This document excerpted from the Santa Clara County Integrated Regional Resource Manual, which is provided on CD with the IPM toolkit.

EXAMPLE OF HOW TO DEVELOP A PUBLIC AGENCY'S INTEGRATED PEST MANAGEMENT (IPM) PROGRAM

The following sample is an example based on Santa Clara County's IPM Program. It will assist you to define & design your organizations' IPM Program>>>>

- MISSION STATEMENT
- GOALS
- IPM PROGRAM'S ADMINISTRATIVE GUIDELINES & PROCEDURES

1. Developing IPM Ordinance or Policy and Guidelines
2. Developing Department or Agency-wide IPM Program
3. Developing Request for Proposal (RFP) and Request for Qualification (RFQ):
4. Developing Approved List of Pesticides
5. Understanding and Developing Pesticide Application Posting & Notification
6. Developing Pesticide Use Reporting (PUR)
7. IPM Training
8. Planning & Implementing IPM Demonstration & Presentations
9. Field/Site Surveys
10. Quality Control & IPM Performance Management

MISSION STATEMENT

Public Agency is committed to provide the following:

1. **Coordination**
   Establish a mechanism that effectively coordinates System Development in IPM focused on the Department IPM activities & setting priorities, facilitate cooperation with universities, public and private sector partners at the local, state, regional, and national level to meet County ordinance objectives & achieve IPM implementation and Pesticide Use Reduction goals.

2. **Training & Implementation**

   Establish and conduct a process for identifying the IPM implementation needs of user Departments, provide support and resources necessary to design and conduct educational programs for interdisciplinary training on IPM, a coordinated program of research, technology development, and of education and information delivery to meet IPM implementation & Pesticide Use Reduction needs. Support demonstration research in pest control management in non-production agriculture, landscapes and structures.

3. **Evaluation and Accountability**

   Develop methods and conduct programs to accurately measure progress toward the goal and assess the economic, environmental, public health, and social impacts of IPM implementation.

4. **Communication**
   Increased visibility and acceptance of IPM through information dissemination; Implement a communication, information exchange program that involves IPM stakeholders and increases understanding of program objectives, progress, impacts, and benefits of IPM to the public and policy-makers through direct communication, print, internet and broadcast media.

GOALS

1. **IPM Implementation through**
   i. IPM System Development & Project Automation
   ii. Department IPM Implementation Plans
   iii. Selecting Qualified IPM Vendors to Provide IPM Services
   iv. Adopting Proven Reduced Risk Pest Management Alternatives
2. **Develop Relational Pesticide Information Data Base to**
   i. Evaluate & Eliminate Hazardous Pesticides
   ii. Provide "Approved List of Pesticides"
   iii. Analyze Specific Pesticide Use for Overall Use Reduction
3. **Achieve Health & Welfare of Environment through**
   i. User & Beneficiary IPM Awareness, Education & Training
   ii. Minimizing or Eliminating Pesticide Exposure
   iii. Pest Free Environment
   iv. Pesticide Use Reduction
4. **Provide Financial Impact Studies & Quality Assurance through**
   i. Record Keeping, Document & Data Control

ii. Qualitative & Quantitative Project Management
iii. Performance Management

IPM PROGRAM'S ADMINISTRATIVE GUIDELINES & PROCEDURES

The purpose of the administrative guidelines & procedures is to offer consistent and constructive advice to public agency's departments that adopt the Integrated Pest Management policy or ordinance. Based on the size of the agency from a one department to multi-agency approach, the IPM Program calls for each Department (or departments/divisions within a Department) to develop an IPM plan containing general implementation steps as well as specific maintenance standards and IPM strategies. These Guidelines offer clarifying information about the IPM approach in general and about specific practices appropriate to structures, waterways and buffer zones, road rights-of-way, developed landscapes, lawns and turf, natural open spaces, noxious weeds, electrical utility lines & facilities, easements, and pesticide handling. It should be the intent of these Guidelines to serve as the basis of planning each Department's IPM program.

These Guidelines should be periodically revised based on new research and implementation experience. Revised editions of these Guidelines should be developed and disseminated to participating Departments by the Integrated Pest Management-Technical Advisory Group (IPM TAG). Revised Guidelines can be implemented through incorporation in a Department's IPM program.

The Public Agency's IPM Coordinator (in consultation with IPM-Technical Advisory Group, departments and concerned public representatives) should define the basic framework for the following tasks/programs/projects.

1.Developing IPM Ordinance or Policy and Guidelines

A Public Agency should formulate or define Integrated Pest Management (IPM) ordinance or policy & guidelines. The guidelines are a companion to the IPM ordinance or policy. It describes in greater detail what constitutes an IPM approach and offers specific guidelines for a variety of public land management situations. The purpose of the Guidelines is also to offer consistent and constructive advice to various departments with in an organization that adopt and participate in Integrated Pest Management program to meet specific maintenance standards and IPM strategies. These Guidelines should offer clarifying information about the IPM approach in general and about specific practices appropriate for example to structures, waterways and buffer zones, road rights-of-way, developed landscapes, lawns and turf, natural open spaces, noxious weeds, electrical utility lines & facilities and pesticide handling. The

Guidelines should also be periodically revised based on new research and implementation experience.

The definition of Integrated Pest Management in the IPM Ordinance should provide a basic description of an IPM approach to pest management. Keys to an IPM approach include:

- Its integrated nature, involving planning and design of the landscape, facility or roadway, as well as maintenance practices and specific pest control tactics.

- Its preventive nature, emphasizing a wide variety of maintenance practices to promote appropriate and healthy growth;

- It's emphasis on knowledge about the pest and regular monitoring of pest levels as well as evaluation of control methods applied.

- Use of "management" and "control" approaches in preference to elimination or eradication - except in cases of certain noxious weeds and specific situations where the tolerance threshold may be zero. In general, IPM establishes an approach to manage pest problems within tolerable limits.

The IPM approach encourages planning, design and maintenance of landscapes, rights-of-way and facilities that meet their intended purposes while promoting healthy environment and minimizing pest problems. The IPM approach follows a continuum that begins with careful planning, design and construction decisions followed by appropriate maintenance and management of public lands, facilities and water bodies by employees with up-to-date training.

The IPM approach emphasizes a thorough knowledge of the pest or vegetation problem, pre-determined tolerance thresholds, regular monitoring to determine when those levels are met, and treatment of the pest or vegetation problem with appropriate cultural, mechanical, biological and, where needed, chemical tactics.

Tolerance thresholds are set at levels that keep pest numbers or vegetation problems low enough to prevent intolerable damage, annoyance or public safety hazards while remaining economically and environmentally feasible.

IPM encompasses the use of chemical controls specifically in situations where they may be the most environmentally responsible or safest way to deal with a problem, or where other control tactics have proven ineffective at meeting tolerance levels. When chemical controls are necessary, decisions on their use will consider any possible effects on aquatic life (toxicity) and any tendencies for the chemical to move in the environment (mobility). Decisions on chemical use

are made in conjunction with other control methods that are effective and practical.

2. Developing Department or Agency-wide IPM Program

IPM program implementation is the function of various departments within a public agency or local government as mentioned above. Normally these departments are responsible for planning, budgeting & executing IPM projects in their respective jurisdictions. The implementation plans are a living document where components are customized for each facility as needed. Well-trained field staff should fully implement the strategies selected and record the steps followed and management methods used. Each department should start with a specific implementation plan based on the following components:

- Educate, train and communicate with facility managers, department IPM coordinators and facility tenants
- Procure Qualified IPM Contractors

- Develop a comprehensive IPM service plan
- Document & Data Control
- Pesticide Use Reduction: Physical, Mechanical & Cultural Control – A Non-Chemical Approach
- Focus on Over all Pesticide Use Reduction
- Program Performance Management
- Safety & Communication
- Budgets & Economics: Continuously improve & make the process feasible and economical to the facilities
- Negotiate IPM Clauses in New Leases & Lease renewals

3. Developing Request for Proposal (RFP) and Request for Qualification (RFQ)

The intent of this document is to develop request proposals and invite bidders, and qualify contractors in the performance of IPM in various categories. The process should include inviting perspective IPM contractors/bidders to submit RFQ. Upon receipt of the written proposal (RFQ) from a vendor, the IPM Selection Committee should evaluate the proposal. Once the RFQ is evaluated, qualified vendors should be placed on the prospective IPM provider database. At a later date, only pre-qualified vendors should be allowed to bid specific IPM projects.

To make new products and services more readily available to contract users, the selection process should be continuous and periodic recruitment bid opportunities for certain contracting areas. The following examples are Procurement Guidelines and Sample of IPM Contract Services. Depending on the administrative system the specifications and contract may be developed by

the Public Agency. The bid specifications and contract determines exactly how a professional pest manager or pest control operator is to monitor and treat pest.

- IPM-Structural – Santa Clara County
- IPM-Landscape Maintenance & Related IPM – Santa Clara County
- IPM-Wild Life Services – Santa Clara County
- IPM Program Contract Language – King County Environmental Preferable Purchasing Program
- Compost as Organic Soil Amendment - King County Environmental Preferable Purchasing Program
- Shredded Wood Waste and Landscape Mulch- King County Environmental Preferable Purchasing Program
- IPM - Indoors – Environmental Preferable Purchasing Guide from SWMCB.ORG
- Landscape Mulch - Environmental Preferable Purchasing Guide from SWMCB.ORG
- Hydrolic Mulch and Hydroseeding - Environmental Preferable Purchasing Guide from SWMCB.ORG
- Pest Management through IPM – OGS State of New York – Editors Choice – A model for procurement of IPM Services assisting Statewide agencies, local governments.
- School IPM – Standards for School – The IPM Institute of America
- Integrated Pest Management – Contract Performance Specifications
- IPM RFP – OSD, Commonwealth of Massachusetts
- IPM – VHA Program Guide 1850.2 Department of Veterans Affairs

Since IPM in Non-Crop Production Agriculture and Structures is a very large field, it may be necessary to develop several RFQ/RFP based on the contracting department/agency requirements as follows: (These documents will soon be posted on the SCC IPM Website):

- RFP: Administrative Requirements to be a qualified vendor for Santa Clara County Contracts: to be submitted with initial RFQ
- RFQ: Structural IPM
- RFQ: Beehive Removal
- RFQ: Stinging Arthropod Control in Open Spaces
- RFQ: Termite and other wood destroying organism control
- RFQ: Wild Life IPM
- RFQ: Wild Life Trapper
- RFQ: Bird Trapping & Exclusion Work
- RFQ: Landscape Maintenance & Related IPM
- RFQ: Aquatic Weed Management
- RFQ: Mechanical Harvesters to Control Aquatic Weeds
- RFQ: Pest Management Consultant/Trainer/Advisor
- RFQ: IPM Material (Chemical & Non-Chemical) Suppliers

4. Developing Approved List of Pesticides

Pesticides have enabled growers to produce some crops profitably in otherwise unsuitable locations, extend growing seasons, maintain product quality and extend shelf life. It enabled us to maintain Nation's right-of-way reliable & safe, a major conduit for the flow of goods and services vital to our economy; also protected us from vector borne diseases and other emergency situations.

Nevertheless, these chemicals also pose some risks if used improperly or too frequently. Several problems and limitations have become apparent by relying solely on pesticides to control pests. Some of the problems include: pest resistance to pesticides; increased costs; toxicity to fish, wildlife, beneficial natural enemies of pests, and other non-target organisms; concerns about human health and safety; ground water contamination; and overall environmental quality. Pesticide exposure from drift to non-target areas; contamination of ground and surface waters; and residues on food are topics of concern to the general public.

Is there any Ideal pesticide?

Ideally, any pesticide that will act rapidly on pests yet be completely harmless to people, domestic animals, wildlife, and other aspects of the environment. Its residues would last only as long as was necessary to create the desired effect, usually for very short periods. It would also be inexpensive and readily available in necessary quantity, chemically stable (before application), non-flammable, and otherwise, safe to use around homes or industrial sites. It would be easily prepared and applied, no corrosive, and non-staining, and it would have no undesirable odor.

Unfortunately, no such ideal pesticide exists!

The control of pests in urban environment has historically meant using a chemical pesticide to reduce pest numbers once an outbreak has occurred. There has been a major mind shift philosophically and practically, to the concept of pest management. The transformation utilizes balanced approach of physical, cultural, biological, and chemical measures, with primary focus on environmentally compatible, economically feasible approach to manage pest populations under threshold or acceptable levels.

Public Agency's IPM program should take a cautious approach by restricting use of certain categories of pesticides based on set criteria of screening the bad actors. It is recommended that final outcome of the screening should follow Environmental risk analysis to create an approved list of pesticides. Since no ideal pesticide exists, **these pesticides will only be used as a last resort.**

Santa Clara County IPM Program reviewed approximately 350 pesticide products in consultation with Dr. Lois Levitan, Program Leader: Department Communications & Center for the environment, Cornell University, NY. You may leverage on this work and adopt the list as needed for your organization. If you want to participate in the review of additional products, please contact Naresh.Duggal@ceo.sccgov.org or call 408-299-5105. Participating in collaborative work will economize the resources.

The review of Approved Pesticide list is a continuous process based on the renewed data availability from variety of sources. As new data is made available, screening process should continue to reinforce the agency's objectives.

For additional information on Pesticide Risk Analysis, click on the following links:

Pesticide Risk Indicators:

http://environmentalrisk.cornell.edu/PRI/PRI.cfm

Pesticide Risk Indicators Resources:
http://environmentalrisk.cornell.edu/PRI/PRI-Resources.cfm

5. Understanding and Developing Pesticide Application Posting & Notification

Consider on-site information about pesticide applications will help to reduce pesticide exposure, and for some pesticide applications. Notification and posting of pesticide applications give concerned people the opportunity to take precautions to avoid exposure to potentially toxic chemicals.

Posting and notification laws are legal requirements that pesticide users notify the public about the applications they make. Notification involves public notice prior to application. Posting involves the placement of signs on treated areas at the time of application and for a specified interval afterwards.

Notification and posting can be aimed at all pesticide applications, or can target special concerns. Schools, parks, and hospitals are good examples of sites where notification and posting are high priorities.

California Food & Agriculture code 12978 refers to posting of pesticide warning signs when a pesticide is applied on the public property such as school grounds, parks and other public right of way where public exposure is foreseeable. This law applies to only to pesticide applications, which have worker re entry interval of at least 24 hours.

An example of posting requirements by Santa Clara County is as follows: Please note that these requirements are only applicable to Santa Clara County owned & managed facilities and grounds.

What are the time requirements of posting signs in Santa Clara County?

Santa Clara county IPM ordinance requires posting of warning signs at least **three days in advance** of all pesticide application and **remain posted at least fours days after application** except departments shall not be required to post signs in right of way locations and other areas that the general public does not use for recreational purposes. Do not remove signs until the reentry restriction expires as per the county ordinance or until the label of the pesticide allows you to do so, whichever exceeds.

Pesticide use posting signs have been designed for landscape, right of way as well as structural pesticide application notification.

What must the notice-of-application sign look like?

The notice of application signs must be water resistant and measure at least 24 inches in height and 24 inches in width. The sign must contain the following information in black lettering and symbols on a bright yellow background:

FRONT

- The word "WARNING", in at least 60-point bold faced type
- The words "PESTICIDE APPLIED", in at least 24-point bold-faced type
- The symbol of a circle at least 12 inches in diameter with a diagonal slash over an adult, child, and dog

BACK

- Name of Pesticide, Active Ingredient, California Registration Number, Date & Time of Application, Re-Entry Time if applicable, in at least 18-point bold-faced type
- Name of the applicator or Applicator Company, which made the application, Telephone Number (24 hours accessible), in at least 18-point bold-faced type

Where should you post the signs?

The signs must be posted on a lawn or yard at the property boundary 2-5 feet from the sidewalk. If there is no sidewalk, the

sign must be posted 2-5 feet from the road, or if there is no road, 2-5 feet from the property boundary.

When landscaping or other conditions would make a sign inconspicuous or illegible if the sign were posted within the distances specified above, the sign must be posted in a conspicuous area and be easily legible to any adult or child entering or passing the property on foot

The bottom of each notice-of-application sign must project at least 18 inches above the ground and the top of the sign must be no higher than 48 inches above the ground

For greenbelt, parks, golf courses athletic fields, playgrounds, or other similar recreational or common property, the sign must be posted immediately adjacent to areas within the property where pesticides have been applied. For applications on a golf course, the applicator must post a sign at the clubhouse and at the first tee and the tenth tee notifying the public of the application.

For applications on any body of water with any legal public access, signs must be posted notifying the public of the application at each place of legal public access (docks, etc.)

6. **Developing Document & Data Control Process: IPM Record Keeping, Pesticide Use Reporting (PUR) System**

Economically and environmentally sustainable pest management requires an integrated approach. Pesticides are one of many tools used in integrated pest management. Judicious use of pesticides demands practical knowledge of their fate and effects in urban and agricultural settings, and natural ecosystems. A better understanding of initial distribution and redistribution via processes such as airborne loss, run-off and leaching is necessary to characterize both human occupational and non-occupational exposure, and assess risks to biota in surrounding ecosystems. Detailed and accurate information on pesticide use practices can provide information appropriate for risk assessment. The quality and ultimate utility of data should determine what data comes to be controlled.

The following are examples of records that may be maintained as part of an IPM program:

- Departmental IPM program: The written IPM program kept in accessible location(s).
- Site- or pest-specific management plans to be maintained with following information:

- Pest identification and assessment: Records of documented pests, including date, specific location, name, reference used for identification and/or corroborating expert (if appropriate), stage of life cycle, extent of pest presence and other pertinent information.
- Maintenance: Methods performed to minimize pest populations and enhance healthy plant growth.
- Control methods implemented: Control methods employed per the IPM strategy selected, including dates, location and other pertinent information.
- Pesticide applications: If chemical methods are employed, pesticide application records as required by the State Department of Agriculture, including but not limited to licensed applicator's name, application target or site, chemical name, brand name, area of application, concentrations used, amount and rate of application, coverage rate, equipment used, weather conditions including temperature and wind, and date and time intervals of application.
- Monitoring: Records documenting site or pest-specific observations that may include results of IPM methods used. Monitoring records are key tools for evaluating management strategies to allow assessment and revision as needed. Revisions should be documented.

Record keeping is an important element of an IPM program. It should be emphasized that record keeping need not be burdensome. It could be as simple as field notebooks or logs that can easily cover the majority of records kept, so that follow-up evaluation of what worked or didn't work and what to do differently in the future can be accomplished. However, in this electronic age, maintaining data for large scale IPM Program, it is ideal to develop an agency-wide web based data collection system.

Santa Clara County IPM Program is currently developing a central data bank of pesticide use information (non production agriculture & structural) to facilitate analytical reporting by applicators, departments focusing pesticide use reduction, as well meeting all reporting requirements.

Information such as the amount and identity of pesticides applied at a particular location on a certain date can be enormously useful both in the protection of human and environmental health by providing better risk assessments and illuminating pest management practices that are particularly problematic so they may be targeted for development of alternatives.

This system will enable the departments to monitor pesticide use by each application, site, location, purpose, associated cost thus allowing analytical and strategic shift from chemical to non-chemical pest management.

Quarterly and Annual Pesticide Use Reports will be generated through this system and published on this web site.

For inquiries on using the Santa Clara County's "Pesticide Use Reporting Web-based application software", contact Naresh.Duggal@ceo.sccgov.org or call Naresh Duggal, Santa Clara County IPM Manager at 408-299-5105; a demonstration can be arranged for your organization. Participating in collaborative work will economize the resources.

7. IPM Training

The central lesson of Urban IPM project implementation over the past decade is that the complex ecological and social context of IPM argues for a sustained effort combining elements of technological development, adult education, local organisation, alliance building and lobbying.

Scientific excellence and adherence to ecological principles provide a strong technical basis for IPM development, and the application of participatory, non-formal adult education methods represent a real advance over models based on information dissemination and the delivery of simple messages. But these in themselves are not enough.

The long-term development of a sustainable IPM program also requires strong leadership & cooperation among user groups and the linkages between these groups and the wider community. The interactions of the people involved in a pest management system are the key to the success or failure of the program. When the respective roles of all the people in the pest management system are identified and agreed upon, and when these people communicate well with each other, effective and less expensive protection of the site and the people can be achieved with fewer risks.

Training is often identified as a major need or bottleneck in IPM projects, but uptake of lessons learnt is often rather limited for various reasons. It can be argued that in some contexts, urban IPM requires a generally knowledge intensive approach…

From this perspective, IPM trainings are not an end in themselves, but rather a good starting point for the development of a sustainable awareness among the public agency's user groups and public at large and enable participants to design, implement and manage pest management plans beyond pesticides…

Training permanent and seasonal employees on the basics of the IPM policy, the agency's IPM program and specific maintenance standards and IPM strategies will help ensure that they are understood and consistently followed. Implementing the IPM approach from design through daily maintenance will eliminate unnecessary applications of chemicals. In addition, full implementation of a well-

understood IPM approach will create a more efficient and safe environment, saving time and money and increasing worker safety.

The following paragraphs provide guidelines for developing a training plan:

> All staff associated with the planning, design, construction, and maintenance of parklands, roads, rights-of-way, park and ride lots, electrical substations, golf courses, other landscaped buildings and facilities and other areas where vegetation is managed and where pests may need to be controlled should receive an orientation to the IPM policy, the department's specific IPM program and these Guidelines.

Gardeners and other ground maintenance workers responsible for vegetation management should receive training on:

a. An overview of Integrated Pest Management including identification and life cycles of typical California pests, weeds and beneficial insects; determining threshold levels for different types of landscapes; and monitoring techniques.
b. Noxious weed identification, control and regulations.
c. Pesticide laws and safety.
d. Specific Best Management Practices as appropriate.

Staff responsible for maintaining and scheduling irrigation systems should receive training on:

a. Irrigation system maintenance and how to conduct audits.
b. Scheduling based on evapo-transpiration and seasonal fluctuations.
c. Backflow prevention.

To the extent practicable, IPM training should be shared across agency departments.

Some of the examples of Santa Clara County's IPM Training Program are:

a) "I am the County IPM Guard" – An Administrative Training for Department IPM Coordinators, Facility Managers, Procurement Managers & Policy Makers

b) "My Contribution to The Healthy Environment" – An IPM Awareness Training for Santa Clara County Employees (Sanitation, Housekeeping & Maintenance)

c) "Kindergarten to High School" – IPM Grass Root Campaign – A Project in Development phase

d) "The Bug that does not Bug Anymore" – Bug Safari – A Project in Concept phase

e) "Meeting the Experts" – Technical Training for Pest Managers – A Project in development phase, part of SCC IPM website

f) "Reducing Risk Through Pesticide Safety & Education"- training designed for pesticide applicators to minimize self & environmental exposure to pesticides: The Pesticide Education Program strives to educate all pesticide applicators and users across the Santa Clara County about pest management alternatives, including the safe, proper, and legal use of pesticides. The program promotes responsible decision-making, which will protect pesticide users, public health, plant and animal health, and the environment.

g) "Regional IPM Training Annual Conference"- Economizing resources through collaboration, advancing education and outreach to larger community base; interaction among the local, regional & national experts; developing regional resource database

h) "Field Days" – Organizing field days through the Regional Alliance Base, target specific IPM projects and solutions, share success stories through cross training among the participants

8. Planning & Implementing IPM Demonstration & Presentations

To effectively train the department's managers, gardeners, maintenance personnel, and pest control contractors in new tools & techniques, IPM demonstration sites should be utilized where hands-on education is coupled with a relevant, "real-world" example makes the difference. Public Agencies should cross train their workers on various IPM projects, leveraging on other agencies success stories inviting each others groups on "Field Days", targeting specific IPM projects. A few example of Santa Clara County's IPM Demonstrations & Presentations are as follows:

- Non-Chemical Alternatives to Right of Way Vegetation Management
- Least Impact Chemical Alternatives to Pre-emergent herbicides
- Wildlife habitat management (California Ground Squirrel, pocket gopher control), preserving burrowing owl habitat and maintaining nature's balance around County Airports using alternative chemical & non chemical strategies

- Preparation of Road Landscape aesthetics & design manual with an objective of integrated vegetation management
- Pesticide Free Regional Park ED LEVIN Project
- Algae control in the Spring Valley pond through biological agent; rejuvenating pond through aeration.
- Use of mulch to replace pre-emergent herbicide use associated with recreational areas (picnic & play area).
- Organic Foam Heat Treatment for Weed Control on parking lots, recreational areas and playgrounds – project on hold due to current economic situation
- Trapping for Rodent control thus limiting use of Rodenticide
- Trapping for Yellow Jackets and early abatement strategies; Park user awareness program
- IPM Training for all maintenance staff to educate in IPM practices
- Mulching median strips and landscaping in all parks
- Start Park User's Awareness program through interactive educational brochures to educate the public that reduced pesticide will bring them a safer, healthier environment with very little compromise with aesthetics
- Set a protocol for spot treatment of only Post-Emergent herbicide and seek long term reduction of post emergent through life cycle studies of alternative strategies
- Investigate & set adaptability trials for the use of organic herbicides such as Clove Oil, Vinegar, Ammoniated Soap of Fatty Acid, Thyme Oil
- Investigate Integrated Vegetation Management for Parks and Rangelands through the use of biological agents and the introduction of native vegetation.
- Biological Control of Algae in lakes and ponds
- Mechanical Control of Aquatic weeds in lakes and ponds
- Argentine Ant Management without Pesticides – Under consideration
- Post emergent vegetation control through Organic herbicides (Clove Oil) – Project ready for implementation
- Yellow Jacket Control through trapping in Regional Parks
- Ground Nesting Yellow Jacket Control through vacuuming in Regional Parks
- Structural infesting honeybee control in Regional Parks through reduced risk strategies
- Rubber Mulch Efficacy Trial at Ed Levin Park
- Total Vegetation Control through Use of Mulch at Roads Right of Ways

9. **Field/Site Surveys**

Field surveys are essential components of Public Agency's IPM program to assist user groups in current pest management issues, primarily suggesting non-chemical approach.

Some of the example of Santa Clara County's Field/site surveys area as follows: Performance of these projects will be soon shared on SCC IPM web site.

- California Ground Squirrel Control at Correctional Facility
- California Ground Squirrel Control at Regional Parks
- California Ground Squirrel Control at Regional Airports
- Pocket Gopher Control at Regional Airports
- Bird Exclusion at Correctional Facility
- Averting herbicide application in Turf through Field Scouting
- Argentine ant control through precision baiting, physical alteration & tenant awareness
- Dry Wood Termite Control: Inspection leading to decisions about fumigant use or non-chemical approach

10. Quality Control & IPM Performance Management

Effectiveness of the IPM method(s) employed should be measured, records kept and an evaluation process conducted in order to regularly assess how well it is working to bring about the desired result(s). Field staff needs time allocated for appropriate monitoring and record keeping, as well as opportunities for training and discussion in evaluation processes.

The Quality Systems Evaluation is a comprehensive audit to thoroughly evaluate IPM supplier's quality system. Public Agency's user group should develop this tool to measure quality and assure integrity of the process. IPM project performance should be measured statistically, continuously improved to achieve its objectives, while maintaining pest free environment.

Evaluation Criteria, and Monitoring/Reporting Mechanisms

- Sample Monitoring Forms - U.S. Environmental Protection Agency
  This document provides monitoring forms for both indoor and outdoor environments.
- Seasonal Checklist for Turfgrass Integrated Pest Management - Connecticut Department of Environmental Protection
- IPM Standards for School Grounds - IPM Institute of North America Inc.

Learning and revision: Results of application of specific IPM strategies as well as the IPM program as a whole should be reviewed regularly and revisions made as appropriate based on experience. The success and failures should also be shared with others, so that redundant, repetitive work is removed and success stories further flourish.