



City of Arts & Innovation

Land Use, Sustainability, and Resilience Committee Memorandum

TO: LAND USE, SUSTAINABILITY, AND RESILIENCE COMMITTEE **DATE: NOVEMBER 9, 2020**

FROM: COMMUNITY & ECONOMIC DEVELOPMENT DEPARTMENT **WARDS: ALL**

SUBJECT: RECOMMEND APPROVAL FOR THE USE OF PRODUCTS CONTAINING GLYPHOSATE FOR WEED CONTROL ON CITY MAINTAINED PROPERTIES AND FACILITIES

ISSUE:

Recommend the use of glyphosate products for weed control on City-maintained properties and facilities.

RECOMMENDATION:

That the Land Use, Sustainability, and Resilience Committee recommend to the City Council that staff be able to resume the use of glyphosate products for weed control on City-maintained properties and facilities.

BACKGROUND:

In April 2019, the City Manager placed a temporary moratorium on the use of products containing glyphosate (e.g. Roundup) on City-maintained properties and facilities. Staff have since collected information on how glyphosate products were being applied Citywide and compiled this information for the City Council to review. Glyphosate is a broad spectrum, non-selective systemic herbicide; this means the targeted weed is completely killed to the root and does not grow back. Glyphosate is currently approved and registered by the U.S. Environmental Protection Agency as a general use herbicide under several trade names, with the Roundup label being the most well-known. Glyphosate is used as a post-emergent herbicide in agricultural operations and turf grass applications, including golf courses and residential lawns.

The City has historically used Roundup to control weeds. From an aesthetic perspective, proper and safe use of Roundup have facilitated maintenance of city facilities, landscapes, open space, streets, alleys, and public spaces. Uncontrolled weeds can cause damage to asphalt and concrete surfaces resulting in increased maintenance and require replacement sooner if not kept weed free. Untreated, weeds also provide harborage for rodents, are a fire hazard, and moreover are

considered a nuisance per City Code.

Alternative products, such as vinegar, plant oil extracts, and other organic and chemical herbicides (e.g. contact herbicides) are available for weed control. It should be noted that horticultural vinegar is not labeled for use as a pesticide in the state of California and therefore it is illegal to use as a pesticide. While these non-glyphosate products control weeds, they do not provide systemic weed abatement, meaning the product only kills the leaves it encounters above ground and will regrow from its root stock that was not killed from treatment with a contact herbicide. For example, when a weed is sprayed with a non-systemic herbicide only that half of the weed that is exposed above ground will die and can later re-establish with its root system still intact.

Non-systemic herbicides work best on very small weeds (seedlings) and are not effective on larger weeds or perennial weeds such as Bermuda grass. In order to have measurable control of weeds using non-glyphosate herbicides, they must be applied more frequently, as much as bi-weekly, or be completely removed manually with its root stock. Roundup, in comparison, has historically been applied two to three times annually for effective systemic treatment, killing the entire weed including the roots. Roundup products used by the City are the same products containing glyphosate that homeowners can purchase at home improvement retailers.

On January 14, 2020, staff presented to the City Council comprehensive information on glyphosate, its regulation, health and safety concerns, pending litigations, application protocols, locations and frequencies of its application prior to the temporary moratorium, and alternative weed control methods being tested. This staff report is provided in Attachment 1.

DISCUSSION:

Staff were directed to return to the City Council with additional information in the following areas:

1. State water agency and other municipalities' position on glyphosate use;
2. A map of where glyphosate has been applied prior to the temporary moratorium;
3. Human health concerns related to glyphosate use;
4. Safety protocols regarding glyphosate application;
5. Effectiveness of alternative weed abatement methods; and
6. Fiscal impacts of alternative weed abatement methods.

1. Positions on Glyphosate

California Health and Safety Code §116365(g) charges the State Water Resources Board, at least once every five years, to review maximum contamination levels of twenty-nine specific compounds to determine whether they achieve public health goals established by the Office of Environmental Health Hazard Assessment (OEHHA). Glyphosate is one of the compounds evaluated to determine whether its maximum contamination levels require an adjustment based on new federal regulations, new science, and changes in application instructions. In the most recent round of reviews in 2018, the maximum contamination levels for glyphosate was reviewed and not revised. The Water Board's Division of Drinking Water (DDW) also researched exposure risk based on the occurrence of contaminants in drinking water sources. Water quality data from 2013 to 2017 were queried from DDW's water quality database, and showed that 26 contaminants, including glyphosate, were not detectable in any of the regulated drinking water sources. Riverside Public Utilities has also conducted several hundred drinking water tests for

glyphosate, and the results of these test concluded that glyphosate was not detected.

Staff spoke with the Riverside County Agricultural Commissioner's office and was told their office follows California state guidelines, which currently do not prohibit glyphosate-based products. Regarding the use of any specific pesticide/weed killer, the Agriculture Commissioner's Office refers to the manufacturer's labeling. Staff had discussions with the Riverside County Environmental Health office and found the County neither recommends, nor restricts the use of these products.

A survey of surrounding cities has found glyphosate products is currently being used in Rancho Cucamonga, Fontana, Moreno Valley, Corona Parks, and San Bernardino County Transit Authority.

2. Use of Glyphosate in the City

City departments using glyphosate prior to the temporary moratorium include: Public Works; Parks, Recreation & Community Services; General Services; and Riverside Public Utilities. A summary of the facilities managed for weed control by department is as follows:

- *Public Works Department* has the responsibility of maintaining streets and public right of ways including greenbelt shoulders, edge of roads, cracks within the road, dead ends and cul-de-sacs, medians, bike lanes, bike paths, the Santa Ana bike trail, canal maintenance roads, and properties owned by Public Works. One of Public Works major operated facilities includes the wastewater treatment facility, which is connected to the retention basin.
- *Parks, Recreation and Community Services Department* maintains park sites and areas around park areas such as sidewalks, gutters, parking lots, and planters. Playgrounds are not treated by herbicides. Prior to the temporary glyphosate moratorium, developed park sites and surrounding areas were treated once per month with glyphosate. A fifty-foot perimeter along fence lines of Department-owned open-space and undeveloped park sites were treated twice annually with the same product.
- *Riverside Public Utilities (RPU)* owns, operates, and maintains properties on which RPU water and electric utility infrastructure exists, such as well and pump facilities, canals and maintenance roads, electrical substations, open fields and vacant property. Public Utilities operates in two counties and five city jurisdictions outside the City of Riverside. Alternative weed abatement methods at these facilities have primarily been manual removal and less effective contact herbicides to address above ground vegetation. These methods have resulted in quicker re-growth, frequent return of weeds, and need for increased visits and chemical application frequency.

All Electrical substation facilities require chemical weed abatement to be performed within the perimeter of the substation yards since no mechanical weed removal is allowed due to the sensitive equipment within.

Water sites that require chemical weed abatement include well extraction areas, access roads, discharge ponds, treatment plants, pumping facilities, above ground reservoirs, earthen covered buried reservoirs, and various open spaces (totaling about 800 acres). Like electrical substations, many water sites also have sensitive equipment that limits the amount of mechanical weed removal allowed.

- *General Services Building Maintenance Division receives infrequent weed abatement requests, which are sent to Parks & Recreation or a landscape contractor for treatment. General Services' Airport Division applied Roundup on a 6-week treatment cycle to control weeds along airport taxiways, runways, parking lots, and facility entrances.*

Per the request of the City Council, a map showing the locations where glyphosate products have been applied for weed control can be found in Attachment 2.

3. *Human Health Concerns*

In January 2020, the Environmental Protection Agency (EPA) released its interim decision for registration review after receiving and considering public comments on glyphosate. The EPA actions in January continued to find that there are no risks of concern to human health when glyphosate is used in accordance with its current label. EPA also found that glyphosate is unlikely to be a human carcinogen. A summary of the human health concerns related to glyphosate is provided in Attachment 3.

Members of the public have expressed concerns linking glyphosate to health concerns. Three lawsuits tying Roundup to cancer have awarded plaintiffs millions of dollars in compensatory and punitive damages. In each of these cases, plaintiffs successfully argued that continuous exposure from their use of Roundup and its active ingredient glyphosate over long spans of time, played an active role in the development of non-Hodgkin's lymphoma. In August 2018, the first lawsuit against the product's manufacturer, Bayer AG, awarded a former groundskeeper extensive monetary damage. On appeal, that award was reduced by nearly 90%. The case is currently on further appeal by Bayer.

Bayer AG states Roundup is safe when used according to the label instructions. The World Health Organization's (WHO) cancer research center contends glyphosate "may" be a cancer-causing agent. The U.S. Environmental Protection Agency conducted their own study and determined Roundup is safe when used according to manufacturer's directions in their January 2020 report "Interim Registration Review Decision":

"EPA has thoroughly evaluated potential human health risk associated with exposure to glyphosate and determined that there are no risks to human health from the current registered uses of glyphosate and that glyphosate is not likely to be carcinogenic to humans."

In addition to the EPA study, the following determinations have been made:

*"Glyphosate use was not associated with overall cancer risk"
National Institute of Health, 2018 Agricultural Health Study*

*"EFSA – in line with the scientific opinion of 27 out of 28 Member State experts – concluded that glyphosate is unlikely to be carcinogenic to humans"
European Food Safety Authority, State of Glyphosate, February 2019*

On June 22, 2020, a U.S. federal appeals court ruled the State of California cannot require Bayer AG to add a cancer warning to the products label. (Reuters article in Attachment 3)

"In his ruling, U.S. District Judge William Shubb called California's cancer warning

misleading and said the state's label is not backed up by regulatory findings."

4. Safety Protocols

The health and safety of City employees and its residents is paramount. City departments are responsible for maintaining the Department's pesticide use manual which provides recommendations and includes special conditions for safe use and maintains updated Safety Data Sheets for each pesticide and herbicide product. Additionally, the Public Works' Safety Officer oversees a comprehensive citywide environmental, health and safety management program, and staff works closely with its labor groups to maintain a safe work environment.

State laws require applicators to obtain and demonstrate appropriate training prior to use. All City employees who perform pesticide and herbicide applications undergo annual training on safety, and safe and effective use of pesticides and herbicides, and don proper Personal Protective Equipment (PPE) prior to applications. State laws also require City staff follow strict safety guidelines in the use of herbicides and must hold either California Department of Pesticides Regulation Qualified Applicator Certificate or License. These licenses and certificates demonstrate city employees have studied for and passed a test concerning the proper application of pesticides and herbicides, and the laws surrounding their use. Supervising staff, Crew Leads, Inspectors, and Maintenance Workers in the Public Works and Parks & Recreation Departments hold DPR Qualified Applicator Certificates. Contractors hired by City departments for landscape maintenance and vegetation control are required by the City and regulations to hold current DPR Qualified Applicator Certificates and Licenses. City staff and contract landscapers are required to follow protocols that provide application rates and application timing recommendations to minimize risks of glyphosate exposure to the public.

5. Effectiveness of Alternative Weed Abatement Methods

Since the temporary glyphosate product moratorium was enacted, City Departments and landscape contractors have utilized a variety of alternative weed abatement methods including non-systemic herbicides, manual weeding, and "natural" weed killer solutions made of white vinegar, salt and dish soap. A summary of the effectiveness of alternative weed abatement methods by department is provided below.

- General Services – Airport: Although effective, in the case of the Airport, the natural solution cannot be used where aircraft operate due to the salt additive and the corrosive impact of salt to the aircraft. This solution also takes several weeks to be completely effective. It should be noted that natural weed killer solutions are not labeled for weed treatment.
- Parks and Recreation Department has tested Fusilade II, MSO Gold, Lifeline and Polaris. Staff has to combine chemicals to gain results needed to reduce weeds. They have increased material costs due to glyphosate substitutes which are more expensive. It also forces them to increase spraying to have the same effect as glyphosate. Parks Management had to adjust the current budget to include an additional \$5,000 to cover the increased costs. This may not cover all of the costs, but a bigger picture will be provided at the mid-cycle budget target. Contractors have stated that they are either using manual control methods (pulling weeds) or applying chemicals that are listed above, which has increased their costs.
- Public Works Department has tested Avenger, Speed Zone, Finale, Reward, Envoy, Lifeline, Fusilade, and Cheetah Pro throughout the City's publicly maintained parkways,

medians and freeway on and off ramps. The use of these ineffective substitute chemicals has resulted in:

- Increased materials costs. Glyphosate substitutes are not only more expensive but require larger quantities and more frequent spraying to have the same effect as glyphosate. On April 21, 2020, the City Council authorized an additional \$30,000 annually through the end of Fiscal Year 2020/21 for just one of Public Works' contractors since glyphosate substitutes were not a requirement at the time their contract was negotiated. The financial impact is expected to rise as more contractors would likely seek additional compensation, should the moratorium continue.
- Increased labor costs due to the inefficient use of staffing resources. Staff and contractors are having to make multiple trips to the same areas for treatments making it difficult to maintain or control weed growth throughout the City. This is also redirecting resources away from other maintenance functions such as graffiti removal, pothole repair, etc.
- Riverside Public Utilities normally applied glyphosate-based weed control products four times per year. Using alternative chemical weed control products, such as Diquat or Lifeline, the application frequency has increased to about eight times per year (an effectiveness of about 50% as compared to using Glyphosate based products). The increase in application frequency has resulted in an annual increase in costs to the Utilities' landscape maintenance contract. When Utilities was able to apply Glyphosate based products following weed abatement services, it reduced the frequency of required weed abatement. Using non-Glyphosate products has essentially doubled the frequency and need of weed abatement services under the Utilities weed abatement contract. Overall, Utilities has experienced inferior results using non-Glyphosate based weed control products. Utilities has also received a significant increase in the number of 311 Service Requests and code compliance complaints coming from customers regarding potential fire hazard and aesthetic concerns. The increase in these requests and complaints has required more staff time to manage and resolve the concerns, as compared to when Glyphosate based products were being used.

As indicated above, "homemade" natural mixtures and commercial products not containing glyphosate have shown to be ineffective in controlling weeds and require multiple applications to gain effective results. Moreover, these methods are not "registered" methods for weed abatement. Multiple applications of homemade mixtures have resulted in additional staff time and costs for products.

6. *Fiscal Impacts of Alternative Methods of Weed Abatement*

The table below summarizes the fiscal impacts of alternative weed abatement methods by department.

Department	Alternative Methods	Increased Expenses Summary
Riverside Public Utilities	<ul style="list-style-type: none"> ● Diquat and/or Lifeline 	Approximately \$20,000 annual increase to landscape maintenance contract and approximately \$40,000 annual increase to weed abatement contract.
Public Works	<ul style="list-style-type: none"> ● Cheetah Pro (Water 	The increased usage of alternative

	<p>Quality Treatment Plant)</p> <ul style="list-style-type: none"> • Landscape Maintenance Agreements (Urban Forestry) - vendors have experimented with Avenger, Speed Zone, Finale, Reward, Envoy, Lifeline, Fusilade, and Cheetah Pro • Street Maintenance currently uses Cheetah Pro. 	<p>herbicides has resulted in a \$30,000 increase to one of 8 negotiated agreements. Should the moratorium continue, it is anticipated that the remaining 7 vendors will request similar increases.</p> <p>Public Works has experienced additional increased costs of approximately \$15,000 using an alternative to Roundup and an additional 15% increase in total acreage sprayed due to respraying areas multiple times to achieve the same impact as Roundup.</p>
General Services	<ul style="list-style-type: none"> • 30% Vinegar, Salt and Dawn Dish liquid solution • Spectracide Spray 	<p>Material costs for mixing vinegar, salt and Dawn Dish liquid solution is \$13 per gallon and equivalent to one gallon of Round Up. Material costs for Spectracide Spray are \$11 per gallon. These alternative products require multiple applications to achieve results, thereby increasing labor costs.</p>
Parks & Recreation	<p><u>Planter area alternative products:</u></p> <ul style="list-style-type: none"> • Speedzone • Fusilade II • MSO Gold <p><u>Undeveloped areas</u></p> <ul style="list-style-type: none"> • Lifeline • MSO Gold <p><u>Undeveloped areas no trees</u></p> <ul style="list-style-type: none"> • Polaris • MSO Gold 	<p>The total material costs for alternative products is approximately \$16,380, or over \$4,000 more than Roundup, and applications are less effective and are more labor intensive.</p>

Staff also spoke with two University of California Cooperative Extension experts to better understand if there are any long-term environmental impacts to applying glyphosate and non-glyphosate weed control compounds. Summarizing the information provided by Cooperative Extension experts, all pesticides are regulated by the Department of Pesticide regulations and the US EPA. Pesticide labels dictate what, when, where, why and how to apply products. There are specific rules on what protective gear one must wear to mix chemicals and other rules dictating what should be worn when applying pesticides, and how much time must pass between application and reentering the field without personal protective equipment. When applied, glyphosate that does not immediately come in contact with the subject plant will bind itself to the soil and not be biologically available to plant or animal life. Because of its limited environmental impact, new plantings can generally be done one day after glyphosate is applied. Comparatively, other non-glyphosate herbicides in most cases are less effective and require repeated applications, can be less safe compounds to work with requiring greater oversight from Agricultural Commissioner's Office, and longer reentry period.

Upon review of current science around glyphosate products and having a better understanding of the efficacy of alternative weed control methods, staff requests authority to resume use of glyphosate products provided the following safety protocols, which have historically been in practice and required by law, to be followed:

- Strictly adhere to the use and warnings on the product label
- Wear appropriate clothing: long-sleeve shirts/pants and gloves
- Wear goggles and face coverings
- Product will only be applied in low wind conditions
- Product will not be used in areas that will have general public access before the product dries (this is a recommendation listed by the manufacturer)
- Provide signage of applications in areas where there is greater public access.

The Public Works Director, Parks, Recreation and Community Services Director, General Services Director and Riverside Public Utilities General Manager concur with the recommendations in this staff report.

FISCAL IMPACT:

Should the temporary glyphosate moratorium be lifted and use of glyphosate products be allowed, the fiscal impact by department users is as follows:

- An undetermined reduction in labor costs will be achieved associated with using glyphosate in lieu of more frequent applications of alternative weed abatement products.
- Public Works is expected to save at least \$100,000 on an annual basis. Funding for weed abatement is provided for by the Forestry and Landscape, Landscape Maintenance Contract account number 4110110-421203 and Street Maintenance Chemical Supplies account number 4110100-426600.
- Public Utilities will save approximately \$60,000 annually if allowed to resume use of Glyphosate based products for weed control. Affected account numbers are 6200006710-42100006 & 6100005910-42100006.
- Parks and Recreation will be able to save at least \$4,000 annually in addition to labor costs should it be able to resume use of glyphosate for weed control.

The City will save at least \$164,000 annually in total should staff be able to resume the use of glyphosate for weed control on City-maintained properties and facilities.

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Certified as to	
Availability of funds:	Edward Enriquez, Chief Financial Officer/City Treasurer
Approved by:	Moises Lopez, Deputy City Manager
Approved as to form:	Gary G. Geuss, City Attorney

Attachments:

1. January 19, 2020 Staff Report
2. City Map of Glyphosate Use
3. EPA Web Publication on Glyphosate
4. Reuter's internet news article dated June 22, 2020 titled "*U.S. Court Blocks California Cancer Label on Bayer's Roundup Label*"
5. Additional Resources on Glyphosate
6. Presentation