



2022 Integrated Pest Management Annual Report



Hills above Marsh Creek Detention Facility

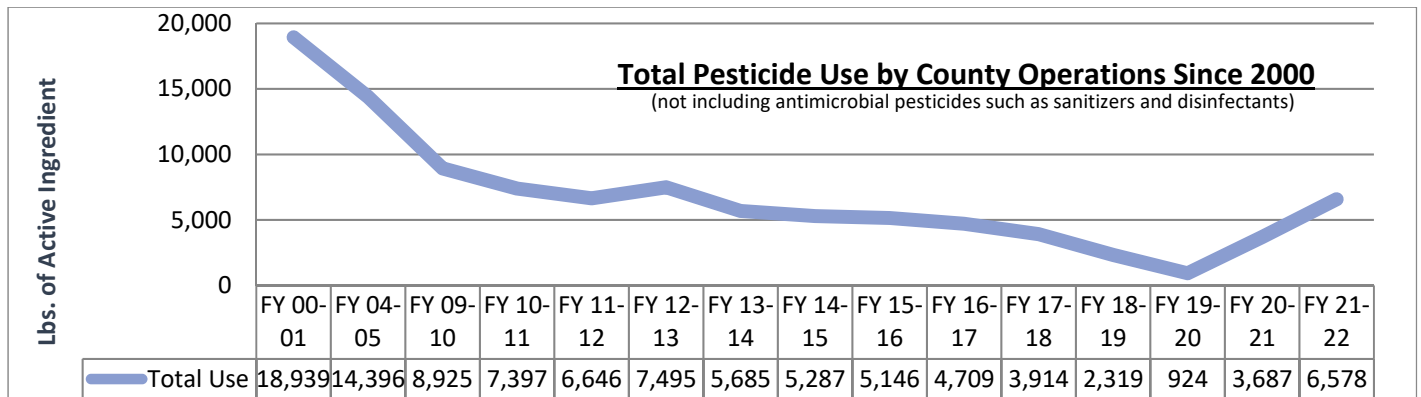
IPM Advisory Committee Members

| | |
|----------------------------------|---|
| Jim Donnelly, Chair..... | Public Member #3 Seat |
| Kimberly Hazard, Vice Chair..... | Sustainability Commission Representative |
| Carlos Agurto, Secretary..... | County Pest Management Contractor Seat |
| Susan Captain..... | Public Member #1 Seat |
| Stephen Prée..... | Public Member #2 Seat |
| Amy Budahn..... | Public Member Alternate Seat |
| Andrew Sutherland..... | Environmental Organization Representative |
| Susan Heckly..... | Fish & Wildlife Commission Representative |
| Michele Mancuso..... | County Stormwater Program Representative |
| Michael Kent..... | Health Services Department Representative |
| Dave Lavelle..... | Public Works Facilities Designee |
| Chris Lau..... | Public Works Deputy Director Designee |
| Beth Slate..... | Agriculture Commissioner Designee |

Executive Summary

Pesticide Usage

- For the first time in the history of the IPM Program, the amount of pesticide applied to County property has increased for two consecutive years. Usage numbers from 2018 to 2021 are misleading since the Public Works Department Maintenance Division (PWD-Maintenance) suspended herbicide applications during that time. Nevertheless, usage this year represents a nine-year high and merits a closer examination of the program in 2023. The following chart shows the total amount of pesticide used by County operations since 2000.



IPM Program Highlights

- The IPM Advisory Committee developed a new IPM plan template to help County pest management operations comply with [Administrative Bulletin 542](#). The new, simplified format is nimbler than previous versions and highlights information relevant to public observation. Each section within the template provides guidance for County staff while promoting a process that refines how the Committee monitors pest management activities in County operations. The Committee anticipates annually reviewing each completed departmental or divisional IPM plan during its meetings.
- The Committee initiated the process to revise the County IPM Policy and Committee bylaws. Potential revisions were identified during Committee discussions about potentially adding seats to represent University of California Agriculture and Natural Resources (UCANR) and the Public Works Airports Division (PWD-Airports). Additional alterations being discussed include converting the Public Member-Alternate seat to an at-large public member seat and designating all seats as voting members. Committee membership has historically been listed in both the IPM Policy and the bylaws. The Committee will likely propose removing the membership section from the Policy so future revisions to either document would not require an update to both.
- The Committee completed [Decision Documentation for Vegetation Management at County Airports](#). The document transparently depicts how vegetation management decisions are made at both County airports and identifies areas for refinement. An enhanced use of the [Pesticide Risk Footprint Tool](#) is incorporated in the chemical controls section.
- The IPM Coordinator assisted the Board of Supervisors in preparing [Resolution Number 2022/96](#) commemorating the 100th anniversary of the birth of IPM pioneer Dr. Robert van den Bosch in Martinez. The resolution passed unanimously and is now on display in the Martinez Museum. Van, as he was primarily known, coauthored a seminal article that is largely credited with the introduction of several concepts now known as integrated pest management.

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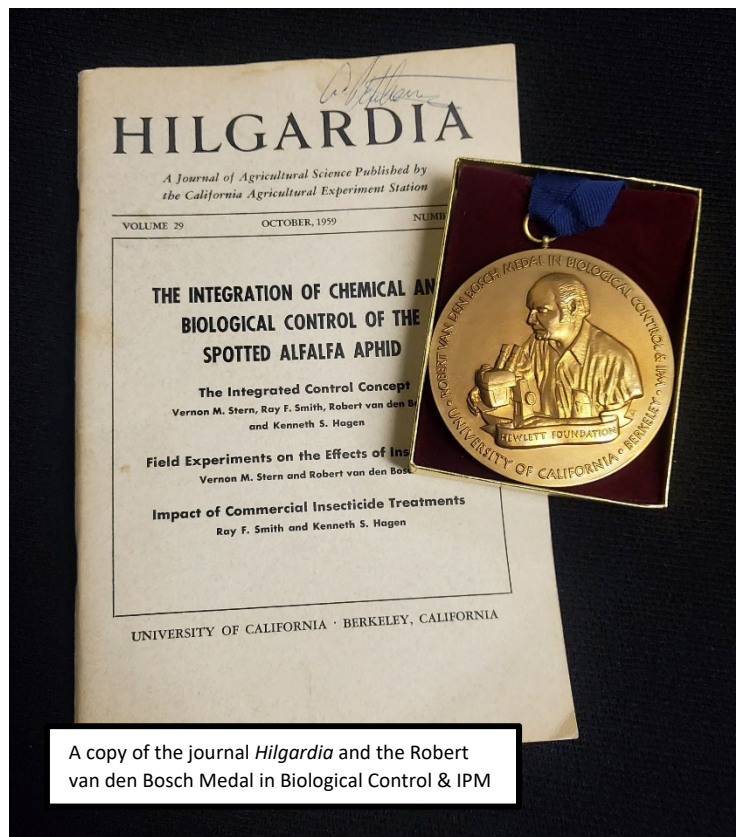
Introduction

Integrated Pest Management (IPM) has never been—nor will it likely ever become—a tidy system of definitive rules and rigid metrics. IPM also has never been and probably won't ever be the first topic of choice in most conversations that occur amongst our species. Even within peculiar circles of professionals and citizens who share concerns about weeds, bugs, germs, rodents and other accoutrements of the natural world, the topic is often queued below a list of more elegant subjects.

Nevertheless, the IPM Advisory Committee continues to simultaneously engage in the ongoing experiment of democracy as well as this sordid, yet critical pursuit. The difference between IPM victories and failures are rarely clear. 2022 is no exception. On one hand, pesticide usage in County departments reached a 9-year-high. On the other, the Committee developed an IPM plan template that should illuminate paths toward the refinement of pest management programs in the County.

November 12, 2022 marked exactly twenty years since the Board of Supervisors (Board) adopted Contra Costa County's first IPM Policy. Another local anniversary significant to the global practice of IPM was also observed earlier in the year. On March 31st, the Board [commemorated](#) the centennial of the birth of IPM pioneer Robert van den Bosch (Van) in Martinez. Van was born and raised in Martinez; he and his wife Peggy were residents of Kensington. Along with contemporaries he initiated concepts of pest containment in agricultural systems that have since been incorporated into urban integrated pest management programs.

As we reflect on the legacy of Professor Van den Bosch and two decades of IPM in the County, the quest to pursue a more perfect program endures. Pesticide use reporting will continue to be a key component of the IPM Program, but it does not fully convey contextual complexities. Climate impacts, staff shortages, and other considerations will continue to complicate an already dynamic overlap between natural systems and the built environment. The new IPM plan format for operations within the County is intended to move towards an elevated level of stewardship.



A copy of the journal *Hilgardia* and the Robert van den Bosch Medal in Biological Control & IPM

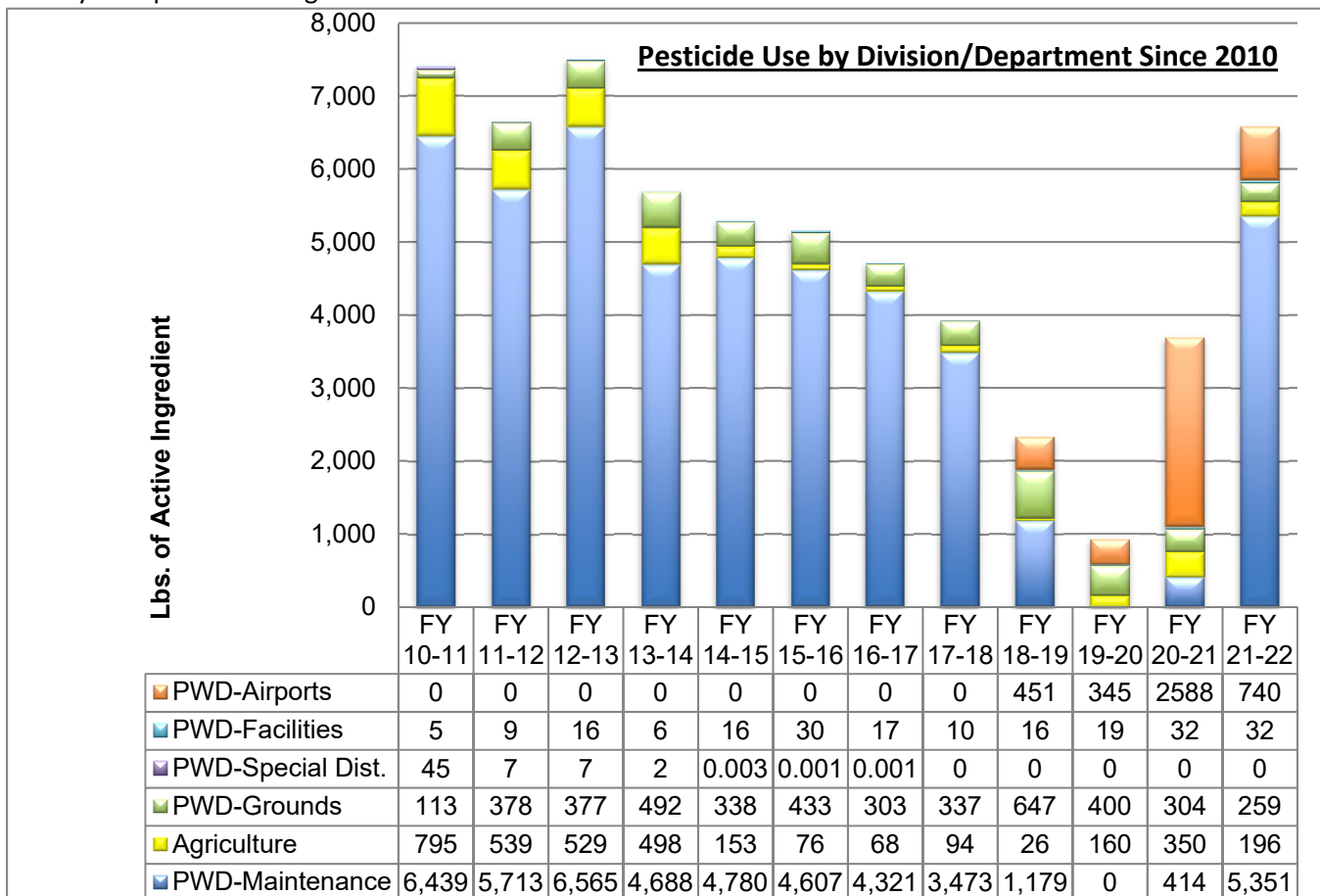
Perhaps the next 20 years of the IPM program will feature enhanced mechanisms for measuring holistic management outcomes. Most land and structural properties operated by the County and similar institutions are typically managed with a focus on a single function. An expanded view of many of these parcels reveal latent beneficial resources that extend beyond useful square footage or road miles. Co-benefits of an ecosystem-based strategy could include drought resilience, carbon sequestration, habitat improvements and many others.

Pesticide Usage

Between 2000 and 2020, the County reduced pesticide use by 95%. In the two years since that point, usage is now trending upwards. This year, the amount of herbicide applied on County properties reached the highest point it has been since fiscal year (FY) 2012-13. The increase is attributed to PWD-Maintenance who manage vegetation on roadsides, rights-of way, and Flood Control properties. The Decision-Making Subcommittee and PWD-Maintenance intend to review herbicide use as part of the process of revising pertinent decision documents in 2023.

PWD-Maintenance has four Vegetation Management Technician positions and FY 2021-22 was the first time in several years that all four positions were filled. Since then, three of the four have either retired or resigned. The combination of being fully staffed during the reporting period and the need to catch up on deferred maintenance in untreated areas during the 26-month suspension of herbicide applications, contributed to the drastic increase. This was also the first full year of herbicide applications in the Maintenance Division since FY 2017-18. It's important to note that a single year's data does not represent a trend, and the planned engagement with PWD-Maintenance in 2023 will further clarify details of this critical program. A guiding principal will be to appropriately juxtapose chemical controls with mandated fire prevention, traffic safety, and flood prevention expectations.

The chart below shows the last 12 years of pesticide usage broken down by department or division. Note that these totals with limited exceptions do not include sanitizers and disinfectants which are classified as pesticides by the Environmental Protection Agency. The full [Pesticide Use Summary Comparison](#) details Countywide pesticide usage in FY 2021-22.



Development of the Departmental/Divisional IPM Plan Template

The most notable achievement of the Committee in 2022 was the creation of a departmental/divisional IPM plan template. The Committee reviewed existing departmental IPM plans in 2021 and advised the IPM Coordinator to draft an updated template. The first draft was introduced in January. The Committee worked from January through July to refine the format to be more user-friendly for County staff while promoting a process that improves how the Committee—and the public, by extension—monitors pest management activities in County operations.

With the exception of the PWD-Facilities IPM plan developed by Pestec, the other departmental IPM plans had not been revised since 2013 (PWD-Facilities require selected structural pest management contractors to submit an IPM plan as specified in the competitive bidding process). The 2013 versions were thorough and included an admirable level of detail. However, the Committee found that a simpler format would better support the goals of the IPM Policy.

Administrative Bulletin 542 requires the Agriculture and Public Works Departments to "develop and maintain a written IPM Plan, or its equivalent, specific to the operational needs of the department and consistent with the (University of California Statewide IPM Program) IPM definition." The policy also requires each department to designate a departmental IPM Coordinator and provide an annual report of pest management activities to the County IPM Coordinator by September 30th of each year.

One key role of the IPM Advisory Committee as stated in the IPM Policy is to "serve as a resource to help both department heads and the Board of Supervisors review and improve existing programs and the processes used for making pest management decisions." The Committee will be better situated to fulfil that role if the new template is adopted by each applicable department or division.

The IPM Advisory Committee anticipates annually reviewing each completed divisional IPM plan during regular meetings. This is in addition to the requirement that each departmental IPM Coordinator provide an annual report to be included with the Committee report as referenced above. Presumably, the discussion that occurs during the annual IPM plan review will clarify expectations for the divisional IPM annual reports to be submitted later in the year.

The proposed template including written guidance for every section is featured in [Appendix A](#). Previous versions of departmental IPM plans can be found at the following links:

- [2013 IPM Plan for the Agriculture Department](#)
- [2013 IPM Plan for PWD-Maintenance](#)
- [2021 IPM Plan for PWD-Facilities \(Pestec\)](#)
- [2013 IPM Plan for PWD-Grounds](#)

Initiated Revisions to Committee Bylaws and the County IPM Policy

During the July meeting, the Committee reviewed their bylaws which were last updated in 2017. That discussion led to the creation of an ad hoc subcommittee to examine potential changes. Since many elements of the bylaws are replicated in the County IPM Policy, the subcommittee simultaneously reviewed both documents. They met four times between September and November. The full Committee discussed the recommended revisions in their November meeting and will continue to deliberate on the topic in 2023.

The most substantial bylaws change being considered includes amending Committee membership to add a representative from University of California Agriculture and Natural Resources (UCANR) as well as a staff seat representing PWD-Airports. The Committee is also considering the designation of all seats as voting members.

Pending changes to the IPM Policy involve the removal of duplicate items also found in the bylaws as well as minor editorial modifications.

There is precedent for inclusion of UCANR in the County IPM Program. The previous iteration of the Committee (prior to 2009) had a designated UC seat. The current Environmental Organization Seat is filled by Dr. Andrew Sutherland, an IPM Advisor with the Cooperative Extension (a program of UCANR). Dr. Sutherland also served in the Public Member #2 At-Large Seat from 2016 through 2019. There are several UCANR-affiliated professionals in the region whose areas of expertise would benefit the work of the Committee on a wide range of IPM-related topics. Those include human-wildlife interactions, urban forestry, specialty crops, rangeland management, urban agriculture, and other relevant disciplines.

The rationale for adding a representative from PWD-Airports is that they now manage all components of their sizable vegetation management program. Prior to 2018, airport herbicide applications were performed by PWD-Maintenance staff. Airport Safety Officers now use chemical controls to supplement their vegetation management efforts that consist of mechanical, cultural, and biological tactics. Other changes to staff seats on the Committee were explored. The executive management teams of the Agriculture and Public Works Departments were consulted during this process and are supportive of the modifications under consideration.



Additional Accomplishments of the Committee

Other notable activities of the Committee in 2022 included the development of [Decision Documentation for Vegetation Management at County Airports](#) and the facilitation of discussions on the following topics:

1. IPM specifications on leased property.
 2. Per- and polyfluoroalkyl substances (PFAS) in artificial turf.
 3. Review of previous Committee recommendations.
1. Decision-Making Subcommittee members raised concerns about potential liabilities associated with pest management activities conducted by private lessees on County property near the Buchanan Field Airport. Representatives from the Public Works Real Property Division (PWD-Real Property) and PWD-Airports attended the March meeting of the full Committee to discuss the concerns. The presenters noted that current lease agreements—both for when the County acts as lessee and lessor—do not specifically include language that requires or encourages IPM practices. The IPM Policy applies only to County-maintained properties, but [Administrative Bulletin 542](#) requires “reasonable efforts to negotiate the use of IPM practices as a part of” leases with terms of more than three months.

2. During the May meeting, Dr. Salar Parvini from the National PFAS Workgroup Council presented information regarding PFAS in artificial turf. The item was of interest to the Committee since it included the installation of artificial turf as a type of cultural control in [Decision Documentation for Vegetation Management at Juvenile Hall](#). The Committee referred additional consideration of the issue to the Decision-Making Subcommittee who discussed it in August. Subcommittee members expressed the importance of being aware of these hazards, but cited the lack of regulatory guidance and general information about exposure risks to formally make recommendations pertaining to the topic. In September, this was reported back to the full Committee who declined to take action.
3. Supervisor Candace Andersen attended the March meeting to discuss previous recommendations from the Committee. The discussion highlighted progress on some recommendations and identified implementation barriers on others. It was noted that even though many recommendations may not be feasible within current operations, they embody IPM values that County departments should aspire to. A tracking table of all recommendations made since 2018 is updated annually and provided to TWIC. In 2022, PWD-Maintenance and PWD-Grounds made progress on recommendations from previous years as pictured below.



Carlos Agurto from Pestec operates a CO-Jack machine to control ground squirrels along a Rheem Creek levee in Richmond. PWD-Maintenance initiated the pilot in response to excessive burrowing at this location. In 2019, the Committee recommended using this tactic as part of a year-round effort to protect critical infrastructure. Pest populations were reduced as a result of this effort. Ongoing trials and analysis are needed to fully evaluate potential expansion.

In 2020, the Committee made a recommendation to explore partnerships with organizations like Save Mount Diablo (SMD) who own property adjacent to the 154-acre parcel that contains Marsh Creek Detention Facility. County staff met with members of SMD's Land Stewardship Team to assess plant communities and other ecological assets. Pictured left to right is Sean Burke-SMD Land Programs Director, Debbie King- Grounds Supervisor from PWD-Grounds, and Roxana Lucero-SMD Land Stewardship Manager.



Attendance, Training, and Member Engagement

| IPM Advisory Committee Attendance | | | | | | | |
|--------------------------------------|------|------|------|------|------|-------|----------------|
| 2022 | 1/20 | 3/17 | 5/19 | 7/21 | 9/15 | 11/17 | Total Absences |
| Public Member #1 | P | P | | P | P | | 2 |
| Public Member #2 | | P | P | P | P | P | 1 |
| Public Member #3 | P | P | | P | P | P | 1 |
| Public Member Alternate | | P | P | P | | | 3 |
| Environmental Org. Representative | P | P | P | | | | 3 |
| Sustainability Comm. Representative | | P | P | P | P | P | 1 |
| Fish & Wildlife Comm. Representative | P | P | P | P | P | P | 0 |
| Stormwater Program Representative | P | P | P | P | | P | 1 |
| Health Services Representative | P | P | | P | P | P | 1 |
| Ag Commissioner Designee | | P | P | | P | P | 2 |
| PWD-Facilities Designee | P | P | P | | P | P | 1 |
| PWD Deputy Director Designee | P | P | P | | P | P | 1 |
| County Pest Mgmt. Contractor | P | | P | | P | P | 2 |
| Total Present | 9 | 12 | 10 | 8 | 10 | 10 | |
| Voting Members Present | 6 | 8 | 6 | 8 | 6 | 6 | |

P=Present

- All public members of the Committee are current on Brown Act and Better Government Ordinance Training.
- There have been no unexpected vacancies occur within the reporting period.
- In addition to the six meetings of the full Committee, many members also attended subcommittee meetings throughout the year. The Decision-Making Subcommittee met four times and the Ad Hoc Bylaws Subcommittee also had four meetings.
- No Committee meetings were canceled this year due to lack of quorum.
- A quorum of voting members was present for all meetings with the exception of half of the November meeting.
- Regarding current public members, two reside in Board District 1, three in District 2, one in District 4, and one in District 5. No public member currently lives in Districts 3 or the eastern portion of District 5.

2023 Work Plan of the IPM Advisory Committee

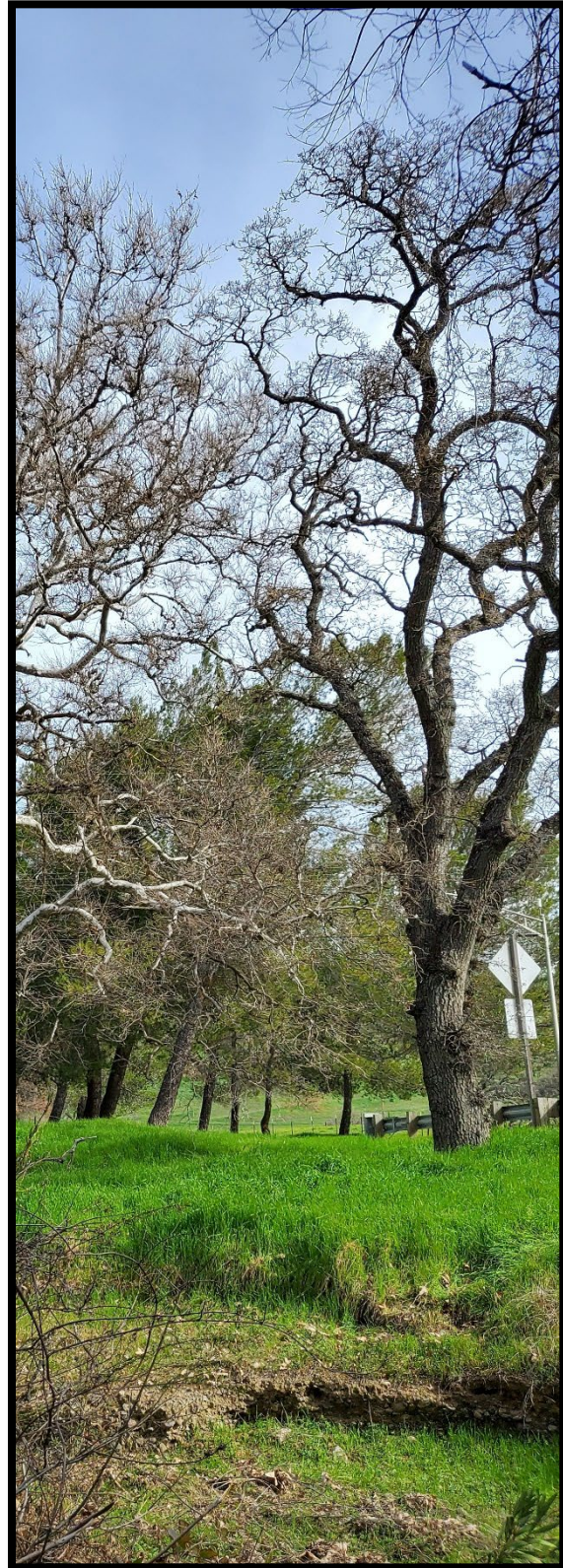
The IPM Committee will focus on the following objectives in 2023 that correspond to the four IPM Policy goals:

1. *Minimize risks to the general public, staff and the environment as a result of pest control activities conducted by County staff and contractors.*
 - a. **Implement an IPM training program that complies with County policy and other relevant mandates.**
 - b. **Identify IPM-related impacts of climate change and assist County operations create a better built environment.**

2. *Create, implement and periodically review written IPM plans in the Agriculture, Health, and Public Works Departments specific to their operational needs and consistent with the UC definition and this policy.*
 - a. **Review revised IPM plans for County departments and divisions during the year and advise departmental/divisional IPM coordinators on what elements to highlight in their annual report.**

3. *Promote availability, public awareness and public input into written county pest management plans and records.*
 - a. **Investigate the feasibility of standardizing pest management recordkeeping across County Departments and centralizing reporting protocols.**

4. *Create public awareness of IPM through education.*
 - a. **Coordinate meeting agendas around specific themes that promote engagement on IPM topics of mutual interest to residents and adjacent public agencies.**



Appendix A: Revised Departmental/Divisional IPM Plan Template



Contra Costa County Integrated Pest Management (IPM) Program Departmental/Divisional IPM Plan for

(Name of department or division)

Revised: (Date of Revision)

On November 12, 2002, the County Board of Supervisors adopted the Integrated Pest Management definition provided by the University of California Statewide IPM Project, which states: "Integrated Pest Management is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates that they are needed according to established guidelines, and treatments are made with the goal of removing only the target organisms. Pest control materials are selected and applied in a manner that minimizes risks to human health, to beneficial and non-target organisms, and to the environment."

The Agriculture and Public Works Departments will use the IPM principles set forth in this Administrative Bulletin whenever providing pest management services. Each department will establish an IPM program. As a part of the respective IPM programs, each department will develop and maintain a written IPM Plan, or its equivalent, specific to the operational needs of the department and consistent with the IPM definition above. Each Department will designate a Departmental IPM Coordinator responsible for implementation. (excerpt from [Administrative Bulletin 542](#))

Section 1: Overview of the pest management function in the department/division

Guidance: Include a general description of the department or division and the role of pest management in the context of its broader delivery of services. Characterize and quantify site types and list pests typical to each property. Where applicable, highlight regulatory mandates, customer service expectations, or industry standards that impact how pest management decisions are made. This section may also include organizational values that support the implementation of integrated pest management.

IPM Advisory Committee members recommend the inclusion of quantifiable data (miles of roadside, acres, square feet, etc.) to describe sites and also include the budgeted amount used on pest management-related efforts.

Section 2: Description of available staff and contractor resources

Name and title of departmental/divisional IPM Coordinator:

(not to be confused with the Countywide IPM Coordinator)

Classification titles of staff who perform pest management tasks and number of positions allocated:

Guidance: This should include titles of all positions making pest management decisions and those performing field tasks.

Description of IPM training currently available to staff:

Guidance: Detail which IPM-focused training is currently provided to staff and how it complies with the IPM Policy and provisions in the Municipal Regional Stormwater Permit (MRP).

The Countywide IPM Policy states “Training programs will be developed under the direction of the County IPM Coordinator with the concurrence of the IPM Advisory Committee to ensure that County employees understand IPM techniques and County Policy.”

The MRP requires “that all municipal employees who, within the scope of their duties, apply or use pesticides are trained in IPM practices and the Permittee’s IPM policy and/or ordinance and standard operating procedures.” (The current version of the MRP is available at this link:

https://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2022/R2-2022-0018.pdf

Names of private companies contracted to perform pest management tasks and scope of service rendered:

Guidance: List current service providers under contract that have any pest control component. This includes services such as landscape maintenance, grazing, trapping, disking, etc.

Section 3: Operational considerations

Description of how sites are monitored for pests and the process for selecting pest management tactics:

Guidance: Indicate who generally monitors each property for pests and the frequency of these visits. What methods are used? Also include the process for responding to service requests from citizens, customers, or regulatory bodies. Articulate what pest tolerance levels are in place and describe how they differ from one property type to another. If pest tolerance levels are not uniform throughout the property portfolio, describe how certain sites or segments of sites are prioritized.

Description of non-chemical pest management tactics most commonly used:

Guidance: List all non-chemical methods currently in use and include operational advantages and limitations of the different techniques. Project the long-term viability of each practice and indicate what barriers currently prevent broader application of each method.

Pesticide selection process:

Guidance: Detail how pesticides are selected to minimize risks to human health, to beneficial and non-target organisms, and to the environment. List all pesticides currently being used as well as alternative products being considered.

Section 4: Long-Term Planning

Environmental Stewardship:

Guidance: Provide a statement that addresses the department/division's ability to incorporate other potential co-benefits of ecosystem-based pest prevention activities. These may include elements such as wildlife habitat preservation, carbon sequestration, wildfire resilience, and others.

Innovation:

Guidance: Record priorities for potential pest management pilot projects and research endeavors. List upcoming capital projects or other initiatives that may be able to incorporate proactive principles of integrated pest management.

Annual Goals:

Guidance: List measurable pest management goals that the department or division is pursuing this year. Progress on these goals should be included in departmental submissions that are included in the Annual IPM report.

Where applicable, tie goals to those listed in the IPM Policy, any relevant decision documentation, or previous recommendations from the IPM Advisory Committee.

Section 5: Transparency

Guidance: Describe how the department/division will fulfil the IPM policy goal to promote availability, public awareness and public input into written county pest management plans and records.