

Memo

6 November 2015

To: His Worship the Mayor, All Councillors

cc: Auckland Council Chief Executive Stephen Town, Auckland Transport Chief Executive Dr David Warburton

From: Chief Operating Officer, Dean Kimpton

Subject: **Information used to inform decisions on Weed control methods in local parks and the road corridor**

Purpose

This memo and attached table provide further information following our recent weed management policy implementation update, in response to requests for further information on weed control methodologies. In response to this request this memo provides:

- a) further background information regarding weed control standards, methods and decision making, and
- b) a table summarising the effectiveness, costs, environmental implications and human health risks associated for each weed control option.

Background information on Weed control standards

Auckland Council and Auckland Transport currently treat approximately 230 species of weeds in the region. This includes weeds on the hard edges on 4,000 local parks (covering 10,000 hectares), and 7,984 km of road corridor.

Weed control is undertaken to ensure that public assets can be used as intended and are maintained, and for amenity, safety and environmental objectives.

The standard of service for weed control in park amenity areas is:

- a) Areas are clean, tidy and fit for purpose.
- b) Footpath edges do not encroach on to footpaths or cause a trip hazard.
- c) Park boundaries are tidy and vegetation is not causing a nuisance to neighbours or damage to fences.
- d) Garden beds are full of healthy, thriving plants.
- e) Specimen trees have protection from machinery, and thrive and grow to their full potential.
- f) Sports field turf and amenity turf are maintained to a level which is fit for purpose.

The standard of service for weed control in the road corridor is:

- a) Ensure vegetation growing in the kerb and channel and open water channels does not interfere with water flow.
- b) Maintain the safety of pedestrians and road users by maintaining clear sight lines of street signage, reflective marker posts and minor streetscape assets as well as at intersections and roundabouts
- c) Control plant pests in accordance with the requirements of the RPMS.
- d) Maintain the streetscape in a tidy and aesthetically pleasing condition.
- e) Prevent root intrusion causing damage to the road surface, kerb and channel, footpaths and other road assets
- f) Maintain horizontal and vertical clearances over the road carriageway and footpaths.

Specific standards of service vary depending on the site. For example, “premier” local parks have a higher level of weed control than other local parks.

Current weed control methods used

From July 2015 the primary methods used to control weeds on hard edges of local parks and the road corridor, are;

- Agrichemical (primarily glyphosate-based products applied via roller ball or folio spray).
- Mechanical (weed eater and mower).
- Manual (digging and pulling weeds out).

This is as per the Long-term Plan 2015/2025 decision making. These methods are often used in combination (for example, mechanical methods are used to prepare sites for the application of agrichemicals).

Auckland Transport, for weed management in the road corridor, also uses high pressure steam around Devonport, hot water treatment in the north-west urban area, and biochemicals on Waiheke Island and two other central contract areas, in addition to the weed control methods above. None of these methods are used for controlling weeds on the hard edges of local parks. In a small proportion of local parks and the road corridor, no weed control is undertaken.

Decisions on weed control methods

When determining which weed control method to use on a given site, all Weed Management Policy (WMP) objectives are considered. Essentially the data as per the attached table, is used to identify the most effective option to achieve the desired outcome with the lowest cost, environmental impacts and human health risks.

A range of factors need to be considered when identifying the best method to control one or more weed species in any given environment. It is important that methods of least disturbance are adopted wherever possible to minimise the opportunity for seed activation from the remaining seed bank, or re-invasion from wind and other dispersal methods. Methods of least disturbance are those that cause the least impact on soil and the immediate environment. Method selection includes consideration of the following attributes:

- Site analysis,
- Target species analysis,
- Physical site characteristics, and
- Wider landscape characteristics

During the development of the Long-term Plan 2015 – 2025, a standard methodology and level of service for weed control on hard edging in local parks, via the consistent use of herbicide was consulted on and adopted. Local boards, however, may elect to alter this level of service on behalf of their communities, via funding an alternative method of control. Some local boards have taken up this opportunity and are using alternative methods for controlling weeds on the hard edges of local parks.

As part of the implementation of the WMP, Auckland Council has recently established the Weed Control Best Practice Reference Group (BPRG). The first meeting for this group is being scheduled for November 2015. The BPRG includes members that have technical weed control experience in urban and rural environments and it is intended that they will provide urban and rural community views to be considered during decisions on weed control methods. In addition we will be updating the biosecurity pages on Auckland Council's website with the latest weed control information over the coming weeks.

Basis for information in the attached table

The attached table outlines the performance of eight weed control methods against effectiveness, cost, environmental impact and human health risks. It assesses all weed control methods, including some that are not viable for hard edges on local parks or the road corridor. Hot water treatment is assessed separately from high pressure steam and other methods. The information in the attached table has been compiled by Auckland Council and Auckland Transport staff. It is based on:

- a) The current operational experience of both Auckland Council and Auckland Transport in administering weed control contracts in parks and the road corridor in Auckland. It reflects the average performance of each weed control method, rather than citing the performance of individual companies or contracts, which can vary considerably.
- b) National and international literature.

The cost data has been independently peer reviewed by Price Waterhouse Coopers (PWC) and the effectiveness, environmental and human health information has been independently peer reviewed by AECOM.

Effectiveness

Each weed control method is evaluated in terms of its effectiveness in meeting the weed control service standards for local parks and the road corridor. Effectiveness includes:

- The range of weeds controlled.
- Whether they are killed at the root or only the surface.
- The frequency of required application.
- The extent to which the application can interfere with other activities.
- The proportion of the parks and road corridor edges the method can feasibly be used on.

Costs

The costs in the table are based on the average of current actual contract costs and are expressed in New Zealand dollars as at 2015.

Note that, for current hot water control, Auckland Transport's operational experience is that the frequency of weed control does not meet the required service standard. The provided costs therefore underestimate the actual costs of using this method to meet the required service standard.

The cost estimated for each weed control method includes the costs of the primary method and any supplementary method that is used. For example, the cost for glyphosate includes provision for mechanical weed control undertaken to prepare edges for agrichemical application. The cost for high pressure steam includes provision for mechanical removal and glyphosate treatment on level two roads.

Glyphosate is the only chemical costed for the agrichemical method. The cost does not include the development and on-going management of the no spray register.

Environmental impact

The environmental impact of each method will vary according to:

- The specific habitat conditions including surrounding native vegetation, for example no-control can result in complete weed domination or in some cases native plants and weeds co-existing.
- The specific nature of the method, for example different forms of manual control, have different risks of spreading weed seeds.

Each method has been broadly evaluated with respect to impacts on flora and fauna. Some comment is provided on the consumption of energy and water associated with each method. Quantitative data for energy and water consumption could only be generated by an extensive investigation into the range of operational practices being used by the current contractors, and this has not been completed. Similarly a full life cycle assessment for each of the options including product constituents, product manufacture, transport to New Zealand, storage, packaging and disposal has not been completed. The extent of investigation required to generate quantitative data on water, energy consumption or life cycle environmental impacts for each weed control method is not considered warranted given the range of contractor operational methods. The data would be variable and based on many assumptions. Useful comparisons between methods would therefore not be possible.

Human Health

Each method is assessed in terms of its health risk on both operators and the general public. Risks include direct and cumulative health impact of herbicides, burning from steam or hot water, injury from machinery or traffic in the road corridor, and the impact of failing to control weeds.

Where herbicides are used, contractor and public health risk is assumed to be mitigated by adhering to all Environmental Protection Authority (EPA) licencing requirements. Management of risks to contractor health includes the provision of Personal Protective Equipment (PPE) in accordance with the EPA licencing requirements.

Products used are those approved by the EPA and listed in the NZ Novachem Agrichemical Manual. Consistent with NZ Standard for Application of Agrichemicals (NZS8409:2004, part 5.3.1.1 Public place and amenity use). Notice of intended application is given in the following manner:

- Prior notice in local newspapers or door-to-door advice.

- On-site signage.
- Signage on application equipment.

Additionally, Auckland Transport maintains a no spray register. The register allows landowners to apply to exclude their road frontage or boundary adjoining parkland treated with herbicide.

Attached: Weed Control Comparison Table – November 2015