Appendix A -

Herbicide Free, Weed[1] Management Programme for Cambridge City Council

[1] The Cambridge Dictionary definition *any wild plant that grows in an unwanted place, especially in a garden or field where it prevents the cultivated plants from growing freely*

1. Introduction

1.1 Cambridge City Council has long been committed to environmental stewardship and sustainability, recognising the importance of preserving biodiversity and minimising the ecological impact of urban activities. As part of this commitment, the Council has declared a clear objective to eliminate the use of chemical herbicides on highway verges, roads, and pavements. This progressive decision reflects the Council's dedication to addressing environmental challenges, safeguarding public health, and contributing to a greener, more sustainable future.

1.2 The Council's initiative is underpinned by its broader Biodiversity Strategy, which aims to enhance local ecosystems, protect pollinators, and promote environmentally responsible practices in public realm maintenance, Cambridge City Council recognises the urgent need to transition towards sustainable alternatives that align with its environmental goals and the expectations of the community.

2 What wards will be cleared and when, and why this is the approach?

2.1 This report outlines the planned programme for systematically visiting and performing weed management in all 14 wards, detailing the sequence of operations and the rationale for adopting this structured approach. The programme aims to ensure a comprehensive, equitable, and efficient weed management approach that addresses both public footways and carriageways across all wards.

2.2 Planned Schedule for weed management Cambridge City Council's 14 Ward's

The weed management of wards will be conducted in the following sequential order:

- Kings Hedges
- Arbury
- East Chesterton
- West Chesterton
- Abbey
- Romsey
- Petersfield
- Coleridge
- Cherry Hinton
- Queen Edith
- Trumpington
- Newnham
- Castle
- Market

This schedule has been developed to ensure all wards are attended to in a systematic manner,

2.3 Rationale for the Chosen Approach

i. Comprehensive Coverage

The systematic, programmed approach guarantees that all wards, irrespective of their size or location, are included in the

cleaning schedule. This ensures a balanced distribution of resources and prevents areas from being overlooked or neglected.

ii. Maintaining Consistency and Transparency

By adhering to a structured order, residents, businesses, and stakeholders can be informed of the cleaning schedule in advance, fostering transparency and enabling communities to anticipate and prepare for cleaning activities.

iii. Efficiency in Resource Allocation

Programming the visits enables better planning and optimisation of resources, including resource, equipment, and logistics. This minimises unnecessary duplication of efforts and ensures cost-effective operations.

iv. Proactive Maintenance

A programmed schedule shifts the focus from a reactive to a proactive cleaning strategy. Rather than responding to isolated requests for cleaning, the program ensures that all areas are attended to systematically. This reduces the likelihood of accumulating cleanliness issues and enhances the overall appearance and hygiene of public spaces.

v. Enhancement of Public Spaces

Consistent weed management across all wards supports improved aesthetics, safer environments, and greater accessibility for residents and visitors. This contributes positively to community well-being and satisfaction.

2.4 The decision to manage all 14 wards demonstrates a commitment to comprehensive service delivery, operational efficiency, and community engagement. This proactive approach is expected to yield indirect long-term benefits by maintaining high cleanliness standards across all wards while addressing the needs of residents in a fair and structured manner. The programme will also serve as a model for future city maintenance initiatives, ensuring sustainability and continuous improvement.

3 Challenges in Implementing the Weed Management Work Programme and Mitigation Strategies

3.1 The systematic weed management of Cambridge City's 14 wards is a critical initiative aimed at removing the use of herbicides and improving the city's cleanliness, safety, and aesthetic appeal. This comprehensive programme seeks to enhance public spaces and streetscapes, providing residents and visitors with a healthier and more enjoyable environment. However, the programme's implementation is not without challenges. Addressing these issues proactively is essential to its success.

3.2 A significant challenge lies in resource constraints, including limitations in manpower, equipment, and financial resources. These constraints could affect the programme's efficiency and timely execution. Solutions include devising a detailed resource management plan to allocate teams and equipment effectively, prioritising larger or high-traffic areas. Collaboration with stakeholders and the establishment of contingency funding will also help ensure that unexpected needs, such as additional labour or equipment, can be met without disrupting the schedule.

3.3 Unpredictable weather conditions present another obstacle, as heavy rain or extreme heat can delay operations and reduce equipment efficiency. A flexible schedule will mitigate these disruptions, allowing for adjustments as needed. Using weather-resistant equipment will further ensure consistent progress under varying conditions.

3.4 The potential for community disruptions during works, such as blocked walkways and parking spaces, could lead to dissatisfaction among residents and businesses. Clear communication regarding schedules and anticipated disruptions, coupled with alternative access routes and off-peak operational hours, will help minimise inconvenience. Effective coordination with local stakeholders will ensure minimal impact on daily routines.

3.5 The varying weed management requirements of different wards, influenced by foot traffic, commercial activity, and environmental conditions, necessitate a tailored approach. Detailed work surveys

will identify specific needs, enabling efficient prioritisation. Deploying advanced technologies, such as power washers and mechanical sweepers, will expedite efforts in more demanding areas, ensuring consistent progress across all wards.

3.6 Public expectations regarding the speed and thoroughness of the programme must also be managed. Transparent communication about the scope, timeline, and limitations of the initiative will help set realistic expectations. Feedback channels will enable residents and businesses to voice concerns, which will be addressed promptly to improve operations. Regular updates on progress will maintain public trust and engagement.

3.7 Finally, waste disposal and environmental compliance present logistical challenges. Ensuring that collected waste is disposed of in accordance with environmental regulations is paramount. Partnering with certified waste disposal contractors and prioritising sustainable practices, such as recycling will minimise environmental impact. Staff training on proper waste segregation and disposal will further uphold compliance and sustainability standards.

3.8 By addressing these challenges with well-defined strategies, Cambridge City Council can successfully execute the weed management programme, fostering a cleaner, safer, and more attractive urban environment. A key aspect of this initiative is a more selective approach to pavement and roadside vegetation removal, ensuring that plants contributing to the city's aesthetic appeal and biodiversity are preserved. Additionally, integrating the new weed management programme with the Happy Bee Street[2] initiative allows residents to opt out—where feasible—from the removal of non-invasive greenery outside their properties. Continuous monitoring, adaptability, and public engagement will further support

[2] The Happy Bee Street scheme is an initiative aimed at promoting biodiversity and pollinator-friendly environments in urban areas. Under this scheme, residents can choose to opt out of standard weed removal practices, allowing non-invasive vegetation to remain outside their properties. By preserving flowering plants and greenery that support bees and other pollinators, the initiative contributes to ecological sustainability while enhancing the natural beauty of streetscapes. The scheme aligns with broader environmental goals, fostering a balance between urban cleanliness and the conservation of local wildlife.

the programme’s long-term success and commitment to a greener, more welcoming cityscape.

4 Process for dealing with parked cars

4.1 Ensuring vehicles are relocated to facilitate unobstructed cleaning of footways and carriageways is a crucial element of successfully implementing the weed management programme across Cambridge City. However, achieving this requires a carefully planned and coordinated approach that balances operational efficiency with community cooperation.

4.2 One of the key challenges lies in notifying residents and stakeholders well in advance to allow adequate time for vehicle relocation. Effective communication is critical to achieving compliance. This involves placing visible public notices in targeted areas at least one to two weeks before cleaning begins, supplemented by digital announcements through local government websites, social media platforms, and email newsletters. Direct engagement, such as leafleting or door-to-door notifications, further ensures that affected individuals are informed.

4.3 Working closely with colleagues from Cambridgeshire County Council's Highways department is essential. As the footways and carriageways are their assets, maintaining them through effective cleaning reduces the need for costly future repairs and aligns with broader infrastructure goals. Collaboration ensures that traffic management measures, such as temporary parking restrictions and enforcement, are executed smoothly. Clear signage and barriers installed 48 hours in advance help delineate restricted zones, while enforcement teams ensure compliance on the day of cleaning.

4.4 To minimise disruption, providing alternative parking options is another critical component. Identifying nearby streets or parking spaces for temporary use and notifying residents of these options in advance helps reduce inconvenience. Coordination with parking management teams ensures adequate capacity and smooth operations. On the day of cleaning, early-morning inspections help identify vehicles that have not been moved..

4.5 Post-cleaning, normal parking conditions are restored promptly, and efforts are made to maintain positive community relations. Updates through digital platforms confirm the completion of operations, while

a dedicated support line addresses any concerns or complaints. This transparent and responsive approach fosters trust and cooperation among residents and stakeholders.

4.6 By addressing these challenges through proactive communication, strong interdepartmental collaboration, and resident-focused solutions, the programme ensures efficient operations with minimal inconvenience. Maintaining the city’s footways and carriageways in this manner not only supports immediate cleanliness objectives but also reduces long-term maintenance needs, contributing to a more sustainable and well-maintained urban environment.

5 Role of Cambridgeshire County Council's Highways Department in TRO Management

5.1 Where voluntary compliance is insufficient, legal mechanisms such as TROs are essential to enforce parking restrictions. As custodians of the footways and carriageways, the Cambridgeshire County Council's Highways Department plays a critical role in managing TROs on behalf of Cambridge City Council.

- Implementation of TROs: The Highways Department is responsible for issuing TROs, ensuring that they are legally enforceable and fully compliant with statutory requirements.
- Clear Signage: Proper installation of TRO signage is key to informing the public about temporary parking restrictions and their enforcement. This signage must clearly communicate the times, dates, and areas affected by the restrictions.
- Collaboration with Traffic Enforcement Teams: The Highways Department works closely with traffic enforcement officers to ensure that non-compliant vehicles are dealt with efficiently. This includes arranging for vehicles to be towed, if necessary, while providing owners with clear instructions for retrieval and information on any associated fees.
- Enhancing Public Awareness and Minimising Disruption

5.2 To maintain public trust and minimise community disruption, the enforcement process must be transparent and fair. Steps to achieve this include:

- Public Awareness Campaigns: Raising awareness of the TRO's purpose and its role in supporting the weed management programme helps build public understanding and cooperation.
- Engagement with Residents: Providing clear, consistent communication before, during, and after enforcement actions ensures that residents understand the necessity of such measures.
- Feedback mechanisms, such as surveys or community forums, provide valuable insights into public concerns and help refine the process for future cleaning activities.

- To ensure the long-term success of the weed management programme, a focus on continuous improvement is essential. Key measures include:
- Evaluating TRO Effectiveness: Regular reviews of TRO management processes by the Highways Department can identify areas for improvement, ensuring smoother implementation in future cleaning cycles.
- Strengthening Communication: Enhancing advance notification methods and exploring innovative tools, such as automated systems for identifying non-compliant vehicles, can reduce operational challenges.
- Aligning with Maintenance Goals: Collaboration between the Highways Department and Cambridge City Council ensures that the cleaning programme contributes to the broader objective of preserving infrastructure, reducing the need for costly repairs and long-term maintenance.

5.3 The success of the weed management programme depends on effective collaboration with Cambridgeshire County Council's Highways Department, particularly in managing TROs to enforce parking restrictions. Their robust TRO framework, coupled with clear communication and transparent enforcement processes, ensures minimal disruption to the community while achieving the programme's objectives. By maintaining fairness, transparency, and operational efficiency, this structured approach supports both the immediate cleaning goals and the long-term preservation of vital infrastructure.

6 Equipment for the Weed Management Programme in Cambridge City

6.1 To support the effective delivery of Cambridge City Council's weed management programme across all 14 wards, a suite of specialised equipment has been procured. This equipment is tailored to ensure the efficient removal of weeds and detritus without relying on chemical herbicides. Below is a summary of the key equipment, its functions, and associated costs:

Equipment	Description	Function	Cost
HAKO 1650 Mechanical Sweeper with Weed Ripper Brush Attachment	Fitted with a weed ripper brush, ideal for cleaning carriageways, traffic islands, and footways. Designed for safe and efficient operation in busy traffic environments.	Removes dirt, debris, and weeds, preventing weed regrowth on hard surfaces.	~£110,000 for the full machine and attachments.
Kersten Weed Brush Attachment for John Deere Compact Tractor	Enhances an existing John Deere compact tractor for mechanical weed control, suited for larger and open areas.	Dislodges weeds from surfaces for easy collection and disposal.	~£12,000 for the attachment. (John Deere tractor already in fleet, no additional cost.)
Kersten Walk-Behind Petrol Matador M-Trac with Weed Brush and Sweeper	A walk-behind, petrol-powered unit with a weed brush and sweeper attachment,	Suitable for narrow footways and pedestrian-heavy areas, providing a manual but	~£18,000 for the unit and attachments.

Equipment	Description	Function	Cost
	ideal for confined spaces.	effective weed removal solution.	
Kersten RIPAGREEN – Easy Kit (341040) Thermal Lance	Uses intense heat for a non-chemical weed control method.	Ideal for areas where mechanical solutions are impractical, offering an environmentally friendly alternative to herbicides.	~£3,500 for the lance and associated equipment.
Boucher 650 LGV Channel Sweeper with Weed Ripper Brush	A large channel sweeper with a weed ripper brush, designed for roadside channels and carriageway edges.	Clears weeds and debris from gutter channels, ensuring clean and safe road edges in high-traffic areas.	No additional cost (already in fleet). Future business case for a dedicated unit.

7 Staffing Requirements for the Weed Removal Process

7.1 The Weed Management Programme in Cambridge City necessitates a dedicated and efficient team to manage the various tasks associated with weed management and weed management. Below is a detailed outline of the staffing requirements:

7.2 Dedicated Team for Weed Removal

Team Size: The programme requires a dedicated team of five staff members.

7.2.1 Roles and Responsibilities:

Mechanical Equipment Operators:

All team members who have been trained will operate the specialised mechanical equipment, such as the HAKO 1650 Mechanical Sweeper, Kersten Weed Brush, and Boucher 650 LGV Channel Sweeper. Their primary role is to ensure efficient operation and maintenance of the machinery during cleaning activities.

Walk-Behind Equipment Operators:

All staff members will handle the Kersten Matador M-Trac walk-behind units and the RIPAGREEN thermal lance, targeting areas that are less accessible to larger equipment.

Manual Labour Support:

The remaining team members will focus on manual removal of weeds in areas unsuitable for mechanical or thermal methods, as well as assisting with loading and waste disposal.

Public Realm Skilled Operative:

One team member may act as the lead to coordinate the works, ensuring that the cleaning schedule is adhered to, resources are allocated effectively, and all equipment is functioning properly.

7.2.2 Working Hours

Schedule:

The team will work Monday to Friday, providing consistent coverage across all 14 wards.

Daily shifts will be organised to optimise productivity, ensuring that all areas receive adequate attention within the allocated time.

During periods of high weed growth, such as the spring and summer months, additional temporary staff may be required to meet increased demand. This ensures that the programme remains on track without overburdening the core team.

7.3 Staff Training

All team members will receive comprehensive training on the safe operation of equipment, sustainable weed removal practices, and environmental compliance.

Training sessions will also include comprehensive health and safety protocols to minimise risks during operations. This will cover the setup and dismantling of working areas, ensuring the use of appropriate signing, lighting, and guarding in accordance with the New Roads and Street Works Code of Practice.

The core weed removal process will be managed by a team of 5 staff members, working diligently to cover all 14 wards in Cambridge City. This staffing model balances efficiency and effectiveness, ensuring that the programme's goals are met while maintaining a sustainable workload for the team. Flexibility and potential seasonal adjustments will ensure the programme's continued success throughout the year.

7.4 Operational Efficiency

By employing a dedicated team of 5 and utilising specialised equipment, the programme ensures a balance between efficiency and thoroughness. The combination of mechanical and manual methods allows the team to handle both large and small-scale tasks effectively, while the structured daily workflow ensures consistent progress across all wards.

The weed and detritus removal process is well-supported by the allocation of appropriate equipment and a skilled team of 5 staff members. This arrangement provides the capacity to manage the programme’s demands while maintaining high standards of cleanliness and operational efficiency.

8 Process for Weed and Detritus Removal

8.1 The removal of weeds and detritus involves a structured, multi-step process to ensure thorough cleaning while adhering to environmental standards and operational efficiency. Below is an overview of the process, followed by a cost comparison between the manual/mechanical removal method and the use of herbicide.

8.2 The cessation of chemical weed control by Cambridgeshire County Council, without an immediate alternative in place, has contributed to a backlog of weed growth. This factor will significantly extend the time required for manual and mechanical weed removal efforts in the initial stages of the herbicide-free project.

8.3 Impact on Time for Weed Removal

a) Increased Density and Root Establishment:
   Since chemical herbicides were discontinued, weeds have been left to grow unchecked, resulting in higher densities and deeper-rooted plants that are more challenging to remove. Removing these mature weeds will require additional effort, particularly in areas where growth has proliferated over time.
b) Operational Constraints:
   Teams must now address accumulated weed growth while adhering to sustainable practices, which may involve additional passes with equipment or more time spent manually removing stubborn weeds.
c) Long-Term Efficiency Gains:
   Once the initial backlog of weeds is cleared, subsequent maintenance is expected to be less time-consuming, provided a regular schedule is maintained. However, the immediate focus will require significant resources to bring the situation under control.
d) Revised Time Estimates
   Spot-Spraying Comparison: While the previous use of herbicides might have allowed for 100 metres of footway to be treated in 3–5 minutes, the current process of manual or mechanical removal could take longer than the typical 20–30 minutes estimated for weed-free conditions. For the initial phase, this may increase to

30–45 minutes per 100 metres, depending on the level of weeds that need to be cleared.

e) Mitigation Strategy
   Enhanced Equipment Use:
   Deploy all available weed removal equipment simultaneously, including the HAKO 1650 Mechanical Sweeper, Kersten attachments, and RIPAGREEN thermal lance, to manage the workload efficiently.
f) Priority-Based Scheduling:
   Focus on the most heavily weeded areas first to prevent further spread and regain control of neglected zones.
g) Adjusting Workforce Allocation:
   Increase staffing levels temporarily to address the backlog until the maintenance schedule stabilises.
h) Community Engagement:
   Inform the public about the increased timelines and the benefits of transitioning to sustainable practices to maintain transparency and manage expectations.

8.4 While the initial period of clearing mature and dense weed growth will require greater resources, the implementation of sustainable, herbicide-free practices will yield long-term environmental and operational benefits once the backlog is addressed.

9 Cost Comparison: Manual/Mechanical Removal vs. Weedkiller Application

9.1 Cambridge City Council's commitment to removing herbicides from public spaces necessitates a detailed analysis of the costs and benefits of alternative weed management methods. Below is a comparison of manual/mechanical weed removal versus traditional weedkiller application, focusing on key operational and environmental considerations.

a) Manual/Mechanical Weed Removal

Labour Costs:

This approach is labour-intensive, typically requiring a 5-person team working full-time (Monday to Friday). Salaries, benefits, and associated costs must be accounted for in the budget.

Equipment Costs:

Initial investment in equipment such as mechanical sweepers and weed rippers.

Regular maintenance, repairs, and potential equipment replacement.

Operational Costs:

Ongoing costs include fuel, parts, and consumables needed to operate the equipment.

Environmental Considerations:

Manual and mechanical methods avoid the use of harmful chemicals, contributing to biodiversity and environmental sustainability.

Debris collection and disposal require transportation and potentially recycling, adding to overall costs.

Total Cost:

Medium to high, depending on factors such as team size, frequency of operations, and equipment condition.

b) Weedkiller Application

Labour Costs:

Weedkiller application typically requires fewer staff compared to manual/mechanical methods, reducing direct labour costs.

Material Costs:

Lower initial costs for purchasing herbicides and sprayer equipment.

Ongoing expenses for replenishing herbicide supplies.

Operational Costs:

Limited to training staff and maintaining sprayer equipment, which is generally inexpensive.

Environmental Considerations:

Weedkillers can have long-term environmental consequences, including soil contamination, harm to non-target vegetation, and potential risks to human and animal health. While these concerns affect the public, it is particularly important to recognise the disproportionate impact on vulnerable populations, such as children, pregnant women, and individuals with chronic illnesses or allergies/hypersensitivities to active ingredients. Accessibility considerations must also be factored in, ensuring that alternative weed management approaches do not create barriers for those with mobility challenges. A balanced approach that prioritises public health, environmental sustainability, and inclusivity is essential in shaping a responsible weed control policy.

Compliance with strict environmental regulations may incur additional costs, including permits or fines for improper use.

Total Cost:

Low to medium, but environmental damage and regulatory implications can outweigh financial savings in the long term.

9.2 Cost-Benefit Analysis

Factor	**Manual/Mechanical Removal**	**Weedkiller Application**
Upfront Investment	High (equipment costs)	Low (chemicals and sprayers)

Ongoing Costs	Medium to high (labour-intensive)	Low to medium (fewer staff required)
Environmental Impact	Low (chemical-free and sustainable)	High (soil, water, and biodiversity risks)
Public Perception	Positive (eco-friendly)	Negative (concerns about chemicals)
Regulatory Compliance	Easy (no chemical permits)	Moderate to challenging (strict rules)
Overall Cost	Medium to high	Low to medium

9.3 Time Comparison: Spot-Spraying vs. Manual Weed Removal

The time required to cover 100 metres of footway for spot-spraying versus manually removing weeds can vary significantly based on weed density, equipment efficiency, and physical effort. Below is an approximate comparison for Cambridge City's operations:

a) Spot-Spraying with Herbicides

Average Speed:

Workers typically move at 4–5 km/h while spot-spraying, allowing time to aim and spray.

Estimated Time:

Spot-spraying weeds along 100 metres on both sides of a footway takes approximately 3–5 minutes, depending on weed density.

Factors Affecting Time:

Higher weed density increases time due to more frequent stops.

Modern, well-calibrated sprayers minimise delays for refilling or adjustments.

b) Manual Weed Removal

Average Speed:

Workers manually removing weeds move at 1–2 km/h, accounting for time spent identifying, uprooting, and collecting weeds.

Estimated Time:

Manual removal along the same 100 metres takes approximately 20–30 minutes, depending on weed density and soil conditions.

Factors Affecting Time:

Deep-rooted weeds or compacted soil increase the effort and time required.

Collection and bagging of removed weeds add to the duration.

9.4 Summary of Time Comparison

Activity	**Estimated Time (100 metres)**	**Key Considerations**
Spot-Spraying with Herbicides	3–5 minutes	Quick but relies on chemicals, with environmental concerns.
Manual Weed Removal	20–30 minutes	Slower but aligns with sustainability goals.

9.5 While spot-spraying with herbicides is significantly faster (4–6 times quicker) and appears cost-effective in the short term, manual/mechanical weed removal offers greater long-term benefits. The latter aligns with Cambridge City Council's herbicide-free initiatives, prioritising environmental sustainability, public health, and positive community perception. Although manual removal requires higher labour and operational investment, the ecological advantages and compliance with modern environmental standards make it the preferred option for councils committed to sustainable urban maintenance.

9.6 By investing in manual and mechanical methods, Cambridge City can meet its biodiversity goals, mitigate environmental risks, and set a strong example for other communities pursuing greener practices. Importantly, these approaches also reduce public health risks associated with chemical weedkillers, particularly for vulnerable groups such as children, pregnant women, and individuals with chronic illnesses or chemical sensitivities. Additionally, a well-planned transition to non-chemical methods must ensure that streets and public spaces remain accessible to all, including those

with disabilities and mobility challenges. Prioritising both environmental sustainability and inclusivity will help create a cleaner, healthier, and more equitable urban landscape.

10 Summary

10.1 Cambridge City Council is committed to herbicide-free weed management, prioritising manual and mechanical methods as sustainable alternatives to chemical solutions. While the use of weedkiller is quicker (3–5 minutes per 100 metres by one operative compared to 20–30 minutes manually by two operatives) and initially more cost-effective, it carries considerable environmental risks."

10.2 Manual/mechanical removal, although labour-intensive and requiring higher initial costs for equipment and staffing, offers long-term benefits such as environmental sustainability, public health, and positive community perception. The process avoids harmful chemicals and aligns with biodiversity goals, ensuring cleaner, safer streets.

10.3 Cost comparisons show that manual methods are medium to high in expenditure, but the ecological benefits and avoidance of regulatory penalties outweigh these costs. Spot-spraying is low to medium in cost but is less sustainable.

10.4 The Council’s approach prioritises environmental responsibility over short-term efficiency, reflecting its commitment to biodiversity and setting an example for sustainable urban management. This strategy balances operational needs with ecological preservation, promoting a healthier community and greener public spaces.