

I am writing on the topic of the speed limit through the section of road that goes through the swale, connecting to the new bridge. I write without affiliation, and am doing so not only in the interest of those who support well-informed decision-making processes, but also on behalf of those who cannot speak for themselves.

First, I refer you to the City's 2018-2021 Strategic Plan, specifically two strategic goals: Environmental Leadership and Sustainable Growth:

- From the preamble of the goal of environmental leadership, the City recognizes that "The South Saskatchewan River Valley is Saskatoon's natural showpiece and supports biodiversity in its many forms. Our natural assets are protected, enhanced and linked." The third objective of this goal is that "Green infrastructure is identified and managed for the benefit of current and future generations." Keep these ideas of green infrastructure and intergenerational equity in mind.
- For the goal of Sustainable Growth, the first objective is that "Our Plan for Growth is sustainable, through a balanced approach to land use, transportation choices, and efficient servicing." Keep in mind the idea of balance.

I also refer you to the City's Green Infrastructure Strategy, which aims to implement the goal of Environmental Leadership. Key items from the Strategy include:

- Ensure protection of natural areas and other green and open spaces as important infrastructure and part of a valuable ecological system.
- Conserve biodiversity through the identification and conservation of natural areas and by increasing their interconnections.
- Maintain ecologically and culturally important land and water systems.
- Assist in the sustainable use of natural resource land and economically important open space.

I now refer you to the report from administration on the topic of the speed limit through the swale. The report states that its "goal is to establish a reasonable and safe speed limit that is appropriate for a particular roadway based on its design and classification".

The report identifies only one strategic goal (moving around), but at least two others are implicated: Environmental stewardship, in terms of green infrastructure and biodiversity, and Sustainable growth, in terms of our ecological footprint when it comes to land use and transportation. In terms of Environmental Leadership, supporting biodiversity requires us to be good stewards of the environment. This means we have to forefront the environment in our decisions that may impact it. The swale represents a number of ecological goods and services, which have yet to be studied in sufficient detail to make a robust cost-benefit analysis. In terms of Sustainable Growth, who decides this balance, how, and upon what knowledge do they base their decisions?

My concern with the report and its recommendations is that they adopt a very narrow and technical interpretation of the issue at hand, seeking a general rule approach to an issue that is highly sensitive to context. This unnecessarily constrains the options open to Council, who need to consider the cascading or ripple effects of the road, its traffic, and the varying speeds at which that traffic may travel.

A specific example of my concern is that the "Options to the recommendation" incorrectly states that there is "no adjacent land use" in the Swale. There may not be human habitation or commercial activity adjacent to the road, but there are certainly other-than-human beings using that land for their homes, pathways, and forage area. How should this interpretation of the swale be reconciled with the goals of environmental leadership and sustainable growth? Do natural areas and ecosystems not count as 'land use'? Perhaps not by a strict, technical

definition, but surely it would be ignorant to presume that wastelands occupy either side of this road.

This is not simply an issue of optimizing speed on the road according to its design and the speeds of connecting roads. The road's placement has, and will continue to have, significant impacts on wildlife in the area. The technical speed for a generic road design is one thing, but it is the speed for the **Swale** that must be the topic of discussion.

Now, on to some facts, acknowledging first that the roadway is built, and built to a specific standard. We can also acknowledge that road users will (and already have) complained that setting the speed limit any lower than 70 km/h (or for some people, 90+km/h) will establish a 'speed trap', and that the City is making moves to establish a cash cow ticketing the everyday, working-class users of the road. But there are facts beyond the sense of entitlement and tight schedules that people feel.

1. Vehicles produce noise pollution, with impacts wildlife on manifold ways. One study shows that within the range of 30 to 60km/h, reducing light vehicle speeds by 10km/h can reduce noise levels by up to 40%. From 70 to 60 can bring reductions of 1.9dB for light vehicles.¹
2. We have limited knowledge of the animals and plants in the swale and surrounding area, but we do know that noise, light, and movement of vehicles can disrupt and disturb wildlife in close proximity to roadways, with varying abilities to adapt between species.²
3. Roadsides may create new habitat, inducing increased mortality by providing habitat for species already in the swale, or by attracting new species from outside the swale.³
4. Roads also lead to encroachment of alien and invasive species by deposition of plant seeds ejected from passing vehicles.⁴
5. A 2011 article on the CBC reports that, of the money SGI spent on vehicles colliding with wildlife, \$48 million was paid out for collisions just with deer. The image in Figure 1 below was taken a few days ago at the Swale, and shows one of three deer that were bounding toward and across the new section of road, as well as evidence of a well-travelled crossing.⁵

¹ http://www.ukna.org.uk/uploads/4/1/4/5/41458009/speed_and_road_traffic_noise.pdf

² <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.556.1764&rep=rep1&type=pdf>

³ Ibid.

⁴ <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0052733>

⁵ <https://www.cbc.ca/news/canada/saskatchewan/wildlife-collisions-rising-sgi-1.990277>



Figure 1: Deer crossing McOrmond in the Swale. Photo credit: Meghan Mickelson

6. The Saskatchewan Wildlife Federation reports that payouts partway through 2016 for moose and deer collisions combined was over \$35 million, before the most active season was accounted for.⁶ Partial data for 2016 showed an increase of 1100 claims over 2015, again before the most active season was accounted for.
7. The Northern Leopard Frog, a species of special concern under the federal Species At Risk Act,⁷ has been identified within the swale, and is represented on a map produced by the MVA. As with most amphibians, the Northern Leopard Frog is particularly susceptible to mortality from road traffic, even at low volumes. Culverts have been installed to provide safe passage, but is Council certain that
 - A study in Minnesota published in the year 2000 noted a rapid decline in populations of the frog due to road mortality. Their solution was to capture and transport thousands of the frogs across the road in order to sustain population levels.⁸
 - Without knowing how many of the frogs are in the Swale, where they migrate to and from, is Council really prepared to make a decision on the speed limit of a road that bisects the 'high disturbance limit' of a species of special concern? If the culverts installed are insufficient to protect the frogs, is Council willing to support a program of catch and release to protect populations of this frog in the Swale, given that the road passes through a previously identified Northern Leopard Frog habitat? Perhaps Council would participate in this project under the leadership of Councilor Jeffries, who represents this ward.
8. Perhaps the most important fact is that this decision is being made in the shadow of uncertainty. The MVA has and continues to research and monitor the Swale, but how is Council using this knowledge in support of their decision?
 - Which animals and plants are in, or use, the swale, where are they, and how do they travel?

⁶ <https://swf.sk.ca/2016/10/spike-in-vehicle-wildlife-collisions-causes-concern/>

⁷ http://www.registrelep-sararegistry.gc.ca/document/default_e.cfm?documentID=1812

⁸ <https://pdfs.semanticscholar.org/f94e/9469519ce0d3de27ac8b31e414ad3351c0a7.pdf>

- The Meewasin map identifying areas to avoid high disturbance represent individual points where the species were identified, and do not account for their movement, forage, or true extent of habitat.
- When the road was planned, did administration or the contractor conduct any modelling to predict animal movement?⁹ Would they have had a solid basis to conduct that modelling, given the lack of knowledge of what exactly is in the swale?¹⁰
- What will future climate change be like, and how will that change the Swale? How will the animals and plants adapt and change their behaviours in response to climate change, and what will that mean for their use of habitats near the road?
- In terms of the ecosystem, what will be the impact of the road itself? What will be the impacts of vehicle traffic? What impacts would different speeds have on the various species that cross the roadway?

Common sense dictates that, when you see an animal on the side of the road, you slow down... so why would council set a higher speed limit on a road where animals are known to be present, and then expect people to slow down? Without knowing population numbers, movements, and habits of the animals that live in and use the Swale, how will administration and Council choose to **balance** the costs in mortality borne by the animals, human stresses from collisions (and yes, from feeling that they are 'driving too slowly' through the Swale), and the financial costs of collisions that will come with the new road and its traffic flows? Costs that will then be borne by all road users through insurance rate hikes.

Undoubtedly this is a contentious issue and will be a difficult decision, even more so because the middle ground (60km/h, previously agreed to by administration and the Swale Watchers, a major stakeholder through the City's attempts at participatory engagement) has already been voted down. Before Council comes to a decision on this as a whole, individual Councilors will have to take a stance.

Councilors can either take this as a narrow, technical decision, focusing on a single strategic goal of traffic movement (and undoubtedly seeking to quell the loud voices of those who feel that a few tens of km/h in speed limits will help them arrive at their destination hours earlier); or they can make an ethical decision to be honest with themselves and the public, recognizing our collective ignorance of the risks that come with uncertain outcomes and lack of knowledge. We all recognize that taking the ethical path will require of Council to make a politically difficult decision, especially considering the middle ground was already defeated in a vote. The ethical choice is to take a decision that does not bind our current and future selves to avoidable ecological impacts. This is the epitome of **Environmental Leadership**.

If viewed from a broader perspective, this is an educational opportunity for Council and for the citizens of Saskatoon. To 'capitalize' on that opportunity, we must consider not just narrow visions of human-centric 'land use', 'traffic volume', and 'road design', when selecting a speed limit, but also 'wildlife land use and movement'. This would require that the concept of 'land cover' replace 'land use' as a primary consideration, as land cover is a highly significant factor in the occurrence of collisions with animals.¹¹

So what should Council do? In my opinion, respect the pervasive lack of knowledge, risk, and uncertainty implicated in this decision. Choose a lower speed limit, monitor the impacts, and review the speed limit in 10 years. That way, future Councilors can make a more informed decision.

⁹ <https://www.lsrca.on.ca/shared%20Documents/reports/wildlife-road-mortality-hotspots.pdf>

¹⁰ <https://www.ail.ca/wp-content/uploads/2017/07/CSPI-Frogs-on-the-Road.pdf>

¹¹ <https://www.lsrca.on.ca/Shared%20Documents/reports/wildlife-road-mortality-hotspots.pdf>