City of Santa Barbara
Integrated Pest Management Advisory Committee

DRAFT Fiscal Year 2024 Report

Prepared July 2024

Alice Keck Park Memorial Garden

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I. BACKGROUND

In January 2004, the City of Santa Barbara (City) adopted a City–wide Integrated Pest Management (IPM) Strategy to reduce pesticide hazards on City property and promote effective pest management.

The IPM Strategy contains the mission and purpose, assigns responsibilities, and outlines pest management processes, among other things. In addition, the Strategy requires an annual report be prepared that addresses the following:

- Types of pest problems encountered
- Types and quantities of pesticides used
- Exemptions in place and granted during the past year
- Alternatives used for phased out pesticides
- Alternatives proposed for use within the next 12 months
- Effectiveness of any changes in practices implemented
- Planned changes to pest management practices

PHAER Zone System

The IPM Strategy required the development of a "Zone System" tied to the IPM Approved Materials List to limit pesticide use based on potential human exposure. In February 2006, the City Council approved the PHAER Zone System to be incorporated into the IPM Strategy.

The PHAER Zone System assigns a Green, Yellow, or Special Circumstance/Red Zone designation to each site, or portions of sites, based upon the potential for exposure by humans and sensitive habitat to hazardous pesticides, and allows the use of carefully screened materials by zone designation. For example, Green Zones are areas of high exposure potential, and only pesticides designated as "Green", which show very limited human and environmental impacts, may be used. Yellow Zones are areas with less potential for harm from exposure, and a broader range of "Yellow" materials are permitted under the PHAER Zone System.

IPM Advisory Committee and Staff IPM Committee

The City Council established the 5 member IPM Advisory Committee by Resolution No. 06-008. The members of the Committee are appointed by the Parks and Recreation Commission to serve two-year terms. The purpose of the Committee is to review and advise on the implementation of the City's Integrated Pest Management Strategy. The Fiscal Year 2023 (FY23) IPM Advisory Committee included the following representatives:

- Greg Chittick, Community at large
- Larry Saltzman, Pesticide Awareness and Alternative Coalition
- Kristen LaBonte, Community at large
- Barbara Silver, Community at large
- Keith Nevison, Community at large

Department IPM Coordinators are designated by Department Directors to serve on the Staff IPM Committee. In FY24, Department representatives included: Andrew Bermond and Lucas Hathaway from the Airport, Ryan DiGuilio from Fire, Joe Gonzalez and Cenen Aparicio from Public Works, Lyn Burich from the Waterfront, Mark Nunez from Parking, Ron Kerley from the Golf Course, and Jazmin LeBlanc from Parks and Recreation. The Parks Division coordinates

both the IPM Advisory Committee and the Staff IPM Committee and oversees the implementation of the City's IPM Program.

Significant Committee Actions

The following is a list of significant changes to IPM policy made during committee meetings. Most of the changes relate to PHAER Zone Model color designations:

- April 6, 2016 – New Business Item 2: The Committee granted the Airport Department a change in PHAER Designation for terminal parking lots, loop road right-of-way's, and right-of-way's north of Fowler Road from Green to Yellow. These areas have low public exposure potential, and all other areas will remain Green.

- July 11, 2019 – New Business Item 3: Fifteen (15) City park and parking lot sites were changed from Mixed Use (Green and Yellow) and Yellow to all Green Zones.
    - Cabrillo Ball Park
    - Dwight Murphy Ball Field
    - Franceschi Park
    - Hidden Valley Park
    - MacKenzie Park
    - Orpet Park
    - Pershing Park
    - San Roque Park
    - Sylvan Park
    - Chase Palm Parking Lot
    - East Beach Parking Lots
    - Garden Street Waterfront Lot
    - Harbor Parking Lots
    - Leadbetter Lot

    Only the A.C. Postel Memorial Rose Garden in Mission Historical Park is proposed to remain as-is (Mixed Use) due to the need to maintain the roses. Neem oil is organic but is classified as a Yellow material.

- August 11, 2021 – New Business Item 3H: Glyphosate materials were moved from a yellow to red tier on FY22 Materials List.

II. FY24 IPM STRATEGY RESULTS

1. IPM Advisory Committee Actions

In FY24, the IPM Advisory Committee met six times to revise the Tiered Materials List, hear exemption requests, hear staff communications, and approve the FY23 IPM Annual Report and the FY24 IPM Annual Plan. See Section 5. Exemptions for additional information.

2. Pests Encountered

The top 3 pests encountered are shown in Table 1, with 1 being the worst pest issue encountered in FY24.

Table 1. Worst Pest Problems Encountered by Department/Division

	Airport	Golf Course	Facilities	Env'l Services	Parks	Parks Open Space	Waterfront	Creeks
1	General weeds	Summer Patch	Ants	Rats/mice	Gophers	Acacia	Termites	General Weeds
2	Gophers	Fusarium blight	Rats/mice	Bees, yellow jackets, etc.	General weeds	Castor Bean	Rats/mice	Ground Squirrels
3	Ground squirrels	Pythium root rot/ blight	Termites	Mosquitos	Ground squirrels	Olive Tree	Gulls, nuisance birds	Mosquitos

The Creeks Division also mentioned fan palms, pampas grass, castor bean, English ivy, tree tobacco, brush rabbits, and thistle as particularly difficult pests.

The Golf Course also mentioned having particular issues with gray leaf spot on Fairways.

3. City-wide Pesticide Use

City Departments/Divisions that applied pesticides, or contracted with professional applicator services prepare quarterly pesticide reports, which form the basis of the Annual Report. Pesticides reported are in either ounces, pounds, or gallons, depending on whether they are dry or liquid.

Table 2 below provides a summary of total pesticide use for FY24. See notes below for additional information by department/division.

Table 2. FY24Pesticide Use Summary

	Material Use			
	Green	Yellow	Red	Total
Ounces	160	66.6	1055.9	1282.5
Gallons		127.4	69.1	196.5
Pounds	1505.9	566.4	334.2	2406.5

AIRPORT
The Airport made a total of 9 applications and used 35 gallons of Round Up (Red) to treat weeds on runways, taxiways, and around signage on the airfield.
On behalf of the Airport, the Mosquito and Vector Management District applied 1,481.45 pounds of Vectobac G (Green) and 566.4 pounds of Altosid XR (Yellow) for the treatment of mosquitos.

GOLF COURSE
The Golf Division made 36 applications and applied 1,356.7 units of material. Heritage G represents with highest amount, followed by Velista, and Tebuconazole all of which are red tier fungicides. Golf Course Superintendent Scott Walwyn previously explained that warm and humid weather patterns contributed to fungal growth, especially summer patch and pythium.

PARKS DIVISION
The Parks Division made 6 applications and applied 77.8 units of material, in addition to experimenting with multiple applications of Weed Rot. Three ounces of Garlon 4 Ultra (Yellow) were applied at Parma Park, 40 ounces at Honda Valley Park, 3968 ounces of Garlon foliar mix (Yellow) on East Camino Cielo along Gould Park, and 2.4 gallons of Reliant (Yellow) were applied to the Moreton Bay Fig Tree.

CREEKS DIVISION
The Creeks Division made three applications totaling 65 ounces of Roundup (Red) one application of 30 ounces along lower Arroyo Burro Creek downstream of Veronica Springs, 20 ounces on the northwest corner of the Bird Refuge and zoo, 15 ounces at Las Positas Road at Portesuello Ave. The Creeks Division's Invasive Plant Removal Program has the goal of eliminating Arundo from the City's watersheds, an extremely fast-growing invasive plant. Efforts in the Arroyo Burro Watershed started in 2013, focusing on upstream locations and slowly making progress downstream.

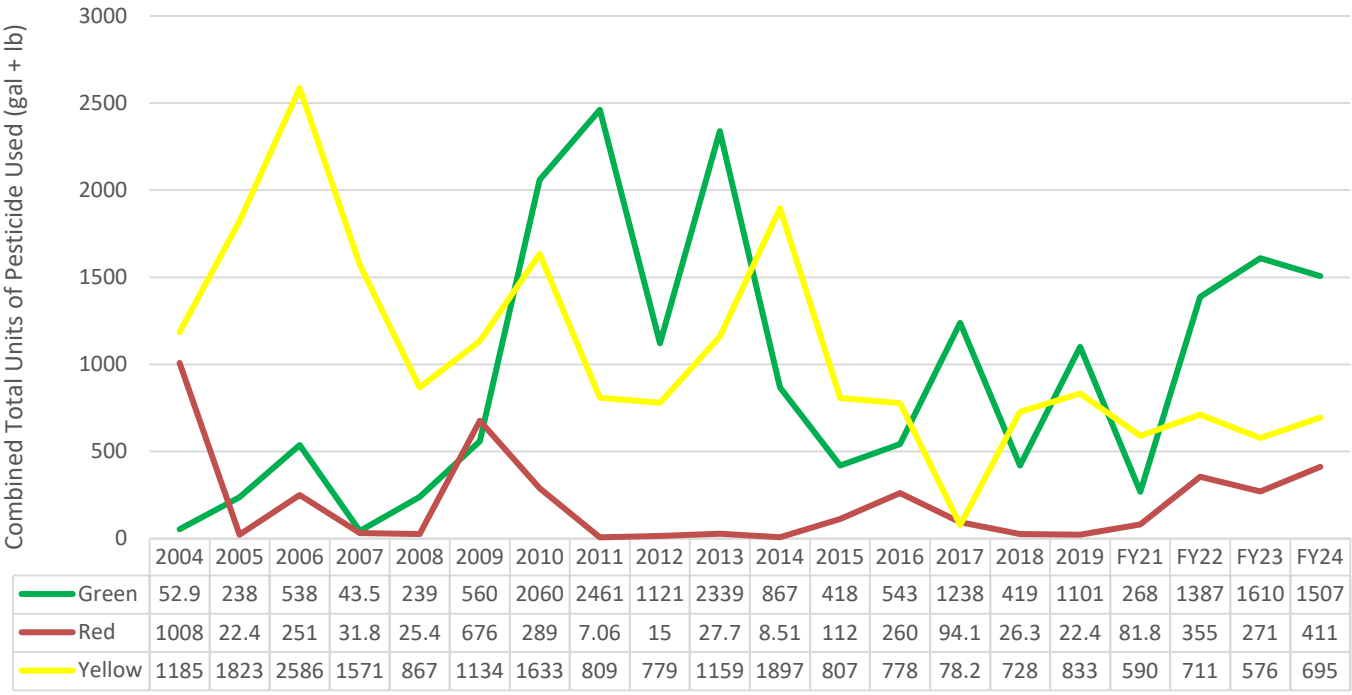
PUBLIC WORKS DEPARTMENT
On behalf of the Environmental Services Division, the Mosquito and Vector Management District applied 19.5 pounds of Vectobac G (Green) for the treatment of mosquitos in 15 locations throughout the City. As is typical, the majority was applied at the Andrée Clark Bird Refuge, with additional sites including the Channel in front of the Municipal Tennis Courts (along Old Coast Highway), Light House Creek near Mesa Park, Honda Preserve swale, Chase Palm Park Drains, Storm Drain @ Anacapa and D Cabrillo Blvd, Dwight Murphy Field Storm Drain Receptor, Parks Annex Yard (next to Munis Tennis), and Sylvan Park.

The Facilities Division facilitated 17 applications of 23.6 ounces of yellow materials Advion, Arilon, and Navigator for the control of ants and cockroaches. These materials were applied by a contractor at locations including Fire Stations and El Estero Wastewater Plant.

WATERFRONT
The Waterfront facilitated the treatment of various buildings for termites with 2 applications of PT Alpine Foam (Red) at Sterns Wharf, 1 application of 94 gallons of Termidor SC (Yellow) at 107 Harbor Way, and 1 fumigation using 11 pounds of Sulfuryl flouride (Red) at 309 Shoreline Dr.

Figure 1 looks at the City's pesticide use by tier since 2004. Mosquito control accounts for the majority of pesticide use in any given year.

Figure 1. Citywide Pesticide Use by Tier



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	FY21	FY22	FY23	FY24
Green	52.9	238	538	43.5	239	560	2060	2461	1121	2339	867	418	543	1238	419	1101	268	1387	1610	1507
Red	1008	22.4	251	31.8	25.4	676	289	7.06	15	27.7	8.51	112	260	94.1	26.3	22.4	81.8	355	271	411
Yellow	1185	1823	2586	1571	867	1134	1633	809	779	1159	1897	807	778	78.2	728	833	590	711	576	695

* To avoid skewing the annual data, the numbers for the six-month 2020 report were omitted, see Section II.
**Ounces have been converted to gallons to maintain consistency with past data.

Table 3, on the next page, presents a more in-depth look at pesticide use by Department/Division, including: pesticide name, tier, active ingredient, type of pesticide, and units applied.

Table 3. Pesticide Use by Department/Division

	Pesticide Name	Active Ingredient	Type	Airport			Creeks Division			Golf Division			Parks Division			Public Works			Waterfront		
				Amount of Pesticide Applied																	
				Gal	Lbs	Oz	Gal	Lbs	Oz	Gal	Lbs	Oz	Gal	Lbs	Oz	Gal	Lbs	Oz	Gal	Lbs	Oz
	Natular XRT	Spinosad	Insecticide														0.9				
	Niban	Boric Acid	Insecticide														4.1				
	Vectobac G	Bti	Insecticide		1481.5												19.5				
	Suppress	Caprylic, Capric Acid	Herbicide									160.0									
		Green Totals		0.0	1481.5	0.0	0.0	0.0	0.0	0.0	0.0	160.0	0.0	0.0	0.0	0.0	24.4	0.0	0.0	0.0	0.0
	Advion Ant Gel	Indoxacarb	Insecticide															22.5			
	Altosid XR	Methoprene	Insecticide		566.4																
	Garlon 4 Ultra	Triclopyr	Herbicide										31.0		43.0						
	Navigator	Fipronil	Insecticide															1.1			
	Reliant	Mono and di-potassium salts of Phosphorous Acid	Fungicide										2.4								
	Termidor SC	Fipronil	Insecticide																94.0		
		Yellow Totals		0.0	566.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.4	0.0	43.0	0.0	0.0	23.6	94.0	0.0	0.0
	Acelepryn	chlorantraniliprole	Fungicide									60.0									
	Affirm	polyoxin D zinc	Fungicide									127.0									
	Arena G										150.0										
	Cleary's 3336	Thiophanate methyl	Fungicide							3.0		121.0									
	Daconil Weatherstick	Chlorothalonil	Fungicide							8.6											
	Enclave	Chlorothalonil	Fungicide									64.0									
	Fore 80WP Rainshield	Mancozeb	Fungicide								43.2										
	Heritage G	Azoxystrobin, Acibenzolar-S-methyl	Fungicide								130.0										
	Lexicon	Fluxapyroxad & Pyraclostrobin	Fungicide									63.0									
	Medallion	Fludioxonil	Fungicide							6.0											
	Podium	trinexapac-ethyl	Regulator									14.0									
	Primo Maxx	trinexapac-ethyl	Regulator									59.0									
	Proxy	Ethephon	Regulator							5.2											
	Quali Pro chlorothalonil 720	Chlorothalonil	Fungicide							4.3											
	Roundup Products	Glyphosate	Herbicide	35.1					65.0												
	Scimitar	Lambda-cyhalothrin	Insecticide									28.0									
	Tebuconazole	Tebuconazole	Fungicide							1.0		217.0									
	T-Nex	Trinexapac-ethyl	Regulator									27.5									
	Sedgehammer	Halosulfuron-methyl	Herbicide												1.4						
	Velista	Penthiopyrad	Fungicide									99.0									
	Vikane & Cholopicrin	Sulfuryl fluoride, Cholopicrin	Fumigant																	11.0	
		Red Totals		35.1	0.0	0.0	0.0	0.0	65.0	28.0	323.2	879.5	0.0	0.0	1.4	0.0	0.0	0.0	0.0	11.0	0.0
		Department Totals		**35.1**	**2047.9**	**0.0**	**0.0**	**0.0**	**65.0**	**28.0**	**323.2**	**1039.5**	**33.4**	**0.0**	**44.4**	**0.0**	**24.4**	**23.6**	**94.0**	**11.0**	**0.0**
		City-wide Totals		**Gallons**	**196.5**					**Pounds**	**2406.5**						**Oz**	**1282.5**			

4. BEE CITY CERTIFICATION

On September 19, 2017, the City Council adopted Resolution 17-097 designating Santa Barbara as a Bee City USA affiliate, a program of the Xerces Society to protect and promote native pollinators. The City qualifies for this program because of its very low pesticides use required by the IPM Strategy. Additionally, there are a number of projects throughout the City that also promote and enhance habitat for native pollinators. The 2024 re-certification report (covering calendar year 2023) highlighted a number of restoration projects across several spaces such as Andre Clark Bird Refuge, Bohnett Park Creek, Parma Park, East Beach, continued restoration and invasive weed removal at Elings Park, and the many trees planted in both street parkways and restoration sites.

5. EXEMPTIONS

Under the IPM Strategy and PHAER Zone System, exemptions may be granted when a pest outbreak poses an immediate threat to public health, employee safety, or will result in significant economic or environmental damage. Exemption requests are often made in anticipation of a particular pest outbreak and may be requested for one-time application or as a programmatic exemption for a set time period. The exemption process is outlined in the IPM Strategy.

Twenty exemptions were requested inFY24.

AIRPORT: 1
In August 2023 the Airport requested the use of RoundUp ProMaxx to control general weeds on the airfields, in its annual programmatic exemption.

GOLF COURSE: 2
In August 2023 the Golf Course requested and was approved for the use of 23 materials including insecticides, herbicides, plant growth regulators, and fungicides in its annual programmatic exemption. In October 2023 Golf Course request and was approved for the use of Vikane and Chloropicrin to fumigate the large cart bar

PARKS DIVISION: 6
Parks: 2 – In February 2024 Channel Islands Restoration staff requested and was approved for the use of Imazapyr in Gould Park along East Camino Cielo to treat fennel as part of a project funded by a National Fish and Wildlife Foundation grant. In April 2024 Parks staff requested and was approved for the use of SedgeHammer Plus at Alice Keck Memorial Park to control nutsedge in preparation for the native planting project with the Santa Barbara Botanic Garden

Forestry: 2 – Forestry staff requested and was approved the use of Subdue Maxx Fungicide and Reliant Systemic Fungicide to control Phytophthora spp. in the Moreton Bay Fig Tree October 2023,

Open Space: 2 – In October 2023 the Open Space Planner requested and was approved for the use of Garlon 4 Ultra at Honda Valley Park and Parma Park to control invasive plants.

CREEKS DIVISION: 2
In October 2023 Creeks staff requested the use of glyphosate and imazapyr to control Arundo at Arroyo Burro Creek, Lower Mission Creek, Lower Sycamore Creek, Andre Clark Bird Refuge, and Santa Barbara Zoo and for the use of glyphosate to control Pampas grass in a small area on Las Positas Road. Both requests were approved.

PUBLIC WORKS DEPARTMENT: 6
In August 2024 Facilities staff requested and was approved for the use of Advion products and Navigator for the control of ants and cockroaches in City buildings in its annual programmatic exemption. In October 2024 the Public Works Department requested and was approved for the use of Vikane and Chloropicrin to treat for termites at 735 Anacapa, 401 Shoreline Drive, 620 Laguna, Plaza Del Mar Bandshell and at 1235 Chapala in January 2024.

WATERFRONT: 3
Waterfront staff requested and was approved for the use of Termidor SC and PT Alpine Foam to treat for termites at 107 Harbor Way Building in August 2024 and in various waterfront buildings in October 2024. In January 2024 Waterfront Staff requested and was approved for the use of Vikane and Chloropicrin at 217 and 219 Sterns Wharf.

A summary of exemption requests is included below.

Table 4. FY24 IPM Advisory Committee Exemptions

Exemptions	July 2023-June 2024
Number of Exemption Requests (total)	20
Number of Exemption Requests Approved	20
Number of Exemption Requests Denied	0
Number of Emergency Exemption Requests	1

Meeting Date	Div/Dept	Pest	Material	Location	Approval
8/9/2023	Airport	Various	Annual Programmatic	Airport	Approve
8/9/2023	Golf Course	Turf pests and various insects	Annual Programmatic	Golf Course Greens	Approve
8/9/2023	Waterfront	Termites	Termidor SC and PT Alpine Foam	132 Harbor Way Building and 125 Harbor Way Building	Approve
8/9/2023	Facilities	Ants and cockroaches	Annual Programmatic	City Buildings	Approve
10/25/24	Waterfront	Termites	PT Alpine Foam	Various Waterfront Buildings	Approve
10/25/2023	Golf	Termites	Vikane & Chloropicrin	3500 McCaw Ave	Approve
10/25/2023	Forestry	Phytopthora spp.	Reliant Systemic Fungicide	Moreton Bay Fig Tree	Approve
10/25/2023	Forestry	Phytopthora spp.	Subdue Maxx	Moreton Bay Fig Tree	Approve
10/25/2023	Creeks	Arundo	Glyphosate and Imazapyr	Arroyo Burro Creek, Lower Mission Creek, and Lower Sycamore Creek	Approve

				Andre Clark Bird Refuge, Santa Barbara Zoo	
10/25/2023	Creeks	Pampas grass	Glyphosate	Las Positas Road	Approve
10/25/2023	Public Works	Termites	Vikane & Chloropicrin	735 Anacapa St	Approve
10/25/2023	Public Works	Termites	Vikane & Chloropicrin	401 Shoreline Drive	Approve
10/25/2023	Public Works	Termites	Vikane & Chloropicrin	620 Laguna St	Approve
10/25/2023	Public Works	Termites	Vikane & Chloropicrin	Plaza Del Mar Bandshell	Approve
10/25/2023	Open Space	Invasive weeds	Garlon 4 Ultra	Honda Valley Park	Approve
10/25/2023	Open Space	Invasive weeds	Garlon 4 Ultra	Parma Park	Approve
1/18/2024	Waterfront	Termites	Vikane and Cholorpicrin	217 & 219 Sterns Wharf	Approve
1/18/2024	Facilities	Termites	Vikane and Cholorpicrin	1235 Chapala St	Approve
2/27/2024	Parks	Fennel	Imazapyr	Gould Park	Approve
4/30/2024	Parks	Nutsedge	Sedgehammer Plus	Alice Keck Park	Approve

6. ALTERNATIVE PEST MANAGEMENT PRACTICES USED

The use of non-chemical IPM alternatives are emphasized over pesticide applications. The use of alternatives by department/division are presented in Table 5 with a check (✓) indicating that the alternative was used. The data in Table 5 presents a combination of staff and contractor time.

Table 5. Alternative Management Practices Employed

PEST	Alternative	Airport	Golf	Public Works	Parks	Creeks
WEEDS	Mulch & wood chips	✓	✓		✓	✓
	Weed fabric		✓			
	Propane flame weeder					
	Hand weeding	✓	✓		✓	✓
	Weed whip	✓	✓		✓	✓
	Habitat modification		✓		✓	✓
	Irrigation Mgmt.	✓	✓		✓	✓
	Host plants squeeze out					
PLANT PESTS	Irrigation Mgmt.	✓				
	Compost tea/microbial in.					
	Enhance plant health	✓			✓	✓
	Worm castings					
	Effective micro-organisms					
	Wash off plants				✓	
	Remove plant/tree	✓			✓	
GOPHERS	Traps	✓	✓		✓	
SQUIRRELS	Traps	✓	✓			
RATS & MICE	Mechanical traps	✓	✓	✓		
	Cat					
MOSQUITOES	Mosquito fish					
	Remove stagnant water	✓		✓	✓	
BEES	Relocation		✓	✓	✓	✓
OTHER	Glue traps/roaches			✓	✓	
	Heat Treatment			✓		

The Parks Division had 6 European honeybee hives relocated from Parks. Environmental Services had 40 hives relocated from City right of ways.

Environmental Services reported that Lenz Pest Control spent 298 hours trapping 295 rodents throughout the City.

The Parks Division applied approximately 500 cubic yards of mulch to many park locations throughout the City. Much of this mulch came from trees and limbs that fell during winter storms.

7. EFFECTIVENESS OF ALTERNATIVE PRACTICES IMPLEMENTED

In general, most alternative pest management practices are more labor intensive and costly, and not as effective as the use of Yellow and Red tier pesticides. While most Green materials and practices provide only moderate control of pest populations, there have been some successes.

The effectiveness of alternatives for the biggest pest problems encountered in an average year is reviewed below.

- **Weeds**: Between January-June 2023, Santa Barbara received approximately 13 inches of rainfall.. This high amount of precipitation lead a greater volume and rate of growth of weeds throughout the spring. In order to combat this vigorous growth, the Parks Division relied more heavily on contract labor support in both mechanical and hand weeding.

  Herbicide Alternative Exploration

  The Parks Division has continued in its third year using the green material Weed Rot, a Systemic Post Emergence Non-Selective Weed Killer with active ingredients Citric Acid and Sodium Lauryl Sulfate. Weed Rot has been used successfully throughout developed parks and parking lots to treat weeds in early stages of growth.

  Sheep Grazing in Open Space Parks

  Grazers (sheep) were utilized in 4 open space parks for to decrease fuel loads before the high fire season and to control invasive annual grasses. Grazing is a great alternative to both mechanized methods of vegetation management as well as chemical methods for weed control. Grazing is considered a viable option if the proposed area to be grazed is (1) within the defensible space distance criteria set forth within the Community Wildfire Protection Plan, and therefore, must be largely devoid of vegetation; or (2) meets the following general criteria:

  - is dominated by non-native species;
  - is not adjacent to a creek, waterway, or other natural drainage feature;
  - is not on a steep slope.

- **Gophers and Ground Squirrels:** One pest control benefits of the high precipitation during the second half of FY24 was a significant decrease in gopher and ground squirrel activity due to their runs being flooded. Additionally, the continually moist soil allowed for a more effective use of the Gopher X machine in parks, which is used to pump carbon monoxide into their runs and functions most effectively when soil is impermeable.

  Owl Boxes in Parks

  In FY23 three owl boxes were installed in parks as an effort to help control gopher populations: MacKenzie Park, Mission Historical Park, and La Mesa Park. So far, no nesting activity has been observed. Staff are considering purchasing rehabilitated barn owls from the Ojai Raptor Center for the nesting season in FY24.

  Golf Course certified as an Audubon Cooperative Sanctuary

  In October 2022 the Golf Course became certified as an Audubon Cooperative Sanctuary. The course has long had raptor poles, but is in the process of planning to install raptor baths and birdhouses. Golf Course staff is also very careful about applying

chemicals a safe distance from the two water basins and regularly submit water tests to verify safe levels of chemicals.

8. CONCLUSION

Many factors contribute to the use of pesticides as well as the color classification of pesticides used. These include weather patterns (unseasonably dry or wet weather), introduction of new, or changes to, existing pest populations, and effectiveness of alternative methods, as well as the effectiveness and availability of certain pesticide materials. Such variances are, and will continue to be, a normal occurrence.

Because the number of factors that affect pesticide use can vary greatly from year to year, it is difficult to look at past pest management practices to predict future pesticide use. In addition, prior to implementing IPM and the PHAER Zone System, pesticide use was analyzed only by the Parks Division and used at higher frequencies and in larger quantities, based on staff and IPM Advisory Committee knowledge.

In addition, it should be noted that the amount of pesticides used and the number of applications are not necessarily accurate indicators of the extent of pesticide use or, conversely, the extent of use of reduced-risk pest management methods and alternative practices. For example, staff may apply several hundred small-scale "spot" applications targeted at problem areas rather than a few treatments of a large area. Further, staff may replace a more toxic pesticide used at a smaller quantity with a less hazardous compound that must be applied at a much larger quantity.

It is always important for City staff to find low risk, cost effective, viable alternatives to reduce pesticide hazards and to increase the overall efficiency of IPM practices. Additionally, changes in maintenance standards and expectations may be necessary if more Green materials are employed.

III. PLAN FOR FISCAL YEAR 2025

All departments will continue to test any promising new materials or methods of integrated pest management as they are introduced.

The Parks Division plans to update the IPM policy, program documents, and processes to better coordinate across departments and manage IPM into the future now that the program is 20 years old. The Parks Division also plans to install Bee City signage in various high profile parks with flowering plants including Alice Keck Park Memorial Garden, Mission Rose Garden, and somewhere along the beach area. Parks will also continue to experiment with Weed Rot as it is proving to be a relatively effective green material. Staff will report to the IPM Advisory Committee as significant findings are made.

Staff and the IPM Advisory Committee will continue to monitor research regarding impacts of pesticides on humans, wildlife, and native habitats as well as begin a discussion on funding and staffing options for community education and outreach to reduce pesticide use on private property. It is staff’s goal to present the Parks and Recreation Commission with any recommendations for changes City’s IPM Strategy and/or PHAER Zone System.

IV. ATTACHMENTS

ATTACHMENT A: TIERED MATERIALS LIST

The pesticides listed on the Tiered Materials List are categorized according to the pesticide screening protocol in the PHAER Zone Model. It has been the practice of the IPM Advisory Committee to make adjustments to the list in the IPM Annual Report. This list supersedes the version in the IPM Strategy and PHAER Zone Model. A mark in the Used column indicates this product was utilized during the reporting period.

Used	Active Ingredient	Product Name	ZONE	Type
	Orthoboric Acid	Advance Ant Bait	Green	Insecticide
	Indoxacarb	Advion Roach Stations (enclosed)	Green*	Insecticide
	citric acid, acetic acid, garlic	AllDown	Green	Herbicide
	Orthoboric Acid ant bait station	*Any brand name*	Green	Insecticide
	Citrus oil	Avenger	Green	Herbicide
	Abamectin B1 0.05%	Avert Cockroach Bait Station	Green*	Insecticide
	Abamectin B1 0.05%	Avert Cockroach Gel Bait	Green*	Insecticide
	Bt	Bactimos Pellets	Green	Insecticide
	Bt	Bactimos Wettable	Green	Insecticide
	corn gluten	Bio-Weed	Green	Herbicide
	Orthoboric Acid	Borid Turbo	Green	Insecticide
	clove oil	BurnOut 2	Green	Herbicide
	B. subtilis	Cease Biofungicide	Green	Fungicide
	cinnamaldehyde	Cinnamite	Green	Insect/Fung
	spinosad	Conserve	Green	Insecticide
	Bt	Dipel Flowable	Green	Insecticide
	Orthoboric Acid	Drax Ant Kill PF	Green	Insecticide
	Wintergreen Oil	EcoExempt	Green	Herbicide
	2-Phenethyl propionate / Euginol	EcoExempt D	Green	Insecticide
	Thyme oil, 2-Phenethyl propionate,Rosemary oil	EcoVia	Green	Insecticide
	mefluidide	Embark	Green	Growth Regulator
	Citric, Acetic Acid	GreenErgy	Green	Herbicide
	potassium bicarbonate	Kaligreen	Green	Fungicide
	clove oil	Matran (EPA Registration Exempt)	Green	Herbicide
	spinosad	Naturlar	Green	Insecticide
	clove oil	Natura Weed-A-Tak	Green	Herbicide
	Isoboric Acid 5%	Niban	Green	Insecticide
	Trinexapac-Ethyl	Primo-Maxx	Green	Growth Regulator

Used	Active Ingredient	Product Name	ZONE	Type
	potassium salts of fatty acids	Safer Soap	Green	Insecticide
	iron phosphate	Sluggo	Green	Other
	Bt	Summit BTI Briquets	Green	Insecticide
	Caprylic and Capric Acid	Suppress Herbicide Ec	Green	Herbicide
	Bti	Teknar HP-D	Green	Insecticide
	Orthoboric Acid	Terro II	Green	Insecticide
	Btk	Vectobac G	Green	Insecticide
	bacillus sphaericus	VectoLex CG	Green	Insecticide
	Mint Oil 8% & Sodium Lauryl Sulfate 1%	Victor Wasp and Hornet Killer	Green	Insecticide
	Chlorantraniliprole	Acelepryn	Yellow	Insecticide
	Indoxacarb	Advion Ant Arena	Yellow	Insecticide
	Indoxacarb	Advion Roach Gel	Yellow	Insecticide
	Indoxacarb	Advion Insect Granules	Yellow	Insecticide
	Polyoxin D zinc salt	Affirm	Yellow	Fungicide
	POE Isoocatadecanol	Agnique MMF	Yellow	Insecticide
	fosetyl aluminum	Aliette	Yellow	Fungicide
	methoprene	Altosid Briquettes	Yellow	Other
	methoprene	Altosid Liquid	Yellow	Other
	methoprene	Altosid Pellets	Yellow	Other
	methoprene	Altosid XR-B	Yellow	Other
	Potassium Phosphite	Appear II	Yellow	Fungicide
	Indoxacarb	Arilon	Yellow	Insecticide
	abamectin	Avid	Yellow	Miticide/Insecticide
	Diphacinone	Ditrac	Yellow	Rodenticide
	petroleum oil	Dormant	Yellow	Insecticide
	Neem oil	Green Light	Yellow	Insecticide/Fungicide
	Copper Oil	Kop-R-Spray	Yellow	Fungicide
	flurprimidol + trinexapac-Ethyl	Legacy	Yellow	Herbicide -PGR
	potassium salts of fatty acids	M-PEDE	Yellow	Insecticide
	Mineral Oil	Omni Oil	Yellow	Fungicide
	Imazapyr	Polaris	Yellow	Herbicide
	flutolanil	Prostar 70 WP	Yellow	Fungicide
	Neem oil	Rose Defense	Yellow	Insect/Fung
	petroluem oil	Safticide Oil	Yellow	Insecticide
	Petroleum distillates	Stylet Oil	Yellow	Insecticide
	Parafin oil, sulfur	Sulf-R-Spray	Yellow	Fungicide
	Diquat	Razorooter	Yellow	Herbicide
	petroleum distillates	Superior Spray Oil	Yellow	Insecticide

Used	Active Ingredient	Product Name	ZONE	Type
	oryzalin	Surflan	Yellow	Herbicide
	oryzalin	Surflan AS	Yellow	Herbicide
	Fipronil	Termidor SC	Yellow	Insecticide
	Neem oil	Triact	Yellow	Insecticide/Fungicide
	Neem oil	Trilogy	Yellow	Insecticide/Fungicide
	allethrin	Wasp-Freeze	Yellow	Insecticide
	diphacinone	Wilco Ground Squirrel Bait	Yellow	Other
	benefin; oryzalin	XL 2G	Yellow	Herbicide
	glyphosate	Aquamaster-Rodeo	Red	Herbicide
	triadimafon triazole	Bayleton	Red	Fungicide
	Azoxystrobin; Difenoconazole	Briskway	Red	Fungicide
	Thiophanate methyl	Cleary's 3336	Red	Fungicide
	Chlorothalonil	Daconil	Red.	Fungicide
	Propiconazole	Dorado	Red	Fungicide
	Mancozeb	Fore 80WP Rainsheild	Red	Fungicide
	Aluminum phosphide	Fumitoxin	Red	Rodenticide
	Pyraclostrobin	Insignia	Red	Fungicide
	Propiconazole / fludioxonil	Instrada	Red	Fungicide
	Azoxystrobin	Heritage	Red	Fungicide
	halosulfuron methyl	SedgeHammer / Manage	Red	Herbicide
	fludioxonil	Medallion	Red	Fungicide
	glyphosate/diquat	Quick Pro	Red	Herbicide
	Ethephon	Proxy	Red	Growth Regulator
	diquat dibromide	Reward	Red	Herbicide
	glyphosate	Roundup PROMAX	Red	Herbicide
	glyphosate	Roundup Custom	Red	Herbicide
	fenarimol	Rubigan	Red	Fungicide
	fenarimol	Rubigan EC	Red	Fungicide
	Fluazinam / Acibenzolar-S-	Secure Action	Red	Fungicide
	Indaziflam	Specticle	Red	Herbicide
	metalaxyl	Subdue	Red	Fungicide
	Mefenoxam	Subdue Maxx	Red	Fungicide
	Flumioxazin	SureGuard	Red	Herbicide
	Tebuconazole	Tebuconazole 3.6	Red	Fungicide
	Paclobutrazol	Trimmit 2SC	Red	Growth Regulator
	Triclopyr	Turflon	Red	Herbicide
	Penthiopyrad	Velista	Red	Fungicide
	Zinc phosphide	Zp Rode	Red	Rodenticide
	Sulfuryl flouride	Zythor	Red	Insecticide

* By decision of the IPM Advisory Committee, chemicals that may be classified normally as Yellow materials may be classified as Green materials if they are entirely enclosed in factory sealed bait station.