

### Appendix 3: benefits and disbenefits of each option

Manual removal of weeds	Benefits	Disbenefits
Biodiversity and sustainability	Continuing to use manual techniques for weed management will mean the council continues its ban on glyphosate, except for in exceptional circumstances. This means the council can continue to deliver on its commitment to address the climate and biodiversity emergencies declared in 2018. Manual techniques will also support the delivery of The Living Coast UNESCO Biosphere objective on biodiversity conservation and Strategic Risk 36 which is to address climate and ecological change.	As evidenced by the experiences since 2020, a manual approach to weed removal means it is not possible to remove all weeds from across the city. Weeds in channels can inhibit surface water flowing in the channels and gullies. The weeds also trap rubbish and other detritus. These blocked gullies can then lead to surface water flooding.  Furthermore, the limitation of manual removal leads to more damage to the highway infrastructure. This means tarmac and paving slabs need to be repaired / replaced more frequently. There is a carbon cost to this.
Cost	There is no increase in cost for continuing with the manual removal of weeds. The same approach including tools and staff will be used as in 2023 to manage weeds across the city. This is budgeted for.	The higher sickness rate due to musculoskeletal injuries / issues may mean agency staff are required to undertake weed management. This will increase the cost of manual weed removal.
Efficiency / effectiveness		The Street Cleansing Service is demand led. Depending on need, staff can be deployed from weeding or their barrow route to deal with other tasks such as large events or clearing up around communal refuse or recycling bins. This means that even with a full resource and planned works, not all weed removal may take place.  There is high turnover of staff within the Street Cleansing Service which means the service is always carrying a level of vacancy. This is particularly the case for weed removal as it is intensive manual labour and staff find it is not the job for them, sometimes after one day. As evidenced in Appendix 1, there have been historic issues with recruiting enough staff to

Manual removal of weeds	Benefits	Disbenefits
		<p>undertake weed removal. This all impacts on the effectiveness of the manual approach to weed removal.</p> <p>It is not possible for operatives to weed all day. For example, mechanical weed rippers can generally only be used for 20 to 40 minutes before a break is required. Although staff are rotated, this means the efficiency of weed removal is affected.</p> <p>Having not used pesticide for five years, weeds in many parts of the city are well established, meaning they are bigger and more difficult to remove. There is not sufficient resource to be able to remove these effectively which means they are either strimmed or hoed. Strimming and hoeing the weeds does not remove roots; this means the weeds grow back quickly. Areas weeded at the beginning of the season need weeding again before the end of the season and there is not enough resource to undertake a second round of weed removal.</p>
Equalities		<p>As evidenced, a manual approach to weed removal means it is not possible to remove all weeds from across the city. This presents a risk that the council is not meeting its equalities duties by not keeping the city's highways clear and free of obstructions. Further information on the impact on some protected characteristics is available in Appendix 4.</p>
Highways		<p>Highways Inspectors have reported that weeds are now damaging the highway infrastructure. The highway carriageway currently has an immediate maintenance backlog of £57 million that is estimated to increase to £212 million by 2043 at the current rate of investment. The growth of weeds is currently not factored into these figures, but continuing with manual weed removal is likely to see this figure grow substantially. A typical replacement of a footway in asphalt is £11,000 for 100m<sup>2</sup>, and this equates to approximately three footway renewals per year from the existing footway safety budget. If the condition of footways continues to degrade due</p>

Manual removal of weeds	Benefits	Disbenefits
		<p>to damage caused by weeds, it will mean there will be an increased budget gap and pressure for the council.</p> <p>Weeds can also damage the carriageway surface which allows water ingress. Freezing, then thawing, causes the highway to form defects or premature deterioration of the surface.</p>
Public health	<p>There is conflicting evidence on the public health implications of the use of glyphosate. As detailed in the main report, a <a href="#">report from the International Agency for Research on Cancer in March 2015</a> found that the herbicide glyphosate was classified as “probably carcinogenic to humans”. Using manual techniques to remove weeds will mean this risk is mitigated.</p>	
Staff		<p>The manual removal of weeds is hard on the body. More staff are informing management of musculoskeletal complaints due to weeding. In the last 12 months, 56 street cleansing staff (out of 155) have received treatment from the on-site physiotherapist, citing ‘weeding’ as the cause or contributing factor to their injury or condition.</p> <p>The tools used to remove weeds manually present risks relating to whole body vibration and hand arm vibration. Appropriate training, breaks and PPE is provided but use of tools can impact on staff wellbeing and sickness levels.</p>

Controlled-droplet spray	Benefits	Disbenefits
Biodiversity and sustainability	<p>Using a controlled-droplet application is a better option than using traditional glyphosate.</p>	<p>Using a controlled-droplet approach will mean the council is not taking all the action it can to address the climate and biodiversity emergencies declared in 2018. It will not support the delivery of The Living Coast UNESCO Biosphere objective</p>

Controlled-droplet spray	Benefits	Disbenefits
	Controlled-droplet applications use less glyphosate than the traditional approach.	on biodiversity conservation or Strategic Risk 36 which is to address climate and ecological change. See Appendices 5 and 6 for more information on the sustainability implications. However, this option is a better option than using traditional glyphosate. This is because the application is applied in large droplets released under gravity (unlike the traditional method of glyphosate application, which is a pressurised mist). This reduces drift and the likelihood of the application adhering to non-target items.
Cost		Based on the soft market testing completed to inform this report, a controlled-droplet approach to weed management is not the most cost-effective way to manage weeds across the city. The estimated costs are more expensive than traditional glyphosate: £0.266m compared to £0.110m.  Funding for this treatment is subject to Budget Council approval in February 2024.
Efficiency / effectiveness	<p>Using a controlled-droplet application is likely to tackle most weeds and use less glyphosate.</p> <p>Controlled-droplet weed management may tackle the established roots. This may mean the weeds may not grow back once they have been treated.</p> <p>Using a controlled-droplet application will mean barrow operatives will have more time for other duties, such as litter picking.</p> <p>The use of contractors will mean the planned weed management work will take place (weather dependent) rather than having to respond to other needs within a demand led service.</p>	<p>Having not used pesticide for five years, weeds in many parts of the city are well established, meaning they are bigger and more difficult to remove. This means the controlled-droplet applications may not be as effective at removing these weeds compared to traditional glyphosate.</p> <p>Controlled-droplet applications are untried and untested way to manage weeds on hard surfaces on a large scale and because of this, more applications may be required, which will increase the cost.</p>
Equalities	The use of a controlled-droplet application is likely to mean the council is better placed to meet its equalities duties by keeping	Having not used pesticide for five years, weeds in many parts of the city are well established, meaning they are bigger and

Controlled-droplet spray	Benefits	Disbenefits
	<p>the highway free of obstructions. Further information on the impact on some protected characteristics is available in Appendix 4.</p>	<p>more difficult to remove. This means the controlled-droplet applications may not be as effective at removing these weeds compared to traditional glyphosate and may mean the council is not able to meet its equalities duties and keep the highway free of obstructions.</p>
Highways	<p>Using a controlled-droplet application is likely to mean there is reduced damage to the highway infrastructure, with weeds and their roots treated before they start to cause damage. This may lead to reduced cost of replacing / repairing the highway caused by weed damage.</p> <p>There is likely to be fewer trip hazards on the highway.</p> <p>There is likely to be less opportunity for water ingress meaning fewer instances of premature deterioration of the surface during freeze/thaw conditions.</p>	<p>Having not used pesticide for five years, weeds in many parts of the city are well established, meaning they are bigger and more difficult to remove. This means the controlled-droplet applications may not be as effective at removing these weeds compared to traditional glyphosate and may mean that repairs to the highway continue to be required due to damage caused by weeds.</p>
Impact on staff	<p>Using contractors to manage weeds means there will be a reduced need for manual labour and therefore the number of musculoskeletal injuries will reduce across the workforce. It will also reduce the risk of whole body vibration and hand arm vibration injuries.</p>	
Public health	<p>There is conflicting evidence on the public health implications of the use of glyphosate. A July 2023 assessment by the <a href="#">European Food Safety Authority</a> of the impact of glyphosate on the health of humans, animals and the environment did not identify critical areas of concern. On 16 November 2023, the European Commission renewed the approval for the use of glyphosate for a further 10 years.</p>	<p>There is conflicting evidence on the public health implications of the use of glyphosate. As detailed in the main report, a <a href="#">report from the International Agency for Research on Cancer in March 2015</a> found that the herbicide glyphosate was classified as “probably carcinogenic to humans”. However, using a controlled-droplet application is a better option than using traditional glyphosate. This is because the application is applied in large droplets released under gravity (unlike the traditional method of glyphosate application, which is a pressurised mist) and does not produce breathable droplets.</p>

Traditional glyphosate	Benefits	Disbenefits
Biodiversity and sustainability		Using traditional glyphosate will mean the council is not taking all the action it can to address the climate and biodiversity emergencies declared in 2018. It will not support the delivery of The Living Coast UNESCO Biosphere objective on biodiversity conservation or Strategic Risk 36 which is to address climate and ecological change. See Appendices 5 and 6 for more information on the sustainability implications.
Cost		Based on the soft market testing completed to inform this report, traditional glyphosate is the most cost-effective way to manage weeds across the city. The estimated costs are £0.110m (compared to £0.266m for a controlled-droplet approach).  Funding for this treatment is subject to Budget Council approval in February 2024.
Efficiency / effectiveness	<p>Traditional glyphosate is a tried and tested way to manage weeds, with many local authorities using glyphosate for weed removal, as well as homeowners in their own gardens. It is proven to work effectively and efficiently to tackle weeds on hard surfaces on a large scale.</p> <p>Traditional glyphosate will tackle the established roots. This means the weeds are unlikely to grow back once they have been treated, keeping the city's highways will remain free of weeds.</p> <p>Using a traditional glyphosate application will mean barrow operatives will have more time for other duties, such as litter picking.</p> <p>The use of contractors will mean the planned weed management work will take place (weather dependent) rather</p>	

Traditional glyphosate	Benefits	Disbenefits
	than having to respond to other needs within a demand led service.	
Equalities	The use of traditional glyphosate to manage weeds will mean the council is better placed to meet its equalities duties. Further information on the impact on some protected characteristics is available in Appendix 4.	
Highways	<p>Using a traditional glyphosate application will mean there is reduced damage to the highway infrastructure, with weeds and their roots treated before they start to cause damage. This will lead to reduced cost of replacing / repairing the highway caused by weed damage.</p> <p>There will also be fewer trip hazards on the highway.</p> <p>There will be less opportunity for water ingress meaning fewer instances of premature deterioration of the surface during freeze/thaw conditions.</p>	
Impact on staff	Using contractors to manage weeds means there will be a reduced need for manual labour and therefore the number of musculoskeletal injuries will reduce across the workforce. It will also reduce the risk of whole body vibration and hand arm vibration injuries.	
Public health	There is conflicting evidence on the public health implications of the use of glyphosate. As detailed in the main report, a July 2023 assessment by the <a href="#">European Food Safety Authority</a> of the impact of glyphosate on the health of humans, animals and the environment did not identify critical areas of concern. On 16 November 2023, the European Commission renewed the approval for the use of glyphosate for a further 10 years.	There is conflicting evidence on the public health implications of the use of glyphosate. As detailed in the main report, a <a href="#">report from the International Agency for Research on Cancer in March 2015</a> found that the herbicide glyphosate was classified as “probably carcinogenic to humans”.

