

Contra Costa County Integrated Pest Management Advisory Committee

2012 Annual IPM Program Status Report

to the

Transportation, Water, and Infrastructure Committee of the Contra Costa Board of Supervisors

EXECUTIVE SUMMARY

This year, the IPM Advisory Committee explored how pest management decisions are being made in the County and how to make the IPM Program more transparent, especially in the area of pesticide use. The Committee also worked on a comprehensive method for evaluating the County's IPM Program. It was felt that pounds of pesticide used is not the only or the best metric for evaluating the IPM program.

The IPM Advisory Committee produced a generic decision tree to document how County staff currently make pest management decisions. The Committee also developed a form for the Departments to use in documenting the details of specific pest management decisions. The Committee provided input to the IPM Coordinator on updating the County's IPM webpages and adding more information about pesticide use. In 2013 the County will launch online posting of pesticide use in the areas where posting is required by the County's pesticide posting policy. The IPM Committee also developed an IPM priority assessment tool for assessing implementation of elements of an IPM program and for prioritizing work on IPM implementation.

The Committee recommended, and the Departments agreed, that each Departmental IPM program will choose a priority that is not fully implemented, determine appropriate metrics, and commit to improving implementation of the priority in 2013. The Departments also agreed to identify a priority pesticide or pest management activity and complete the form for documenting management decisions to demonstrate their decision-making process.

The County's use of pesticide continues to decrease. Overall, County operations have decreased their pesticide use by about 65% since FY 2000/01. Use of pesticides that are either known or probable carcinogens, reproductive or developmental toxicants, cholinesterase inhibitors, known groundwater contaminants, or of high acute toxicity has decreased by 83%. Twenty-six of the 34 pesticides in these categories that have been used over the years have been phased out.

Bed bugs remain a serious issue in the County, especially for those citizens who are least able to cope with the problem, such as the elderly, the disabled, and those with little means. The IPM Coordinator is working to provide information to these citizens about what they can do to prevent bites and reduce the numbers of bed bugs.

The Agriculture Department continued its noxious weed management program. The Department surveyed over 216,000 acres of public and private land and treated 235 net acres of weeds. This year Department staff found and eliminated small infestations of two weeds that are new to Contra Costa County.

In the Public Works Department, the Facilities Division continues to repair structural deficiencies in buildings to prevent the entry of pests. These deficiencies are prioritized and the backlog is addressed as time and resources allow. The County's structural IPM contractor continues to provide excellent service. The Grounds Division has switched to organic fertilizer and has purchased new equipment to make their work more efficient. All prunings are now being chipped on site and used as mulch. The Roadside and Creeks Divisions participated in an annual refresher training in habitat assessment for endangered and threatened species in order to comply with the Department's Routine Maintenance Agreement with the California Department of Fish and Game. The Department is continuing its multi-year study comparing herbicide with sheep or goat grazing. In addition to this study, the Department grazed 76 acres to manage weeds. The data being collected on grazing will help the Department to determine, where, when, and how much to use grazing as a weed management tool.

HISTORY

From 2002 to 2009, an informal IPM Task Force met to coordinate implementation of the IPM Policy that was adopted by the Board of Supervisors in November 2002. A formal body, the Integrated Pest Management (IPM) Advisory Committee, was created by the Board of Supervisors in November 2009. This report is the fourth annual status report from the IPM Advisory Committee.

BACKGROUND

Purpose of the IPM Advisory Committee

The purpose of the Committee is to:

1. Protect and enhance public health, County resources, and the environment;
2. Minimize risks and maximize benefits to the general public, staff, and the environment as a result of pest control activities conducted by County staff and contractors;
3. Promote a coordinated County-wide effort to implement IPM in the County in a manner that is consistent with the Board-adopted IPM Policy;
4. Serve as a resource to help the Agriculture and Public Works Departments and the Board of Supervisors review and improve existing pest management programs and the processes for making pest management decisions;
5. Make policy recommendations upon assessment of current pest issues and evaluation of possible IPM solutions; and
6. Provide a forum for communication and information exchange among members in an effort to identify, encourage, and stimulate the use of best or promising pest management practices.

Members of the IPM Advisory Committee

Currently the Committee has a total of 13 seats consisting of voting and non-voting members.

The 8 voting members include

- One representative from Contra Costa Health Services
- One representative from the County Storm Water Program
- One representative from the County Public and Environmental Health Advisory Board
- One representative from the County Fish and Wildlife Committee
- One representative from an environmental organization
- Three at-large members of the public.

The 4 non-voting members include

- A representative from the Agriculture Department
- Two representative from the Public Works Department (Facilities Division and Maintenance Division)
- One representative from the County's pest management contractor

The Committee also has one public member alternate who only votes if one or more of the three at-large public members is absent from a meeting.

COMMITTEE PRIORITIES FOR 2012

In January of this year, the IPM Advisory Committee decided to focus its work on the following three aspects of an IPM program and to develop recommendations for the Departments of Agriculture and Public Works around these three topics:

- A. IPM decision-making—how pest management decisions can be clarified and documented
- B. Data management/IPM program evaluation—what data should be collected and how to evaluate it
- C. IPM program transparency—how information and data should be presented to increase transparency

The Committee formed three subcommittees to work on these priorities.

2012 ACCOMPLISHMENTS OF THE IPM ADVISORY COMMITTEE AND THE IPM COORDINATOR

Accomplishments of the IPM Committee

The IPM Advisory Committee (the Committee) held six regular meetings during 2012 and the subcommittees held a total of 20 meetings to address the above priorities. The IPM Coordinator serves as staff to the Committee and the three subcommittees. The accomplishments of the IPM Committee and its subcommittees are as follows:

Priority A: IPM Decision-Making

Through the work of the subcommittee, the IPM Advisory Committee

1. Gained an understanding of the complexities involved in making pest management decisions
2. Documented an existing Departmental decision-making process
 - a. Produced a specific weed management decision tree for the Public Works Department
 - b. Produced a detailed, annotated decision path for a specific weed problem on a roadside, and from this began developing a form for the Departments to use
3. Prepared a generic pest management decision tree

The Committee recommends to the Departments that they

1. Accept the generic decision tree (see Attachment A) as documentation of how pest management decisions are currently made
2. Use the Decision Documentation Tree (see Attachment B) as a method for documenting management decisions for new pests, new sites/situations, and for using new pesticides

Priority B: Data Management/IPM Program Evaluation

Through the work of the subcommittee, the IPM Advisory Committee

1. Developed a tool (see Attachment C) to assess the implementation of the elements of an IPM program, and to prioritize those elements
2. Worked with each Department to complete the tool
3. Verified that the vast majority of the data that needs to be collected is already being collected

The Committee recommends to the Departments that they:

1. Use the IPM Priority Assessment tool for assessing implementation of elements of an IPM program and as a method for prioritizing work on IPM implementation
2. Have each Departmental IPM Program work with the Data Management subcommittee to choose one priority that is not fully implemented, determine appropriate metrics, and commit to improving implementation of the priority in 2013
3. Have each Departmental IPM program identify a priority pesticide or pest management activity and fill out the Decision Documentation Tree (Attachment B) for that pesticide or activity

Priority C: IPM Program Transparency

Through the work of the subcommittee, the IPM Advisory Committee

1. Provided input to the IPM Coordinator to update the IPM webpages on the Health Services website and add more information about pesticide use and notification of use
2. Developed the format for a permanent posting sign that can be used in conjunction with current posting methods
3. Developed a method for web posting of pesticide use
4. Revised the County's pesticide use posting policy to accommodate web posting and the use of permanent signs (see Attachment D)

The Committee recommends to the Departments that they:

1. Accept the revised pesticide use posting policy
2. Begin using the web posting method in 2013
3. Evaluate the web posting process after one year

Accomplishments of the IPM Coordinator

In addition to working on each subcommittee, the IPM Coordinator accomplished the following:

Bed Bugs

The common bed bug continues to be one of the most serious pests in the County, a pest that has provoked citizens to misuse pesticides to an alarming extent. Pesticides do not solve the problem, and in many cases make the problem worse. We increasingly see bed bugs affecting the citizens of Contra Costa who have the fewest resources to combat them.

There is a sense that the bed bug problem is increasing in the County, but the County has not been collecting data that can verify that assumption. We are working to remedy this.

This past year a single bed bug was found in the Contra Costa Regional Medical Center. It appears to have entered the facility on a child's car seat. Fortunately, it was quickly spotted and killed, and no others were found after a thorough search of the area. This kind of bed bug introduction is likely to occur more frequently in the future.

In an effort to educate County staff and the public about bed bugs, the IPM Coordinator

- Continued to organize and staff the County's Bed Bug Task Force; the Task Force meets monthly and advocates for increasing public awareness of bed bug problems and for developing sound bed bug management policy throughout the County
- Joined forces with Alameda County Vector Control and the University of California Cooperative Extension to widen the scope and effectiveness of the Bed Bug Task Force
- Began work with the new Bed Bug Task Force partners to design a study of the efficacy of IPM methods versus conventional methods for controlling bed bugs in multi-family dwellings; the site of the study will be Contra Costa County
- With the help of the Bed Bug Task Force, investigated (by telephone) a number of bed bug infestations that came to the attention of the Health Services Department
- Began developing a specific bed bug prevention protocol for the County's Head Start programs; once complete this protocol can be used in private child care/pre-school settings across the County
- Presented a training in the use of the County's bed bug prevention protocols to the County's Brookside homeless shelter staff
- Presented a bed bug awareness talk to the staff and clients of the Ambrose Senior Nutrition Center in Bay Point; developed a notebook of laminated photos for distribution to other senior facilities
- Presented a bed bug awareness training to the Northern California Entomology Club

- Developed and presented a bed bug awareness training to around 90 parents at Meadow Homes Elementary School in Concord. Nati Flores from the Michael Chavez Center was a co-presenter. We hope to train teachers and administrators at the school as well.
- Worked with Mara Gold in Supervisor Mitchoff's office and Betsy Burkhart, Director of the County Office of Communications and Media, on increasing bed bug awareness in the County

Outreach/Advising

- Organized a meeting of the Bay Area IPM Coordinators group to network and share new ideas
- Agreed to provide on-going advice along with review of educational materials for IPM training in child care settings as part of a project of the Center for Environmental Research and Children's Health at U.C. Berkeley
- Agreed to participate in a committee developing IPM standards of practice for the Healthy Homes Alliance in Alameda County; these standards, which include many more areas than just pest management, will be directly applicable to Contra Costa County and will become part of a manual for in-home visitors in a wide range of professions
- Worked with the Cities of San Pablo, El Cerrito, Walnut Creek, and Richmond on IPM issues in the cities
- Responded to a number of requests for pest management information from County staff and citizens

Pesticide Hazard Identification

- Met with Department staff to continue work on developing a pesticide hazard identification process for the County
- This will be completed and presented to the IPM Advisory Committee at the beginning of the new year.

Responding to Public Records Requests

- From June 1 to September 24, spent 51.25 hours (9% of working hours) responding to public records requests from Parents for a Safer Environment

2012 DEPARTMENT IPM PROGRAM HIGHLIGHTS AND CHALLENGES

Agriculture Department

IPM Program Highlights

- The Department actively worked on all three subcommittees of the IPM Advisory Committee and has agreed to the Committee's recommendations to the Departments.
- All historically treated noxious weed sites were surveyed and treated again this year
In order to achieve eventual eradication of target noxious weeds, all sites that have not been declared eradicated must be surveyed each year and treated if necessary. Significant progress was made in the Department's eradication and control effort this year. The department program involves 18 target terrestrial noxious weed species. This is two more than last year, because this year the Department found two species new to Contra Costa. The Department surveys and/or spot-treats weeds on more than 580 sites that range from one acre to more than 5,000 acres in size. This year the Department surveyed over 216,000 acres (almost 2 ½ times as many acres as last year) and only treated 235 net acres (two-thirds of what was treated last year).

Treatment involved hand removal, mechanical removal and targeted treatment with low toxicity herbicides. With rare exception, pesticide treatment involved highly focused spot spraying using backpack sprayers. In some newly treated areas, treatment involved focused area spray using a vehicle mounted sprayer. The program involved over 4,000 hours of direct field time by staff. Of this, approximately 90-95% of the time was spent in surveying and monitoring with the remainder being spent on pesticide application.

- One new Japanese dodder (*Cuscuta japonica*) site found this year
Japanese dodder is a very aggressive parasitic plant that has the potential to severely alter the composition and function of riparian areas. It also affects ornamental plantings and agricultural crops. It is native to Southeast Asia and was first discovered in the county in spring of 2004.

One new site involving two adjacent residential properties was discovered this year by Department staff detection specialists. All the landscaping that was infested with Japanese dodder was manually removed and buried at a land fill. No pesticides were used. Staff will continue to monitor the site for a minimum of three years until eradication can be declared.

Forty-four of the 48 historically infested properties in the county have been free of Japanese dodder for three or more years, which meets the criteria for eradication on these properties.

- Red sesbania (*Sesbania punicea*) removal

This was the seventh year of red sesbania removal at the primary infestation site of Kirker Creek, Dow Wetlands. This small tree has a high potential for environmental damage by displacing native plants and wildlife in riparian areas. Red sesbania is an exotic invasive weed that is native to South America, and is poisonous to humans, livestock, and many native vertebrates.

All historic sites were surveyed, and a total of 4,293 plants were removed this year. Staff removed 2,838 plants in 2011; 1,899 in 2010; 2,059 in 2009; 492 in 2008; 833 in 2007 and 878 in 2006. A few individual red sesbania plants were removed in Grayson Creek and lower Walnut Creek by County Public Works. Two new infestations were discovered on residential properties and abated this year. The fact that more plants were removed this year than any previous year demonstrates that red sesbania seeds are long-lived, and that the seed bank is healthy and persistent.

Infestations are located on three wildland and 11 residential properties. With the exception of the eight established plants on the two new properties, all plants removed were seedlings that germinated from the existing seed bank. Removal of red sesbania is performed mechanically or by hand pulling.

- Kangaroo thorn (*Acacia paradoxa*) removal

The County has one site infested with kangaroo thorn. The removal of the existing infestation in 2005 involved 52 hours of staff time. At that time the infestation covered a little less than one net acre. This year, it took only 5.5 hours of staff time to accomplish the surveying and seedling removal. Only small seedlings of less than one foot in height were found, and the infested area totaled less than one hundredth of an acre.

Each year the Department removes by hand pulling all new seedlings sprouting from the old seed bank.

- Smooth Distaff Thistle (*Carthamus baeticus*)

There is only one known smooth distaff thistle infestation site in the county. It originated from the movement of a tractor from Fallon, Nevada to the site off Christie Road in Martinez. The small infestation was first discovered in 2005 by one of the Department's biologists. For six years, the Department spot-sprayed this area. This year the infestation had been suppressed to the extent that staff were able to accomplish removal of all plants without the use of herbicide. The Department hopes to continue working toward eradication using only mechanical or hand pulling on this species.

- Two new noxious weed species found: Japanese knotweed and woolly distaff thistle

Two very small infestations of Japanese knotweed (*Fallopia japonica*) were found in the county by staff biologists. One is in Lafayette and one in El Sobrante. These are first recorded occurrences of this species in Contra Costa County. Japanese knotweed spreads by tenacious rhizomes from which small pieces can break and form a new plant. The weed is a particular threat in riparian areas where it can survive floods and quickly colonize scoured streambanks. The plant can form very dense patches that shade out all other vegetation. The rhizomes produce bamboo-like shoots that can penetrate through two inches of asphalt.

After considerable research and study, and after formally documenting the decision-making process, the Department treated both Japanese knotweed sites with the herbicide active ingredient imazapyr. The product called Stalker® was used in El Sobrante, but the product Habitat® was used in Lafayette because

it is labeled for aquatic use, and there was a creek nearby, although no herbicide was used in or near the creek.

Two woolly distaff thistle (*Carthamus lantanis*) plants were found by a staff biologist on CalTrans right-of-way on Highway 4 at the Highway 680 overcrossing. The biologist removed the plants by hand. This is the first recorded occurrence in the county. This noxious weed occurs in Nevada, and it is very likely that the source of the infestation was thistle seed falling off a vehicle carrying infested hay or equipment. This noxious weed can form dense monocultures that displace native plants and reduce the availability and value of forage. The plant does not produce rhizomes.

- Departmental IPM plan updated
The Department performed a detailed review and revision of the Department's IPM plan.
- Work on pesticide screening process continued
The Deputy Agricultural Commissioner met regularly with the Public Works Vegetation Manager and the IPM Coordinator to work on developing a screening process for pesticides used in the County.
- Critical infrastructure protection continued
The Department continues to protect critical infrastructure including levees, earthen dams, railroad beds and roadways from damage by ground squirrels.

This past summer the Department experimented with live trapping ground squirrels along 1,200 linear feet of roadway. The project involved the use of 12 Black Fox® traps that were inspected daily. Unfortunately this method proved to be very costly. Data from the field trial show that live trapping cost 23 times that of the Department's traditional diphacinone bait treatment. In addition, there were a number of other problems identified with live trapping. This technique may be useful in sensitive situations, especially if ground squirrels are threatening infrastructure damage in an area inhabited by an endangered vertebrate species. (See Attachment E and the Appendix A for the final report on this in-house field trial of live trapping.)

- South American Spongeplant (*Limnobium laevigatum*)
AB1540 (Buchanan) was signed by the governor in September. The Department, with endorsement from the Board of Supervisors, worked with the Assembly Member and her staff to develop this legislation that mandates control of this serious aquatic invasive weed by the Department of Boating and Waterways. This is a major accomplishment in protection of fragile Delta resources.

Agriculture Department Challenges

- Ground squirrel control alternatives
The department continues to search for alternatives to treated grain bait. Unfortunately, raptor perches and live trapping of ground squirrels have proved to be ineffective and/or too costly.
- Finding alternatives to herbicides
Although in field operations the Department uses only least toxic "Caution" labeled herbicides, staff are continually trying to find safer and more effective materials and methods for noxious weed control. This includes evaluating the feasibility of mechanical or hand removal as well as new herbicides that may be more efficacious and of reduced toxicity.

Public Works Facilities Division

IPM Program Highlights

- The Division assisted as needed in the work of the three subcommittees of the IPM Advisory Committee and has agreed to the Committee's recommendations to the Departments

- Pestec, the structural IPM contractor, is providing excellent service
The Division hired Pestec IPM Providers in December 2009 for the County's structural pest management. They continue to do an outstanding job in the County and are very responsive to the County's needs. Pestec has an excellent relationship with their customers in County buildings.
- IPM awareness among County employees
Last year Pestec was still encountering employees who were unaware of the County's IPM Policy and were confused about how structural pest problems are handled in the County. This has changed in the past year, and the process for handling pest problems is running smoothly. Building occupants are really starting to understand the purpose of the IPM program and to recognize the benefits of finding and treating the source of the problem without using a pesticide (or by occasionally spot-treating with a least toxic pesticide).
- Correcting structural deficiencies in buildings continues
Pestec regularly reports on conditions conducive to pests ("deficiencies") in County buildings. Correcting these deficiencies is the key to pest prevention in County buildings. It has been difficult in the past for the Division to keep up with the repairs because of lack of budget and staff, but this year the Division was able to hire a lead carpenter, fill two other positions and hire two temporary workers. The Division has been making progress installing doorsweeps, sealing cracks, screening windows, sealing pipe entries, and screening off areas under steps going to buildings.
- Owls in downtown Martinez
Pestec discovered an extensive "boneyard" on the roof of the County Administration building at 651 Pine in Martinez. It appears to be the remains of hundreds of meals taken by owls nesting on the roof. These bones are most likely from small rodents like rats and mice, as well as birds such as starlings. Dr. Jim Hale, wildlife biologist and member of the IPM Advisory Committee, will be collecting samples of the bones for a study he is doing on prey taken by owls in Contra Costa County.
- Structural IPM program pesticide use remains low
In FY 09/10, 17 lbs. of pesticide active ingredients were used in the approximately 2.75 million sq. ft. of County structures. In FY 10/11, only 9 lbs. of active ingredients were used in County buildings. These pesticides are almost exclusively deployed as baits in bait stations or in cracks and crevices. Pestec continues to successfully manage rats and mice exclusively with traps.
- Uptick in service calls involving ants, mice, bees and yellowjacket
In FY 11/12, the Facilities Division received 126 additional calls for service for various pest problems. These are calls for service that are outside the regularly scheduled monitoring service of the pest control contractor. This is a large increase over the 40 calls received last year. Nearly three-quarters of the 126 calls were for ants, mice, spiders, and bees/yellowjackets. The increase in ants and mice invading buildings is probably weather related. The increase in yellowjacket nests near buildings may also be weather related. The very dry winter meant that County buildings with irrigated vegetation were havens for these creatures amidst very dry surroundings. The majority of ant and mice problems were in Head Start buildings which by their nature often have more food and habitat available.

Two bee hives were found in the ancient olive trees at the Contra Costa Regional Medical Center in Martinez. The trees are very large and have many cavities that are perfect for hives. Another hive has actually been in one of the olive trees for many years. It is 8 to 10 ft. from the ground where the bees are unlikely to impact any people, so that hive is left undisturbed. The other two hives, which were near the ground with flight paths across a sidewalk in the front of the building, had to be exterminated. There was no way to remove them without destroying the trees.
- Bed bugs in the County
Both the Concord and Brookside homeless shelters have instituted the bed bug prevention protocols developed last year by the IPM Coordinator. So far, there have been no bed bug problems at Brookside. The Concord shelter had an ongoing problem for several years, but the prevention protocols combined with staff vigilance and cleaning drastically reduced the numbers of bed bugs found daily.

The Concord shelter received a \$10,000 gift to help buy new metal beds and new encased mattresses that are easier to clean and provide far fewer hiding places for bed bugs than did the old wooden beds. The new beds were installed in September. The staff performed a thorough cleaning of the sleeping areas when the beds were installed, and with all the prevention measures in place, staff have not seen any bed bugs since September. The shelter has had to reduce staff time devoted to bed inspections and cleaning, but is now involving clients in this process.

It is unlikely that the facility will remain free of bed bugs because the chances for new introductions are so high with the daily influx of new clients, but any new introductions will be quickly found.

Facilities Division Challenges

- Pest exclusion in County buildings
This continues to be a challenge, but the Facilities Division is making steady progress.
- Pest exclusion in leased buildings
Reducing pest intrusions into leased buildings continues to be more of a challenge since the responsibility often falls to the landlord.
- Bed bugs in County buildings
Bed bugs are particularly difficult and costly to control. As bed bugs become more prevalent, it is very likely that more County buildings will be affected. At this point, awareness and prevention are critical, but the amount of work to outreach to all the County Departments and staff that need information is daunting.

Public Works Grounds Division

IPM Program Highlights

- The Division participated in various aspects of the work undertaken by the three subcommittees of the IPM Advisory Committee and has agreed to the Committee's recommendations to the Departments
- The Division switched to organic fertilizer
In January 2012, the Division stopped using synthetic fertilizer and switched to organic fertilizers. Staff have seen a significant difference in the quality and health of the turf they manage. There were a number of complaints about the smell of the product at some of the health clinics, but the manufacturer is remedying this problem.
- New equipment purchased
The staff are better equipped now than they have been for the last 10 years. The Division purchased a power sweeper to clean up acacia seeds which are the source of a perennial weed problem at a number of sites. They also purchased a stump grinder and a chipper. Now all prunings are chipped on site and put back on the soil as mulch.

Grounds is now using MP Rotators as sprinkler heads. These deliver multiple streams (rather than a spray) of water at a slow, steady rate. This slower application rate allows water to soak into the soil without running off. Irrigation is more efficient and the Division has seen a huge savings in water. All new irrigation systems will use these heads, and as old sprinkler heads fail, they are being replaced with MP Rotators which can be snapped onto existing equipment. The spray from the old sprinkler heads is very susceptible to wind and large amounts of water are lost to hardscapes and other areas that should not be irrigated.

- Hidden Pond Special District
This year a new irrigation system and many new plants were installed in the frontage landscape at Hidden Pond Rd. and Reliez Valley Rd. Recently a flock of turkeys moved in and began digging up plants and scattering mulch. The Division is going to experiment with two different scare tactics used in vineyards to chase away the turkeys. One is a kite that is shaped and colored to look like an osprey and is tethered to a

flexible pole. It can be lifted by even a gentle breeze. The other device is a bird scare windmill that combines reflected light and sound to repel birds.

- Eucalyptus at the West County Detention Center
In preparation for a new park going in next to the Detention Center, Grounds has been dealing with Eucalyptus stumps from trees cut down last year. Staff decided not to use herbicides and have cut all the suckers by hand using machetes. They have used a flail mower to cut the sprouts once more since then and will continue to mow new sprout until they can grind the stumps out.
- Grounds Division staff training
Kevin Lachapelle, Grounds Division Manager, and Jerry Tourte, Lead Gardener, attended trainings to fulfill the continuing education requirements for the licenses they hold from the Department of Pesticide Regulation (DPR). One more staff member is studying to pass the DPR licensing exam. All staff participated in the annual pesticide safety training.
- Pesticide use
Pesticide use by the Grounds Division increased this year as the Division tries to improve the condition of many of the County's properties. For a number of years the lack of funding made it impossible to properly manage weed problems around County buildings and in the Special Districts the Division is responsible for. Weeds that are left unmanaged provide huge amounts of seed that make the weed problem increasingly worse. The combination of inadequate funding and labor, and the intense weed pressure makes it necessary to resort to more herbicide use, which is cheaper than other management methods.
- Contracting out hand weed abatement
The Department continues to contract with Anka Behavioral Health for hand weed abatement around the County. This year they cleared weeds by hand from a large number of acres, and the Grounds Crew chipped the material and left it on site.

Grounds Division Challenges

- Inadequate funding for landscape maintenance in the County
This year the Division was allowed to hire 4 temporary workers, but this is still not enough labor to adequately maintain County property. In the past several years the main problem was one of having adequate funds at each site to perform needed landscape maintenance. This year the funding has been increased at some sites, but the Division does not have enough staff to use the increased hours that are allotted. Grounds does as much work as they possibly can and continues to explore new ways to reduce the maintenance costs at sites around the County.
- Inadequate funding to license all grounds staff
It would be ideal to have all members of the grounds crew licensed by the Department of Pesticide Regulation; however, it would be extremely difficult to pay for the fees and their time to attend continuing education classes to maintain their licenses. Currently, staff that are not licensed must apply pesticides under the supervision of one of the two licensed staff members.

Public Works Department Roadside and Creeks Divisions

IPM Program Highlights

- The Divisions participated in various aspects of the work undertaken by the three subcommittees of the IPM Advisory Committee and have agreed to the Committee's recommendations to the Departments
- Staff participated in annual habitat assessment refresher training
A large number of Public Works Maintenance crew members attended annual refresher training in habitat assessment for endangered and threatened species in order to comply with the California Department of

Fish and Game (CDFG) Routine Maintenance Agreement (RMA). The RMA stipulates that before work can commence in an area, an assessment must be conducted to identify endangered species habitat. This year crews trained to identify potential habitat spent a total of 359 hours performing habitat assessments. As habitats are identified, they are reported to CDFG, which then provides County staff with guidelines to move forward with work. These guidelines may include full time monitoring of the jobsite by a licensed biologist.

- Buffer zones for certain pesticides enjoined by the courts have been implemented
Several lawsuits brought by environmental organizations against the EPA have been temporarily settled by the delineation of buffer zones in and around habitat for a number of endangered or threatened species in the Bay Area. The Department continues to work within the guidelines of the injunctions to assess work sites and implement buffer zones before using any of the enjoined pesticides.
- Departmental IPM Plans revised
The Department completed a detailed IPM Plan for Roads, Flood Control Facilities, and Real Property in 2010 and the plans were reviewed and updated as needed in 2012.
- Multi-year grazing study continues
The County Flood Control District is conducting a streambank vegetation management study comparing currently used herbicide application methods with grazing of sheep and/or goats. The study is examining the safety, costs, and efficacy of each method to meet the District's vegetation management goals for streambanks. Data are being collected on erosion, water quality, and reduction of vegetation, in addition to costs. There are two study sites: Reach 1 of Walnut Creek, which is between Monument Blvd. and the I-680 and SR-242 split, and Reach 2 of Walnut Creek, which is between Willow Pass Rd. and SR-242. Herbicides were applied in designated plots in March. Sheep and goats grazed their designated plots in June.
- Grazing used for weed abatement
In addition to the grazing study mentioned above, goats and sheep were used to abate weeds at 23 other sites in the County. A total of 76 acres of weeds were grazed with livestock, and records were kept on costs and outcomes. The Department will use this data along with data from the grazing study to make decisions about where, when, and how much to use grazing as an additional vegetation management tool.

Roadside and Creeks Divisions Challenges

- Cost implications of regulations
Compliance with RMA requirements has considerable cost implications. As mentioned above, work within CDFG jurisdiction requires a habitat assessment prior to start of work so endangered species are not harmed. Our crews identified endangered species at a couple of job sites and consultation with CDFG resulted in using alternative work methods that were more costly.
- Staffing
In 2012 a long term county employee with the Vegetation Management Crew was promoted to fill the vacant Vegetation Management Supervisor position and a new Senior Vegetation Management Technician was hired. Even with these additions, the crew is still understaffed with only four personnel as compared to a staff of 6 three years ago.
- Weather
Mowing, as well as the application of herbicides, to manage weeds is highly dependent upon weather conditions. Weather can substantially alter the size of the weed load or its distribution over time. The Department has a limited capacity to use mowing because of a number of factors including staff vacancies in vegetation management staff, the Department's limited budget for weed abatement, and the limited number of tractor mowers (two). The Department faces a continued challenge of balancing the use of herbicides to control weed growth with the Department's capacity to mow or graze with goats or sheep within the confines of our budget and timeline in order to prevent fires.

PESTICIDE USE BY THE COUNTY OF CONTRA COSTA

Starting in FY 00/01, the IPM Task Force annually reported pesticide use data to the Transportation, Water, and Infrastructure Committee for the County departments involved in pest management. The IPM Coordinator has continued this task.

Table 1. Comparison of Pesticide Use in FY 00/01, FY 10/11 and FY 11/12

Program	Total Lbs. ¹ of Active Ingredient used in		Total Lbs. ¹ of Active Ingredient used in		Reduction in Use from Beginning of IPM Program (FY 00/01) to FY 11/12
	FY 00/01		FY 10/ 11		
Public Works Roadsides and Creeks	16,591		6439		65.5 %
Agriculture Noxious Weeds and Ground Squirrels	1,421		795		61.8%
Public Works Grounds	927		113		59.2%
Public Works Facilities ²	FY 07/08	21	5	9	57.1%
Public Works Special Districts ²	FY 07/08	11	45	7	36.4%

¹ Figures are rounded to the nearest whole pound.

² The IPM Program did not tabulate pesticide use data for Facilities and Special Districts until FY 07/08.

Concern about “Bad Actor” Pesticides

There has been concern in the community and within the County about the use of “Bad Actor” pesticides by County departments. “Bad Actor” is a term coined by the Pesticide Action Network and Californians for Pesticide Reform to identify a “most toxic” set of pesticides. These pesticides are at least one of the following: known or probable carcinogens, reproductive or developmental toxicants, cholinesterase inhibitors, known groundwater contaminants, or pesticides with high acute toxicity.

The County’s use of these particular pesticides has decreased dramatically since FY 00/01 as shown in Table 2, below. Of the 31 “Bad Actor” pesticides used by the County since 2000, 22 have been phased out and one more is in the process of being phased out. In addition, two other pesticides that are not designated as “Bad Actors” by the Pesticide Action Network are being phased out because the County feels they are particularly problematic.

Table 2. Comparison of “Bad Actor”¹ Pesticide Use in FY 00/01 and FY 11/12

Program	Total Lbs. ² of “Bad Actor” Active Ingredients used in		Reduction in Use
	FY 00/01		
Public Works, Roadsides and Creeks	5765		81%
Agriculture	132		99%
Public Works Grounds	649		100%
Totals	6546		83%

¹ “Bad Actor” pesticides are one of the following: known or probable carcinogens, reproductive or developmental toxicants, cholinesterase inhibitors, known ground water contaminants, or pesticides with high acute toxicity as designated by the Pesticide Action Network’s pesticide database.

² Figures are rounded to the nearest whole pound.

Trends in Pesticide Use

A change in pesticide use from one year to the next does not necessarily indicate a long-term trend. Long-term trends are more meaningful than short-term changes. It is important to understand that pesticide use can increase and decrease depending on the pest population, the weather, the invasion of new and perhaps difficult to control pests, the use of new products that contain small percentages of active ingredient, the use of chemicals that are less hazardous but not as effective, the addition or subtraction of new pest management projects to a department's workload, and cuts to budgets or staff that make it difficult or impossible to use alternate methods of control.

The County's pesticide use trend follows a trend typical of other pollution reduction programs. Early reductions are dramatic during the period when changes that are easy to make are accomplished. When this "low-hanging fruit" has been plucked, it takes more time and effort to investigate and analyze where additional changes can be made. The County is entering this period, and if further reductions in pesticide use are to be made, it will require time for focused study and additional funding for implementation.

DEPARTMENTAL INTEGRATED PEST MANAGEMENT PRIORITIES FOR 2013

Agriculture Department Priorities for 2013

- Continue the County's highly effective Noxious Weed Program
Noxious, invasive weeds cost Californians at least \$82 million per year in monitoring, control, and outreach. Every year, invasive weeds ruin thousands of acres for recreation and agriculture and for native California plant and animal habitat. Some noxious weeds increase the fuel load in urban and rural areas, and some suck up prodigious amounts of scarce water. Early detection and control of these weeds greatly reduces their impact and the cost to manage them.

Contra Costa's highly effective Noxious Weed Program has been in operation for 33 years. A major objective of the Agriculture Department is to continue to monitor and treat targeted noxious weeds on all historic sites before the weeds set seed. Preventing seed set is the most important factor in reducing weed populations and in depleting existing seed banks. By doing this, the hours of labor needed and amounts of herbicides applied in successive years to a particular area will be reduced. These reductions allow the department to add previously untreated sites to the noxious weed program bringing local eradication of the targeted weed species one year closer.
- Continue work on the pesticide screening process
The Department will work with the IPM Coordinator to screen all pesticides used by the Department.
- Continue attending IPM training and sharing the information with other Departments
The Agriculture Department will continue to have staff attend outside IPM seminars and training sessions given on a variety of pest management issues. The Department will develop a training database so that personnel who return from IPM seminars and workshops can store training and outreach materials in a way that will be easily accessible to other County staff members. In addition, each staff person involved with pest management attends annual pesticide safety training.

Public Works Department Priorities for 2013

Facilities Division

- Continue working to fix structural deficiencies in County buildings
- Continue monitoring the bed bug situation in County buildings and providing awareness training if necessary

Grounds Division

- Collect cost and efficacy data on sheet mulching at 2530 Arnold Drive in Martinez (Summit Center) over the next several years
The landscaping at this site was completely inappropriate for the amount of money available to maintain it. Over the last couple years, the Division has intentionally killed a great deal of the vegetation at this site in order to have a hope of maintaining some of the landscaping properly. Wood chips have been stockpiled at the site and because there is a small amount of extra money available for this site, the crew can sheet mulch a portion of the entrance to the site. The Division will try both synthetic weed fabric and cardboard underneath the woodchips and monitor the installations over time to determine which is more acceptable in the long run.
- Continue diverting as much green waste as possible from the landfill by chipping prunings and using the material in place
- Continue hand weed abatement at various sites using Anka Behavioral Services
- Continue preparation of the site next to the West County Detention Facility for a new park that will be completed next year
The goal is to prepare the site without having to use herbicides.

Roadside and Creeks Divisions

- Continue work on the pesticide screening process
The Department will continue to work with the IPM Coordinator to develop a hazard screening process for all pesticides used by the Department.
- Continue to collect data from the two spray trucks equipped with data collectors and analyze data to ensure accuracy and usability of information.
- Continue grazing study
The Creeks Division will continue its multi-year study of grazing and chemical weed control methods.
- Continue to refine IPM practices
The Vegetation Manager will continue to refine the Department's IPM practices and investigate new methods of weed control. The Divisions will continue to expand the use of wood chips generated from their tree trimming operations as mulch to control weed growth. In addition the Vegetation Manager will explore the feasibility of reseeding areas such as roadside shoulders and creek banks with low growing grasses such as rye or Bermuda in an effort to choke out fire prone weeds such as oats.