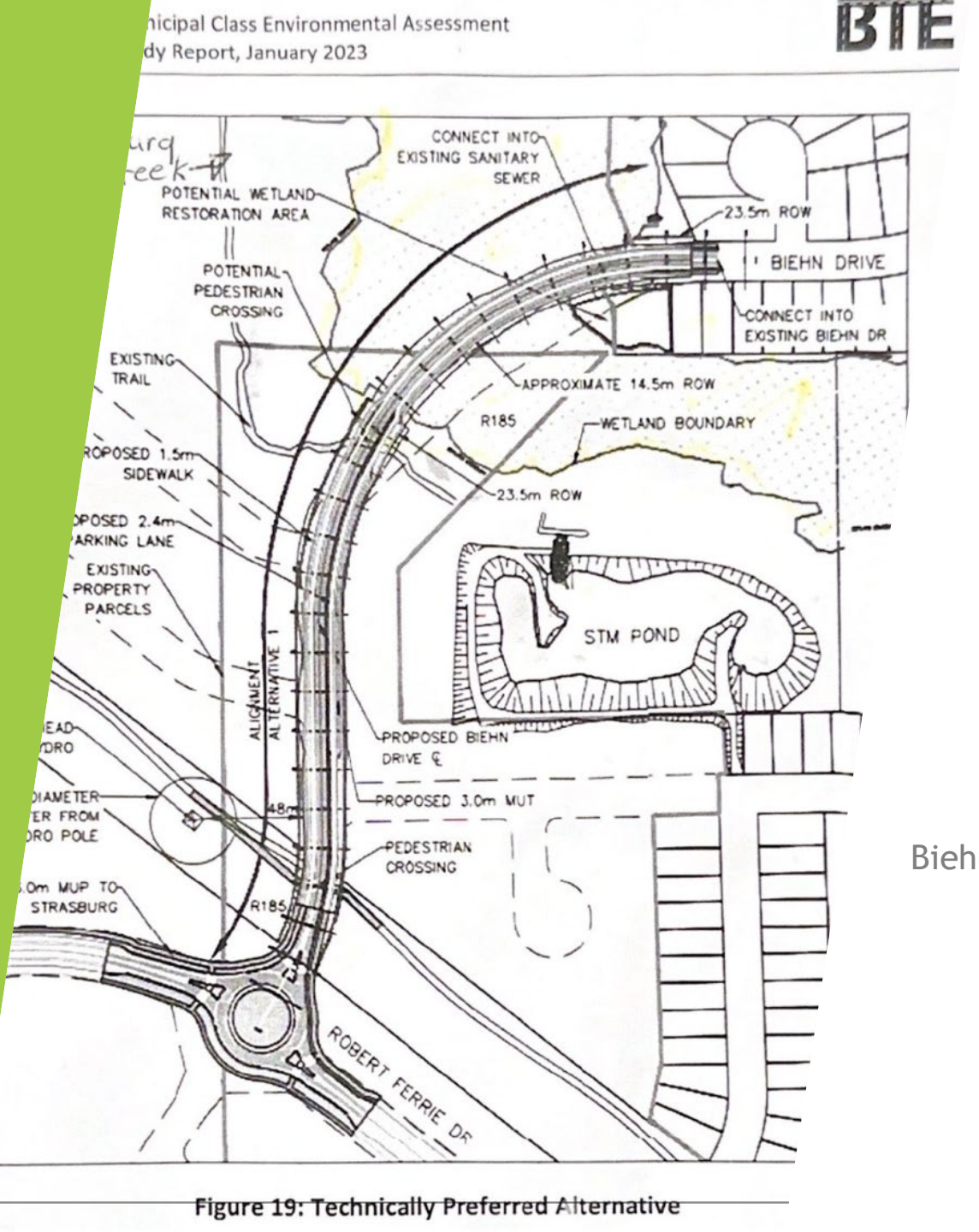


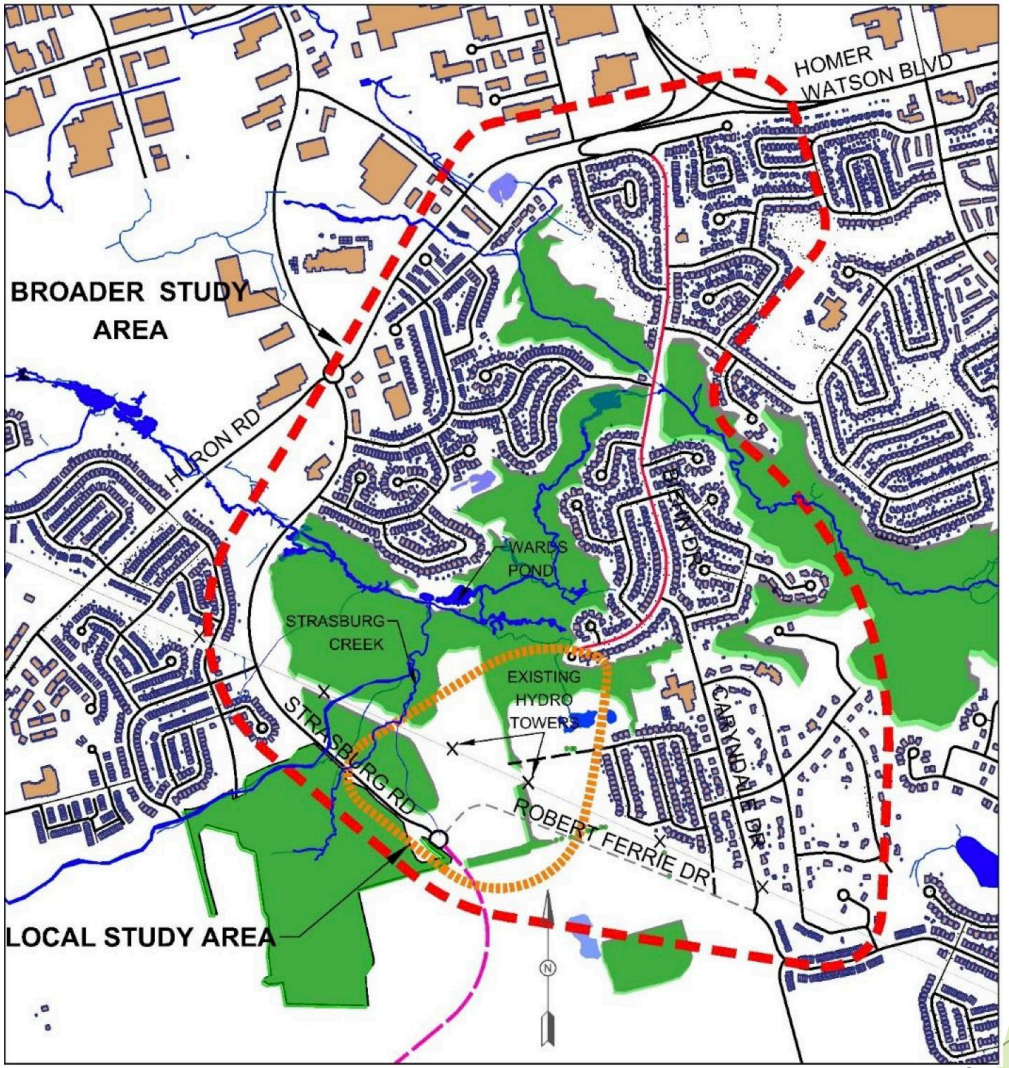
Figure 19: Technically Preferred Alternative

City of Kitchener

Community & Infrastructure Services Committee:

Biehn Drive Extension Environmental Delegation

Michael Spiar & Brittany Woodhall

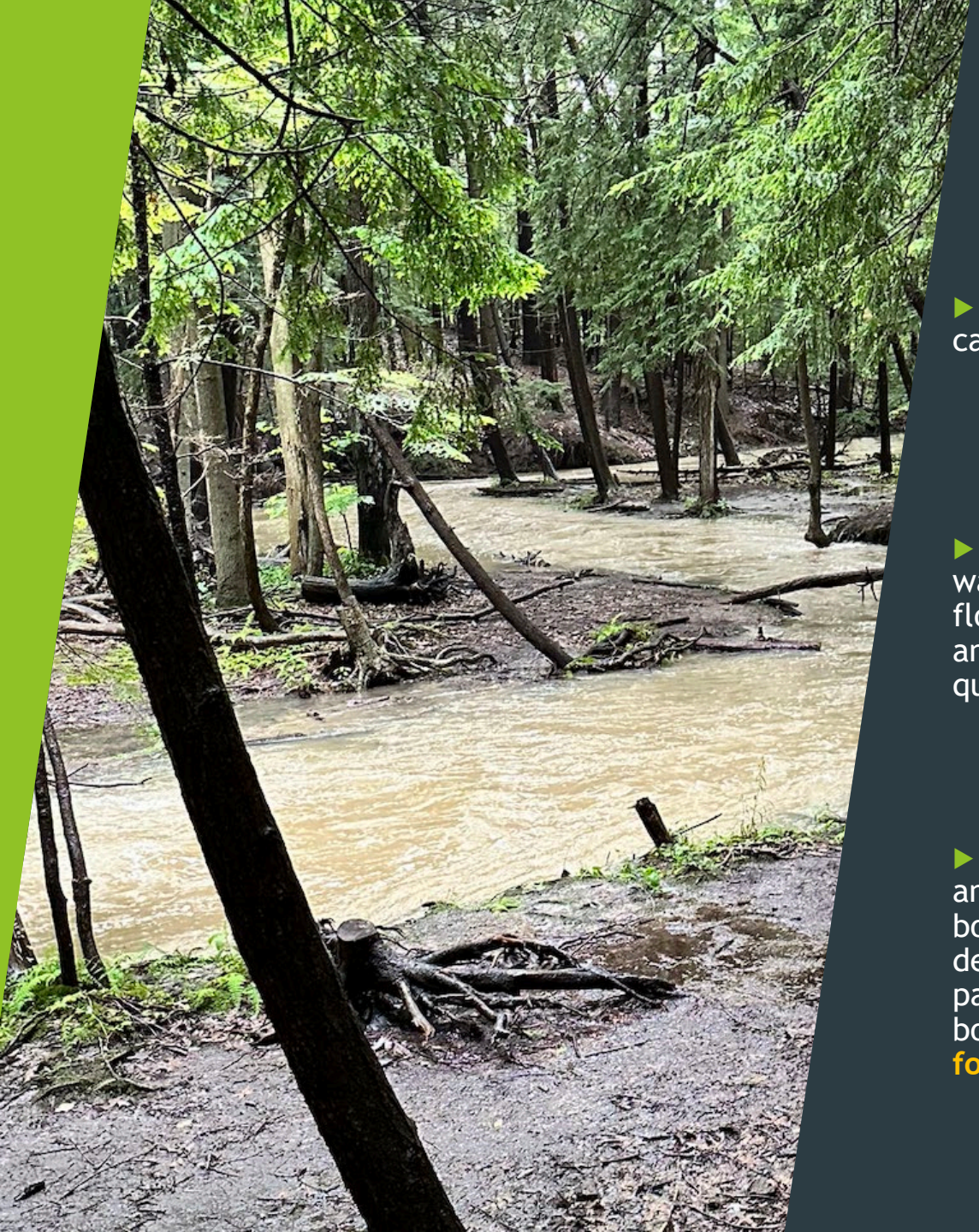


Purpose of 2023 Studies

- In February 2023, this committee deferred a decision on the Biehn Drive extension through Provincially Significant Wetlands 30 (PSW 30)
- Purpose of deferral was to acquire more data
- To be ***certain*** that the extension was the best possible option for:
  - Pedestrian safety/traffic volume
  - Environmental protection
  - Future development

Did We Achieve Certainty?

- In a word: **No**
- The ESR leaves many questions **unasked** and **unanswered**:
  - No hard, quantifiable data provided on risks to:
    - Greenhouse gas storage/sequestration
    - Drinking water
    - Stormwater absorption/flood prevention
    - Impact to wildlife
  - Is the ESR weighted appropriately?



What We Know

- **For every degree** the atmosphere warms, it can hold seven per cent more moisture.

-- Jason Thistlethwaite, PhD, University of Waterloo

- Because of their **sponge-like ability** to absorb water, wetlands can slow the momentum of flood waters. Wetlands [...] hold the soil in place and filter pollutants, naturally improving water quality.

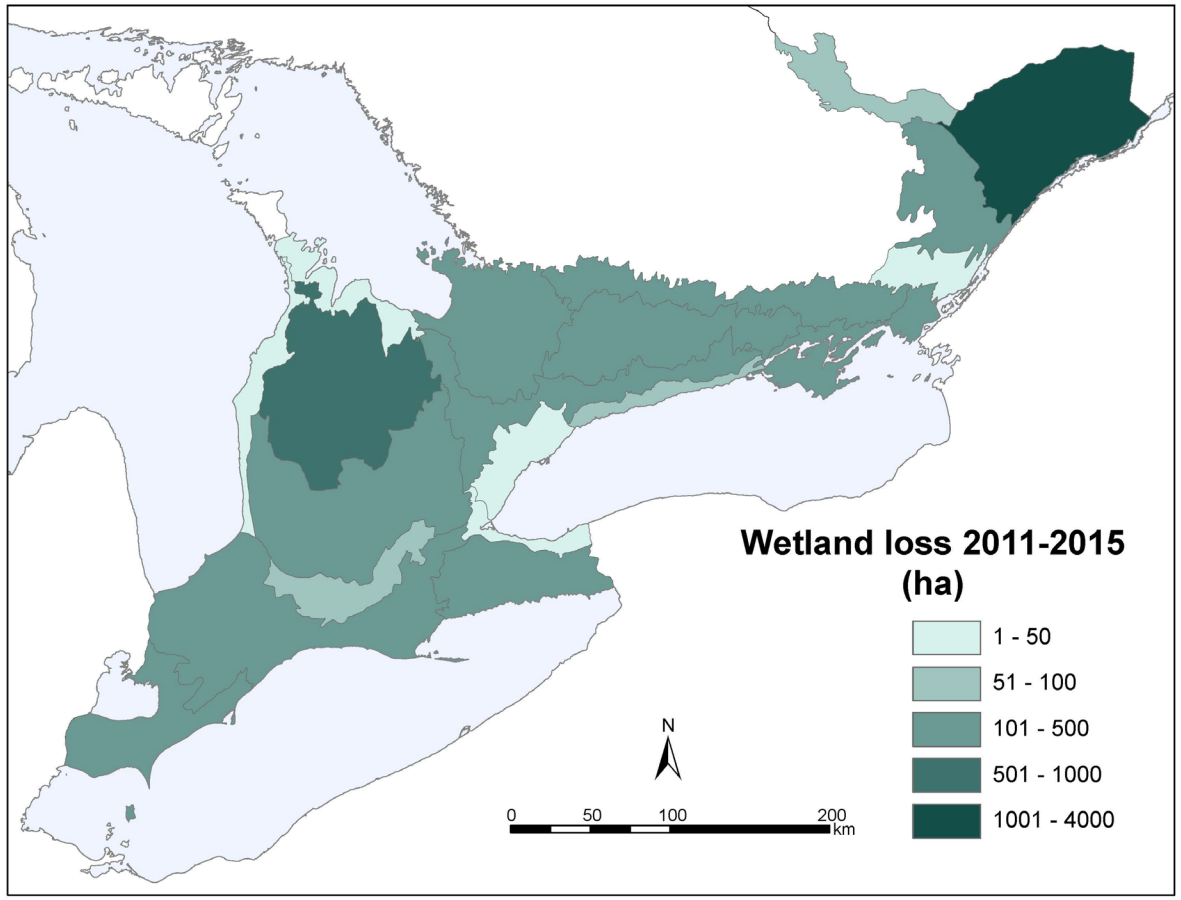
-- US EPA, Feb 2024

- **Wetland plants absorb carbon dioxide** [...] and when they die [...] the plant sinks to the bottom of the wetland where it can't fully decompose. Over time, carbon accumulates in partially decomposed plant matter at the bottom of wetlands, and this carbon is **stored for hundreds or even thousands of years**.

-- Ducks Unlimited Canada

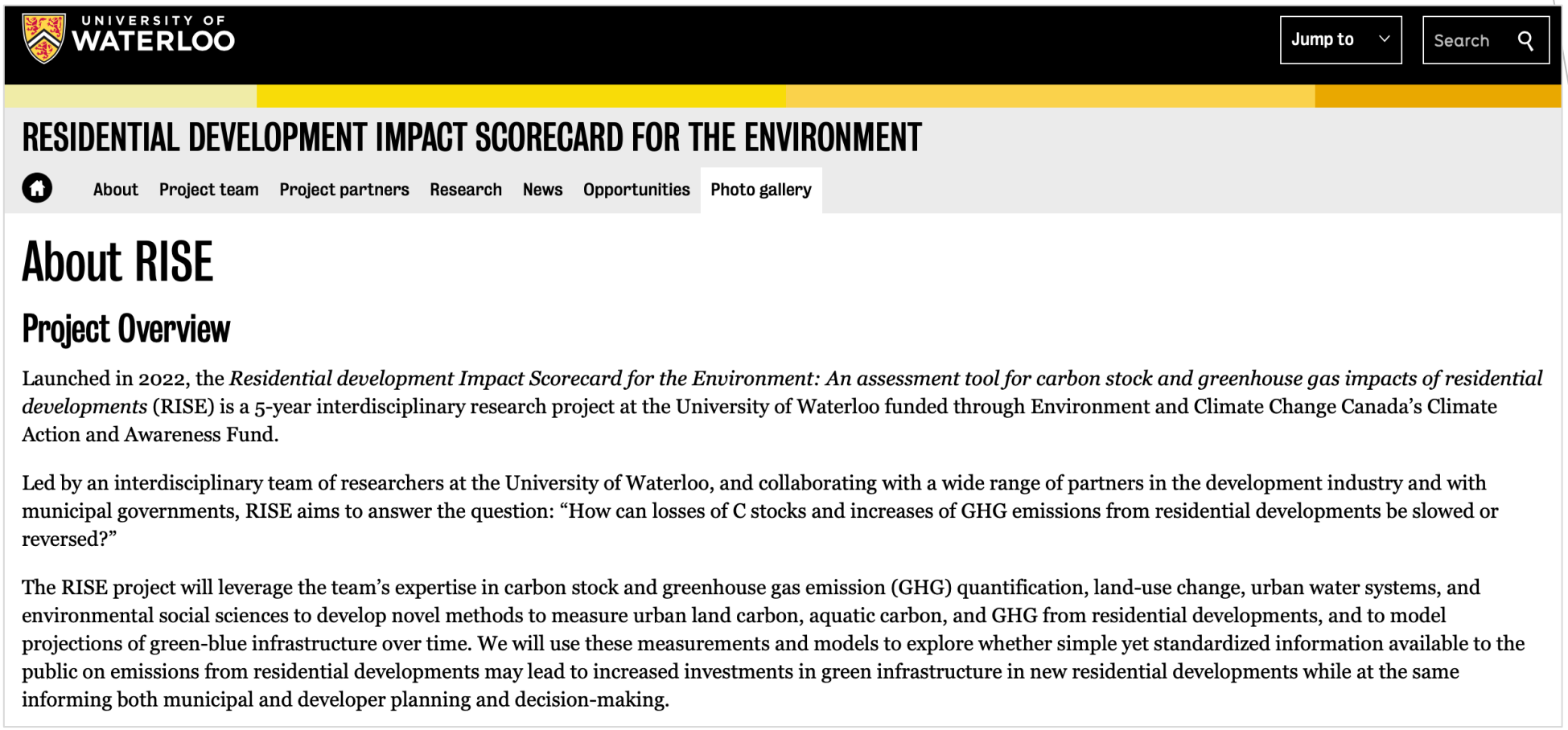
What we Know about Wetland Loss

- **More than half** of Southern Ontario's wetlands have been converted to other land types (Byun et al. 2018)
  - Est. 1.9 Pg of carbon dioxide emitted from wetland loss since 1850
  - Equals **C02 of 413 million cars on the road for a year**
- Examination of 7 Ontario municipalities (incl. Kitchener) for wetland loss and SWM pond creation from 2002 to 2010 (Birch et al. 2022)
  - 95.5 ha of wetlands lost, most being smaller than 2 ha
  - Total area of 111.6 ha of SWM ponds was created, but on average, **man-made SWM ponds were smaller than lost wetlands**
- Ecohydrological function of SWM ponds is **not equal to natural wetlands** (Houlahan et al., 2006; Keitt et al., 1997; Marton et al., 2015; McLaughlin et al., 2015; Saura et al., 2014)



- Greenhouse gas storage processes in wetlands can take 1000s of years
- Disturbing wet soil found in wetlands -- potentially including construction activities, dewatering, etc -- releases greenhouse gases that cannot be replaced by industrial solutions

What We Don’t Know



- RISE partners with the City of Kitchener **and** developers
- Their goal is to develop a scorecard cities can use to better assess the impact of development and greenhouse gases
- RISE is currently studying PSW 30 and effectives of man-made infrastructure vs natural environment

“

Canadian wetlands represent a **nationally and globally significant storehouse of carbon**. Once disturbed, this carbon is released to the atmosphere, contributing to greenhouse gas emissions.

As this carbon has been slowly accumulating over centuries, **this released carbon is irrecoverable over human lifetimes**. Therefore, from a climate change mitigation perspective, protecting wetlands and the carbon they store is an important action.

Prof. Maria Strack

Co-Principal Investigator of RISE; Professor, Canada Research Chair, Department of Geography and Environmental Management, University of Waterloo

What We Don’t Know

Impact to Wildlife

Pressure on coyotes, who already venture into backyards and residential streets with regularity

Impact to cold water brook trout (should mitigation measures fail), whose habitat and spawning grounds in PSW 30 were restored at great expense 12 years ago

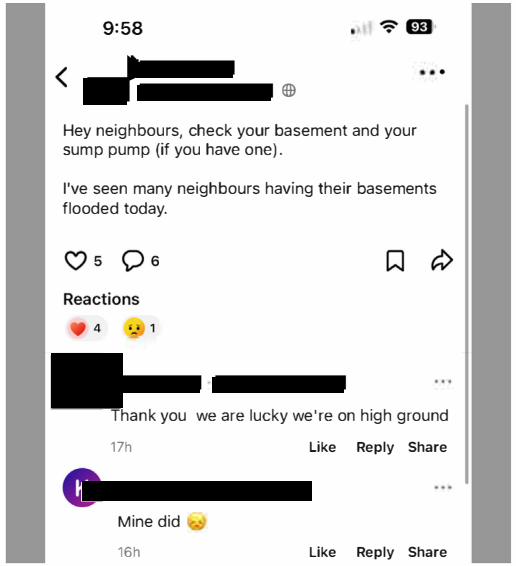
Impact from Runoff

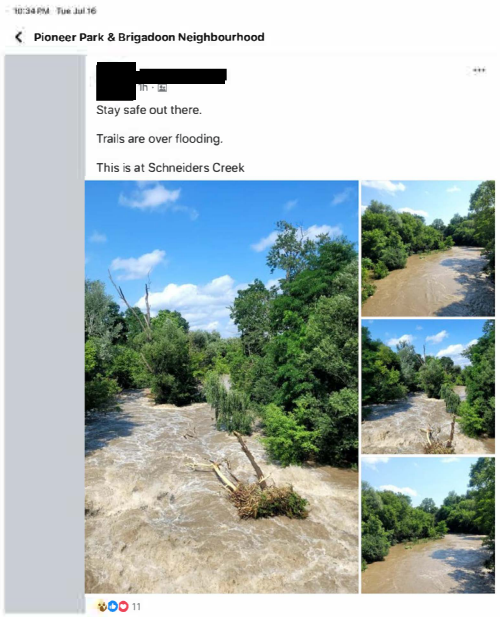
Salt and vehicular emissions on water table and wildlife should mitigation measures fail

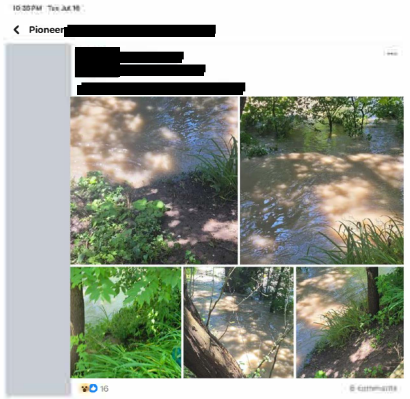
Risks presented if newly constructed storm pond fails to function as expected, as is the case with the one on Kilkerran Crescent, which sees crews on site regularly to clear the stagnant water channel

What We Don't Know

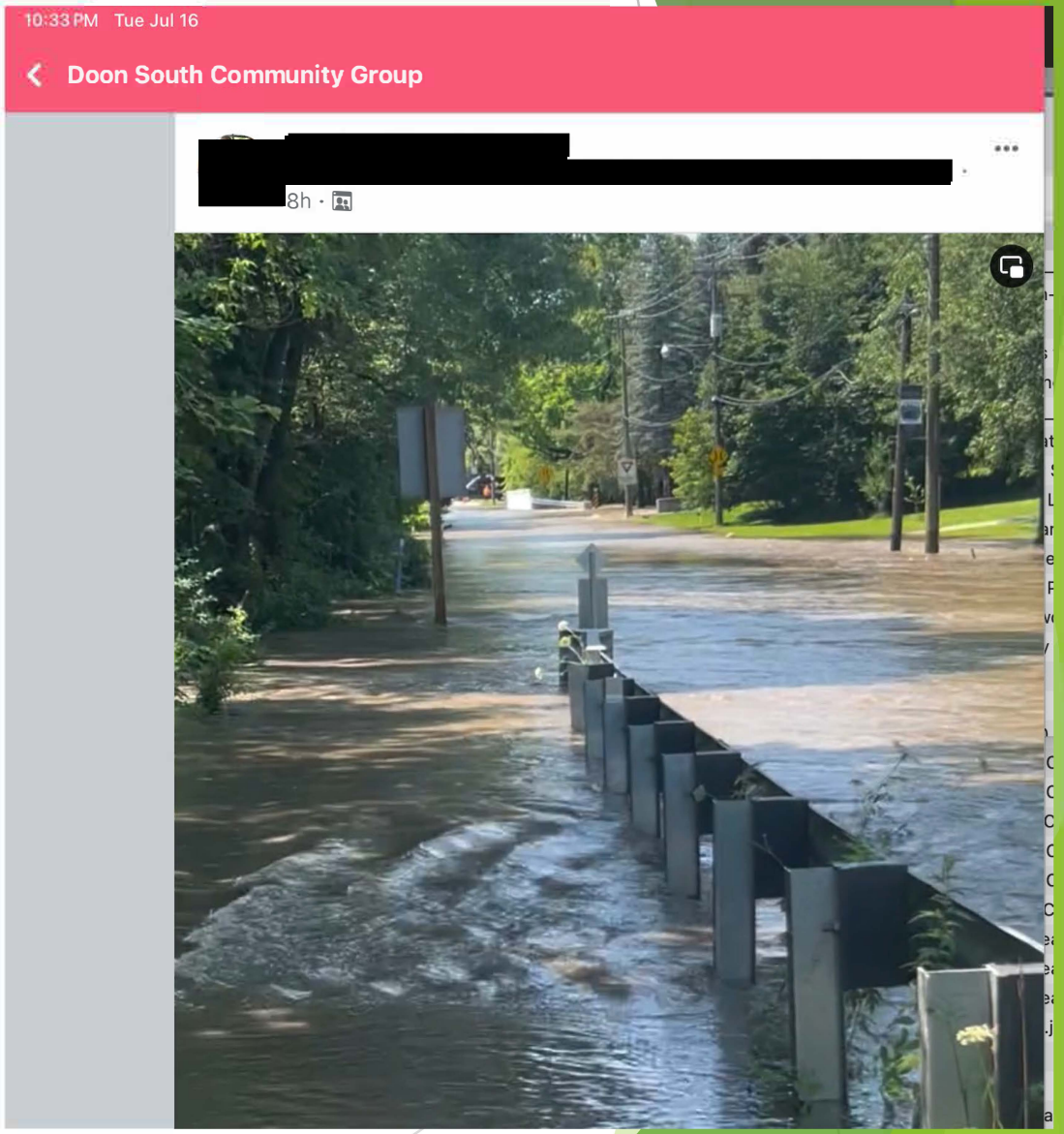
- Severe storm events are becoming more frequent
- How will compacting this spongey soil and replacing some of it with a hard surface impact its ability to protect residents from flooding?







Old Doon village Rd is flooded. Avoid is possible
15
3



Questions and (Non) Answers

Concerns	ESR
Carbon Storage How much carbon does PSW 30 store, how much would be disturbed during construction, and how effective would replacement, man-made wetland be in replicating or bettering this quantity?	Silent
Flooding & Affordable Insurance In severe rain events such as what we experienced in June 2024, how much stormwater can the impacted area of PSW 30 absorb and keep out of our basements? How much would that capacity be reduced due to compression/loss due to the road extension, and how might it impact flood insurance and premiums?	Silent
Pressure on Wildlife and Interactions with Humans We already have a problem with coyotes entering people's backyards. How much habitat loss does this new road represent, and what does that mean for coyote behaviour in our neighbourhoods?	Silent
Impact of Runoff We see mitigation measures to limit the amount of salt and oil/grit runoff. How much salt do we expect to see used? How much oil/grit do we anticipate from road usage? How much penetration of toxic materials do we anticipate in the best-case scenario? What would the impacts be in the event of failure?	Names mitigation measures, but does quantify impacts

And For All This Uncertainty…

- The ESR recommended course of action is the one that has the most (and least-understood) environmental impact

Screening Criteria	Alternative 1: Do Nothing	Alternative 2: TDM	Alternative 3: Use of Existing Local Roads	Alternative 4: Limit Development	Alternative 5: Extend Biehn Drive
Environmental	No impacts.	No or low impacts. Low impacts may be associated with active transportation projects/ improvements (i.e. sidewalks, bike lanes).	Low impacts. Creates disruption to properties on local roads that would experience an increase in traffic.	No impacts.	Low to medium Environmental effect possible with new corridor. Magnitude of effects will depend on environmental mitigation.

-- Final Draft (ESR)

- Why proceed with such confidence when we have so little data to go on?

EA Weighting

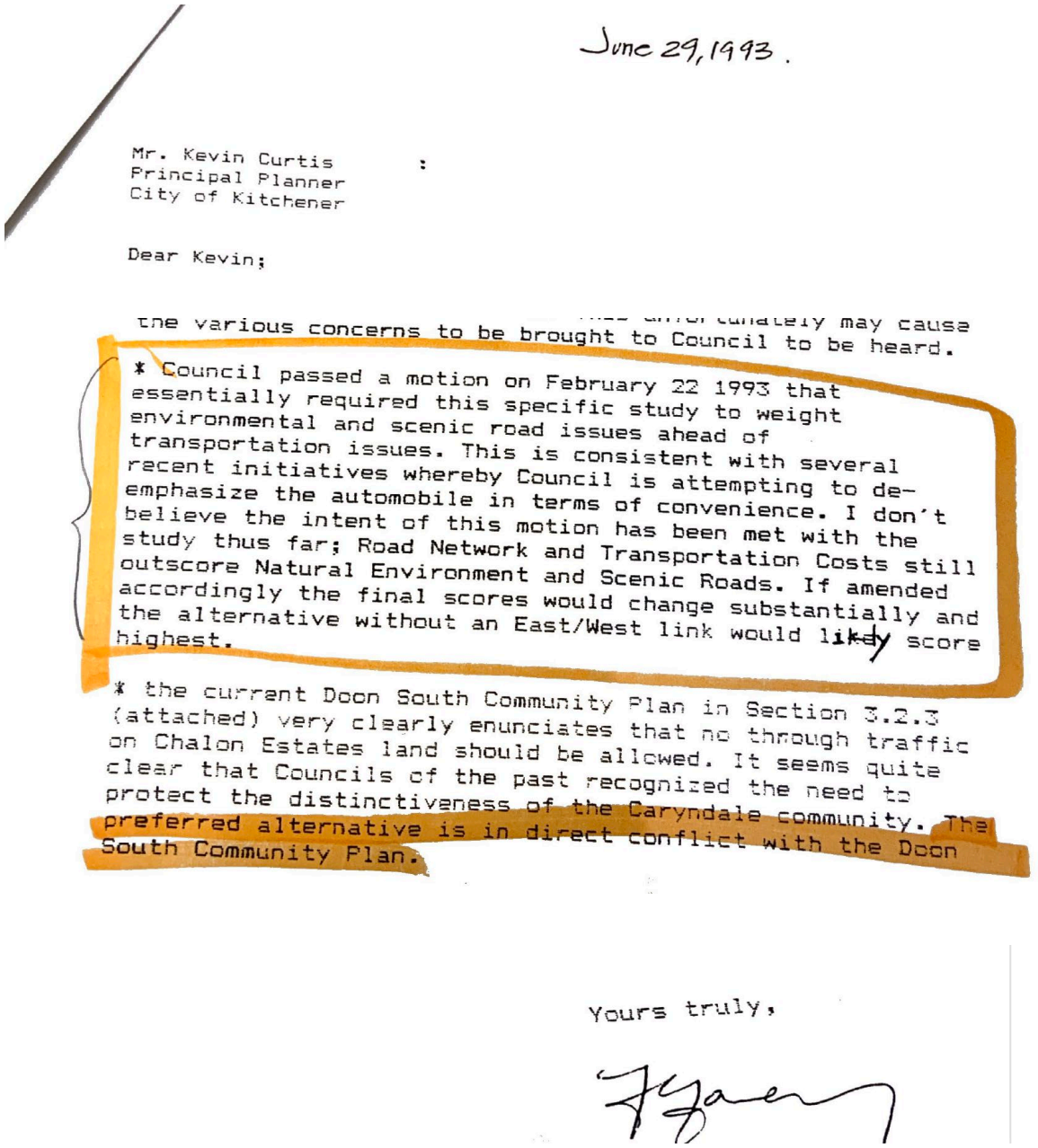
- <u>February 1993:</u>

  Kitchener City Council passed a motion requiring that environmental concerns be weighted higher than transportation for Biehn Drive

- <u>June 1993:</u>

  Letter from Councilor Tom Galloway to Principal Planner Kevin Curtis stating that the weighting was not adjusted

  (*full letter attached as appendix*)



June 29, 1993.

Mr. Kevin Curtis
Principal Planner
City of Kitchener

Dear Kevin;

the various concerns to be brought to Council to be heard.

* Council passed a motion on February 22 1993 that essentially required this specific study to weight environmental and scenic road issues ahead of transportation issues. This is consistent with several recent initiatives whereby Council is attempting to de-emphasize the automobile in terms of convenience. I don't believe the intent of this motion has been met with the study thus far; Road Network and Transportation Costs still outscore Natural Environment and Scenic Roads. If amended accordingly the final scores would change substantially and the alternative without an East/West link would likely score highest.

* the current Doon South Community Plan in Section 3.2.3 (attached) very clearly enunciates that no through traffic on Chalon Estates land should be allowed. It seems quite clear that Councils of the past recognized the need to protect the distinctiveness of the Caryndale community. The preferred alternative is in direct conflict with the Doon South Community Plan.

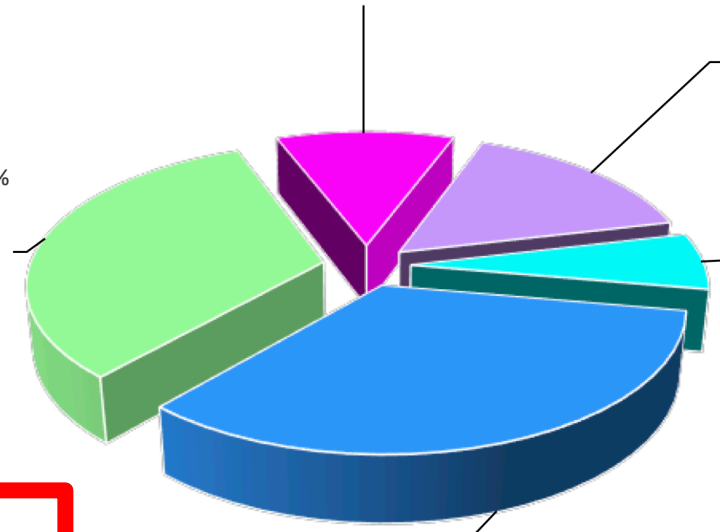
Yours truly,

Biehn Drive ESR (November 2024)

Socio - Economic Environment 10.3%
- Community Disruption to Biehn Drive North 21.0%
- Community Disruption to Biehn Drive South 50.0%
- Community Disruption to Caryndale 29.0%

Land Use and Property 14.2%
- Supports the City of Kitchener's Official Plan 56.0%
- Efficient Utilization of Land 29.5%
- Crossing of the Hydro Corridor 14.5%

Natural Environment 29.7%
- Accommodating Wildlife Movement 11.9%
- Provincially Significant Wetlands (PSW) Removed 24.8%
- Potential Black Ash Impacted 24.8%
- Groundwater Infiltration 23.5%



Cost 5.9%
- Capital Costs 100.0%

Transportation 30.5%
- Improved Emergency Response 7.1%
- Roadway Safety – Supports Area Traffic Calming Measures 17.5%
- Efficiency of Travel 19.9%
- Compatibility with Integrated Transportation Master Plan 8.3%
- Safety of School Zone 14.7%
- Personal Security of Pedestrians and Cyclists 7.3%
- Intersection Spacing/Safety 16.6%

Note:
Weights have been adjusted to account for updates to sub-factors.

What do we Know?

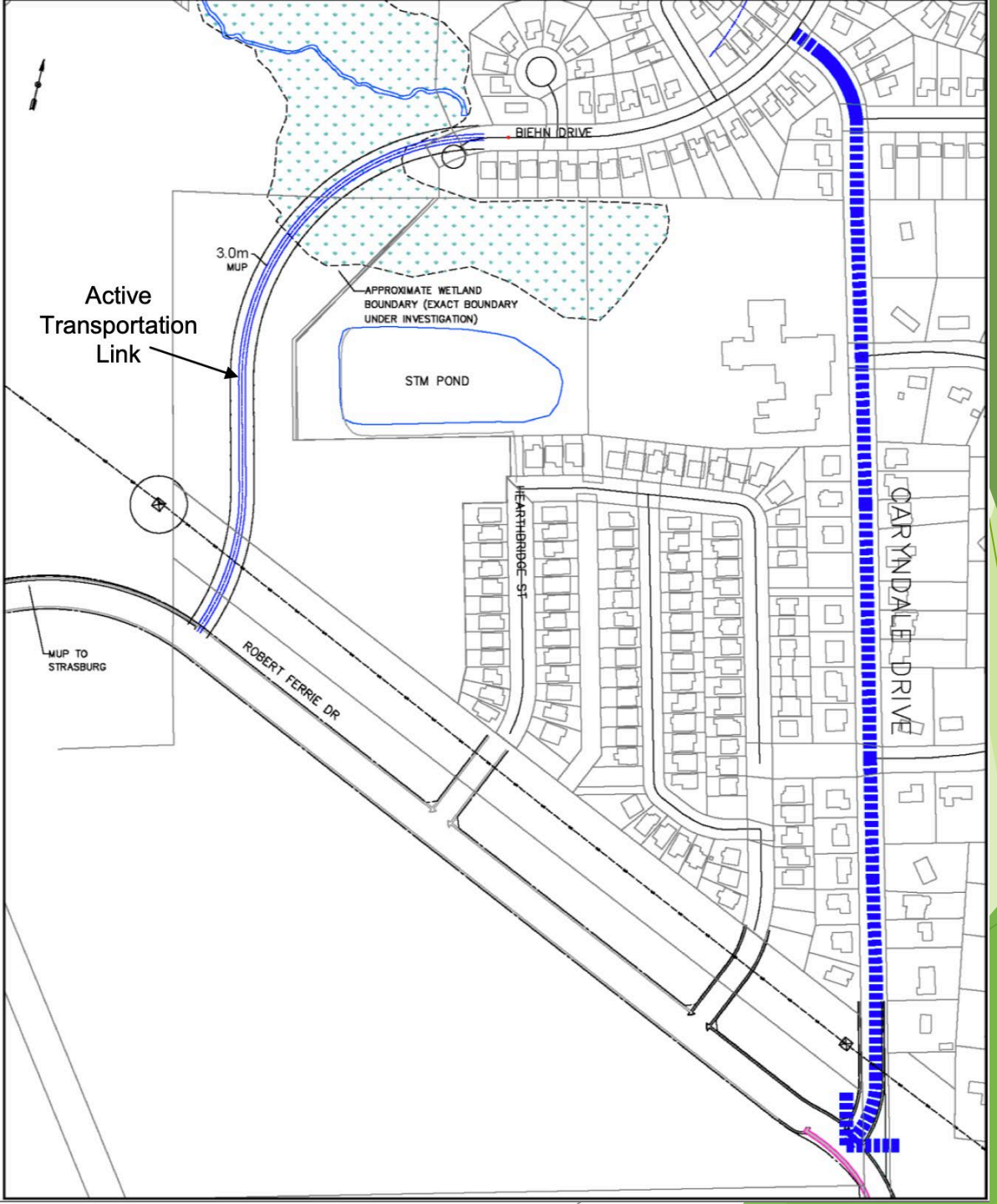
- X The weighting for Biehn Drive was never adjusted properly
- X The **only** alternative in the ESR with high environmental risk is building the extension
- X We do not have a full understanding of the benefits of PSW 30 (RISE study)
- X Assessment or quantification of the risks to PSW 30

- ✓ Completing Robert Ferrie to Strasburg Road will divert significant traffic volume and improve road safety
- ✓ Micro-tunnelling of utilities will fully support future development
- ✓ Monitoring and maintenance of risk mitigation engineering requires operating and contingency budgets
- ✓ PSW 30 left in its natural state mitigates floods, stores carbon, and meets City climate goals **better** than man-made replacements

Figure 19: Technically Preferred Alternative

In Conclusion

From an environmental perspective, the ESR **does not provide the quantified data we need** to proceed with the Biehn Drive extension



Vote for the Win-Win-Win Scenario

- ✓ Vote for future development
- ✓ Vote for improved road safety
- ✓ Vote for environmental protection and flood mitigation for current and future residents

Vote for Alternative 4 in the Biehn Drive ESR **and accelerate approval** for the completion of Robert Ferrie Drive to Strasburg Road

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Notes from EA

- S3.1.5 (existing conditions – climate change)
  - Climate change provisions, as described, deal with mitigating the creation of greenhouse gases (cycling infrastructure, access to transit – only one of which is addressed here)
  - Does not contemplate the storage of GHG
  - Limited analysis of drainage and stormwater absorption capacity
- S3.2.4 (existing conditions - proposed/approved development)
  - Makes non-specific reference to future development adjacent to study area, but neglects to mention that study area is fully built
  - Does not quantify future development or impact to road network
- S3.3.3 (existing conditions – hydrogeology assessment)
  - Silent on stormwater absorption – focus on construction impacts of dewatering
- 4.3 (projected traffic)
  - Traffic from area 3 will not increase, as it is built out. Area three has three options to exit (Marl Meadow, Huron, Caryndale). The number of homes that will benefit from this one extra route is negligible (s4.3.1)
  - Areas 1-4 are largely built out – additional traffic will only come from adjacent, out-of-study-area growth, which is unlikely to choose to travel through the neighbourhood as a primary route to/from main roads (fig. 9)
  - Supposition that more residents from areas 2 and 3 would use Biehn Drive vs Robert Ferrie or Marl Meadow is likely erroneous – the majority of homes will still be closer to Marl Meadow, and travel times via Biehn will have negligible time savings at best (s4.3.1, table 3)

Appendix

June 29, 1993.

Mr. Kevin Curtis
Principal Planner
City of Kitchener

Dear Kevin;

I would like to make several comments in regards to the preferred alternative for the Doon-South Brigadoon Transportation Network and Corridor Study as it relates particularly to the East/West link. As a Project Team member, I attended all the meetings and Open Houses and, while not a transportation or planning expert, I feel that I do understand the fundamentals of the study and the major issues. I am hopeful that the process will still allow for further deliberations before the final draft.

I believe the current preferred alternative may well suit transportation needs well, however, I also believe that other factors have not been given sufficient consideration. These considerations are detailed below.

* I am concerned about the public process that was undertaken. My understanding was that the Project Team would reconvene after the second Open House to give due consideration to the input received. This has not been the case and therefore this Open House was essentially redundant and the comments received there were not available to the Project Team. This unfortunately may cause the various concerns to be brought to Council to be heard.

* Council passed a motion on February 22 1993 that essentially required this specific study to weight environmental and scenic road issues ahead of transportation issues. This is consistent with several recent initiatives whereby Council is attempting to de-emphasize the automobile in terms of convenience. I don't believe the intent of this motion has been met with the study thus far; Road Network and Transportation Costs still outscore Natural Environment and Scenic Roads. If amended accordingly the final scores would change substantially and the alternative without an East/West link would likely score highest.

* the current Doon South Community Plan in Section 3.2.3 (attached) very clearly enunciates that no through traffic on Chalon Estates land should be allowed. It seems quite clear that Councils of the past recognized the need to protect the distinctiveness of the Caryndale community. The preferred alternative is in direct conflict with the Doon South Community Plan.

* the City's Official Plan in a more general way expresses similar protection for Caryndale. Section IV 1.viii (attached) talks about the distinctiveness of Caryndale and the need "to accomodate the wishes of the residents". The preferred alternative essentially dissects this community with an arterial road. In my opinion, this is in conflict with the Official Plan.

* the East/ West link seems to be a transportation solution only. The portion of this link that effects Chalon Estates and the scenic roads does not appear necessary to provide for adjacent development nor is it any more environmentally friendly. Rather, it seems only to more expeditiously take traffic from the Brigadoon, Huron, Laurentian, Laurentian West and Country Hills planning communities to the 401.

Kevin, I am hopeful that the process will still allow further consideration of these and other issues being brought forward by the interested parties. We are indeed quite fortunate to have citizens with such keen interest their neighbourhoods. I realize the study will only form guidelines for future development and future planning processes may make changes. However, these studies and documents do get "carved in stone" to some extent and used to advantage by various parties at City and OMB meetings in the future.

Thank you for your consideration of these matters.

Yours truly,