

ATTACHMENT B: ISSUES AND RESPONSES

**Public Comments and Agency Responses**

*Draft 2017 Reduced Risk Pesticide List, City & County of San Francisco*

This list is a compilation of comments received in 2016 and 2017 on San Francisco's Reduced Risk Pesticide List

Public Comment	Agency Response
<i>A Restrictions language</i>	
1 The current language, "All treated areas must be clearly noticed, marked and identifiable for four days after the treatment...", says nothing about the 3 day preposting requirement.	Clarifying language has been added.
2 All requirements, including herbicide restrictions and compliance checklist, must be gathered in one location.	The herbicide restrictions, which are part of the Reduced Risk Pesticide List, are packaged in the same downloadable document as the compliance checklist, which is intended as a more broad set of instructions for IPM ordinance compliance.
3 The posting signage should include a color sample of the blue dye so people will know what to look for. The dye must not be so persistent that it is still visible weeks later. Otherwise it will lose meaning.	SFE has added a requirement to mention blue dye on posting signs, and is exploring the inclusion of color samples on signage in its redesign of the signs. The dye most commonly used by City operations, Blue Lagoon SS, is a non-toxic water soluble product that is not persistent.
4 The meaning of designated public paths is unclear to the public.	Trail maps do not yet exist for all City parks. Until more maps are developed, the restriction language has been changed to define "designated public paths" as walking paths that appear on City maps (when available), or paths that are actively maintained by City operations (when maps are not available).
5 Social trails should not be excluded from the prohibitions	Social trails are impractical to define and are actively discouraged on parklands. If a treatment takes place near one of these trails, the posting and blue dye will serve to alert users.
6 Broadcast spraying needs a clearer definition.	Restrictions were modified to define broadcast spraying as "using a spray boom."
7 Defining "broadcast spraying" as the use of a spray boom is a specious argument, since most of these park areas would not lend themselves to use of a spray boom anyway.	SFE clarified its definition of "broadcast spraying" in December as a direct response to comments received from the same parties who submitted this comment. Using a spray boom involves higher pesticide use than backpack sprayers, with little opportunity to specifically target problem areas. A prohibition on boom spraying was the original intent of this restriction. There are actually many park areas where boom spraying could theoretically be used: meadows, multiple use fields, and athletic fields, for example. Introducing a more complex definition of broadcast spraying, such as by quantifying the contiguous area sprayed, would be unrealistic for staff to follow and for SFE to enforce.
8 Defining "broadcast spraying" as the use of a spray boom does not restrict untargeted blanket spraying with a backpack sprayer.	See comments in #7 above. Targeting treatments is a fundamental part of the IPM decisionmaking process and is part of existing practices. For clarity's sake we have added the following phrase to this item: "Use of a backpack sprayer does not qualify as broadcast spraying, provided that the applicator is targeting specific plants that have been identified for treatment."
9 "It would be good to start building an explicit list of 'areas frequented by children' to prevent mistakes from being made."	Herbicides have not been used in any childrens' play areas for at least the past seven years. . SFE considered incorporating a specific list of designated childrens' play areas as part of the restrictions, as reassurance to concerned parents. However, this list seemed to create more questions than it answered, and - in conversation with other City agencies - we have maintained the "areas frequented by children" language for 2017. This language acknowledges the fact that on-the-ground staff are the people most likely to know where children spend their time. SFE continues to work with other city agencies to improve communication resources available to the public.

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<p>10 "Children play on more than playgrounds. They sit on stumps on Mt. Davidson; on grassy fields at McLaren; they roll down hillsides at the Conservatory of Flowers... It's not possible to create a comprehensive list of where children can come into contact with pesticides. Just don't spray in parks! "</p>	<p>Operationalizing restrictions requires the clearest definitions possible, but as the commenter has acknowledged, a comprehensive and unambiguous list of "areas frequented by children" is unrealistic. If the commentors' core intent for this exchange is to ban pesticides in parks rather than better define pesticide-free zones, then please see the agency response under #11 below.</p> <p>It is important to note that tier I herbicides are very rarely used in park areas generally, even in areas not officially required to be free of herbicide use In the first three quarters of 2016, only 1.19 lbs of tier I herbicide active ingredient (about 1 pint of product) were used in all Rec Park "parks &amp; facilities" areas combined, and most of this was used for the Golden Gate Park nursery, which is not open to the public.</p>
<p>11 "All hazard tier I and II pesticides should be banned"</p>	<p>The Precautionary Principle Ordinance (Environment Code, Chapt. 1) requires that City agencies "examine a full range of alternatives and select the alternative with the least potential impact on human health and the environment including the alternative of doing nothing." This means that in addition to reviewing likely impacts of pesticide products, we must also consider the relative effectiveness and risk of alternative control methods, and the likely risks of no treatment at all before adding a pesticide product to the Reduced Risk Pesticide List.</p> <p>The purpose of San Francisco's tier system is to flag potential hazards of pesticide products. However, hazard alone is not sufficient for guiding product selection; the product's potential for exposure, its efficacy, and the availability of safer alternatives are the other critical pieces of information. There are some lower hazard (Tier II or III) products, for example, that might require large volume applications to be effective, and therefore might pose a higher risk than a Tier I product that is used in tiny quantities, or used in situations where humans and pets are not likely to be exposed (such as baits). For this reason, San Francisco's Integrated Pest Management (IPM) program has developed a process to systematically review both hazards and exposure potential.</p> <p>Based on past experience with SF's pesticide ban in 1996, which led to significant deferred maintenance and public complaints, we do not believe that an outright ban will serve the public interest. However, we believe that City departments can aim for continual improvement in their pest management efforts by regularly reviewing priorities and substituting safer products/techniques as they become available. This is the core of the City's IPM approach.</p>
<p>12 How are landscape renovations defined?</p>	<p>Based on public comments, we have included a definition of renovations in the revised restrictions: "A contiguous area of land where a significant amount of the existing vegetation is removed and replaced, with a minimum size of 100 square feet." In most cases renovations are completed without the use of herbicides, but in some cases - such as the 2003 removal of kikuyu grass from Harding Park golf course, or the recent removal of Arctotheca from Marina Green, there are no effective non-chemical alternatives available. The restrictions require that the area be fenced off to the public for at least four days after treatment, although in actual renovations the fencing is often in place much longer.</p>
<p>13 Need for licensed applicator to be on site: How does the public know who that supervisor is, unless he wears an ID indicating his role at the ongoing application? Otherwise, how does the public ascertain such a supervisor is present?</p>	<p>The public will not necessarily know who the licensed applicator is without having a conversation with the affected City staff. However, we do not understand how the ability to identify supervisory personnel plays a role in reducing or communicating pest management hazards. While the public will not necessarily know who the licensed applicator is, they are always welcome to have a respectful conversation with City staff.</p>

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14 Re-sprouting trees do not constitute a fire hazard any more than a healthy growing tree does.	Resprouting trees usually grow very quickly. In the case of <i>Eucalyptus globulus</i> , it is true that juvenile foliage is less flammable than mature leaves and branches, but if not recut the sprouts become thickets of small trees, with high fuel density. Young trees can function as "ladder fuels" to transfer small fires into higher levels of the forest canopy. Fuel density and ladder fuels are widely accepted as important contributors to fire risk. The USDA Fire Effects Information System (FEIS) features numerous references on the fire hazards of <i>E. globulus</i> , such as Osterling, Ralph S. 1983. Managing a coastal bluegum ( <i>Eucalyptus globulus</i> ) forest.
15 How can the public know where pesticides are applied?	Transparency is a fundamental goal under the City's Precautionary Principle. The IPM Ordinance requires that all pesticide applications on City properties be posted for three days before the planned application, with the sign remaining for four days after the application. Signs must be placed in locations most likely to be seen by people using the site. The ordinance allows a few exemptions to the posting requirement, such as median strips in roadways or certain baits used in structures; in these cases, the information must be available at a central location (in a building or via the 311 line). The 2016 version of "Restrictions on Most Hazardous Herbicides" further addressed public concerns by requiring greater specificity in the posting regarding the exact location of the treatment. The restrictions also prohibited any tier I herbicide use in areas frequented by children, on designated trails, or within 15 feet of a designated trail, as well as requiring that any tier I herbicide treatments be marked with blue dye. If tier I herbicides are required for public health purposes - such as a large poison oak bush near a trail - there must be some kind of physical demarcation. such as contractor fencing, caution tape, or orange cones. The current draft of the restrictions includes improved language on "designated paths," a requirement that posting signs mention the use of blue dye, and a requirement that the dye be readily visible. In addition, we are requiring that a simple map of planned treatment areas be attached to the posting sign when those areas are not readily identifiable from verbal descriptions, for example in natural areas treatments. For treatments in publicly accessible areas (excluding golf courses and areas under habitat management), some kind of demarcation must also be put up around the treated area and/or blocking access to the treated area, for example, flagging, rope, or staked hazard cones.
16 Why were Rec & Park staff spraying native Coyote Bush and sticky monkey flower in natural areas? This is a violation of the restrictions.	The wording of the 2016 restrictions allows limited tier I herbicide use on "invasive species that pose a threat to local, native, rare, threatened or endangered species or ecosystems, and which cannot be controlled by other means." On receiving the report of this treatment, SFE staff immediately contacted Natural Areas staff to ensure that the restrictions were being followed. Natural Areas staff treated Coyote Bush around the perimeter of a small area of Glen Canyon Park native coastal grassland that they are protecting. Without native elk or other large herbivores present, brushy vegetation sometimes takes over these grasslands. Similar management actions are occasionally performed by the Public Utilities Commission on properties in San Mateo County, in order to protect populations of endangered plant species there. Staff said there was no targeting of sticky monkey flower plants, and never is. SFE concluded that there was no violation of the restrictions.
17 You do not provide a definition of invasive species. Why do you not use the California Invasive Plant Council's list of invasive plants?	The Cal-IPC list is a statewide list operating at a statewide scale. Many of the invasive plants that are a serious problem in San Francisco are on the list. A handful are not because they are not a threat at a statewide scale. Of course all effects are local, so when a plant is clearly causing harm in San Francisco, then land managers address the issue regardless of whether it has a status according to Cal-IPC. <i>Oxalis</i> is listed as "moderately" invasive, in part due to the fact that it is restricted to the fog belt. But within the fog belt, in certain situations, it is a scourge for native grasslands, and for dunes, and coastal scrub ground layer/wildflower diversity. <i>Eucalyptus</i> is listed as "limited" invasivity due to the fact that its rate of spread is slow, and in general it does not invade wildlands where it was not planted directly adjacent. But once it's established, it creates a wholesale transformation of the landscape and the biodiversity, and it does spreads laterally from planted areas. These characteristics explain why, with the rating of "limited;" <i>Eucalyptus globulus</i> belongs on Cal-IPC list. The management goal here is to protect the rare remnant grassland patches, not to broadly target particular plant species. For this reason, SFE does not orient its herbicide restrictions around weed species.

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<b>B Biodiversity</b>	
18 What is the evidence that the use of herbicides is warranted by the need to “preserve biodiversity”	See the response above. The negligible risk of treatments, compared against the prospect of permanently losing some of the City's biodiversity hotspots, drove this decision.
19 City should be using more herbicides to protect endangered native habitats, which are shrinking. This includes using more triclopyr (Garlon®)	The IPM Ordinance requires that the City save pesticides as a method of last resort. Meanwhile, the protection of native habitats is also a priority for the City, as shown by the General Plan’s Recreation and Open Space Element (ROSE) (Objective 4). The IPM program seeks to strike a balance between these goals.
20 Oxalis and blackberry plants are not problems for biodiversity	The Rec & Park Natural Areas program has observed many instances of these species smothering native plant communities.
21 Who decides what species or ecosystem is of value?	The federal Endangered Species Act requires the designation of critical habitat for federally listed species and prohibits “takings” of these species. San Francisco’s General Plan, through its Recreation and Open Space Element (ROSE) (Policy 4.1) requires the City to “Preserve, protect and restore local biodiversity.” Specifically, the policy states that “the City should employ appropriate management practices to maintain a healthy and resilient ecosystem which preserves and protects plant and wildlife habitat, especially rare species which are the primary contributors to local biodiversity.” The ROSE involved extensive public input and charges City staff with assessing landscapes for their current and potential natural habitat. The Planning Commission and Parks Commission recently gave final approval to the Dept. of Recreation & Parks Natural Resources Management Plan, which goes into greater detail on management goals to preserve particular ecosystems. Finally, the Public Utilities Commission is implementing several habitat mitigation projects that specifically require the control of certain weed species in order to successfully restore native plant communities.
<b>C Pesticide hazards and alternatives</b>	
22 Why are the allowed uses of glyphosate (Roundup) products more permissive than those of Garlon 4 Ultra?	Based on reviews by pesticide toxicologists, we still consider Garlon to present a higher risk than Roundup. This opinion is based on a comparison of established pesticide reference doses* to the likely exposure an organism (or applicator) is likely to receive. By comparing how close actual exposures come to the amount of the reference dose, we can better understand the chance that harm could occur. This analysis was first presented by the Pesticide Research Institute at a public meeting of the Integrated Pest Management Technical Advisory Committee in July, 2015. The risk of cancer from Roundup products - although we take it seriously - is not clearly established in the scientific literature at the exposures likely to occur in real life. (See response to next item)
23 Glyphosate is a "powerful" carcinogen	The word "powerful" has no scientific meaning here. The fact is that the International Agency of Research on Cancer (IARC) found that glyphosate is "probably carcinogenic to humans," and that the California Office of Environmental Health Hazard Assessment in turn added glyphosate to its "Prop 65" list of substances “known to the State of California to cause cancer or reproductive toxicity.” These actions alone are enough to make glyphosate a Tier I substance under San Francisco's hazard screening protocol, and to prompt our current efforts to find safer alternatives under the Precautionary Principle.
24 Why is there no risk analysis provided to balance the discussion?	A formal risk analysis requires a detailed analysis of likely exposures from a wide variety of situations, in combination with data on reference doses.* Reference doses do not apply to cancer or reproductive toxicity; for these, a different quantity called "potency" is required. However, there is still no clear quantification of the "potency" for glyphosate (see #22 above).

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25 Glyphosate represents a groundwater hazard	Glyphosate is not likely to get into groundwater because it binds tightly to the soil. Studies on Mt. Tamalpais (Hwang et al., 2011) showed that most of the herbicide remained in the top 6 cm of the soil, and no AMPA (its chief breakdown product) was found below 30 cm. Similarly, neither glyphosate nor AMPA were susceptible to leaching after a forest application in British Columbia (Feng and Thompson 1989). In most agricultural settings, glyphosate does not leach more than six inches into soils, according to summaries by the Pesticide Research Institute. The San Francisco Public Utilities Commission has monitored groundwater from all wells in the Westside groundwater basin that will be used for domestic water supply, and no glyphosate has been detected per methods required in the California Drinking Water Standards (California Code of Regulations, Title 22).
26 Herbicide-tainted runoff would create risks downslope for areas frequented by children.	There is no data supporting this statement in the San Francisco context. To pose a risk through runoff, several unlikely conditions must be met: 1) previously applied herbicides must be dissolved during a rainfall event and washed downslope, rather than soaking into the soil; 2) There must be a plausible scenario that would expose children to the runoff; 3) The amount of exposure in that scenario must be higher than established "reference doses"* for the chemical in question. The Pesticide Research Institute conducted an analysis using an extreme scenario: Data from the site with highest use (Twin Peaks) of the highest toxicity herbicide (triclopyr), using the highest weekly usage from 2015, and assuming that a person <i>drinks</i> 2 liters of herbicide tainted runoff water/day. In this extreme case, the person would be exposed to between 0.00000002% and 0.48% of the RfD.
27 Aren't herbicides harming the bees, like so many other pesticides?	Herbicides are designed to interfere with plant metabolism, not insect or mammal metabolism. They should not be confused with certain fungicides and insecticides (especially the neonicotinoid class of insecticides), which have demonstrated effects on pollinators. It is true that almost any pesticide, including soapy water, can kill a bee if it is sprayed directly on the animal, however, we have not found data showing systemic effects of herbicides on bees. There is data showing indirect effects of herbicides sprayed on corn fields, caused by the decimation of milkweed - the primary host plant for the Monarch butterfly, but this is not relevant for the use cases found in San Francisco.
28 "There are 'data showing systemic effects of herbicides' on butterflies 'relevant for the use cases found in San Francisco'...from a study that found that "use of herbicides to restore butterfly (Langes metalmark) habitat actually kills about 30% of these butterflies."	<p>The study cited in the SF Chronicle article, <a href="http://www.sfgate.com/bayarea/article/Weed-killers-threaten-Lange-s-metalmark-butterfly-3451816.php">http://www.sfgate.com/bayarea/article/Weed-killers-threaten-Lange-s-metalmark-butterfly-3451816.php</a>, tested the impacts of spraying herbicides 1) directly on the caterpillars themselves, and 2) on the butterflies' host plant, a native buckwheat species. There may indeed be effects by herbicides on the caterpillars; as noted above, most any soapy substance sprayed directly on most any insect will damage the insect's cuticle and possibly cause death by dessication. The study's authors also acknowledged that it is possible that "the chemicals are somehow changing the nutritional value of the buckwheat, indirectly harming the larvae." Put more simply, this means that wilting and dying plants make poor caterpillar food.</p> <p>However, this information is not relevant to the real-world situation, for the following reasons: The larvae of endangered butterflies like the Lange's metalmark or Mission blue feed on only a very narrow range of native host plants (like the buckwheat mentioned), and the goal of habitat management efforts is to <i>protect</i> these plants, not to spray them. It would be a monumental mistake to spray herbicides on the very plants targeted for protection.</p>
29 Why are alternatives such as grinding/drilling stumps not being considered?	Stump grinding is being used by the City, and is preferred to stump daubing. It is not possible in some situations, for example, where stumps are far from a road or in steep areas, where eucalyptus often are found.

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<p>30 Under your restrictions, it seems like glyphosate would be used forever</p>	<p>In light of the 2015 IARC findings on glyphosate, SFE is committed to reducing its use as quickly as possible. However, we have learned from experience the perils of “regrettable substitution,” that is, banning one hazardous product only to have it replaced by something even more hazardous. The decision is complicated by the fact that glyphosate has much lower acute (short-term) toxicity than alternative herbicides. An immediate, full ban on a product like this, without the availability of safer drop-in substitutes or even a full understanding of the risks of the alternatives, is not recommended – especially given the large scale of city operations and the time needed to add extra staff. Top-down bans of such scale require time to adapt, and after consulting the departments involved we have found certain specialized situations that prevent a full ban. The pesticide use restrictions are a first step, and were developed after long series of work meetings with internal and external stakeholders. We have identified the critical uses and begun moving to alternatives, resulting in a significant (81%) reduction in usage compared to the previous year. By choosing this path, we can harness the energy of our very committed City staff to overcome the challenge, rather than damaging the program by instituting blunt, top-down bans.</p>
<p>31 Why are alternatives not being used, such as organic herbicides or herbicidal soaps; tarping (the most successful method in Presidio); biological controls of host-specific insects or pathogens; cultural controls like choosing pest-resistant plants and companion planting; mechanical alternatives like pressurized water; other mower heads; sub-soil brushing; weed wrench alternatives; or goats for smaller scale grazing</p>	<p>Avenger is an organic certified herbicide that has been piloted by several City departments, and is currently on the 2016 Reduced Risk Pesticide List. Burndown herbicides such as Avenger, herbicidal soaps, and other products are limited in their effectiveness, primarily because they do not seep into the plant tissue and kill the roots. This means that multiple applications are necessary. In addition, these products work much better in warm weather, and are many times more expensive than other herbicides. Still, 2016 saw an increase in pilot use exemption requests for burndown products to explore their usefulness as alternatives to Tier I herbicides. Most if not all of the other alternatives suggested have been explored, or are still being used for specific weed control needs. Biological control options for weeds are currently quite limited, but biological controls for insects have been used for indoor environments at the airport as well as at the Conservatory of Flowers. Cultural controls and proper plant selection are front and center in the Bay Friendly Landscaping guidelines, as well as in our own promotion of the SF PlantFinder database. A wide variety of mechanical controls have been explored; some, such as pressurized water, were impractical given the amount of water wasted as well as the disruption of soil profiles; others, such as weed wrenches for French broom, are now used routinely. Goats have been used by several City agencies over the past decade for appropriate situations, such as utility rights-of-way in San Mateo or for vegetation near Laguna Honda Hospital. Tarping can be effective for killing all plants in defined areas, but after trials by the Natural Areas program have been deemed impractical for publicly accessible areas because the tarps are quickly stolen, and because they are nonselective.</p>
<p><b>D IPM program implementation</b></p>	
<p>32 A treatment occurred on Mt. Davidson on November 2, but the posting signs did not list all of the plants being treated.</p>	<p>SFE staff checked in with Rec &amp; Park land managers following this report, and reviewed the new procedures on posting to ensure that compliant posting takes place in the future. It is important to note that it is not always feasible to know in advance which plant species require treatment.</p>
<p>33 Garlon was sprayed illegally next to trails on Mt. Davidson on January 31, 2017.</p>	<p>Dept. of Recreation &amp; Parks staff filed an exemption request with SFE for these treatments, as required under the IPM Ordinance. SFE staff followed up with site visits before granting the request. (In fact, the first exemption request was rejected because it did not provide sufficient background information.) In this situation RPD staff have been using certain trails as lines of defense against the advance of Oxalis into sensitive areas. However, individual Oxalis plants had begun to cross the trails. If treated immediately, a tiny amount of herbicide is required, but left untreated staff would have needed to use much more product. (Oxalis can only be controlled with herbicides in these situations.) The exemption was granted on the condition that the affected trails be closed the day of treatment, and that evidence of these closures be submitted to SFE. RPD complied with these requirements.</p>

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<p>34 "The Department of Environment is not neutral on the mission of Rec and Park's Natural Areas Program to preserve 'remnant biodiversity.' Thus, it cannot be considered neutral on the issue of their use of Tier 1 herbicides, since use of these herbicides is an integral part of the Program's implementation."</p>	<p>The Department of the Environment supports biodiversity conservation and the mission of the Natural Areas Program. These biodiversity goals are not unique to our department, but are citywide, as expressed in the Recreation and Open Space Element of the City's General Plan, as well as by the recent approval by both the Planning and Parks Commissions of the Rec &amp; Park's Natural Resources Management Plan. SFE's role is not to set habitat management goals, but to work with other City departments to ensure that the safest possible techniques are used. In other words, the issue of "neutrality" is not relevant to the question at hand, which is: How to most safely manage weeds in habitat management efforts.</p> <p>The current herbicide restrictions are designed to minimize unnecessary use, protect the public and the environment, and provide appropriate transparency for San Francisco citizens. If the herbicides in question posed a clear danger to applicators or the public, and alternative management techniques were exhausted, SFE would institute further restrictions in consultation with the affected departments. However, after thorough reviews of the data available on the specific Tier I herbicides in question, SFE has determined that the risk to the public from these dispersed treatments is negligible. As a worst-case scenario, SFE examined Triclopyr (active ingredient of Garlon), which has the highest acute toxicity of the Tier I herbicides currently used in San Francisco. Dogs are known to be the mammal most sensitive to this chemical. SFE consultants used exposure estimates from a US Forest Service risk assessment and concluded that a dog would need to eat 6 pounds of freshly sprayed vegetation in one day in order to have any detectable effects. Meanwhile, the amount of triclopyr used on Natural Areas lands in 2015 totalled 0.08 ounces per acre/year.</p>
<p>35 "Why does the City despite having an IPM program allow other departments to spray illegally with no consequences nor penalties?"</p>	<p>SFE's IPM program does not allow other City departments to spray illegally without consequences. Reports of violations, or violations that are suggested via pesticide use data, are investigated by staff. In most cases, violations (in posting, for example) are addressed with increased training and vigilance. While the enforcement provisions in the IPM Ordinance are minimal, the Ordinance does require significant public accountability, in the form of an annual public hearing, public justification of any exemptions granted, public justification of any use of "most restricted" products, a complaints log, and web publication of all approved pesticide exemptions. The required public justification of violations serves as a disincentive for these behaviors.</p>
<p>36 Application of the Precautionary Principle to IPM</p>	<p>SFE's IPM Program is rooted in the Precautionary Principle (Chapt 1., Environment Code) in its application of alternatives analyses to consider all available alternatives and take proactive measures to minimize harm. IPM staff use the best available science, as well as advice from highly qualified toxicologists, landscape management professionals, university extensionists, and the public, to decide on the safest effective options - including the option of doing nothing.</p>
<p>37 "You don't really know what the risk [of pesticide use] to the public is until many years later. You don't know what amount is unsafe until many years later."</p>	<p>San Francisco adopted the Precautionary Principle in part to address this very issue: By the time chemical risks are crystal clear and proven beyond any doubt, harm may already have taken place. IPM staff strive to minimize harm by using the best available science to support their decisions, but not necessarily delaying such decisions until regulatory processes are complete. "Best available science" always includes a review of known hazards, however, as the science improves, the IPM program adjusts its decisions proactively in a process of continual improvement.</p>

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38 Concerns on irregularities in pesticide use database/missing data	The Pesticide Use Reporting database is a web-based system for collected pesticide use data from disparate City facilities. Departmental IPM coordinators are responsible for collecting the data, initial quality control, and entering in the database. The SFE IPM Manager then does another round of quality assurance, using automatic and manual methods, and often calling coordinators to check. The City collects data that is much more detailed than that required by the state, and allows increased accountability and trends tracking. Very few other cities possess such a system. SFE has received feedback on its pesticide use data in the past from the same commenters, and appreciates the assistance in its quality assurance efforts. The most recent discrepancy noted was the lack of certain "burndown" herbicides in the Rec & Park 2016 data, despite the fact that pilot testing took place. (Some burndown herbicides might be safer alternatives to Tier I herbicides currently used, for certain situations.) In checking the PURS data for 2016 Q1- Q3, we did not see this discrepancy. PURS lists 13 lbs. of active ingredient categorized as burndown herbicides reported for the period. Products applied were GreenMatch, Avenger, and Axxe. Note that burndown herbicides must be applied in much higher concentrations, which means that the pounds (and cost) are dramatically higher.
39 The restrictions should require that some parks be designated as "pilot projects" where no Tier I herbicides may be used.	The IPM Program, together with City departments, regularly conduct pilot projects relating to safer products and practices. Designating certain parks as pilot projects requires the participation of the relevant department. SFE will explore further pilot project opportunities in the coming year.

*Footnotes and references*

\*A reference dose (RfD) is defined as the US EPA's maximum acceptable oral dose of a toxic substance. It is usually 100X less than the "No Observable Effect Level" (NOEL), which is the dosage where no impacts on an organism can be detected.

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