



City of Arts & Innovation

City Council Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL DATE: FEBRUARY 16, 2021

FROM: COMMUNITY & ECONOMIC DEVELOPMENT WARDS: ALL
DEPARTMENT

SUBJECT: ENDING THE TEMPORARY MORATORIUM ON THE USE OF GLYPHOSATE-BASED PRODUCTS AND ALLOW FOR THE RESUMPTION OF THEIR USE FOR WEED CONTROL ON CITY-MAINTAINED PROPERTIES AND FACILITIES

ISSUE:

Approve ending the temporary moratorium on the use of glyphosate-based products and allow for the resumption of their use for weed control on City-maintained properties and facilities.

RECOMMENDATION:

That City Council approve ending the temporary moratorium on the use of glyphosate-based products and allow for the resumption of their use for weed control on City-maintained properties and facilities.

COMMITTEE RECOMMENDATION:

On November 9, 2020, the Land Use, Sustainability, and Resilience Committee met with Chairwoman Plascencia with Councilwoman Edwards present and reviewed the information on the outcomes and impacts from the application of non-glyphosate products. Following discussion, the Committee voted unanimously with all members present to recommend the City Council approve ending the temporary moratorium and allow staff to resume the use of glyphosate products for weed control on City-maintained properties and facilities.

BACKGROUND:

In April 2019, a temporary moratorium was placed on the use of products containing glyphosate (e.g. Roundup) on City-maintained properties and facilities. 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 of Riverside has historically used Roundup to control weeds. From an aesthetic perspective, proper and safe use of Roundup has facilitated maintenance of City facilities, landscapes, open space, streets, alleys, vacant land sites, 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 non-systemic 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 affects the above ground portion of the plant and will later regrow from its root stock. For example, when a weed is sprayed with a non-systemic herbicide only the above ground portion of the weed will die and can later re-emerge 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 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 can be reviewed in Attachment 1. At this meeting, the City Council directed staff to collect additional information over the next six months and provide a report back.

DISCUSSION:

At the request of City Council, the following information has been gathered by staff and is discussed in detail below:

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 29 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 (RPU) 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 and divisions using glyphosate prior to the temporary moratorium include: Public Works; Parks, Recreation & Community Services; General Services; Riverside Public Utilities; Successor Agency; and Housing Authority. 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. Public Works operated facilities include the wastewater treatment facility, which is connected to the retention basin.
- *Parks, Recreation and Community Services Department* maintains developed and undeveloped 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* 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 entrance.
- *Successor Agency and the Housing Authority Divisions* hire contractors to maintain weeds on vacant land sites owned by each respective entity on an as needed basis.

Per the request of City Council, maps showing several 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 (Bayer), 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 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 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 residents are paramount. City departments are responsible for maintaining their 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 (DPR) 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 department for landscape maintenance and vegetation control are required by the City and regulations to hold current Department of Pesticide Regulation (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** has applied natural solution in certain areas of the airport, but not areas where aircraft operate due to the salt additives and the corrosive impact of salt to aircraft. The application of natural solutions takes several weeks to be completely effective. It should be noted that natural weed killer solutions are not labeled for weed treatment. Annual labor and material costs are estimated at \$10,700 for glyphosate treatments and increase by \$21,400 for multiple applications of non-glyphosate herbicides.

- *Parks and Recreation Department (Parks)* has tested several non-glyphosate herbicides including Fusilade II, MSO Gold, Lifeline, Polaris. The Parks department has had to combine chemicals to gain results needed to reduce weeds. This has resulted in increased material costs as glyphosate substitutes are more expensive. Additionally, frequency of spraying also increased in order to maintain the same weed-control levels as glyphosate. Parks had to adjust their current budget for an additional \$10,000.00 to cover additional materials costs and anticipates that adjustment may not be enough. Contractors have stated that they are either using manual control methods (pulling weeds) or applying chemicals that are listed above and increased their costs. The additional labor costs to use mechanical methods and or scheduling areas to be sprayed three times a year, instead of once, has increased costs by \$86,240.
- *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 substitute chemicals has resulted in:
 1. 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 FY 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 are likely to seek additional compensation, should the moratorium continue.
 2. Increased labor costs resulting from increased need for staffing resources. Staff and contractors are having to make multiple trips to the same areas for repeat treatments as alternative non-glyphosate product make 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. Applications of alternative chemical weed control products, such as Diquat or Lifeline, have increased annual applications to eight times per year as these products have 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 in 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.
- *Successor Agency & Housing Authority Divisions* utilize service contracts with a property maintenance general contractor who switched to a non-glyphosate-based product when

the moratorium was enacted. To minimize the cost to the City, a Spectracide spray was chosen based on cost and effectiveness. The Spectracide spray kills weeds within days of application, however the results are short lived. The use of a non-glyphosate-based weed control product has produced inferior results and has increased property complaints. The additional cost to the Successor Agency to use mechanical, as well as manual labor methods to abate weeds is approximately \$2,250.00 annually. Use of a Spectracide spray has increased the material cost by approximately \$4,540.50 annually.

The additional cost to the Housing Authority to use mechanical, as well as manual labor methods to abate weeds is approximately \$2,400.00 annually. Use of a Spectracide spray has increased the material cost by approximately \$4,872.00 annually.

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 Quality Treatment Plant) • 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. 	Yearly consumption, Public Works Sewer Water Quality Treatment Plant: Round-up vs. Alternative (Cheetah Pro) both products are concentrates. <ul style="list-style-type: none"> • One 30-gallon drum annually of Round-up, cost \$524.65 • Three 30- gallon drums annually of Cheetah Pro, cost \$2,136.94 x 3 = \$6,410.82 Annual additional cost for the sewer division at the facility is \$5,886.17 The increased usage of alternative 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. 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.
General Services	<ul style="list-style-type: none"> • 30% Vinegar, Salt and Dawn Dish liquid solution 	Material costs for mixing vinegar, salt and Dawn Dish liquid solution are \$13 per gallon

	<ul style="list-style-type: none"> • Spectracide Spray 	<p>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>
<p>Parks & Recreation</p>	<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 are approximately \$16,380, more than Roundup, and applications are less effective and are more labor intensive.</p>
<p>Successor Agency & Housing Authority</p>	<ul style="list-style-type: none"> • Spectracide Spray 	<p>The material cost for switching from a glyphosate-based product (Roundup) to a non-glyphosate-based product (Spectracide Spray) significantly increases the cost.</p> <ul style="list-style-type: none"> • Weed Abatement Under 1 Acre - \$87.00 per application + labor (Roundup) • Weed Abatement Under 1 Acre - \$130.50 per application x 3 applications = \$391.50 + labor (Spectracide Spray) <p>The alternative product (Spectracide Spray) is less effective when you factor in long term requirements. A one-time application of Roundup would require multiple (3+) applications of the alternative product to yield the same result. The alternative product can kill weeds within days, but the weeds return at a much faster rate, which increases costs, property complaints and is more labor intensive for both City and Contractor personnel.</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 require a 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, are 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:

- General Services estimates savings of at least \$32,100 in labor and materials annually. The Airport Fund's Chemical Supplies account number 2245000-426600 provides for weed abatement expenses.
- Public Works is expected to save at least \$100,000 on an annual basis. Funding for weed abatement is provided for by the Sewer Fund's Plant Maintenance account number 4125400-424130 for Maintenance/Repair of Buildings and Improvements, General Fund's Forestry and Landscape Maintenance/Repair of Buildings and Improvements account number 4110110-421203, and General Fund's Street Maintenance Chemical Supplies account number 4110100-426600.
- Riverside Public Utilities will save approximately \$60,000 annually if allowed to resume use of Glyphosate based products for weed control. Affected account numbers are the Water Fund's Professional Services account number 6200006710-42100006 and the Electric Fund's Professional Services account number 6100005910-42100006.
- Parks, Recreation and Community Services will be able to save at least \$16,380 annually in material costs in addition to labor costs should the department be able to resume use of

glyphosate for weed control. The General Fund's Parks, Recreation and Community Services account number for material costs is 5215000- 426600.

- The Successor Agency Fund would have an approximate annual cost savings of \$6,790 by using a glyphosate-based product (Roundup). Affected account number is 2805000-421000, which is an administrative account.
- The Housing Authority Fund would have an approximate annual cost savings of \$7,272 by using a glyphosate-based product (Roundup). Affected account number is 2875000-424130, Maintenance/Repair Building and Maintenance Account.

In total, the City will save at minimum \$222,542 annually should staff be able to resume the use of glyphosate for weed control on City-maintained properties and facilities.

Prepared by: David Welch, Community & Economic Development Director
Certified as to
Availability of funds: Edward Enriquez, Chief Financial Officer/City Treasurer
Approved by: Rafael Guzman, Assistant City Manager
Approved as to form: Kristi J. Smith, Interim City Attorney

Concurs with:



Councilwoman Gaby Plascencia, Chair
Land Use, Sustainability, and Resilience Committee

Attachments:

1. January 14, 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