

# Engaging the public with Edmonton's GoatWorks program



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# Sustainability Scholar Final Report

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**Executive Summary**

This report is a critical analysis of the public's perception of the GoatWorks pilot project, and serves as a basis for assessing the public education and engagement components of this project. I conducted informal interviews and intercept surveys during 2019 events. I assessed comments, interactions, and critiques of the GoatWorks program on social media from 2017 until 2019. I conducted a brief literature review of other goat-based community projects and community-learning projects to incorporate approaches to our current public education and engagement strategies. I planned, organized, and facilitated numerous learning opportunities during the 2019 season. Based on observations and results of community-based discussions, I provide an overview of the public's perception of the program, discuss current educational approaches, and advocate for a continued public component to events like this in the future. I have provided a brief public education plan for approaching community engagement for similar projects.

**Acknowledgement**

I wish to express my sincere appreciation to mentor Joy Lakan, who afforded me opportunities to learn and participate fully in this program. She advocated for me to take the lead on initiatives and often encouraged me to get more involved as an educator. She crafted a truly engaging learning experience for me. To my partner in crime Niki Faloon, who was a vital part of the programming, media, and educational planning – and whose knowledge of local flora has taught me *many* things! Thank you to Jeannette, Dan, and furrier BPMR staff for their educational support and ongoing trust of me with the herd. The rest of the OPDP team were welcoming, supportive, and on board with any of my ideas and for that I say thank you. It really was an amazing team dynamic and I felt at home working with the Glengarry and Westwood teams.

It is also important for me to thank the University of Alberta Sustainability Scholar program and City of Edmonton for this wonderful opportunity. Please keep providing these opportunities for sustainable education.

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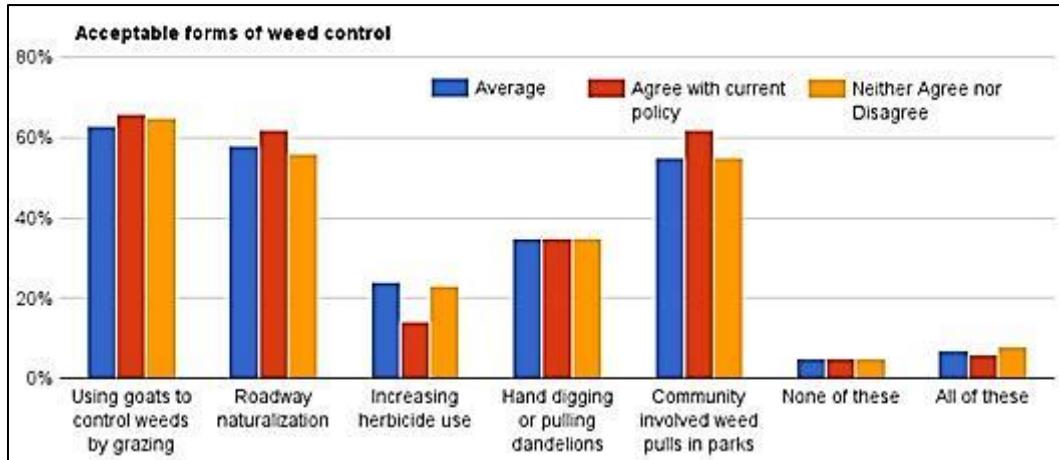
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# Engaging the Public with Edmonton's GoatWorks Program

## 1. A GoatWorks summary

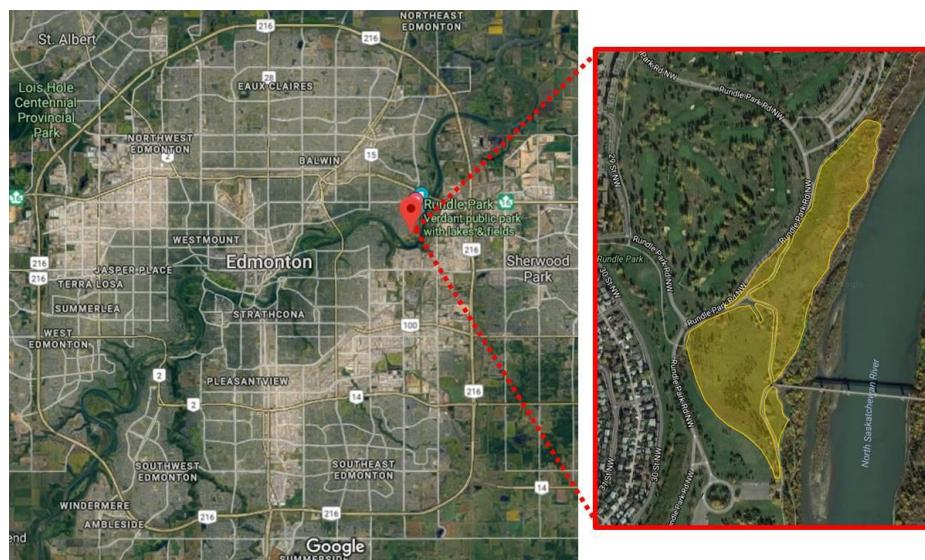
### 1.1. Program background

In 2015 the City of Edmonton established a cosmetic herbicide ban in parkland areas. In 2016 Parkland Management surveyed City of Edmonton residents on their herbicide opinions, and gauged their interest in various strategies for alternative forms of weed control and land management. Of the 1500+ respondents, over 60% were in favour of using goats as an acceptable means of weed control (Fig. 1). This included respondents who identified as pro- and anti-herbicide users.



**Figure 1** Results of 2016 Insight Survey on “acceptable forms of weed control” conducted by the City of Edmonton Insight Community (Parks and Roads Services, 2016).

Rundle Park (Fig. 2) was chosen as an area to test the effectiveness of goat browsing in the form of the GoatWorks pilot project. This old landfill site turned park includes rolling landscapes, steep cliff areas, and a lot of noxious weeds. Because of the steep slope, it is difficult to manage the entirety of the park using traditional mowing. Mowing also promotes seed dispersal and noxious weed spreading.



**Figure 2** Location of Edmonton’s Rundle Park, including the area managed during the GoatWorks pilot program (yellow).

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**Figure 3** Left: Evidence of leafy spurge overgrowth in Rundle Park in 2017. (J. Lakhan)  
Right: Part of the extensive root system of a leafy spurge weed. (Q. Chen)

Figure 3 (left) shows an image of Rundle Park taken in 2017, which highlights the considerable overgrowth of yellow spurge (yellow), Canada thistle (purple), and other weeds. Leafy spurge and Canada thistle are both listed as noxious weeds under the Alberta Weed Control Act (Wheatland County, 2015). Both of these weeds have extensive root systems (Fig. 3, right), which are not easily removed or effectively managed using traditional hand pulling. Goats were brought in as an alternative management strategy for the noxious weed problem at Rundle Park, which would also serve as the pilot project to test the efficacy of using targeted browsing for land management in the City of Edmonton. The area outlined in Figure 2 (right) was chosen for the pilot program as it is categorized as naturalized and is not booked for picnicking or recreational use by the public. Over the next 3 years the pilot program contracted Baah'd Plant Management and Reclamation (BPMR) and their team of shepherds, dogs, and over 400 trained goats to work in Rundle Park on a rotation schedule and target browse noxious weeds. By hiring a herd of goats trained in target browsing, weeds were less likely to go to see, natural species would not be over-browsed, and that the area obtained fertilizer for improved natural floral growth ([www.organicweedcontrol.ca](http://www.organicweedcontrol.ca)).

### 1.2. Vegetation management

Part of this pilot program is to assess whether goats are an effective vegetation management tool in Rundle Park. A research team from Olds College records the number of natural and noxious plants growing in the park using an observational transect system. Plant counts are recorded prior to the goats arriving (May-June), mid-season (August), and at the end of the season (September-October) for all three years. The results of their study will be made available at the end of 2019.

### 1.3. Public exposure and reception (2017-2018)

Public engagement and education are an important component of the GoatWorks Pilot Program, largely because it was born out of community-based strategic planning but also because "goats" are a globally recognized entity that can be used to teach more technically relevant information (e.g. Appendix 9.1). As an example, in 2017 alone, the goats in #YEG Parks was trending in Canada, had over 3.2 million interactions or views on social media, 1.9 million engagements or comments, and over 750,000 video views (Lakhan 2017). The project could easily capitalize on the global exposure to educate and engage with the public.

## **2. Sustainability scholar project and goals**

In 2018 an application was put forward by Joy Lakan for a Sustainability Scholar to evaluate GoatWork's current public education and engagement strategy and to provide recommendations for its improvement. The information gathered in the Scholar's project is to be incorporated into the pilot project summary report, and to be used to inform the pilot's continuation review. The sustainability project would include two phases:

**Phase 1:** The Scholar will develop and implement an evaluation plan to assess the efficacy of the current GoatWorks Public Education Plan and Engagement Plan. The scholar research should include tools and methods used to gauge public education retention and identify any education and engagement gaps (e.g., public surveys, intercept survey technique, media interaction messaging review, etc.).

**Phase 2:** Based on the identified educational and engagement gap(s), the scholar will recommend an alternative or improved public education tool, campaign, and/or strategy. The recommendation must include a corresponding evaluation plan. If applicable, the scholar might develop a hard copy example of the education tool.

Between May 1 and August 15, 2019 I had the opportunity to work as a GoatWorks project team member and conduct research related to public education and engagement programming. Throughout my project I had two main objectives:

1. Assess and reflect on the public's perception of GoatWorks and incorporate any feedback into the pilot summary, and
2. Establish an effective education plan for sustainable programs like GoatWorks.

Appendix 9.2 overviews the Scholar Project Plan and Appendix 9.3 lists my role with the project overall. The remainder of this document overviews the steps I took to research and improve the public education and engagement portion of the GoatWorks program (Section 3). This includes a critical analysis of other community-based programs (Section 4), and an explanation of how I integrated these approaches into the current program and events (Section 5). Based on observations and interactions with the public during these events I was able to record how engagement varied according to education platform, communities engaged, or messages used (Section 6). I also established means of measuring engagement level, knowledge retention, and summarize all of my findings in an accumulated public perception of the GoatWorks program (Section 7). Because of my in-depth involvement with the program, I also worked closely with other GoatWorks teammates, the contractor (BPMR), and other Parks and Roads programs and staff to actively program, facilitate, and assess engagement events. I provide an overall understanding of the GoatWorks Pilot Program and the roles it has in the City of Edmonton; I include recommendations and summary thoughts for the future (Section 7). As a tangible deliverable, I also created a Public Education Toolkit with GoatWorks as a workable example (Appendix 9.4).

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## **3. Methods**

I approached completing my primary objectives through the following steps:

- (1) **Learn:** Assess and learn about the GoatWorks program;
- (2) **Research:** Research similar endeavours to incorporate different strategies into 2019 programming and public engagement opportunities;
- (3) **Program:** Plan and facilitate various programs and instances of public exposure;
- (4) **Assess:** Critically examine our education strategies and how we are perceived by the public;
- (5) **Outreach:** Serve as an ambassador for the program to work within the community first-hand.

This section serves as a summary of my activities during the 2019 GoatWorks program. I overview actions taken, events planned, and suggestions related to each category.

### **3.1. Learning about the GoatWorks pilot program**

In order to be a successful educator of the program content and teammate in programming, I needed to understand all aspects of the GoatWorks program. I did this by reading news articles (Appendix 9.1), watching media, and examining our publicly accessible FAQ ([www.edmonton.ca/goats](http://www.edmonton.ca/goats)). I met with the contractor and other teammates to learn from them. Because I started my position with no knowledge of the program, I felt that I could improve our education strategy according to my perceived gaps in the available information; if I had missed a fact or component of the program during my background study, then it was similarly unavailable to the public. I also incorporated any negative feedback or questions that arose from the 2017 and 2018 content to create new approaches for public education.

### **3.2. Researching other approaches to public education**

I researched other goat-related management projects to analyze how they were perceived, what media exposure they had, and how they approached education (if at all). I found that many goat-based projects did not actively participate in public education, so soon shifted my attention to examining how other community-based learning initiatives ran their programs. After a critical analysis of a small sample of programs, I summarize effective strategies and began incorporating them into GoatWorks' event planning and educational programming.

### **3.3. Programming & facilitating engagement opportunities**

As part of GoatWorks' Public Education and Engagement Plan, we welcomed a number of members of the public to partake in a tour of the GoatWorks site. Depending on the group, this included an instructional component about the program, site, and impact, followed by a hands-on meeting with the shepherd and her herd that was catered to the age level. The following is an outline of the steps that were taken to contact each group, facilitate the visits, and gauge knowledge retention. We have included a number of suggestions for future years, which were incorporated into a public education toolkit (Appendix 9.4).

#### ***3.3.1. Elementary school visits***

##### **Initial contact | Elementary schools**

We preferentially contacted principals at schools that were within a 20 minute walking radius to Rundle Park. We wanted to focus on students who lived in the community around Rundle Park that could foreseeably visit the site by a simple walk, and who could relay what they learned back to their families. The [GoatWorks School Invite](#) included a summary of the program, available dates, and an overview of what a school visit would entail should principals/instructors be interested. Principals were asked to forward the email to their instructors, and any interested classes were asked to fill in the [GoatWorks School Group Visit form](#) and submit it back to our team. The form provided us with

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information about the grade, number of students, and accessibility concerns, as well as the preferred dates/times for visiting, and any emergency contact information. From this information we could cater the lesson to include age-appropriate content and organize the classes to fit the shepherd's schedule. A confirmation email was sent to each instructor with the note that a follow-up email would come to them with information prior to their visit. Throughout the interaction we wanted to ensure consistent communication with the instructor, which was shown to increase the likelihood that instructors would motivate students to participate in activities after the initial visit.

### Pre-visit | Elementary schools

Each instructor was emailed days prior to their class visit with an [information package](#). The package included a map with the Rundle Park meeting location, a reminder of their time slot, emergency contact information for GoatWorks team members, and an overview of what to expect during the visit. We also felt that it was important to send a [project summary video](#) for students to see and learn about the project before they arrived on site. Although this was not mandatory, the CBC National Video was informative, entertaining, and would give instructors and students the opportunity to engage with the material prior to the site visit.



**Figure 4** An elementary school visit, showing the class observing the herd in action.

### During visit | Elementary schools

Classes met the team on site and instructors were asked to fill out an [Event Sign-In Form](#). We held the instructional portion in an area that we would have their full attention (i.e. not distracted by the goats). We went through site safety. The lesson plan was catered towards each age group in a way that would relate to their [Alberta school curriculum](#), interests, and attention span. We consulted with curricula ahead of time and crafted a [Lesson plan template](#) with examples of questions to ask to guide the talk, connections that students could make, and proposed games that we could do on site if time allowed. As an example, we had large print-out pictures of noxious weed species, and encouraged the students to look around their surroundings to see if they could find similar plants. We encouraged students to ask questions at any point. After roughly 10-20 minutes we took the students to see the working goats. We asked students to spend a few moments to observe the animals in action, and prompted additional conversation points (Fig.4). The shepherd was very interactive with the students and encouraged a

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hands-on component. Students were given the opportunity to pet and hand-feed goats and learn about their teeth, horns, poop, and general life cycles. The shepherd is enthusiastic and very animated, affording a truly enriching learning opportunity for all students. Students were provided with hand sanitizer at the end of the visits prior to their walk home.

### **Post-visit | Elementary Schools**

We sent each instructor a [follow-up email](#) with photos of their class taken on site, a [reflection activity](#) for all students to complete, and a link to a [feedback survey](#) for the instructors. It was our goal to gain feedback on what students learned, how effective our instruction was, and whether school visits were an effective form of public education and engagement. We had hoped to include any feedback or suggestions in future years.

### **Suggestions | Elementary Schools**

- Create an interesting activity for students to complete after the visit. This allows children to reflect, discuss what they learned, and ultimately have a lasting impact on their overall education.
- Offer in-class and on-site programming based on what instructors would like. This year we focused more heavily on on-site instruction to emphasise experiential learning, which has proven more effective in other programs.
- Have a dedicated staff member for education and engagement; they can do all the planning and craft age-appropriate lesson plans.

### **3.3.2. Post-secondary school visits**

#### **Initial contact | Post-secondary schools**

This was a program born out of a school visit request. Initially we contacted each of the post-secondary institutions in Edmonton to gauge their interest in participating in a program-specific learning opportunity. The invite was catered to each program that we contacted and offered different possible approaches for the on-site learning. We sent out numerous emails with three potentially interested groups. Programs at NAIT were interested in future collaboration, but at this point had already established their fall curriculum. The University of Alberta Faculty of Agriculture, Life, and Environmental Sciences (ALES) contacted us to be involved in their community service-learning day in September. Planning for this event is ongoing. The Faculty of ALES also contacted us to arrange for an on-site learning event for a group of International Students visiting from China (see below).

#### **Event planning | ALES international student event**

This 3-hour long event soon became an integrated learning opportunity that incorporated numerous Parks and Roads programs and the help of various staff. The following overview focuses on this, referred to as the “ALES International Student Event”. Each program coordinator was contacted to devise a strategy for the events purpose, objectives, outcomes, and coordinating action plan. Ultimately this event became a collaborative effort of GoatWorks, Root for Trees, Integrated Pest Management, and Communities in Bloom.

#### **Pre-visit | ALES international student event**

The instructor was emailed days prior to their class visit with an information package. The package included a map with the Rundle Park meeting location, a reminder of their time slot, emergency contact information, and an overview of each program; we included all necessary health and safety measures students needed to consider for these events.

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**Figure 5** ALES International Students learning about GoatWorks and target browsing first-hand.

### **During visit | ALES international student event**

Students arrived by bus and met at the general meeting location for health and safety as well as to sign in to the event as volunteers. Students were separated into three groups to each participate in events for Root for Trees (tree planting), Integrated Pest Management (nature walk and weed pull), and GoatWorks (land management, conservation, and shepherding). The lesson plan was catered towards Agriculture, Life, and Environmental Sciences with a discussion of real-world application. As part of the GoatWorks portion, students had the opportunity to shepherd the animals, relocate their target browsing areas, and to move the working dogs (Fig. 5). Students spent roughly 50 minutes at each station prior to rotating to the next station.

### **Post-visit | ALES international student event**

We sent each instructor a [follow-up email](#) with photos of their class taken on site and a link to a [feedback survey](#) for all participants. It was our goal to gain feedback on what students learned, how effective our instruction was, and to assess the applicability of our different programs to the student's ultimate career or life goals. We had hoped to include any feedback or suggestions in future years.

### **Suggestions | Post-secondary schools**

Overall post-secondary education planning was a huge success that incorporated multiple programs and institutions. The following are event-specific suggestions for the future:

- Inquire with schools about programming well in advance of the intended event, as they will need time to fit it into their curriculum, or to arrange off-site programming and transportation.
- I strongly advocate for post-secondary institution-based partnerships. Although we have a partnership with Olds College currently, a similar land management program could provide an exceptional tool for students at the post-secondary level, which gives them hands-on learning and a glimpse at government-based job opportunities after graduation. It also ensures consistent assessment of the program's effectiveness from a land management perspective (see Section 7.2).
- Have a dedicated staff member for education and engagement; they can do the bulk of event planning and craft on-site or in-classroom learning opportunities and assessment strategies.

#### **3.3.3. Unplanned public visits**

When members of the public would come to view the goats, it was either spontaneous (they were already in Rundle Park and came upon the goats) or they planned to see the goats (often bringing their whole families). During these events we were on hand to record the number of people who participated,

## Engaging the Public with Edmonton's GoatWorks Program

to hand out informative [brochures](#), or to answer questions. I also took the opportunity to engage with the public about their perceptions of the program, observe what knowledge they had about the program, or to keep track of frequently asked questions.

### Suggestions | Unplanned public visits

- I recommend having dedicated staff on site to help field questions or informally educate the public via conversation or reciting key messages. This affords the contractor time to focus on shepherding the animals and keeping the process moving smoothly.
- Have staff on site during peak hours: evenings, weekends, and on the day of key media events. The contractor was an important point of contact for when extra staff were beneficial.

### 3.3.4. Planned public events

For various public events I served as an ambassador for the program, assisted in facilitating the event, and was on hand to answer questions or contribute to engagement materials. Public events included:

- **United Way Donor “Goat Naming” Event:** a United Way donor won the ability to name one of Baah'd Plant Management and Reclamation's newest kids. We also used this event, photos, and the story as a public interest piece for the City of Edmonton staff newsletter.
- **Alberta Emerald Awards night:** This was the only public event that did not occur at Rundle Park. This awards ceremony was an outreach opportunity for the GoatWorks program to engage with other award winners/nominees about sustainable projects and public education campaigns.
- **SURF Event:** This was a program was planned with the City of Edmonton's Persons with Disabilities programming where the shepherd and one goat would participate in an intimate and sensory-friendly event at the ACT Centre at Rundle Park (Fig. 6).
- **Meet and Bleat:** This was a major planned public event that welcomed anyone from the public for an informative and engaging experience. I was support staff during the planning and organizing stages, and helped facilitate the event during the day. I also took the opportunity to engage with the public and record community perceptions about the program and its use as an educational tool.
- **Alpha Kidz:** This was an event planned similar to elementary school visits. In it we welcomed a local community group for kids (aged 5-12) to participate and learn about the GoatWorks program and see the goats. Most of these children were from the Rundle Park community and they got to engage with a program in their own home area.



**Figure 6** SURF Event at ACT Centre with Shepherd Jeannette Hall and Chewy the Goat (J. Lakhan)

## Suggestions | Planned public events

- Extend the invitation for public engagement to various audiences. Although we were fortunate to plan programming for children from various backgrounds, one demographic we could have improved were local senior's homes. We did attempt to find contact information and extend the invitation, but were unable to follow through because of staffing and time restraints.
- Have a dedicated staff member to plan various types of engagement opportunities. This benefits your program but also increases your audience, and creates programs for every Edmontonian.
- Continue participating in events like the Alberta Emerald Awards, where we can engage with a larger audience of likeminded individuals or projects.
- Continue doing Meet & Bleats for the general public.

### 3.4. Creating online engagement material

We used various forms of social media and other online material to engage with the public. Using the platforms listed below we were able to share information about the GoatWorks program, engage with the public, and spread awareness about other Parks and Roads campaigns.

#### 3.4.1. Social media (@YEG\_parks)

We specifically used the YEG Parks accounts (Twitter, Instagram, and Facebook), which were managed independently of the City of Edmonton's account. During May, June, July, and August I was responsible for crafting posts for each platform, coordinating timing with our public events, creating infographics, and managing content according to positive, negative, and question-based feedback.

#### 3.4.2. Webpage: [Edmonton.ca/goats](http://Edmonton.ca/goats)

A common form of information dissemination is through the City of Edmonton's website and GoatWorks-specific webpage: [Edmonton.ca/goats](http://Edmonton.ca/goats). Since its creation in 2017, web analytics have shown that there has been an increase in page views (+19.7%) and unique views (+16.3%) from 2017 to 2018, with the average time spent on the page at 4:37 and 3:38, respectively (Lakhan 2018). This year I updated the information to include facts about positively- and negatively-perceived information in an attempt to handle many common questions or misunderstandings about the program. This was done in July after research and reflection on the 2017 and 2018 years, public observations, and frequently asked on-site questions. Analytical assessment is ongoing.

#### 3.4.3. Email: [goats@edmonton.ca](mailto:goats@edmonton.ca)

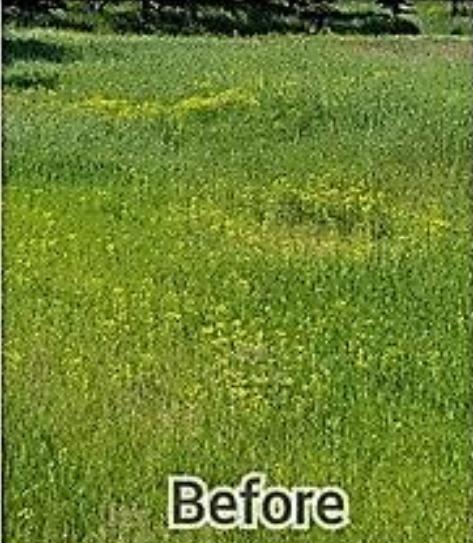
The GoatWorks Pilot Project involves a team of staff. This email account served as a joint communication tool that we all had access to. As questions came in from the general public, or as issues arose, we would flag them, discuss as a team, and respond accordingly.

#### 3.4.4. Integrated Pest Management (IPM) newsletter

The City of Edmonton started the Integrated Pest Management [newsletter](#) in May 2019 as a way of spreading information about bugs, weeds, and other pests, as well as tips on pest control and how to get involved in City of Edmonton IPM events. GoatWorks is one of the IPM strategies. For May, June, July (Fig. 7), and August we were responsible for crafting different content to go out as part of this newsletter. We considered that the audience would be interested in pest management and have knowledge of various strategies; we wanted to engage with this more technical side of our program and illustrate some of our immediate results in 150 words or less.

## Engaging the Public with Edmonton's GoatWorks Program

### Here We Goat Again...



**Before**



**After**

Rundle park: before and after goats performed targeted weed browsing.

GoatWorks returned to Rundle Park, controlling 10 hectares in June with the Beah'd Plant Management and Reclamation staff and their hard-working goats.  
Check out the diminishing of Leafy spurge - the yellow flowers featured in the picture above. Leafy spurge is one of the noxious weeds that goats browsed on and 'oh my goat' you can really see the difference.

Mark Saturday, July 27th on your calendars - GoatWorks is hosting its final Meet and Bleat - a family fun event where you can see the goats at work! Connect with us by emailing [goats@edmonton.ca](mailto:goats@edmonton.ca) or follow us on social media @yegparks.

**Figure 7** GoatWorks feature in the July edition of the Integrated Pest management Newsletter

### Suggestions | Media:

- Have a dedicated staff member to handle content, questions, and feedback via social media. In 2017 there was a staff with consistent access to the @YegParks pages, and they were able to quickly respond to questions or handle viral instances (positive and negative). It increases program transparency and makes for more effective campaigns
- Pass major media content by a team. This helps improve editing, increases your breadth of material, and keeps the team in the loop on major issues or successes

### **3.5. Assessment**

I considered the guidelines from Anderson et al. (2009), which outlined different public relations objectives and how to quantify or assess them. Based on our programming outputs, I wanted to assess the project outcomes, which include the level of awareness or engagement, understanding and knowledge retention, attitudes and public perception, and overall numbers or spread of our initiatives.

#### ***3.5.1. Elementary school program***

To assess the effectiveness of our teaching strategy we created a [feedback survey](#) for instructors to fill out related to content, applicability of instruction to classroom learning, and for instructors to indicate whether they would be interested in participating in similar events in the future. This afforded us the chance to improve our educational approach at the elementary level, and to gauge the instructor's perception of GoatWorks as a learning tool.

To assess knowledge retention and approach of our youth-based learning program we crafted a reflection activity that students could easily complete during in-class time. We wanted students to reflect on their experiences and be given the opportunity to tell us what they learned or enjoyed. The activity included a colouring sheet and a short written portion depending on the student's preference. We picked up completed forms and assessed them for content as it related to knowledge retention and perception. This is discussed in greater detail in Section 6.4.

#### ***3.5.2. Post-secondary school program***

To assess the effectiveness of our educational program we created a [feedback survey](#) for all participants to fill out. It was a longer survey that assessed the level of understanding of each program prior to and after the visit, as well as the applicability of each section to their career or life goals. Because we had various programs incorporated into one learning event, we took the opportunity to assess the effectiveness of each approach.

#### ***3.5.3. Unplanned visits***

I recorded the number of people who took part in unplanned visits, including the relative demographics of those who participated, why they participated, and what their perceptions of the program were. I recorded a summary of each evening/weekend shift and discussed observations with the rest of the GoatWorks team.

#### ***3.5.4. Social media***

I went through every social media post directly posted by YEG Parks related to the Goats. I recorded the content, the number of views, and how people interacted with each post. I formulated this information according to type of interaction and the general theme of the social media comments:

- Exposure: # likes/responses
- Perception and level of engagement:
  - # Positive comments
  - # Questions & Interaction
  - # Negative comments
- Spread of message: Sharing & tagging

By taking note of how people interacted with, or engaged with each post, you could see what people were interested in, what their concerns were, and whether or not the feedback was positive, negative, or questioning. It is an easy way to assess how the public perceives your program. In terms of education and engagement, it helps you better understand how your messages are getting across, and whether or not people are retaining any of that knowledge. This is discussed in greater detail in Section 6.1.

## **4. RESEARCH: Other approaches to public education**

### **4.1. Goat-related programs**

After a review of many of the popular goat- and sheep-based programs, there are various approaches to public education and engagement (Table 1). Fort Saskatchewan has been using sheep to trim the grass in a public park for 27 years. The Fort Saskatchewan city website includes a brief overview of where to find the sheep, events related to their arrival and departure, and encourages people to visit them (<https://www.fortsask.ca/en/things-to-do/visit-the-sheep.aspx>). Because this program uses sheep to mow the lawn and not target specific areas, the public are welcomed to this tourist attraction and are even encouraged to feed and interact with the sheep on a regular basis (Mueller 2019). This is very different from temporary herds employed for target browsing or prescriptive browsing, including those working in Rundle Park as part of GoatWorks. In these instances you have herds that are moving from area to area within a short amount of time, and biosecurity cautions against considerable hand-to-hoof interaction. Educational programs also aim to portray the goats as workers and not a petting zoo.

The City of Calgary has been employing various trained goat herds to manage their noxious weeds for the past 4 years. The municipality has outlined guidelines for target grazing projects (City of Calgary, 2017) however there is no mention of any public engagement or education outside of the use of 311 for public inquiries. One of the available news articles (Stolte, 2017) mentions that students were on site viewing the goats in 2016 however I was unable to access any educational strategies comparable to the GoatWorks program. Social media and news reports do mention public meet and greets with the goats in 2016 and 2018, but I have been unable to find evidence of planned tours or educational programs outside of this. City of Calgary social media (@cityofcalgary) has utilized Twitter and Facebook media platforms to disseminate information about their program. One instance that I found particularly useful was how they used social media to survey their audience to record public perception about their program. I adapted this tool and incorporated it into our media content.

Other municipalities have followed Calgary's lead and used goats as a means for noxious weed management (Table 1). Many of these programs offer demonstrations or small meet and greets, but I have been unable to find any mention of specific educational programs, tours, or platforms to engage with the programmers outside of municipal 311dispatch. Grand Prairie has a brief mention of their program when discussing Leafy Spurge on their municipal webpage (<https://www.cityofgp.com/parks-recreation/park-space-urban-forestry/weeds/legislated-weeds/leafy-spurge>), but they make no mention of a goat-specific program outside of leafy spurge management. Similarly, Kamloops mentions that they have been using assessing their use of goats for weed management since 2012, but outside a small community webpage mention (<https://www.kamloopsnews.ca/weed-control-goes-to-the-goats-in-kenna-cartwright-park-1.1234828>) or news articles from the community, there is no mention of a specific goat program or any educational opportunities.

I recognize that the City of Edmonton does not have its education plan readily available, however the webpage and email address welcome constant feedback and social media encourages ongoing engagement with the program. The city of Lethbridge has been assessing the use of goats in their public parks since 2018 and their webpage (<https://www.lethbridge.ca/Things-To-Do/Parks/Pages/Targeted-Grazing---Goats.aspx>) and approach to the goat program appear to parallel the City of Edmonton's program. Lethbridge uses their Targeted Grazing program as a tool to spread information about integrated pest management and welcome questions with their Parks Coordinator. Red Deer has a similar webpage (<http://www.reddeer.ca/city-services/environment-and-conservation/your-yard/weeds/goats-and-weed-management/>), although it is a summary of the goat program, and not necessarily a tool for engagement.

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**TABLE 1** Example of North American municipalities with information about popular sheep- or goat-based land management strategies, with a note about education (ed.) plans

Community Program	Role of Sheep or Goats	Ed. plan?	Accessible Information
Fort Saskatchewan	Sheep Grazing: Mowing	No	Public is encouraged to visiting (feeding & petting); with planned events
Calgary	Target Browsing: Weeds	Partial	Program guidelines have information; some social media and other news reports; Meet & Greet events
Grande Prairie	Lawn Mow & Noxious Weeds	No	Brief mention on city webpage; some media news reports; no planned events
Red Deer	Target Browsing: Weeds	Partial	Webpage with some information about program and contact information
Lethbridge	Target grazing: weeds	Partial	Full webpage with information about IPM, contact information, and accessible reasoning. Similar to Edmonton's current approach
Kamloops	Weed control	No	Brief mention on city webpage; some media news reports; no planned events
Colorado	Weed management	Partial	Cook (2017) overviews a how-to, which includes mention of education for public awareness.
Nevada	Prescriptive Browsing: Fire Prevention	N/A	Goat Fund Me Public Campaign. Although it does not include a public education component, it is a glimpse at the result of public engagement: motivation to action.
Long Pasture Wildlife Sanctuary on Cape Cod	Invasive weed & Brush removal	Partial	Offered "Meet the Goat" educational events: meet the goats, walk them on leashes, learn about their diets, and what it takes to raise or rent them; Also offered tours
The congressional Cemetery, Washington	Invasive weed control and management	Partial	The goats graze overgrown areas that could damage headstones. Public are invited to come out and view the herd during their open hours.
Pacific Gas and Electric, Auburn, CA	Invasive weed and brush removal	No	Various stories discuss how they are using goats, but all of it takes place on private lands and it is more about positive image rather than education.
O'Hare International Airport, Chicago	Manage overgrowth and reduce habitat for wildlife hazards at airport operations	No	Interesting use, but because of the nature of the project, not educational programming is expected
Governments: Maryland, Pennsylvania, California, New York, Iowa	Vegetation management	No	Fifield (2016) overviews various projects, including their successes and failures and overall guidelines moving forward from the business side of government regulated goats
Google Corporate Campus, CA	Weed and brush management (lawnmowing)	No	Mow the lawn and manage the property using a low-carbon approach; only engagement is through media exposure.

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Other areas, including Peace River Regional District (<https://bcinvasives.ca/news-events/recent-highlights/renting-sustaina-billies-as-public-contractors>), small municipalities like Merritt, BC (Hill 2019) and other parts of Canada have reports of goats being used for weed management, but outside of news reports or media updates I have been unable to locate any additional information about their programming. It appears that the focus of many programs is on the use of goats for land management and not on the opportunity for education or engagement.

When examining programs in the US, many municipalities employ goats for prescriptive browsing or “goatscaping”. Goatscaping is different from target browsing, as the goats are encouraged to eat all vegetation, including invasive weed species, brush, and natural areas (similar to Fort Saskatchewan's sheep). The Long Pasture Wildlife Sanctuary on Cape Cod rents GOat Green Cape Cod goats in Massachusetts and offers various meetings with the goats, as well as a public tours (Wilson, 2017). Based on the Cape Cod article (<https://www.capecod.com/lifestyle/a-goat-alternative-to-weed-control/>), the focus of the educational programming is demonstrating how members of the public can raise or use goats for their own properties, as well as the benefits of using goats in areas with invasive weed problems. This included a hands-on experience with the goats on a leash. Although this opportunity gives members of the public a great interactive experience to goat land management, there are considerable issues with public biosecurity that would prevent us from doing something similar in Edmonton. Other Cape Cod companies also offer goatscaping, but have no approaches to education as their clientele are on mostly private lands (<http://www.gogreengoat.com/how-goatscaping-works.php>).

Similarly, the use of goats by Pacific Gas and Electric (PG&E) in California, the O'Hare International Airport in Chicago, and the Google Corporate Headquarters in California all involve privatized land agreements. PG&E have publicized their use of goats for fire prevention using various means of positive media exposure including in local news stories (e.g. <https://www.ksbw.com/article/pge-brings-160-goats-to-soquel/1336275>). This attempt at positive media exposure and proactive approaches to fire maintenance was likely born out of PG&E's legal battles over their utility lines starting fires in California (Beam 2019). Other than media stories I have been unable to find any additional information about education or engagement<sup>1</sup>. O'Hare International Airport is another example of a goat-based program that takes place on private land where spectators or public members are prohibited from participating. The airport hires a herd of animals (goats, sheep, donkeys, and sometimes llamas) to help remove long grasses or areas where other problematic animals may create nests (Voon, 2019). Google's Mountain View Headquarters similarly hired goats to mow their lawns and clear weeds and brush from their building grounds to reduce fire risk (Google, 2009). Based on the considerable amount of media attention Google received for hiring goats (e.g., Beaumont, 2009; Zielinski, 2009), their decision was based on the need for alternative (non-machine) land management, promoting their “green” branding, and to increase worker morale.

Alternatively, the Congressional Cemetery in Washington, who welcome goats on site to ensure historic monuments aren't damaged by overgrowth or large trees, includes information about their program and welcomes community visits (APHCC, 2015). According to their 2013 fall newsletter, which overviewed the onset of the “Eco-Goat” program, the Congressional Cemetery received a massive amount of media attention for the use of goats, which included over 100 newspapers and over 50 live television or radio stations. Eco-Goats were featured on broadcasts and publications such as the BBC, NBC Nightly News, the Washington Post, USA Today, BBC World News, Al Jazeera, and even on the ticker at Times Square (APHCC, 2013). Because of the media exposure, the group increased involvement with their organization and collected over \$85,000 in on-site sales, including a fundraiser to have the goats return in future years. Based on the recurrence of the goats in 2015, it was apparent that the community was engaged through public interactions with the goats and their organization. This

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<sup>1</sup> I am currently blocked from accessing PG&E websites because I do not have a USA IP address

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was a similar approach for Edmonton, wherein we used goats as an awareness mascot for integrated pest management. Although this may have not been the original attention for the Congressional Cemetery, it was definitely a good opportunity to capitalize on their media exposure

Other communities have similarly taken a public approach to try and bring goats into their cities for public use. Nevada City gained notoriety for an extensive “Goat-fund-me” campaign, which is set to conclude this summer (<https://www.gofundme.com/GoatFundMeNevadaCity>). Because of the success and exposure of goats used for prescriptive browsing for fire maintenance in other areas of the United States, the fundraiser aimed to protect the city from fire damage using preventative goat measures (Anzilotti, 2019). Although this is not an educational campaign, I believe it is something we can learn from; sustainable goat projects motivated this community to be proactive about their own fire prevention. We can similarly use goats as a means for education about other sustainable project.

Cook (2017) created a guide for city planners and goat contractors in Colorado to navigate projects like GoatWorks, which included potential considerations, impacts, and assessment methods for land management in public areas. In it Cook (2017, p.3) indicates that any public education should be catered towards community perceptions and safety, both in terms of how it is communicated, what key messaging is, and how signage can be used effectively. This model can be easily adapted to other municipalities. Fifield (2016) overviews how many American governments have shifted to using grazing goats for vegetation management, but caution about the pros and cons of this practice.

In addition to looking at the municipalities, I examined the proponents themselves. Both Baah'd Plant Management and Reclamation (BPMR) in Alberta and GOat Green Cape Cod in Massachusetts discuss their roles in the communities, and provide educational components to their online media. Having seen BPMR's role in public education, I know that it is important to work with your proponent and follow their guide in terms of education. We often only allow for a single meet and greet event throughout the whole year in an attempt to control biosecurity; if the community is afforded opportunities to pet or play with the goats, they are more likely to respect them as working animals during the remainder of the year. If you work with the shepherd's schedule, you can also create educational programs that cater to your staff strengths. This ensures that the workers keep working, but that the audience has the right amount of engagement.

### 4.2. Community-learning programs

Although many jurisdictions and groups have targeted browsing, prescribed grazing, or other similar approaches, it is clear that very few focus on an educational component (Table 1). In order to improve GoatWorks' engagement strategies, I shifted my focus to examine community-learning programs (Table 2). I feel that GoatWorks can be an effective program to engage with various community members and foster sustainable stewardship through experiential learning. Roots & Shoots is a program that actively promotes youth-led initiatives and motivates community members to become agents in environmental stewardship.

**TABLE 2** Community- or service-learning engagement initiatives researched or discussed

Program	Target Audience	Source
Jane Goodall's Roots & Shoots	Youth of all ages	<a href="https://www.rootsandshoots.org/">https://www.rootsandshoots.org/</a>
Vanderbilt University: Center for Teaching	Students (young adults)	Bandy (2018)
Environmental Youth Alliance	Youth	<a href="https://eya.ca/about-eya/">https://eya.ca/about-eya/</a>
City of Red Deer	Community members (all ages)	City of Red Deer (2006)

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Jane Goodall believed that we could not impose stewardship onto communities, but instead felt that we had to foster an environment for community members to engage and become agents of their own stewardship (<https://janegoodall.ca/our-work/roots-and-shoots/>). She created the Roots & Shoots initiative as a means for youth to become inspired to take action and create change in their communities. Through experiential learning that promotes leadership skills, team building, and critical thinking, Roots & Shoots equips students with the resources and training to succeed (<https://www.rootsandshoots.org/>). We took a similar approach to community engagement this year. We focused on school groups around Rundle Park because they are from that community. It was our hope that when kids went back home they shared their experiences with their parents, and would ultimately remember how their community was a part of a larger project. Although it may not mean much now, it starts a seed that grows into future sustainable stewardship. It starts at the kid level (pun intended) and affords children the opportunity to be agents in their own community development. We focus on the sustainable practice of education, and move together with community members of all ages. Table 3 provides an overview of a successful approach to youth engagement, program development, and community building, referred to as the Roots & Shoots formula. This year GoatWorks focused on incorporating the first two points into our education strategies. In particular we adapted concepts of self-reflection into part of our post-school visit activities. We wanted students to gain introspection on the program in their own backyard. All four levels of the Roots & Shoots formula have been incorporated into the Public Educational Tool Kit (Appendix 9.4).

**TABLE 3** Roots & Shoots formula for community-based initiatives (Jane Goodall Institute, 2012)

<b>1. Get Engaged</b>	Youth develop introspection by examining their beliefs to consider how their actions affect the world around them. This promotes positivity and youth are committed to achieving their goal.
<b>2. Community Mapping</b>	Youth collaborate and communicate to connect feelings outside their own by viewing concepts through the lens of another. In this stage they observe their community, mark community assets, and reflect about what their community needs or identify areas where people may be in need; reflection leads to a collective campaign effort.
<b>3. Take Action</b>	Youth learn how to act with a purpose and make choices that align with their commitment. They think critically and explore a topic from all angles before making decisions. They get to embrace challenges and overcome setbacks; campaigns lead to planning and action.
<b>4. Celebrate</b>	Celebrating promotes youth introspection, inspiration of their peers, and helps promote optimism. Reflection is an important part for youth to celebrate and recognize the bigger picture.

Notions of self-reflection were also part of the pedagogy overviewed on Vanderbilt University's centre for teaching. In a post about service learning and community engagement, Bandy (2018) highlights that service learning is a type of experiential education. Community engagement requires a cycle of action and refection as students seek to achieve real objectives for their communities. Although our elementary school students only participated in GoatWorks for a 40 minute session, by doing a reflection activity a week later they were participating in continuous reflection and engagement with the ideas surrounding the GoatWorks program. If students also watched the pre-event program (i.e. watched the CBC National Video), there were three instances of engagement with our program within a week. This creates a deeper understanding of the community-based program, and enriches the

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skills they learned and the knowledge they retained. Bandy (2018) goes on to explain that experiential learning and self-reflective programs like this juxtapose personal and social development with academic and cognitive development. The students benefit from various outcomes, including learning, personal, social, career development, and relationships with the community or program. There are clearly a number of reasons why youth and young adults should be engaged and incorporated into public education strategies.

The Environmental Youth Alliance (EYA) based in Vancouver also cultivates natural experiences into community engagement for children and youth in urban BC environments (<https://eya.ca/about-eya/>). This alliance focuses on creating opportunities for youth to engage with their own communities and empower them to turn ideas into action. Much like Roots & Shoots, the EYA raises awareness about environmental issues to foster youth stewardship; they use experiential learning to grow communities and empower them to maintain them for future years. This is something that GoatWorks can look into for future years if it is maintained after the pilot program.

As part of my research I also considered the approaches to public awareness done by the City of Red Deer (Red Deer, 2006). This “Public Awareness Toolkit” served as a major foundation for the GoatWorks Public Education Toolkit (Appendix 9.4). Their approach targets all audiences regardless of demographic, and gave insight on how to tailor educational strategies and approaches depending on who the campaign audience is. Although the municipality was interested in helping their community build public awareness campaigns about any topic, the take-away was that anyone could become empowered to create change, and that a toolkit was the first step in showing you how.

### 4.3. Take-away for GoatWorks

Throughout my research of various goat- and community-based programs, it is clear that education can be a valuable way to promote community cohesion, foster transparency between entities, and initiate empowerment. The key to all of these goals is experiential learning. Provide community members the opportunity to learn through physical interaction with your project or by means of a tangible application. Opportunities for self-reflection (e.g. post-visit activities) or engagement with the community about the topic (e.g. social media) can also enhance these learning opportunities and lead to deeper levels of engagement. GoatWorks can easily provide these learning opportunities through physical interaction with the goats, participating in shepherding or land management assessment, or reflecting on the importance of goats in the park. Voth (2004, p.16) advocates for pilot project as:

*“they give you an opportunity to show communities what goats are all about, can give you a chance to invite the media to do a field tour, and allow you time to work out any bugs, test your assumptions, and adjust and adapt to unforeseen issues.”*

I believe that pilot projects like GoatWorks also gave us the opportunity to determine effective ways to engage with communities, and assess knowledge retention of various groups. Instead of focusing entirely on the positives of the project, Hart (2004) advocate for projects to incorporate public concerns directly into program education materials; this is a bottom-up approach. Consider how the project could negatively impact the environment or community in relation to cost, damage to land, animal safety, etc. The public wants to know they’re getting the best program for their tax dollars, and they may be skeptical that the way they’re currently doing things is not the best. They may also have opinions about how it doesn’t need to be changed in the first place. Engaging with the public is as much about educating them about your project or campaign, as it is about learning about how your campaign is perceived. Section 6.1 applies this strategy to our social media engagement.

## **5. PROGRAM: Engagement opportunities by the numbers**

### **5.1. Classroom and school visits**

**TABLE 4** Demographics of the elementary and post-secondary school visits

Grade	# Children	# Adults	Notes	Did they read the pre-visit info?	# of post-visit activities submitted
Kindergarten	50	3	Cancelled (weather)	N/A	0
Grade 3	16	1	Science class	Y	0
Grade 2	15	1	None	Y	31
Grade 4/5	27	2	None	N	0
Grade 1 & 2	41	3	Cut short (weather)	N	0
Undergraduate	0	68	Visiting from China	Y	4

#### ***5.1.1. Local elementary school***

We had the opportunity to facilitate an on-site learning experience for 5 classes, with an additional one planned but cancelled due to weather. Table 4 outlines the demographics, including who engaged with the pre-visit information, and who completed the activity sheets and instructor survey. Although only one class completed the activity forms, it was such a success that we advocated using the same technique for children at the Meet and Bleat (Section 5.3).

#### ***5.1.2. ALES international student visit***

Approximately 3 local instructors and roughly 65 undergraduate students visiting from China took part in the event (Table 4). To date only four individuals have completed the post-visit survey. The instructor was contacted twice to promote filling out the survey, but recognized that many of the students had no interest in participating further because of travel back to their home institutions.

### **5.2. Community group visits**

**TABLE 5** Demographics of the community group visits

Group	# Children	# Adults	Notes	Did they read the Pre-Visit Info?	# of post-visit activities submitted
Alpha Kidz	50	4	Two separate group events (n=25 each)	Y	0
SURF	0	25	At the ACT Centre	N/A	N/A
Meet & Bleat	~1,500 overall		4-hour major event	N/A	59 (22 surveys & 37 colouring sheets)

#### ***5.2.1. Alpha Kidz***

Alpha Kidz is a summer program put on by the Beverly Towne Community Development Society that focuses on inclusive community building and programming for children 5 to 12 years of age. We were able to create two hands-on events at the Rundle Park site, wherein 25 children participated in each event. We tailored the experiential learning similar to the on-site classroom visits, with age-appropriate lessons and language used for both. Children really appreciated the opportunity to participate in this event, and many of the students were from the local communities near Rundle Park. I suggest to

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continue events like this, which make experiential learning accessible to various community members, especially those from low-income families or not for profit community groups.

### 5.2.2. SURF

Shepherd Jeannette Hall and one of the new goats (Chewy) attended a drop-in session at the ACT Centre at Rundle Park for the City of Edmonton's Person with Disabilities Programming. It was simple, engaging, and accessible for the members who participated. This event provided an engagement opportunity for individuals who would not have been able to attend the Meet & Bleat or other classroom events. It afforded many members of our communities to become engaged with the goats at Rundle Park in a sensory-friendly setting.



**Figure 8** Chewy engaging with the public as part of the SURF event at the ACT. (J. Lakhan)



**Figure 9** Left: Meet & Bleat interactive areas; Right: an observation area. (A. Chow).

### 5.3. Public Meet & Bleat

The GoatWorks Meet & Bleat Public Event was a massive success. It took multiple teams with many volunteers to pull off a well-visited event. We took over a large portion of Rundle Park with hands-on learning stations and reflective and fun crafts in the south at the bottom of the hill (Fig. 9, left), and an interactive goat display with goat petting and viewing in the north on top of the hill (Fig. 9, right). All programming was related to City of Edmonton OPDP departments. This included an information table on GoatWorks, an interactive display (and spin game) for Integrated Pest Management, a craft station run by the Reuse Centre wherein people could make a goat puppet out of reused materials, and the Root for Trees truck offered an information station complete with plant giveaway. People were welcomed to go and see the goats on top of the hill where they could see them working (browsing) in

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action, or go and observe and potentially pet and feed them. The shepherds were on hand to help make sure the animals were cared for and the humans were informed. At the base of the parking lot we had two staff stationed to help answer questions, direct visitors, and record the number of patrons visiting the site. Based on these two trackers, there were at least 1,005 attendees at our event at the parking lot. Because of the spread of our activities, it is likely that more people attended the event but only visited the northernmost portion of the site, and didn't start at the main parking lot in the south. According to estimates provided by the shepherd, at least 500 individuals approached the Meet & Bleat from the north. Other staff members were on hand to provide relief at the hydration and first aid station, answer questions, or record feedback from the public.

**TABLE 6** Overview of the Meet & Bleat logistics

Category		Overview or Explanation
Attendance	South lot	1,0005+ at south parking lot
	North lot	~500 at the north parking lot
Demographic	Age	Included families with young and old members, older couples, youth, and middle-aged couples
	Experience Level	A lot of newcomers and visitors who had never heard of it before and were surprised this was the final year
	Hometown	Mostly Edmonton, but visitors from Nova Scotia, South Carolina, etc. were in town visiting and participated in the event
Feedback	Overall	Positive; all said the program should continue
Areas for Improvement	Scenario 1	<b>Concern:</b> Golf carts to take people up the hill with accessibility issues <b>Response:</b> People with accessibility issues were advised to park near the site (see location section below)
	Scenario 2	<b>Concern:</b> booths were too close together and it would have been better to have more interactive learning displays in future <b>Response:</b> will incorporate it into future events (if the program continues)
Limitations	Weather	Around 12 pm it started raining, and although it stopped raining around 12:30, the overcast environment was not a draw for many people in the afternoon (attendance tapered)
	Location	Many of the visitors were concerned about the location, as it meant a considerable amount of walking uphill. Our solution was to have people with accessibility needs park closer to the goats. Because people couldn't see the goats from the parking lot, there were many instances where groups left.

We received feedback in various forms, including online social media responses, in-person verbal discussion, engagement through questions, kids colouring pages, or filling in surveys. Colouring pages were provided to children for them reflect on their favourite part of visiting the goats. Of those who completed the pages, over 40 children (~4.0% of all participants) left their sheets with us as part of a contest. The results are discussed in section 6.4. Additionally, a survey was constructed specifically for this event and 22 people helped provided feedback using this medium (~2.2% of all participants). The results are analyzed in section 6.3.

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### 5.4. Campaigns and Awards

#### 5.4.1. United Way Campaign

One of the ways that GoatWorks got involved in our community was through participating as a United Way Campaign prize. In coordination with the shepherd, we provided a campaign donor with the opportunity to name BPMR's newest kids. This gave us an opportunity to spread the word about GoatWorks through City of Edmonton's internal media (Fig. 10), as well as to promote collaboration between different community organizations.

**New Kids on the Block**



**GoatWorks** returned to Rundle Park this month with the [Baah'd Plant Management and Reclamation](#) (BPMR) staff and their hard-working goats. Targeted browsing done by the goats is used to control the noxious weeds in the park as part of a 3-year pilot project.

On Thursday, June 13, we held an "Name A Goat" event at Rundle Park. Through the United Way Campaign, ETS Transit Instructor Lisa Andrews was awarded the opportunity to name one of Baah'd Plant Management and Reclamation's newest kids. Lisa had been considering different goat names for months prior to the event. Along with the support of her two friends, Melissa and Debbie, Lisa had the opportunity to meet the herd and get to know the personalities of some of the kids prior to providing the perfect name. Due to a very successful kidding season, Lisa had the opportunity to name four of BPMR's month-old goats.

Although their herd is at least 400 strong, Jeannette and Dan of BPMR keep the names of each of their goats to aid in identification, health records, and to help them call out their training commands; and yes, they know all 400 names.

We are excited to announce the four new kids in the herd are twins Fuzz Bug & Feta, and twins Bumper & Chewy!



Thanks to BPMR, including Jeannette, Dan, and the goats, who continue to welcome us into their herd.

**Figure 10** Infographic of the event information, images, and write-up of the United Way "Name a Goat" event through GoatWorks in June

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### 5.4.2. Alberta Emerald Awards

For the past 28 years, the Emerald Awards have recognized and celebrated the outstanding environmental achievements of large and small businesses, individuals, not-for-profit associations, community groups, youth groups, and governments. Uniquely Albertan, the Emerald Awards are the only award of their kind in our country, showcasing environmental excellence across all sectors (<https://emeraldfoundation.ca/emerald-awards/>). GoatWorks was one of three finalists in the “Shared Footprint” category:

*The Shared Footprints Award recognizes those who have exemplified land and water stewardship, built shared knowledge, improved air quality, reduced land disturbances, and encouraged ecotourism.*



**Figure 11** Social media post of the awards event, including current and past team members

Although we were not the recipient of the award, it was an incredible honour to be considered as a finalist. It meant that the foundation perceived our program as a sustainable force built on stewardship and engagement. The Emerald Awards Ceremony was also a great opportunity to see how the GoatWorks program interacted with the larger audience, and to understand the scope of the project within a community like the Alberta Emerald Foundation. It also gave me the opportunity to engage with previous GoatWorks team members, and to learn from other initiatives (Fig. 11).

### 5.5. Informal (spontaneous) Public Visits

During the month of June we had over 800 people visit the GoatWorks site during non-planned events (Fig. 12). During this time I estimated that roughly 75% of the public who engaged with the project during evenings planned to attend, or stopped by the park ‘hoping’ to catch a glimpse of the goats. Many have heard about us from media exposure, because of their experience with it in previous years, or word of mouth. The other 25% of the public who stopped by more or less stumbled upon the animals

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working. This included bikers, joggers, walkers, or even cars that stopped by to question us. We also received comments on social media from individuals who had attempted to see the goats but were unable to find them (either through locational issues or they misunderstood the available dates). It was clear from these numbers that people wanted to see the goats, and if they didn't previously know about them, they wanted to learn more. All of the discussions with people on site were positive (see Section 6.2), and the demographics were similar to those who attended the Meet & Bleat.



**Figure 12** A snapshot of one of the spontaneous informal public visits on the weekend in June

### 5.6. Take-away for GoatWorks programming

Public events are incredible tools for public engagement, which help increase transparency between City of Edmonton communities and the GoatWorks project. It also serves as a learning tool for different age groups, community members, and campaigns. It affords staff the opportunity to reduce ignorance about various facets of Parks and Roads Services, increase awareness about integrated pest management, and positively impact global perceptions of the City of Edmonton. Each of the programs or events we participated in was well-attended, the responses we received were positive (see Section 6), and people were encouraged to get involved. I found it particularly important that we invited various groups from different backgrounds, organizations, or education level. One thing I would encourage in future years is to invite seniors centres or facilities near Rundle Park. Although there are some accessibility limitations, if the goats are positioned along multi-use trails, it can make for an engaging opportunity for everyone. We were contacted by one of the local groups through the #311 app, but were unable to make an event work.

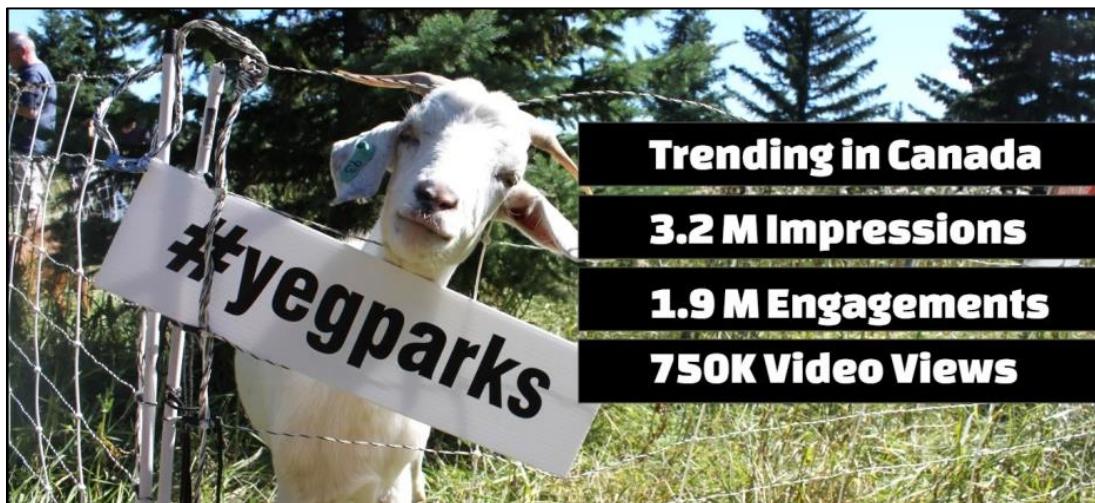
## **6. OBSERVING: Analysing responses and perceptions**

Based on all of my observations, including the millions of interactions with our project since 2017, it was clear that the public had different levels of engagement, knowledge retention, and perception, which can be interpreted as varying degrees of success for the GoatWorks program. The objectives for this year's program included increasing awareness of GoatWorks and Integrated Pest Management, aiming for high levels of engagement among various members of our communities, and to continuously improve educational approaches to increase the impact over time. Although we had a flashy mascot for our program (goats), which drew international attention in our first year, we wanted to show continuous engagement with our program across all the three years. We accomplished our outcomes using various platforms. This section overviews my findings and observations during the 2019 season.

### **6.1. Social Media**

There was an overwhelming positive response from the public towards the City's parks social media accounts (@YEG Parks), which included Facebook, Instagram, and Twitter. In 2017 analytics across Facebook and Twitter showed that over 2 million individuals were reached with messages related to GoatWorks and other parkland management strategies (Lakhan, 2017). Among these interactions, analytics showed that there were:

- 678,000 views on the first goat video
- 3,300,000 individual views on content
- 3,454 increased followers to yegParks Facebook page
- 23% increase engagement to non-goat related posts
- #yegparks was also a prominent feature on social media (Fig. 13)



**Figure 13** An overview of the analytics for the #yegparks hashtag in 2017. (J. Lakhan)

This potential for social media engagement and education has only increased since 2017. Instead of focusing solely on the number of interactions, I also wanted to examine the content of comments, questions, or interactions. Major themes included general enjoyment in goats, excitement to go and see the goats, positive reviews of the program or experiences, or questions related to the program and its role in our community. There were some negative comments, but it was impressive to see how random people responded to negative comments. For example, many comments were fueled by ignorance and the community was quick to provide information to improve the ignorance or educate their peers. Based on engagement with different posts or comments, I believe that GoatWorks is perceived as a

## Engaging the Public with Edmonton's GoatWorks Program

relatively positive program. When there have been negative comments, it is often based on ignorance about the program, or a lack of understanding of goat physiology. The community has been quick to answer questions or help reduce the ignorance.



**Figure 14** A social media post used on Facebook and Twitter in 2019 which focused on transparency of the program and results of the project overall (note: reduced yellow leafy spurge in the “after” photo)

Community member also began using GoatWorks posts as a platform to discuss other sustainable projects (e.g. household chickens, bat houses, etc.) or to mention similar projects in other areas, including the sheep in Fort Saskatchewan, the fire prevention goats in Los Angeles, and the grazing goats in Kamloops (recall Section 4.1). Other people requested goats to be used in their private properties or on other parkland areas in Edmonton, as well as in London (England), Waterloo (Ontario), and various green spaces around Canada. More negative comments focused on issues related to the electric fencing, goat poop, animal welfare (e.g. trailer, water, safety, animals being taken for slaughter), environmental welfare or concerns (e.g. trees and other species destruction, goat poop), the cost of the program, and the actual effectiveness of the program. Many of these more negative comments were met with healthy debate among posters, but also prompted the GoatWorks team to create new social media posts to add transparency or provide more information and reduce ignorance or unease about the program. Recall that this bottom-up approach was suggested by Hart (2004). As an example, we provided before and after shots from the 2019 June visit to show an area that had less leafy spurge than in May 2019 (Fig. 14). We soon received comments from posters that pointed out that the two photos were taken in different locations, which was not very transparent. We quickly created a new post as a follow-up (Fig. 15), thanked the commenter, and began using Figure 15 on social media and in various presentations for GoatWorks to date.

## Engaging the Public with Edmonton's GoatWorks Program



**Figure 15** A photo of the same site location at Rundle Park in 2017 and 2019, created with the intent of being used on social media as an update to Figure 14.

The following sections overview how GoatWorks has been received on various social media platforms between 2017 and 2019. All data was based on observations made on each individual post, photo, or comment. No additional analytics have been consulted, although this would be an effective means of analysis in future years.

### 6.1.1. Instagram

Instagram is based off of photos and small captions of an instant in time. Although videos can be used, they have not been the focus in all years. Posts always included a photo or video, and the aim was to catch the attention of the public, and include a small story or information summary of a part of the project. Table 6 and 7 overview the response we have had from the public interacting with our Instagram posts. The values listed are based on analytics recorded up to August 1, 2019.

**TABLE 6** Overview of responses and interactions from Instagram according to Pilot Year

Year	# of Posts	Video Views	♥	# Tags	# Comments	Comment Breakdown (#)		
						Positive	Negative	Question
2017	18	1608 <sup>2</sup>	609	11	33	30	0	3
2018	3	N/A	257	2	8	4	0	4
2019	10	N/A	497	2	9	5	0	3
Total	31	1608	1363	15	50	39	0	10

<sup>2</sup> A video was only posted during the 2017 year.

## Engaging the Public with Edmonton's GoatWorks Program

**TABLE 7** Overview of the comments on Instagram Posts on @YEGparks

Comment or Question type as it relates to:	Number			Examples
	Positive	Negative	Question	
General about the program	24		3	"I'm glad this project is happening" "Cool. The goats are the best solution to noxious weeds! I'm so glad this project is happening."
Visiting the goats and program			3	"When are they coming back to Rundle Park?" "If I wanted to go see the goats in action how do I find out where they are?"
Animal welfare	1		1	"What's the white stuff they eat on site, salt?" "They look so happy!"
Environmental welfare			1	"Rather pretty for an annoying weed?"
Goats in general	4			"Taking an impossible amount of pictures, because goats"
Goats for personal use			1	"Can I borrow a few?"
Other programs			1	"Have you travelled to Europe?"
Program effectiveness	3			"Rooting for those goats to get rid of those weeds!! Love this project and the daily updates!" "I really hope it's effective. It's a great adorable solution! #goyeggo"
Goat puns	1			
Public replying to public questions	2			Re: baking soda as dietary supplement Re: project overview
Conversational Banter	4			
<i>Total: 50</i>	<i>39</i>		<i>10</i>	

All posted comments were considered positive (Tables 6, 7). Those comments that were not openly enthusiastic, such as one poster who exclaimed that the leafy spurge was "rather pretty for an annoying weed" invited discussion and engagement about noxious weeds and provincial regulations for all community members. Comparing the comment breakdown and numbers from 2017 to now, there is a drop in commentary over time (1.83 comments/post in 2017 compared to 0.9 comments/post in 2019) but an increase in likes (33.83 likes/post in 2017 compared to 49.7 likes/post in 2019) (Table 6). We

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consider this to be a positive sign that GoatWorks is an ongoing engagement program, and did not just start strong with people quickly losing interest. One of the limiting aspects about using social media is that without a dedicated staff member, we were not always able to engage with these comments directly. By having a consistent presence on social media, and not just a consistent poster, members of the public often feel more compelled to engage with @YEGParks (based on 2017 Facebook commentary). Overall Instagram is an effective means for engaging with the community. It also serves as a data collection tool for assessing the levels to which community members are engaged, whether they are retaining certain pieces of knowledge, and if they are satisfied with the program.

### 6.1.2. Twitter

Twitter is another media platform that we have engaged with. Twitter offers a ‘quick fix’ of information, with posts and photos restricted to 180 characters. Although some videos can be posted, overall it’s about getting condensed information out to the public with fewer chances for a return of dialogue, comments, or feedback. Table 8 and 9 overview the response we have had from the public interacting with our Twitter posts. The values listed are based on analytics recorded up to August 1, 2019.

**TABLE 8** Overview of responses and interactions from Twitter according to Pilot Year

Year	# of Posts	Video Views	Re-Tweets	❤	# Tags	# Comments	Comment Breakdown (#)		
							Positive	Negative	Question
2017	42	2,511	727	2,022	16	96	55	1	16
2018	9	97,600 <sup>3</sup>	416	1,426	21	51	28	4	8
2019	11	12,100	234	810	9	45	19	0	13
Total	65	112,211	1,749	5,558	46	239 <sup>4</sup>	102	5	37

Based on the analytics, community members engaged with our Twitter posts more than our Instagram posts. This included video views, likes, and comments overall (Table 8). Twitter comments were also the first instance wherein we received negative comments or feedback. This number of negative comments may appear high (Table 8), but the tally also includes instances wherein members of the public reacted to, or engaged with, a discussion of the negative commentary by providing their own (positive) feedback or information to mediate the concern. As an example, in July 2019 there was an original poster (OP) commenting about how goats were way better than pesticides on site. One of the members of the public (P1) commented on OP’s post about the negative or “poopy” side of GoatWorks. Two additional members of the public (P2, and P3) engaged with the posters in a friendly conversation about one of the parts of having goats on site.

<sup>3</sup> The number of video views for 2018 is considerably higher because of a BBC News World Video on the project which went viral ([https://www.bbc.com/news/av/world-us-canada-45643154/these-goats-work-for-the-government?ocid=socialflow\\_twitter](https://www.bbc.com/news/av/world-us-canada-45643154/these-goats-work-for-the-government?ocid=socialflow_twitter)). This time period was also when the post for the goat coordinator went viral, wherein the City of Edmonton received the most job applications it has ever received to date (<https://www.cbc.ca/news/canada/edmonton/edmonton-goat-coordinator-hiring-job-1.4552077>; <https://www.facebook.com/watch/?v=1706190806108910>) The hiring process was similarly featured on a “This Hour has 22 Minutes” clip, in which our manager was seen hiring a goat ([https://www.youtube.com/watch?v=\\_aZ9CiXnqyk](https://www.youtube.com/watch?v=_aZ9CiXnqyk)).

<sup>4</sup> Comments include tags and may not add up

## Engaging the Public with Edmonton's GoatWorks Program

*OP: "Since goats won't cause my children to ingest endocrine disrupting chemicals if they play in that space, I say keep the goats! Stop using herbicides and pesticides – and they'll work on hills/valleys that mowers can't reach."*

*P1: "But what about the goat poop?"*

*P2: "I've worked with a lot of goats. Cool thing about goat poop is that it's in small pellet form. The way it passes through the goat's system means that it decomposes quick,, doesn't really smell, and doesn't attract a lot of insect. Works as a fertilizer for natural spaces."*

*P1: "I just wouldn't want my baby crawling around hand to [mouth] and or kids rolling around in a city field that allows dogs and cats [gnats] or goats to freely poop on it... if you do then I have no problem you having your own green spaces."*

*P3: "I agree biohazards are a risk factor. Closed herd like ours that go through regular veterinary screening have a very tight bio-security reduce the parasite and disease risk to others. Goat droppings have almost no bacteria and don't attract flies. We also sweep the trails.*

*P1: "Well hey I get it but I was just pointing out the irony on how she's worried about [herbicides] being absorbed and probably will never even cause a rash but completed disregards feces... which we all know can cause serious gastrointestinal illness extremely quickly."*

*P3: "It's important to ask the government for legislation and licensing for target browsers to ensure safe standards for the public."*

During this conversation the contractor, Baah'd Plant Management and Reclamation (aka P3), engaged with OP, P1, and P2 and were able to discuss bigger issues related to goats and land management, namely legislation and licensing around biosafety. Often it can be difficult to engage with these bigger issues, and a negative post created the circumstances to do so. There were many likes and shares of this “poopy” conversation afterwards. When comparing the number of comments and interactions on Twitter over time, we appear to receive more likes (73.6/post vs. 48.1/post) and more comments (4.1/post vs. 2.9/post) on our Twitter posts in 2019 compared to 2017, respectively. This again shows that we are getting more engagement with the public as time goes on despite having fewer social media posts. I believe this is partially due to how we frame the content for our social media.

Table 9 overviews many of the comments and dialogue that occurred on our @YegParks Twitter posts. Many of these comments fit into similar themes that we engaged with on our Instagram platform. The bulk of content on our Twitter posts were considered positive (Table 9) and those that were not, were followed up with conversation or posts from other community members. Some of the negative comments included skepticism about the benefits of the program, goat poop, and animal welfare as it relates to transportation. The trailer and overall animal welfare are better addressed on our Facebook posts (Section 6.1.3), but we made sure to address major issues on all platforms. One of the limiting aspects about using Twitter is that it can be difficult to quickly engage with posters when there are negative comments or major questions. Because of the potential for Twitter hashtags to go viral, we advocate for the continued use of Twitter for public awareness in the future, especially if there can be a dedicated social media staff member.

## Engaging the Public with Edmonton's GoatWorks Program

**TABLE 9** Overview of the comments on Twitter Posts on @YEGparks

Comment or Question type as it relates to:	Number			Examples
	Positive	Negative	Question	
General about the program	58	0	11	“Why the final season?” “What’s the taxpayer cost for this?” “This is the greatest thing the city has ever done”
Visiting the goats or seeing the program in action	7	0	10	“Are they still in the park?” “Can you pet the goats?” “Will there be another meet?” “This was so fun! Edmonton is the best!”
Animal welfare	1	0	2	“Is it dead?” (the photo showed a napping goat) “Some special goats!”
Environmental welfare	1	1	5	“I think this is a great idea! But how does the city prepare the park before the goats?” “What do they do with the goat raisins?” “Great so now my grass is cut but I have a yard full of goat [poop]... nice”
Goats in general	16	1	1	“Goats are a bit too thorough. If left unattended they’ll convert anything to moonscape”
Goats for personal use	2	0	3	“Can I rent your goats?”
Goats for food	1	0	1	“When they’re done can we make some delicious goat curry with them?” “And they make cheese... mmmm”
Other programs	10	0	3	“Can we bring this to Vancouver? Because... goats! Go Canada!” “@YEGMayor we need to do this in more parks” Mentioned.: Savannah, San Juan Hill, Brazil, Richmond VA, Oregon, For Saskatchewan, California, Pittsburgh, Calgary
Program effectiveness	20	3	1	“There is a new invention on the market called a lawnmower. Last year it was “Go Bagless” this year is “go farm animal”? Please” “Great idea and extremely environmentally friendly well done to the innovative idea from City of Edmonton” “Why hasn’t this been happening in all yeg parks for years?”

## Engaging the Public with Edmonton's GoatWorks Program

**TABLE 9** Overview of the comments on Twitter Posts on @YEGparks (continued)

Comment or Question type as it relates to:	Number			Examples
	Positive	Negative	Question	
Public replying to public questions or comments	0	2	8	“...they’re only used for 7-10 days in any given area” (to prevent “moonscape”) “Because of the way the pellets form and decompose, it’s a quick process and doesn’t attract any additional insects or smell. It’s a good fertilizer for the field”
Conversational Banter	7	2	1	“Awesome video! Can we use on our CBC website and social pages?”
Total: 239 <sup>5</sup>	123	9	46	

### 6.1.3. Facebook

Facebook was by far the most effective form of social media that GoatWorks engaged with, especially considering the spread, impact, number of interactions, and opportunity for conversation. Facebook is an integrative social media platform that allows you to post photos, videos, events, textual information, and surveys, which can all be useful means of spreading information and gauging knowledge retention. In recent years it also introduced a reaction button that prompts the public to express likes, loves, sadness, laughter, and anger of posted content. As an analytical tool, this is an easy and effective way of assessing the public’s perception of each post (Table 10). You can also interact with each individual comment or response. Due to time restraints, I have not included reactions on each individual responses or comment, but I did record the context of each comment (Table 11). The volume of interactions overviewed in Tables 10 and 11 are based on posts up to August 7, 2019.

**TABLE 10** Overview of responses and interactions from Facebook according to Pilot Year

Year	# Posts	Video Views	👉	❤️	😊	😊	😢	😡	Shares	# Comments	Comment Breakdown		
											Positive	Negative	Question
2017	28	595,911 <sup>6</sup>	9,132	1,835	234	86	25	2	6,920	3,525	994	139	175
2018	7	2,000	386	67	10	0	1	0	131	104	40	0	10
2019	12	4,010	575	102	0	3	0	0	154	94	50	0	13
Total	47	601,921	10,093	2004	244	89	26	2	7,205	3,723	1084	139	198

<sup>5</sup> All other comments were involved in tagging people or spreading the message further

<sup>6</sup> The total number of video views for 2017 is considerably higher than others; this is due largely in part because of a viral video that showed the goats exciting a “clown car” of a trailer. It was shared on CBC News and reached a very widespread audience.

## Engaging the Public with Edmonton's GoatWorks Program

**TABLE 11** Overview of the comments on Facebook Posts on @YEGparks

Comment or Question type as it relates to:	Number			Examples
	Positive	Negative	Question	
General about the program	445	1	24	<p>“I love that YEG does this!”</p> <p>“Hey! My tax dollars aren’t paying for that slacker to be sleeping on the job!” (in response to a goat napping)</p> <p>“Fluffy lawnmowers in action”</p> <p>“Eco-goats!”</p>
Visiting the goats or seeing the program in action	334		32	<p>“I hope to see them in action around the city”</p> <p>“But can we pet them?”</p> <p>“Where can I find them at Rundle?”</p>
Animal welfare	64	20	24	<p>“Are the goats unionized?”</p> <p>“How did they all fit in that trailer?”</p> <p>*Concerns related to: trailer, electric fence, and water</p> <p>“The fence with a gentle current? Really?”</p>
Environmental welfare	1	7	3	<p>“Have you thought of weevils to combat your thistle problems?”</p> <p>“I like the idea, but wonder about all the poop. Is it cleaned up or left as fertilizer?”</p> <p>“Who’s cleaning all the crap up?! I Have to clean up after my dog, how is this any different? Just strolling through the park stepping on goat crap.”</p>
Goats in general	48		2	<p>“YEG Parks I heard that the City is trying to ban the goats?”</p>
Goats for personal use	17		5	<p>“I want all the baby goats”</p> <p>“How can I rent a couple goats for the weekend?”</p> <p>“We need three to five of your goats. For the reasons of...”</p>
Goats for food	4	2	3	<p>“So they can make good ricotta cheese”</p> <p>“And the goats? Do they get slaughtered?”</p> <p>“I could use one to make some patties”</p>
Other programs	16		1	<p>Mention previous programs: California, Calgary, Seattle, Fort Saskatchewan, New England, New Zealand, Hermitage Park, Kamloops</p> <p>Advocating for them to do similar: Cornwall, Vancouver, Hawridge, Ottawa, Winnipeg</p> <p>Similar programs re: mosquitoes</p>

## Engaging the Public with Edmonton's GoatWorks Program

**TABLE 11** Overview of the comments on Facebook Posts on @YEGparks

Comment or Question type as it relates to:	Number			Examples
	Positive	Negative	Question	
Program effectiveness	34	3	6	"Wonderful! Fantastic alternative to carcinogenic chemicals. Keep going forward City Parks! Great job!" "Great globalization remedy" "Most cost effective way to control weeds no chemical and the grass get fertilized" "Are you expecting some additional positive effects on plant and insect diversity from this project?"
Public replying to public questions or comments	15	102	97	"A 22ft x 6ft trailer with a top deck is more than enough room legally for 75 sheep" "As per YEG PARKS POST..." "Be assured that these animals are very valuable thing to the goat herders – and having healthy happy animals is vital to how they make a living. Any sick or stressed goats would be a loss."
Conversational Banter	106	4		*negative banter was racist and/or flagged as inappropriate and/or trolling; I will not include examples
<i>Total: 3,723</i>	<i>1084</i>	<i>139</i>	<i>198</i>	

During the first year of our project a controversial video went viral and elicited a much stronger response than we were expecting. Because of this exposure we noticed an increase in activity on GoatWorks posts, other @YegParks platforms, and in terms of media events or opportunities. In many ways, the exposure we received on Facebook in 2017 is the reason why we have had such a global spread. Although it may have gone viral because of concerns related to animal welfare, humor related to the trailer being a "clown car" or a "tardis", the GoatWorks team and other community members quickly engaged with posters in an attempt to de-escalate the situation. There is a noticeable drop in Facebook activity after the viral period in 2017, with fewer interactions or comments in 2018, but we hold steady with the number of people engaged in 2019. Table 11 overviews a breakdown of the type of comments or questions discussed on Facebook. Comments or questions have been organized into contexts similar to Instagram (Table 7) and Twitter (Table 9). Although there is a large number of negative comments related to animal welfare (in relation to the trailer), environmental welfare (in relation to goat poop), misunderstandings about the program (animals used for food), or people who simply do not believe the program will be effective, there is an enormous response from the public in response to these concerns. For each negative comment it often appeared as though 5 to 10 people would respond with clarification, reasoning, or engage in a discussion with the original poster. This is an exceptional outcome of social media that we had not expected.

As an example of community engagement and knowledge sharing, an original poster had a misunderstanding about naturalized areas and why the goats were in Rundle Park. They were excited

## Engaging the Public with Edmonton's GoatWorks Program

that the goats were there to eat the dandelions. A member of the public (P1) took a moment to engage with this poster and impart more information about the program. The entire conversation was positive:

*OP: "Let's go watch the goats eat dandelions!"*

*P1: "Leafy spurge is their main target, not many dandelions in naturalized areas."*

*OP: "Good to know! I imagine they are still cute eating leafy spurge!"*

After the initial post about the trailer, YEG Parks quickly issued a follow-up email explaining the dimensions and size of the trailer, discussed measures taken to ensure positive animal welfare, and highlighted important assurances that the company (BPMR) and City of Edmonton take to keep the goats happy and healthy. After the update was posted, we received an outpouring of support related to animal welfare, including comments and likes/loves. Any additional comments about animal welfare were directed to the updated post both by YEGParks and general members of the public. This example highlights the importance of having regular staff engage with commentary and do damage control when posts are misunderstood or taken poorly.

Another outcome of our Facebook posts going viral was the attention it drew from people in communities who also had goat-related programs (e.g. California, Calgary, Seattle, Fort Saskatchewan, New England, New Zealand, Hermitage Park, and Kamloops; recall section 4.1). There was also comments asking for different communities to follow Edmonton's lead; one poster even tagged their City's social media:

*OP: "I love this idea. Hey @CityofVancouver we should be participating in this environmental way to deal with nasty weeds!"*

People were also advocating for similar projects in Cornwall, Hawridge, Ottawa, Winnipeg, and other parts of Edmonton. Ultimately we believe that social media helped propel GoatWorks into the international spotlight, and afforded us a platform to engage with various community members. It may have also supported other community involvement in similar programs. We were able to spread word about the GoatWorks program, advertise public on-site engagement opportunities, and maintain a level of transparency about City of Edmonton programs like GoatWorks. While crafting Facebook posts in 2019, it was also clear that the members of the public who were actively engaging with @YegParks on a regular basis were interested in seeing the program's overall effectiveness, participating in events like the Meet & Bleat, or sharing their positive experiences or perceptions of the program. After 2017 we received no negative comments about the GoatWorks program through our Facebook page. We believe that it would be an effective means for education and engagement in the future.

### 6.2. In-person (informal) discussion

Any time GoatWorks staff members were on site we were able to serve as ambassadors for the program. This involved handing out brochures (Fig. 16), engaging with community members in a dialogue, and answering any questions. It also meant that we could observe and listen to the public's response to the goats based on body language, tones, or personal conversations. I believe that over a thousand people stopped by the GoatWorks project during informal times in June and July (e.g. evenings and weekend outside of regularly programmed events). The perception from the public during these engagements was overwhelmingly supportive, and it provided a great opportunity for public members of all ages to view the goats working.

## Engaging the Public with Edmonton's GoatWorks Program

# GoatWorks!



### How it works

- The goats working in Rundle Park have been trained to eat key weed species. They are ideal for ecologically-sensitive areas where herbicides or other control methods are impractical or inappropriate.
- The goats are never left alone. A skilled shepherd is on site 24 hours a day.
- The park is their salad bar! The goats will be targeting noxious weeds, but they will also sample dandelions and other vegetation.

### Why goats? Chew on this...

- Goats are the best animals for the job because they are mobile in all terrain. They move easily on steep slopes and heavily-vegetated areas that are not safely accessible to people.
- Goats have special enzymes in their stomachs that allow them to eat plants that are poisonous to other animals.
- Goat poop is not a problem! It's actually a fertilizer. Goat poop is dry, breaks down quickly and does not smell or attract flies. Grasses and other vegetation left behind are given a natural boost!



[edmonton.ca/goats](http://edmonton.ca/goats) 

# Weed Control



The City adheres to provincial and federal regulations for weed control and herbicide use. We control weeds in a way that is mindful of environmental impacts and meets professional and industry standards for parkland care. Herbicide is used to control weeds on a very small percentage of Edmonton's parkland. The City uses alternative weed management approaches such as:

- Removing weeds with trimmers and brush blades
- Working with communities to remove weeds mechanically and by hand
- Using biological controls such as bugs and goats (pilot planned for 2017)
- Converting non-active turf sites to maintained naturalized areas, where natural vegetation eventually out-competes weeds

The City of Edmonton uses techniques designed to enhance the growth of healthy turf, thereby out-competing weeds in certain areas. Techniques include:

- Hydro-seeding, which involves mixing grass seed with sticking and thickening agents (pulp) and spraying it on poor turf
- Aerating, topdressing, fertilizing and overseeding turf in select areas



[edmonton.ca/weeds](http://edmonton.ca/weeds) 

**Figure 16** GoatWorks brochure handed out during public events (2-sided)

During informal events the public is not permitted to pet or feed the goats under normal circumstances, so the majority of the 1,000+ that visited were only there to observe the goats working. Many took pictures, many told their children about the program and pointed out their favourites, and a lot had questions. Questions were often based on the program itself:

- Why are they here?
- How many are there here?
- Where do they go each night?
- Where do they come from / where do they go when they're not here?
- How do you "train" goats?

But sometimes people who stopped by were unfamiliar with the program, and had different kinds of questions, usually related to acquisition:

- Are they for sale?
- Can we buy their meat or milk?
- Can we rent them for our lawn?

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Some of them had the same concerns that we received on social media, including:

- What happens to the goat poop?
- Won't they just eat all the trees?
- Do they get slaughtered at the end of their time here?!?
- Is it *really* effective?

Getting to engage with public members on a one-on-one basis meant that we could listen to their concerns and address them with additional information or considerations. When the same concerns or questions kept getting asked, we knew there was a gap in publicly available information. To improve this disconnection we modified the website, changed our awareness approach online, and included additional information in our key messaging.

Discussing GoatWorks with public members also afforded me the chance to target the public for insight into specific topics. I would ask engaged members:

- Do you think GoatWorks is effective?
- Are you happy to know it's in your community?
- Do you want it to continue?
- Is it worth it?

Responses to these questions were *very* positive. Public members felt it was "a wholesome program that I can bring the whole family out to see" and that "most of these people won't have seen this many animals like this, and it's an important part of Alberta culture." All were happy that it was an initiative that their city was participating in, and they hoped that it would spread to other areas of the city for future years.

Ultimately we found that through informal engagement with community members we were able to spread awareness about the program and engage with them through observational learning. Many individuals who came onto site were not originally there with the intention of seeing 450 goats. But the takeaway message that they had was that goats were in their community, and they were working to help manage the land naturally.

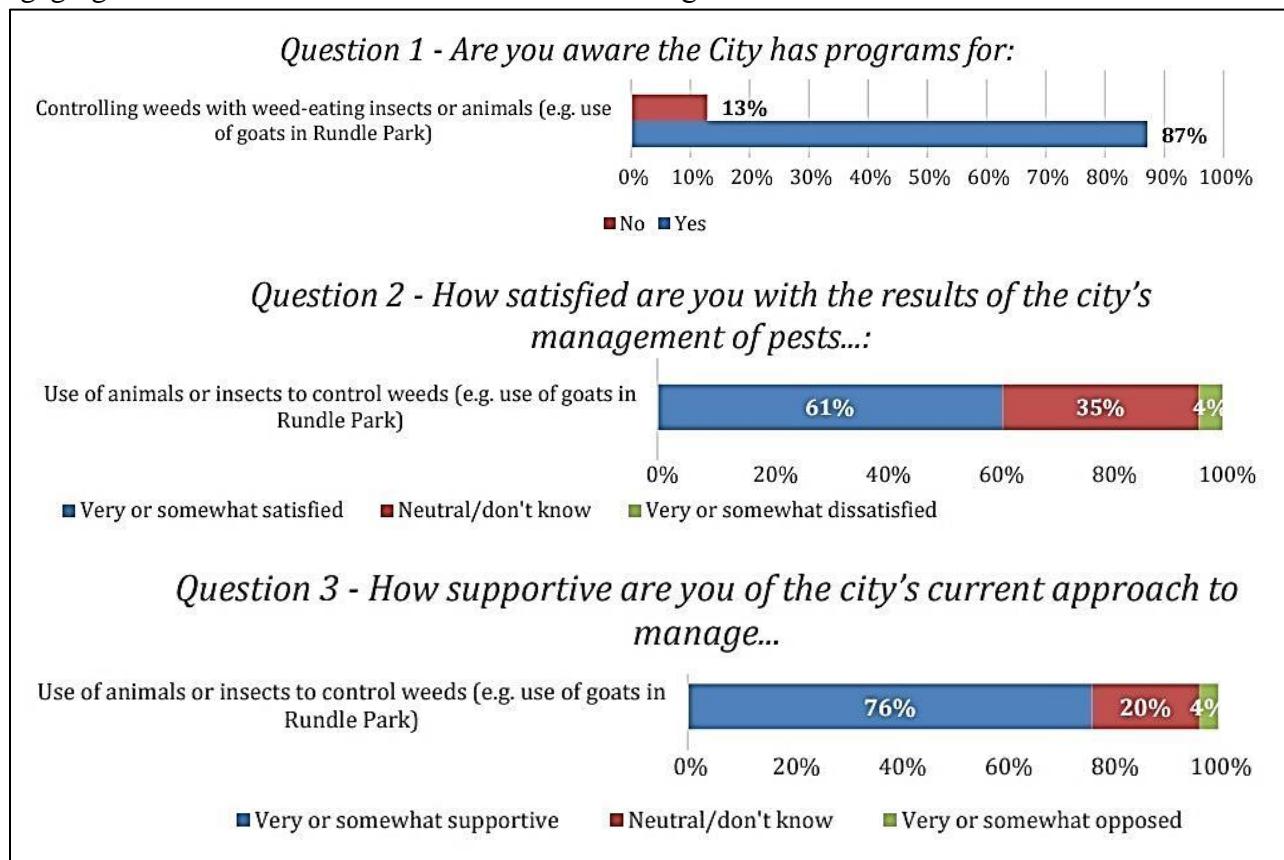
### 6.3. Intercept Surveys

As a more quantifiable measure of public perception, engagement level, and knowledge retention, the City of Edmonton uses intercept surveys. Recall that in 2016 Parkland Management surveyed the Edmonton insight community to gauge their interest in using goats to manage vegetation. Because of the success of this assessment strategy, they followed up with the same community in 2018.

#### 6.3.1. City of Edmonton 2018

Between September 11 and 18, 2018 the City of Edmonton surveyed the insight community to better understand the public's priorities regarding pest management. They received over 2,400 responses, including perceptions related to the GoatWorks program. The key findings are illustrated in Figure 17. Roughly 87% of the community had prior knowledge of the program, and 76% were supportive of this approach. Although the majority of respondents (61%) were satisfied with the program there is a 15 point drop between supportive of, and satisfied with programs like GoatWorks. We believe that this drop may be due to how we approach education and engagement. Those who are serious about pest management and the goats as workers may be dissatisfied with social media posts or media exposure that consistently focuses on the "cute, cuddly petting zoo." In order to improve our level of transparency and raise awareness about the effectiveness of the program, we shifted our social media strategies and began posting before and after photos (e.g. Fig. 14, 15). I would advocate for another insight survey to be conducted at the end of the pilot program using the same communities that were surveyed in 2016 and 2018. Similar questions should be asked to see if there has been any change in perception, opinions, or interest in a continued program.

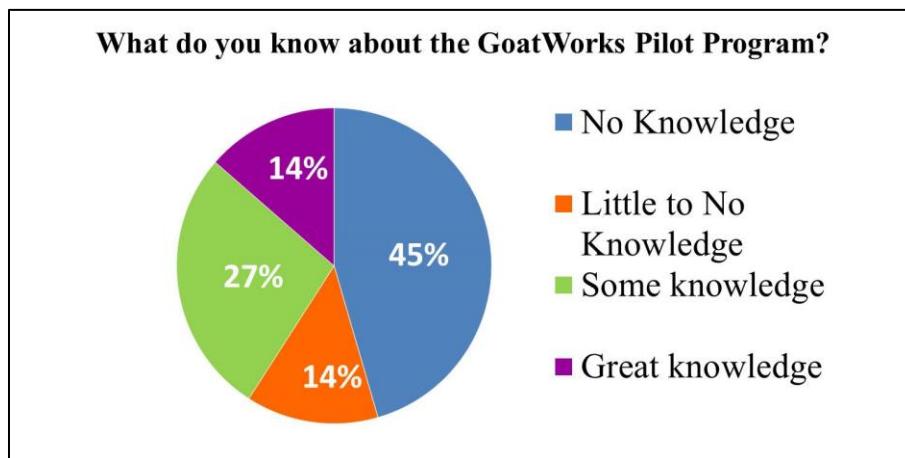
## Engaging the Public with Edmonton's GoatWorks Program



**Figure 17** Questions and responses from the 2018 City of Edmonton insight survey on pest management priorities, including support and satisfaction of the GoatWorks project.

### 6.3.2. Meet & Bleat

In an attempt to conduct our own insight survey of the local community, we surveyed available members who participated in our annual Meet & Bleat. Respondents included a range of demographics that varied by age, who they visited with, where they were visiting from, and why they were visiting in the first place. Figure 18 shows the relative knowledge level of the respondents who visited the Meet & Bleat. Of these respondents, over 80% were attending their first GoatWorks-related event.



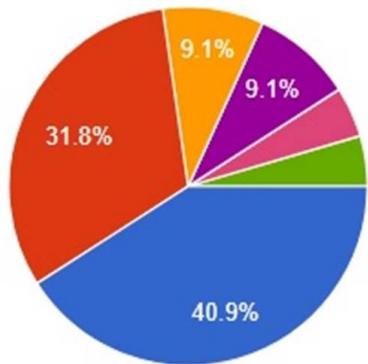
**Figure 18** Response to the Meet & Bleat intercept survey question: "What do you know about the GoatWorks Pilot Project?"

## Engaging the Public with Edmonton's GoatWorks Program

Respondents were then asked a series of questions about what they liked or didn't like about the program (fig. 19).

A

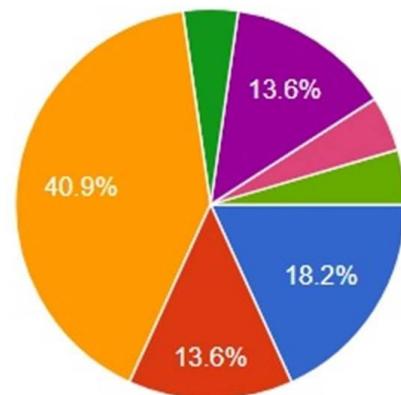
### What is your favourite part about the GoatWorks Program?



- Visiting the goats and seeing them working hard
- The goats are an effective alternative to pesticides
- They provide a learning opportunity for the public (especially school children) about sustainable practices
- They are a cost-effective way to manage noxious weeds
- They are cost effective
- Petting and feeding the goats

B

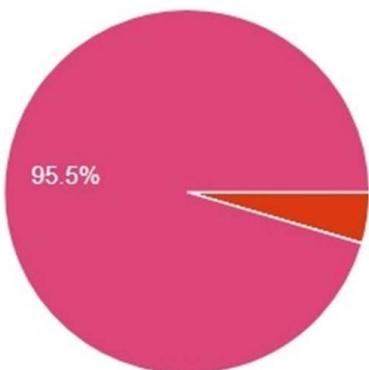
### What is your second favourite part about the GoatWorks Program?



- Visiting the goats and seeing them working hard
- The goats are an effective alternative to pesticides
- They provide a learning opportunity for the public (especially school children) about sustainable practices
- They give Edmonton a good name
- They are a cost-effective way to manage noxious weeds
- Fun for the kids
- Something to do in Edmonton

C

### What is your least favourite part about the GoatWorks Program?



- The goats smell
- I like everything about the GoatWorks program

**Figure 19** Various responses about favourite and least favourite parts of the GoatWorks project. Respondents were surveyed during the annual Meet & Bleat event.

## Engaging the Public with Edmonton's GoatWorks Program

As expected, over 45% of the public most enjoyed the opportunity to see the goats (Fig. 19A, blue and green). Interestingly, over half of respondents were happiest that the goats were used as an effective alternative to pesticides (red), or that they were a cost-effective way to manage noxious weeds (pink and purple) (Fig. 19A). This meant that some of the people who had never been to a GoatWorks event, and did not have knowledge of the event prior to this visit, were most excited by the effectiveness of the goats as a vegetation management tool. Relating these results back to the 2018 intercept survey, it is possible that our current engagement approaches were both supported *and* effective.

We also wanted to understand what the public enjoyed about the program if we removed the initial “goats are great to visit” (Fig. 19B). The majority of respondents (yellow, 40.9%) were secondarily excited about GoatWorks as a tool for public education, especially for school children. Many of our respondents were there with younger family members and were excited that events like GoatWorks were free and open to the public so that their children could participate and learn. Based on these responses, GoatWorks is not just seen as a tool for vegetation management, but as a learning opportunity to engage with the public and foster sustainable stewardship among its members.

Only one respondent could think of anything negative about the program (Fig. 19C), and it was that goats smell. Considering the negative comments we engaged with on social media, we were surprised that we received no other negative feedback related to the program among any of the public we engaged with. Perhaps this is because only those community members who like the program planned to attend the Meet & Bleat, or that many of the negative perceptions are being positively engaged with in other forums.

### **6.3.3. Elementary School Visits**

We also wanted to gauge the effectiveness of the educational programs we offered to elementary school students. We created intercept surveys for instructors to complete after their visit. The nature of these surveys focused on the effectiveness of our approach, suitability of instruction, and whether they wished to be part of future programming. Although we only received one response, the results were positive. The students had no knowledge of the program prior to their visit, and left with a basic knowledge about why the goats were in the park. The instruction was grade-appropriate, the teacher was happy with the course instruction, and they would definitely participate in the future. The instructor also commented that the program “...was amazing the way it was!” and advocated for a similar one in future years. Overall we felt that elementary school instruction was a positive way to engage children and raise awareness about a sustainable program in their community.

### **6.3.4. Secondary School Visits**

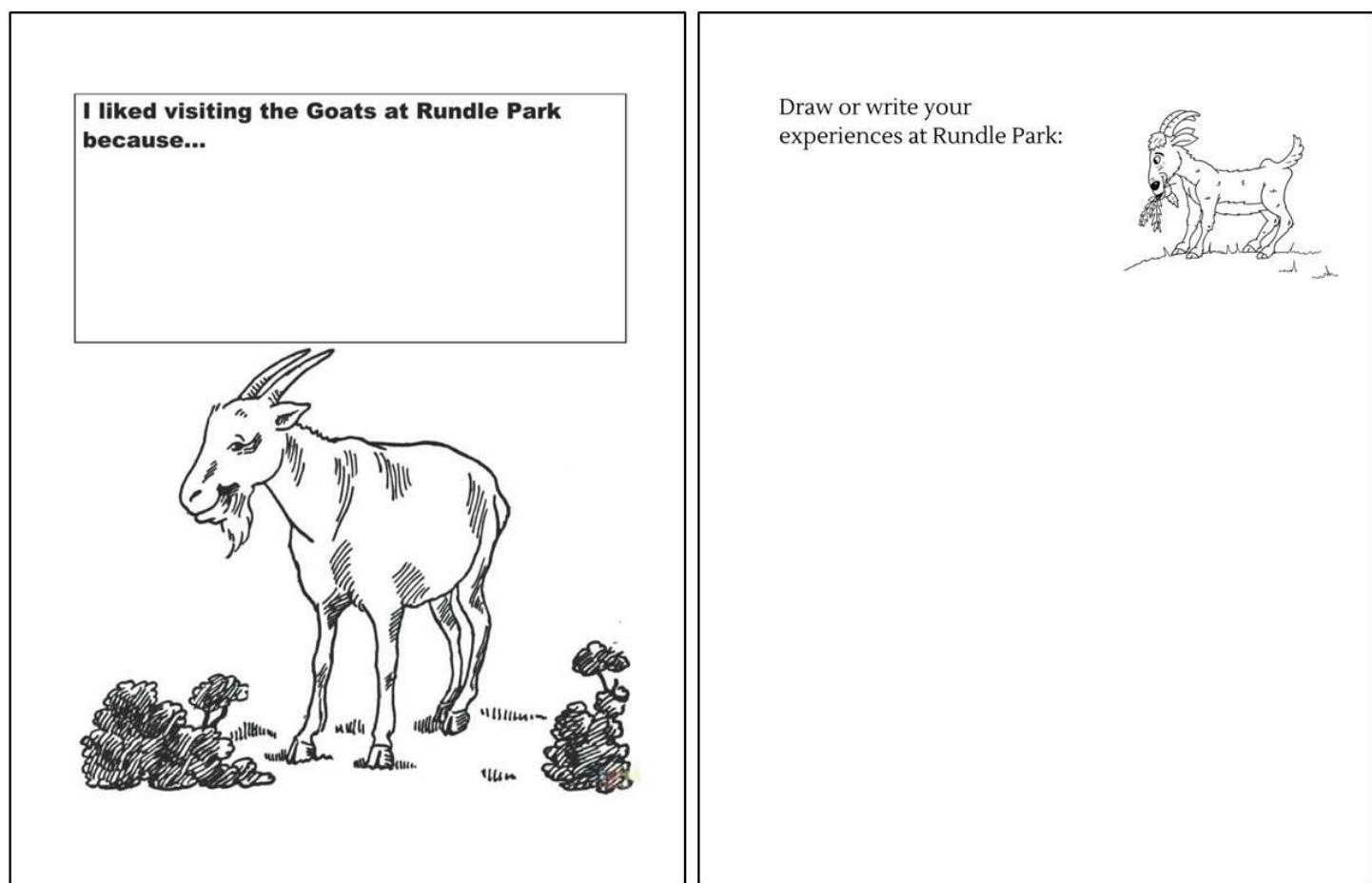
After the ALES International Student Visit we sent students and instructors intercept surveys to record their level of understanding before and after the program. Because this event also included material from Root for Trees and Integrated Pest Management, we asked additional questions related to these programs. We also wanted to learn students’ backgrounds to gauge how applicable each project message or program would be for the student in their career once back in China. Our respondents included instructors and undergraduate students who were mostly unfamiliar with City of Edmonton programs. By the end of their visit all respondents had noted an increase in knowledge of our programming and wished to participate in this or similar events in the future. Some preferred planting trees, others liked “having a variety of learning opportunities”, and another said that the favourite part of the trip was that it was an “informative session and observation [of] weed control using goats.” All respondents enjoyed doing their part for the environment, either through weed pulling, planting trees, or being involved in shepherding the GoatWorks herd. All of the feedback was positive and included ways to improve various approaches to education in the future. Overall students felt that it was beneficial to see real-world applications of their formal education, which many hoped to take and apply

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to their future careers. Through programs like these GoatWorks is fostering sustainable stewardship locally and abroad. The instructors appreciated the opportunity to bring students to the field for on-site learning. This program was so successful that we will do another on-site program for local undergraduate students in ALES in September.

### 6.4. Children's Perceptions, Engagement, and Knowledge Retention

Although intercept surveys are a beneficial tool for the general public, they are not an effective means of assessing children's perceptions or levels of engagement. Thousands of children take part in our GoatWorks events every year, and we wanted a way to receive feedback from them. This year we created an activity sheet that students could complete after their visit. As part of the activity they would reflect on their experience at Rundle Park (Fig. 20). We offered the same opportunity for children at the Meet & Bleat. This reflection activity asked children to colour or write a short piece about their favourite part about visiting the GoatWorks project. They were collected and assessed for content.



**Figure 20** Activity sheets given to school-aged children for colouring or writing about their visit to Rundle Park.

#### 6.4.1. Elementary School Children

We received 32 activity responses from elementary school children, which included written and visual interpretations that overviewed student experiences. The following are examples of various responses that children wrote about after their visit. Each response started with the given expression:

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I liked visiting the goats in Rundle park because...

“...they have a cute face. And you get to feed [them]”

“...their names are cute, you get to feed them, their horns are cute, they are cute when they eat.”

“...Oreo was funny because he [kept] standing up when he was at the tree to eat leaves.”

“... they eat milkweeds and thistles, you get to feed them, they are cute when they eat, their horns are cute.”

“...you get to feed them... they are cute when they eat... they eat milkweeds and thistles”

“...you get to feed them”

“...they were so cute. Their horns are so cute.”

“....their names are cute. They eat very nice and cute. Their horns are cute. They are cute when they eat. They eat milk weeds and grass and thistles. Some of them grab on to the trees.”

“...their names are cute and when they eat they are cute!”

“I liked visiting the goats because they are soft and cute and lovely.”

“...their names are cute (Oreo, Jelly, Flurry) you get to feed them (grass)...their horns are cute.”

“....milkweed is nokcis” (possibly ‘noxious’)

“...we got to feed the goats and learn about what they eat. Thank you for [taking] time off your work to spend time with us.”

“Thank you for take time off your work to spend time with us”

“...we get to feed the goat and it is fun! I [appreciate] how you [showed] us the [site]”

“...their names are cute and their name is Oreo and Jelly. Their horns are cute. They eat milkweeds and thistles.”

“Thank you to feed the goats. They are best goats!”

“....their names are cute, Oreo, Jelly and Flurry. ... get to feed them grass.. their horns are cute... they are cute”

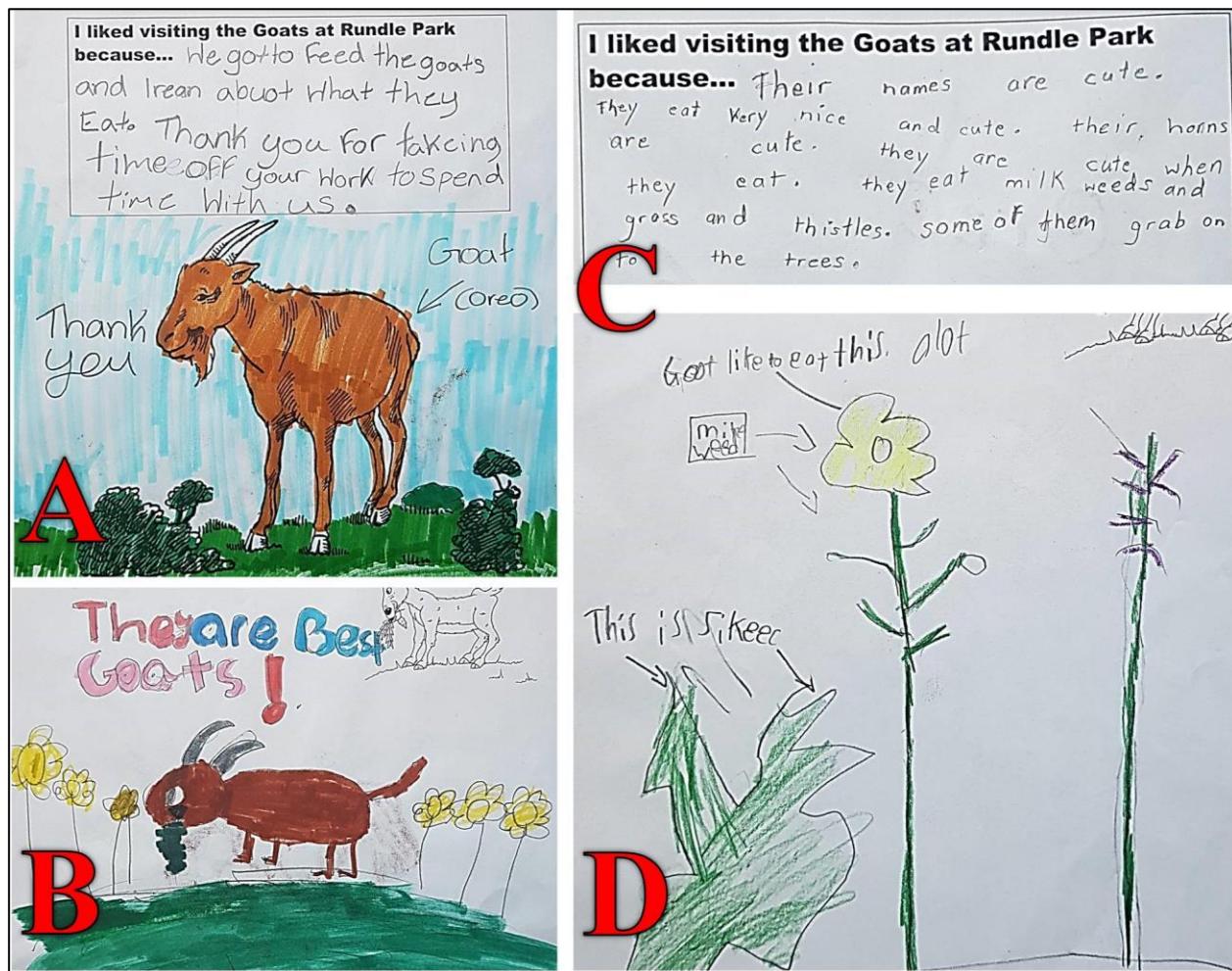
“...I feed them and I [pet] them”

“I love Rundle Park because we got to feed them all”

The overwhelming response from Grade 2 (age 7-8) students was that the goats were “cute” and they enjoyed the opportunity to feed them. We were excited to see that many of the students recognized that the goats were working at Rundle Park (Fig. 21A). We believe that students wrote about milkweed (Fig. 21C), which is not actually a noxious species, because we explained that the yellow leafy spurge is a weed with a milky residue. When comparing the sketches (Fig. 21B, 21D) we see yellow flowers that look like leafy spurge, which are labelled as milkweed. Students also recognized that the goats were there to eat purple Canada thistle (Fig. 21C) and one student may have even recorded the term noxious (“nokcis”). Many students drew flowers in the field, recognized that the weeds were good for

## Engaging the Public with Edmonton's GoatWorks Program

the goats to eat (Fig. 21B), and that the goats may also work on the lower parts of the trees (Fig. 21C). Overall it showed us that students retained knowledge about their visit and were excited by some of the information that we gave them. We believe that the experiential learning that students participated in by being on-site contributed to their level of engagement and knowledge retention. We also believe that by watching the CBC national video before attending the on-site portion may have engaged students and given them a sense of familiarity or relatability that helped improve knowledge retention (see 6.5.2).



**Figure 21** A selection of activity sheet responses from elementary school children (aged 6-8) after they visited the goats at Rundle Park.

### 6.4.2. Meet & Bleat Children

Because of the success of the child activity sheets, we set up a colouring and reflection station with the same forms for the Meet & Bleat event. All children were welcomed to colour the sheets (e.g., Fig. 22A) and anyone who volunteered to leave their forms with us could pin it onto the display boards (Fig. 22B, 22C). We found that many families would often colour the forms together, so we were able to record the event success from the whole family's perception (e.g. Fig 22A). Overall the responses on the Meet & Bleat forms were not as detailed as the responses we received from school children who had taken a private tour. There was a higher level of engagement in the school children, and they retained more information after a week than many children did while still on site. This may be due to the education strategy in place for on-site school visits compared to informal engagement styles as part

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of the Meet & Bleat. I believe it showcases the benefit of on-site school visits, and hints at ways to improve future Meet & Bleat education. Regardless of the detail on the activity forms, we believe that youth of all ages were given the opportunity to participate in experiential learning, and those who chose to keep the activity forms will continue to think about the event after the day is over.



**Figure 22** Examples of activity sheet responses from children during the Meet & Bleat.

### 6.5. Levels of Engagement

Although people engaged with GoatWorks, there were varying degrees of engagement:

- **Low-level engagement** meant that the member had basic interest in the program, which for us usually meant that they liked goats. We measured low levels of engagement on our social media in the form of likes, surficial comments, or excitement over goats in general.
- **Medium-level engagement** meant that the community member was interested in learning more about the program, or saw the goats as an effective means for weed management; they saw the goats as workers, and not just as goats.
- **Highly engaged** meant that the member was motivated to participate in GoatWorks events, do more with the program, or participate in other programs like ours.

Overall we found that each platform of engagement could offer a low, medium, or high level of engagement. The following examples showcase how I feel we achieved various levels of engagement, why they were successful, and how we can improve from there.

#### 6.5.1 Low Engagement: Social Media Success

As part of an awareness campaign, low level engagement strategies would include spreading knowledge or awareness about your program to the general public. We recorded low level engagement success through our social media. Section 6.1 indicates how much of an impact we had on social media. The number of views, comments, likes, and spin-offs that have come out of our program indicate that goats are eye-catching, but the messages behind them are also interesting. We were effectively able to elicit interest and spark excitement in our program through the content we were able to post, spread, and share among international communities. We first inform people about our program

## Engaging the Public with Edmonton's GoatWorks Program

through social media or various forms of media exposure, which hooks them in. At that point people are either content with their basic knowledge (low engagement), or they engage more with our project by actively choosing to learn more through various means (medium engagement). At this point we see proactive members of the public answering comments or concerns directly on social media (Table 7, 9, 11). They are becoming engaged in discussions, provided information that they retained from their own research or comprehension, and actively resolved issues among other community members.

### ***6.5.2 Medium Engagement: “That’s the weed from the video!”***

You then take that sparked interest, and motivate your community members to continue learning. One of the goals of education and engagement is to invite local schools from the community to participate in hands-on learning programming. Prior to attending their on-site visit, we sent every class a welcome package that included a CBC National Video about our project, which gave students entertaining and informative background information about GoatWorks. The reaction that we got was something we hadn't anticipated. During our short on-site lesson, we showed the students examples of noxious weeds and native species, which are terms that many of the younger children had never heard before their visit. To our surprise, many of the students exclaimed: “that’s the weed from the video!” Students had developed an interest in the program prior to their visit, which made for a more engaging hands-on learning experience. They were hooked in with the video of basic knowledge, but were engaged to learn more, and motivated to retain that knowledge through experiential learning.

After the class visit these same school children reflected on their experiences in the form of activity sheets. One week later, students had retained knowledge of the weed species, the reasons why goats were on site, and their general enjoyment with the program. Based on the surveys given to each instructor, students had no knowledge of the program before their visit but afterwards had general knowledge of goat-based land management and a developed excitement in their community programming. The next stage of engagement would be to see if students attend the public sessions again, or if they are motivated to participate in other community programs moving forward.

### ***6.5.3 High Engagement: Moira’s Story***

An example of high engagement came in the form of an email we received at the end of April from Edmonton's 311 dispatch service. The message read:

*“Hello, my name is Moira...I am preparing for a presentation about how the city of Edmonton is using goats instead of harmful chemicals to control weeds in the city. I would like to know who I can talk to about how this decision was made and what challenges they came upon... Thank you.”*

The fact that Moira was motivated to teach her class about GoatWorks was positive, inspiring, and an example of high engagement. Not only was Moira motivated to learn more about the program, she wanted to take that knowledge and share it with her class. The more we learned about Moira, the more we realized just how engaged she was. Moira lives in the south end of Edmonton. Where she lives is important, because Rundle Park is in the northeast end of town. So Moira wouldn't have been able to participate in a GoatWorks class visit, or seen the goats on a regular basis. She may have heard about the program from her parents who saw it in the news or read about it online, but we were contacted by Moira in April, during the off-season and prior to any 2019 media coverage. This meant that Moira was not prompted or reminded of our program by any news or media outlets since September 2018. Moira was self-motivated to learn more about the program, unprompted, and wanted to disseminate her research to her class. Part of her research also included asking Mayor Don Iveson and councillors about what considerations had been made and how they had come to a decision on the program. I believe that this is high engagement from a 10-year old who had actually never participated in any GoatWorks-related activity prior to the Meet & Bleat in 2019 (fig. 23).

## Engaging the Public with Edmonton's GoatWorks Program



**Figure 23** Moira, an example of high engagement, finally gets to meet the goats at the 2019 Meet & Bleat event in Rundle Park

Moira is a success story about how our programs have the ability to (1) reach beyond our communities, (2) motivate future leaders, and (3) initiate and foster sustainable stewardship. Imagine the impact we will have on other youth, like Moira, in the coming years. After meeting her at the Meet & Bleat it was clear that her enthusiasm for the project was infectious, and I am certain that her class would have at least been medium-level engaged by the end of her presentation.

### 6.6. GoatWorks Engagement Outcomes

Social media can be an incredible tool. It gives you the opportunity to reach a large audience and disseminate information about positive parts of your program. It adds to the transparency of your program by adding honest information about perceptively negative parts of your campaign. It's an engaging tool that can reach a global audience. This exposure has the potential to motivate community members to become more engaged in GoatWorks and to participate in other forms of City of Edmonton events. If the GoatWorks program is to continue, it is an effective tool for maintaining an open line of communication with the public, which the 2018 Intercept Surveys showed was an important consideration for future support. In its current form, YegParks has the potential to be a truly beneficial tool. Many people engage with social media, however without dedicated staff, many questions, comments, or concerns go unanswered and we lose the opportunity. It is also important to focus more on the content of the program's objectives than to continue focusing on its cuddly mascot.

The Meet & Bleat continues to bring in the support of the community with new members participating in events every year. It is an effective means of minimizing biohazard risks while simultaneously sharing information about the programs. Because it is disseminated on a wider scale, the educational approaches may not always engage the community members, but the experiential learning is an effective tool overall. More targeted on-site school programming appears to be a more effective means of educating youth, and I believe it is a practice that should be continued in future years. I also advocate reaching out to different types of groups for on-site programming, as community members of all ages and backgrounds could benefit from higher levels of engagement. Ultimately the education and engagement strategies currently in place are successful and beneficial for our communities, however constant reassessment will only improve the program for future years.

## 7. Conclusions and Recommendations

If the pilot project doesn't continue, what will happen to Rundle Park? After a summer with the Parks Crew, I can safely say that their program attracts positive attention, contributes to community life, and serves as a means for individual agency of stewardship. It also appears to work as an effective means for vegetation management (Fig. 15). My role as a sustainability scholar was to assess the current education and engagement program and to analyze the GoatWorks project overall. I approached this assessment by (1) analyzing the current GoatWorks education and engagement approach, (2) assessing its effectiveness with various groups, and (3) researching and implementing ways of improving our unique strategy. Based on my research, we could improve our program by adapting our key messages to various age groups, developing programming that suited the needs of all community members, and maintaining transparent communication throughout message delivery and programming. We could also easily record how we were doing with our approaches while concurrently assessing and improving upon our strategies. Using these findings I was able to craft a public education toolkit (Appendix 9.4) and examine how effective GoatWorks is as a public entity, as a learning tool, and in terms of sustainability. Each section will have its own recommendations to consider after the pilot has ended.

### 7.1. As a Public Entity

Overall GoatWorks is perceived as a positive public entity, with a large portion of the public supporting it as an approach to integrated pest management (Fig. 17-3, 19A), as an effective public education tool (Fig. 19B), and as a “a wholesome program that I can bring the whole family out to see” (section 6.2). Comments on social media and answers on intercept surveys also recognized that GoatWorks gave Edmonton a good reputation and was a form of “ecotourism” (Meet & Bleat intercept survey response). The breadth of positive media exposure for the city and its programs was also overwhelming across the three years of the pilot program (Appendix 9.1).

When GoatWorks wasn't perceived positively, the negative comments were related to a lack of understanding about the program, misunderstandings of the facts related to animal or environmental welfare, or personal preference (e.g. “the goats smell”, Fig. 19C). This is where public education and engagement could benefit and increase public perception of the program. We recognized that many of the negative perceptions were because of transparency. As a means of improving the public perception, we improved the website to include common frequently asked questions that had been brought up on social media or in person. Our key messages for the media and informal on-site discussions were enhanced to include as much relevant information that we could provide, and we began crafting social media posts that were less cuddly and more about results.

#### 7.1.1 Recommendation: Biosecurity and Regulations

One recommendation for the future of the program would be to focus attention on the biosecurity and regulations related to GoatWorks and other similar programs. Currently there are no regulations in place for any animal-related vegetation management program in Alberta. In terms of biosecurity, this means that animals can be hired for a job without being adequately screened for (i.e. tested for communicable diseases or other pests), which can cause harm to your environment, the public, and other livestock<sup>7</sup>. A lack of regulations also impacts the quality of work. Companies that focus on animals for grazing, goatscaping, agricultural tailoring, or other simple grass cutting (e.g. Fort Saskatchewan sheep) are not trained to target browse specific species. When non-trained specialists are hired for a job that requires target browsing, they do considerable damage to areas and tarnish the reputation of conservation-focused companies (e.g. Baah'd Plant Management and Reclamation). If

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<sup>7</sup> As recent as July 2019 Scrapie was a goat-related health concern for herds in Calgary:

<https://www.cbc.ca/news/canada/calgary/scrapie-quarantine-alberta-1.5215982>

## Engaging the Public with Edmonton's GoatWorks Program

regulations are in place, companies would be required to obtain certifications for their animals that include safety measures and training certifications. Pilot studies that are conducted using conservation-focused companies will more accurately depict the impact of target browsing compared to an agriculture-tailored company with untrained animals. Regulations have the ability to improve public perception of the program, highlight its true effectiveness, and improve integrative pest management.

### 7.2. As a Learning Tool

In 2010 a pilot study was done in Silverberry, Alberta (200 km east of Edmonton) to test the effectiveness of using goats to manage the noxious weed toadflax (Conservation Magazine 2010). The first of its kind in Alberta, this pilot study examined whether goats would be a more cost-effective tool for managing noxious weeds when compared to pesticides and other chemical practices that often seep into riparian systems. The 400+ goats and other workers at Rocky Ridge Vegetation Control (based out of Beaverlodge Alberta) were hired for the task. The goats were shown to be effective land managers of the conservation area. The shepherd Conrad Lindblom explained that there is an additional benefit to using goats in these situations:

*“According to Limdbom, the sheer curiosity of hundreds of goats munching their way along a streambank or across a field is enough to compel passerby to stop and ask about what’s going on, and in turn to learn about noxious weeds and this unique, low-impact way of controlling them.”* (Conservation Magazine, 2010, p.10).

In 2019 Rundle Park would reap the same social benefits that Silverberry discusses in 2010. As an example, Figure 24 shows a photo of the Rundle Park goats taken by a member of the community from the Strathcona Science Park Pedestrian Bridge. A community member was at Strathcona Science Park in June 2019 and was curious enough about the goats that they walked across the bridge and engaged with our staff about the project. They later posted this photo to social media, and effectively shared the story about why the goats were working in Rundle Park.



**Figure 23** Photo taken from social media that displays the goats working at Rundle Park. Image is taken from the Strathcona Science Park Pedestrian Bridge looking west. (Facebook user)

## Engaging the Public with Edmonton's GoatWorks Program

Instead of relying on in-person curiosity to spread our messaging, we soon turned to social media platforms. Social media is accessible by all members of the public, has the capacity to reach international audiences, and affords GoatWorks incredible engagement opportunities. Although it started as an unfortunate viral post about a goat “clown car”, @YEGParks has evolved into an effective social media platform that is well-suited for GoatWorks messaging. It has motivated people to participate in our events, learn more about integrated pest management, and engage with similar City of Edmonton programming.

Targeted education programs have also proven their effectiveness through on-site events for youth, adult visits, and accessible programming for various age groups. Student reflection activities have highlighted the benefit of targeted learning compared to self-guided Meet & Bleat events, although both formats have their benefits. I recommend continuing both styles of education, and continuing to craft lesson plans according to age, ability, and background. I also advocate for assessing the effectiveness of teaching through activity sheets or intercept surveys, moving forward.

### **7.2.1 Recommendation: Post-Secondary Institution Research Collaboration**

In offering post-secondary education opportunities we are expanding our collaborative efforts and affording young adults relatable work experiences. I believe we have a great partnership with Olds College for the research component of our vegetation management strategy. After the pilot has completed, I believe we can adapt this approach to offer an ongoing learning opportunity for post-secondary institutions such as NAIT, MacEwan, the University of Alberta, and Concordia (among others). I propose that when the goats are not working at the site, post-secondary students are given the task of crafting independent- or group-based research projects related to environmental sciences, sustainability, animal management, or other relatable fields. This will promote real-world applications of course-based learning and afford the City of Edmonton to maintain ongoing research of the effectiveness of the program. The following email illustrates the interest that these institutions have for integrative learning programs. The message was sent by the chair of Environmental Sciences Technology at NAIT, and in it she expresses interest in an on-site visit with GoatWorks for their students to gain valuable experiential learning:

*“Thanks very much for the information about GoatWorks. I will forward it to the appropriate instructors who may be interested in incorporating it into their curriculum this fall. Is this the first year of the program? Will it be continuing next year, too? It may be too late to include a field visit into this fall’s curriculum, but we have plenty of time if it will be available in September 2020, too. Thanks”*

This email also highlights the importance of reaching out to various institutions at the onset of your program. This was something we tried this year, and the response was overwhelmingly positive. Sending the message to institutions that you are interested and willing to collaborate will increase student potential and can be beneficial for everyone.

## **7.3. Sustainability**

The GoatWorks program is also inherently sustainable. It contributes to the growth and prosperity of our green space by removing noxious weeds, managing areas to provide more sunlight and resources for good species to grow back, removing brush as a form of fire prevention, and fertilizing the native species to help them grow. The effects of goats on vegetation management in Rundle Park will be made available after Olds College has finished their research portion, but preliminary images suggest it is effective (Fig. 15). One way to improve the approach for future years is to pair goat land management with a biocontrol. In this scenario, goats will target browse the vegetation above ground, preventing it from going to seed and spreading throughout the park, and beetles or slugs will effectively remove the root system so that it cannot spread further. Although this was not the focus of my research,

## Engaging the Public with Edmonton's GoatWorks Program

it has been the focus of other sustainability scholars research, and was a suggestion put forth by the shepherd at Baah'd Plant Management and Reclamation. It was also the topic of a number of social media comments made by the general public, wherein they provided links to studies.

The other way that this program is sustainable is through lasting education. The charisma of the goats draw people into the program, provide passive and active learning opportunities, engages with members of the community to varying degrees, and creates sustainable stewardship. Just like the programs outlined in Section 4.2 (e.g. Roots & Shoots), GoatWorks is an integrative educational program that has the ability to motivate youth and other members of our community to get involved as active members of society. The best way to advocate for change, or to foster a better community for tomorrow, is to engage with the next generation. Get them excited about community-based projects, so that they themselves feel motivated to be agents of their own community. In many ways GoatWorks has established stewardship, and sustainability thrives with stewardship.

### ***7.3.1 Recommendation: Continuing GoatWorks***

It is my hope that programs like GoatWorks have shown their worth as a potential integrated pest management tool and as a sustainable example for our communities, but also as a means for education. It provides an accessible tool and means for engaging youth from a young age, which will have a lasting impact on their futures. It affords young adults hands-on learning in a real-world applicable setting. As a City of Edmonton program, it fosters community building, transparency within municipal affairs, and gives community members a voice in their parkland management. If GoatWorks continues with dedicated staff and resources, there is great potential for this program to continue evolving into a successful community-drive program.

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## 9. Appendix

### 9.1 GoatWorks Media Exposure

**TABLE 12** Edmonton GoatWorks Media Exposure from 2017

Date Published	Media Outlet	Post Type	Title	Media Type	Link
June 2, 2017	Edmonton Journal	Primary	How a herd of trained goats could demolish the thistles of Rundle Park	Article	<a href="https://edmontonjournal.com/news/local-news/how-a-herd-of-trained-goats-could-demolish-the-thistles-of-rundle-park">https://edmontonjournal.com/news/local-news/how-a-herd-of-trained-goats-could-demolish-the-thistles-of-rundle-park</a>
July 14, 2017	CTV News	Primary	Bring in the goats: City launches pilot project to control noxious weeds	Video, Article	<a href="https://edmonton.ctvnews.ca/bring-in-the-goats-city-launches-pilot-project-to-control-noxious-weeds-1.3503943">https://edmonton.ctvnews.ca/bring-in-the-goats-city-launches-pilot-project-to-control-noxious-weeds-1.3503943</a>
July 15, 2017	Edmonton Sun	Primary?	Weeding with goats a complicated task	Video? Article	<a href="https://edmontonsun.com/2017/07/15/weeding-with-goats-a-complicated-task/wcm/aefc5524-b6fe-4247-a2e5-42f83f36a8dd">https://edmontonsun.com/2017/07/15/weeding-with-goats-a-complicated-task/wcm/aefc5524-b6fe-4247-a2e5-42f83f36a8dd</a>
July 17, 2017	Edmonton Journal	Primary	Goats go head-to-head with weeds in Rundle Park	Article	<a href="https://edmontonjournal.com/news/local-news/goats-go-head-to-head-with-weeds-in-rundle-park">https://edmontonjournal.com/news/local-news/goats-go-head-to-head-with-weeds-in-rundle-park</a>
August 15, 2017	Global	Primary	Meet Edmonton's weed-eating goats at Rundle Park	Article	<a href="https://globalnews.ca/news/3669549/meet-edmontons-weed-eating-goats-at-rundle-park/">https://globalnews.ca/news/3669549/meet-edmontons-weed-eating-goats-at-rundle-park/</a>
August 21, 2017	CBC News	Primary	New food safety rules may drive weed-eating goats out of Edmonton, herder says	Article	<a href="https://www.cbc.ca/news/canada/edmonton/new-food-safety-rules-weed-goats-1.4255564">https://www.cbc.ca/news/canada/edmonton/new-food-safety-rules-weed-goats-1.4255564</a>

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**TABLE 13** Edmonton GoatWorks Media Exposure from 2018

Date Published	Media Outlet	Post Type	Title	Media Type	Link
February 25, 2018	Global	Primary	Want to be a goat coordinator? Here's your chance	Article	<a href="https://globalnews.ca/news/4046762/want-to-be-a-goat-coordinator-heres-your-chance/">https://globalnews.ca/news/4046762/want-to-be-a-goat-coordinator-heres-your-chance/</a>
February 27, 2018	Edmonton Journal	Primary	Paula Simons: Breaking baaah'd: City hopes people flock to be goat co-ordinator	Video; Article	<a href="https://edmontonjournal.com/news/local-news/paula-simons-breaking-baaahd-city-hopes-people-flock-to-be-goat-co-ordinator">https://edmontonjournal.com/news/local-news/paula-simons-breaking-baaahd-city-hopes-people-flock-to-be-goat-co-ordinator</a>
February 27, 2018	CTV News	Primary	City of Edmonton will pay 'Goat Co-ordinator' up to \$43 per hour to oversee project	Article	<a href="https://www.ctvnews.ca/canada/city-of-edmonton-will-pay-goat-co-ordinator-up-to-43-per-hour-to-oversee-project-1.3820835">https://www.ctvnews.ca/canada/city-of-edmonton-will-pay-goat-co-ordinator-up-to-43-per-hour-to-oversee-project-1.3820835</a>
May 10, 2018	CBC Edmonton	Primary	Edmonton's new goat co-ordinator 'humbled and excited' to get gig	Article	<a href="https://www.cbc.ca/news/canada/edmonton/edmonton-new-goat-co-ordinator-humbled-and-excited-to-get-gig-1.4657090">https://www.cbc.ca/news/canada/edmonton/edmonton-new-goat-co-ordinator-humbled-and-excited-to-get-gig-1.4657090</a>
May 13, 2018	The Star	Primary	Edmonton's goat co-ordinator has a job that can't be bleat	Article	<a href="https://www.thestar.com/edmonton/2018/05/13/edmontons-goat-co-ordinator-has-a-job-that-cant-be-bleat.html">https://www.thestar.com/edmonton/2018/05/13/edmontons-goat-co-ordinator-has-a-job-that-cant-be-bleat.html</a>
June 11, 2018	The Globe and Mail	Primary	'It's like having 100 toddlers': Herd of goats helps Alberta cities keep weeds at bay	Article (BPMR)	<a href="https://www.theglobeandmail.com/canada/article-its-like-having-100-toddlers-herd-of-goats-helps-alberta-cities/">https://www.theglobeandmail.com/canada/article-its-like-having-100-toddlers-herd-of-goats-helps-alberta-cities/</a>
June 12, 2018	CBC Edmonton	Primary	The comeback kids: Weed-chomping goats return to Edmonton	Video; Article	<a href="https://www.cbc.ca/news/canada/edmonton/the-comeback-kids-weed-munching-goats-return-to-edmonton-1.4702915">https://www.cbc.ca/news/canada/edmonton/the-comeback-kids-weed-munching-goats-return-to-edmonton-1.4702915</a>
July 19, 2018	Edmonton Journal	Primary	Don't be baaad: Come visit city's weed-eating goats but follow the rules	Article	<a href="https://edmontonjournal.com/news/local-news/dont-be-baaad-come-visit-citys-weed-eating-goats-but-follow-the-rules">https://edmontonjournal.com/news/local-news/dont-be-baaad-come-visit-citys-weed-eating-goats-but-follow-the-rules</a>
July 21, 2018	Global	Primary	Edmonton goats pilot project back at Rundle Park	Video; Article	<a href="https://globalnews.ca/news/4345584/edmonton-goats-pilot-project-back-at-rundle-park/">https://globalnews.ca/news/4345584/edmonton-goats-pilot-project-back-at-rundle-park/</a>
July 22, 2018	CTV News	Primary	Grazing on weeds: Goats brought to Edmonton parks as herbicide alternative	Video; Article	<a href="https://www.ctvnews.ca/canada/grazing-on-weeds-goats-brought-to-edmonton-parks-as-herbicide-alternative-1.4023167">https://www.ctvnews.ca/canada/grazing-on-weeds-goats-brought-to-edmonton-parks-as-herbicide-alternative-1.4023167</a>
October 2, 2018	BBC News	Primary?	These goats work for the government	Video	<a href="https://www.bbc.com/news/av/world-us-canada-45643154/these-goats-work-for-the-government">https://www.bbc.com/news/av/world-us-canada-45643154/these-goats-work-for-the-government</a>

## Engaging the Public with Edmonton's GoatWorks Program

**TABLE 14** Edmonton GoatWorks Media Exposure from 2019

Date Published	Media Outlet	Post Type	Title	Media Type	Link
June 12, 2019	CTV Edmonton	Primary	Weed-eating goats: Herd hired to clean up noxious weeds	Videos; article	<a href="https://edmonton.ctvnews.ca/weed-eating-goats-herd-hired-to-clean-up-noxious-weeds-1.4463197">https://edmonton.ctvnews.ca/weed-eating-goats-herd-hired-to-clean-up-noxious-weeds-1.4463197</a>
June 12, 2019	CityNews Edmonton	Primary	No 'kidding' around: Edmonton's weed eating goats are baaack	Videos	<a href="https://edmonton.citynews.ca/video/2019/06/12/no-kidding-around-edmontons-weed-eating-goats-are-baaack/">https://edmonton.citynews.ca/video/2019/06/12/no-kidding-around-edmontons-weed-eating-goats-are-baaack/</a>
June 12, 2019	Edmonton Journal	Primary	They're baaah-ck: Goats combat noxious weeds in Rundle Park pilot project	Video; article	<a href="https://edmontonjournal.com/news/local-news/theyre-baaah-ck-goats-combat-noxious-weeds-in-rundle-park-pilot-project">https://edmontonjournal.com/news/local-news/theyre-baaah-ck-goats-combat-noxious-weeds-in-rundle-park-pilot-project</a>
June 12, 2019	Canoe	Secondary	Goats combat noxious weeds in Edmonton pilot project	Video; article	<a href="https://canoe.com/news/local-news/theyre-baaah-ck-goats-combat-noxious-weeds-in-rundle-park-pilot-project/wcm/584cd72e-af4d-4b60-83a0-4874f640de74">https://canoe.com/news/local-news/theyre-baaah-ck-goats-combat-noxious-weeds-in-rundle-park-pilot-project/wcm/584cd72e-af4d-4b60-83a0-4874f640de74</a>
June 13, 2019	CBC Video	Primary	Our Edmonton: the 2019 Attractions Edition	Video	At the 1:34 Minute Mark: <a href="https://www.cbc.ca/player/play/1537132099655">https://www.cbc.ca/player/play/1537132099655</a>
June 13, 2019	Narcity	Secondary	400 Goats Are Currently Being Used As Lawnmowers In This Canadian City	Posts; Article	<a href="https://www.narcity.com/news/ca/ab/edmonton/400-goats-are-currently-being-used-as-lawnmowers-in-this-canadian-city">https://www.narcity.com/news/ca/ab/edmonton/400-goats-are-currently-being-used-as-lawnmowers-in-this-canadian-city</a>
June 24, 2019	Internal Video	Secondary	To the Point Season 2 Episode 1	Video	At the 1:34 Minute Mark: <a href="https://www.youtube.com/watch?v=d8lsMuOGe_4&amp;feature=youtu.be">https://www.youtube.com/watch?v=d8lsMuOGe_4&amp;feature=youtu.be</a>
July 2, 2019	Internal Newsletter	Secondary	July IO/IM Newsletter "In the Loop" (re: Emerald Awards)	Article	<a href="https://drive.google.com/open?id=1GVci2LxYpt9H3vgT67ggZYFQ2BZ53">https://drive.google.com/open?id=1GVci2LxYpt9H3vgT67ggZYFQ2BZ53</a>
July 2, 2019	Internal Newsletter	Primary	Parks and Roads July newsletter: We are helpful	Article	<a href="https://drive.google.com/open?id=0B17Tse24qf71YmhUVG44MFVxWV9rQS1wYmF6ZkQyQS1nODdJ">https://drive.google.com/open?id=0B17Tse24qf71YmhUVG44MFVxWV9rQS1wYmF6ZkQyQS1nODdJ</a>
July 26, 2019	CTV Edmonton	Primary	Meet and Bleat with the goats of Rundle Park Saturday	Article	<a href="https://edmonton.ctvnews.ca/meet-and-bleat-with-the-goats-of-rundle-park-saturday-1.4525317">https://edmonton.ctvnews.ca/meet-and-bleat-with-the-goats-of-rundle-park-saturday-1.4525317</a>
July 27, 2019	Edmonton Journal	Primary	Goats at Work: Targeting weeds in Rundle Park with highly-skilled herbivores	Article	<a href="https://edmontonjournal.com/news/local-news/goats-at-work-targeting-weeds-in-rundle-park-with-highly-skilled-herbivores">https://edmontonjournal.com/news/local-news/goats-at-work-targeting-weeds-in-rundle-park-with-highly-skilled-herbivores</a>

## Engaging the Public with Edmonton's GoatWorks Program

### 9.2. Sustainability Scholar Project Plan (Page 1 of 4)

This document serves as the project plan at the onset of the program.

#### **Key Information**

**Scholar:** Katherine Bishop

**Project Title:** GoatWorks Public Education and Engagement

**Primary Mentor:** Joy Lakan

**Workplace:** City of Edmonton

#### **PROJECT OUTLINE**

*The deliverables produced by the Scholar, be they a report, presentation or other material containing recommendations, case studies, data analysis and so on, are provided to the project partner at the completion of the project. The project partner may use the outputs, results and findings to help inform various initiatives. A version of the final report approved by the Mentor will be made publicly available online by the Sustainability Council at <https://www.ualberta.ca/sustainability/experiential/sustainability-scholars/completed-research>*

#### **PROJECT OBJECTIVES**

*Please describe the objective of Scholar research and the goals you aim to achieve by the end of the project. Please keep scope in mind, as projects must be achievable within the 250 hour timeframe. If the Scholar project is part of a larger initiative, please include any relevant background information and ties to existing or future projects.*

1. Critically analyze the current GoatWorks Public Education and Engagement Program Plan
2. Identify key areas for improvement of the current program
3. Implement changes for the 2019 season
4. Establish an engagement and retention assessment plan for future programs/years

#### **PROJECT METHODS**

*Please briefly describe the methods the Scholar will be using to complete the Project Objectives stated above, including whether the Scholar will be required to perform any field work.*

1. I will research and overview the current plan. I will examine the results of the 2017 intercept survey and media relations related to the GoatWorks pilot program.
2. I will research similar programs in other jurisdictions (e.g. Calgary, California, Google, etc.) to assess their approaches to public education and engagement. I will research other tools and methods used to gauge public education retention. Based on these findings, I will attempt to adapt other programs successes to Edmonton's GoatWorks program. I will consider the findings from Olds College's assessment of the efficacy of the goats browsing.
3. I will research effective public education plans and work to adapt existing plans to meet the needs of the GoatWorks program.
4. I will assist in facilitating the multiple on-site events during the 2019 season.
5. I may use intercept surveys or other means of garnering feedback from each engagement event. Otherwise I will engage with the public directly through informal discussions with families at public events, conversations in passing with members of the public, or through classroom discussions.
6. I will engage with social media platforms to administer information and gauge analytics.

## Engaging the Public with Edmonton's GoatWorks Program

### 9.2. Sustainability Scholar Project Plan (Page 2 of 4)

#### SPECIFIC DELIVERABLES

*Please list the specific deliverables the Scholar will provide by the end of this project. As a reminder, the Program requires that all Scholars complete a report on their research, and a presentation to be delivered at a public event coordinated by the Program in August.*

#### EVENT SUPPORT:

1. Create and Facilitate "Lunch and Learn Event" (May 29, 2019)
2. Support Staff by facilitating:
  - a. School Visits (June 11-14, 17-18, 2019)
  - b. Meet and Bleat Public Event (July 27, 2019)
  - c. Public Tours (June 16-17; July 28, 2019)
3. Project Presentation (August 8, 2019)

#### DOCUMENTATION DELIVERABLES

1. Project Report (August 15, 2019)
  - a. Summary of research and findings
  - b. Critically analyze events and gauge public feedback at each event
  - c. Retention Assessment Plan
2. Summer Mock Education Plan (August 15, 2019)
  - a. Tailored to the GoatWorks Program
  - b. Accessible for other Municipal Programs

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#### WORK SCHEDULE

*Please outline the Scholar's proposed work schedule and timelines for this project. Note that the Scholar must spend at least 50% of their total work time on-site at their Mentor's workplace for project development, guidance and mentorship from their mentor. Scholars will be expected to present on their final project results in August, as well as provide final drafts of their written reports by August 15, 2018.*

#### Rundle Park: Engaging the public during goat availability and presence at the park

- June 11 – 14, 17-18, 2019: School tours (5 hours/day)
- June 15-16, 2019: Public tours (5 hours/day)
- July 24-26, 28-31, 2019: Public tours (5 hours/day)
- July 27, 2019: Meet & Bleat event (8 hours)

#### Office: research, meetings, and events with the OPDP team with the City of Edmonton (Glengarry, Westwood, or City main locations). Will be under the guidance and mentorship of Joy during this time, with additional support and resources from the OPDP team.

- Tuesday & Wednesday weekly (15 hours)

Due to scheduling conflicts and delays in the project starting, limited time was spent on this position for the first half of May, and will be spent at the beginning of August. All hours will equate to 250 as needed.

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## 9.2. Sustainability Scholar Project Plan (Page 3 of 4)

### TRACKING HOURS WORKED

*All Scholars will track and submit their hours worked on the online timesheet available at [ualberta.beartracks.ca](http://ualberta.beartracks.ca). Mentors are responsible for reviewing Scholar's hours and approving them. Please outline here how the Scholar and Mentor will track the Scholar's hours and work that the Scholar has completed in order to ensure that the Mentor is able to approve Scholar hours, to ensure the Scholar is not overextended, and to maintain ongoing accountability and communication with the Mentor.*

We have established a working excel document to record my hours, including tasks completed and hours worked on- and off-site. Mentor and mentee will have regular (weekly) meetings to discuss goals and tasks managed. A screenshot of the hours worked will also be sent to Joy and Justis prior to submitting.

---

### SCHOLAR LEARNING OBJECTIVES

*Please include any specific Scholar learning objectives. Writing these objectives down can help ensure that the Scholar completes their objectives and may serve as a record should the Mentor be required to provide a reference for the Scholar.*

By participating in the GoatWorks program the scholar will be able to:

- Evaluate current education and engagement practices through in-field observation;
- Identify strengths, weaknesses, and areas for improvement with the current program;
- Investigate similar public education programs in other areas;
- Examine suitable applications of other programs to the current GoatWorks project;
- Synthesize all data; and,
- Establish a new working education and engagement plan

Ideally this Education and Engagement Plan will be catered to the GoatWorks Project, but can serve as a working template for other similar projects.

## Engaging the Public with Edmonton's GoatWorks Program

### 9.2. Sustainability Scholar Project Plan (Page 4 of 4)

#### **Project Report Outline**

##### Engaging the public with Edmonton's GoatWorks Program

1. Introduction
2. GoatWorks Program
  - a. Background
  - b. Overview of Pilot Program
  - c. Public Engagement (born out of media attention)

##### PART 1: Critically Assessing Edmonton's GoatWorks Program

3. 2017
  - a. Intercept Surveys
  - b. Media Feedback
  - c. Identified areas needing improvement
4. 2018
  - a. Media Feedback
  - b. Identified areas needing improvement
5. 2019
  - a. School Visits
  - b. Public Visits
  - c. Meet & Bleat
  - d. Social Media
  - e. General Media

##### PART 2: Investigating similar programs elsewhere

6. Similar programs used in other areas
  - a. Calgary
  - b. California
  - c. Google Inc.
7. Methods and Strategies used to gauge public education retention

##### PART 3: GoatWorks *after* the Pilot project

8. Recommendation for project
  - a. Classroom visits
  - b. Public Visits
  - c. Meet & Bleat
  - d. Social Media
  - e. Media Relations
9. Model education and engagement plan
  - a. GoatWorks specific
  - b. Accessible for other positions/programs

### **9.3. GoatWorks Support Summary**

This document aims to review and capture the support that was given to the GoatWorks pilot project by Katherine Bishop (Sustainability Scholar) in 2019.

- Public education planning
  - Exploring school opportunities
  - Scheduling onsite education sessions
  - Arranging post-visit activities
  - Developing insight surveys for instructors
  - Developing assessment activities for students
- Public outreach
  - Delivering educational materials to elementary school groups (n=5)
  - Delivering educational materials to post-secondary school groups (n=3)
  - Delivering educational materials to public groups (n=3)
  - Participating in outreach events (Alberta Emerald Awards, Lunch & Learn)
- Capturing and assigning measurable
  - Capturing program reach and influence by analyzing social media analytics
  - Assessing feedback from social media, in-person interactions, or insight surveys
  - Developing insight surveys for adults (Meet & Bleat)
  - Developing assessment activities for children
- Managing social media content and accounts YEGparks
  - Creating content for social media
  - Analyzing analytics related to social media influence
  - Adapting common misconceptions and negative feedback into FAQ
- Managing GoatWorks email: [goats@edmonton.ca](mailto:goats@edmonton.ca)
  - Responding to community questions or feedback
  - Adapting common misconceptions and negative feedback into FAQ
- Managing GoatWorks webpage: Edmonton.ca/goats
  - Adapting common misconceptions and negative feedback into FAQ to modify website content and flow
- Acting spokesperson (answer questions, assess events, hand out brochures)
  - During non-planned public events (evenings and weekends): answer questions, assess events, hand out brochures
  - During planned public events: answer questions, assess events
- Assisting with public events
- Developing new public events (ALES International Group Event)
  - Coordinate multiple teams
  - Create educational materials
  - Create assessment strategy
- Teammate and colleague
  - For the GoatWorks Team
  - For the OPDP Team
  - For the Contractor (BPMR)
- Create public education plan

## Engaging the Public with Edmonton's GoatWorks Program

### **9.4. Public Education Plan Toolkit**

The following document serves as a toolkit for public education and engagement campaigns using the City of Edmonton GoatWorks program as a workable example.

# A Public Education Tool Kit



A Programming Guide Based on  
the GoatWorks Program



# A Public Education Tool Kit

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## **Tool Kit Created/Assembled by:**

Katherine Bishop, Sustainability Scholar (2019)

## **Acknowledgements**

This tool kit has been developed for the City of Edmonton's Operations Program Delivery and Partnerships (OPDP) Department through collaboration with the University of Alberta's Sustainability Scholars Program. Much of this work has been adapted from research of other projects, campaigns, or approaches that are publicly available and are relevant to the GoatWorks Project. All have been adapted for the purposes of being publicly used and available as needed.

Appendix A1 includes many of the projects that were consulted during the making of this tool kit. Many of these works directly contributed to the layout, messaging, or approach of this tool kit.

## **Disclaimer**

The Sustainability Scholar (Katherine Bishop) bears the sole responsibility for the content of this document. It does not reflect the opinions of the City of Edmonton, its staff, or its contractors.

## [1] INTRODUCTION

As a result of the media attention the GoatWorks program received in 2017, the City of Edmonton's Parks and Road Services began increasing its focus on community education and engagement for this portfolio. As a result, two summer campaigns effectively engaged with members of the public and raised awareness about invasive species and pest management. In 2019 the GoatWorks project partnered with the University of Alberta Sustainability Scholars Program to assess current education strategies and improve engagement practices with the public. As a result, this tool kit has been developed to assist future programs in the development of their public education and engagement strategies.

*This toolkit includes a planning template for public engagement, education, or awareness activities and campaigns. There are also lists and links for resources available in the City of Edmonton. It uses the GoatWorks program as a working example of the planning template.*

### *Definition*

**Public Education Plan:** processes of increasing the general public's awareness and understanding of City of Edmonton campaigns, and engagement with specific community events. Programs may wish to foster learning for:

- ❖ The general public about its purpose/mandate, and/or
- ❖ Potential community members about services and resources available, and/or
- ❖ Potential audiences about special events/performances/exhibits, and/or
- ❖ Volunteers about opportunities to be involved in the organization and/or
- ❖ Potential funders, donors, or corporate sponsors about opportunities to contribute to or support different campaigns.

**Goal:** to create attractive, informational, and motivating exchanges with our target audience(s)



**CONSIDER:**  
**How you approach a general audience is different than an individual member of your community.**



## [2] PLANNING TEMPLATE

Departments often have limited resources, so every dollar counts – and so does every hour. As a result, investing time in developing a thoughtful plan for your public awareness campaign is important.

***The following steps will help guide you to a successful campaign:***



*Although these are useful steps to help plan your engagement program, the timing of each step will vary according to your unique project or campaign. You can always redo steps and continue to improve your plan as you go.*

### AS AN EXAMPLE | Consider the GoatWorks Project

- **2017:** The project was established, which included the operational **Planning** (browsing schedule) how it would be **Executed**.
- **2017-2018:** Because of the media attention, key **Messaging** was established as part of a campaign to increase public awareness of the program.
- **2019:** As a result of **Research**, surveys, and **Evaluation** of the current program, a target **Audience** was established, with audience-appropriate **Messaging** applied to each engagement session.

## [3] BRAINSTORM & RESEARCH

Brainstorming with your team and conducting research on your target audience often go hand-in-hand. You are also required to think about your program, adapt to research findings, and incorporate necessary changes into your overall approach as your campaign proceeds.

**ON THE RIGHT** are steps that overview some of the things you will need to brainstorm and research at the onset of your program. Establish:

### A | Type of Project

When planning to promote an organization, event, or service, it is helpful to begin by clarifying the overall purpose for the campaign.

- ❖ What is the issue or reason for the program?
- ❖ Are you promoting awareness, planning an event, or motivating involvement in various programs?

#### *Consider:*

If your project is for general marketing or a promotional plan for the year, it will have a broad purpose. If you have a specific campaign or a targeted program, you may have a more specific purpose.

Broad Purpose	Specific Purpose
Increase the overall number of members in your group	Encourage more new Edmontonians to get involved in your organization
Showing the community how your organization helps to protect the environment	Encourage children to develop good water conservation practices
Publicizing your season of events	Attract youth to community gardening initiatives
Helping the public understand what your organization does to reduce a community-based issue	Demonstrate to downtown businesses the value of continuing to support a particular project

Your purpose will guide your audience, objectives, key messaging, and deliverables. If you are struggling, it may be beneficial to do a bottom-up approach; what are your anticipated outcomes and how can that guide your purpose. This will also help you narrow down the scope of your research and indicate where you need to collect your initial information.

### Type of Project

### Intended Audience

### Objectives & Deliverables

### Timeline

### Key Messaging

### History or Past Work

### Available Resources or Budget

### Impacts & Risks

### Reporting Requirements

## B | Collect Initial Information

In order to narrow in on your intended audience or establish objectives, it may be beneficial to collect initial information. This can be done through independent research, surveys or discussions with potential community members, or evaluation of other similar projects or campaigns.

**Research:** Think about the logistics of your program or campaign. You may wish to learn about:

- The project you are working on
- Similar projects available in the community already
- Approaches to promoting this project that have been successful in your area or elsewhere
- Resources that would be required (money and people) for this or similar projects

**Survey:** You may wish to survey your community to:

- Understand the current level of awareness regarding your product, service, or event
- Establish possible gaps in current understanding or knowledge of your issue
- Identify target audiences or community groups. For example:
  - Who is most likely to be impacted by the current issue?
  - Who is most likely to engage with the current program?
- Understand effective means for engagement or education according to:
  - Demographics (age, background)
  - Learning styles
  - Engagement platform preferences



*Appendix A1 has  
an example of an  
Invasive Species  
Knowledge survey  
given to a targeted  
audience*

## C | Intended Audience & Project Objectives

Writing objectives should be done concurrently with choosing your target audience: Why did you choose to do this campaign, and who is it for? Outline objectives that will help detail the specific knowledge, attitude change, or level of involvement you wish to see in your intended audience. That way your key messaging and engagement approach are tailored to particular groups. *As an example, teaching children about your program is different than how you would approach educating adults.*

**CONSIDER:** Is your program an educational campaign, or are you engaging with the community to contribute to your program in various ways? This may include the planning phase, but can also be an objective of your current project. Forms of engagement may include:

### ADVISE

- Members are consulted to share feedback and perspectives that are considered for your program or campaign cause.

### REFINE

- Members are involved in your project to adapt and adjust your programming, events, or outcomes.

### CREATE

- Members collaborate with you to develop and build solutions or initiate new programming related to your project.

### DECIDE

- Members are empowered to make decisions directly on behalf of your program or project.

Once you have established your audience and engaged with them through preliminary research or surveys, consider what your project objectives are. It may be helpful to think about the end result.

Ask yourself...

*What do we want people to do, demonstrate, or learn as a result of our campaign?*

Do you want people to:

- Understand an idea that's important to us and our mandate?
- Get excited about what we do and pass this excitement onto others?
- Attend our event or program?
- Use one of our ongoing services whose numbers have been declining lately?
- Remember our organization when they discover they need it?
- Try out a new product, program, or service?
- Volunteer with us?
- Donate something we need (money or in-kind resources)?
- Advocate for our group?



### **Make objectives:** Meaningful, Reasonable, and Quantifiable *Objectives do not mean actions*

When considering your objectives, ensure that you will have the resources necessary to make it happen, and you are focusing those resources on obtainable outcomes.

Consider the resources you will have access to

- **Staff**: City of Edmonton staff, volunteers, or contractors
- **Supplies**: display materials, handouts, other programming materials, etc.
- **Access**: does your communication strategy require access to shared social media, etc.
- **Space**: areas to set up your campaign, conduct group planning, facilitate events, etc.
- **Budget**: what finances are available to help you with the aforementioned materials/staff

*....And research how to maximize these resources or obtain those you are missing*

Another way to establish your objectives is with the assessment or evaluation strategy in mind. Is the objective quantifiable? Section 5 overviews strategies on how to incorporate evaluation tools into your programming as you plan it out.

## D | Devise Strategies and Develop Messaging

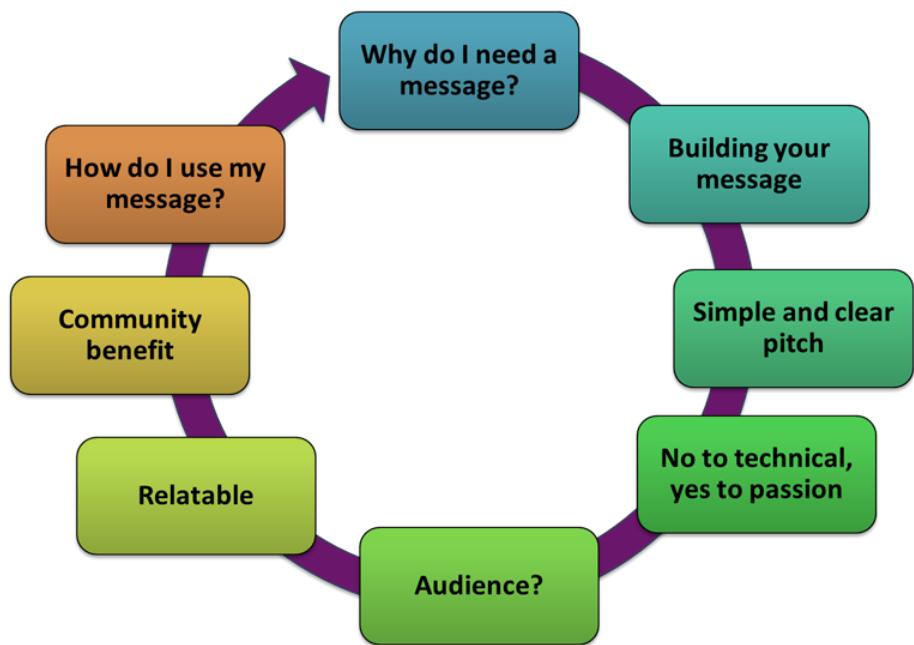
Once you outline your objectives, determine strategies you plan to use in this project to accomplish your goals. Select strategies which are reasonable and realistic for your organization based on your resources and timeline and ones you feel will resonate with your target audience(s).

*If you weren't able to do research on your audience, see how it was perceived by other communities.*

## ***Creating Effective Messaging:***

If you were able to conduct research of your target audience you should have a clear understanding of their specific knowledge gaps in relation to the objectives for this campaign. Often knowledge gaps occur when there are misconceptions about your topic, negative perceptions of your program, or your event is entirely new. These are great starting points for effective messaging.

**IF A COMMUNITY MEMBER SAID:**  
**“So what” or “Who cares” about your program purpose, how would you answer? This becomes the heart of your key messaging.**



Every program can have effective messaging, even if it doesn't have a charismatic mascot like a goat. Start by thinking about your audience. If you've been able to gather insight on the community find out:

- ❖ **What is important to them?** Relatability helps members *care* about your program purpose
- ❖ **Is it catered to their knowledge background?** Do not talk technical, but talk with passion.
- ❖ **Transparency over Gimmicks.** People want to know the benefits and what they're getting into. Sell it to them transparently using real messaging and not gimmicks or clickbait.

Things to consider when designing key messages:

- Do you want to inform, influence, or persuade your audience?
- What tone do you want to take (e.g. serious, breezy, humorous, etc.)?
- What do you want people to remember?
- What emotions do you want people to feel?

### ***Imagine if:***

- You have 6 words to Tweet about your project to the public. What do you type?
- You have a 30 second elevator ride with the mayor. How do you sell your project?



**Your audience, timeline, and environment are always changing...  
Why not adapt your messaging strategy for each context.**

## E | Selecting the Actions and Activities

Also consider how to convey your key messaging. What actions or activities make the most sense for your project purpose, using your current resources, and for your target audiences? Consider promotions or campaigns you have encountered or heard about. What components did you think were effective or interesting? Does this align with your target audience(s)? What components did you think were effective or interesting, and how can you adapt them to your strategy? Section [7] overviews a list of some general communication tools you can consider.



Get creative, and be open to constant feedback. If your community isn't receptive at first, ask why, and revise it to be a more effective means for communication or engagement. Invite community members to be on your planning committee. For these reasons, you may also wish to incorporate evaluation processes into your program or campaign activities.

### For Example:

- Is there an opportunity during your event for people to leave feedback?
- Is there an opportunity to engage with the participants for casual discussion or reflection?

*Activities will also need to fit within your proposed timeline...*

## [4] PLANNING & FACILITATING

You now have an idea of your messaging and actions you wish to take to inform or engage the public, but how do you put the plan in motion?

### Ask yourself...

- What should be in place before we go much further?
- What else is going on in our group, department, or community that might affect our plans?
- What exactly are we promoting?
- Do we have all the information we need about the event/service/activity/concept?
- Are there other similar events/services/activities already available in our community?
- Have similar campaigns been undertaken elsewhere?
- How many resources do we have to allocate to our programming?
- Are there any possible partnerships (people, organizations, or businesses) we can incorporate?
- What are some potential challenges we might face?
- What else do we need to know before we begin?



### Objective-Specific Action Plan:

Objective	Action	Anticipated Impact	Proposed Output

- What action would help communicate our message best?
- What would appeal to the people we want to reach?
- What would excite and motivate our staff and volunteers?
- What would be the best use of our resources?

### Communication Tools

Target Audience	Key Messaging & Timing	Information Sharing Tool

Consider social media, media exposure, door-to-door communications, posters, pamphlets, etc.  
Consider available resources (including time) and cost-effective tools; do you have the expertise?

### Progress Reporting Tools

Communication Method	Purpose/ Description	Frequency	Distribution Method	Internal or External	Target Audience

Consider that your department may need updates; this also helps you keep track

Now consider who will do what, and when. Break the project down into small easily doable tasks and list everything that will be required (be as specific as possible). We also recommend having the project plan accessible to all teammates so that they can see who is responsible for what, and when each task has been completed.

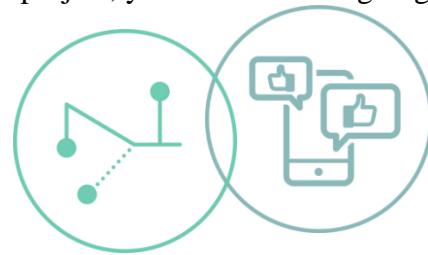
**Your department may also require event-specific project plans, communication plans, or emergency plans. Examples have been provided in Appendix 2**

## [5] EVALUATE & ASSESS

Establishing assessment strategies can be difficult, but it is important to incorporate public feedback into the continued success of your campaign.

- Start by considering what your end goal is: what are you trying to achieve?
- Work backwards and set measurable objectives and targets. In this way, measurement can help shape the campaign, guide your approach, and increase your chance of success.
- By having the tools and practices in place at the start of your project, you can ensure ongoing assessment and showcase the impact of your program.

You can constantly incorporate feedback into your education strategy according to outputs and outcomes. Measuring these features often indicates misconceptions, negative perceptions, or common questions from the public that can be turned into a positive engagement approaches.



**Outputs:** include impressions and reach. For many public education campaigns outputs are in the form of media coverage (social media likes, interactions, video views) and attendance numbers at public events.

**Outcomes:** include awareness, comprehension, attitude, and behavior. Outcomes are a result of the outputs and can be measured as level of engagement with outputs and in forms of knowledge retention.

### *Things you need to assess throughout the campaign...*

Inputs	Outputs	Outtakes	Outcomes
<p>What you do before and during the activity:</p> <ul style="list-style-type: none"> <li>• Planning</li> <li>• Preparation</li> <li>• Pre-testing</li> <li>• Production</li> </ul>	<p>What is delivered, or is the target audience reached:</p> <ul style="list-style-type: none"> <li>• Distribution</li> <li>• Exposure</li> <li>• Reach</li> </ul>	<p>What the target audience thinks, feels, or does:</p> <ul style="list-style-type: none"> <li>• Awareness</li> <li>• Understanding</li> <li>• Interest</li> <li>• Engagement</li> <li>• Preference</li> <li>• Support</li> </ul>	<p>The result of your activity on target audience:</p> <ul style="list-style-type: none"> <li>• Impact</li> <li>• Influence</li> <li>• Effects</li> <li>• Attitude</li> <li>• Behaviour</li> </ul>
<p>Select the right metrics to help you measure and evaluate the performance of your campaign. Use a mix of qualitative and quantitative methods (e.g. surveys, interview feedback, focus groups, social media analytics, and tracking)</p>			

## ***Assessment strategies will vary based on...***

We care about the campaign success from all members of the public. But how we assess engagement or knowledge retention will vary according to community member (e.g. age) and level of participation.

### ***Levels of Engagement***

**Low Engagement:** Member has basic interest in your program

**Middle Engagement:** Member is interested in learning more about your program

**High Engagement:** Member was motivated to do more with the program or participate in other programs.



Measuring knowledge retention also indicates whether the current education approaches are sufficient, or if different areas need to be highlighted or taught more effectively.



## **Consider...**

How you will evaluate your program, when you will do it (one-time or continuous), and what you plan to do with the information. Is there an opportunity to incorporate any of the feedback into future sessions?

### **Data Management**

Some simple steps for evaluation include keeping track of the number of materials you distribute or how many times a social media post was viewed, liked, or interacted with. Data collection and evaluation will help inform future campaigns and assist you in using resources judiciously.

Consider how you will manage data and assess it.

<b>Information gathered</b>	<b>How it will be recorded, managed, or integrated into planning considerations</b>

### **Evaluation Strategy**

In terms of evaluating your chosen objectives, it's helpful to compare your target audience's knowledge and awareness before and after the campaign was launched. Conducting pre- and post-campaign surveys is one way to determine the effectiveness of your efforts.

<b>What are the indicators of success for the public involvement process?</b>	
<b>What will we measure or evaluate about the public involvement process?</b>	
<b>When and how?</b>	
<b>What will we do with the results of the evaluation?</b>	

Many projects require final reports or progress reports. If you collect updates and quantifiable data throughout your project, this will make the final report *much* easier.



## Team Initiatives

Consider assessment and input from teammates throughout the program. Continuously ask these questions *throughout* the program:

- How are we doing?
- Are we meeting our objectives?
- What can we do next time to make it even better?
- Who do we need to thank?
- How shall we celebrate?

Work with team insight at all stages of planning, facilitating, and assessment.

And don't forget to celebrate *all* accomplishments with them at major milestones. This may be something to incorporate into your timeline or overall project plan.



**NOTE:** A good project takes time.

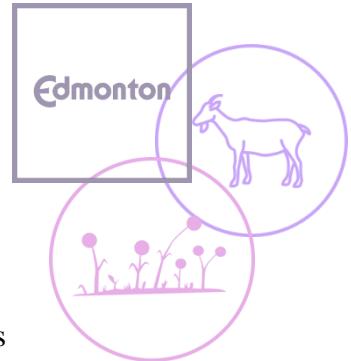
Public education and engagement involve constant reassessment with the communities and research to improve the focus or approach.

This can take months, or even years for pilot programs.

Allocate time and resources accordingly.

## [6] WORKING EXAMPLE | GOATWORKS!

Throughout this section, we use the City of Edmonton's GoatWorks Pilot Project as a workable example. We specifically focus on the 2019 Public Education and Engagement Campaign as an example of how each step might be followed.



### STEP 1: BRAINSTORM

*Establish Overall Purpose, Objectives, and Outcomes*

**Overall Purpose:** Engage City of Edmonton communities with the GoatWorks Pilot Program in an attempt to educate all community members about the impact of various forms of integrated pest management, including goats as target browsers of noxious weeds.

#### Main Campaign objectives:

- 1) Inform City of Edmonton community members about goat-based land management strategies
- 2) Assess public perception of the GoatWorks program
- 3) Assess current education and engagement strategies for the GoatWorks program
- 4) Encourage community members to participate in the GoatWorks program (e.g. Meet & Bleat)
- 5) Encourage student involvement through on-site school visits

#### Anticipated Outcomes

By the end of the 2019 field season we will have:

- Engaged with the community through various events
- Educated the community through social media, on-site visits, and outreach
- Recorded the public's perception of the GoatWorks program
- Assessed the effectiveness of current education and engagement practices

By the end of the 2019 field season we hope to have:

- Motivated youth about sustainable practices like GoatWorks happening in their community
- Advocated for the continuation or completion of GoatWorks in Edmonton

### STEP 2: RESEARCH

*Collect Initial Information*

When we first began the 2019 Field Season, we had a number of questions.

- What are we promoting?
- What resources (budget, supplies, people) do we have or can we get?
- Who are potential partners, sponsors, or collaborators?
- How can we work with the contractors in our campaign efforts?
- Can we learn from other ongoing informative campaigns?

*Example:* Because this project took place during 2017 and 2018, we already had access to [brochures](#) (APPENDIX) signage, and the results of a 2017 insight survey conducted by the City of Edmonton's Parks and Roads Services.



We used data obtained through the 2017 insight survey and as a result of assessing the 2017 and 2018 campaigns to serve as our starting point for planning the 2019 campaign. If you are starting a campaign from scratch, consider conducting insight surveys in your communities, talking with community members informally, or researching what has already been done in your area. This can help define your scope, audience, or needs.

## STEP 2A: AUDIENCE

*Identify the Audience.*



Possible audiences:

- ❖ Anyone who lives in Edmonton
- ❖ Newcomers to the community
- ❖ Members who live near/around Rundle Park
- ❖ Nearby elementary and secondary schools
- ❖ Post-secondary institutions in Edmonton who have an environmental focus



In 2017 Parks and Roads Services conducted an insight survey and knowledge testing showed that the majority of residents who strongly believe in an herbicide ban or no restrictions to herbicide use are basing their opinions on incorrect perceptions of the current policy. They advocate that future marketing and communications about integrated pest management should primarily focus on people who are still undecided.

GoatWorks School programs are open to any classrooms interested in engaging their students with our program. However, the committee has decided that it's particularly important to reach classrooms:

- ❖ Nearby Rundle Park, who may see the goats grazing during non-programmed visits
- ❖ Who have not yet participated in 2017 or 2018 school visits

GoatWorks Meet & Bleat program is open to any members of the public. However, the committee has decided that it's particularly important to reach people who:

- ❖ Live in the community area around Rundle Park
- ❖ Who live near other naturalized parks where this initiative may be used in the future
- ❖ Have an interest in community naturalization
- ❖ Have concerns about ongoing sustainable city projects
- ❖ Who are undecided on the effects of integrated pest management

We think these people may benefit most from engaging with our programs and having the opportunity to openly discuss aspects of the project.



## STEP 2B: MESSAGING

*Decide on your key message(s)*



We wanted to balance fun and upbeat messages with an informative approach related to GoatWorks and the greater integrated pest management program. Because our projects relates to sustainability, we also want people to feel inspired to participate in similar activities throughout the year.

**Key Message:** The GoatWorks Pilot Project is an innovative program using goats to manage noxious weed infestations in natural areas and parks.

**Note:** that different platforms and audiences required different messaging styles

Platform	Audience	Messaging
Social Media	Wider community	They're baaaaaaaaa'k Here we Goat again...
Website	Wider community	Why are there goats in Rundle Park? How Targeted Browsing Works
Brochures	Event participants	Why goats? Chew on this...
IPM Newsletter	Pest management community	Got Weeds? Get Goats! Target browsing from trained goats is an effective tool for land management
Elementary School Visits	Children/youth	Why are goats in our community? Working goats eat purple thistle and yellow leafy spurge
Pots-Secondary School Visits	Young adults	We are piloting an environmentally conscious method of weed control in Rundle Park: Goats!
Outreach (Emerald Awards)	Environmental community	The benefits of this pilot, if successful, will have a positive impact on the environment as well as demonstrate land stewardship
On-Site Visits	General public	The goats working in Rundle Park have been trained to eat key weed species and are an ecological alternative to herbicides or other control methods
Meet & Bleat	General public	Good or baaah'd? Are Goats an acceptable alternative to herbicides or other control methods?
Leadership tours	City of Edmonton Leadership	The benefits of this pilot have had a positive impact on the parkland, in the community, and as an educational tool for various institutions in Edmonton
Program Tours	Special groups	How are goats benefiting our community?

*Although we could focus our messaging on the “cute goats!”...  
We found that the public were more engaged with messaging related to the program’s impact and long-term effectiveness.*

## STEP 2C: ACTIONS

Select the actions and activities to obtain your objectives.

Overall Purpose: Public Education and Engagement	
Campaign Objectives	Actions/Activities & Communication Tools
Inform Members	social media, media events, on-site visits,
Assess Public Perception	analytics, intercept surveys, on- and post-site feedback
Assess Education Plan	research, surveys, on- and post-site feedback
Meet & Bleat Participation	posters, media exposure, social media, online notices
School Visits	invite schools, adapt curriculum, integrate assessment plan

## STEP 2D: TOOLS

Select appropriate communication tools

We integrated this step with the key messaging and actions stages. We wanted to focus on reaching many community members and used different means to achieve engagement across communication. The tools that we use varied according to the level of engagement.

**Low Engagement:** communicate basic information about program

- Social media
- Media exposure
- Word of mouth (on-site visits)



Brynn Merkosky Janine Jaeger goats  
Like · Reply · 8w

Melissa Aloisio-Schnack Yay!!  
Like · Reply · 9w

**Medium Engagement:** motivate your community to learn more about your program

- Social media & media exposure
- Website, Brochures, and Integrated Pest Management Newsletter
- School Visits
- Meet & Bleat
- Public tours

Sarah Hauck My daughter and I just loved this event as well as meeting Root for Trees volunteers. I can't wait for your next event and my daughter will be thrilled again.

Like · Reply · 5d



**High Engagement:** motivate your community to participate in your programming, or to become part of your campaign.

- School Visits
- Meet & Bleat

*What level of engagement do you want the community to have with your campaign?*

## STEP 3: PLAN

*Plan how you will launch and facilitate your program*

It helped our team to have an ongoing task list that everyone could see, modify in real time, and manage assignments. We did this using google docs and google calendar.

Event or Task	Action	Date
Social Media	May: Re: The goats are back	May 15
	June: Re: Goat dates, program facts	May 27
	July: Re: Meet & Bleat, program facts	June 27
	August: Re: Program facts	Mid-July
	Re: Goat dates, program facts	Aug 15
Media Events	Round 3: Goats are back	June 12
	Communities in Bloom Judges on site	July 26
	Meet & Bleat	July 27
Integrated Pest Management Newsletter	May: Did you see my... goat?	April 27
	June: Who you gonna call... goat browsers!	May 27
	July: Before and After shots	June 27
	August: Here we goat again	July 27
Elementary School Visits	Contact Schools (APPENDIX)	May
	Research and adapt lesson plan according to Alberta curriculum	May
	Schedule Visits	June
	Facilitate Events	June 12-17
	Conduct post-visit assessment	June
AB Emerald Awards	Attend event: outreach, network, and engage	June 4
Post-Secondary School Visits (ALES)	Contact Schools	May
	Schedule Visit	June-July
	Program integrative multi-team approach	July
	Facilitate Event	July 26
	Conduct post-visit assessment	August
On-Site Visits	Answer questions, hand out brochures, and record public feedback or misconceptions	June 12-17
		July 24-31
		Sept.11-17
Meet & Bleat	Plan event (APPENDIX)	July
	Facilitate event	July 27
	Assess event (intercept surveys)	July 27
Public Events	Plan events (e.g. Alpha Kidz, SURF)	July
	Facilitate event	July
	Conduct post-visit assessment	July

**Consider:** Adding a column of who has been assigned each task. Also consider communications with your leadership team(s), contractor(s), and any partnered groups.

## STEP 4: EXECUTE

*Facilitate your program or campaign*

Throughout the summer we had regular check-ins with our team, support staff, and our assessment strategies. What we originally set out to do quickly evolved into a very busy scheduled campaign. We included the integration of various OPDP programs for the ALES visit and the Meet & Bleat. We welcomed additional on-site programming (tours) for various groups and continue to plan for events into September.



**Tip:** Be adaptable and open to changes depending on weather, availability, and personnel.

...And don't forget to **THANK** your various teams along the way!

## STEP 5: EVALUATE

*Evaluate and assess the success of your program*

Considering our original objectives, we wanted to assess:

- Public perception about the program
- Education and engagement strategies for various community members
  - Did educators find it effective for their class?
  - Did students engage with and retain knowledge?
  - Did members of the public engage with and retain knowledge?



Event or Task	Evaluation Strategy
Social Media	Analyze: views, likes, shares, and comment content
Email/311	Analyze: dialogue, questions, and concerns
Elementary School Visits	Students: <a href="#">activity sheets</a> and dialogue/questions (APPENDIX)
	Instructors: <a href="#">post-visit survey</a> & dialogue
Secondary School Visits	Students/Instructors: <a href="#">post-visit survey</a> & dialogue
Meet & Bleat	<a href="#">Intercept survey</a> , dialogue, questions, and concerns
On-Site Visits	Dialogue, questions, concerns

Each survey or activity form was catered to the age, event, and intended responses.

## STEP 6: SHARE RESULTS

Our campaign is part of the City of Edmonton and involves heavy public involvement. As part of our program facilitation, evaluation, and assessment, it is important to share the findings with staff, management, and the public. This took the form of:

- Public presentations
- Scholar Report
- Social media updates
- Integration of data into Integrative Pest Management Policy
- Pilot Study Summary Report



## STEP 7: CELEBRATE & ACKNOWLEDGE

Openly celebrate in your hard work and successes with your teams. This will include acknowledgements and thanks for hard-working volunteers and other staff. As part of the City of Edmonton, this included formal thank you cards related to our ongoing cultural commitment.



*Team photos help during celebration, sharing of results, and acknowledging crucial staff involvement!*



## [7] LOCAL RESOURCES

Tools or resources that can be used.

You can also find art/artist and photographs/photographers using local archives, yellow pages, or

Communication Tools in Edmonton	
Tools	Description
Edmonton Volunteers	Volunteer opportunities organized through the City of Edmonton services or programs: <a href="https://www.edmonton.ca/programs_services/volunteer-opportunities.aspx">https://www.edmonton.ca/programs_services/volunteer-opportunities.aspx</a>
Website	Host websites for not-for-profit organizations
The City of Edmonton Community Services Activity Guide	Produced by the community itself, either as an online forum, or as a program guide: <a href="https://www.edmonton.ca/activities_parks_recreation/program-guides.aspx">https://www.edmonton.ca/activities_parks_recreation/program-guides.aspx</a>
City of Edmonton Recreation Facilities	Bulletin boards at recreation facilities feature information about community events
The City of Edmonton Website	For City-sponsored events <a href="https://www.edmonton.ca/activities_parks_recreation/parks_rivervalley/got-pilot-project.aspx">https://www.edmonton.ca/activities_parks_recreation/parks_rivervalley/got-pilot-project.aspx</a> )
CKUA Alberta Arts & Culture Events Listing	A web-based arts and culture events listing ( <a href="https://ckua.com/events/">https://ckua.com/events/</a> )
Coffee News	Weekly publication that appears in local coffee shops and other business in Edmonton
Community Association websites & newsletters	Association-specific; this may also include University or College list servs
City of Edmonton Community Events Calendar	A web-based calendar of events in Edmonton: <a href="https://www.edmonton.ca/attractions_events/schedule_festivals_events/events-calendar.aspx">https://www.edmonton.ca/attractions_events/schedule_festivals_events/events-calendar.aspx</a>
EventBrite	Event management and ticketing website. The service allows users to browse, create, and promote local events: <a href="https://www.eventbrite.ca/d/canada--edmonton/events/">https://www.eventbrite.ca/d/canada--edmonton/events/</a>
To Do Canada	Event management site that has an Edmonton-specific section: <a href="https://www.todocanada.ca/things-to-do-in-edmonton-this-weekend/">https://www.todocanada.ca/things-to-do-in-edmonton-this-weekend/</a>
ExploreEdmonton	In partnership with Travel Alberta, this event management site allows users to browse, create, and promote Edmonton-specific events
Edmonton Journal	The newspaper includes an events listing calendar where users can create and brows Edmonton-specific events: <a href="https://www.eventsedmonton.ca/">https://www.eventsedmonton.ca/</a>
Family Fun Edmonton	A website promoting family-friendly events and opportunities in the Edmonton area. <a href="https://www.familyfuncanada.com/edmonton/calendar/">https://www.familyfuncanada.com/edmonton/calendar/</a>
Various News Agencies	The Edmonton Journal, CBC News Edmonton, CTV News Edmonton, and the Edmonton Sun, who may all support local initiatives in the form of news stories or opinion pieces (op-eds).

online gallery guides. These avenues may provide resources or images that you may be able to use in your promotional materials.

## APPENDIX 1: Examples of Other Campaigns or Resources

Various programs or reports were used or consulted when creating this tool kit. Many of them have been listed below, but all may be beneficial examples or approaches to use when planning your program.

### Planning the program:

- **Violence Prevention Campaign** | The National Sexual Violence Resource Centre (NSVRC) created a template for planning an effective campaign. Check out [this link](#).
- **Sustainable Youth Programming** | Roots and Shoots is an organization that advocates for youth involvement in their communities. They have an extensive [how-to guide](#) for youth involvement and education at the community level.
- **Municipal Public Awareness Campaign** | The Municipality of Red Deer has a [Building Public Awareness tool kit](#), which served a strong foundation for this tool kit.

### Researching your target audience:

- **Invasive Species Public Awareness** | When gauging public awareness of a topic prior to the onset of your program, consider questions you can ask the general public using intercept surveys. Lara Hakam overviews [her study of how to approach public awareness and education of Invasive Species through community surveys](#).

### Creating Messaging:

- **The Benefits Catalogue** | Built around 8 key messages about the benefits of recreation and sports. [www.benefitshub.ca](http://www.benefitshub.ca)
- **Valuing Culture** | Measuring and Understanding Canada's Creative Economy ([Conference board of Canada in collaboration with Canadian Heritage, 2008](#))
- **Social Effects of Culture** | Exploratory Statistical Evidence [example](#)
- **The Marketing Playbook** | [Strategic Messaging Map](#)
- **Cutting Edge PR** | A [how-to blog](#) for creating strategic messaging

Community-based programs may want to focus their campaigns on benefits related to the community members. When researching your target audience, or determining how to create effective messaging, consider one or more of the following benefits:

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>❖ Exercise, fitness, and sport activities</li> <li>❖ Relaxation and stress reduction activities</li> <li>❖ Open space and access to nature</li> <li>❖ Time with children/family</li> <li>❖ Pleasure and enjoyment and play</li> <li>❖ Connections with neighbours – a sense of belonging</li> <li>❖ Getting to know new people</li> <li>❖ Programs for all ages</li> <li>❖ Increased safety that comes from neighbours knowing one another</li> </ul> | <ul style="list-style-type: none"> <li>❖ Special events</li> <li>❖ Having a voice related to city planning issues that affect the area</li> <li>❖ Information through newsletter or other sources</li> <li>❖ Member discounts and deals</li> <li>❖ Facility rentals</li> <li>❖ Contributing to improving the quality of life in the neighbourhood</li> </ul> |
|--|--|

## APPENDIX 2: Tools and Form Examples

### GoatWorks Brochures

From [Edmonton.ca/goats](http://Edmonton.ca/goats)



#### How it works

- The goats working in Rundle Park have been trained to eat key weed species. They are ideal for ecologically-sensitive areas where herbicides or other control methods are impractical or inappropriate.
- The goats are never left alone. A skilled shepherd is on site 24 hours a day.
- The park is their salad bar! The goats will be targeting noxious weeds, but they will also sample dandelions and other vegetation.

#### Why goats? Chew on this...

- Goats are the best animals for the job because they are mobile in all terrain. They move easily on steep slopes and heavily-vegetated areas that are not safely accessible to people.
- Goats have special enzymes in their stomachs that allow them to eat plants that are poisonous to other animals.
- Goat poop is not a problem! It's actually a fertilizer. Goat poop is dry, breaks down quickly and does not smell or attract flies. Grasses and other vegetation left behind are given a natural boost!



Edmonton

[edmonton.ca/goats](http://edmonton.ca/goats)

#### Weed Control



The City adheres to provincial and federal regulations for weed control and herbicide use. We control weeds in a way that is mindful of environmental impacts and meets professional and industry standards for parkland care.

Herbicide is used to control weeds on a very small percentage of Edmonton's parkland. The City uses alternative weed management approaches such as:

- Removing weeds with trimmers and brush blades
- Working with communities to remove weeds mechanically and by hand
- Using biological controls such as bugs and goats (pilot planned for 2017)
- Converting non-active turf sites to maintained naturalized areas, where natural vegetation eventually out-competes weeds

The City of Edmonton uses techniques designed to enhance the growth of healthy turf, thereby out-competing weeds in certain areas. Techniques include:

- Hydro-seeding, which involves mixing grass seed with sticking and thickening agents (pulp) and spraying it on poor turf
- Aerating, topdressing, fertilizing and overseeding turf in select areas



Edmonton

[edmonton.ca/weeds](http://edmonton.ca/weeds)

## Public Education and Engagement Group Visit Request Form (page 1 of 2)



### Public Education and Engagement Request Form for Group Visits

We are the City of Edmonton's GoatWorks Pilot Program, which contracts a shepherd team (Baah'd Plant Management and Reclamation) and their goats to manage noxious weed species in Rundle Park. These goats have been trained to eat key weed species and provide a sustainable alternative to other pest management. They are ideal for ecologically-sensitive areas where herbicides or other control methods are impractical or inappropriate. We believe that this program also provides a unique learning opportunity for participants to engage in real-world applications of ecosystem science (forestry, waterways, and animal life cycles), social and environmental issues, as well as human and animal activities within their community.

We invite you to participate in this interactive learning experience. By taking part in our field activity participants will engage with age-appropriate content and have the opportunity to learn something new. We foster environments that inspire participants to engage with the natural world in their own communities.

If this is something your constituents wish to participate in:

- Please fill in all items listed below.
- Email completed files to [goats@edmonton.ca](mailto:goats@edmonton.ca)
- Questions or concerns should be directed to the same email.
- For additional information, please go to [www.Edmonton.ca/goats](http://www.Edmonton.ca/goats)

<b>Group Name:</b>	
<b>The age range of participants:</b>	
<b>Total Number Visiting:</b>	
<b>Primary Contact:</b>	
<b>How do you plan to arrive on site?</b>	
<b>Is your visit weather-dependent?</b>	
<b>Do you have accessibility needs?</b>	

**Public Education and Engagement Group Visit Request Form** (page 2 of 2)**Public Education and Engagement  
Request Form for Group Visits**

We have availability for participants to visit our goats on July 25-29. If you book the “morning” time slot, we will accommodate the times that work best for you. Please keep in mind the goats will be working, and we wish to keep disruptions to a minimum.

Scheduling is made on a first come, first serve basis.

**Please rank your preferred dates for visit (1-5)**

DATE	MORNING	AFTERNOON
Thursday, July 25		
Friday, July 26		
Saturday, July 27	“Meet & Bleat” Public Event (all are welcome)	
Sunday, July 28		
Monday, July 29		
Tuesday, July 30		

Things to consider:

- We are an outdoor park, and participants will be outside for the duration of the visit
- The goats are working

Any additional notes?

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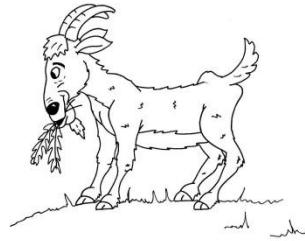
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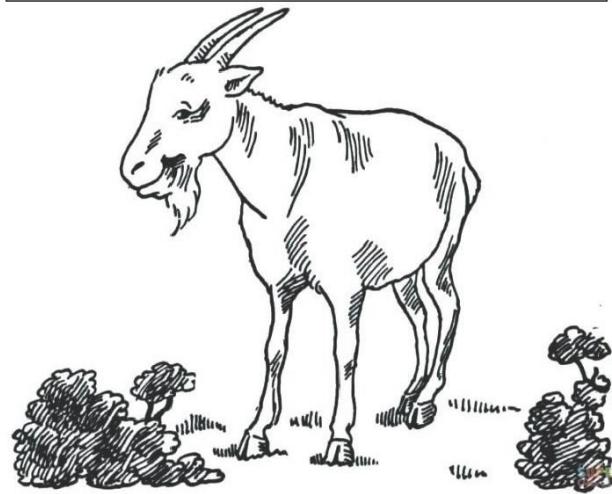
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## Student (child) Activity Sheet Examples

Draw or write your experiences at Rundle Park:



**I liked visiting the Goats at Rundle Park because...**



## Meet and Bleat Event Poster



© Created by Niki Faloon

## Meet and Bleat Event Plan (template) Page 1 of 3

### **GoatWorks Meet and Bleat 2019 Event Plan**

#### **Event Description & Summary:**

An opportunity to meet the browsers at a free, family event. Festivities will include educational exhibitors and browsing goats. Goats in the Park is an event to celebrate the City's parkland management practices. This event will connect community members with an opportunity to meet the goats and engage with City parkland.

**Target Audience:** Families and all ages.

Date: July 27th, 2019

Location: Rundle Park

Time: 10:00 a.m. to 2:00 p.m.

Admission Price: Free

#### **Event Outcomes & Goals:**

- Engage community City's parkland management practices.
- Increase awareness of the City's parkland management practices.
- 500 participants on the day of the event.
- 200 citizens in attendance.
- Kid friendly event
- Develop and distribute educational information on the City's parkland management practices.
- Positive media/social media received from the event.

#### **Activity/Station Descriptions:**

##### **Activity # 1: Goat viewing**

Program: This opportunity will allow for public participants to be guided down to a viewing point to engage shepherd and goats through a fenced area

Supplies: Hand sanitizer, Handbills, Signage, DOL and Farm visits

##### **Activity # 2: Craft Station**

Program: Reuse centre program Coordinator to host and assist participants with a goat themed craft. Draw prize with colouring sheets.

Supplies: Tables and chairs, Signage, String, clothespins

##### **Activity # 3: Exhibitor Tent**

Includes: Root for Trees, Integrated Pest Management, GoatWorks Education Table, Reuse Centre

Supplies: Root for Trees: (2) 10x10 event tents + weights, truck with first aid kit + AED, some extra high-vis vests for volunteers, plant giveaways, Speaker system. Integrated Pest Management: pull up banners, postcards, engagement wheel, gloves for giveaway, sign up sheet for newsletter. GoatWorks: postcards

##### **Activity # 4:**

Subway catered lunch

Supplies: Signage, Garbage cans, Garbage bags

**POINT OF CONTACT:** Joy Lakhan, GoatWorks Coordinator

Event Map:

<https://www.google.com/maps/d/u/0/edit?hl=en&mid=1pR0A8gesPhrjP-v0aAQDPIJKLWs&ll=53.5640085457261%2C-113.37998723345186&z=17>

## Meet and Bleat Event Plan (template) Page 2 of 3

### Pre-Event Plan:

Task	Person(s) Responsible	Status
Begin project and event plan.	Joy	Complete
Book Rundle Park through Civic Events.	Joy	Complete
Site visit to determine layout of event.	Joy	Complete
Create overall site map.	Joy	Complete
Order portable washrooms and hand wash stations.	Joy	Complete
Order tables, tents, chairs.	Joy	Complete
Send sign-up sheet to request event assistance from OPDP and IVMT teams.	Joy	Complete
Create signage for overall event and activity stations.	Joy	Complete
Send final confirmation package to all exhibitors and volunteers.	Joy	Complete
Create staff and volunteer sign-in sheet.	Joy	Complete
Utility check the site	Joy	Complete
Request garbage/recycling cans and picnic tables from Operations	Joy	Complete
First aid kit + AED on site/IIDC forms	Joy	Complete
Obtain onsite vehicle permit	Joy	Complete
<b>Activity #1:</b> Signage displayed on site	Joy	Complete
Contact and confirm volunteers	Joy	Complete
<b>Activity #2:</b> Select craft, purchase supplies, Print out colouring sheets	Joy	Complete
<b>Activity #3:</b> Contact partner groups & invite them to have a display table.	Joy	Complete
Contact RFT team and invite them to have a display table.	Joy	Complete
Create signage for each display table.	Joy	Complete
<b>Activity #4:</b> Place order with SubWay	Joy	Complete
Create social media posts (texts and photos) for Facebook and Twitter.	GW	Complete
Create media advisory PSA.	Jill	Complete
Update Goat website with event details.	GW	Complete
List event on online calendars.	GW	Complete

## Meet and Bleat Event Plan (template) Page 3 of 3

### **Emergency Preparedness Plan:**

The Goat Works Meet and Greet is taking place at Rundle Park. To ensure that everyone is prepared for the unexpected, please review this plan and keep a copy at all times. Ensure that all participants, staff, and volunteers are accounted for.

#### In the event of an emergency:

Call the Event Coordinators (Joy Lakhani) for all emergencies

#### **On-site muster point:** Parking lot

**Emergency notification by whistle:** If you hear a loud whistle, stop what you are doing and stay still. Take inventory of your group and wait for further instructions. Maintain radio silence until further instruction from the Event Coordinator.

#### **Medical emergency response:**

1. Call the Event Coordinator.
2. Event Coordinator will notify on-site First Aid personnel.
3. If the emergency is severe, call 911 immediately and tell them you are located in Rundle Park (2909 113 Ave NW) near Parking lot north of Rundle Park Tennis Courts. Stay at the site of the incident until assistance arrives. Send someone to the parking lot to meet the ambulance.
4. Administer First Aid if you are trained to do so.
5. Do not attempt to move seriously injured persons.

#### **Missing participant:**

1. Radio the Event Coordinator.
2. Event Coordinator will notify on-site First Aid personnel and Police.
3. Provide the following information:  
Last place and time that the participant was seen.  
Name, age, and what the participant was wearing.  
Other information that could be helpful.
4. With one other person, retrace your route to attempt to find the missing participant.
5. If the participant is found, radio the Event Coordinator to notify them.

#### **Weather protocol:**

*If a Weather Watch is issued for the Capital Region:*

1. Event Coordinator will perform consistent weather monitoring throughout the event via Environment Canada, The Weather Network, and the City of Edmonton.
2. Weather updates will be reviewed and recorded every 30 minutes.

*If a Weather Warning is issued for the Capital Region:*

1. Weather updates will be reviewed and recorded every 5 minutes.
2. Make an announcement to all participants.

*If event is to be shut down due to severe weather:*

1. Event will shutdown and evacuation procedures will begin in the event of the following:  
Wind gusts in excess of 45 km/hr.  
Severe Weather Warning (thunderstorm, tornado, snowstorm) issued for the City of Edmonton.  
As determined by on-site River Valley Ranger.

#### **Procedure to shut down event due to severe weather:**

1. Evacuate participants to a safe structure or to vehicles.
2. Remove/secure any tents on site.
3. Professionally installed tents should have all side walls removed.
4. Evacuate people from the areas around tents and large trees.
5. Power down all electronic equipment and generators.
6. Tear down site once severe weather has passed.

#### **Explosion response:**

1. Radio the Event Coordinator.
2. Event Coordinator will call First Aid designate and 911, if needed.
3. Take shelter against a large, sturdy object.
4. Exit buildings immediately.
5. Check for fire and other hazards.
6. Take any emergency supplies, if time allows.

#### **Mass casualty incidents:**

**Event will be postponed if:**

An incident occurs with less than 4 patients.  
The incident is contained to a small, manageable area.

**Event will be shutdown if:**

An incident occurs with more than 4 patients.  
The event site is deemed unsafe.  
Event site must be maintained in the event of an investigation.  
The event must be postponed for an excessive amount of time.

#### **The following groups will determine event shutdown:**

Event Coordinator  
Police  
Fire Services  
Event Committee