprise a small but non-trivial portion of the Districts' revenues.

Reserves and Investment Income

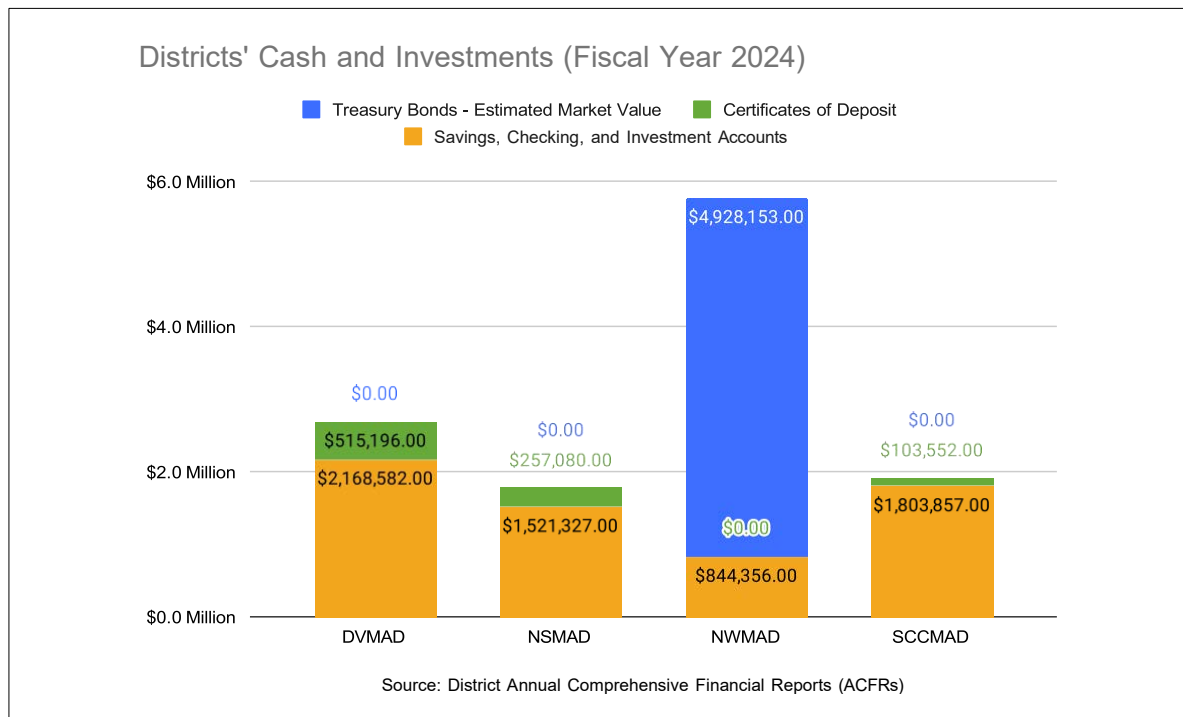
As reflected in Districts' most recent audits, all four Districts hold significant reserves. NWMAD additionally holds the proceeds from a bond sale, which the District plans to spend on its Wheeling improvement project (NWMAD Rolling 5-Year Capital Improvement Plan 2026). Because the Districts each hold millions in reserves, there is opportunity to earn significant investment income.

As part of the Districts' respective investment plans, SCCMAD, NSMAD, and DVMAD purchase certificates of deposits, and NWMAD purchases Treasury bonds. According to District leadership, NSMAD holds additional reserves in both a money market account and in The Illinois Funds, a state-run investment pool for local governments (Illinois State Treasurer 2026). DVMAD also holds some of its reserves in a money market account. SCCMAD is the only District which does not appear to currently invest in a money market or high-yield savings account (Illinois State Comptroller 2026a, 23).

Finances and Fiscal Management Assessment

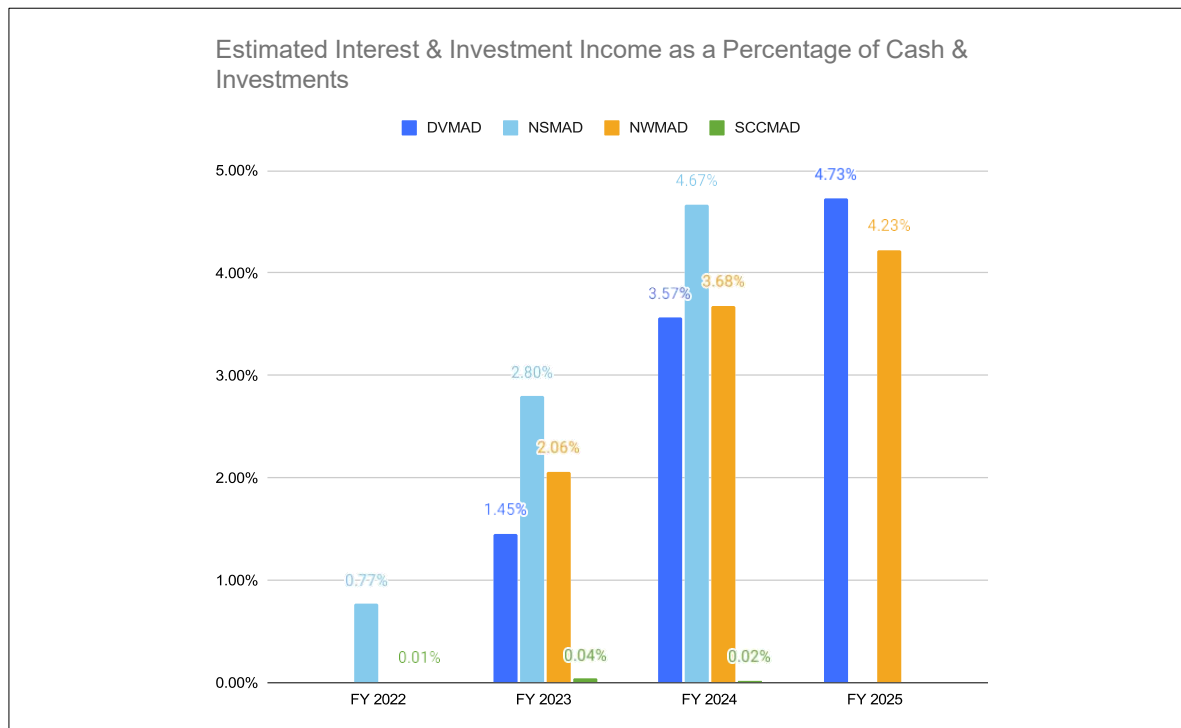
As required by law, all Districts with bank reserves above the Federal Deposit Insurance Corporation (FDIC) insurance limit of \$250,000 per account have ensured that their reserves above the insurance limit are collateralized by the holding financial institution (Illinois Compiled Statutes 30 ILCS 225). The Illinois Funds are not FDIC-insured, but Fitch rates the fund AAmmf, the highest investment-grade credit rating for a government-managed money market fund (Illinois State Treasurer 2026).

The graph below illustrates the composition of Districts' cash reserves and investments. Savings, Checking, and Investment Accounts includes traditional bank accounts, money market accounts, and Illinois Funds investments.



Investment returns vary greatly year-to-year and even month-to-month, so investment income cannot be directly compared across Districts with different fiscal years. Still, as demonstrated in the graph below, SCCMAD's investment returns are two orders of magnitude below the returns of the other Districts. By holding most of its reserves in a low-interest checking account, the District is likely forgoing between \$40,000 and \$100,000 in annual investment income. SCCMAD indicates it intends to utilize The Illinois Funds starting this budget cycle.

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Miscellaneous Income

Occasionally, Districts may receive other forms of income. These miscellaneous income sources may include: tax increment finance (TIF) District surpluses, sale of assets – usually used vehicles, or rebates from suppliers. From an analysis of District ACFRs over the last three fiscal years, these miscellaneous sources have comprised under five percent of Districts' total revenues on average.

Grants

IDPH issues two relevant grants to qualified LHDs: Vector Control and Surveillance Grants and Tick Surveillance Grants. Only Local Health Departments (LHDs), and not Mosquito Abatement Districts, are eligible for state grant funding through these programs; but LHDs may support District activities with the funding. Five LHDs in suburban Cook County receive these grants directly from IDPH: CCDPH, City of Evanston, Stickney Public Health District, Village of Oak Park, and Village of Skokie. Three of these LHDs – CCDPH, City of Evanston, and Village of Oak Park – additionally receive Tick Surveillance Awards of \$8,000 each from IDPH. LHDs are also eligible for reimbursement as a subcontractor from CCDPH's Vector Control and Surveillance Award, though not every LHD claims this available amount every year.

Finances and Fiscal Management Assessment

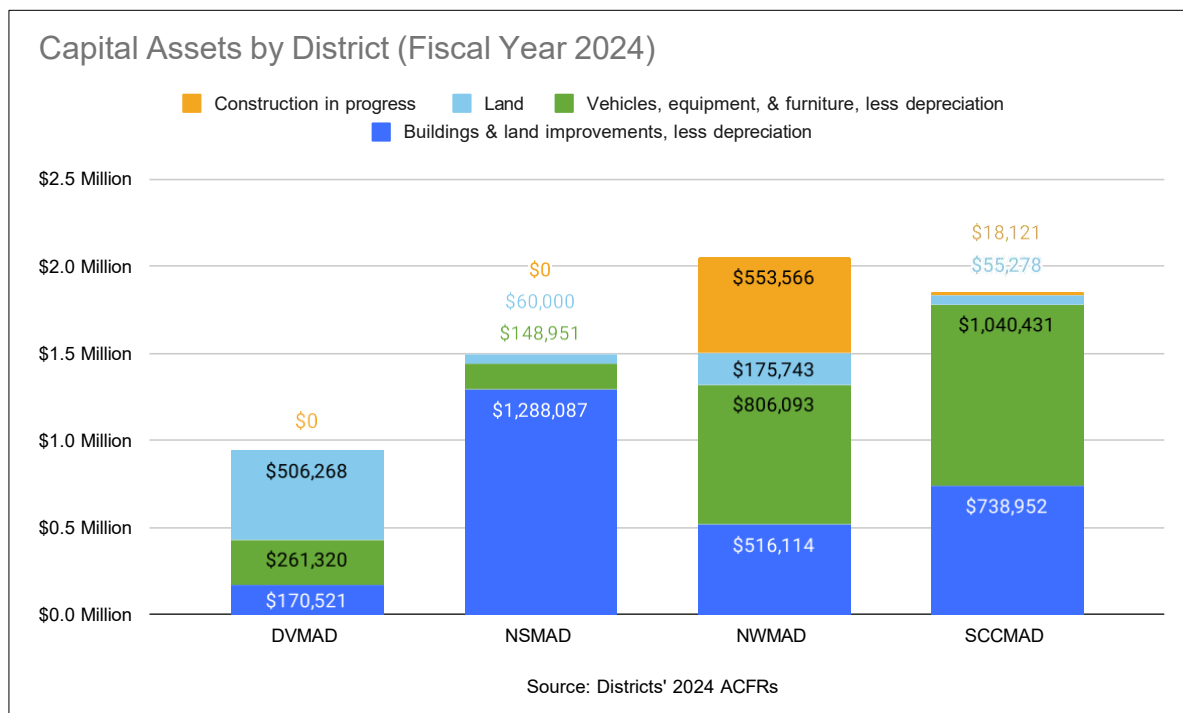
	IDPH Vector Control and Surveillance Award (FY25-26)	Cook County West Nile Virus Grant, subcontract from CCDPH Vector Control and Surveillance Award (FY25-26)	IDPH Tick Surveillance Award (FY25-26)	Total Available Vector Control and Surveillance Grant Funds (FY25-26)	Territory Overlap with Districts
CCDPH	\$353,733	N/A	\$8,000	\$361,733, minus \$42,151 passed to LHDs	N/A
City of Evanston	\$12,000	\$14,270	\$8,000	\$34,270	Fully contained within NSMAD
Stickney Public Health District	\$12,000	\$7,221	—	\$19,221	Does not overlap any District
Village of Oak Park	\$12,000	\$9,187	\$8,000	\$29,187	Fully contained within DVMAD
Village of Skokie	\$12,000	\$11,473	—	\$23,473	Fully contained within NSMAD

NSMAD leadership verbally shared that in some previous years, Skokie and Evanston used their grant funding to support equipment or materials for use by NSMAD. According to municipal budgets and conversations with municipal employees, Oak Park, Skokie, and Evanston have recently used their IDPH Vector Control and Surveillance Award funding to support public awareness, source reduction, vector surveillance, and/or rodent control – all of which supplement the mosquito control and surveillance conducted by Districts overlapping their municipal boundaries (Skokie 2025, 281; Oak Park 2025, 231; Evanston 2025, 8). According to municipal employees, Oak Park specifically funds a position for an Environmental Health intern, who conducts preventative efforts and supports public education around vector control. LHDs typically use their West Nile virus Grant funds from CCDPH to support larviciding (Oak Park 2025, 233). LHDs receiving IDPH Tick Surveillance grants may partner with an overlapping District to support monitoring for tick-borne diseases, as Evanston already has (Evanston 2025, 8).

Finances and Fiscal Management Assessment

Assets

In addition to cash and investments, which are described above, Districts hold substantial capital assets. These capital assets include land, buildings, vehicles, and other equipment. Capital asset valuations are displayed below. Note that government accounting standards require that Districts report the historical purchase value of land, which may understate its present value. Additionally, asset depreciation schedules may reduce reported asset values below true market values. Because the year of land and other asset purchases significantly affect these asset valuations, assets cannot be directly compared across Districts (GASB 1999).



Major Liabilities

Bond Issuances

Per the Illinois General Obligation Bond Act (30 ILCS 330), Districts in Illinois can issue bonds as long as their total outstanding general obligation debt does not exceed 2.85% of total equalized assessed value of real estate in the District (Illinois Compiled Statutes 50 ILCS 405; Illinois Compiled Statutes 30 ILCS 330). Districts can pass bond measures through “backdoor referendums” which do not require a vote unless a subset of registered voters petition for a referendum (Illinois Compiled Statutes 30 ILCS 350/15). To date, only one District has issued bonds. In 2025, Northwest Mosquito Abatement District issued \$6.75 million of general obligation bonds, which will fund a new facility in Wheeling (Irwin, Migacz, and Miceli 2025).

Finances and Fiscal Management Assessment

Pension Plans

All four of the Districts have defined-benefit pension plans for their employees. DVMAD, NSMAD, and NWMAD have been members of the Illinois Municipal Retirement Fund (IMRF) for the last several years. SCCMAD transitioned its independent pension fund to IMRF in the last year. All four Districts were funded above 90% of their estimated pension liability in their 2024 audits. South Cook County's independent pension fund was funded at 180% as of their 2024 audit, which will ease the District's transition to the more generous IMRF plan.

Budget Process

Mosquito Abatement Districts in Illinois must follow budget and financial practices as outlined in the Illinois Municipal Budget Law (50 ILCS 330). This statute outlines requirements around public notification, budget practices, and related practices.

Fiscal Years and Budget Cycle

The four Districts operate on three different fiscal year calendars. Some Districts align their fiscal years with the typical mosquito season, which starts roughly in April or May. A District's fiscal year determines when a District's budget ordinance and annual audit is due to the Illinois Comptroller. Note that IDPH and CCDPH's fiscal years also differ from each other and from most Districts.

Entity	Fiscal Year
DVMAD	May 1 - April 30
NSMAD	Jan 1 - Dec 31
NWMAD	May 1 - April 30
SCCMAD	July 1 - June 30
CCDPH	Dec 1 - Nov 30
IDPH	July 1 - June 30

Finances and Fiscal Management Assessment

Budget and Appropriation Ordinance Requirements

The Illinois Municipal Budget Law (Illinois Compiled Statutes 50 ILCS 330) requires governments including Mosquito Abatement Districts to:

- Plan and hold a public budget hearing.
- Publish notice of said hearing at least 30 days in advance of the hearing.
- Make a draft of the budget and appropriation ordinance available for public inspection at least 30 days prior to approving the budget.
- Complete a combined budget and appropriations ordinance within the first quarter of the fiscal year.

Districts must pass a budget that is balanced on a cash basis, which means that budgeted expenditures cannot exceed the sum of a District's revenues and cash on hand. Districts must separately file their levy ordinance with the County Clerk by the last Tuesday in December, which falls at different points in each District's fiscal year (Illinois Compiled Statutes 35 ILCS 200/18-60). The Districts' budget ordinances must be adopted before they file their levy ordinances. For the last three years, DVMAD has passed its budgets after the start of the District's fiscal year but within the first quarter. SCCMAD similarly passed its budget after the start of its fiscal year, and in one case – fiscal year 2025 – the District passed its budget after the end of the first quarter. Although the governing statute allows a one-quarter buffer, it is considered a best practice to establish a budget before the start of the fiscal year (National Advisory Council on State and Local Budgeting 1998, 61). SCCMAD leadership shared that this is a key area of focus for the District moving forward.

“We have three very intentional areas of focus for improvements moving forward: communications, business operations including financial management, and professional development.”

— Jeffery Cohn, SCCMAD Interim Executive Director

	DVMAD	NSMAD	NWMAD	SCCMAD
FY 2024	17 days AFTER start of FY	19 days BEFORE the start of FY	26 days BEFORE the start of FY	73 days AFTER start of FY
FY 2025	15 days AFTER start of FY	20 days BEFORE the start of FY	28 days BEFORE the start of FY	106 days AFTER start of FY
FY 2026	14 days AFTER start of FY	14 days BEFORE the start of FY	29 days BEFORE the start of FY	13 days AFTER start of FY

Finances and Fiscal Management Assessment

Financial Practices and Controls

Audit Requirements

Local units of government in Illinois with more than \$850,000 in revenues, including all four Districts, are required by statute to submit an independent audit to the Illinois Comptroller within 180 days of the end of the fiscal year (Illinois Compiled Statutes 50 ILCS 310). DVMAD, NSMAD, and NWMAD are currently up to date on their audits. SCCMAD completed its Fiscal Year 2024 audit several months after its original deadline. SCCMAD's fiscal year 2025 audit was originally due in December 2025, but the District received an extension through late February 2026. As of early May 2026, the District had not submitted its 2025 audit to the Illinois Comptroller (Illinois State Comptroller 2026b). SCCMAD recently upgraded to new digital expense tracking software and expects that this upgrade will increase the speed of future audits.

All four Districts received unqualified audit opinions on their most recent audits, which indicate that the Districts currently comply with financial reporting standards (Illinois State Comptroller 2026a; Illinois State Comptroller 2026c; Illinois State Comptroller 2026d; Illinois State Comptroller 2026e). However, it is important to note that audits are agnostic toward high-level financial practices and budgetary prudence. In other words, a “clean” audit does not necessarily signal strong budgetary practices (American Institute of Certified Public Accountants 2012).

Accounting and Expense Authorization

All four Districts use digital expense tracking software. SCCMAD recently transitioned to a new digital expense tracking software, which the District anticipates will hasten the timeline for future audits.

Pursuant to 50 ILCS 330, all District Boards must vote to approve and adopt District budgets. Every District reported that they had a defined process for sign off on large purchases – through Trustees and/or District leadership. All four Districts verbally confirmed that they have procurement policies in place. NWMAD's written policy establishes a competitive bidding requirement for purchases above \$25,000, outlines limited exceptions to competitive bidding, and spells out the Board's role in approving bids and change orders. NSMAD's written policy outlines purchasing criteria, quote requirements, and the discretionary purchase cap.

Debt Policy and Capital Improvements Plan

NWMAD is currently the only District with bonded debt. Though not statutorily required, the District has followed best practices in creating both a Debt Management Policy and a Five-Year Capital Improvement Plan (GFOA 2015).

Finances and Fiscal Management Assessment

Capital Fund

The Illinois Mosquito Control Act permits Districts to create and allocate funds to a designated Capital Fund, as distinguished from a District's corporate General Fund (70 Ill. Comp. Stat. 1005/9.1). Such a fund allows governmental entities to segregate monies designated for day-to-day operational expenses from long-term capital investments. While this is not statutorily required, separating capital budgets and actual expenses in their own funds is often considered best practice for financial management and control (GASB 2009; GFOA 2022). Three of the Districts – DVMAD, NSMAD, and NWMAD – have separate capital funds, while SCCMAD commingles capital and operating expenses in the District's General Fund.

Expenditures

Expenditures by District

The magnitude of Districts' budgets and expenditures vary and, in fiscal year 2024, ranged from NSMAD's \$1.8 million budget to SCCMAD's \$4.5 million budget. The table below presents each District's budgeted and actual operating (non-capital) expenditures normalized by both population and by square mileage. Note that neither of these normalization methods is exact; although population size and geographic area are important drivers of District budgets, budgets are also a function of the unique geographies of each District, specific mosquito populations, insecticide resistance levels, and other environmental factors.

	DVMAD	NSMAD	NWMAD	SCCMAD
Operating Budget (FY24)	\$2,709,312	\$1,833,574	\$3,423,162	\$4,457,744
Actual Operating Expenditures (FY24)	\$1,747,092	\$1,833,992	\$2,583,796	\$3,581,532
Population (2024)	370,000	330,000	800,000	1,678,533
Operating Budget per Capita	\$7.32	\$5.56	\$4.28	\$2.66
Actual Operating Expenditures per Capita	\$4.72	\$5.56	\$3.23	\$2.13
Square Mileage (2024)	77	70	242	340
Operating Budget per Square Mile	\$35,186	\$26,194	\$14,145	\$13,111
Operating Expenditures per Square Mile	\$22,689.51	\$26,199.89	\$10,676.84	\$10,533.92

Finances and Fiscal Management Assessment

Districts' operating expenditures include:

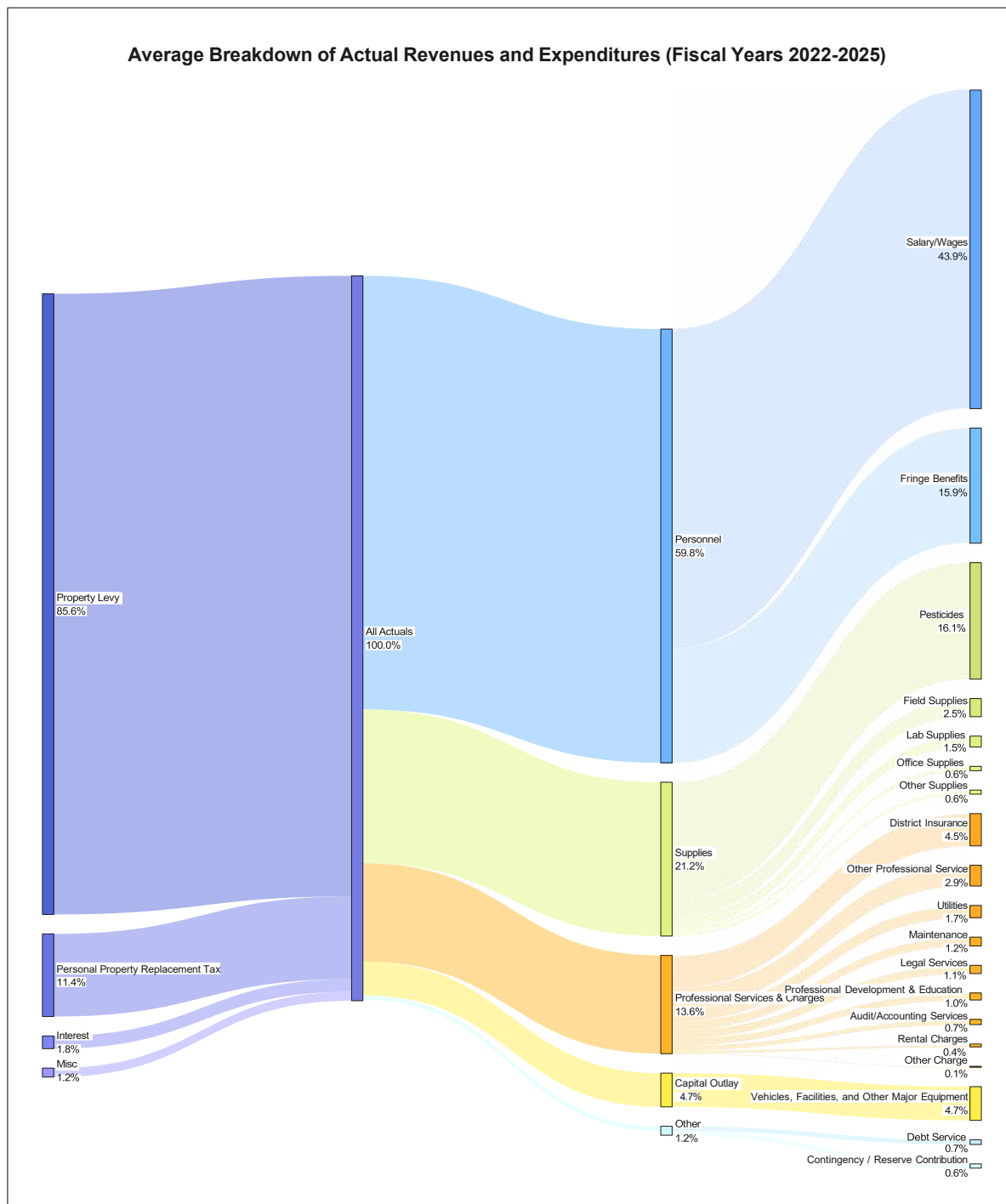
1. Personnel, including salary/wages and employee benefits;
2. Professional services and charges, including accounting and audit services, legal services, District insurance (including property insurance, vehicle insurance, and general liability insurance), utilities, professional development, IT services, and other charges;
3. Supplies, including insecticides, office supplies, laboratory supplies, field supplies, and other supplies; and
4. Debt service (NWMAD only).

The Districts may also budget "contingency" line items as cushions for unexpected expenses.

In addition to operating expenditures, Districts spend resources on capital improvements, repair, and replacement. According to financial data that Districts shared, Districts have slightly different definitions of what constitutes a capital expense or an operating expense. In general, capital expenses may include replacement and repair of vehicles, other major equipment, and facilities. Note that in the following graphs all major equipment purchases are categorized as capital outlay, even if the District did not classify those purchases as such. Because capital expenditures are often large purchases, such as vehicles or facility repairs, capital outlay can vary greatly from year to year.

Finances and Fiscal Management Assessment

The following chart displays the average composition of Districts' revenues and expenditures for the last four fiscal years, according to available District ACFRs for fiscal years 2022 to 2025.

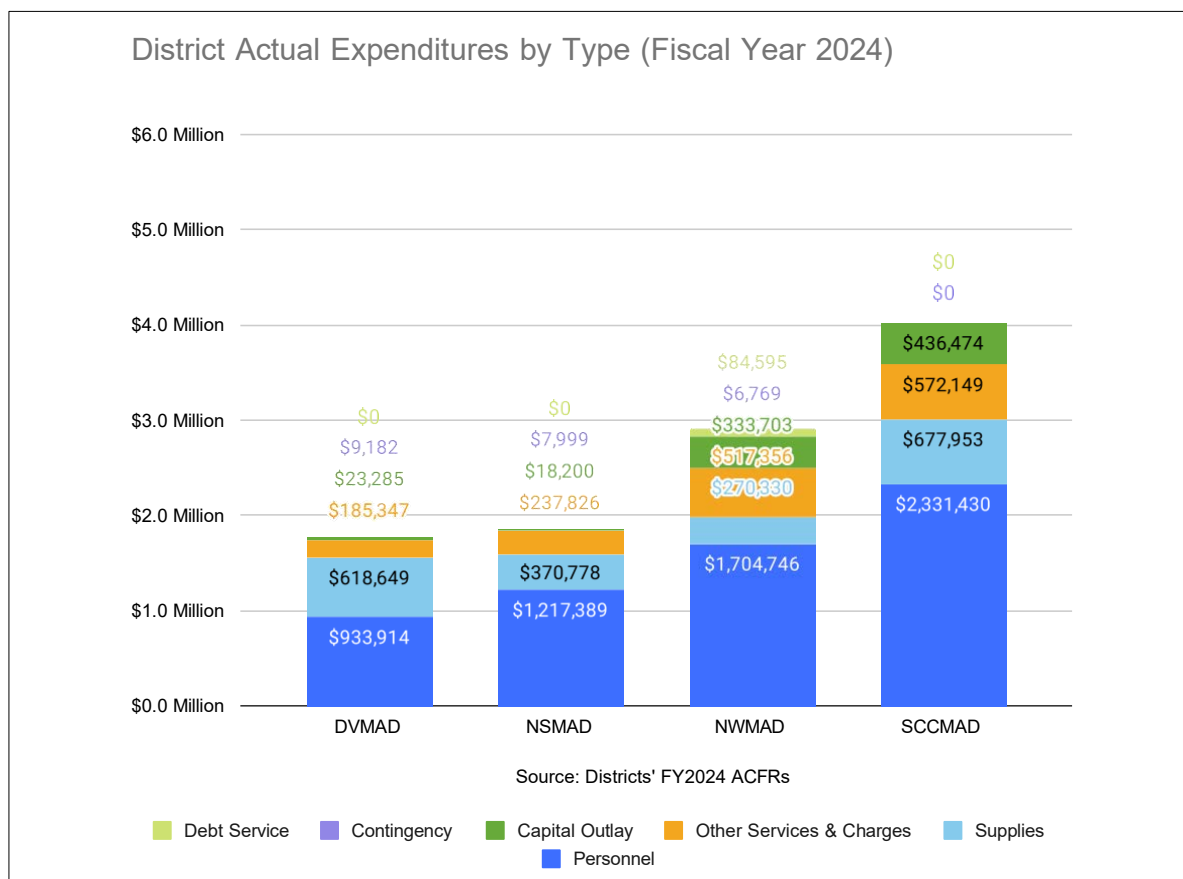


Finances and Fiscal Management Assessment

The largest category of expenses for all Districts is personnel, which comprises 52 to 65% of Districts' total actual expenditures. Districts spend about 10-18% of their total expenditures on professional services, and 9-35% of their budgets on supplies.

Districts' largest commodity or supply purchases are insecticides. Districts purchase these mosquito control products at unit prices determined by state master contracts. The Illinois Governmental Joint Purchasing Act allows local governments, like the Districts, to take advantage of prices negotiated by the State's Procurement Office. Districts purchase different quantities of insecticides and different combinations of products, but the available unit prices are identical ("BidBuy" 2026). All local government units have access to these negotiated rates, but private contractors do not have direct access to these rates.

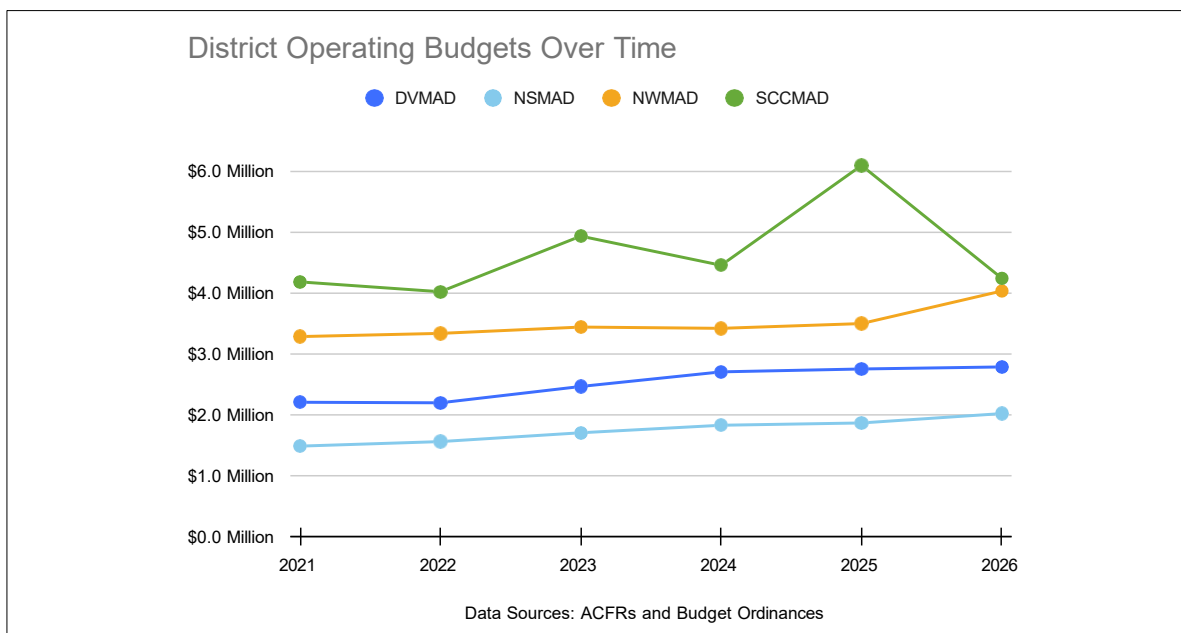
Districts' budgets and actual expenditures have similar compositions. For all Districts, personnel is the largest expenditure type. Within personnel, Districts pay for employee salaries and wages, and they also pay for "fringe benefits." These fringe benefits include medical insurance, employer payroll taxes for Medicare and Social Security, pension contributions, unemployment insurance, workers' compensation, and any other employee benefits.



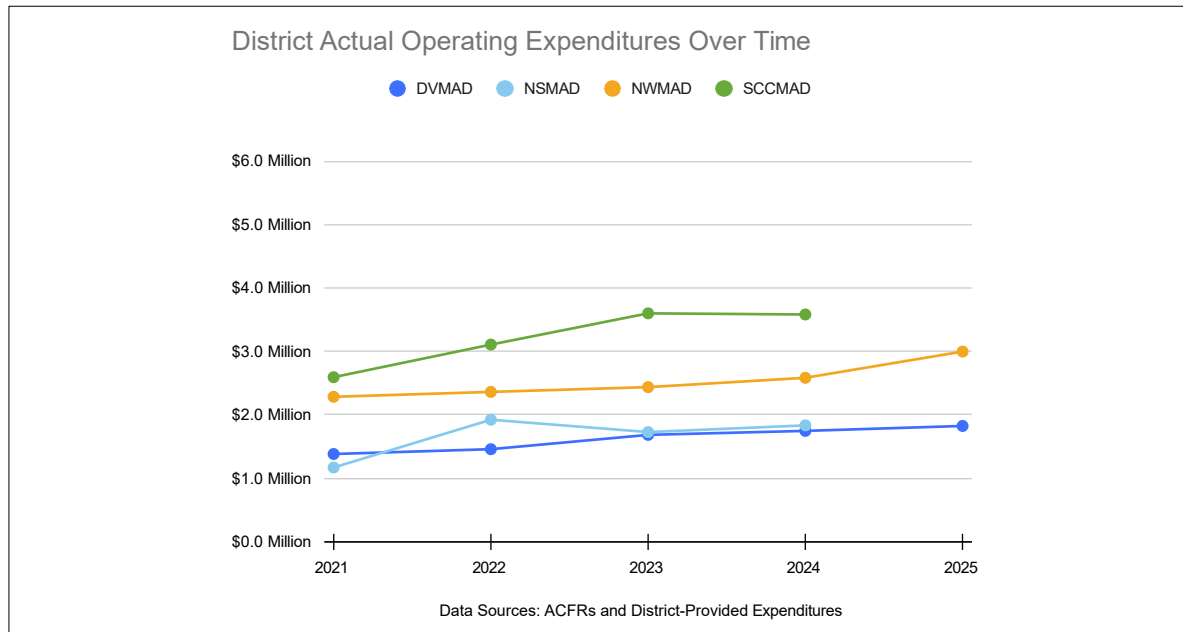
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As reported in the Districts' ACFRs from the last three fiscal years, SCCMAD spends a slightly larger portion of its total budget on fringe benefits than other Districts. The higher amount is driven by higher pension contributions in SCCMAD than in other Districts. SCCMAD has been contributing more to its self-managed pension fund than its actuarial obligation, so the District's pension costs will likely fall when it transitions to IMRF (Illinois State Comptroller 2026b). While pesticide costs are a substantial portion of all District's expenditures, they are highest in DVMAD. This is in line with operations in each District; DVMAD has the smallest overall budget – including a smaller personnel budget for biology and laboratory professionals – and also applies the most catch basin treatments. As discussed previously in this report, Districts also purchase different insecticide products – at different price points – depending on the particular geographies and insecticide resistance levels of each District. Districts spend comparable portions of their budgets on professional services, but each purchase a slightly different slate of services. For instance, most Districts purchase information technology support, while DVMAD manages their website in-house.

Across all Districts, expenditure compositions have remained relatively stable over the last four fiscal years. While District ACFRs from fiscal years 2021 through 2025 indicate that costs have increased across all Districts, no specific category has outpaced others. On an annualized basis, District operating (non-capital) budgets have grown about 4% on average, and actual operating expenditures have grown about 10.5% on average. The following graphs display Districts' operating budgets and actual expenditures over time. SCCMAD's budget increase from 2024 to 2025 was primarily driven by higher budget lines for health insurance and pension payments. Despite the budget increase, SCCMAD's actual operating expenditures did not increase substantially from 2024 to 2025.

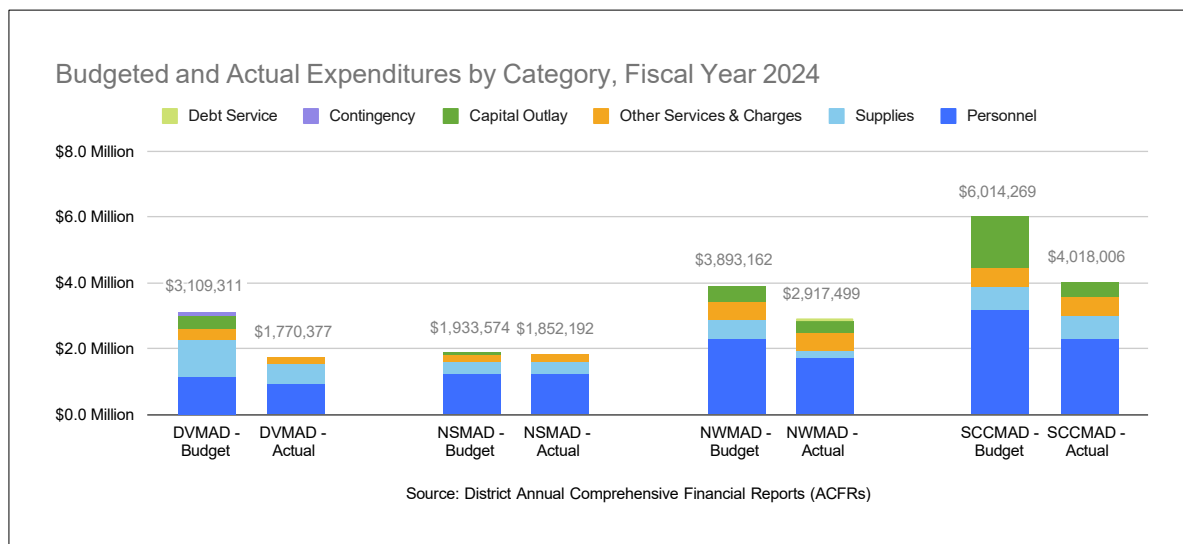


Finances and Fiscal Management Assessment



Budgeted Expenditures by District

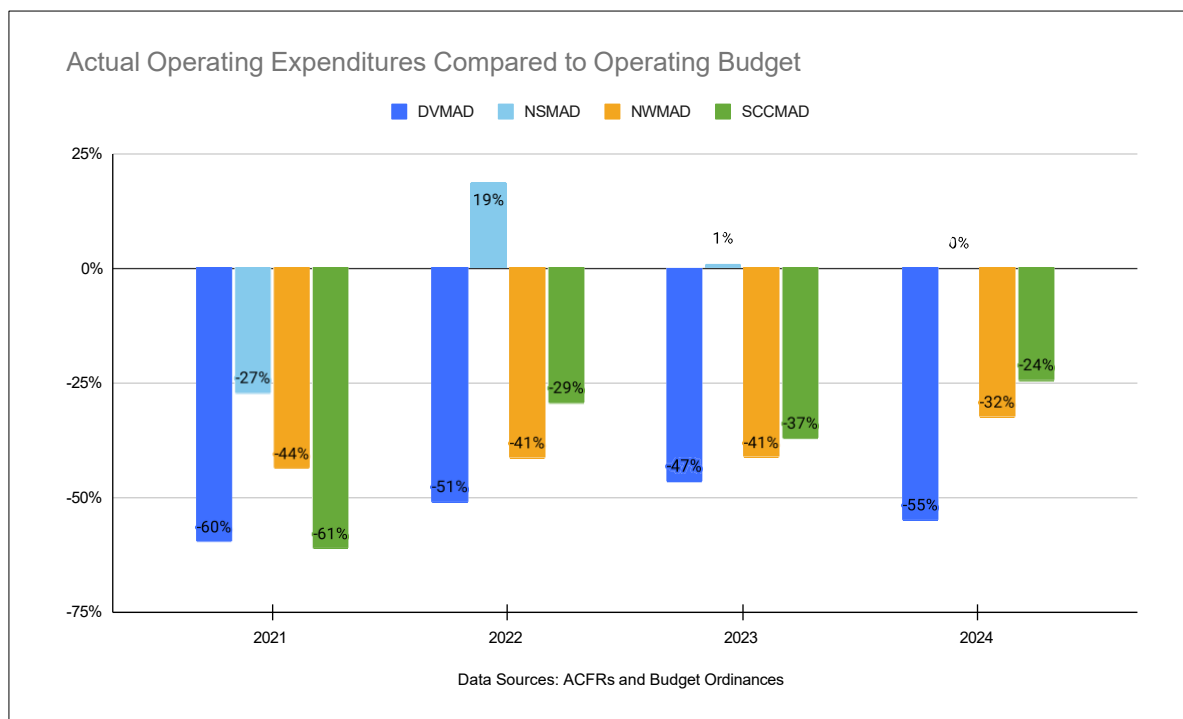
District budgets represent varying levels of fidelity to actual expenditure levels. The graphs below depict a side-by-side comparison of budget versus actual levels of expenditures across major categories for fiscal year 2024.



As the following graph demonstrates, some Districts consistently budget amounts well above their actual spend. While conservative budgeting can be beneficial to some extent, a budget is also meant to represent a good faith estimate of the quantity and allocation of District resources for a given fiscal year (GFOA 2018).

Finances and Fiscal Management Assessment

Based on analysis from District ACFRs and budget ordinances, some Districts have spent less than half of their appropriated operating budget in the last three years. One reason for this disconnect seems to be a practice in DVMAD and SCCMAD of budgeting all or part of Districts' accumulated fund balances. This is not required by statute; there is no prohibition for accumulating fund balance in Districts' General Fund in the Illinois Mosquito Abatement District Act, and the Illinois Municipal Budget Law only requires that expenditures be below, not exactly equal to, available resources (Illinois Compiled Statutes 50 ILCS 330/3).



One area of consistent over-allocation is capital outlays. Districts may intend these underspent capital allocations as a method to save for multi-year capital projects. In this case, best practice for funding multi-year capital projects is to publish a Capital Improvement Plan to increase transparency for residents.

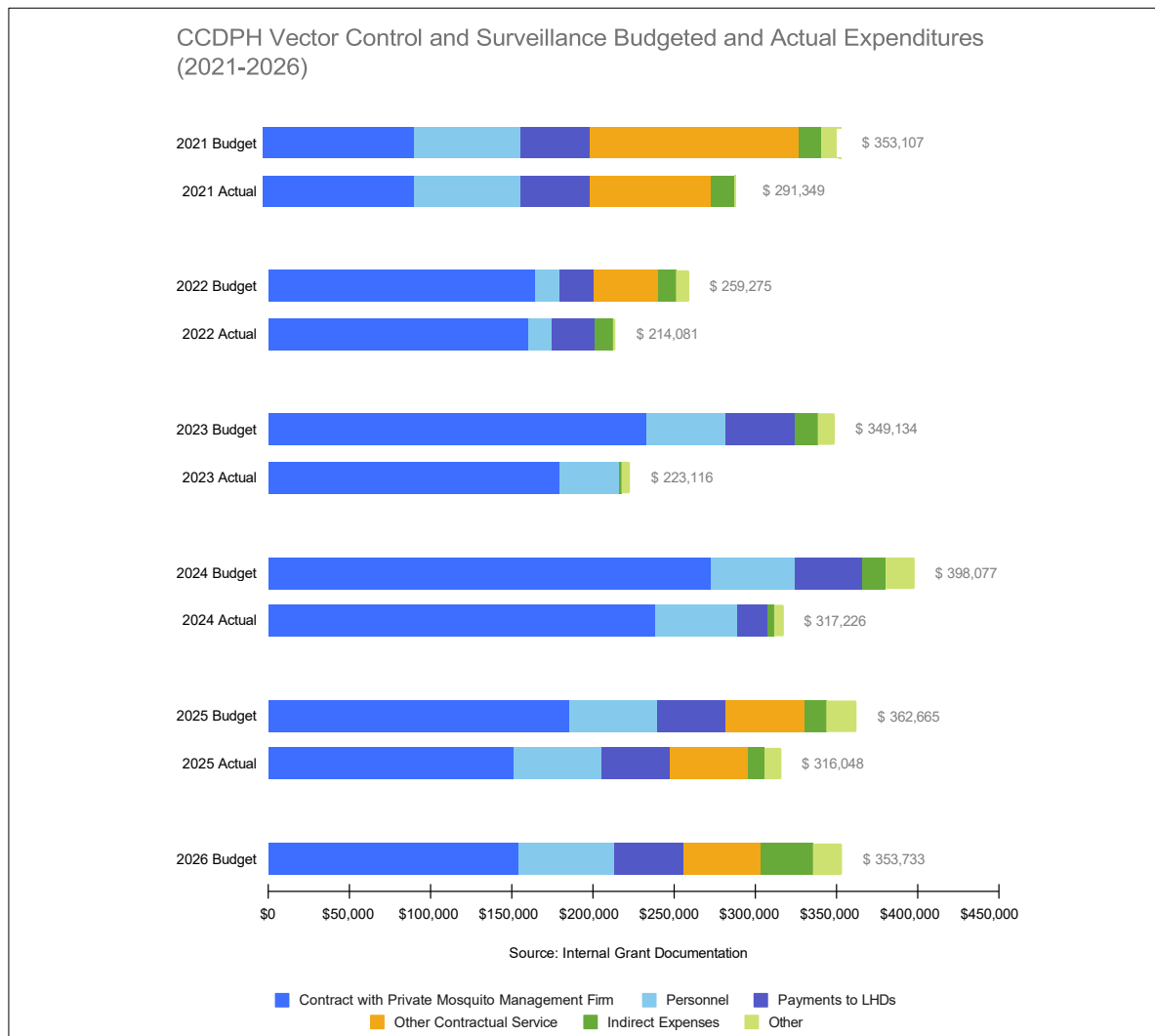
Finances and Fiscal Management Assessment

Cook County Department of Public Health Vector Control Budget

“We had the largest outbreak of SLE(St. Louis encephalitis) in the history of the United States in 1975 in Chicago and Cook County; we had one of the largest outbreaks of WNV in 2002 and 2005-2008. I’ve heard this in other large population centers ... when they get these outbreaks, [governments] fund it, and then the funding goes away 10 years later, [and] we’re back reinventing the wheel again.”

— Jack Thennisch, Control Consultant, Clarke; George Balis, Midwest Regional Manager and Entomologist, Clarke

CCDPH’s annual vector control budget is determined by IDPH’s grant funding allocation, which is determined by a state funding formula that is a function of population and environmental health factors. Although CCDPH may incur additional administrative and stray personnel costs not captured by the grant, most expenditures are budgeted in and funded by the IDPH Vector Control and Surveillance Grant. CCDPH’s budgets and actual expenditures for the grant are displayed below.



Finances and Fiscal Management Assessment

CCDPH spends the majority of its grant funds on a contract with a private mosquito management firm, Clarke Mosquito Management. The grant also covers the cost of a portion of CCDPH employee time. In 2021, the grant reimbursed personnel costs for portions of time for five CCDPH employees. In each year since, the grant has only reimbursed part of one employee's time. This employee manages the mosquito control contract and provides some supplementary surveillance efforts. The next largest category of expenditures is reimbursements to LHDs, as discussed in the Grants section above. In FY2025, every LHD received their full eligible amount for reimbursement, but in previous years, some LHD did not receive reimbursement, presumably because they did not provide mosquito control or surveillance services in those years.

Other contractual services included various services depending on the year, including communications; advertising campaigns on television, radio, billboards, and PACE buses; and website development. Indirect expenses are allowable administrative overhead expenses. The "other" category in the graph includes non-contracted expenses, including travel reimbursements for CCDPH employees, office supplies, training, and education.

Recommendations



Illustration/CDC.gov

Recommendations for the Future

CONSIDERATIONS FOR REFORM

Across all stakeholders interviewed for the assessment, there was alignment around the opportunity to collectively strengthen mosquito abatement in Cook County, especially given the urgency created by emerging threats. Multiple stakeholders across District staff, District Trustees, and other organizations stressed that they hoped this assessment would be guided by evidence rather than any preconceived conclusions, and that the assessment would help support broader dialogue about vector control as a critical public health function. Several overarching factors provide helpful context for considering the range of options available for reform.

As Districts are independent units of government, Cook County does not have direct oversight authority. Cook County does influence the Districts' governance by appointing their Boards of Trustees. Several scenarios for reform would require majority votes from one or more District Boards. The County could prioritize alignment with priorities such as good governance, commitment to best practices, and evidence-based reforms in selecting new Trustees for appointment. Once appointed, a Trustee's duty is to their District. The County could therefore encourage certain actions, but not require or unilaterally enact them absent changes to state law.

Trustees universally expressed that their Districts' work is critically important, and that the District model enables effective service. Every Trustee interviewed for this assessment opposed consolidation or dissolution of Districts, including several who noted that they entered Board service more open-minded about structural reforms.

“There have been several times when something proposed at the Cook County level that proposed eliminating Districts without really knowing what they do ... but it is different from a public health department. If put in a public health department, it would get shunted off into a corner because it's different. Public health departments have so many priorities they have to deal with. This is controlling an insect. That is different than other ways public health tries to make a difference.” — Board Trustee

Most high-impact recommendations involving CCDPH and scenarios involving consolidation into CCDPH would require additional resources to support full implementation. Because CCDPH currently operates most of its vector control program through a private vendor, new or expanded CCDPH responsibilities involving coordination, oversight, direct surveillance and control efforts, or science-driven planning and strategy would require additional resourcing. CCDPH staff warned that especially as public health funding has become more at-risk due to federal changes, now would be a “vulnerable time to be making significant changes.” Multiple stakeholders, including County staff, raised concerns that any scenario in which CCDPH absorbs vector control functions could exacerbate existing disparities and result in loss of the Districts' expertise as CCDPH's communicable disease program covers 100+ reportable diseases, and vector control is a small sliver of what they do.

Recommendations for the Future

“It’s hard to imagine [the County] being equipped to do everything that the Districts are doing right now ... that loss of that expertise, I think would be deeply felt.”— CCDPH Staff

Several case studies are presented below to surface lessons drawn from structural changes considered for other local organizations.

CASE STUDY—

Southlake Mosquito Abatement District Annexation

The Southlake Mosquito Abatement District (SLMAD) was a District servicing parts of Bannockburn, Deerfield, Highland Park, Highwood, Northbrook, Riverwoods, and unincorporated Lake County. It operated without any in-house staff, delivering all operations through a contract with a private vendor. In 2025, the Lake County Board initiated a process to dissolve the District pursuant to 55 ILCS 5/5-44025. The Lake County Board had previously dissolved the 6.25-square mile Lake Bluff Mosquito Abatement District in 2021 using the same pathway, which the Village of Lake Bluff had replaced with the same private vendor that had provided services on behalf of the Lake Bluff Mosquito Abatement District as part of a broader push to reduce local taxing jurisdictions.

When dissolution was proposed, SLMAD weighed several options for paths forward: continue contracting with a private provider under a different type of governance agreement, pursue an intergovernmental agreement for mosquito abatement services, stop providing mosquito abatement services and defer to the county health department and municipal governments within the territory, or pursue annexation into a neighboring District.

In its deliberations, the SLMAD Board concluded that annexation into NSMAD would provide a higher level of service at a lower total cost. The Board’s analysis found SLMAD was paying more for its private-contractor arrangement relative to what NSMAD would spend on an IMM program. Additionally, the SLMAD Trustees cited concerns regarding the environmental impacts of a spray-heavy approach and the increase it can cause in insecticide resistance, particularly if individual municipalities were engaging private vendors without coordination.

“It was pretty clear and we had consensus on our board that we needed to ... merge with North Shore. That was the best approach to making sure that we had proactive mosquito treatment in our area, to also keep people from using these private spray companies, which are breeding resistant mosquitoes.” — Kim Stone, NSMAD Trustee and Former SLMAD Board President

Recommendations for the Future

Municipal governments served by SLMAD reached similar conclusions. The City of Highland Park sent an October 2025 letter expressing unanimous Council support for consolidation with NSMAD on the grounds that it would enable “continued regional management and economies of scale in managing this important public health concern.” Local officials were especially concerned that dissolution of SLMAD could result in disparities in mosquito control across the former District that would affect all neighboring communities. Kent Street, Village Manager of Deerfield (a municipality formerly within SLMAD), stated, “Where do mosquitoes start and end? They don’t just check in at the border ... in general, we felt that there was a reason [SLMAD] existed and a need for it based on our community’s interests.”

On November 10, 2025, the SLMAD Board voted to approve annexation. Three days later, the NSMAD Board approved assumption of SLMAD’s territory, operations, assets, and liabilities under 70 ILCS 1005/11.5, and SLMAD was formally dissolved. Notices of Annexation were sent to former SLMAD territories, listing changes including enhanced public health protection from vector-borne disease and a reduction in property tax levies for mosquito abatement. NSMAD anticipates that the property levy for the former SLMAD territory will decrease.

Several conditions made this consolidation unusually straightforward. SLMAD’s contracting operating model resulted in no staff to transition, no building to maintain, no fleet to absorb, and no debt to assume, leaving NSMAD to inherit a service area, a tax levy, and the contract with the private vendor. The two Districts were geographically contiguous, satisfying the statutory requirement that often blocks consolidation elsewhere. Service continuity was preserved by honoring SLMAD’s existing contract through its December 2027 expiration, giving NSMAD time to build internal capacity. Affected municipal councils and boards supported annexation after reviewing options, citing concerns about public health from diminished mosquito abatement activities and support for District service as a professional, evidenced-based approach.

A former Trustee stated that if SLMAD had been dissolved, it would be likely that “another mosquito-borne disease would pop into our area, people would panic, and pesticides would be sprayed ... then, anytime there were budget issues, the vector control contract would be the first to be cut.”

The SLMAD case offers useful signals for Cook County’s broader evaluation of reforms, illustrating a recent evaluation of District versus non-District service and costs; precedent of annexation being accomplished under state law; and the administrative challenges of even a straightforward structural change. Application of this case study to Cook County’s four Districts is contextualized by the Districts’ staff, facilities and other capital, governance, and community dynamics, which would make any future dissolution or consolidation substantially more complex.

Recommendations for the Future

CASE STUDY:

Suburban Cook County Tuberculosis Sanitarium Dissolution

The Suburban Cook County Tuberculosis (TB) Sanitarium was a single purpose taxing body created in 1947 to fund inpatient tuberculosis treatment for the residents of suburban Cook County. It operated under 70 ILCS 920, supporting a specialized sanitarium facility in Hinsdale and four outpatient clinics in Forest Park, Desplaines, Harvey, and Evanston. By the time the Civic Federation called for its elimination in 2003, the District had not housed an inpatient TB case in roughly a decade, as antibiotics had changed TB care into an outpatient-treated condition. Other sanitarium Districts in Chicago and across the country were eliminated more than 30 years prior (Metcalf et al. 2003). After a three-year campaign, the General Assembly unanimously dissolved the District in 2006 under 70 ILCS 920/5.4, transferring its assets and responsibilities to CCDPH (Msall 2006).

Several stakeholders have raised the sanitarium dissolution as a relevant model when considering feasibility of dissolving Mosquito Abatement Districts. Its comparability is negatively impacted by the disappearance of the underlying community need, whereas vector-borne disease risk in Cook County is increasing, not declining. Additionally, the Sanitarium District had effectively stopped performing its mission before dissolution, while all the Districts are active. Third, the operational substitutes do not appear comparable as TB treatment is a clinical service CCH was already equipped to absorb, while mosquito abatement is a field-intensive operation requiring specialized expertise, equipment, licensed applicators, surveillance labs, and other functions and assets that are not currently housed or practiced directly by CCDPH.

Recommendations for the Future

REFORM SCENARIOS

Seven possible scenarios for reforming the organization of mosquito abatement in suburban Cook County were identified based on historical context, analysis of information collected as part of the assessment, suggestions from stakeholders, examples from other jurisdictions, and statutory and resourcing considerations. Five scenarios which are more practically viable under current law were further studied through a cost-benefit analysis. Scenarios B and C, reflecting high-impact improvements and annexation of non-District territory into Districts, are recommended for consideration. Significant effort and resourcing would be required to navigate the processes and transitions for any scenario involving organization-level structural change, particularly for Scenarios D-H.

Scenario A: Current State

This scenario is presented as a baseline. Current state reflects current boundaries, governance, and operations. No legislative changes would be made.

- *Process:* N/A
- *Tradeoffs:* No new resource expenditures would be incurred, and current operations would not be disrupted. However, no coordinated, system-level efforts toward performance and service improvement would occur, increasing the likelihood of continued disparities in service across the County; continued lack of collaboration against emerging threats; and no change in public understanding of vector-based threats or available services.
- *Financial Considerations:*
 - For the past several years, Districts' actual expenditures have grown by ~7% annually, on average. Districts' expenditures continue to grow at comparable rates for supplies, professional services, and personnel costs. At the current rate of cost growth, Districts are forecasted to require about \$229 million cumulatively, over the next ten years. However, PTELL caps limit possible expenditure growth, bringing the estimated ten-year cumulative costs to about \$170 million.
 - Over the last several years, IDPH's Vector Control and Surveillance Award to CCDPH has fluctuated in value but has not kept pace with inflation. If this pattern continues, CCDPH may face a difficult decision between cutting services or increasing its non-grant-funded contributions to sustain the current level of County-provided vector surveillance and control services.

Recommendations for the Future

- *Other Considerations:* Insofar as there are opportunities to proactively enhance preparedness for emerging public health threats, lack of action now could defer needed planning and coordination and increase the urgency and scale of threat response in the future. Growing threats from mosquito-borne and tick-borne diseases could result in unanticipated health outcomes and cost increases for the Districts, CCDPH, and other entities engaged in abatement action within Cook County. A true status quo scenario, with limited new actions taken to address emerging threats, and no changes to service provision in areas with less comprehensive or evidence-based services, would need to consider monetary and non-monetary costs associated with increased vector-borne disease incidence in Cook County.

Scenario B: High-Impact Improvements

In this scenario, mosquito abatement stakeholders work together to implement high-impact improvements as detailed in the Recommendations section, including increased countywide coordination and information sharing; joint efforts to promote best practices and preparedness; and strengthened District governance.

- *Process:* These improvements are envisioned as being implemented voluntarily and within existing authority by relevant stakeholders, including the Districts, CCDPH, other LHDs, municipal vector control programs, and other partners. Should satisfactory progress not occur, stakeholders could use an intergovernmental agreement to promote accountability as discussed below, or a change in state law through an amendment to the Mosquito Abatement District Act could require enhanced coordination between Districts and relevant local certified public health department(s) beyond reporting requirements for positive vector samples.
- *Tradeoffs and Outcomes:* These recommendations would support enhanced consistency and quality of service across the County, minimize disruption of services by leveraging current structure, increase accountability to the public through stronger Board governance and protect against District-specific performance risks, and increase countywide coordination and preparedness for emerging threats.
- *Financial Considerations:* Resource needs depend on implementation choices; CCDPH could implement several of the recommendations in this report with the Department's existing resources. Broadly, CCDPH would be able to fully implement all recommendations with resources to cover between \$62,500 and \$200,000 in one-time costs, such as staff or consultant costs to develop training materials for Trustees and expand vector control information available on its website; and between \$160,000 and \$570,000 in recurring annual costs, such as additional staff time (1.0-

Recommendations for the Future

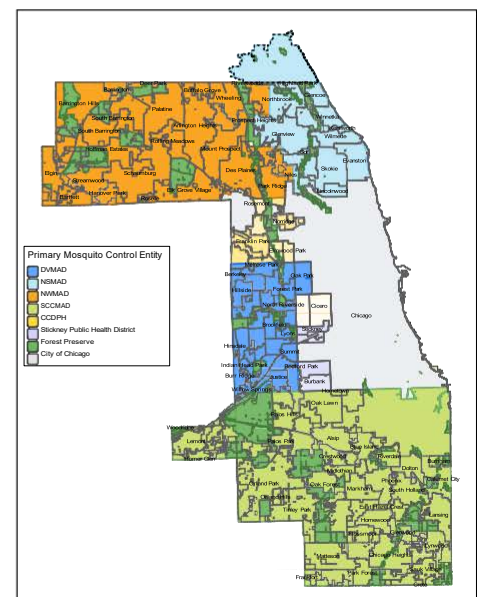
3.5 full-time equivalents), training materials costs for Trustees, and expanded website maintenance costs. There may be additional one-time costs to the County Clerk of up to an estimated \$20,000 for updating and maintaining accurate taxing District maps. Districts may incur up to a combined \$1 million in recurring annual costs, such as additional staff, materials for tick surveillance, and waste tire disposal fees; or less for narrower implementation, such as using existing staff to expand tick surveillance and tire collection activities. At the same time, implementing these recommendations may have indirect benefits associated with reduced disease incidence and more effective response efforts.

- *Considerations:* This Scenario may be combined with Scenario C or partially with other Scenarios, as most recommendations would still be applicable regardless of structural changes.

Scenario C: Existing Districts Annex Non-District Areas in Suburban Cook County

In this scenario, existing Districts would engage suburban Cook County communities not currently served by a District to explore annexation, with the goal of establishing more consistent, District-level service across suburban Cook County. The Districts would provide information on District services to non-District areas, and communities interested in joining Districts would work with District Boards to follow the appropriate annexation process, with some areas eligible for a streamlined, District-initiated pathway and others requiring a lengthier petition process under current law. The below map identifies areas not currently served by Districts.

- *Process:* There are two pathways for annexing non-District areas under current authorities in Section 10 of the Mosquito Abatement District Act (70 ILCS 1005/10).
 - Currently, some municipalities served by Mosquito Abatement Districts have only part of their territory within a District's boundaries. Under Section 10, subsection (b), if a District operates within territory "predominantly in a municipality or 2 or more municipalities that would become coterminous or nearly coterminous with the municipality or municipalities" upon annexation of additional territory not currently served by a District, the District may annex such territory by passing an ordinance. Following publication of the ordinance, it would become effective in 30 days unless 10% or more of registered voters requested a referendum. This first option only applies within a county that the District already serves.



Recommendations for the Future

- Under the second pathway, other areas, particularly unincorporated areas and municipalities entirely outside of all Districts, would use a less straightforward pathway per Section 10, subsection (a), which allows a District Board of Trustees to annex adjacent and contiguous territory not currently within a District following a petition signed by a majority of legal voters and the owners of more than half of taxable property. A District would then pass a resolution which would become effective in 30 days following publication unless 10% or more of registered voters requested a referendum.

Alternatively, a change in state law through an amendment to the Mosquito Abatement District Act could simplify the latter process creating a more feasible pathway (such as less dependence on hard-to-collect petitions) for adjacent territory to join a District.

- *Tradeoffs and Outcomes:* Because the most significant inconsistencies in service exist between areas served by a District and areas not served by a District, annexing non-District areas could meaningfully improve consistency and quality of service as well as increase coordination and preparedness for emerging threats. As communities that currently have narrower vector control or purchase treatment that is not part of an IMM strategy would instead be served by a District, their territory and neighboring territory would experience reduced environmental and resistance risks and mitigate breeding sites more effectively. Risks to service disruption are low because a more comprehensive suite of services would be provided, and Districts have historically been able to respond quickly to small increases in territory. Shifting to one dedicated entity responsible for coverage could make it easier for residents in annexed communities to navigate available vector control services. Annexation of non-District areas would not directly address any existing underperformance or create new structural accountability, although engagement with neighboring communities could provide a motivator for transparency and performance improvement. Communities currently contributing general County taxes that support countywide vector control efforts would become subject to the Mosquito Abatement District-specific levies.

CCDPH would focus less on direct mosquito surveillance and control activities in the limited areas it currently services through a private contractor and more on countywide vector control strategy and coordination.

- *Financial Considerations:* Financial considerations vary depending on which territory is being annexed, and by which District. Under this scenario and under current law, Districts could incur one-time costs between \$6,000 and \$120,000 per square mile annexed, including the cost of gathering land descriptions and the cost of

Recommendations for the Future

surveying the new territory and mapping catch basins. The lower bound on one-time costs assumes an area with straightforward land parcels and that Districts can absorb mapping and surveying tasks without hiring additional staff. The upper range assumes complex land description requirements and temporary staff augmentation for surveying activities. Based on historical operational costs, Districts could incur recurring costs of between \$10,500 and \$22,700 per square mile of additional territory, depending on the terrain, population density, and number of catch basins. These costs would be offset by an expansion of taxing authority, which would bring the annexing District between \$11,300 and \$21,700 in additional property tax revenue per square mile of additional territory.

Depending on the areas annexed, CCDPH may have a reduction in required mosquito surveillance and control activities. If so, CCDPH could save between \$5,640 and \$35,120 per square mile at the current service level, and in future years increase the level of service in remaining areas served by CCDPH or support other vector control activities. Municipalities outside of Districts which currently provide their own control and/or surveillance services – including at least Stickney Public Health District, Leyden Township, Village of Franklin Park, Town of Cicero, City of Berwyn, and Village of Norridge – also stand to save in operating costs because they would no longer pay to provide these services directly.

Depending on the legal pathway chosen, there may be additional resources expended by the Districts related to legal services to support annexation or engagement with ongoing legislative processes.

- *Considerations:* This Scenario may be fully combined with Scenario B to promote consistency and coordination of service across suburban Cook County, and Districts could engage in annexation of neighboring non-District areas under other Scenarios retaining the District model. If current law remained in place, some areas interested in joining Districts could do so relatively quickly, while others would have to enter into the longer petition process. Because some non-District territory is wholly surrounded by Chicago, under current law, additional territory in Chicago would have to be annexed to enable annexation of all non-Chicago Cook County territory into a District with contiguous borders.

Scenario D: Underperforming District Consolidates into Cook County

In this Scenario, a District would choose to consolidate into Cook County. Ideally, this targeted consolidation would occur after a single District's Board of Trustees found its organization to be unacceptably underperforming even after concerted efforts toward performance improvement, including seeking technical assistance. Upon a District initiating consolidation and with the assent of Cook County, Cook County would assume the "rights, powers, duties, assets, property, liabilities, indebtedness, obligations, bonding authority, taxing authority, and responsibilities" of the District, which would cease to exist, as well as responsibility for its employees (70 ILCS 1005/11.5). The status and rights of the employees, including collective bargaining agreements and representation rights, would not be affected. Through a delegation of authority to CCDPH, Cook County would then have to make decisions about how to conduct mosquito abatement services in the former District's territory, including any changes to infrastructure and operations to address underlying performance issues.

Alternatively, an underperforming District could be dissolved pursuant to 70 ILCS 1005/11.0 rather than consolidated into the County; the County would not assume the powers, infrastructure or responsibilities of the District, including its taxing authority, and would be responsible for vector control in that territory comparable to its current obligation to areas not served by a Mosquito Abatement District.

- *Process:* This scenario is possible under current authority. Using the process outlined in the Mosquito Abatement District Act (70 ILCS 1005/11.5), a majority of the District's Board of Trustees would vote to consolidate the District into Cook County, and the Cook County Board would pass a resolution agreeing to accept the consolidation.

Alternatively, a change in state law through an amendment to the Mosquito Abatement District Act could either establish a more streamlined process for consolidating underperforming Districts, or directly consolidate a specific District or specific Districts into Cook County.

- *Tradeoffs and Outcomes:* The potential for a Board to initiate consolidation into Cook County could help motivate improvement for an underperforming District. In terms of potential system-level disruptions, one underperforming District consolidating would also provide greater precision than other cross-District structural reforms. In the event of consolidation, CCDPH would take on substantial new responsibilities in operating a comprehensive mosquito abatement program over a large area. These activities would require technical expertise and capacity beyond CCDPH's current capabilities, as a private vendor is used to deliver services. Centralizing governance of mosquito abatement in the former District territory with CCDPH would also reduce local control, which could potentially provide a reset on governance-driven performance deficiencies but diminish local expertise and responsiveness.

Recommendations for the Future

- **Financial Considerations:** In the case of consolidation of a single District, the Cook County Board would retain the property levy of the former District. Assuming continued delegation of vector control to CCDPH, under this scenario, CCDPH would retain all assets of the former District. CCDPH would also incur most of the same costs of the consolidated District. At the same level of service and using largely existing infrastructure, CCDPH would require essentially the same staffing levels, equipment, and supplies as the District. If a District Board chooses to consolidate its District due to underperformance, CCDPH may need to expend additional resources above the former District's budget to reach an adequate service level, such as external entomological expertise and additional staff and supply costs to increase the volume of mosquito surveillance and control. CCDPH may save on certain professional services which could be provided in-house by the County, including legal services, accounting, IT, and insurance (the County self-insures); but may incur additional costs to provide oversight or replace other work done by volunteer Trustees, comply with County IT policies, and to travel to District locations from CCDPH offices. There would also be upfront transitional costs, including legal fees, collective bargaining considerations (applicable for one District, and which would require analysis for potential conflicts with current collective bargaining agreements), and IT system integration costs. Total estimated costs depend heavily on the District under consideration and on CCDPH's specific implementation. Estimates are below and do not include potential County resources to support legislative changes.

District to be Consolidated into Cook County	Lower Bound on County Costs to Retain or Improve Service Level	Upper Bound on County Costs to Retain or Improve Service Level
DVMAD	\$11,250 one-time + \$1.75 million recurring	\$250,000 one-time + \$2.15 million recurring
NSMAD	\$11,250 one-time + \$1.84 million recurring	\$250,000 one-time + \$2.30 million recurring
NWMAD	\$11,250 one-time + \$2.93 million recurring	\$500,000 one-time + \$3.88 million recurring
SCCMAD	\$11,250 one-time + \$4.05 million recurring	\$250,000 one-time + \$5.32 million recurring

Recommendations for the Future

If dissolution were used instead of consolidation, the levy would not be retained, and Cook County would instead have to absorb the costs of mosquito control and surveillance through the County budget. The County would then effectively be shifting the costs of mosquito control and surveillance in the former District's area to all County residents, including residents in remaining Districts who continue to pay property taxes to those Districts.

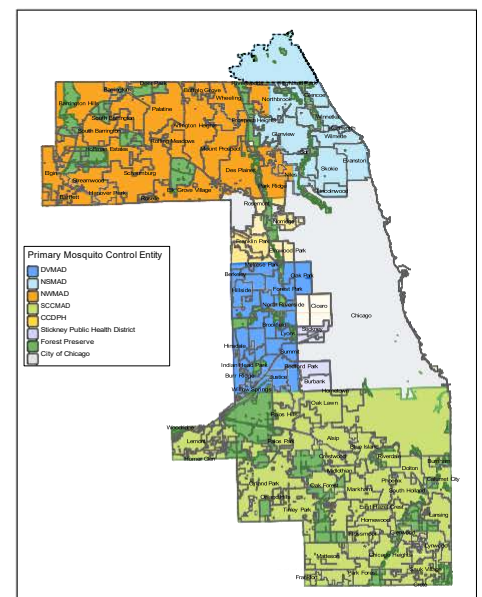
- *Considerations:* One District (NSMAD) serves territory outside of Cook County, which would need to be separately addressed. This option would be contingent on the willingness of a District to consolidate into Cook County, and Cook County's willingness to annex the District.

Scenario E: Annexation of Underperforming District(s) into Higher-Performing District(s)

In this scenario, a District would choose to be annexed into another neighboring District. Ideally, a persistently underperforming District would choose to be annexed into a higher-performing District after concerted efforts toward performance improvement, including seeking technical assistance. Upon annexation, the receiving District would assume the “rights, powers, duties, assets, property, liabilities, indebtedness, obligations, bonding authority, taxing authority, and responsibilities” of the former District, which would cease to exist (along with its Board), as well as responsibility for its employees (70 ILCS 1005/11.5).

Because Districts may only annex a District with contiguous boundaries, only NWMAD and NSMAD could take such actions relative to one another, or DVMAD and SCCMAD. Below is a map illustrating the relative locations of the Districts.

- *Process:* This scenario is possible with current authority. Using the process outlined in the Mosquito Abatement District Act (70 ILCS 1005/11.5), a majority of the underperforming District's Board of Trustees would vote to annex the District into a higher-performing District with contiguous boundaries, and the receiving District's Board would pass a resolution agreeing to accept the annexation.
- *Tradeoffs and Outcomes:* Annexation would retain the more comprehensive District level and model of service and likely reduce differences between Districts. Many of the potential effects are dependent on how the annexing District responds to significant new responsibility. Performance improvement in the former District's territory would require intentional organizational change by the Board and employees of the resulting District.



Recommendations for the Future

- The risk of service disruption is high as the annexation of another District would represent a substantial increase in territory for any other District to newly oversee and improve, even with the annexed District's infrastructure. District staff and Trustees raised concerns that by combining operations and potentially altering governance, performance in the original territory of the higher-performing District could decrease as well.
- *Financial Considerations:* Financial considerations are highly variable due to the structural limitations of the option, the dependency on which Districts are involved, and the relative benefits of other scenarios with similar effects. Opportunities for economies of scale are limited due to the lack of scale-based discounts on major cost drivers.
- *Considerations:* This option is contingent on the willingness of a higher-performing District to annex an underperforming District with which it shares boundaries.

Scenario F: Total Consolidation of All Districts into Cook County

All four Districts in suburban Cook County would choose to consolidate into Cook County government. Upon agreeing to accept consolidation, Cook County would assume the “rights, powers, duties, assets, property, liabilities, indebtedness, obligations, bonding authority, taxing authority, and responsibilities” of all four Districts, which would cease to exist, as well as responsibility for their employees (70 ILCS 1005/11.5). Cook County would then have to make decisions about how to conduct mosquito abatement services in the former Districts' territory, including public health strategy and governance. Cook County would also have to determine how to manage differences in service between areas for which it would have District-level powers and responsibilities (including taxing authority) and areas it currently services (through a private contractor).

One related alternative is all four Districts choosing to dissolve pursuant to 70 ILCS 1005/11.0, through which Cook County would not assume the powers, infrastructure or responsibilities of the District, including its taxing authority; the County would be responsible for vector control in relevant territory comparable to its current obligation to areas not served by a Mosquito Abatement District.

- *Process:* This scenario is possible with current authority. Using the process outlined in the Mosquito Abatement District Act (70 ILCS 1005/11.5), a majority of each District's Board of Trustees would vote to consolidate the District into Cook County, and the Cook County Board would pass a resolution agreeing to accept each consolidation. Cook County would then confer the powers on CCDPH by amending existing

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ordinances or adopting new ones to effectuate the transfer, although taxing authority would continue to be exercised at the County level. Additional legal research would be necessary to determine the practical effects of consolidation on parameters for levying the tax.

Alternatively, a change in state law through an amendment to the Mosquito Abatement District Act could directly consolidate the Districts into Cook County or create a pathway to do so by County initiation.

- *Tradeoffs and Outcomes:* This Scenario would likely reduce differences between areas formerly served by Districts (although inconsistency could remain in areas not served by Districts). Unifying the Districts would create structural unity and substantially simplify countywide coordination, including preparedness against threats and ongoing adoption of best practices. It could become easier for residents to navigate available vector control services. Many of the potential effects are dependent on how the County would choose to organize the new vector control program and respond to substantial new responsibilities, including operating a comprehensive mosquito abatement program over a much larger area than it currently services. If Cook County delegates certain responsibilities to CCDPH, these activities would likely require technical expertise and capacity beyond CCDPH's current capabilities. Centralizing governance of mosquito abatement in the former District territory to Cook County would also reduce local control, which could potentially provide a reset on governance-driven performance deficiencies but diminish local expertise and responsiveness. The unified structure would protect against isolated governance issues, although overall performance would be contingent on the effectiveness of the new organization. Opportunities for economies of scale are limited due to the lack of scale-based discounts on major cost drivers. The risk of service disruption during a transition is high due to the complexity of integrating any degree of five organizations' existing functions and infrastructure, including the assumption of employee rights and responsibilities such as pension and retirement plans and one District's collective bargaining agreement.
- *Financial Considerations:* Under this scenario, Cook County would have two options: retaining all assets and providing mosquito control and surveillance services in-house, or selling all District assets and contracting out all services.

Under the first option, Cook County would likely retain a regional structure similar to the former District territories and add an additional layer of management for coordination across the county and possibly add additional entomological expertise. As in Scenario D, the County might see moderate savings by bringing professional

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services in-house such as legal services, accounting, IT, and insurance. Compared to District costs, Cook County may see higher costs for replacing volunteer Board duties, for ongoing IT compliance, for travel, and for using County human resources (no District currently has a standalone human resources system or dedicated employee). Again, as in Scenario D, there would be significant upfront costs associated with creating new protocols, legal fees, collective bargaining considerations (applicable for one District), and integrating all IT systems. Altogether, Cook County would likely incur one-time costs of between \$45,000 and \$1.5 million, as well as recurring costs of between \$10.7 and \$11.9 million, about \$164,100 to \$1.3 million higher than the combined Districts' expenditures. The County Board would decide whether to offset these costs with the former Districts' levies or to absorb these costs into the County's total budget.

Under the second option, Cook County would sell all District assets and rely entirely on a private contractor to deliver mosquito control and surveillance services. Cook County would likely need at least one full-time employee to oversee the contract, or if delegated to CCDPH, CCDPH would need the same. Selling all District assets would probably yield \$5 to \$15 million in one-time revenues. There would likely be one-time legal costs, severance payments, and other costs associated with unwinding the Districts of \$100,000 to \$1 million. Cook County would be responsible for an area substantially larger than most other nearby, non-Cook County Mosquito Abatement Districts which fully contract out mosquito abatement services; using the average expenditures for such Districts in DuPage County which contract all mosquito control and surveillance work, CCDPH would likely spend at least \$12 million per year, roughly \$550,000 more per year than the combined expenditures of all current Districts. However, comparison Districts in DuPage County had lower levels of service, so maintaining the same level of service could cost the County up to \$18 million per year, or roughly \$6.5 million more than the Districts currently spend in total.

- *Considerations:* This Scenario could be combined with Scenario C (completed prior to consolidation) to increase the area for which Cook County would assume a District's powers and responsibilities. One District serves territory outside of Cook County, which would likely need to be separately addressed.

Scenario G: All Districts Combine into a Single District

Under this scenario, all four Districts in suburban Cook County would take a series of annexation actions in order to form one unified Mosquito Abatement District. Upon annexation, the resulting District would assume the “rights, powers, duties, assets, property, liabilities, indebtedness, obligations, bonding authority, taxing authority, and responsibilities” of all four former Districts, three of which would cease to exist, as well as responsibility for their employees (70 ILCS 1005/11.5).

- *Process:* This scenario is technically possible but extremely difficult to execute under current authority; successful annexation of territory not currently served by Districts would have to occur to enable the creation of a single District. Using the process outlined in Section 11.5 of the Mosquito Abatement District Act (70 ILCS 1005/11.5) through which a majority of one District’s Board of Trustees would vote to annex their District into the neighboring District, and that District’s Board would pass a resolution agreeing to accept the annexation, NWMAD or NSMAD could annex the other, and DVMAD or SCCMAD could annex the other. Then, because Districts may only annex another District with contiguous boundaries, territory between the current boundaries of NWMAD and DVMAD (including at least a small part of the City of Chicago) would have to be annexed using the processes in Section 10 (70 ILCS 1005/10) so the two remaining Districts had a contiguous boundary. The two remaining Districts could then engage in annexation per Section 11.5 to create a single District. This District would be governed by the Board of Trustees of the annexing District, which would not be representative of the annexed former District until new Trustees were appointed to any vacancies or upon expiration of current Trustees’ terms.

Alternatively, a change in state law through an amendment to the Mosquito Abatement District Act could directly consolidate the Districts into Cook County or create a more feasible pathway for consolidating all Districts in Cook County by the County’s initiation.

- *Tradeoffs and Outcomes:* This Scenario would retain the more comprehensive District level and model of service, and likely reduce differences between the former Districts (although inconsistency could remain in areas not served by Districts unless they were also annexed). Unifying the Districts would create structural unity and substantially simplify countywide coordination, including preparedness against threats and ongoing adoption of best practices. District tax rates across the District could equalize, and it could become easier for residents to navigate available vector control services. Many of the potential effects are dependent on how the new District would respond to significant new responsibility. The unified structure would protect against isolated governance issues, although overall performance would be

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contingent on the effectiveness of the new organization. Opportunities for economies of scale are limited due to the lack of scale-based discounts on major cost drivers. Total unification would also reduce local control, which could diminish local expertise and responsiveness. The risk of service disruption during a transition is high, especially given a long and complicated process that could create uncertainty and the complexity of integrating any degree of four organizations' existing functions and infrastructure.

- *Financial and Cost/Benefit Modeling:* This scenario is not quantitatively modeled due to the practical feasibility of executing the required process.
- *Considerations:* This Scenario could be combined with Scenario C to create a single unified District in suburban Cook County. As with Scenario C, because some non-District area is wholly surrounded by Chicago, under current law, additional parts of Chicago would have to be annexed to enable annexation of all non-Chicago Cook County territory into a District with contiguous borders. Additionally, one District serves territory outside of Cook County, which would likely need to be separately addressed. This Scenario would likely require the longest amount of time to execute.

Scenario H: County-Initiated Dissolution of Districts

Under this scenario, the Cook County Board could dissolve one or more of the three Districts that exist entirely within Cook County boundaries. Upon dissolution, the County Board could delegate vector control responsibility to CCDPH or the applicable LHD in the relevant areas of the former District territories. For each District dissolved, the Cook County Board would have the option to establish a special service area with the powers and duties of the dissolved District, including the dedicated levy.

- *Process:* Using the process in the Counties Code (55 ILCS 5/5-44025), the Cook County Board would pass an ordinance proposing dissolution of a District within Cook County boundaries and publish notice. The ordinance would have to include the "purpose and cost savings to be achieved" (55 ILCS 5/5-44025). Following an audit within 30 days, the Cook County Board could adopt an ordinance authorizing dissolution of the District effective at least 60 days after the appointment of a trustee-in-dissolution, after which the Cook County President would petition the circuit court to designate the trustee-in-dissolution. Any such dissolution would be subject to a backdoor referendum, through which petitions from the lesser of 7.5% of registered voters in the District or 200 registered voters filed within 30 days would lead to the referendum being asked in the next election. If dissolution continued, the trustee-in-dissolution would close up the affairs of the District per 55 ILCS 5/5-44030.

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- Per 55 ILCS 5/5-44040, the Cook County Board could choose to establish all or part of the territory formerly served by the District as a special service area by County Board resolution if determined necessary to provide services. The special service area would assume the powers and duties of the dissolved District, including the levy.
 - Per 55 ILCS 5/5-44043, employee rights would not be affected, including the status and rights of employees represented by an exclusive bargaining representative; representation rights; and employee rights under pension, retirement, or annuity plans.
 - Per 55 ILCS 5/5-44045, in the event of a dissolution and subsequent creation of a special service area, a financial review would be required within six months and then annually thereafter to determine whether the special tax levy would remain necessary.
- *Tradeoffs and Outcomes:* If a District were to be dissolved without the establishment of a special service area, CCDPH, if delegated, would be challenged to extend its coverage of vector control services to any former District territory in its jurisdiction using existing resources, as would any other LHD delegated responsibility for providing vector control services in the relevant former District territory. Because Districts are empowered and resourced to provide a more comprehensive suite of IMM-based services, the level of service could be diminished absent new resources and changes in service delivery.

If a District were to be dissolved concurrent with the establishment of a special service area, outcomes would depend on implementation. The Cook County Board could attempt to maintain some of the infrastructure of the former District, such as through acquisition of its former assets, or a likely-narrower set of services could be provided through a contract with a private vendor. As the County – in establishing a special service area -- would assume the powers and duties of the former District, mosquito abatement governance would be subject to the leadership and oversight of the County, which might choose to make the CCH Board of Directors and CCDPH responsible for management of the area. Further research would be required to determine if a special service area commission would be appointed. The special service area would also be subject to requirements in state law for special service areas. This scenario would only reduce inconsistency in service levels across the County if the County dissolved more than one of mosquito abatement districts that are located within the County's boundaries and then standardized management of any subsequently created special service areas. In short, this special service area option could potentially mitigate the loss of dedicated funding for mosquito abatement and increase County responsibility and control, although it may not duplicate all

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the features of District-level service. The limited real-world uses of this dissolution pathway makes it difficult to anticipate practical considerations. The risk of service disruption during a transition is high due to the change in operator and possible narrowing of scope of service, such as the need to hire and build a new vector control team, developing plans around the former District's mapping assets if available, acquiring product, building relationships with local partners, and other core functions.

- *Financial and Cost/Benefit Modeling:* Financial implications would depend on how the Cook County Board decided to implement the dissolution. If the levy were maintained through the special service area, such levy would be subject to the Special Service Area Tax Law of the Property Tax Code, and would no longer be capped by PTELL.
- *Considerations:* One District serves territory outside of Cook County and therefore would not be subject to dissolution through this pathway.

Recommendations for Improvements

In alignment with the recommended Scenario B from the presented “Reform Scenarios”, the following recommendations present systems-level actions to improve mosquito management across suburban Cook County. These recommendations for high-impact improvements involve a range of actors across the mosquito abatement ecosystem; an initiator for implementation is identified where possible, although successful outcomes in accountability, consistency, and effectiveness of services are tied to participation from all involved stakeholders.

Many recommendations are powered by improved coordination and ongoing dialogue across the Districts, CCDPH, and other LHDs and local vector control programs. To institutionalize these practices and promote mutual accountability, Districts, CCDPH, and other LHDs could choose to enter into an intergovernmental agreement pursuant to the Intergovernmental Cooperation Act (5 ILCS 220) in support of coordinating strategies and activities, sharing information, and leveraging countywide expertise.

District Boards

Collaborate to recruit and appoint qualified District Trustees in a timely manner.

Good governance of Boards is an irreplaceable driver for District performance. However, finding interested and qualified applicants can be challenging, and Board positions can remain vacant for extended periods or be held by Trustees serving beyond their term while waiting for replacements to be appointed. To strengthen District governance, the Office of the Cook County Board President can collaborate with Districts to track upcoming vacancies or expiring terms, understand Board skillset needs, locally promote Board appointment opportunities to surface qualified applicants, provide information to prospective Trustees, and consider feedback on simplifying the appointment process. Cook County will then be better able to appoint strong leadership with expertise that supports the Districts in operating at their full potential.

Participants: Office of the Cook County Board President (Initiating), Districts, Districts’ local partners

Recommendations for Improvements

Create expectations of active review of Trustee performance prior to timely reappointment.

Board appointment terms last four years. Many Trustees provide effective service for a decade or more, although Trustees' ability to continue serving beyond their term until a replacement is appointed can lead to inadequate checks on Trustees' conduct and performance. The difficulty of identifying new Trustees also creates a disincentive to replacing less effective Trustees. Supporting a more robust pipeline of qualified Trustee applicants and creating the explicit expectation of a performance review would positively encourage Trustees to serve as active stewards of their Districts and align with County public health and management priorities. Such review could minimally include checks such as attendance, feedback from District staff, and any ethics or other conduct investigations.

Participants: Office of the Cook County Board President (Initiating), Cook County Board, Districts

Share materials and best practices for onboarding new Trustees across Districts, and explore collaboratively developing new educational materials.

District Trustees and staff describe a steep learning curve for new Trustees to understand IMM and District administration, including technical material which requires significant staff support for each District to independently deliver. Cross-District sharing of existing orientation materials would help onboard new Trustees more consistently and prepare them for success. Such materials may also be used to support the Office of the Cook County Board President in recruiting qualified candidates and educating other new partners. Collaboratively developing new educational materials for Trustees may efficiently address shared governance needs while promoting consistency and idea exchange across Districts.

Participants: Districts (initiators), Office of the Cook County Board President

Recommendations for Improvements

Coordination

Convene quarterly meetings with CCDPH, other LHDs, Districts, and interested municipal vector control officials.

Coordination across Districts currently relies on personal relationships and norms, and interaction with CCDPH is largely limited to data sharing. Interaction with neighboring vector control officials is highly variable. To promote unified efforts against vector-borne disease across Cook County, CCDPH can convene regular meetings with representatives from Districts and other local vector control programs to create a forum for discussing topics including best practices, emerging threats, coordinated messaging and public health strategies, data sharing, research, and organizational updates. This forum supports multiple other recommendations requiring collaborative efforts across these stakeholders. In addition to District leadership, Districts may send staff and Trustees relevant to the agenda, and participants may consider inviting other stakeholders such as the Forest Preserves to join meetings as applicable. The cadence may be adjusted, although planning for meetings to occur both during and outside of the mosquito season will better scaffold high-value conversations. Beyond initiation, CCDPH would require additional resourcing to actively organize and manage these convenings.

Participants: CCDPH (Initiator), Districts, municipal governments, other local LHDs

Align on and clarify discrepancies in mosquito abatement boundaries across the Districts, City of Chicago, and Cook County.

Given historical boundaries that don't always align with current municipal boundaries and changes to District territory over many years, there are several areas where stakeholders appear to have differing understanding of the boundaries and therefore service areas of the Districts, which may result in duplicated or lack of service. A single source of truth is needed to ensure tax levies and services reflect official District territory. Because boundary discrepancies have financial implications (tax levies) as well as operational ones (service coverage), it is important to ensure alignment with the Office of the Cook County Clerk. As necessary, the Cook County public shapefiles can be updated to reflect accurate, clarified boundaries. Moving forward, a process can be established to ensure timely updates to reflect any new boundary changes.

Participants: CCDPH and Districts (initiators), City of Chicago, Office of the Cook County Clerk

Recommendations for Improvements

Engage municipal governments in suburban Cook County to encourage education and adoption of best practices in IMM.

CCDPH and Districts report very limited visibility into the operations of private mosquito control vendors with varying degrees of science-based practices. In some instances, inappropriate reliance on adulticide or lack of coordination with vector control programs can increase the risk of insecticide resistance and disrupt government entities' mosquito control strategies. Such vendors may be hired by municipal governments or by other local stakeholders such as neighborhood groups, business associations, and individual residents. Engaging municipal governments to share information about IMM, including the benefits of upstream intervention, as well as monitoring and messaging resources, can help municipal partners focus their mosquito management investments while minimizing unintended consequences for CCDPH and District operations and public health goals. Municipal governments may in turn share information with other local stakeholders and better understand the resources available through existing vector control programs in Cook County.

Participants: CCDPH and Districts (initiators), municipal governments

Engage municipalities outside of Districts annually to assess control and surveillance plans and inform CCDPH vector control coverage areas and strategy.

CCDPH relies on information about municipal mosquito management activities to plan its own services for areas not served by Districts, which can be difficult to collect ad-hoc. Municipalities take varying and often narrow approaches to vector control. A few run their own programs, some have limited contracts for adulticide treatment, and some conduct no activities. Building on stronger intergovernmental collaboration around vector control referenced in other recommendations, CCDPH could annually survey municipal governments outside of Districts regarding their planned vector control and surveillance activities to prevent duplicative or missing service when planning where and what services to direct through CCDPH's contract. Such information may also be shared with Districts and other LHDs to support their planning and partnership opportunities, particularly around coordinating treatment.

Participants: CCDPH (initiator), non-District municipal governments

Recommendations for Improvements

Establish and follow standard practices for notifying neighboring Districts as well as relevant County and municipal government entities of upcoming treatments.

Knowing neighboring vector control programs' pesticide application plans can inform treatment and insecticide resistance strategies, including opportunities for coordinated efforts and minimizing duplicative interventions. Beyond public notice for certain pesticide applications required by state law, CCDPH, Districts, and municipal governments inconsistently share advance information about treatments. Routinizing such notice would support treatment effectiveness as well as Cook countywide coordination on an informed vector control strategy. Minimally, this recommendation may be implemented through a lightweight shared channel such as an email distribution list.

Participants: CCDPH and Districts (initiators), municipal governments

Share timely updates regarding resistance and efficacy testing results across Districts, CCDPH, and other vector control programs within Cook County.

Timely sharing of resistance and efficacy testing results across the Districts, CCDPH, and other Cook County vector control programs supports coordinated response and better decision-making around product selection and treatment strategies. This practice currently occurs ad-hoc, but once institutionalized could improve the usefulness of the information and encourage more consistent adoption of best practices in resistance testing and strategy across Cook County. This recommendation may be implemented through a lightweight shared channel such as an email distribution list.

Participants: Districts and CCDPH (initiators), other vector control programs within Cook County

Recommendations for Improvements

Align across Districts and the Forest Preserves on use of the U.S. Fish and Wildlife Service framework for mosquito management on federal wildlife refuges.

Districts and the Forest Preserves regularly must work through vector surveillance and control strategies which are compatible with the Forest Preserves' conservation mission while protecting public health. The Forest Preserves navigate additional burden from separately engaging with four different Districts that have distinct approaches to mosquito management in and near Forest Preserves territory. Reaching alignment on use of the U.S. Fish and Wildlife Service framework, which presents a consistent, narrowly tailored approach supported by evidence, would provide clarity for operators and reduce the burden of ad-hoc arrangements. Such alignment would also be clarifying for invested Forest Preserves volunteers and advocates who may not be familiar with IMM. This recommendation is particularly important as vectors that breed in the Preserves may impact human health across Cook County.

Participants: Districts (Initiators), Forest Preserves of Cook County, CCDPH

Education & Outreach

Convene relevant stakeholders to organize shared continuing education and training, especially focusing on new and emerging threats.

Districts share needs in providing continuing education for staff on similar topics, although do not appear to consistently collaborate beyond attendance at the same conferences. Shared training and professional development convened across CCDPH, Districts, and municipal vector control programs could help Districts efficiently stay current on new and emerging vector-borne threats, follow best practices, and invest in their workforce. This collaborative approach would also promote the exchange of ideas and innovations, surface inconsistencies in practice, and build working relationships across organizations while leveraging system-level expertise. IDPH offers training statewide as well as by request and could be an impactful collaborator in suggesting and supporting trainings.

Participants: CCDPH and Districts (initiators), municipal governments, other local LHDs, IDPH

Recommendations for Improvements

Coordinate across CCDPH, the Districts, and municipal health officials to promote public education around personal mosquito and tick protection.

Description: CCDPH, Districts, and some other municipal governments conduct public education and messaging around personal protection against vector-borne disease. District Trustees and staff pointed to the broader reach of CCDPH's communications campaigns and identified public education as a key way CCDPH and Districts could work together for broader impact. Districts also have less specialized capabilities than CCDPH in public information; some Districts have no dedicated communications staff. Such collaboration could include joint message planning to address mutual priorities, shared communications materials, and coordinated distribution and promotion strategies. This coordination would help improve consistency of public information across the County as well as amplifying reach and reducing the possibility of conflicting or confusing guidance.

Participants: CCDPH (initiator), Districts, municipal governments, other local LHDs

Create a County webpage that provides a one-stop-shop for vector control information for residents.

To supplement existing surveillance and personal protection information on the CCDPH website, CCDPH can create a new webpage providing information about how vector control is addressed across Cook County. The webpage can host a tool residents use to identify the District they reside in, connect with their District's website to learn more information, and make a relevant complaint or service request. This recommendation would directly address the routing confusion that residents can currently face, and relies on accurate mapping data.

Participants: CCDPH (initiator), Districts as needed

Budget

Ensure that Districts comply with state law with regard to the timely passage of budget ordinances, and encourage Districts to pass budget ordinances before the start of their fiscal year where possible.

Districts should pass budget ordinances on the timeline required by state law. Consistent, timely, and transparent budget adoption is a baseline governance expectation and supports accountability and sound financial planning. A pattern of late budget ordinances has recurred within some Districts; addressing these deficiencies can prevent escalating downstream compliance and governance issues.

Participants: Districts (initiators)

Recommendations for Improvements

Explore opportunities to optimize District asset management.

Districts currently have substantial funds in bank accounts, including some funding planned for longer-term capital projects. Districts use a variety of investment strategies, including certificates of deposit (CDs), Treasury bonds, money market accounts, and The Illinois Funds, a state-run, pooled investment account for local governments in Illinois. Districts balance various priorities, including liquidity needs and returns on investment. These investment choices matter because poor investment decisions may translate to tens of thousands of dollars in foregone revenues. Districts with low or zero investment returns on cash reserves should consider investing in the Illinois Funds or other higher yield options.

Participants: Districts (initiators)

Preparedness

Collaborate to strengthen surveillance through human case data.

To improve countywide surveillance of vector-borne disease trends and make diagnosis of vector-borne diseases more timely and consistent, CCDPH could work with Districts to provide local health care providers and associations with information on local vector-borne disease risks, raise awareness of diagnostic criteria, and help medical stakeholders remain aware of relevant trends and emerging threats. Historically, health care providers have not recently been active stakeholders in local vector control discussions. Human case data is a valuable but inconsistent and delayed signal of local vector-borne disease transmission risk. Especially as new mosquito species with different associated diseases arrive and the risk from ticks increases, creating a stronger human case-based surveillance system can improve preparedness for future threats and engage valuable partners in combating vector-borne disease.

Participants: CCDPH (Initiator), Districts, local health care providers and associations

Recommendations for Improvements

Work with stakeholders to consider an updated emergency preparedness plan for vector-borne disease outbreaks.

Emergency preparedness planning is a core function of public health systems. As the threat of vector-borne disease grows, emergency operations planning for potential outbreaks is important to establish protocols for critical elements such as supply lines and distribution for emergency pesticides, public communications for cross-jurisdiction outbreaks, and information sharing across vector control programs. CCDPH can work with Districts and other stakeholders to consider developing an updated emergency preparedness plan for vector-borne disease outbreaks, and may wish to approach IDPH regarding leading or participating in such an effort.

Participants: CCDPH and IDPH (initiators), Districts, other public health and vector control program stakeholders

Integrate vector-borne disease risks and considerations into relevant natural disaster preparedness planning and response.

Description: Natural disasters can dramatically change vector-borne disease risk overnight. As the changing climate increases the frequency of conditions (heavy rainfall, flooding, extended warm seasons) that amplify mosquito and tick habitats and populations, building vector considerations into natural disaster frameworks can more comprehensively support an effective public health response when disasters occur. Existing natural disaster preparedness planning and protocols can be strengthened by explicitly incorporating vector-borne disease considerations. Districts and other vector control programs can sometimes be excluded from emergency preparedness and response efforts as nontraditional partners despite the relevance of their equities and services. CCDPH may wish to approach IDPH regarding a collaborative approach to these updates.

Participants: CCDPH and IDPH (initiators), Cook County, Districts, Cook County Department of Emergency Management and Regional Security

Recommendations for Improvements

Surveillance

Fully implement and institutionalize tick surveillance as an ongoing function in vector control programs across Cook County.

As the threat of tick-borne disease increases nationwide and across Cook County, tick surveillance is outside the historical scope and expertise of many vector control programs. While most Districts have stood up tick surveillance programs, some are nascent, and one has not yet instituted this surveillance. Establishing new programs requires staff time, expertise, equipment, and funding. Actively scaling up and institutionalizing tick surveillance as a core function across all Districts and in areas served by CCDPH would strengthen Cook County's readiness to address this emerging threat.

This recommendation would be best accompanied by standardized data sharing as well as coordination around best practices, control options as they become available, and public education. Districts may consider collaborating with LHDs in their territory eligible for IDPH's Tick Surveillance grants. CCDPH and the Districts may also wish to engage municipal governments to coordinate on surveillance and promote consistent public guidance on tick-borne disease risk and prevention. Tick dragging on Forest Preserve land, and information sharing between Districts and the Forest Preserves about tick surveillance findings, should be coordinated jointly as well. CCDPH would require additional resources to fully institutionalize an ongoing tick surveillance function as well as coordinate related countywide collaboration.

Participants: CCDPH and Districts (initiators), municipal governments, other local LHDs, Forest Preserves

Recommendations for Improvements

Engage the Forest Preserves in broader strategic planning and surveillance discussions to provide ongoing visibility into trends and emerging threats, including around ticks.

To improve consistency and coordination in engagement between Districts and the Forest Preserves, the Districts and CCDPH can involve the Forest Preserves in planning and surveillance discussions to provide ongoing visibility into identified trends and emerging threats, including ticks. The Forest Preserves can also provide surveillance insights from their zoonotic disease monitoring activities and other insights from their territory. This dialogue can strengthen working relationships and support shared actions around messaging for Forest Preserves guests and the general public, surveillance and control activities in Forest Preserves lands, and combating emerging threats. This recommendation may be supported by regular convenings across Cook County vector control stakeholders.

Participants: CCDPH and Districts (initiators), Forest Preserves

Treatment

For organizations that don't already have them, develop written action threshold policies to support consistent IMM practices.

Written action threshold policies define the conditions under which specific interventions (such as larviciding, adulticiding, surveillance intensification) are triggered. Vector control programs that do not currently have these written thresholds should document and examine their policies in support of consistent IMM practices and preparedness. Written thresholds can also help establish expectations with the public and support vector control programs in maintaining evidence-based approaches to pesticide application. Additionally, existing written action threshold policies contain some differences and may benefit from discussion across Districts; while such variation is common and may reflect community-specific and historical differences, understanding differences in approach can improve future coordination.

Participants: Districts and CCDPH as applicable (initiators)

Continue to identify opportunities to align abatement strategies with IMM best practices.

Districts, CCDPH, and other stakeholders can work together to encourage upstream source reduction and larval control as effective upstream tools of IMM, encouraging diminished reliance on adulticide. While spraying adulticide has become less common, especially to combat nuisance mosquitoes, public demand still exists in some areas. Facilitating education of residents, local officials, and community groups can help create understanding of sustainable and effective mosquito management, especially considering risks to human health and environmental health. Written action thresholds may also support this recommendation.

Participants: Districts (Initiators), CCDPH

Recommendations for Improvements

Source Reduction

Explore opportunities to support tire collection initiatives to reduce breeding habitats.

Used tires are a major source of mosquito breeding in suburban Cook County, particularly in areas with higher concentrations of abandoned and unmaintained properties. The State of Illinois already provides some resources through the Illinois EPA's Units of Local Government Collection Program, funded through the Used Tire Management Fund, which removes and disposes of tires from public and abandoned properties at no cost to local governments. Districts can participate in this program, as DVMAD has done, and may also wish to consider registering as a used tire collection site to provide a sanctioned local drop-off point.

Participants: Districts (initiators), CCDPH, municipalities, Illinois EPA

Conclusion

Mosquito Abatement Districts fulfill a critical public health function across suburban Cook County, with distinct organizational characteristics, operations, and finances. As independent units of government, they reflect the unique needs, context, and expectations of their communities, historical and current governance practices, and changing threats in vector-borne disease. All four Districts are performing the fundamental surveillance and control activities of a vector control program. While SCCMAD is referenced several times in this assessment in terms of opportunities to better align with IMM and effective administration, its team has been undertaking active efforts to address the identified areas for development. Variation across the Districts does not necessarily suggest inadequate performance of core capabilities because of the many ways a vector control program can satisfactorily accomplish its goals and because NSMAD and NWMAD have been recognized nationally for accomplishments in the practice and science of IMM.

Opportunities exist to strengthen vector control across Cook County, which is increasingly important to combat the growing threat posed by new mosquito species, insecticide resistance, and ticks. Substantial improvement can be accomplished through enhanced coordination, collaborative efforts toward full and engaged Boards, and alignment with IMM best practices. These efforts will be most effective with engagement not only from the Districts but from other entities engaged in mosquito management across Cook County, including County and municipal partners. Structural reforms may reduce fragmentation but carry risks of operational disruption and reduced local control, as well as long and complex paths to implementation.

In presenting an assessment of the four Districts and recommendations for the future, this report also aims to improve understanding of current vector control efforts and the changing risk landscape for vector-borne disease. Through evidence-driven collaboration and planning, stakeholders can build on existing capabilities to enhance readiness and protect public health in Cook County.

Appendix



Illustration/CDC.gov

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Appendix

GLOSSARY

Term	Definition
ACFRs	Annual Comprehensive Financial Reports
ADA	Americans with Disabilities Act
AMCA	American Mosquito Control Association — the trade association that publishes Best Management Practices for Integrated Mosquito Management
BTI	Bacillus thuringiensis israelensis — a biological larvicide that targets mosquito larvae with minimal impact on other organisms
CCDPH	Cook County Department of Public Health
CDC	U.S. Centers for Disease Control and Prevention
CCH	Cook County Health
DDT	Dichloro-diphenyl-trichloroethane
DVMAD	Desplaines Valley Mosquito Abatement District
EEE	Eastern Equine Encephalitis
EPA	U.S. Environmental Protection Agency
FDIC	Federal Deposit Insurance Corporation — insures bank deposits up to federally established limits
GIS	Geographic Information Systems
IDPH	Illinois Department of Public Health
IMM	Integrated Mosquito Management — the CDC- and AMCA-endorsed framework combining surveillance, source reduction, biological and chemical control, and public education
IMRF	Illinois Municipal Retirement Fund — the public pension system for most Illinois local government employees

Appendix

GLOSSARY

Term	Definition
IVAN	Illinois Vector-disease Abatement Network — a state-level association of the Districts
MAD	Mosquito Abatement District
NACCHO	National Association of County and City Health Officials
NJLT	New Jersey light trap — a long-standing standard trap design used for adult mosquito surveillance
NSMAD	North Shore Mosquito Abatement District
NWMAD	Northwest Mosquito Abatement District
PCR / RT-PCR	Polymerase Chain Reaction / Reverse Transcription Polymerase Chain Reaction — laboratory methods used to detect viral RNA in mosquito samples
PTLL	Property Tax Extension Limitation Law — caps year-over-year increases on Illinois property tax extensions
RAMP	Rapid Analyte Measurement Platform — a protein-antigen assay used to screen mosquito pools for WNV
SCCMAD	South Cook County Mosquito Abatement District
SLMAD	Southlake Mosquito Abatement District — dissolved and annexed into NSMAD in November 2025
SLE	St. Louis encephalitis — a viral disease spread primarily by <i>Culex</i> mosquitoes
VI	Vector Index — an estimate of the number of WNV-infected <i>Culex</i> mosquitoes per area, used to trigger adulticide decisions
VDCI	Vector Disease Control International
WNV	West Nile virus
WCAG	Web Content Accessibility Guidelines

APPENDIX I: COOK COUNTY BOARD RESOLUTION 25-3114



Board of Commissioners of Cook County

118 North Clark Street
Chicago, IL

Legislation Details (With Text)

File #:	25-3114	Version:	1	Name:	Resolution Calling for Evaluation and Reform of Cook County Mosquito Abatement Districts
Type:	Resolution	Status:		Status:	Approved
File created:	6/9/2025	In control:		In control:	Legislation and Intergovernmental Relations Committee
On agenda:	7/24/2025	Final action:		Final action:	9/18/2025
Title:	PROPOSED RESOLUTION				

RESOLUTION CALLING FOR EVALUATION AND REFORM OF COOK COUNTY MOSQUITO ABATEMENT DISTRICTS

WHEREAS, the four Mosquito Abatement Districts (MADs) in Cook County were created through the Mosquito Abatement District Act (70 ILCS 1005/0.01) promulgated in 1927. The Act states the "... board of trustees of any mosquito abatement district, or its designee, shall conduct routine surveillance of mosquitoes to detect the presence of mosquito-borne diseases of public health significance. The surveillance shall be conducted in accordance with mosquito abatement and control guidelines as set forth by the U.S. Centers for Disease Control and Prevention"; and

WHEREAS, organisms such as mosquitoes that are capable of transmitting diseases and parasites from one human or animal to another are known as vectors; and

WHEREAS, the United States Centers for Disease Control and Prevention considers Illinois "vulnerable" to vector-borne diseases; and

WHEREAS, Illinois Mosquito Abatement Districts are authorized by the Mosquito Abatement District Act to safeguard the health of residents through a methodical program to monitor and/or reduce vectors of disease such as mosquitoes, rats and ticks; and

WHEREAS, Mosquito Abatement Districts are independent special districts with a separate taxing authority that use integrated mosquito management strategies to control mosquito populations and prevent diseases from mosquito-borne pathogens such as malaria, yellow fever, dengue, filariasis, encephalitis, Zika and West Nile virus; and

WHEREAS, the management of mosquito populations reduces the risk of disease from such pathogens and protects public health; and

WHEREAS, municipalities and counties nationally spend vastly different dollar amounts on mosquito abatement services and each has its own governance structure. For example, Miami-Dade County, Florida spends approximately \$15 per capita on mosquito abatement. The Minneapolis-St. Paul, Minnesota metropolitan area spends approximately \$8 per capita; and Cook County, Illinois spends approximately \$5.05 per capita. The Minneapolis-St. Paul metropolitan area has one consolidated Mosquito Abatement District which services seven (7) counties that make up the Minneapolis and St. Paul regions; and

WHEREAS, mosquito abatement services are delivered in Cook County through a fragmented array of special district governments, municipal or county public health programs, public works programs, townships, and/or through contracts with private companies. In suburban Cook County (945 sq. miles), there are at least eight (8) entities that provide the majority of mosquito abatement services. There are four (4) separate and independent Mosquito Abatement Districts that provide direct mosquito abatement services including: the North Shore MAD (70 sq. miles), Desplaines Valley MAD (77 sq. miles), Northwest MAD (242 sq. miles), and South Cook County MAD (340 sq. miles). The City of Chicago Department of Public Health covers areas outside of South Cook County MAD and within the

Board of Commissioners of Cook County

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City of Chicago (~160 sq. miles) via commercial contract. The remaining portions of Cook County are managed by a variety of other entities including Stickney Public Health District (13 sq miles), Leyden Township (20 sq miles), and The Cook County Department of Public Health (generally in areas not covered by MADs) often by commercial contract; and

WHEREAS, Mosquito Abatement services in Cook County are funded primarily through property tax levies, resulting in approximately \$12.4 million distributed across the four districts, \$150,000 to Cook County DPH and \$1.2 million to the City of Chicago; and

WHEREAS, the four (4) separate Cook County Mosquito Abatement Districts serve different geographical regions across the County, each of which has an independent Board, director and employees; and

WHEREAS, a county-wide comprehensive, data-and-science driven mosquito management program that is prevention-focused, prevents disease through habitat reduction, public education, the promotion of personal protective measures, and the targeted use of biorational and microbial larvicides will reduce reliance on wide-area adult mosquito control (an approach that should be reserved for situations in which surveillance data or public health concerns indicate an elevated risk and when other interventions have not achieved the desired outcomes); and

WHEREAS, this type of comprehensive, prevention-focused and data-driven integrated mosquito management approach is not uniformly practiced throughout Cook County; and

WHEREAS, a recent Civic Federation report finds, "there has been a disparity in mosquito abatement control programming among the different districts . . ." and surveillance efforts are critical for a successfully integrated mosquito management approach. South Cook County MAD, located in an economically disadvantaged part of the county, routinely employs 38 CDC gravid traps for 340 sq miles of district territory for a trap density of 1 trap per 8.9 square miles. The North Shore MAD routinely employs 19 CDC gravid traps over 69 sq miles of territory for a density of 1 trap per 3.63 sq mile representing a ~2.45-fold difference in surveillance effort for mosquitoes and pathogens. For other trap types (New Jersey Light Trap), the South Cook County MAD employs 1 trap per 85 sq. miles. The North Shore MAD routinely employs 1 trap per 7.66 sq miles representing an ~11-fold difference in surveillance efforts; and

WHEREAS, Cook County has an interest in ensuring the efficacy of critical public health services, including mosquito and mosquito-borne disease surveillance, the promotion of personal protective measures, the reduction or elimination of mosquito breeding sites, larval reduction to prevent adult mosquitoes, and contingency wide-area adult mosquito control are uniformly conducted throughout the County according to CDC guidelines and an integrated mosquito management approach; and

WHEREAS, each entity conducting mosquito control in Cook County has varying operational systems, policies and procedures, reporting and data management capacity making any assessment of mosquito abatement activities and programmatic success more challenging; and

WHEREAS, the Cook County Office of Inspector General (OIG) and the Chicago Sun-Times have documented ethics, management, financial issues and conflicts of interest at the South Cook County Mosquito Abatement District, the largest of the four districts; and

WHEREAS, a 2021 Office of Inspector General report noted the South Cook Mosquito Abatement District "for a testing regime that lags those of the other districts, spends less money on vector testing and control programs, and fails to cooperate with the Illinois of Public Health"; and

WHEREAS, the South Cook Mosquito Abatement District covers populations that have a higher share of communities at risk than other Mosquito Abatement Districts, raising concerns of increased threats to public health, disparities in service and inequity. A less than fully functioning Mosquito Abatement District fails to prevent disease and doesn't fulfill the purpose of equally protecting all Cook County residents under state law; and

WHEREAS, it is anticipated that climate change will result in an increase in vector borne diseases,

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some of which may be prevented by effective mosquito abatement; and

WHEREAS, mosquito abatement is carried out with vastly different methods, different levels of effectiveness, different levels of safety throughout Cook County resulting in an inequitable distribution of services, and widening health inequities; and

WHEREAS, based on OIG reports, the Civic Federation report, and documentation to date, the patchwork of mosquito abatement services, including mosquito abatement districts, may not be equally fulfilling their important purpose; and

NOW, THEREFORE, BE IT RESOLVED, the County through the Cook County Department of Public Health should conduct an assessment of mosquito abatement activities across suburban Cook County, including but not limited to, North Shore MAD, Northwest MAD, Des Plaines Valley MAD, South Cook County MAD, and make recommendations regarding improvements and governance to ensure consistency of services across suburban Cook County and assess how such options are impacted by State law. The Cook County Department of Public Health should include stakeholder engagement which may include but not be limited to other local public health departments, academic institutions, the Cook County Department of Environmental Sustainability, the MADs and the Forest Preserve District of Cook County in determining their recommendations; and

FURTHER BE IT RESOLVED, that the Cook County Department of Public Health should report their recommendations to the President and Cook County Board of Commissioners on or before May June 1, 2026.

Sponsors: BRIDGET DEGNEN, TONI PRECKWINKLE (President), DONNA MILLER, JOHN P. DALEY, JESSICA VÁSQUEZ, SEAN M. MORRISON, FRANK J. AGUILAR, TARA S. STAMPS, STANLEY MOORE, BRIDGET GAINER, MICHAEL SCOTT JR., SCOTT R. BRITTON, MAGGIE TREVOR

Indexes:

Code sections:

Attachments:

Date	Ver.	Action By	Action	Result
9/18/2025	1	Board of Commissioners	approve as amended	Pass
9/18/2025	1	Legislation and Intergovernmental Relations Committee		
9/17/2025	1	Legislation and Intergovernmental Relations Committee		
7/24/2025	1	Board of Commissioners	refer as amended in the errata	Pass

Appendix

APPENDIX II: PROPERTY TAX LEVIES AND RATES FOR ALL DISTRICTS

	DVMAD		NSMAD		NWMAD		SCCMAD	
Tax Year	Requested Levy	Tax Rate	Requested Levy	Tax Rate	Requested Levy	Tax Rate	Requested Levy	Tax Rate
2014	\$1,306,595	0.016%	\$1,450,575	0.013%	\$2,749,943	0.011%	\$2,563,928	0.017%
2015	\$1,466,294	0.017%	\$1,521,650	0.012%	\$2,199,954	0.011%	\$2,743,403	0.017%
2016	\$1,466,294	0.017%	\$1,596,210	0.010%	\$2,265,953	0.010%	\$2,743,403	0.017%
2017	\$1,466,294	0.015%	\$1,520,127	0.010%	\$2,378,117	0.010%	\$3,164,102	0.016%
2018	\$1,466,293	0.015%	\$1,520,127	0.010%	\$2,495,597	0.011%	\$3,385,590	0.017%
2019	\$1,363,294	0.014%	\$1,520,127	0.009%	\$2,618,879	0.010%	\$3,311,837	0.018%
2020	\$1,363,293	0.012%	\$1,520,127	0.009%	\$2,705,826	0.010%	\$3,388,009	0.017%
2021	\$1,347,385	0.014%	\$1,520,127	0.009%	\$2,705,556	0.011%	\$3,166,364	0.019%
2022	\$1,424,755	0.015%	\$1,520,127	0.008%	\$2,593,697	0.009%	\$3,239,190	0.021%
2023	\$1,430,216	0.012%	\$1,520,127	0.008%	\$2,912,363	0.010%	\$3,622,334	0.017%
2024	\$1,498,586	0.011%	\$1,580,932	0.008%	\$3,057,978	0.011%	\$3,750,000	0.017%

Appendix

APPENDIX III: INSECTICIDE USAGE BY DISTRICTS

Below is a table comparing the selection of different insecticides – both larvicides and adulticides – by District. Not every product is necessarily used during a mosquito season.

District Insecticide Products				
	NSMAD	NWMAD	DVMAD	SCCMAD
ADULTICIDES				
Anvil				
Cyzmic				
Duet				
Duet HD				
Flit 10EC				
Permasease 20-20				
Remoa Tri				
Zenivex				
LARVICIDES				
Altosid 150 day				
Altosid 20%				
Altosid 30 d				
Altosid 4%				
Altosid 5%				
Altosid P35				
Altosid SR20				
Altosid WSP				
Altosid XR Ingot				
Altosid XRG Ultra				
Altosid Pellets				
BVA Mineral Oil				
Duplex G				
Golden Bear				
Meta-Larv SPT				
Natular DT				
Natular G				
Natular G30 WSP				

Appendix

APPENDIX III: INSECTICIDE USAGE BY DISTRICTS

District Insecticide Products				
	NSMAD	NWMAD	DVMAD	SCCMAD
Natular SC				
Natular XRT				
SumiLarv 0.5G				
SumiLarv MCP				
SumiLarv WSP				
Summit Dunks				
Vectobac 12AS				
VectoBac G				
VectoBac GS				
VectoBac WDG				
VectoLex FG				
VectoLex WDG				
VectoLex WSP				
VectoMax FG				
VectoMax WSP				
VectoPrime FG				