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Title of meeting:	Cabinet
Subject:	Use of Pesticides on City Council Land
Date of meeting:	22 March 2022
Report by:	Director of Culture, Leisure and Regulatory Services Director of Housing, Neighbourhood and Building Services Director of Regeneration
Report authors:	Adrian Rozier, Parks Service Manager Phil Bentley, Head of Estates Services
Wards affected:	All

1. Requested by the Leader of the Council

2. Purpose

To update Cabinet on the city council's current use of pesticides, approach to reducing and minimising use and the trialling and practical implications of alternative methods.

3. Information Requested

3.1 Background

3.1.1 Pesticides are used by three council services in the maintenance of parks and public open spaces, communal areas surrounding council housing stock and citywide highway infrastructure (roads, pavements and other public realm areas).

3.1.2 This report informs on the current use of pesticides, consideration of alternatives and measures to reduce usage by the three services, these being Parks and Open Spaces (Culture, Leisure and Regulatory Services), Green and Clean (Housing, Neighbourhoods and Building Services) and Highways PFI Team (Regeneration). Parks and Housing operations are largely undertaken by in-house teams and highway maintenance work undertaken by COLAS.

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3.1.3 Strict controls are applied by the council on the pesticides that are applied to sites, with alternative methods being researched and trialled as they become available.

3.2 Current Use of Pesticides

3.2.1 Pesticides, also known as 'plant protection products' are used to control pests, weeds and diseases. Examples include insecticides, fungicides, herbicides, molluscicides, and plant growth regulators. They can exist in many forms, such as solid granules, powders or liquids and consist of one or more active substances co-formulated with other materials. The active substance or substances within a pesticide has the controlling effect on the pest, weed or disease.

3.2.2 The council uses the following types of pesticides for selective applications and only when required:

Type	Number of products	Treatment	Area Used
Biocide	1	Moss, algae	Paved areas / hard surfaces
Fungicide	2	Foliar	Roses, sports turf
Herbicide	8	Weeds (including Japanese Knotweed)	Paths and paved / hard surfaces, gullies, tree bases, street furniture bases, shrub beds, sports turf
Insecticide	2	Pest control (including Brown Tail Moth)	Infected plant areas only

3.2.3 The use of herbicide to control weed growth on hard surfaces is by far the most common form of pesticide in use by the authority. Weed growth can interfere with visibility for road users and weeds in kerbs or around drains can prevent or slow down drainage. Their growth and moss on pavements may eventually become a trip / slip hazard for footway users. Application of chemical herbicide is used ahead of mechanical weed control due to the ease of application, which often saves on the cost of labour and is carefully targeted to minimise product use. It remains the most effective and cost-efficient means of weed control.

3.2.4 Restricted use of selective herbicides are used for the control of weeds on fine turf and sports areas such as cricket squares, bowling greens and golf greens to control broadleaf weeds and retain a safe and uniform playing surface. This is only carried out to affected areas and where it is not practical to manage the control by hand.

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- 3.2.5 Fungicides are required to prevent and remove fungal attacks on fine turf areas such as golf greens, where high quality surface condition is closely associated to participation and player satisfaction. Other grounds maintenance operations are carried out to reduce the potential for recurrence, such as increasing aeration by mechanical means.
- 3.2.6 Small pesticide plugs are inserted into tree stumps where access by a mechanical stump grinder is not possible and there is a need to control re-growth or spread.
- 3.2.7 The city also has small pockets of Japanese Knotweed and where this is identified, stems are injected with herbicide (glyphosate) to control this invasive species. Other harmful and invasive plants may be treated to maintain their control.

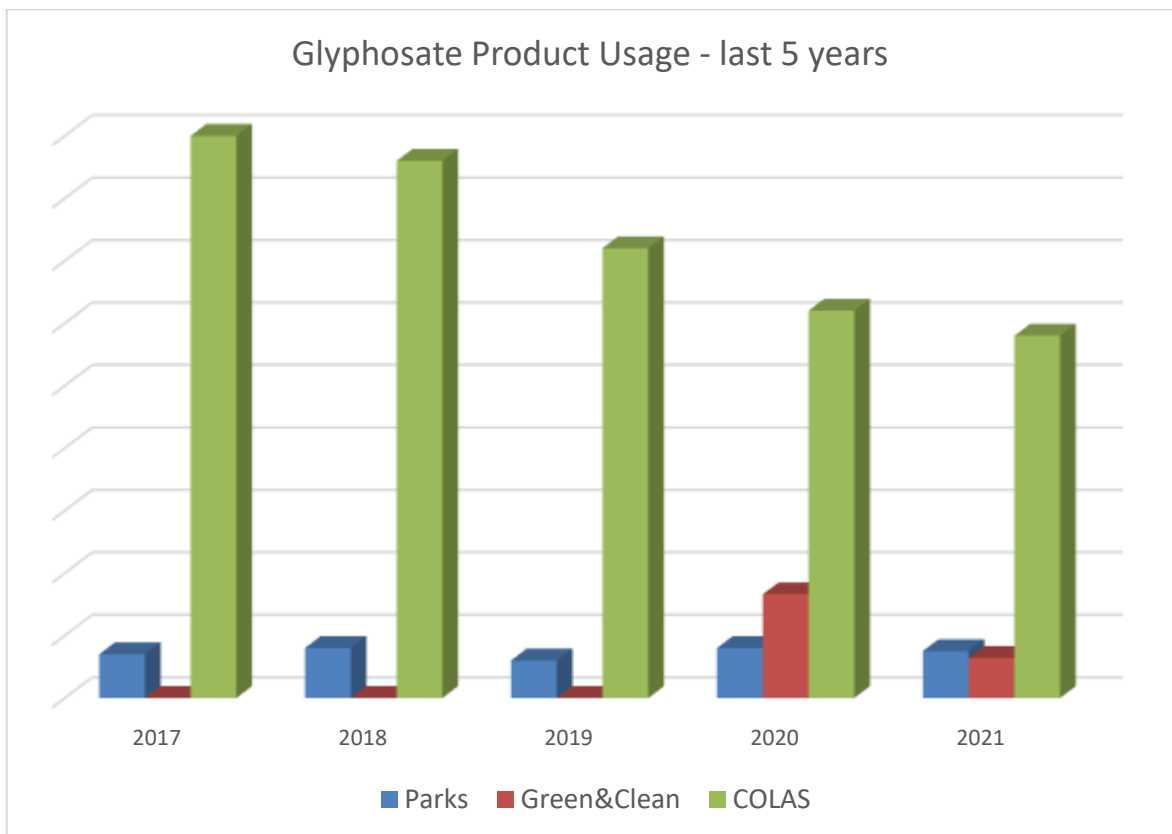
3.3 Use of Glyphosate

- 3.3.1 In 2015, the World Health Organization's International Agency for Research on Cancer (IARC) identified glyphosate, the world's most commonly used herbicide, as a "probable human carcinogen". This report has been contested by the manufacturers of glyphosate who maintain the product remains safe to use. Whilst there has probably been more scientific scrutiny of glyphosate than any other weed control product, the evidence relating to this remains both complicated and conflicting.
- 3.3.2 All products containing glyphosate have previously had to be registered and approved by the European Pesticides Commission having been subjected to a rigorous scrutiny process. From 1 January 2021, an independent pesticides regulatory regime is in operation and new decisions taken under the EU regime will not apply in Great Britain, with the Health and Safety Executive (HSE) the national regulator for the whole of the UK.
- 3.3.3 Authorised use of glyphosate has a current EU expiry date of 15 December 2022, but the legislation introduced post-Brexit means active substance (glyphosate) approvals due to expire before December 2023 now allows extension for 3 years to allow time to plan and implement the GB review programme. Should this extension be applied to glyphosate, it will remain authorised for use until December 2025 unless the Health and Safety Executive exercises its power to review this approval at any time, should new evidence identify any concerns to human health or the environment.
- 3.3.4 Regardless of whichever timescale applies to authorised use of glyphosate, there is a will by all council services to continue reducing dependency on pesticides and using alternative methods to chemical control where these are available and demonstrated to be effective.

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3.3.5 The below graph shows the amount of glyphosate product used by council services over last 5 years:



Notes to be read in conjunction with graph:

1. Parks usage in 2020 includes additional areas to the west of the city and schools being incorporated within the in-house service and 2021 usage includes Great Salterns golf course being incorporated within the in-house provision. Reduction in actual use across all parks areas now maintained in-house is estimated at between 25-30%.
2. Green&Clean usage figures for 2017-19 are not available for representation but show a 60% reduction between 2020 and 2021.
3. COLAS figures represent a 35% reduction in the last five years.

3.4 Reducing use of Pesticides

3.4.1 All council teams involved with grounds maintenance or that use pesticides in maintaining the highway infrastructure and public realm work to the Plant Protection Products (Sustainable Use) Regulations 2012 (formerly the Sustainable Use Directive) and the requirement to consider all available methods of intervention that are economically viable but that minimise risk to human health and the environment.

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3.4.2 The steps the council are currently taking to reduce and minimise the use of pesticides include:

- Restricting use to a minimum - pesticides are only used where they are required - all treatments are targeted with no preventative treatments carried out, whether that be weed or pest control.
- A selective herbicide is no longer applied to any grassed area, other than high amenity sports turf (excluding football pitches).
- Use of weed suppressants - increased mulching of shrub beds and new tree plantings using recycled woodchip from tree works carried out in the city helps to suppress weed growth and the need for treatment.
- Overplanting - an annual winter improvements programme allows for planting beds to be supplemented (gapped-up) or re-planted, not only for their aesthetic and environmental gain, but to reduce areas for weed growth and need for future treatment.
- Maintaining surface integrity - working procedures are in place for surveyors to report surface defects and arrange timely repairs. The efficient reporting of repairs reduces the potential for weeds to grow as they would through damaged paved and hard surfaces. Collaborative working between site surveyors and design teams influence future decision making around the type of surfacing and street furniture.
- Reduced mowing of grass - to enhance and support biodiversity, teams have relaxed mowing regimes to an increasing number of areas across the city and continue to trial expansion of this. Public response has been favourable where this has been introduced and continues to inform further areas where the right balance can be found between increasing wildlife friendly grassland and scrub and public amenity use and respecting walking desire lines. All sites are on a case-by-case assessment and these changes are being monitored and reported through updates on the Council's greening strategy. Wilder site boundaries mean herbicide is no longer applied along areas such as fence lines.
- Mechanical and manual cultivation - chemical treatment is no longer used when preparing beds for the popular and increasing number of wildflower and meadows seeded areas that have been incorporated across a range of green spaces and adjacent residential housing and highways.
- Mechanical weed ripper machines are used to remove moss and weeds to suitable housing curtilage areas and ball courts.
- Manual weed removal is still employed where relatively small areas are affected and it remains more time-efficient for operatives to undertake the necessary control using hand implements, than for this to be followed up by scheduled herbicide treatment.

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- All staff involved in the selection of and use of pesticides have received the necessary training to ensure it is safely applied and is used to a minimum.
- Continual review - teams continue to work with product suppliers to ensure any pesticide used is based on an informed decision and where herbicide is still required, products other than glyphosate are used where possible, or that help reduce the amount used in the weed growing season.

3.5 Alternatives to Chemical Weed Control

3.5.1 Whilst the Council continue with targeted use of pesticides where it is required, all are open to and have trialled alternatives that are on the market, each with pro's and con's. These include:

Method	Use	Advantages	Disadvantages
Hot Foam (thermal treatment)	Weeds in hard and gravel surfaces Moss on hard surfaces and play safety surfacing Grass, where control is required (ie. tree bases)	Foam forms a thermal blanket around heated water and the weed, using natural plant oils Not weather dependent Claimed to kill high percentage of weeds, including roots	Does not kill all weeds on first application Expensive - needs investment of £20k for equipment (estimated to cost £51k to include transport, staffing and materials) Vehicle transport and boiler are diesel powered, increasing carbon footprint Not suited to use on highway network or spaces where access is restricted Resource intensive Time consuming
Hot water / steam (thermal treatment)	Weeds in hard and gravel surfaces Moss on hard surfaces and play safety surfacing	Lower initial purchase cost than hot foam	Requires repeat treatments as heat does not sufficiently damage plant / root structure Diesel consumption and transport increases carbon footprint Resource intensive Time consuming

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Method	Use	Advantages	Disadvantages
Flame gun / weed burners (thermal treatment)	Weeds in some hard surfaces	Relatively cheap to purchase	Health and safety risk when used in public areas Not fully effective
Electrocution	Weeds in hard and gravel surfaces	Pesticide free	Health and safety risk when used in public areas (high-voltage) Diesel consumption increases carbon footprint Time consuming
Mechanical removal blade (highways) / sweeper ripper attachments (paving) See Appendix A	Weeds along kerb lines and in hard surfaces	Attachments can utilise existing machinery	Health and safety risk of projected debris Requires a clear pathway (highways) Ancillary damage to paved areas and kerbing Severs weed head but does not treat root system effectively Fuel consumption increases carbon footprint Risk of manual handling injuries including Hand Arm Vibration Syndrome (HAVs) Resource intensive Time consuming
Vinegar	Weeds in hard and gravel surfaces	Low competence level for application	Not fully effective Strong smell
Soda crystals	Moss treatment	Cheap and effective Low competence level for application	Labour intensive to mix product, apply and agitate moss Slippery on contact, creating alternative hazard
Manual removal	Weeds generally	Effective Low set-up cost	Very time consuming Teams would require significant additional staff resource Increased risk of staff injury

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3.6 Hand Arm Vibration Syndrome (HAVs)

- 3.6.1 Hand-arm vibration syndrome (HAVS) comes from the use of hand-held power tools and is the cause of significant ill health (painful and disabling disorders of the blood vessels, nerves and joints). HAVS is preventable, but once the damage is done it is permanent.
- 3.6.2 The equipment used in some alternative methods of weed control has the potential to increase staff exposure to Hand Arm Vibration Syndrome (HAVS) and this must be managed by risk assessment. The assessment is to mitigate risk and does not completely remove it. To engage in further mechanical treatment of weeds will pose additional risk to staff by its very nature (see Appendix 1) and it is pertinent that previous risk assessment of HAVS has directed services to using herbicides to reduce this exposure.
- 3.6.2 Chemical application is only carried out by qualified and competent operatives and all staff involved in the selection and use of pesticides have received the necessary training to ensure it is safely applied and with minimal use. This report identifies that not only is pesticide use financially economical but is also economical in relation to the level of resources required to complete such tasks. Spray application of a pesticide does not present qualified staff the risk of Hand Arm Vibration Syndrome.

3.7 Future Use of Pesticides

- 3.7.1 It is widely recognised that public use and interaction with open spaces has changed notably in the last 18 months, with a significant increase in usage levels. This has further increased debate and awareness around climate change and concern over anything that is considered to have harmful effect on people, the environment, wildlife or that can have a lasting effect on biodiversity generally. There is greater engagement in the way our public spaces are managed, how they are maintained and allowing for sites to be adapted to connect green infrastructure across this densely populated city.
- 3.7.2 Charities such as Pesticide Action Network (PAN UK) seek to promote safe and sustainable alternatives to pesticide use. It campaigns for pesticide free towns and a number of authorities are recorded as having signalled a phased reduction or end to the use of glyphosate and/or all pesticides, although highways management is often separated from the management of parks, play areas and public footways around housing estates.
- 3.7.3 A commitment to banning the use of all pesticides is not considered a feasible option at this time where there is no viable alternative that is as effective and meets the city's cost and resource constraints for the wide range of circumstances

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where they are currently in use. Appendix A is one example of a recent trial that illustrates this. The significance of weed growth each year is closely aligned to environmental conditions, but the poor appearance and overrun condition of public realm areas in Brighton and Hove was well-publicised in 2021, following the withdrawal of glyphosate from operations. Numerous examples have been illustrated of walkways and public areas being taken over by plant growth, causing reputational damage and reported petition for this to be addressed, as well as claims of surface damage and trip hazard. Engagement with authorities that have committed to a phasing out of pesticides or banning certain products has been commenced by service lead-officers and will help inform success and failures experienced to date.

- 3.7.4 The council's approach is to continue to work towards a reduced, minimal use of pesticides and an integrated or pesticide-free solution wherever possible. The in-house maintenance teams are already committed to reducing the use of all pesticides (see graph in 3.3.5) and the measures being taken to significantly reduce this use are documented in Section 3.4 of this report, resulting in positive outcomes to date. Pesticides will only be used where they are required and where there is no equally effective and cost-efficient alternative (see Appendix A). Continued engagement with authorities that have committed to a phasing out of pesticides or banning or products will further inform success and failures experienced to date.
- 3.7.5 The maintenance of highway infrastructure is subject to a contractual arrangement and specification requirements that require formal amendment if resulting in a material change to the way the infrastructure is managed (such as banning the use of pesticides). Public highways and footways need to be effectively treated to maintain structural integrity, clear flow of drainage channels and avoid trips hazards and slippery surfaces. Trials to find a pesticide free alternative that can meet the complexities of the highway network will continue as alternatives become available.
- 3.7.6 Green spaces will continue to be assessed on a site-by-site basis and a whole site management approach that may incorporate more wildflower and wildlife friendly grassland that increases connectivity for biodiversity and reduces or eliminates the need for herbicide application. Work will continue to naturally suppress the growth of weeds with the use of recycled mulch and maintaining well-stocked planted areas.
- 3.7.7 There is opportunity for green spaces to be managed in consultation with local communities, such as Allotment Associations, Friends Groups and housing residents, to help determine areas where maintenance and use of pesticides may be relaxed and wildlife and biodiversity enhanced.

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- 3.7.8 Invasive and other harmful plants, such as Japanese Knotweed, will continue to be treated with glyphosate as there is no suitable alternative available, so the city council can control growth and spread to neighbouring land. Fine turf areas may also necessitate pesticide treatment to retain their required performance standard until pesticide free alternatives become available, with routine maintenance targeted at prevention of pest and disease, rather than curative treatment.
- 3.7.9 Manual weed removal will still be employed where relatively small areas are affected and it remains more time-efficient for operatives to undertake the necessary control using hand implements. Increased participation by volunteer groups can help support the extent of areas that can be maintained by hand.
- 3.7.10 Chemical application is only carried out by qualified and competent operatives and all staff involved in the selection and use of pesticides have received the necessary training to ensure it is safely applied and with minimal use. Their use is both financially economical and economical in the level of resources required to complete tasks. Spray application of a pesticide does not present qualified staff the risk of Hand Arm Vibration Syndrome.
- 3.7.11 Maintenance teams will continue to work together, in conjunction with product suppliers and with other authorities to share learning and assessment of alternative products that reduce active ingredient usage, offer pesticide-free solutions and adopt integrated control methods where these are proven to be successful. The assessment of alternatives includes capital outlay and ongoing revenue costs such as servicing and maintenance, transport, fuel and power source, consumables, staff welfare and staff resources (including additional treatment visits to that of chemical weed control if required).
- 3.7.12 The environmental benefits of working towards reduced or pesticide-free solutions should also consider the impacts of increased use of fossil fuels and emissions associated to machinery and equipment that enables this transition. In the main, compromise of one is required to offset the other and future operations must account for both. Officers will work with the council's Principal Strategy Advisor for Carbon Management when comparing predicted CO₂e values between existing treatment methods and potential alternatives.

3.8 Financial Consideration

- 3.8.1 A full financial evaluation has not been carried out for each alternative method to pesticide use due to the perceived disadvantages outweighing the advantages, that means they are not considered a viable alternative at an early stage. Where this includes a capital outlay cost or increase in staff resource, this results in a financial implication in addition to assessment of effectiveness.

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- 3.8.2 Whilst in-house teams have not undertaken a comprehensive financial evaluation, the demonstrations and trials undertaken to date provide an indication on the potential financial impacts if Portsmouth were to expedite the reduction in use of pesticides through the investment in mechanical treatments for weeds:
- The trial illustrated in Appendix A results in an estimated increased cost in the region of £49k to equip all Housing Green & Clean area teams with mechanical weed rippers, vehicles and additional staff resource for the treatment of all weeds across housing estate hard surfaces.
 - Following the demonstration of the Foamstream (Weedingtech) thermal treatment machine offering the highest productivity, the Parks Team estimate it would result in an increased cost in the region of £51k to purchase the machine, vehicle, additional staff resource and sundries for the treatment of all weeds across parks and open spaces, including cemeteries.
- 3.8.5 These estimates are high-level, based on limited feasibility and are not an indication these alternatives are recommended to become the adopted method. Neither of these estimates can account for the unknown of repeat treatment frequencies necessitated by their degree of effectiveness. However, it does suggest this would result in additional cost of approximately £100k for both the Parks and Housing Green & Clean teams to adopt alternative practices to applying herbicide.
- 3.8.6 The in-house teams of Parks and Housing have no financial capacity to support the transition to either the hot foam or mechanical alternatives and pesticide application, and there are no identified scheduled works or activities that can be stopped to create capacity, without wider impact. These costs would need to be met from Housing rent payer (via the service charge) and / or the general fund.
- 3.8.7 It is not established what financial consequences may apply to the Highways PFI should there be a requirement to change the contract specification and the use of pesticides in the management of the highway network, or how this may be achieved. This cannot be investigated further until re-structure within the Highways PFI Team is complete. However, since the highway network is extensive and requires the highest volume of herbicide application by any of the teams, any move away from the most effective and cost-efficient method of control will likely be at considerable expense.

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Signed by (Director)

Appendices:

Appendix A - Weed Removal Trial

Background list of documents: Section 100D of the Local Government Act 1972

The following documents disclose facts or matters, which have been relied upon to a material extent by the author in preparing this report:

Title of document	Location