City of Santa Barbara
Integrated Pest Management Strategy

D R A F T 2015 Annual Report

Prepared March 2015

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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 by each Department
- Types and quantities of pesticides used by each Department
- 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.

Citizen and Staff IPM Advisory Committees

The City Council established the 5 member Citizen 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 2015 Citizen IPM Advisory Committee included the following representatives:

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

The Citizen IPM Advisory Committee has had two positions that have remained unfilled for the past year due to a lack of applicants.

Department IPM Coordinators are representatives appointed by Department Directors to serve on the Staff IPM Committee**.** Department representatives include: Jeff McKee from the Airport, Sue Gray from Community Development, Joe Poire from Fire, James Dewey from Public Works, Judd Conley from the Waterfront, and Santos Escobar from Parks and Recreation. The Staff IPM Committee continued to work effectively with the Citizen IPM Advisory Committee to administer

the IPM Strategy and oversee pest management practices. The Parks and Recreation Department coordinates both the Citizen and Staff IPM Committees and oversees the implementation of the City's IPM Program.

II. IPM 2015 STRATEGY RESULTS

1. Citizen IPM Advisory Committee Actions

The Citizen IPM Advisory Committee met once (1) in 2015 to review seven (7) requests for exemptions, review the materials list, and approve the 2014 IPM Annual Report. The Committee approved all seven (7) requests.

2. Pests Encountered

A variety of pests were encountered on City properties in 2015 as outlined in Table 1. Departments ranked their top three pest problems with the numbers 1, 2 and 3. Other pest problems encountered are asterisked (*). Footnote annotations reference additional information including names of plant diseases, weeds, grasses, and specific insects. Due to the low rainfall, the overall abundance of these pests was down as compared to other years.

Table 1. Pest Problems Encountered by Department/Division

Pest Category	Specific Pest	Airport	Creeks	Golf	Parks	Parking	Public Works	Waterfront
Plant pests	Giant whitefly	*			*	*	*	
	Misc. plant insects			*	*[3]	3	*	
	Disease	*		1[1]	*[4]	*		
Tree Pests	Oak Worm				*	2	*	
	Psyllids				*			
	Various Pine Bark Beetle sp.				*			
Weeds	Invasives	*	*		1[5]			
	General weeds	3	*	*	1	1	*	3
	Perennial grasses	*	*	1	1[6]		*	*
Vertebrates	Gopher	2		3	2		*	*
	Ground Squirrel	*		2	*			*
	Gulls/ nuisance birds	*			*	*		2
	Moles				*			
	Raccoons	*						
	Skunks	*						
Human Health	Poison Oak	*			*			
	Bees, yellow jackets, etc.	*		*	3	*	2	
	Rats/ mice	*		*	*	*	3	1
	Mosquitoes	1		*	*		1	
Other	Termites	*					*	
	Roaches						*	
	Ants	*				*	*	

1. Golf reported these plant diseases (fungus): Dollar Spot, Pink Snow Mold, Anthracnose, Rhizoctonia Patch, Waitea patch, Take-All patch, and Rapid blight
2. Parks reported these plant insects: Lerp Psyllids, Mites, Oak Moths, Thrips, Aphids, Snails, Slugs, and Ants.
3. Parks reported these plant diseases: Leaf Spot, Mildew, Blight, Pink Bud Rot, Sooty Mold, Pythium, Armillaria, and Phytothora.
4. Parks reported these invasive weeds: Arrundo, Nutgrass, Kikuyu Grass, Clover, Oxalis, Malva, Foxtail, Spurge, Dandelion, Milkweed, Sow Thistle, Poa annua, Puncture Vine, Johnson Grass, and Poison Oak.
5. Parks reported the following perennial grasses: Crab, and Bermuda.

3. City-wide Pesticide Use

City Departments that applied pesticides, or contracted with pesticide applicators, also prepared monthly pesticide and alternative use reports, and participated in the preparation of this Annual Report. The monthly reports form the basis of the Annual Report and are available at the main offices of each Department.

Table 2 below provides a summary of total pesticide use (gallons and pounds) for 2015, including any increase or decrease in use from 2014. City-wide pesticide use overall decreased 52% in 2015, primarily due to another low water year that has resulted in fewer pests. The use of Green materials decreased 50% from 867 units to 418.43 units and the use of Yellow materials decreased 57% from 1,896.5 units to 807.28 units. Use of Red materials increased 1,216% from 8.51 units in 2014 to 112 units in 2015.

At the Department level, the Airport Department reduced use of all categories of pesticides by 50%. This is predominantly due to low rainfall leading to lower mosquito management. The Golf Division increased its pesticide use by 35% from 2014, while the Parks Division decreased its pesticide use by 9%. Public Works Department decreased use of pesticides by 59% from 2014.

Table 2. 2015 Pesticide Use by Department and Tier

Department / Division	Material Use				Change from 2014
	Green	Yellow	Red	Total	
Airport Department	172.5	732.65	96	1001.2	-50%
Golf Division	0.93	1.125	16	18.055	35%
Parks Division	0	11.5	0	11.5	-9%
Public Works Department	245	62	0	307	-59%
City-Wide Total	**418.43**	**807.28**	**112**	**1337.7**	-52%
Change from 2014	-52%	-57%	1,216%	-52%	

Table 3 presents a more in depth look at pesticide use by Department/Division, including: pesticide tier and name, active ingredient, class of pesticide, units and number of applications. Pesticides are reported in either pounds or gallons depending on whether they are dry or liquid. Vectobac G was the most frequently applied insecticide, at 62 times, while Altosid Xr-B was the most applied by weight (roughly 566.40 pounds). This is consistent with 2014. Both applications are for the control of mosquitoes. Other highly used materials include:

- Razorooter, an herbicide applied by the Public Works Department to kill roots within sewer systems, was applied a total of 60 times.
- Roundup Custom, an herbicide used to treat weeds and grasses, was applied a total of 46 times: 18 applications by the Airport Department and 28 applications by the Parks and Golf Divisions.

Red materials were used in a much larger quantity in 2015 as compared to 2014. The 96 pounds of Zythor insecticide applied once by the Airport Department accounts for this large discrepancy. The Golf Division applied 5 different “red” fungicides to control fungus on the greens.

It is important to note that because pesticide use will vary from year to year, an increase or decrease from the previous year does not necessarily indicate a long-term trend. Many factors affect the amount of pesticides applied in any one year. This topic is further discussed in Section 7.

Table 3. Pesticide Use by Department/Division

	Pesticide Name	Active Ingredient	Type	Airport	Golf	Parks and Recreation	Public Works	Airport	Golf	Parks and Recreation	Public Works
				Amount of Pesticide Applied						Applications	
				Gal.*	Lbs.**	Gal.	Lbs.	Gal.	Lbs.	Gal.	Lbs.				
	Primo-Maxx	Trinexapac-ethyl	Regulator			0.93							9		
	Vectobac G	Bti	Insecticide		172.5						245	30			32
			Green Totals	0	172.5	0.93	0	0	0	0	245	30	9	0	32
	Advion Gel	Indoxacarb	Insecticide					0.13						9	
	Altosid XR	Methoprene	Insecticide		566.40							3			
	Arilon	Indoxacarb	Insecticide					0.05						6	
	Polaris	Imazapyr	Herbicide					0.06						2	
	Razorooter	Diquat	Herbicide							62					60
	Round-up Custom	Glyphosate	Herbicide	75.25		0.625		8.61				18	2	28	
	Surflan	Oryzalin	Herbicide	35								4			
	Termidor SC	Fipronil	Insecticide					0.02						2	
	Trillogy	Neem Oil	Insecticide					2.63						4	
	Acelepryn	Chlorantraniliprole	Insecticide			0.5							1		
	Wilco	Diphacinone	Rodenticide		56							6			
			Yellow Totals	110.25	622.4	1.125	0	11.5	0	62	0	31	3	51	60

	Pesticide Name	Active Ingredient	Type	Airport		Golf		Parks and Recreation		Public Works		Airport	Golf	Parks and Recreation	Public Works
				Amount of Pesticide Applied								Applications			
				Gal.*	Lbs.**	Gal.	Lbs.	Gal.	Lbs.	Gal.	Lbs.				
	Banner-maxx	Propiconazole	Fungicide			1							1		
	Daconil	Chlorothalonil	Fungicide			5.5							4		
	Heritage	Azoxystrobin	Fungicide			2.5							2		
	Insignia	Pyraclostrobin	Fungicide			0.5							1		
	Medallion	Fludioxonil	Fungicide			0.75							2		
	Velista	Penthiopyrad	Fungicide				5.75						2		
	Zythor	Sulfuryl fluoride	Insecticide		96							1			
			Red Totals	0	96	10.25	5.75	0	0	0	0	1	12	0	0
			Department Totals	**110.25**	**890.9**	**12.305**	**5.75**	**11.5**	**0**	**62**	**245**	**62**	**24**	**51**	**92**
	City-wide Totals:			**Gallons**	**196.055**			**Pounds**	**1,141.650**			**Application**			**229**

*Gallons (Gal)
** Pounds (Lbs)

4. 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 and may be requested for one-time application or as a programmatic exemption for a single year. The exemption process is outlined in the IPM Strategy.

Seven (7) exemptions were requested in 2015. Table 4 provides a summary of the exemption requests by Department/Division. All seven (7) of the requests were approved. There were two (2) emergency exemption requests in 2015.

Table 4. 2015 Exemption Summary

Exemptions	Airport	Creeks	Facilities	Golf	Parks	Public Works	Totals
Emergency	1	-	-	1	-	-	**2**
Proposed	-	-	-	6	1	-	**7**
Passed	-	-	-	6	1	-	**7**
Denied	-	-	-	-	-	-	**0**
Applied	-	-	-	6	1	-	**7**
Not Applied	-	-	-	-	-	-	**0**

Tables 5 below provide a detailed look at pesticide exemption requests and includes only those that were requested and applied. No exemptions were requested and not applied. All exemptions were programmatic requests to use throughout the year. This can be due to an anticipation of a particular pest outbreak or because treatment of the pest requires multiple applications.

- The Golf Division made 6 exemption requests. All were applied to the greens.
- In addition, a herbicide was requested and used at Parma Park to reduce non-native invasives.

Table 5 a. Applied Exemptions Requests

Dept. / Div.	Material	Class	Type	Site
Golf	Affirm	Fungicide		Greens
Golf	Insignia	Fungicide		Greens
Golf	Primo Maxx	Regulator		Greens
Golf	Prostar	Fungicide		Greens
Golf	Proxy	Regulator		Greens
Golf	Trimmit	Regulator		Greens
Parks	Glyphosate	Herbicide		Parma Park

Far fewer exemption requests were made in 2015 as compared to 2014 (Table 6).

Table 6. Comparison of Exemptions for 2014 and 2015

Exemptions	2014	2015
Number of Exemption Requests (total)	27	7
Number of Exemption Requests Approved	26	7
Number of Approved Exemption Requests Applied	17	7
Number of Approved Exemption Requests Not Applied	10	0

5. ALTERNATIVE PEST MANAGEMENT PRACTICES USED IN 2015

The use of non-chemical IPM alternatives are emphasized over pesticide applications. Hours reported for the total year are from the *Monthly Alternative Use Reports* prepared by each Department. Non-chemical pest management alternatives are presented in Table 7 and vary from year to year. A check (✓) indicates the alternative was used, but time was not tracked. City Departments track time using a variety of methods. Some Departments track Alternative Management Practices by issuing Work Orders, while some track time by having their staff fill out reports on their daily activities. Additionally, when time has been spent on Alternative Management Practices by contractors, they usually report the time spent to the Department that oversees the contract. Table 7 below is a combination of staff time and contractor time when reported.

Of the tracked hours for City-wide alternative practices, there was a decrease of 53% from 15,247 hours in 2014 to 7,142 hours in 2015 (Figure 1). A number of factors influence time spent on alternative practices including the number of staff available to perform alternative methods, department priorities, and severity of pest outbreak. As has been the case since IPM tracking began, the majority of tracked time is spent hand weeding and weed whipping.

Extra efforts were enacted for increased control against the rodent population, which included increased site/vegetation maintenance, increase of rodent stations and station servicing, public outreach/education, and property inspections.

The Parks Division applied 1,871.5 cubic yards and the Creeks Division applied 200 cubic yards of mulch in 2015.

Table 7. Staff Time Using Alternative Management Practices (hours)

PEST	Alternative	Airport	Golf	Public Works	Parks	Creeks	Citywide Hours
WEEDS	Mulch & wood chips		53	✓	230	✓	**283**
	Weed fabric				✓		**0**
	Propane flame weeder				✓		**0**
	Hand weeding	470	268		✓	✓	**738**
	Weed whip	261	1,461	✓	2,878	✓	**4,600**
	Habitat modification				✓		**0**
	Irrigation Mgmt.				✓		**0**
	Host plants squeeze out				✓		**0**
PLANT PESTS	Irrigation Mgmt.		✓		✓		**0**
	Compost tea/microbial in.		✓				**0**
	Enhance plant health		✓		✓		**0**
	Worm castings				✓		**0**
	Effective micro-organisms		✓		✓		**0**
	Wash off plants				✓		**0**
	Remove plant/tree				✓		**0**
GOPHERS	Traps	67	208		✓		**275**
SQUIRRELS	Traps		166				**166**
RATS & MICE	Mechanical traps	1		359	273		**632**
	Cat		✓				**0**
MOSQUITOES	Mosquito fish						**0**
	Remove stagnant water	1			✓		**1**
BEES	Bee Keepers	1	✓	185	✓		**186**
OTHER	Glue traps/roaches	1			261		**261**
	Heat Treatment						**0**
Total Hours		**800.5**	**2,156**	**544.0**	**3,641**		**7,142**

Figure 1. Tracked Alternative Management Practices (in hours)

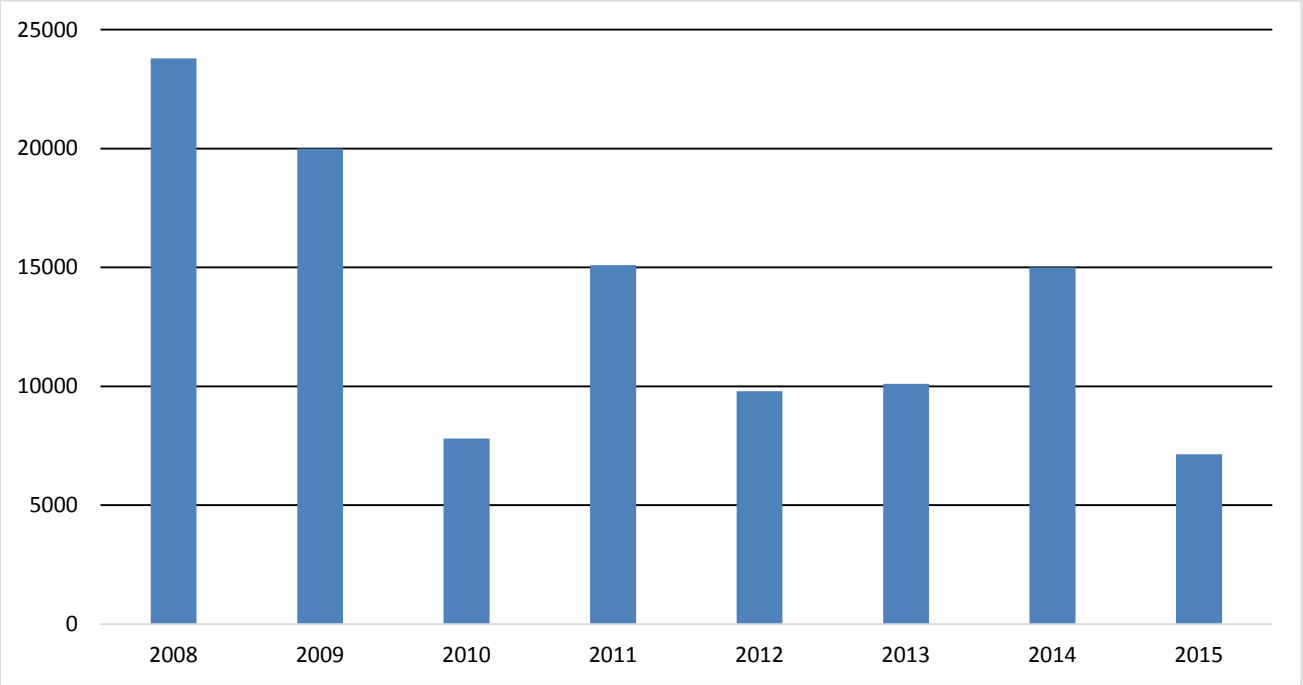


Figure 2 compares the level of effort (in hours) between the 6 alternative methods tracked in 2015. As a whole, maintaining weeds through mulching, hand weeding and weed whipping accounts for 5,621 hours (82%) of the total time tracked. While mulch is one method of weed and grass control, the use of mulch has dropped significantly since 2012. This is primarily due to past years of over-mulching sites and the problems associated with over-mulching (mounding, rot, fungus). The use of mechanical traps for gopher, squirrels, rats and mice control accounted for nearly 16% of total tracked time, or 1,073 hours. Time spent for bee control accounted for 186 hours or 2.7% of total time tracked using IPM alternative methods. Much of the City's rodent trapping and bee control are done by contractor.

Figure 2. 2015 Citywide Tracked Alternative Methods

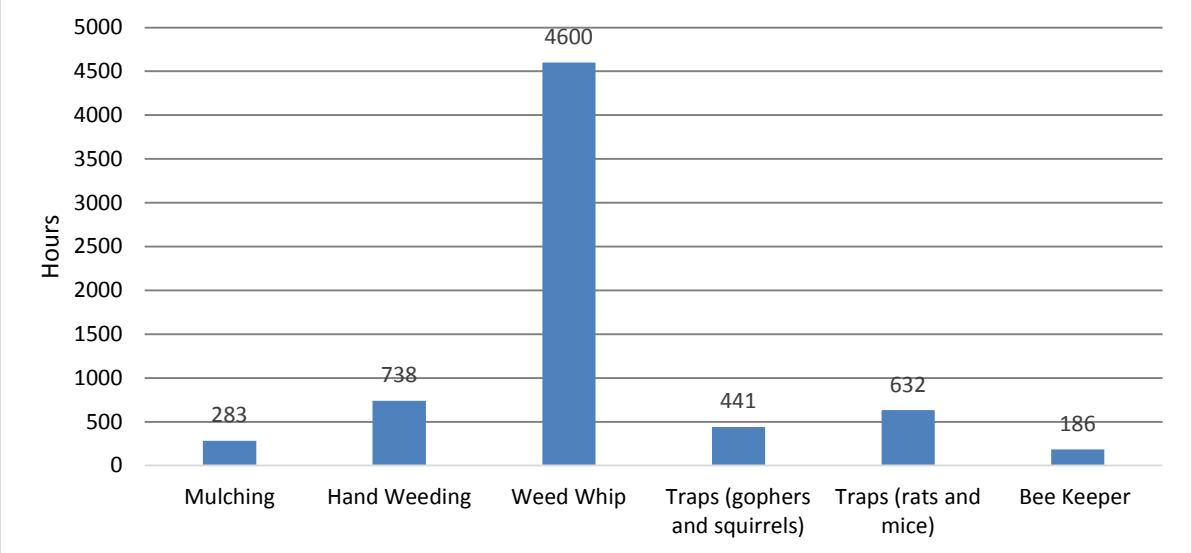
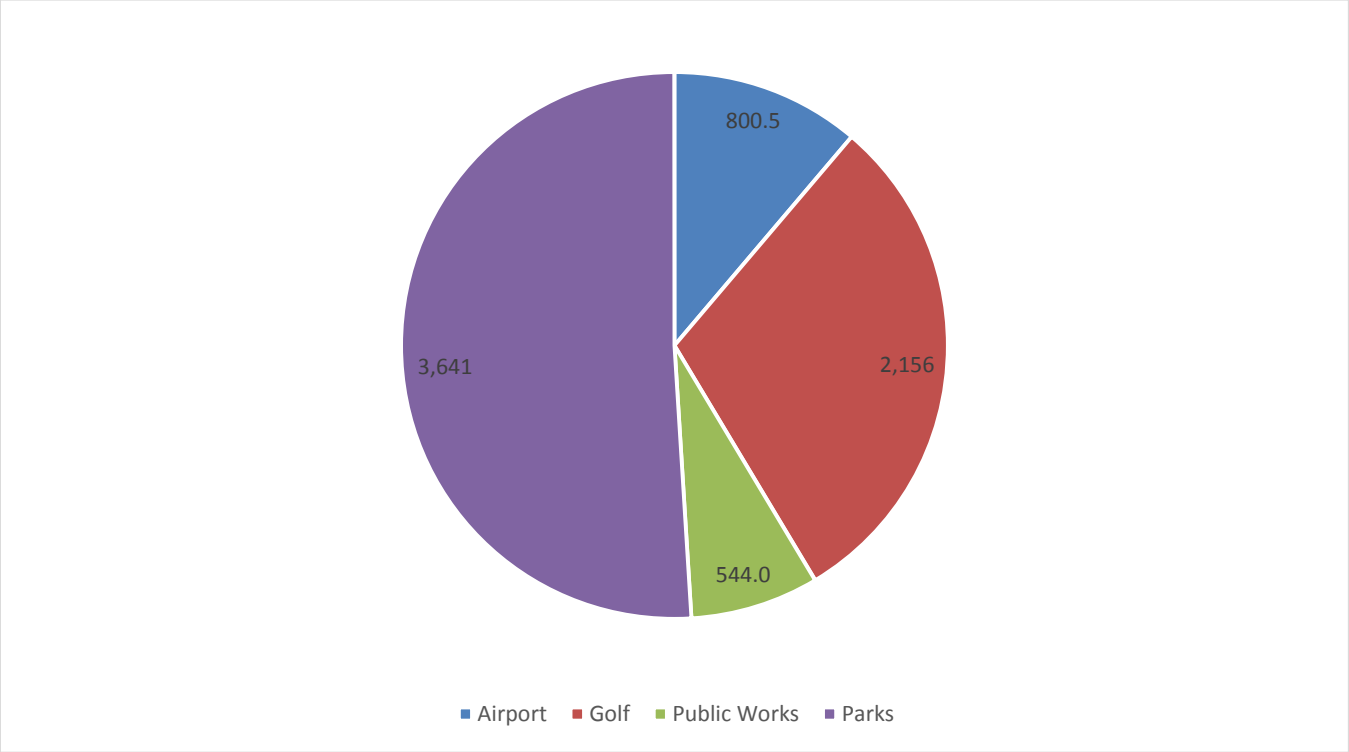


Figure 3 below compares the use of alternative methods (in hours) by Department/Division. Of the total 7,141.5 hours tracked using alternative methods: the Parks Division accounted for 3,641 hours, or 50% of total time; the Golf Division accounted for 2,156 hours, or 30%; the Airport accounted for 800.5 hours, or 11% of total time; and Public Works accounted for 544 hours, or 8% of total time.

Figure 3. Time Spent (hours) Using Alternative Methods by Department/Division



6. 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 classified pesticides. While most Green materials and practices provide only moderate control of pest populations, there have been some successes.

As the program completed its eleventh year, the impact of reduced reliance on pesticides, particularly herbicides, is becoming noticeable in areas, such as the weed population at Alice Keck Park Memorial Garden and other landscape areas throughout the City. The effectiveness of alternatives for the biggest pest problems encountered in an average year is reviewed below.

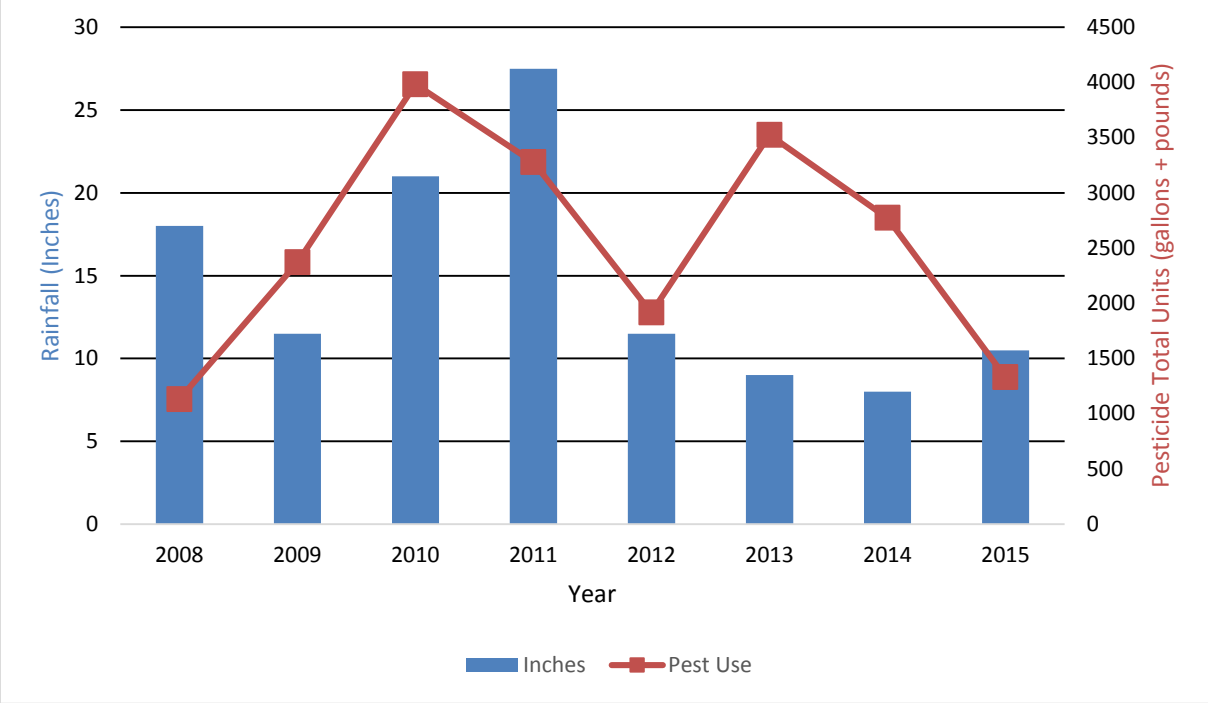
- **Weeds**: A variety of alternatives provide moderate effectiveness and control including: weeding, weed whipping, mulching, mowing, and a flame torch in designated safe areas. These alternatives are significantly more labor and cost intensive and not as effective as Yellow materials such as Glyphosate. Alternative chemicals, such as clove oil or acid based herbicides, have not proven effective. This has resulted in a notable increase in weed populations, predominantly on parkland, that continues to have a negative effect on aesthetics and landscape health.
- **Insects / Mollusks:** Results are mixed for combating insects and mollusks. For some insects, there are no known effective alternatives. Some alternatives can be very effective but expensive, such as removing non-resistant plants and replacing them with resistant varieties. However, the following alternatives have proven successful against insects and mollusks:
    - Sluggo for snails and slugs
    - Worm castings for white fly
    - Insecticidal soap for aphids
    - Neem oil as a dormant spray
    - Bti for mosquitoes
    - Acelepryn for beetles
- **Disease:** No effective alternative has been found for most diseases. Where possible, staff focuses on preventative treatments to enhance plant health. Once disease strikes, a plant may be removed and replaced with a less susceptible plant. If a plant cannot be removed, pesticides are generally required to combat the disease.
- **Gophers:** For the most part, mechanical traps are being used City-wide. Traps have been found to be moderately effective and are more expensive than rodenticides due to higher costs of purchasing, installing, monitoring, and cleaning out traps.
- **Ground Squirrels:** Mechanical trapping, using snap traps, is the primary method of control at this time. This method is moderately effective at controlling populations. Both trapping and baiting have proven very labor intensive.
- **Mice / Rats:** At this time, traps are the primary way of controlling this population. Traps have been found to be effective depending on population size and location and available food sources. Positive public perception seems to far outweigh the costs of using traps. Traps are very effective in controlling rodents on downtown State Street and at Coast Village Road.
- **Termites:** Building Maintenance uses heat treatments to control drywood termites where appropriate. Heat was found to be equally effective as pesticides on smaller buildings with drywood termites. However, costs are 50% higher at this time, and heat is not effective on large structures or with subterranean termites.

7. CONCLUSION

Many factors contribute to the use of pesticides as well as the tier of pesticides used. These include weather patterns (unseasonably dry or wet weather), introduction of new, or changes to existing pest populations, 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.

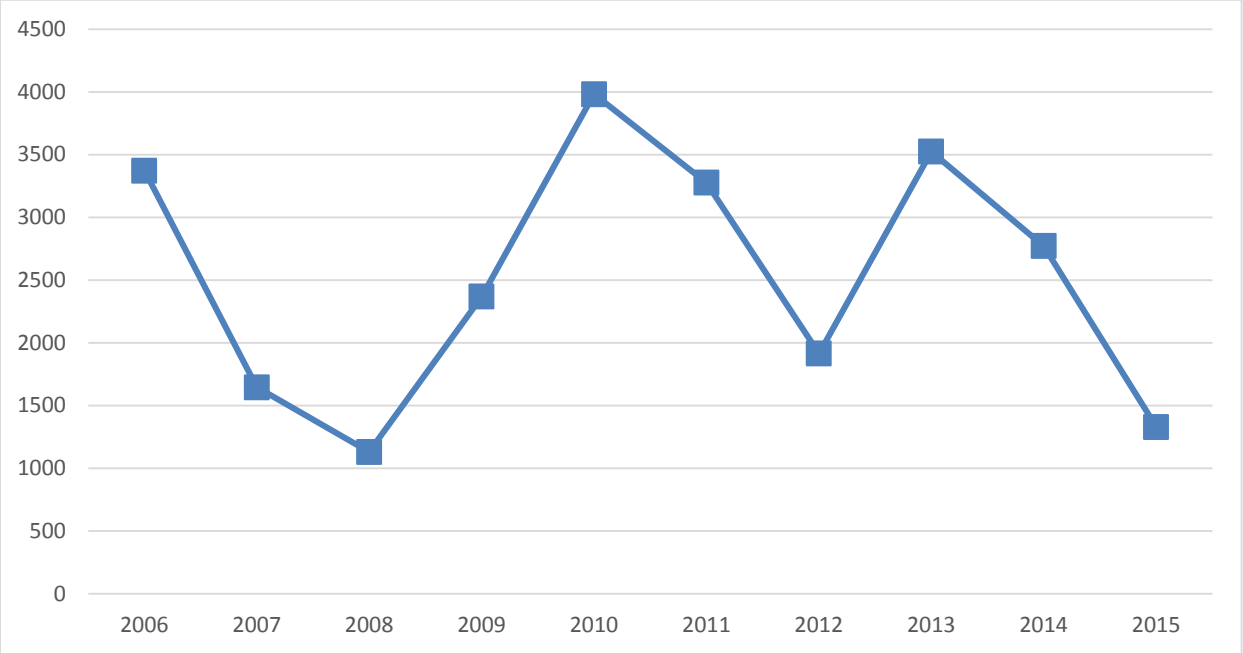
One of the main factors that determine pest populations is rainfall. More rain generally amounts to a greater population of insects and weeds, thus more pesticide use. Figure 4 compares annual rainfall with total pesticide use. With the exception of 2013 and 2014, the data indicates a greater use of pesticides during wetter years. 2013 pesticide use was influenced by the Goleta Slough being closed leading to an increased mosquito population in Airport creeks.

Figure 4. Comparison of Annual Rainfall with Total Pesticide Use



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, pesticide use was not analyzed, and thought to be used at higher frequencies and in larger quantities[1]. That said, the general trend of the City since 2006 appears to be less hours spent on alternative practices (Figure 1) and a level trend in pesticide use (Figure 5).

Figure 5. Citywide Pesticide Use Trend (gallons + pounds)



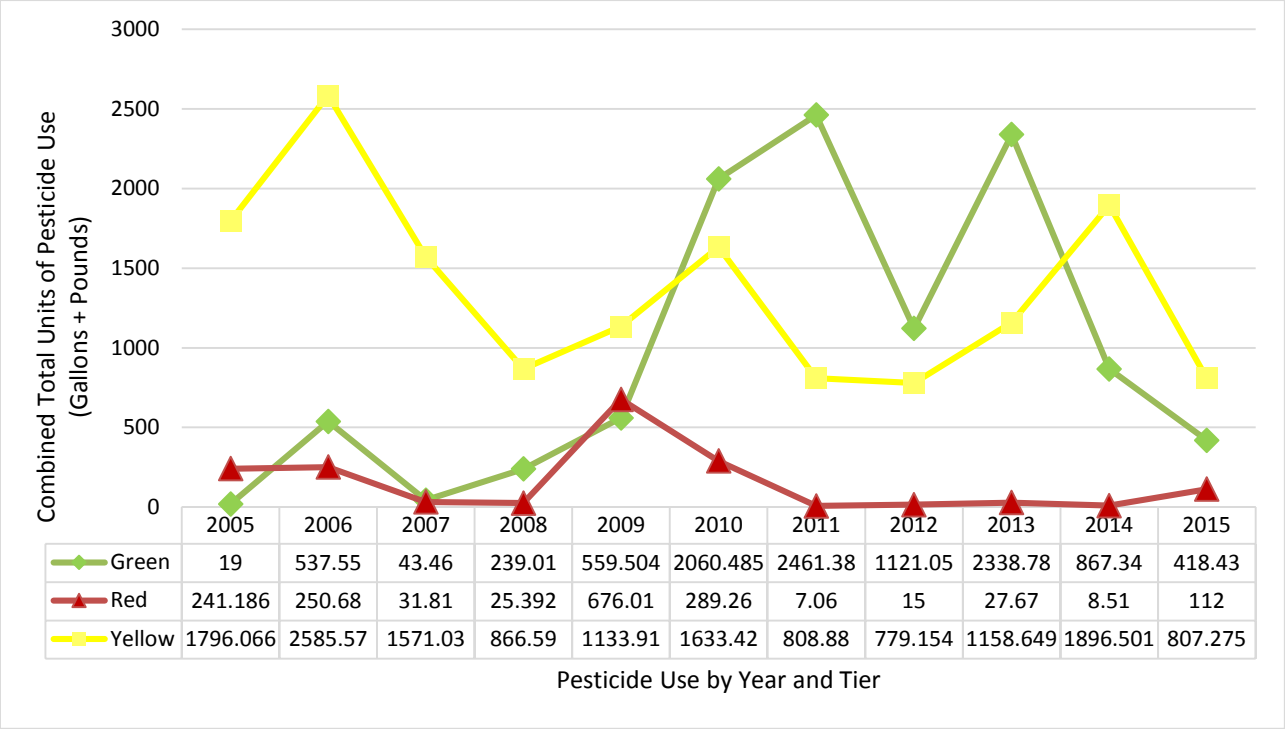
In addition, it should be noted that the amount of pesticides used and the number of applications are not necessarily accurate indicators of the extent of pesticide use or, conversely, the extent of use of reduced-risk pest management methods and alternative practices. For example, staff may apply several 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.

Figure 6 looks at the City's pesticide use by tier since 2005. The data indicates that an increase in Yellow and Red materials generally amounts to less Green material, though this is not always

[1] Information based on staff and IPM Advisory Committee knowledge.

the case. 2010, for example, saw a higher than average use of both Red and Yellow material, while still using a significant amount of Green material. The *2010 Annual Report* indicates that 80% of all pesticide use in 2010 was for mosquito control. In fact, mosquito control accounts for the majority of pesticide use in any given year.

Figure 6. Citywide Pesticide Use by Tier



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Green	19	537.55	43.46	239.01	559.504	2060.485	2461.38	1121.05	2338.78	867.34	418.43
Red	241.186	250.68	31.81	25.392	676.01	289.26	7.06	15	27.67	8.51	112
Yellow	1796.066	2585.57	1571.03	866.59	1133.91	1633.42	808.88	779.154	1158.649	1896.501	807.275

It is always important for City staff to find cost effective, low risk, 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.

Also critical to reducing pesticide hazards in the City of Santa Barbara is the continuation of community outreach and public education. It is anticipated that with greater community outreach, the public will become more aware of low risk alternatives that they can employ at home, thus adding to the overall health of the community.

III. PLAN FOR 2016

The Parks and Recreation Department will continue to administrate and refine the IPM Strategy and will work with IPM consultant Phil Boise for a comprehensive review of the IPM strategy and PHAER ZONE.

All Departments will continue to test any promising new materials or methods of integrated pest management as they are introduced. Departments will also continue to monitor pest populations and adjust priorities as needed. 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.

ATTACHMENTS

ATTACHMENT A: APPROVED MATERIALS LIST

The pesticides listed on the Approved Materials List are categorized according to the pesticide screening protocol in the PHAER Zone system.

Product Name	Active Ingredient	ZONE	Type
Advance Ant Bait	Orthoboric Acid	Green	Insecticide
Advion Roach Stations (enclosed)	Indoxacarb	Green*	Insecticide
AllDown	citric acid, acetic acid, garlic	Green	Herbicide
Any brand name	Orthoboric Acid ant bait station	Green	Insecticide
Avert Cockroach Bait Station	Abamectin B1 0.05%	Green*	Insecticide
Avert Cockroach Gel Bait	Abamectin B1 0.05%	Green*	Insecticide
Bactimos Pellets	Bt	Green	Insecticide
Bactimos Wettable	Bt	Green	Insecticide
Bio-Weed	corn gluten	Green	Herbicide
Borid Turbo	Orthoboric Acid	Green	Insecticide
BurnOut 2	clove oil	Green	Herbicide
Cease Biofungicide	B. subtilis	Green	Fungicide
Cinnamite	cinnamaldehyde	Green	Insect/Fung
Conserve	spinosad	Green	Insecticide
Dipel Flowable	Bt	Green	Insecticide
Drax Ant Kill PF	Orthoboric Acid	Green	Insecticide
EcoExempt	Wintergreen Oil	Green	Herbicide
EcoExempt D	2-Phenethyl propionate / Euginol	Green	Insecticide
Embark	mefluidide	Green	Growth Regulator
GreenErgy	Citric, Acetic Acid	Green	Herbicide
Kaligreen	potassium bicarbonate	Green	Fungicide
Matran (EPA Registration Exempt)	clove oil	Green	Herbicide
Natura Weed-A-Tak	clove oil	Green	Herbicide
Niban	Isoboric Acid 5%	Green	Insecticide
Primo-Maxx	Trinexapac-Ethyl	Green	Growth Regulator
Proxy	Ethephon	Green	Growth Regulator
Safer Soap	potassium salts of fatty acids	Green	Insecticide
Sluggo	iron phosphate	Green	Other
Summit BTI Briquets	Bt	Green	Insecticide
Teknar HP-D	Bti	Green	Insecticide
Terro II	Orthoboric Acid	Green	Insecticide
Vectobac G	Btk	Green	Insecticide
VectoLex CG	bacillus sphaericus	Green	Insecticide
Victor Wasp and Hornet Killer	Mint Oil 8% & Sodium Lauryl Sulfate 1%	Green	Insecticide

Product Name	Active Ingredient	ZONE	Type
Acelepryn	Chlorantraniliprole	Yellow	Insecticide
Advion Ant Arena	Indoxacarb	Yellow	Insecticide
Advion Roach Gel	Indoxacarb	Yellow	Insecticide
Advion Insect Granules	Indoxacarb	Yellow	Insecticide
Affirm	Polyoxin D zinc salt	Yellow	Fungicide
Agnique MMF	POE Isoocatadecanol	Yellow	Insecticide
Aliette	fosetyl aluminum	Yellow	Fungicide
Altosid Briquettes	methoprene	Yellow	Other
Altosid Liquid	methoprene	Yellow	Other
Altosid Pellets	methoprene	Yellow	Other
Altosid XR-B	methoprene	Yellow	Other
Aquamaster-Rodeo	glyphosate	Yellow	Herbicide
Avid	abamectin	Yellow	Miticide/Insecticide
Ditrac	Diphacinone	Yellow	Rodenticide
Dormant	petroleum oil	Yellow	Insecticide
Green Light	Neem oil	Yellow	Insecticide/Fungicide
Kop-R-Spray	Copper Oil	Yellow	Fungicide
M-PEDE	potassium salts of fatty acids	Yellow	Insecticide
Omni Oil	Mineral Oil	Yellow	Fungicide
Polaris	Imazapyr	Yellow	Herbicide
Prostar 70 WP	flutolanil	Yellow	Fungicide
Rose Defense	Neem oil	Yellow	Insect/Fung
Roundup Pro	glyphosate	Yellow	Herbicide
Roundup PROMAX	glyphosate	Yellow	Herbicide
Safticide Oil	petroluem oil	Yellow	Insecticide
Stylet Oil	Petroleum distillates	Yellow	Insecticide
Sulf-R-Spray	Parafin oil, sulfur	Yellow	Fungicide
Razorooter	Diquat	Yellow	Herbicide
Superior Spray Oil	petroleum distillates	Yellow	Insecticide
Surflan	oryzalin	Yellow	Herbicide
Surflan AS	oryzalin	Yellow	Herbicide
Termidor SC	Fipronil	Yellow	Insecticide
Triact	Neem oil	Yellow	Insecticide/Fungicide
Trilogy	Neem oil	Yellow	Insecticide/Fungicide
Wasp-Freeze	allethrin	Yellow	Insecticide
Wilco Ground Squirrel Bait	diphacinone	Yellow	Other
XL 2G	benefin; oryzalin	Yellow	Herbicide
Banner-maxx	Propiconazole	S.C.	Fungicide
Bayleton	triadimafon triazole	S. C.	Fungicide
Daconil	Chlorothalonil	S.C.	Fungicide
Fumitoxin	Aluminum phosphide	S. C.	Rodenticide

Product Name	Active Ingredient	ZONE	Type
Insignia	Pyraclostrobin	S.C.	Fungicide
Heritage	Azoxystrobin	S.C.	Fungicide
Manage	halosulfuron methyl	S. C.	Herbicide
Medallion	fludioxonil	S. C.	Fungicide
Quick Pro	glyphosate/diquat	S. C.	Herbicide
Reward	diquat dibromide	S. C.	Herbicide
Rubigan	fenarimol	S. C.	Fungicide
Rubigan EC	fenarimol	S. C.	Fungicide
Subdue	metalaxyl	S. C.	Fungicide
Trimmit 2SC	Paclobutrazol	Yellow	Growth Regulator
Turflon	Triclopyr	S.C.	Herbicide
Velista	Penthiopyrad		Insecticide
Zp Rode	Zinc phosphide	S. C.	Rodenticide
Zythor	Sulfuryl flouride	S. C.	Insecticide

* By decision of the Citizen 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 stations.