



Beaver Mitigation Projects

Municipal Management Examples

Foothills County
Beaver
Mitigation
Projects
2 Examples
Shared by
Councillor
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&
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Deputy Director
of Operations
Public Works

Putting Beavers to work for Watershed resiliency & restoration – 2019 Update

Councillor Suzanne Oel Bio: Suzanne has been a councillor for Foothills County for 9 years. In representing Division 4, which encompasses the NW of Foothills and includes the headwaters to a number of drainage areas, she has had the opportunity to work with residents, County staff and other agencies on human-wildlife conflict with various species, including the healthy Beaver population present in Division 4. Suzanne is passionate about protecting the beautiful landscapes, watersheds, dark skies, managing wildlife issues and finding coexistence solutions.

SO Presentation + 24 Slides

Slide 1 – title page

- Thank you for giving me the opportunity to share the Municipal Management perspective.
- The beaver-human conflict continues, where residents are passionately for and against their presence in the Foothills County. While many believe that beaver provide great services, others believe they cause nothing but problems with road infrastructure and land use.



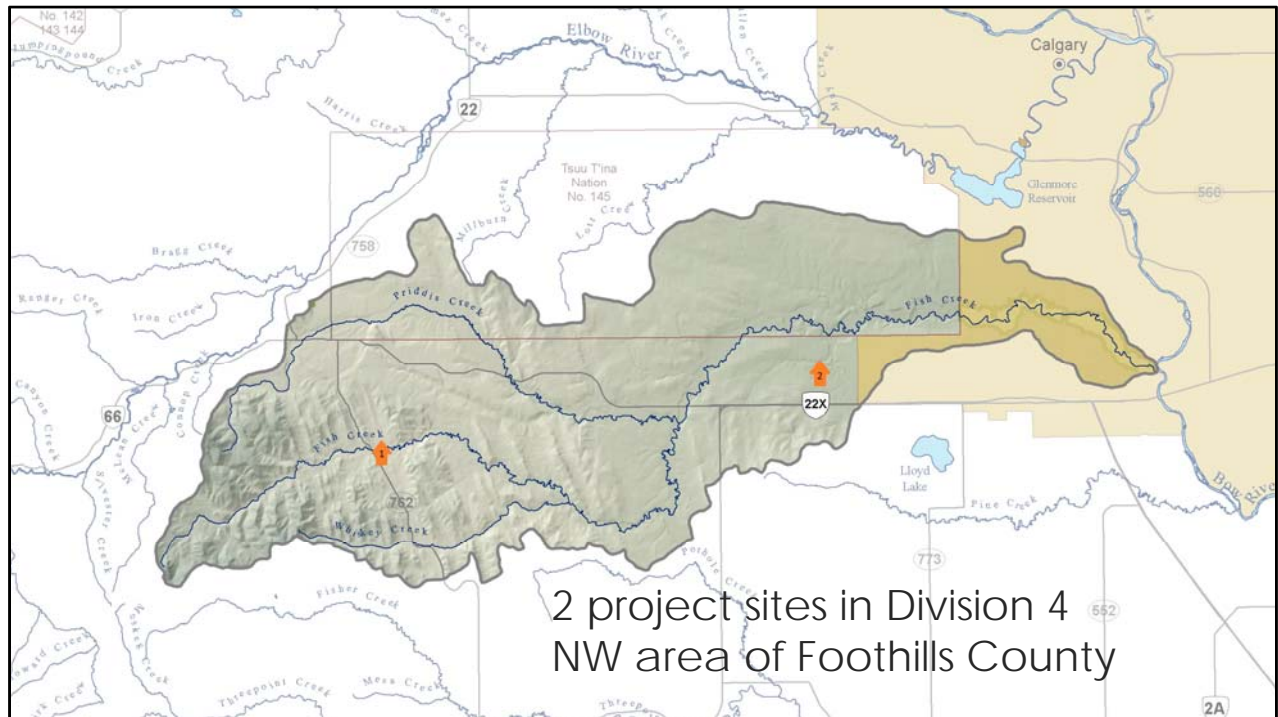
Slide 2 – dead beaver 2012 near 160 St

- We are faced with justifying why the price of a bullet or removal-trapping is outweighed by the cost and effort to plan, educate and promote the positive effects of the beaver and their value to watershed functioning...
- This typical sight, previous to our projects, may be changing now that mitigation measures are becoming more known.
- At the ground level, there's a history of just taking care of business at a low cost financially because the benefit of alternate management strategies has not been generally accepted or easily practiced.



Slide 3 – Resident’s beaver pond in 2017 near 160 St

- In the County’s NW, we have a lot of beaver activity, due to the drainage of the upper watersheds and numerous small lakes and ponding that tie the wetlands together throughout the Priddis and Fish Creeks. In some areas, we are challenged with an unending supply of beaver, while in others, their lack of presence is a noticeable loss to the land and waterscape. This 2017 photo shows an amazing private-land example of a thriving ecosystem with beaver-induced landscaping, which we went out to see over the summer – an opportunity to watch and learn!
- Residents do not typically have tolerance to changes on their land, such as flooding of areas they feel are usable for grazing, recreation or crops. Additionally, they do not like to see changes to the aesthetics they are used to – with the loss of poplar trees; which then usually results in attempts to eliminate the beaver; which then gets the County called in to discussions with private landowners and possibly taking action on adjoining public infrastructure.
- My perspective, as a municipal councillor on this topic, is to support creative solutions, since I have to represent the diverse opinions and interests at play.
- I believe it is helpful to have a municipal approach to manage the situation and look at the whole picture, as well as individual complexities, and consider emerging strategies and products that are helping to make cost effective alternatives of coexistence possible. This, of course, includes the greatly-appreciated willingness of our current Public Works team to venture in this direction.



Slide 4 – watershed map with 2 sites labelled

- In support of the “municipal management” theme, I will share examples from 2 sites where we have stories of solving conflict in a way that gained a win/win for those in favour and those opposed to having the beaver present. And, there’s a cost benefit to add weight to the stories.

SITE 1

- The story of the “2 peace-keeping culverts” takes place at an Environmental Reserve, established in 1988, in the NW of Foothills near Rusticana, off Hwy 762 next to K-Country, in the drainage area of Fish Creek.



Environmental Reserve Site near Hwy 762

Example 1

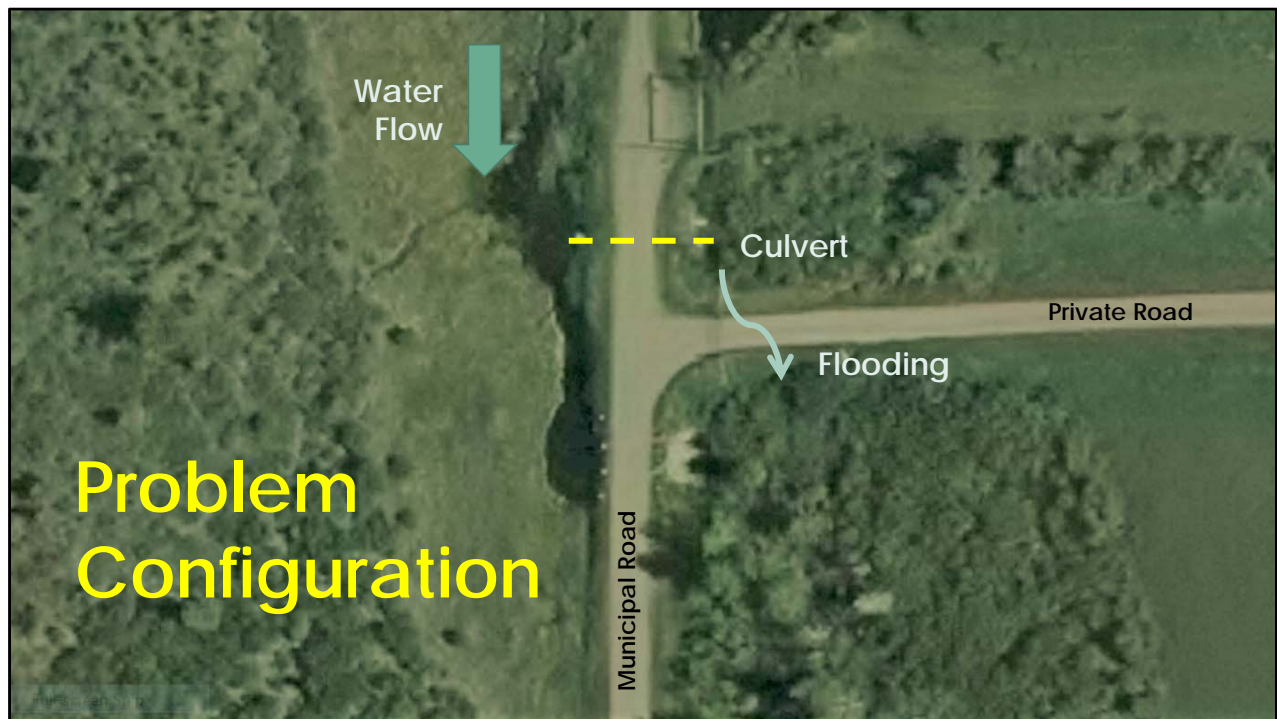
Slide 5 – ER labelled on ortho map

- During the months of May and June, 2012, I began a discussion with the passionate residents of the Rusticana area, including our local area landowner Pierre Bolduc, about the practise of removing problem beaver in the area.
- The beaver were seen as a problem by some and a wonder by others, but they were causing property damage, which was the reason for the difference of opinion.
- In June, 2012, I was presented with a local resident survey that requested the County evaluate the situation in respect of the opinions put forth.



Slide 6 – Photo of site before changes

- Most wanted to either continue cleaning the public culvert and thus protect the beaver, or re-design the culvert to a beaver proof solution rather than exterminate the beaver.



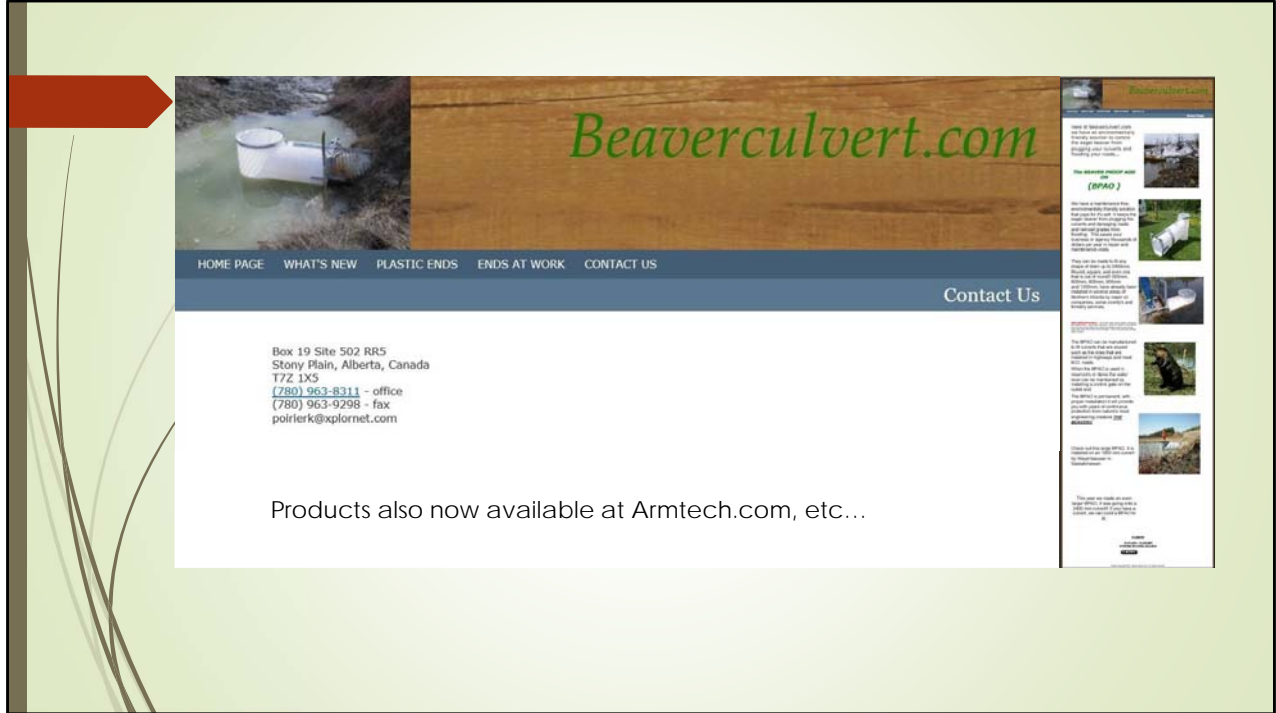
Slide 7 – Problem configuration showing culvert with flooding of road – diagram on ortho

- As a next step, on July 18, 2012, we organized a meeting with our Deputy Director of Operations with Public Works - Mike Gallant, myself and residents at the ER site to discuss and view the area being damaged.
- Meeting directly with the parties both in favour and opposed provided a heated and lively discussion.
- It was turning out to be a "Dammed-if-you-do" & "Dammed-if-you-don't" confrontation! (Pun intended :-)
- At one point, I drew a gesture of a line down the middle of the road and stated that if the beaver were on the ER side of the road you had to leave it be, but if they crossed over to the other side you could shoot it.
- We had to de-escalate this interaction by making it clear that we were looking for a solution for both groups.



Slide 8 – New design with 2 culverts south of private road – diagram on ortho

- When we looked at the site where damage was occurring to the neighbouring landowner, Mike put forward an idea to move the culvert south of the private driveway, so that the majority of the drainage would be moved and stop the continual flooding.
- Then, due to the volume of flow in wet years, an additional culvert was added to the recommendation.
- We had been looking into some options for beaver proof culvert attachment ends and decided to add these in as a worthy experiment.



Slide 9 – Beaver-proof culvert info

- The numbers around the constant maintenance at this site justified the trial.
- Each year, on 2 - 3 occasions, it was necessary for large equipment to attend this one site and remove debris using a large pole and then remove branch material, at a cost of about \$5 – 10,000 per summer season.



Slide 10 – Beaver-proof culvert parts

- So, Mike then sourced out the parts and ordered up the 2 x 600 mm culverts and 2 x 600 mm beaver-proof culvert ends with the special grates.



Slide 11 – Work to install culverts - exposed

- In this specific project we found the perfect solution.



Slide 12 – Work to install culverts – equipment on road

- There had to be a body of water next to the road which would allow the culverts to regulate the height of the water when the ponds fill with drainage.



Slide 13 – New culverts – 3 x photos

- The culverts and attachments were installed in September the same year, 2012, along side the road on the right-of-way, within a bell-hole to catch the water and, of course, located further south to accomplish sending the water away from the private driveway.



Slide 14 – New culverts – different angles & east side gates

- While the initial cost of the 2 new culverts and beaver-proof ends came in at around \$35,000, there has been no maintenance required since they were installed, other than minor work around the end gates on the opposite side.



Slide 15 – Pierre’s photos of the culverts in 2013

- The culverts performed well in the flood year of 2013



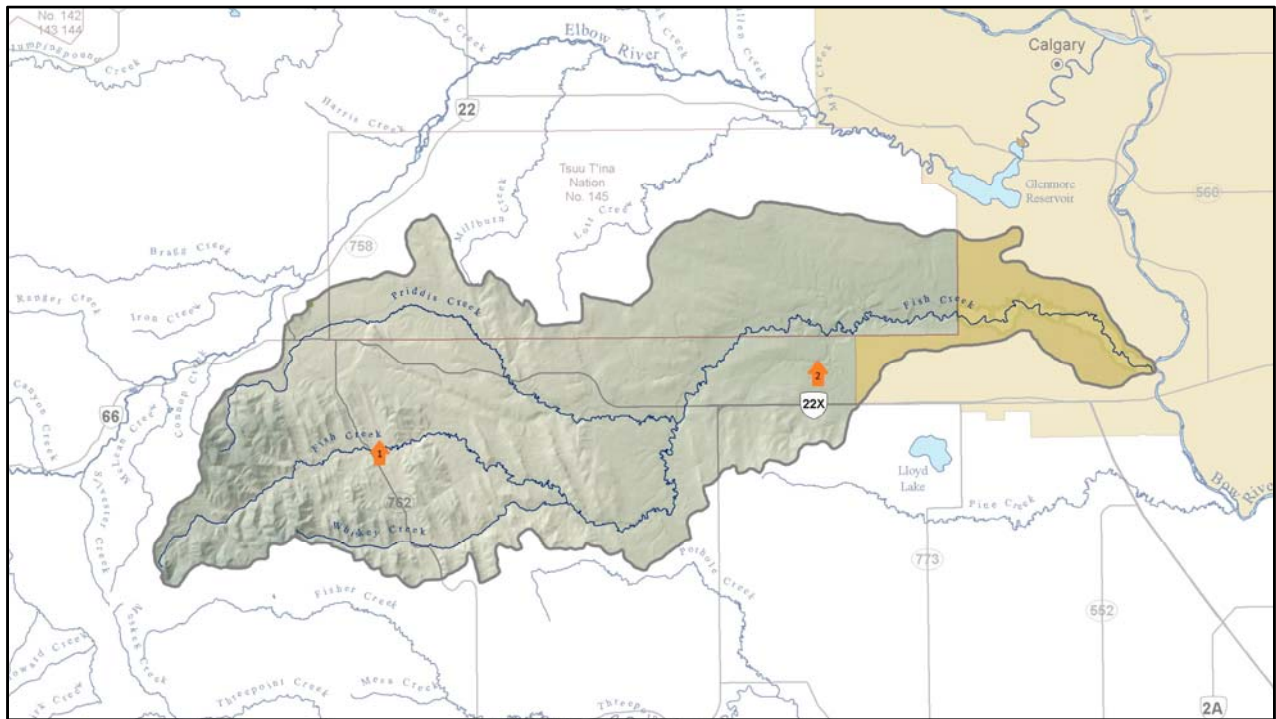
Slide 16 – photos of culverts in 2017

- Since the install, that's 7 years now (2019 – 2012)...
- The neighbourhood is at peace and all are enjoying the magic at the ER, while municipal infrastructure and private roads are intact. We will continue to monitor the area and infrastructure.



Slide 17 – site photos from 2017 – pond area

- Thanks to all who helped with this solution including our public works staff who were open to trying this out and to Pierre for helping to manage the site and creating such enthusiasm to co-exist with the beaver as partners.



Slide 18 – map watershed map with 2 sites labelled

SITE 2

- I'll briefly touch on the second site, which was a sponsored collaborative project in 2016.



Slide 19 – ortho map of site 2 on 160 St W

- This location is closer to Calgary on 160th Street W, north of Hwy 22X, in an area that has approximately 15 ponds between there and the Nation/Reserve... so beaver will keep moving through the area not knowing our municipal borders... which will provide a very interesting area to monitor.



Slide 20 – 2 photos of 160 St site before the mitigation measures were installed – shows branches/consecutive ponds

- The 160 St site is particularly hazardous for the County Public Works staff to do maintenance removal of material, since the banks are steep and difficult for equipment to get safely in and out. So, this was our first choice to offer as a candidate for the project.



Slide 21 – inside a culvert being blocked by branches, etc

- There's been a definite benefit to have partnered with all the agencies on this project and we'll now monitor the effectiveness of these strategies.



Slide 22 – 4 photos of team work to install pond leveller & exclusion fencing

As a participant in this workshop, the Foothills County benefitted from:

1. the training opportunity and receiving expert advice on the installations, materials for building exclusion fencing and a pond-leveller, evaluation of a few different sites, types of devices and combinations, process for approvals, management strategies and behaviour of beavers
2. relationship building, as a resource, with other organizations that deal with similar issues
3. discussion with peers about conflicts associated with coexistence and allowing for the "big picture" public good of beaver activity (storage in drought, slowing water in floods)
4. increasing our knowledge about the cost and consequences of various management choices which will help with decision-making, may make co-existence a viable option, and will help with trouble-shooting as each site is unique and requires custom solutions
5. adding a new management tool which will help in dealing with the diverse opinions of residents, staff and governments about how beaver activity should be handled
6. being able to compare the costs and maintenance of these mitigation devices vs. the costs and frequency of mobilization, labour, safety considerations, maintenance, infrastructure impacts, removal of debris and animals in existing methods
7. the plan to continue monitoring and partnerships, which will help us to measure success and influence future solution choices
8. and... appealing the directly affected landowners who are experiencing impacts on their properties, plus helping with our municipal infrastructure challenge at the County site.



Slide 23 – 1 photo of group installing pond leveller

- Foothills County looks forward to continued learning and information sharing with our neighbours and agencies in the area of coexistence with beaver.



Slide 24 – Beaver swimming – Qs

- Thanks for your interest in our projects!
- Any Qs – for me or Mike?
- (Thx: some photos by Suzanne – Mike & PW - Pierre)