

## Operational Services Briefing to

Executive Committee

2023 October 11

ISC: UNRESTRICTED

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## Roadside Naturalization Pilot Project Results

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### PURPOSE OF BRIEFING

A pilot project that explores naturalization landscaping methods on public land along roadways received \$450,000 from the Council Innovation Fund to demonstrate a proof of concept and determine the costs and environmental benefits of this approach relative to conventional landscaping. This briefing describes the key activities undertaken, the main project findings, and next steps. An executive summary of the technical report from the project team is attached to this briefing (Attachment 1). Project findings and data will be used to inform land management and stewardship practices in Calgary in alignment with existing City policy, plans, and programs.

### SUPPORTING INFORMATION

#### Background

The Council Innovation Fund application (PFC2020-0075, Attachment 2) provides background information on the pilot project, including the focus of Council on service efficiency and related investigations into the cost of boulevard maintenance as a sub-service. A review of alternative approaches and evolving best practices for roadside landscaping and vegetation management had identified the potential for long term cost savings, and other benefits, to be achieved through naturalization landscaping.

In February 2020, Council approved an Innovation Fund application regarding boulevard naturalization. Following is the Council direction to Administration and a description of what was done, with project findings and outcomes addressed in more detail in the next section to follow.

1. Direct Administration to engage with private sector and philanthropic groups to leverage available private contributions for this project.
  - Initial stages of the project involved City-led planning and design of an innovative landscaping treatment as a basis for competitive bidding from the private sector
  - Competitive pricing enabled project execution within available City budget
  - Private sector partners contributed expertise and value-added project elements
  - Partnership with a philanthropic organization, The Royal Canadian Geographic Society, early in the project resulted in national media profile in September 2023
2. Direct Administration to partner with public institutions to optimize the assessment and monitoring program elements of this project.
  - Partnered with University of Calgary faculty (School of Architecture, Planning and Landscape) in project design, execution and assessment phases of work to leverage and apply their expertise in native prairie plant community ecology
  - Partnered with University of Calgary faculty and students (Faculty of Science, Zoology program) to conduct field assessments of pollinator abundance and distribution in relation to different landscaping treatments and conditions
  - Explored a potential partnership with University of Calgary to support their funding application to Genome Canada for the Wild City Bees project
3. Direct Administration to report back to the Priorities and Finance Committee on the outcomes of this project no later than Q2 2023, with interim reports on project progress and return-on-investment as information becomes available.

- Attachment 3 details the interim progress reports and the variety of information exchange and outreach that occurred throughout the project duration
- A July 2023 project update shared with the Mayor and Council noted a delay in reporting back to the Executive Committee on project outcomes in Q4 2023 that allowed for the collection and analysis of additional data from the third growing season on the project site, and additional internal consultation on next steps

## Project Outcomes

Key pilot project findings are that:

- Boulevards and other wide road right-of-ways in Calgary traditionally are landscaped with a mix of turf-forming grasses that are susceptible to invasion by other introduced plant species that become established over time. Roadsides are not irrigated or maintained to the same standards of other open spaces beyond what is required to meet obligations under provincial law for the control of regulated weeds. Regular mowing maintains a trim appearance to roadside areas that are a mix of turfgrass and weeds
- It costs approximately \$1,000 per hectare (the size of a soccer field) per year for The City to maintain its total of 800+ hectares of roadside areas primarily using contracted services, which typically involves four mowing cycles in one year
- The installation cost of conventional landscaping varies with many factors including design objectives, methods used, market conditions, and economies of scale, but a review of recently completed City projects reveals an average cost of \$13,000 per hectare for smaller scale urban projects (less than 10 hectares in size) using hand-seeding and hydro-seeding methods, and substantially more for sod installation
- The installation cost of naturalized landscaping also varies with the same factors and others (e.g. using native seed collected locally, or purchased from local vs US suppliers), with the actual core costs incurred for the pilot project being \$11,000 per hectare for the 5-hectare treatment area, not including the design, extensive site preparation, monitoring and related effort that was specific to this pilot project and its unique objectives
- The maintenance costs for a naturalized site are estimated to be less than \$1,000 per hectare per year, assuming only one mowing cycle during establishment and selective weed control thereafter, and also assuming proper design, installation and monitoring
- Well designed and executed naturalized landscaping is cost-effective (Attachment 4)
- A successfully naturalized area will have a substantial component of wildflower and grass species that are native to the Calgary region and are well adapted to local climate and soil conditions; they are much more deeply rooted than introduced plants, which is key to drought resilience in a changing climate (Attachment 3)
- Naturalized roadsides support in the order of 3,000 pollinators per hectare, plus the birds that feed on these beneficial insects, while mowed turfgrass supports virtually none
- Much public outreach has occurred during this project (Attachment 3) to share information on its purpose in exploring potential cost savings and environmental benefits

## Next Steps

Administration will consider the findings of this report in future updates to bylaws, policies, plans and specifications that address landscaping requirements. Administration also will integrate a roadside naturalization program for City boulevards and other open spaces into the Connect: Calgary Parks Plan, and on an opportunistic and incremental basis, to align with the Biodiversity Strategy, the Climate Strategy, the Stormwater Strategy, the YardSmart program, and the Natural Infrastructure program. For this work to expand and be successful there will be further capacity-building required within the private sector, and ongoing education and dialogue with industry and the general public.

# BRIEFING

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## ATTACHMENTS

1. Executive Summary
2. Council Innovation Fund Application
3. Project Communications and Supporting Information
4. Cost Comparison Table