

## UPDATE ON DANDELION CONTROL ON CITY PROPERTY

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### EXECUTIVE SUMMARY

On 2015 September 28, Council approved \$1.7 million in one-time operating funding and Administration was directed to pilot a short-term suppression strategy to control the visual impact of dandelions on City parks and boulevards. In the spring of 2016, Calgary Parks and Roads added one additional mowing cycle to their regular schedules and conducted public survey work to better understand Calgarian's perception of dandelions. Administration analysed the mowing results, the impact of seasonal climate on dandelion growth, and 311 calls regarding dandelions. Based on this analysis, Administration has determined that an additional city-wide mowing cycle cannot effectively reduce dandelion complaints as it does not control dandelions themselves. Calgary Parks and Roads are pursuing other long-term approaches to limit weed populations including using grazing, naturalization of select park areas, trialing hardy grasses in boulevards, and other turf management techniques. Calgary Parks is undertaking a revision of the existing *Integrated Pest Management Plan*, which will involve reviewing best practices, pilot projects and research, and identifying priority areas for managing weeds with an aim to improving turf conditions in Calgary.

### ADMINISTRATION RECOMMENDATION(S)

That the SPC on Community and Protective Services recommends that Council:

1. Receive this report for information;
2. Direct Calgary Parks to report through mid-cycle budget adjustments with a one-time carry-forward of \$150,000 for pilot projects;
3. Direct Calgary Parks and Roads to return the un-used portion of the one-time funding to the Fiscal Stability Reserve at the end of 2016; and
4. Direct Administration to investigate the necessary bylaw amendments to allow The City to use livestock grazing as a land management and weed control tool on City of Calgary lands in 2017.

### PREVIOUS COUNCIL DIRECTION / POLICY

On 2015 June 15, Council adopted NM2015-12 (Dandelion Control on City Property) and directed Administration to "prepare a report on effective dandelion control for the entire City including financial ramifications and return to Council through the Standing Policy Committee on Community and Protective Service no later than October 05, 2015."

On 2015 September 28, Council approved \$1.7 million in one-time operating for a short-term dandelion suppression program and Administration was directed to report back through the Standing Policy Committee on Community and Protective Services no later than October 2016 on the short-term suppression program's effectiveness and costs, and on long-term recommendations for best practices on pest management including weed and dandelion control.

### BACKGROUND

Dandelions are a highly adaptable species that can thrive in a variety of conditions. Flowering is generally regulated by temperature and amount of daylight, giving a characteristic flowering pattern in late spring and early fall, though this can vary significantly depending on yearly conditions.

## **UPDATE ON DANDELION CONTROL ON CITY PROPERTY**

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Both the Province of Alberta and The City of Calgary provide regulation and policy for weed control. Weeds are regulated through the *Alberta Weed Act* (2010), whereas The City manages dandelions and weeds on public lands through the *Integrated Pest Management Plan* (1998). The City also enforces weed control on private property through the *Community Standards Bylaw* (5M2004). Presently there are no legislated requirements to control dandelions under the *Alberta Weed Act*, as dandelions do not meet the criteria for noxious or prohibited noxious weeds. They are acknowledged in the provincial criteria as being widespread and exotic, but with minimal prospect of spreading beyond disturbed lands. A summary of relevant policy and regulations that govern dandelion control is provided as Attachment 1.

### Short-Term Dandelion Suppression Program Overview

On 28 September 2015, Council approved \$1.7 million in one-time funding that was allocated between Calgary Parks (\$1.1 million) and Roads (\$0.6 million) for a short-term dandelion suppression program. The intent of the program was to test the effectiveness of increased mowing on reducing visual impacts of dandelions in public parks and boulevards.

Parks are mowed throughout the growing season approximately every fourteen days. Roadway boulevards are mowed five times during a season. Calgary Parks is responsible for mowing approximately 3100 hectares of open space assets, while Roads mows approximately 780 hectares. Weather conditions in the early spring 2016 were unusually dry and warm relative to other years and this favoured the rapid growth of dandelions over turf grass earlier than usual. Both Calgary Parks and Roads mobilized to use the funding for one additional mowing cycle during the first peak dandelion flowering period in May. In addition to the extra mowing cycle, Calgary Parks and Roads hired summer students to complete field work, and perform data analysis and research, and also hired a consultant to conduct a public opinion survey specific to dandelions.

### Analysis of 311 Service Requests

Following the first dandelion flowering period in May, Administration began tracking weed and mowing 311 Service Requests (SRs) to determine the effectiveness of the extra mowing cycle against previous 311 SRs from 2011-2015. 311 SR categories currently do not distinguish between dandelions and other types of weeds or long grass complaints. This was left as is this year in order to uphold a baseline for comparison and to determine success of the short-term pilot program.

Several trends emerged from the analysis:

- Between 2011 and 2016, June is the busiest month for calls to 311 regarding weeds and tall grass complaints. This is typical, as late May / early June receive a large amount of rainfall and increasing temperatures. There is a corresponding increase in complaints approximately three weeks after these weather conditions come in.
- Overall the majority of service requests that The City receives for grass and weed control are primarily for private property. Between 2011 and 2016 (May – September), a total of 37,217 (11,436 public; 25,781 private); 44% of calls were directed at public property. See the table for further details:

## UPDATE ON DANDELION CONTROL ON CITY PROPERTY

|   | 2011<br>(May-Sept) | 2012<br>(May-Sept) | 2013<br>(May-Sept) | 2014<br>(May-Sept) | 2015<br>(May-Sept) | 2016<br>(May-Sept) | Total         |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|
| <b>City Owned Property Concerns</b>                   |                    |                    |                    |                    |                    |                    |               |
| Parks (mowing)  | 2,010              | 904                | 1,062              | 1,007              | 1,288              | 1,475              | 7,746         |
| Parks (weeds)   | 474                | 374                | 303                | 340                | 339                | 345                | 2,175         |
| Roads (long grass/weeds)                              | 293                | 195                | 154                | 175                | 351                | 347                | 1,515         |
| <b>Total: Parks &amp; Roads</b>                       | <b>2,777</b>       | <b>1,473</b>       | <b>1,519</b>       | <b>1,522</b>       | <b>1,978</b>       | <b>2,167</b>       | <b>11,436</b> |
|   |                    |                    |                    |                    |                    |                    |               |
| <b>Private Property Concerns</b>                      |                    |                    |                    |                    |                    |                    |               |
| ABS (long grass/weeds)                                | 5,036              | 4,164              | 3,348              | 3,882              | 4,879              | 4,472              | 25,781        |
| <b>Total: Private Property</b>                        | <b>5,036</b>       | <b>4,164</b>       | <b>3,348</b>       | <b>3,882</b>       | <b>4,879</b>       | <b>4,472</b>       | <b>25,781</b> |
|   |                    |                    |                    |                    |                    |                    |               |
| <b>Total: Private Property, Parks &amp; Roads SRs</b> | <b>7,813</b>       | <b>5,637</b>       | <b>4,867</b>       | <b>5,404</b>       | <b>6,857</b>       | <b>6,639</b>       | <b>37,217</b> |

### Public Perception of Dandelions – Survey

As part of the short-term program, The City conducted a survey of Calgarians to evaluate public opinion on dandelion control. The survey was conducted with 500 residents, with results weighted by age, gender and city quadrant to ensure accurate representation. The survey was intended to gain a better understanding of several key issues: i) Calgarian's concern with the presence of dandelions in the city; ii) their understanding of what means of control The City employs; iii) priority areas for control; and iv) acceptable means of control.

The results of this survey are presented in Attachment 2, Dandelion Control Public Opinion Research Report. For the most part, respondents were evenly split on a number of concerns. Key findings regarding familiarity with dandelion control methods, satisfaction of presence, importance of control and types of control are as follows:

- 34% of respondents were 'satisfied' with the presence of dandelions in the city, and 38% were 'unsatisfied'.
- Most Calgarians feel that dandelion control is important on their own property, and on property adjacent to their own.
- Calgarians generally believe that dandelions should be controlled, but that there should be priority given to certain types of open space. The most important areas to limit growth are on private residential properties and sports fields while dandelions are of least concern in natural area parks.
- There was a strong preference for the use of 'alternative' methods. Notably, there was strong support for the use of alternate ground covers, naturalisation and the use of grazing for weed control.

### INVESTIGATION: ALTERNATIVES AND ANALYSIS

An additional full mowing cycle in early spring 2016 did not have any significant effect on reducing the visual impact of dandelions and therefore the number of weed-related 311 SRs did not decline. Several factors contributed to the ineffectiveness of the short-term mowing suppression program including early spring conditions. Both Calgary Parks and Roads elected

## **UPDATE ON DANDELION CONTROL ON CITY PROPERTY**

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to not conduct additional mowing in late summer. A summary of program costs is provided in the Current and Future Operating Budget section of this report.

### Long-Term Recommendations

While the short-term dandelion suppression pilot program did not lead to a reduction in the number of SRs received, work on long-term initiatives has been initiated by Calgary Parks and Roads to develop new information on dandelion growth, trial different techniques to control weeds, and to undertake a revision of relevant policy including the *Integrated Pest Management Plan*.

### *Weather Modelling and Strategic Mowing*

Weather forecasting will be considered in future planning and weed management decision making. For example, growing degree days (GDD) is a weather based indicator for assessing plant growth. It measures temperature (heat accumulation) over the year. It is calculated as the mean temperature (average of daily max and min temperatures) above a certain threshold temperature; for Calgary, that is five degrees Celsius, which tends to fall within the month of May. In order to assess mowing efficacy, Calgary Parks began additional work on GDDs relevant to dandelion growth. As a result, Calgary Parks could refine weather modelling to develop a strategic mowing cycle that targets dandelion flowering in specific high-priority open space.

### *Public Opinion Survey*

The City conducted a survey to evaluate public opinion on dandelions. Calgarians believe that priorities should be established to control dandelions (prioritize certain open spaces over others) and that alternatives from herbicides should be explored such as naturalizing open space and using goats to control weeds. The survey results will be used to guide future policy development and operational work (Attachment 2).

### *Grazing*

The use of goats to control weeds was piloted this year in Confluence Park. Although the project did not target dandelions specifically, indications suggest that the goats could be effective in controlling weed populations in certain circumstances. The goat grazing pilot project was approved through a Development Permit because of the park's S-FUD land use designation that allows agricultural activities. In order to implement the use of goat grazing as a weed control technique more broadly on City lands, Administration will review the applicable bylaws and bring forward amendments to Council as required.

### *Integrated Pest Management Plan Revision*

The *Integrated Pest Management Plan* provides the direction for weed management on City property that promotes an: "ecological approach to suppressing pest populations in which all necessary techniques are consolidated in a unified program, so that pests are kept at acceptable levels in effective, economical, and environmentally sound methods" (Integrated Pest Management Plan, 1998). A revision of the *Integrated Pest Management Plan* will include a review of current weed threshold standards and the creation of a prioritization system of weed management based on asset type.

## UPDATE ON DANDELION CONTROL ON CITY PROPERTY

---

### *Pilot Projects and Trials*

The City is undertaking a variety of pilot projects and trials related to turf health and management. Analysis of the projects will create a review of conventional grass planting and turf health management practices. As per the above mentioned *Integrated Pest Management Plan* revision, pilot work may inform the revision of existing weed threshold standards and create a prioritization framework for turf management based on asset type as per public opinion survey results. The pilots that are underway include alternative “green” fertilizers and herbicides, planting road-salt / drought-tolerant grass species, naturalization of select parks, and improving soil profiles in select high-traffic parks.

### **Stakeholder Engagement, Research and Communication**

Corporate and external stakeholders are engaged for pilot projects, either directly via project scoping or indirectly during the development of a strategy that directs specific program and project areas.

### **Strategic Alignment**

Dandelion and weed control on City property aligns with the Council Priorities of a city of inspiring neighbourhoods as well as a healthy and green city.

### **Social, Environmental, Economic (External)**

#### **Social**

The long-term strategies and pilot projects and trials will reduce visual signs and presence of dandelions in parks, open space, and roadways, supporting the use of public space, urban vitality and citizen connection.

#### **Environmental**

Dandelions and weeds are often a sign of stressed or unhealthy turf conditions, as they have evolved to exploit disturbance conditions. Continuing to develop solutions to plan and manage open space will help to prevent dandelions and weeds, improving overall environmental health.

#### **Economic**

The long term initiatives will help maintain the aesthetics in parks, open spaces and boulevards, partially addressing citizens’ concerns and The City’s image.

### **Financial Capacity**

#### **Current Operating Budget:**

|               | One-time operating received (000s) | Year-to-date spending (000s)                                    | Remaining (000s) |
|---------------|------------------------------------|---|------------------|
| Calgary Parks | \$1,100                            | \$496 (mowing)<br>\$50 (summer students, public opinion survey) | \$554            |
| Roads         | \$600                              | \$279 (mowing)<br>\$95 (summer students/technician)             | \$226            |
| <b>Total</b>  | <b>\$1,700</b>                     | <b>\$920</b>  | <b>\$780</b>     |

## UPDATE ON DANDELION CONTROL ON CITY PROPERTY

---

### **Future Operating Budget:**

If directed by Council at mid-cycle budget adjustments, Calgary Parks is proposing to carry forward \$150,000.

### **Current or Future Capital Budget:**

No implications on current or future capital budgets.

### **Risk Assessment**

Going forward, the proposed initiatives will create performance measures to establish benchmarks on which to evaluate projects.

### **REASON(S) FOR RECOMMENDATION(S):**

Following analysis of mowing results, weather implications on dandelion growth, and 311 SR calls, Administration has determined that an additional city-wide mowing cycle is not an effective tool to control the visual impact of dandelions. Calgary Parks and Roads are pursuing other long-term approaches to limit weed populations including naturalization of select park areas, trialing hardy grasses in boulevards, goat grazing and other turf management techniques. Calgary Parks is undertaking a revision of the existing *Integrated Pest Management Plan*, which will involve reviewing best practices, pilot projects and research, and identifying priority areas for managing weeds and improving turf conditions in Calgary.

### **ATTACHMENT(S)**

1. Policy and Regulations that Govern Dandelion Control
2. Dandelion Control Public Opinion Research Report