Agenda Item

Report

Report to:	**Climate Change and Sustainability Committee**
Date of Meeting:	**8 February 2023**
Report by:	**Executive Director (Community and Enterprise Resources)**

Subject:	**Pesticide Free Council Motion - Update**

1. Purpose of Report

1.1. The purpose of the report is to: -

- provide a final report on the trials undertaken with regard to alternative weed control methods and propose recommendations following those trials

2. Recommendation(s)

2.1. The Committee is asked to approve the following recommendation(s):-

(1) note the content of this report, and
(2) agree the recommendations outlined in section 4.6.

3. Background

3.1. On 16 December 2020, the Council considered a motion regarding a proposal for South Lanarkshire to become a Pesticide free Council. On 10 February 2021, the Climate Change and Sustainability Committee considered a report which outlined work undertaken in respect of the approved motion and set out information in relation to that motion.

3.2. A further report was presented to the Climate Change and Sustainability Committee on 25 August 2021 providing members with an update on the trials requested by the previous Committee. Given the extent and time required to evaluate the impact of further trials, it was agreed to provide a final report early 2023.

3.3. Ground Services have signed up as an associate member of the amenity forum and attended their conference in October 2021. This conference highlighted new legislation in relation to the use of herbicides and as well as alternative methods and integrated approaches in dealing with weed control.

4. Trial Update and Recommendation

4.1. Ground Services, whilst undertaking a series of trials of alternative methods of weed control, has, in the main, continued to use glyphosate on a range of surfaces in the absence of a reliable and affordable alternative. Reasons for using herbicide are outlined in Appendix 1. The Service has, however, reduced the application on areas such as grass verges where grass cutting maintenance is not affected. The Service has also amended the timetable for application in school grounds, providing this core function during school holidays.

4.2. The application continues to be carried out by trained operatives using a licensed and legal product through knapsacks, motorised vehicle (quad bikes), stem injection and controlled droplet application (C.D.A.).

4.3. The table below sets out the volume of glyphosate used by the Service over the last 4 years with a **30% reduction** in usage since passing of the Council Motion in 2020. This is a significant achievement and testament to the work undertaken to reduce usage in specific areas and trialling appropriate alternatives.

Year	Usage (Litres)
2019	4,462
2020	N/A (Covid)
2021	4,187
2022	3,123

4.4. Appendix 2 provides further detail on these trials. A summary of each trial is assessed against three categories (Climate; Control; Cost) and a recommendation is shown in the table below.

Product/Method	Climate	Control	Cost	Recommendation
Glyphosate	Medium	Good	Med/High	Continue and review locations to further reduce usage
Hot Foam	High	Poor	High	Continue and expand usage
Hot Steam	High	Poor	High	Do not continue, poor across all measures
Manual	Low	Good	High	Continue in small areas due to cost
Mankar Lances	Low	Good	Med	Continue and increase usage
New Way Spray	High	Poor	High	Do not continue, poor across all measures
Pedestrian Brushing	Low/Med	Good/Med	Med	Continue in small areas
Mechanical Brushing	Low/Me	Good/Med	High	Continue and expand into areas with slabbed paths
Mechanical Thermal	High	Poor	High	Do not continue, poor across all measures

4.5. Overall, the trials can be considered a success as usage of Glyphosate has reduced by 30% during the trial period. However, it is evident that there are no clear alternatives at this point that would allow the complete removal of glyphosate from the Council's weed control approach. Some methods proved expensive or resource intensive whilst others have negative environmental impact or are simply ineffective in controlling weed growth.

4.6. The trial process has demonstrated a clear direction of travel for decreasing usage of glyphosate. It is recommended that the Service continues to use 5 of the 8 alternatives tested and expand usage beyond the pilot areas to maximise impact. Financial implications are outlined in section 6.

4.7. This approach will also support delivery of the Council's obligations as part of the new "National action plan on the sustainable use of pesticides". The action plan requires councils to reduce usage of herbicides and test alternative methods of weed control. The Council is complying with these commitments, with all staff appropriately trained in the application of herbicide and registered with the legislative bodies.

4.8. The recommended approach will ensure we meet our legislative requirements and set out a direction of travel to decrease usage over time. The pilots have also shown that most alternatives are not suitable for hard standing areas which means that Glyphosate will continue to be utilised in some form in areas such as roads and footpaths and kerbside channels. We have reviewed usage in areas of concern highlighted previously, for example we only use in the vicinity of schools during holiday periods and we plan to implement appropriate alternatives in play areas.

5. Employee Implications

5.1. The new methods of weed control will now be incorporated within day to day operations with staff receiving any additional training required for equipment and machinery.

6. Financial Implications

6.1. During the first year of trials, the service purchased the Hot Foam system at a cost of £15,000. It is proposed to purchase additional Mankar lances and mechanical brushing sets at a total cost of £23,250 and lease 2 additional compact tractors at a cost of £10,000 per annum. The one-off costs will be met by re-profiling current machinery and equipment inventory to include new weed control tools. The recurring additional lease spend will be offset by reduced annual spend on glyphosate with a current estimate of £11,000.

7. Climate Change, Sustainability and Environmental Implications

7.1. The decision to apply herbicides to control weed growth is one that is widely debated and attracts differing views. There are obviously environmental implications with their application, however, the purpose of this trial was to look at the alternatives and reduce the existing use of glyphosate. However, some of the alternative methods do generate additional CO^2 and use more water and this has been taken into account in the evaluation.

8. Other Implications

8.1. There are no risk implications associated with the information contained in this report.

9. Equality Impact Assessment and Consultation Arrangements

9.1. This report does not introduce a new policy, function or strategy or recommend a change to an existing policy, function or strategy and, therefore, no impact assessment is required

9.2. There is no requirement to undertake any consultation at this time in terms of the information contained in this report. However, as detailed proposals are developed, these will be subject to further appropriate consultation arrangements.

David Booth
Executive Director

25 January 2023

Link(s) to Council Values/Priorities/Outcomes

- Improve the lives and prospects of everyone in South Lanarkshire
- Caring, connected sustainable communities
- People live the healthiest lives possible
- We will work towards a sustainable future on sustainable places

Previous References

- South Lanarkshire Council - 16 December 2020 – Pesticide Free Council
- Climate Change and Sustainability Committee 10 February 2021 – Pesticide Free Council Update
- Climate Change and Sustainability Committee 25 August 2021 – Pesticide Free Council Update

List of Background Papers

- None

Contact for Further Information

If you would like to inspect the background papers or want further information, please contact:
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Appendix 1 Main reasons for continued use of herbicides to control weeds.

- Damage to infrastructures such as paths, roads, stairs.
- Serve as hosts for plant diseases or provide shelter for insect pests.
- Can be harmful to human and animal health, e.g. hay fever, poisonous leaves, berries, toxic when wilted.
- Limit the choice of planting when areas become infested.
- Can produce chemical substances, which are toxic to desired plants, as well as animals and humans.
- Interfere and block irrigation channels, impeding water flow and surface drainage systems.
- Can decrease land value especially invasive species.
- Can have an aesthetic impact.
- Can cause safety issues such as fire hazard near power stations
- Can reduce visibility splays at road junctions

Appendix 2 Alternative methods trialled

Hot Foam

This method uses hot water applied directly onto the weed growth and this is complimented by adding a layer of foam which acts to keep the heat from the hot water which is designed to kill the weed at a higher temperature for a longer period thus enhancing the 'kill'. The foam is created from a natural plant-based oil and is mixed through when the water/steam as it is being applied. The unit required to heat the water/ apply the foam is currently on hire at a cost of approx. £1,000 per week (£23,000 to purchase). The level of kill achieved is not 100% and regrowth is seen to appear after 2 weeks at best. The treatment does not kill the root system which leads to this rapid regrowth. Glyphosate would normally be effective for between 8 and 12 weeks. Additional vehicle hire dedicated to supporting this operation is a further £200 per week. The unit is using 1,000 litres of water every fill with approximately 4 fills required each day. Normal glyphosate usage would see water usage at approximately 90 litres. The hot water is generated by a diesel operated pump and heating system so increased C02 emissions are experienced. Recent reports suggest this is 5 times the average family water usage. This system does not kill the root of perennial weeds and grasses so repeat treatments are required. Manoeuvrability is cumbersome and, as the unit requires to be contained on a crew cab vehicle, the spraying operation is restrictive and is seen in some areas to cause issues for pedestrians safely accessing footpaths/pavements. The nozzle used to apply the hot water/ foam is attached to the heating unit by way of a 50-metre hose and therefore the vehicle requires to be moved on a regular basis and in effect after 50 metres in each direction has been treated. This results in the treatment becoming a 2-person job. In addition, there are issues with vehicle movement, pedestrian safety and noise from the generator in built up areas for a period of time which would suggest that this alternative would not be appropriate for use in all areas requiring weed control.

Hot Steam

The use of this process was carried out as a demonstration at no cost to the Service. However, the purchase of the heating unit would be around £23,000 and similar to the hot foam treatment would also require a dedicated vehicle at approximately £200 per week and is likely to be a 2-person operation for similar reasons as the Hot Foam process. Although similar to the Hot Foam system, this method does not incorporate the foam resulting in the hot water losing its heat more quickly and therefore not killing the weed as efficiently as the hot foam system. It is anticipated that regrowth will be rapid as this system does not affect the root system. Whilst the unit has a smaller water tank it is expected that this will use in the region of 4,000 litres per day. Normal glyphosate usage would see water usage at approximately 90 litres. The hot water is generated by a diesel operated pump and heating system so increased C02 emissions are experienced. Recent reports suggest this is 5 times the average family water usage. This system does not kill the root of perennial weeds and grasses so repeat treatments are required. Manoeuvrability is cumbersome and as the unit requires to be contained on a crew cab vehicle the spraying operation is restrictive and is seen in some areas to cause issues for pedestrians safely accessing footpaths/ pavements.

New Way Spray

New Way Spray is a form of non-selective herbicide and promoted as an alternative to Glyphosate. It mainly contains acetic acid which will control most weeds, grasses and moss for use on hard surfaces. This product is approved for use on hard surfaces to control moss, but not weeds. It is applied by way of a conventional knapsack but not via a motorised vehicle thus increasing operational time. The product is new to the market and does identify a number of hazards which Glyphosate based products do not currently have. It is highlighted as being particularly dangerous if it gets into the eyes or is inhaled and therefore requires a higher level

of PPE. The product can effectively be described as a strong version of 'vinegar' with application rates at a high level. 5 litres of New Way will treat 200m2 of land whilst 5 litres of glyphosate based weedkiller will treat 10,000m2 of similar land. This would result in material costs per 10,000m2 at £30 for glyphosate and £1,940 for New Way. The effectiveness of the product is poor with rapid regrowth and in some instances no effect at all.

Mankar
Ultra-Low Volume Lance Whilst this method continues to use glyphosate it is applied through a low volume lance which is very similar to a controlled droplet applicator (CDA). A 500ml bottle is filled with undiluted Glyphosate and this is then fed by gravity through a lance to a high spinning head which produces a fine droplet applied to the surface of weeds. The benefit of using this method is you still have the positive effectiveness associated with glyphosate however only half the product is required to cover an equivalent area. Chemical cost would be reduced, on the basis that the current 2 applications are found to be sufficient, however. this will be a manual operation and not one that can be carried on some areas by use of quad therefore labour costs would increase substantially.

Manual control
Manual weed control, so very much using the workforce to manually weed and clear the affected areas. This process is very time consuming albeit the weed control level is good as the full weed would in the main be removed therefore limiting or nullifying regrowth. However, based on the trial utilising a team of 5 operatives and vehicle at a cost of around £2,200 per week, this alternative is significantly more than applying herbicide. Given the scale of South Lanarkshire and the current financial climate, this approach is unfeasible.

Pedestrian Brushing
This is pedestrian controlled machinery with a rotating wire sweeper head at a cost of £1,000 per unit. They have been used for clearing smaller areas of monoblock within our sheltered or amenity houses complexes and they have proved useful for dealing with moss and low growing weeds between the monoblock or slabs. The weed kill rate is good as it does tend to pull out the full weed/moss and leave a clean finish after the area has been swept and the debris uplifted. The machinery has also proved to be very slow and the ground covered per day low in comparison to other alternatives and glyphosate.

Mechanical Brushing
This approach Involves the use of specially designed sweeping equipment that is mounted onto a small tractor to cover pedestrian footways. Specifically suited to cover larger areas, this machinery was trialled over some areas in East Kilbride as a demo so incurred no additional costs. The units required for the sweeping are dual units which fit to the front or rear of a small tractor unit up to 35HP. These are heavy duty brush heads which cover the full width of an average width path and mechanically brush the area removing most of the weed including the roots. They are particularly effective on slabbed areas as they can get between the slabs to remove not only the weed but any silt builds up. The costs of the units are approximately £10,000 and a small tractor unit would cost approximately £5,000 per annum to lease. The trial has shown that this is a good option for those areas with slab paths to reduce the need to apply herbicide. Like the pedestrian sweeping it does leave a clean finish but requires a sweep up after the unit to remove any weed and debris from the paths.

Mechanical Thermal

This equipment was trialled during the first year on a pedestrian unit, whilst this year the service secured a demo of the ride on unit. The equipment uses gas powered heat blown onto a hard surface, slabs or monoblock and thermally killing the top of the weed by very hot air rather than direct heat. The bottles are mounted on the rear of the machine and the gas burner sits at the front of the unit. The system requires a ride-on machine or compact tractor to transport and operate the thermal equipment. A small compact tractor or ride on would cost approximately £5,000 per year to lease and the thermal equipment costs vary depending on the units purchased. Weed control was similar to the hot foam and hot steam in that the green part of the plant was killed off but it quickly regenerated. There are also significant CO^2 emissions as the gas is burned to generate the heat.