City of Santa Cruz

Integrated Pest Management Program
2006 Annual Report

Contact: Tina Shull, Office of the City Manager: (831) 420-5010

1.0 Introduction

The City of Santa Cruz initiated its Integrated Pest Management (IPM) Program in November of 1998 after the City Council adopted Resolution No. NS-24,067, the Integrated Pest Management Policy. This policy set forth the following goals for all City Departments:

- Eliminate or reduce pesticide applications on City property to the maximum extent feasible;
- Eliminate the application of all U.S. Environmental Protection Agency (EPA) Toxicity Category I and II pesticide products by 2000[1]; and
- Establish a Citywide IPM Program focusing on coordinated administration and public outreach and education.

The following report presents the City's 2006 IPM Program activities and application data. The IPM Program applies to all City departments and divisions, although primary pest management responsibilities fall to three departments: Parks and Recreation (including DeLaveaga Golf Course), Public Works, and Water.

2.0 2006 Program Components

2.1 2006 IPM Program Operationalization

In October of 2003, the City Council approved the IPM Guidance Manual, Reduced Risk Pesticide List, and Pesticide Use Policy, which were drafted by the IPM Technical Advisory Committee and City staff. The documents provide the framework for the program and establish clear directives for appropriate pesticide usage in the City. However, while the documents provide program structure and goals, they were intended to be dynamic to meet future City needs and to reflect changes in the available pesticide spectrum, for instance, the introduction of new pesticides.

To ensure that the IPM Program continues to be an adequate tool to meet the City's pest challenges while upholding the program goals adopted by the City Council, staff are currently reexamining components of the program that may be in need of revision. Specifically, staff are reviewing the Reduced Risk Pesticide List, which provides guidance for all City employees regarding acceptable pesticides. The list was developed in 2003 and despite the evolution of the pesticide industry and new findings in pesticide research since that time, the list has not been updated. Staff are currently researching IPM reduced risk pesticide lists in surrounding communities. In particular, staff are examining the lists and practices of the City of San Francisco and Santa Clara County, as

[1] As defined by the U.S. EPA, Category I pesticides have the highest toxicity, which is denoted on a product's label by the signal word, "Danger". Category II pesticides comprise the second level of toxicity and are signified by the signal word, "Warning". Category III pesticides are the least toxic, are the most readily accepted by the City's IPM policy, and are denoted by the signal word, "Caution."

they are at the forefront of IPM research and techniques. If the City's reduced risk pesticide list is modified, per IPM policy, a report will be forwarded to the City Council.

2.2 IPM Program Coordinator

The IPM Technical Advisory Committee recommended the establishment of an IPM Coordinator position. The duties of the IPM Coordinator would include maintenance of the program and reduced risk pesticide list, review of emergency exemption requests, and preparation of the annual report for the IPM Program. The duties are currently unassigned and are being executed by the Council Affairs Manager in the City Manager's Office.

2.3 Impact of the Santa Cruz County Mosquito and Vector Control District

The City of Santa Cruz is now part of the Santa Cruz County Mosquito and Vector Control (MVC) District. In August of 2005, voters extended the district from a service area of 70 square miles in the southern portion of Santa Cruz County to the entirety of the County, approximately 446 square miles. This translates into better mosquito control for the City, which reduces the risk of mosquito-borne diseases, such as the West Nile and encephalitis viruses, and expanded disease surveillance and suppression services for other vectors such as rodents, yellowjackets, ticks and flies. City residents now contact the MVC District directly to report pest issues.

The City of Santa Cruz benefits from the expansion of the MVC District and there are no anticipated conflicts with the City's IPM policy. While the MVC District is not subject to the City's IPM Program requirements, it voluntarily utilizes stringent IPM methodologies. With prevention, education, and early intervention as its primary activities, the MVC District engages in surveillance, public education, vegetation management, and biological controls before resorting to pesticide use. If pesticides are necessary, the MVC District employs controlled and targeted application methods, with emphasis on narrow-spectrum larvicides to preempt development. These narrow-spectrum larvicides are used because they effectively target specific vector groups with few side effects.

The MVC District has agreed to provide the City with all pesticide application data, which will be included as a separate category in IPM Program Annual Reports.

3.0 Alternative Pest Control Projects

In 2006, existing projects utilizing alternate pest control methods were continued citywide. No radically new or different programs were established. Examples of ongoing projects include:

Utilizing Goats for Weed Management: The Parks and Recreation, Water, and Fire Departments continue to use goats for weed management. The goats provide an effective and ecologically beneficial weed abatement solution.

Alternative Weed Control Methods: The Parks and Recreation Department continues to employ alternative methods of weed control such as mechanical removal through mowing and hand pulling. Additionally, the use of green flaming for targeted weed burning, mulching, and weed barriers has proven effective.

Median and Park Accent Design Modifications: A few years ago, the Parks and Recreation Department implemented a broad redesign program for all new and renovated medians and park accents. Design elements that promote less maintenance-intensive landscaping are used, including: more efficient water systems that target individual plants, careful selection of plant species that choke out weeds, and increased use of ground cover such as weed cloth and rock hardscapes for weed prevention. The Parks and Recreation Department also occasionally paves medians throughout the City to eliminate the need for weed maintenance completely.

Use of Artificial Turf: The Depot Park represents the Parks and Recreation Department's most expansive use of artificial surface in lieu of grass. The artificial soccer field displaces the need for mowing, trimming, and weed control. This past year, artificial turf was implemented at the San Lorenzo Park lawn bowling green to tremendous success. Its use is being considered for medians and park accents.

City Sewer Pest Control: The Public Works Department continues its monitoring program for the Norway rat in sanitary sewer lines throughout the City. Baiting is initiated in response to resident complaints or employee alerts. Bait placements are monitored on a regular basis and ceased when the bait is taken, ensuring a minimal application of the pesticide. The bait is placed within the sewer system, thus eliminating human exposure threats.

4.0 City of Santa Cruz 2006 Pesticide Use and Analysis

4.1 Overview of 2006 Pesticide Use

After a period of general decline, the year 2006 exhibited a slight increase in the amount pesticides applied across all toxicity categories, with the exception of Category III solids (see Table 2). The increase in the use of Category I and II pesticides is not in accordance with IPM policy goals. As discussed below, the application of these chemicals occurred in the Wastewater Treatment Plant, the Museum of Natural History, and the DeLaveaga Golf Course. Although the applications took place in situations of low human exposure risk, staff are exploring alternate means to reduce and eliminate their use altogether.

In 2006, the City entered its ninth year of the IPM program. Similar to the challenges faced by the County from the cumulative effects of less rigorous abatement of weeds and other invasive organisms, the City's plant and animal pest problems were greater than in years past. This was particularly the case at the DeLaveaga Golf Course where the

remnants of turf disease established in prior seasons were fueled by erratic and atypical weather patterns. Heavy rains early in 2006 followed by a period of uncharacteristic heat prompted turf diseases to flourish and necessitated chemical solutions. Consequently, the DeLaveaga Golf Course applied 1.6 percent more pesticides than in 2005 and applied more Category II products.

The DeLaveaga Golf Course greens and turf are subject to a higher standard as premium, healthy grass is integral to play. Turf disease and weed infestations including Dollar Spot, Anthracnose, English Daisy and other heavy broadleaf weeds seriously degrade the playability and subsequently, the economic viability of the City's self-sustaining course. In light of the Golf Course's recent reconstruction expenses, it is vital that the course maintain and enhance its revenues. This, in turn, is contingent upon turf quality.

Although the Golf Course increased its pesticide application in 2006, IPM accepted methods of pest control are always employed first. These methods include irrigation management, vertical mowing and topdressing, organic fertilizer application, aeration, hydro-injection, overseeding with disease tolerant turf species, microbial applications, dew removal, and compost teas. To augment these tools, this year the City is investing in equipment to test and monitor grass health, similar to what is used by viticulturists to evaluate grape crops. Certain chemical indicators in plant fluids, such as sugar content, can reveal vulnerability to disease. With this testing equipment, the Golf Course Superintendent will be able to regularly monitor turf health and intervene in the early stages of disease.

At the Wastewater Treatment Plant, there were a few applications of a Category I rodenticide, totaling 0.5 pounds of product. These applications were needed to address an active gopher population and were placed in areas with little to no human exposure risk. Nevertheless, staff are exploring non-chemical means of reducing the gopher population in the future, notably through trapping. Low-cost traps that effect immediate death will likely be purchased and located in areas infested by gophers.

A final contribution to the increase in Category I pesticides applied in 2006 was the fumigation of the Museum of Natural History. An infestation of Drywood Termites threatened the structural integrity of museum; inaction would have resulted in the complete loss of the structure in time. The City contracted the services of a professional termite company to tent and fumigate the museum. The chemical used, Vikane, is a Category I product. However, after appropriate venting, no pesticide residue persists and there is no risk to City staff and the public.

It is important to highlight the fact that the City is applying very few pesticides, when considered collectively. The Parks and Recreation Department, for instance, applied no pesticides whatsoever aside from the fumigation of one building. Applications by the Public Works and Water Departments are confined to City facilities or sewer lines only, with very little risk of public exposure. Overall, the City is managing its pest issues in accordance with the policies adopted by the City Council in 1998. As discussed in Section 2.1, the program and in particular, the reduced risk pesticide list, is in need of

revision, but City staff continue to employ IPM methodologies to the greatest extent possible.

4.2 Panel Data Analysis

Table 2 displays the City's pesticide use from 1998, when the IPM Program was first established, through 2006. Since IPM implementation, there has been a distinct decline in pesticide use, up until this year. As discussed in Section 4.1, after a period of elimination, a 24.53 pounds of Category I pesticide was applied, 24 pounds of which was for a one-time essential treatment of the Museum of Natural History. Similarly, Category II pesticides were declining in use prior to 2006 but were a necessary last resort to restore the DeLaveaga Golf Course greens and turf. Category III pesticides represent the majority of all application in the City. Use of pesticides from this lowest toxicity group in solid form exhibited a decline.

As discussed in Section 2.3, the Santa Cruz County Mosquito and Vector Control (MVC) is not managed, monitored or directed by the City of Santa Cruz. The application statistics in this report are provided as a courtesy and are not included in the City's totals.

4.3 2006 IPM Exemptions

In 2006, there were six instances of the use of non-IPM approved pesticides. Most were Categories II or III pesticides for the DeLaveaga Golf Course to combat turf disease and invasive weeds. The most commonly applied Category II products were Daconil and Banner Max, which are fairly universal tools for golf course maintenance. The other pesticides are in Category III, which is a toxicity level that is generally accepted and consistent with the IPM Program. However, due to the possibility of human exposure, an exemption for these Category III pesticides was sought. The Museum of Natural History was granted an exemption for Drywood Termite fumigation. A professional contractor tented, applied, and vented the building using the Category I insecticide, Vikane.

The City Manager approved the exemptions per the Emergency Exemption Policy of the IPM Guidance Manual. The decisions to approve the exemptions were based upon the exhaustion of alternative IPM approved means and, in all cases, the threat of major damage to facilities if the problem was not controlled. The exempted materials were used in full compliance with IPM Program application and posting requirements.

TABLE 1: CITY OF SANTA CRUZ 2005 AND 2006 PESTICIDE USE SUMMARY

Department/Division	*Product*	*EPA Category*	*2005 Use*	***2006 Use***
Parks and Recreation: DeLaveaga Golf Course	Banner Maxx	II	1.376 gal	6.1 gal
	Daconil	II	3.76 gal	22.5 gal
	Drive 75 DF	III	-	24 lbs
	Vanquish	III	-	5 gal
	Fore	III	36 lbs	-
	Fore 80 WP	III	144 lbs	-
	Heritage	III	4 lbs	8 lbs
	Round Up Pro	III	0.172 lbs	-
	Speedzone	III	-	15 gal
	Anderson's FF2	III	1165 lbs	1295 lbs
Parks and Recreation: Parks Division	Roundup Pro	III	0.164 gal	-
	EZ-JECT Caps	III	-	-
	Vikane [1]	I	-	24 lbs
Public Works	Tempo Ultra	III	54 gal	67 gal
	Contrac Bait [1]	III	11.5 lbs	-
	Contrac Rodenticide	III	-	10.5 lbs
	FMC Dragnet	III	-	0.03 gal
	Contrac Bait	III	24.5 lbs	-
Water	Round Up Pro	III	5.46 gal	5.35 gal
	Final Rodent Bait	III	-	13.13 lbs
	ProSpreader	III	0.048 gal	0.45 gal
	Scythe	III	0.14 gal	-
	Gopher Getter	I	-	0.53 lbs
	Remuda	III	0.26 gal	-
	Contrac Bait	III	15.61 lbs	0.44 lbs
	Liphatech Bait	III	3.9 lbs	-
Santa Cruz County Mosquito Vector Control [2]	Altosid Briquets	III	0.3 lbs	2.84 lbs
	Altosid Pellets	III	1.2 lbs	6.77 lbs
	Altosid SBG	III	46.8 lbs	19.5 lbs
	Agnique MMF	III	-	-
	Golden Bear Oil -111	III	8.7 gal	6.6 gal
	Vectobac Granules	III	52.8 lbs	198.28 lbs
	Vectobac Liquid	III	0.01 gal	-
	Vectolex Larvicide	III	42.75 lbs	12.99 lbs
	Altosid Liquid Larvicide	III	0.0054 gal	-
	Vectolex Packet	III	3.5 lbs	-

Notes:
[1] Applied by City contractor
[2] The Santa Cruz County Mosquito Vector Control (MVC) District now includes the City of Santa Cruz but applications are completed exclusively by the MVC District. For more information about MVC District vector control methods, see section 2.3.

TABLE 2: CITY OF SANTA CRUZ

PESTICIDE USE SUMMARY 1998–2006[1]

EPA SIGNAL WORD/CATEGORY (IPM REGULATED MATERIALS ONLY)

			Pesticide Usage by Year								
EPA Signal Word	***Product Form***	***EPA Category***	***1998***	***1999***	***2000***	***2001***	***2002***	***2003***	***2004***	***2005***	**2006**
Danger	Liquid	I	28 gal	8 gal	-	-	-	-	-	-	-
	Solid	I	10 lbs	6 lbs	-	-	64 lbs	0.66 lbs	-	-	24.53 lbs
	Gaseous	I	-	-	-	-	-	-	-	-	-
Warning	Liquid	II	11.21 gal	14.57 gal	3.99 gal	-	-	5.16 gal	5.16 gal	5.126 gal	28.6 gal
	Solid	II	1314 lbs	1108 lbs	200 lbs	-	-	-	-	-	-
Caution	Liquid	III	61.54 gal	34.43 gal	13.52 gal	10.21 gal	10.56 gal	10.31 gal	5.61 gal	60.24 gal	92.8 gal
	Solid	III	761.62 lbs	660.83 lbs	858.97 lbs	805.50 lbs	696.0 lbs	944.05 lbs	879.04 lbs[2]	1404.51 lbs	1351.1 lbs

[1] Table excludes Santa Cruz County Mosquito Vector Control data