Public Release
March 25, 2019

Town of Aurora
Additional Items to
Council Meeting Agenda

Tuesday, March 26, 2019
7 p.m., Council Chambers

- **Revised Council Meeting Agenda Index**

- **Delegation (b) Dr. Brian Moore, Resident**
  Re: By-law (a) Being a By-law to amend By-law Number 5840-16, as amended, respecting signs within the Town of Aurora.

- **Item R3 – FS19-010 – 2019 Operating Budget Final Approval**

- **Item R5 – OPS19-009 – Wildlife Crossing on Henderson Drive**

- **Replacement By-law (c) Being a By-law to amend By-law 6106-18, to designate a site plan control area.**

Public Release
March 25, 2019

Town of Aurora
Council Meeting Agenda (Revised)

Tuesday, March 26, 2019
7 p.m., Council Chambers

1. Approval of the Agenda

Recommended:

That the agenda as circulated by Legislative Services be approved.

2. Declarations of Pecuniary Interest and General Nature Thereof

3. Community Presentations

(a) Theresa Buck, Communication Coordinator, Special Olympics Aurora
Re: Special Olympics Aurora Overview

4. Delegations

(a) Doug MacPherson, Resident
Re: General Committee Item R5 – PDS19-004 – Stop Control Removal at Corbett Crescent and Cossar Drive

(b) Dr. Brian Moore, Resident
Re: By-law (a) Being a By-law to amend By-law Number 5840-16, as amended, respecting signs within the Town of Aurora.
(Added Item)

5. Consent Agenda

Items listed under the Consent Agenda are considered routine or no longer require further discussion, and are enacted in one motion. The exception to this rule is that a Member may request for one or more items to be removed from the Consent Agenda for separate discussion and action.

Recommended:

That the following Consent Agenda Items, C1 to C2 inclusive, be approved:

C1. Council Meeting Minutes of February 26, 2019

Recommended:

1. That the Council Meeting minutes of February 26, 2019, be adopted as printed and circulated.

C2. Special Meeting of Council Minutes of March 19, 2019

Recommended:

1. That the Special Meeting of Council minutes of March 19, 2019, be adopted as printed and circulated.

6. Standing Committee Reports

Note: Recommendations from the Budget Committee are included in Item R2 – FS19-007 – 2019 Final Capital Budget Report and Item R3 – FS19-010 – 2019 Operating Budget Final Approval.

Recommended:

That the following Standing Committee Reports, S1 to S7, be approved:

S1. General Committee Meeting Report of March 19, 2019

Recommended:

1. That the General Committee meeting report of March 19, 2019, be received and the recommendations carried by the Committee approved.

S2. Budget Committee Meeting Report of February 2, 2019

Recommended:

1. That the Budget Committee meeting report of February 2, 2019, be received for information.

S3. Budget Committee Meeting Report of February 19, 2019

Recommended:

1. That the Budget Committee meeting report of February 19, 2019, be received for information.

S4. Budget Committee Meeting Report of February 21, 2019

Recommended:

1. That the Budget Committee meeting report of February 21, 2019, be received for information.

S5. Budget Committee Meeting Report of February 25, 2019

Recommended:

1. That the Budget Committee meeting report of February 25, 2019, be received for information.

S6. Budget Committee Meeting Report of March 4, 2019

Recommended:

1. That the Budget Committee meeting report of March 4, 2019, be received for information.

S7. Budget Committee Meeting Report of March 18, 2019

Recommended:

1. That the Budget Committee meeting report of March 18, 2019, be received for information.

7. Consideration of Items Requiring Discussion (Regular Agenda)

R1. FS19-005 – 2019 Water, Wastewater, Stormwater Budgets and Rates

Recommended:

1. That Report No. FS19-005 be received; and

2. That the 2019 combined Water, Wastewater and Stormwater budget of $27,013,565 be approved; and

3. That the 2019 retail water rate of $2.18 per cubic metre and the retail wastewater rate of $2.65 per cubic metre be approved; and

4. That the 2019 flat rate stormwater charges of $5.44 per unit per month for residential and condominium properties and $69.08 per unit per month for metered non-residential commercial/industrial and multi-residential properties be approved; and

5. That the new approved retail water, retail wastewater and stormwater charge rate become effective for all billings issued by the Town on or after May 1, 2019, and be retroactive for all consumption newly billed on such billings; and

6. That the 2019 bulk water purchase rate of $4.83 per cubic metre dispensed effective May 1, 2019 be approved; and

7. That the necessary by-law be enacted to implement the 2019 retail water rate, retail wastewater rate, stormwater charge and bulk water purchase rate.

R2. FS19-007 – 2019 Final Capital Budget Report

Recommended:

1. That Report No. FS19-007 be received; and

2. That the Town’s Strategic Asset Management Policy be approved; and

3. That the renewed 2018 Asset Management Plan be approved; and

4. That the updated 2018 Ten Year Capital Investment Plan be received; and

5. That the 2019 Capital Budget for Repair and Replacement of existing infrastructure totaling $10,521,210 as listed in Attachment 4, be approved; and

6. That the 2019 Capital Budget for Growth and New Capital totaling $49,062,550 as listed in Attachment 5 be approved; and

7. That the 2019 Capital Budget for Studies and Other Projects totaling $980,000 as listed in Attachment 6 be approved; and

8. That the funding sources for each capital project included in this report be approved as those reviewed and recommended by Budget Committee on February 2 and February 19, 2019.

R3. FS19-010 – 2019 Operating Budget Final Approval
(Added Item)

Recommended:

1. That Report No. FS19-010 be received; and

2. That the 2019 Operating Budget summarized in Attachment #1, which reflects all revisions recommended for approval by the Budget Committee, resulting in a total expenditure plan of $67,454,900 and a total tax levy of $47,258,500, resulting in an estimated 3.3% increase on the Aurora share of property tax bills, and a 3.1% residential tax bill increase when combined with the regional and education shares of the tax bill, be approved; and

3. That the Town's full-time staff complement be increased by eight (8) to 231 staff (excluding Library Board and Central York Fire Services) as presented in Attachment #2 and funded in the 2019 operating budget; and

4. That a general wage increase of 2.0% effective April 1, 2019, be approved and applied to the Salary Schedule for Full-time Permanent Non-Bargaining Unit Positions, and to the Rate Schedule for Other-Than-

Continuous-Full-time Non-Bargaining Unit Positions, both being Attachments to Policy #7 and funded in the 2019 operating budget; and

5. That Council fund its share of the Kaleidoscope in Schools pilot program through the creation of a capital project in the amount of $100,000 to be funded from the Rate Stabilization Reserve; and

6. That the necessary by-law be enacted at a future Council Meeting to set the final billing 2019 tax rates and payment dates.

R4. OPS19-005 – Approval of Capital Project No. 71103 and No. 34420 ("Wide Area Mower")

Recommended:

1. That Report No. OPS19-005 be received; and

2. That this report satisfy Council's conditional budget approval for Capital Project No. 71103 – Wide Mower Unit (#255-20) in the amount of $140,000; and

3. That this report satisfy Council's conditional budget approval for Capital Project No. 34420 – New Wide Area Mower in the amount of $140,000; and

4. That the total approved budget for Capital Project No. 71103 be increased to $175,000, representing an increase of $35,000 to be funded from the Fleet R&R Reserve; and

5. That the total approved budget for Capital Project No. 34420 be increased to $175,000, representing an increase of $35,000 to be funded by $3,500 from the Growth and New Reserve and $31,500 from the Parks DC Reserve.

R5. OPS19-009 – Wildlife Crossing on Henderson Drive
(Added Item)

Recommended:

1. That Report No. OPS19-009 be received; and

2. That silt fencing be erected on both sides of Henderson Drive in the vicinity of the crossing; and

3. That amphibian and reptile crossing measures be incorporated into the design for the reconstruction of Henderson Drive presently scheduled in 2020.

8. Motions

(a) Councillor Gaertner
Re: Information Regarding 672 and 684 Henderson Drive
(Deferred from Council Meeting of February 26, 2019)

9. Regional Report

York Regional Council Highlights – February 28, 2019

Recommended:

That the Regional Report of February 28, 2019, be received for information.

10. New Business

11. Public Service Announcements

12. By-laws

Recommended:

That the following by-law be enacted:

(a) By-law Number XXXX-19 Being a By-law to amend By-law Number 5840-16, as amended, respecting signs within the Town of Aurora.
(General Committee Report No. CS18-020, Jul 17/18)

(b) By-law Number XXXX-19 Being a By-law to designate a property to be of cultural heritage value or interest (124 Wellington Street East).
(Heritage Advisory Committee Report No. HAC18-012, Jul 9/18)

(c) By-law Number XXXX-19 Being a By-law to amend By-law 6106-18, to designate a site plan control area.
(General Committee Report No. PDS19-008, Feb 12/19)
(Added Item)

(d) By-law Number XXXX-19 Being a By-law to establish development charges for the Town of Aurora and to repeal Development Charges By-law Number 5585-14.
(General Committee Report No. FS19-009, Mar 19/19)

13. Closed Session

14. Confirming By-law

Recommended:

That the following confirming by-law be enacted:

By-law Number XXXX-19 Being a By-law to Confirm Actions by Council Resulting from a Council Meeting on March 26, 2019.

15. Adjournment

AURORA
You're in Good Company

Legislative Services
905-727-3123
Clerks@aurora.ca
Town of Aurora
100 John West Way, Box 1000
Aurora, ON L4G 6J1

Delegation Request

This Delegation Request form and any written submissions or background information for consideration by either Council or Committees of Council must be submitted to the Clerk's office by the following deadline:

9 a.m. One (1) Business Day Prior to the Requested Meeting Date

Council/Committee Meeting and Date: March 26, 2019 Meeting of Council
Subject: Proposed Portable sign bylaw
Name of Spokesperson: Dr. Brian Moore
Name of Group or Person(s) being Represented (if applicable):
Brief Summary of Issue or Purpose of Delegation: To speak to Council about the proposed inclusion of portable signs in the sign bylaw and under what conditions these signs would be subject to in order to allow business the greatest benefit while taking into consideration town desires.
Please complete the following:
Have you been in contact with a Town staff or Council member regarding your matter of interest? Yes ☑ No ☑

If yes, with whom?	Date:
Sandra Humpheries, Rachael Gilliand, Harold Kim	Throughout Feb, March 201

☐ I acknowledge that the Procedure By-law permits five (5) minutes for Delegations.

Town of Aurora
Council Report

No. FS19-010

Subject: **2019 Operating Budget Final Approval**

Prepared by: Jason Gaertner, Acting Director of Financial Services - Treasurer

Department: Financial Services

Date: March 26, 2019

Recommendation

1. **That Report No. FS19-010 be received; and**

2. **That the 2019 Operating Budget summarized in Attachment #1, which reflects all revisions recommended for approval by the Budget Committee, resulting in a total expenditure plan of $67,454,900 and a total tax levy of $47,258,500, resulting in an estimated 3.3% increase on the Aurora share of property tax bills, and a 3.1% residential tax bill increase when combined with the regional and education shares of the tax bill, be approved; and**

3. **That the Town's full-time staff complement be increased by eight (8) to 231 staff (excluding Library Board and Central York Fire Services) as presented in Attachment #2 and funded in the 2019 operating budget; and**

4. **That a general wage increase of 2.0% effective April 1, 2019, be approved and applied to the Salary Schedule for Full-time Permanent Non-Bargaining Unit Positions, and to the Rate Schedule for Other-Than-Continuous-Full-time Non-Bargaining Unit Positions, both being Attachments to Policy #7 and funded in the 2019 operating budget; and**

5. **That Council fund its share of the Kaleidoscope in Schools pilot program through the creation of a capital project in the amount of $100,000 to be funded from the Rate Stabilization Reserve; and**

6. **That the necessary by-law be enacted at a future Council Meeting to set the final billing 2019 tax rates and payment dates.**

Executive Summary

The intent of this report is to present to Council for its approval the 2019 Operating Budget as amended by the reviews and deliberations of Budget Committee at its recent series of meetings.

- The 2019 budget process continued to be guided by Council's two foundational documents: Council Budget Principles, and Council Budget Process
- Council directed staff to keep budget to inflation, and to add 1% for fiscal strategies
- Staff presented a draft budget of a 2.3% tax increase, plus 1% for fiscal strategies
- The Budget Committee made multiple adjustments to staff's presented draft operating budget
- The 2019 operating budget includes the Library Square's first year's phase-in amount of $240,000
- The Budget Committee agreed to financially support the Aurora Cultural Centre's Kaleidoscope in Schools pilot program at a total cost of $100,000 over two years

Under Ontario Regulation 284/09, made under the *Municipal Act, 2001*, all Ontario municipalities are permitted to exclude from their annual budgets a specified list of Public Sector Accounting Board (PSAB) accounting non-cash costs. However, this same regulation requires that if a municipality excludes any costs of this nature that they must report to their Council on the impact of these excluded costs. Another purpose of this report is to satisfy this disclosure requirement and to illustrate the 2019 budget in the PSAB format.

- The Town's annual budget excludes its usual specified list of PSAB accounting non-cash costs

Background

Budget Committee has concluded its review and discussions of the draft 2019 Operating Budget. Amendments made to the draft budget during the Committee deliberations are summarized on Attachment 1.

The Town of Aurora, like most municipalities, prepared its 2019 budget in the traditional, cash based, balanced municipal budget approach. The Province of Ontario enacted a regulation (O.Reg. 284/09, s.1.) under the *Municipal Act, 2001*, that permits all Ontario municipalities to exclude from their annual budgets the following PSAB accounting non-cash costs:

- amortization expenses
- post-employment benefits, and

- solid waste landfill closure and post-closure expenses (not applicable for Aurora).

Where these non-cash items have been excluded, Council are to receive:

- an estimate of the change in the accumulated surplus of the municipality to the end of the year resulting from the exclusion of any of these expenses, and
- an analysis of the estimated impact of the exclusion on the future tangible capital asset funding requirements of the municipality.

Exclusion in the annual budget of the amortization of tangible capital assets has no impact on the future tangible capital asset funding requirements of the Town. The Town includes in its municipal budget allocations to capital reserves for the purposes of funding future capital asset renewal and replacements. Its newly approved Strategic Asset Management Policy guides the Town's recently re-approved detailed Asset Management Plan, which in turn drives the decisions and recommendations reflected in the detailed ten year capital and investment plan document. This long term plan includes all replacement needs, as well as new assets required for growth and other purposes. This long term plan is updated each year. This plan carefully evaluates the adequacy of the Town's reserves, anticipated future cash flows, and makes recommendations for continued annual dedicated tax increases for the purpose of increasing the capital reserve contributions for infrastructure. Council has a seven year history of making such incremental increases, specifically for infrastructure as recommended by the plan and staff. Continuing with such recommendations is evaluated annually by Council during the annual review of the ten year capital and investment plan, as well as the annual contribution to reserves amount included in the budget.

Analysis

The 2019 budget process continued to be guided by Council's two foundational documents: Council Budget Principles, and Council Budget Process

The 2019 budget process continued to be guided by the two foundational documents that Council adopted in 2016. Council adopted these documents to set out clearly the principles to be followed in preparing and reviewing its annual operating and capital budgets, and the detailed process which would be followed in conducting those reviews. The budget processes document outlines the additional role that the Finance Advisory Committee fulfils in performing detailed departmental reviews outside of the annual budget review and approval process.

Council directed staff to keep budget to inflation, and to add 1% for fiscal strategies

At its March 20, 2018 meeting, guided by the Council Budget Principles foundational document, Council approved specific budget preparation directions for staff. The base budget was to result in a tax increase of not more than inflation, with a further 1% increase to assist in funding the Town's long term financial strategies related to unsustainable revenues and needed funding for infrastructure sustainability.

Staff presented a draft budget of a 2.3% tax increase, plus 1% for fiscal strategies

Despite inflation reported at 2.5% for twelve months ending on June 2018 for the Toronto area, staff presented Council with a base operating budget proposal with a resulting tax increase of 2.3%, plus the 1% for fiscal strategies, leaving 0.2% available within the maximum ceiling allotted by Council for subsequent Council funding decisions. In addition to this draft budget, Council was presented with several budget option decision units relating to increases in service levels in various areas for its consideration. This list was further adjusted throughout the budget process.

The presented base operating budget also accommodated any required extensions of existing Town services in order to accommodate all growth. In addition, the base budget presented to the Budget Committee also accommodated the second year's phase in of the substantial cost increases arising from renewal of the long term solid waste collection contract and from provincial legislation contained in Bill 148, including the increases to minimum wage in Ontario in 2018.

The Budget Committee made multiple adjustments to staff's presented draft operating budget

The Budget Committee made several adjustments to staff's presented base operating budget, which included reductions or increases, as well as transfers between different budgets. Multiple options presented by staff for consideration were added to the budget. All budget adjustments made to the draft budget are detailed in Attachment #3.

The key elements affecting the overall required budget increase are graphically presented in Attachment #4, while the sources of revenue and net operating budget by service is presented in graphs in Attachment #5 and 6 respectively.

The 2019 operating budget includes the Library Square's first year's phase-in amount of $240,000

On March 21, 2019 Council approved an operational plan for the Library Square. This plan estimated that the total incremental operating cost for the ongoing operation of the Library Square will be $720,000 per year once it becomes fully operational.

Due to the material nature of this incremental cost, Council has approved an operating cost funding strategy for the Library square. This funding strategy recommends that this noted impact be phased onto the tax levy in a gradual controlled fashion over the next three years commencing in 2019. This would represent an incremental tax levy increase of $240,000 or 0.5% per year. See below table:

Incremental Net Operating Costs for Library Square
($000's)

Fiscal Year	Phased in Amount
2019	240.0
2020	240.0
2021	240.0
Total	**720.0**

The Budget Committee has approved the inclusion of the first year's phase in amount in the 2019 operating budget.

The Budget Committee agreed to financially support the Aurora Cultural Centre's Kaleidoscope in Schools pilot program at a total cost of $100,000 over two years

As part of the 2019 operating budget process, the Budget Committee agreed to financially support the Aurora Cultural Centre's (ACC) Kaleidoscope in Schools pilot program to take place over the 2019/20 and 2020/21 school years.

In consideration of the cash flow challenges presented by the differing fiscal years of the Town and school board, the one-time nature of this funding request, as well as the materiality of the request, the Budget Committee approved a funding strategy that included the creation of new capital project with a budget of $100,000 to be funded through an equivalent funding transfer from the Rate Stabilization reserve.

The Town's annual budget excludes its usual specified list of PSAB accounting non-cash costs

For compliance with the regulation, the Town of Aurora's 2019 Business Plan, Operating Budget and Capital Investment Program, as approved, excludes the following expenses:

- an expense for the 2018 amortization of the Town's non-water rate funded tangible capital assets, estimated to be $9,681,800 (see Attachment #8 for categorized list). Of this total estimated amount, $9,464,300 is directly supported by taxes while $217,500 is indirectly supported by taxes via a funding contribution to the Aurora Public Library and Central York Fire Services. In regards to the portion of the total estimated amortization expense that is directly supported by the tax levy, this amount has been under-funded by $4,200,400, meaning the budgeted contributions to capital reserves are not keeping pace with the depreciation of the town's tangible capital assets. The Town is able to partially subsidize this noted funding gap through alternative funding sources such as federal and provincial grants and gas tax sharing, reducing this noted gap to a remaining short-fall of $1,404,700.
- the current year's post-employment benefit obligation in relation to eligible employee early retirement and/or accrued sick leave is estimated to grow by approximately $230,300, thus creating a related non-cash expense;
- the current year's Workplace Safety & Insurance Board benefit obligation is estimated to increase by approximately $9,800, thus creating a related non-cash savings;
- the Town does not own or operate a landfill site and therefore is not subject to solid waste landfill closure or post-closure expenses.

The 2019 operating budget was prepared in the traditional cash-based municipal budget approach, whereby total revenues (including taxation) equal total expenditures, resulting in a "balanced" budget. Attachment #9 illustrates the differences between the 2019 approved operating budget as prepared (on a cash basis) to what it would be if prepared under PSAB guidelines on an accrual basis budgeting. The accrual basis approach would result in an estimated annual surplus of $24,580,900 as shown on Attachment #9. Two significant contributors to the 'accrual based' estimated surplus is the planned utilization of $11,636,300 in DC revenues and a cost recovery of $13,500,000 from the Town of Newmarket as funding sources for a group of approved 2019 capital projects. Both of these 'revenues' are excluded in the standard municipal budget approach, and therefore increase total revenues under PSAB, creating surplus.

Advisory Committee Review

The Finance Advisory Committee is not involved in the detailed budget reviews of the annual budget. However, this Committee is expected to review the detailed budgets of each operating department and budget section once per term of Council. It will continue these reviews in the second quarter of 2019.

Financial Implications

The 2019 Operating Budget sets out planned expenditures totalling $67,454,900, funded with non-tax revenues of $20,196,400, such as investment income, user fees,

Federal Gas Tax grants, and fines & penalties. The remaining $47,258,500 requirement is to be raised through property taxes.

The final approved budget results in an average increase to the Aurora share of the residential tax bill of 3.3%. When combined with the Region of York's tax increase of 4.37%, and the expected net 0% increase on the provincial education share of the tax bill, the combined effect on the overall tax bill in Aurora is expected to be approximately 3.1% on average for residential properties. For each $100,000 of assessment, these increases will add $9.96 to the Aurora share, and $25.29 total overall. For an average home assessed at $800,000, the impacts are $79.71 to the Aurora share, and $202.28 total overall, on average. All reports, presentations and materials presented to the Budget Committee will remain available to the public on the Town's Budget and Financial Information website page. Attachment #7 outlines Aurora's history of increases to its share of property tax levies.

In 2019, the budgeted contributions to infrastructure reserves are as follows:

Direct property taxation contributions	$5,263,900
Expected Federal Gas Tax contributions	1,694,600
Expected Ontario Infrastructure contributions	1,101,100
Total non-rate funded Infrastructure renewal contributions	$8,059,600

Of note is the disparity between the estimated amortization expenses of $9,464,300 for tax levy directly supported assets and the tax levy contributions to reserves of $5,263,900 (excluding federal and provincial infrastructure funding) for the rehabilitation and replacement of these aging assets.

The Town has approved an ongoing financial strategy to close this funding disparity. This strategy includes increasing property taxes each year by 1% more than the Consumer Price Index. This additional 1% helps to increase funding for the current and future replacement or rehabilitation of our existing capital assets. Provided Council continues to follow the strategy, significant sudden tax increases, new debt, or financial crisis can be avoided in the future.

Communications Considerations

A press release and information kit has been prepared related to the approval of the Town's 2019 Operating Budget. Updated budget information will be included on the reverse side of the Final Tax Bill Brochure included with all mailed tax billings to be issued in June. The full budget details have been updated to the Town's Budget and Financial Information page on our website, including the capital budget approval report and detailed capital sheets of all approved projects.

Link to Strategic Plan

Approval of the 2019 Operating Budget provides funding support and approval for all initiatives, services and operations of the Town, all of which support and advance the Strategic Plan objectives. Overall, the budget leads to improving the quality of life of the community we serve.

Alternative(s) to the Recommendation

Council may make further adjustments to the budget than those recommended by Budget Committee.

Conclusions

The Budget Committee has concluded its review of the annual budget for 2019. The result of the recommended budget is a 3.3% tax increase on the Aurora share of the tax bill. When combined with the increases for the Region of York and the provincial education portions, the expected overall tax impact for Aurora residents is 3.1%.

This operating budget includes the first phase-in amount relating to the funding of the estimated on-going incremental Library Square operating costs that are expected to commence upon the Square and all its components becoming fully operational.

In the preparation of the 2019 operating budget, the Town of Aurora has complied with requirements of the Municipal Act which identifies allowed exclusions from that budget (paragraph 3, subsection 289 (2) and paragraph 3, subsection 290 (2)). This report provides the disclosures required under this regulation which requires municipalities to report to Council when these exclusions exist and the impact on the overall accumulated surplus of each transaction.

Attachments

Attachment #1 - 2019 Operating Budget Summary by Department
Attachment #2 - Converted and New Full Time Staff Additions
Attachment #3 - Details of Adjustments made to the Budget by Committee
Attachment #4 - Key Budget Drivers affecting the tax increase
Attachment #5 - Total Revenues by Source
Attachment #6 - Net Operating Budget by Service
Attachment #7 - History of Tax Rate Increases – Aurora Share
Attachment #8 - Schedule of Estimated 2019 Tangible Capital Asset Amortization

Attachment #9 - Reconciliation of 2019 Approved Budget to the 2019 Budget as if prepared under PSAB 3150

Previous Reports

FS18-004: 2019 Budget Development Direction
FS19-002: 2019 Operating Budget
FS19-013: 2019 Budget Committee Additional Information
FS19-014: Kaleidoscope in Schools Pilot Program Funding Options
FS19-017: Incremental Operating Requirement Funding Strategy

Pre-submission Review

CAO and Treasurer only

Departmental Approval

Jason Gaertner, CPA, CMA
Acting Director of Financial Services - Treasurer

Approved for Agenda

Doug Nadorozny

Doug Nadorozny
Chief Administrative Officer

Attachment 1

Town of Aurora
2019 Operating Budget

Summary by Department

Shown in $000's	2018 Approved Budget (adjusted)	2019 Draft Budget	Dollar Change favourable / (unfavourable)	Tax Pressure Change
Gross Expenses				
Council	$ 627.8	**$ 576.1**	$ 51.7	0.1 %
CAO's Office	$ 1,228.3	**$ 1,332.4**	$ (104.1)	(0.2 %)
Corporate Services	$ 8,037.1	**$ 8,269.9**	$ (232.8)	(0.5 %)
Financial Services	$ 2,061.3	**$ 2,293.8**	$ (232.5)	(0.5 %)
Planning and Development Services	$ 6,161.9	**$ 5,868.5**	$ 293.4	0.6 %
Operational Services	$ 10,506.8	**$ 11,063.9**	$ (557.1)	(1.2 %)
Community Services	$ 13,888.1	**$ 14,654.1**	$ (766.0)	(1.7 %)
Corporate Expenses	$ 7,370.8	**$ 8,365.0**	$ (994.2)	(2.2 %)
Fire Services	$ 10,484.2	**$ 11,188.1**	$ (703.9)	(1.5 %)
Funding Provided for Library Operations	$ 3,843.1	**$ 3,843.1**	$ -	-
Gross Expenditure (Increase) / Decrease	**$ 64,209.4**	**$ 67,454.9**	**$ (3,245.5)**	**(7.1 %)**
Gross Revenues				
Council	$ -	**$ -**	$ -	-
CAO's Office	$ (0.3)	**$ (0.3)**	$ -	-
Corporate Services	$ (737.3)	**$ (797.0)**	$ 59.7	0.1 %
Financial Services	$ (202.7)	**$ (456.3)**	$ 253.6	0.6 %
Planning and Development Services	$ (5,594.4)	**$ (4,820.7)**	$ (773.7)	(1.7 %)
Operational Services	$ (850.9)	**$ (1,067.8)**	$ 216.9	0.5 %
Community Services	$ (5,227.1)	**$ (5,224.4)**	$ (2.7)	(0.0 %)
Corporate Revenues	$ (7,142.6)	**$ (7,829.9)**	$ 687.3	1.4 %
	$ (19,755.3)	**$ (20,196.4)**	$ 441.1	0.9 %
Taxation - 2018	**(44,453.3)**	**$ (44,453.3)**		-
Taxation - Growth from New Assessment	**-**	**$ (1,289.1)**	1,289.1	2.9 %
Taxation - 2019 Levy Increase	**-**	**$ (1,516.1)**	1,516.1	3.3 %
Gross Revenue Increase / (Decrease)	**$ (64,208.6)**	**$ (67,454.9)**	**$ 3,246.3**	**7.1 %**
Net Expenditures/(Revenues)				
Council	$ 627.8	**$ 576.1**	$ 51.7	0.1 %
CAO's Office	$ 1,228.0	**1,332.1**	$ (104.1)	(0.2 %)
Corporate Services	$ 7,299.8	**7,472.9**	$ (173.1)	(0.4 %)
Financial Services	$ 1,858.6	**1,837.5**	$ 21.1	0.0 %
Planning and Development Services	$ 566.7	**1,047.8**	$ (481.1)	(1.1 %)
Operational Services	$ 9,655.9	**9,996.1**	$ (340.2)	(0.7 %)
Community Services	$ 8,661.0	**9,429.7**	$ (768.7)	(1.7 %)
Corporate Revenues & Expenses	$ 228.2	**535.1**	$ (306.9)	(0.7 %)
Fire Services	$ 10,484.2	**11,188.1**	$ (703.9)	(1.5 %)
Funding Provided for Library Operations	$ 3,843.1	**3,843.1**	$ -	-
	$ 44,453.3	**$ 47,258.5**	$ (2,805.2)	(6.1 %)
Taxation	**$ (44,453.3)**	**(47,258.5)**	$ 2,805.2	6.1 %
	$ -	**$ -**	**$ -**	**-**

Town of Aurora **Attachment 2**

2019 Operating Budget Impacts

CONVERTED AND NEW POSITIONS IN 2019 BUDGET

2019 Budget Requests

	Dollars			Full-Time Complement
	Gross Cost	Offsets	Net Cost	
2018 Budget Approved Full-Time Complement				**223**
Full-Time Staffing - Conversion Requests				
Program Specialist (HR) - July 1st start date	42,800			**1**
Accounting Analyst - July 1st start date	49,850			**1**
Position will be funded 40% from Building and 10% from Water		24,925		
Collections Coordinator - Funded in Water Budget (Full Year)	73,500			**1**
Position will be funded 100% from Water		73,500		
Program Manager, Facility Capital Projects - July 1st start date	46,500			**1**
Position will be funded 100% from Capital		46,500		
Site Inspector/Contract Administrator - July 1st start date	46,500			**1**
Position will be funded 100% from Capital		46,500		
Fleet Supervisor - July 1st start date	51,600			**1**
Flex Serviceperson (2) - July 1st start date	17,700			**2**
	$ 328,450	$ 191,425		
Net Full-Time			**$ 137,025**	**231**

Town of Aurora
2019 Operating Budget
BUDGET COMMITTEE CHANGES

Attachment 3

ADJUSTMENTS				RESULTS					
Ref.	Date of Decision	Department	ITEM	Change to Operating Budget	Running Revised Budget Increase	Impact on Town Rate	Running Town Rate Pressure	Effective Combined Tax Impact	
								Residential	Commercial
			STARTING POINT - Draft Budget, As of February 12, 2019 = 1,506,900				3.3 %	3.1 %	1.8 %
1	Feb.12/19	CMS	Remove earmarked funding from within core draft budget for the Sports Hall of Fame operating grant	(28,100)	1,478,800	(0.06 %)	3.2 %	3.0%	1.7%
2	Feb.12/19	CMS	Return of remaining previous Sport Aurora funding to CMS as a placeholder as per CMS19-001 Report	53,800	1,532,600	0.12 %	3.4 %	3.1%	1.8%
3	Feb.12/19	Fire	Change in final approved Fire Services budget impact for the Town of Aurora	(22,600)	1,510,000	(0.05 %)	3.3 %	3.1%	1.8%
4	Feb.12/19	CMS	Remove earmarked inflationary funding increase - Aurora Historical Society	(1,850)	1,508,150	-	3.3 %	3.1%	1.8%
5	Feb.12/19	CMS	Remove earmarked inflationary funding increase - Aurora Cultural Centre	(10,400)	1,497,750	(0.03 %)	3.3 %	3.1%	1.7%
6	Feb.12/19	LIB	Remove earmarked inflationary funding increase - Library	(95,000)	1,402,750	(0.20 %)	3.1 %	3.0%	1.7%
7	Mar. 4 & 18/19	CAO	Increase the Town's sponsorship program budget	40,000	1,442,750	0.08 %	3.2 %	3.0%	1.7%
8	Mar. 4 & 18/19	Corp	Reduce Council contingency budget	(40,000)	1,402,750	(0.08 %)	3.1 %	3.0%	1.7%
9	Mar. 4/19	CMS	Approval of one-time AHS Godfrey Collection storage costs	3,500	1,406,250	-	3.1 %	3.0%	1.7%
10	Mar. 4/19	CMS	Rate stabilization draw to offset AHS Godfrey Collection Costs	(3,500)	1,402,750	-	3.1 %	3.0%	1.7%
11	Mar. 18/19	CMS	Approval of Sports Hall of Fame operating grant	28,100	1,430,850	0.06 %	3.1 %	3.0%	1.7%
12	Mar. 18/19	CAO	Increase the Town's sponsorship program budget	7,600	1,438,450	0.01 %	3.1 %	3.0%	1.7%
13	Mar. 18/19	Council	Reduce Council civil responsibilities budget	(7,600)	1,430,850	(0.01 %)	3.1 %	3.0%	1.7%
14	Mar. 18/19	Corp	Remove IT Application Specialist - approval subject to further information back to Council	(51,600)	1,379,250	(0.11 %)	3.0 %	3.0%	1.7%
15	Mar. 18/19	Corp	Remove IT Manager - approval subject to further information back to Council	(51,600)	1,327,650	(0.12 %)	2.9 %	2.9%	1.7%
16	Mar. 18/19	FS	Remove Procurement Consultant	(51,600)	1,276,050	(0.11 %)	2.8 %	2.9%	1.6%
17	Mar. 18/19	CMS	Library Square operating budget phase-in.	240,000	1,516,050	0.52 %	3.3 %	3.1%	1.8%
				9,150		0.02 %			

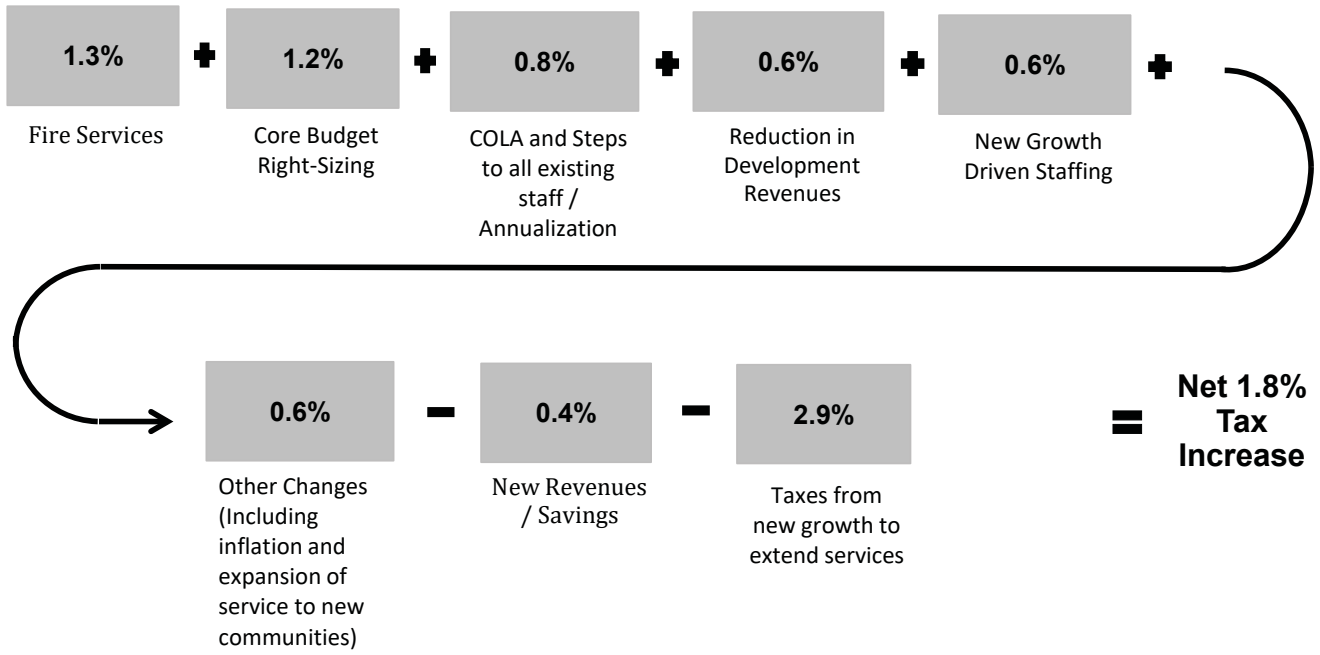
CALCULATION OF IMPACT ON OVERALL TAX BILL	Estimated Tax Rate Pressure (from above)	RESIDENTIAL		COMMERCIAL	
		Share of Tax Bill	Weighted Tax Rate Pressure	Share of Tax Bill	Weighted Tax Rate Pressure
Town of Aurora	**3.3%**	**36.6 %**	**1.21%**	**20.8 %**	**0.7%**
Region of York	4.4%	42.7 %	1.86%	24.4 %	1.1%
Education	0.0%	20.7 %	0.00%	54.8 %	0.0%
			3.08%		**1.8%**

Attachment 4

Town of Aurora
2019 Operating Budget

KEY BUDGET DRIVERS

Core Operations:



Service Enhancements:

Fiscal Strategy:

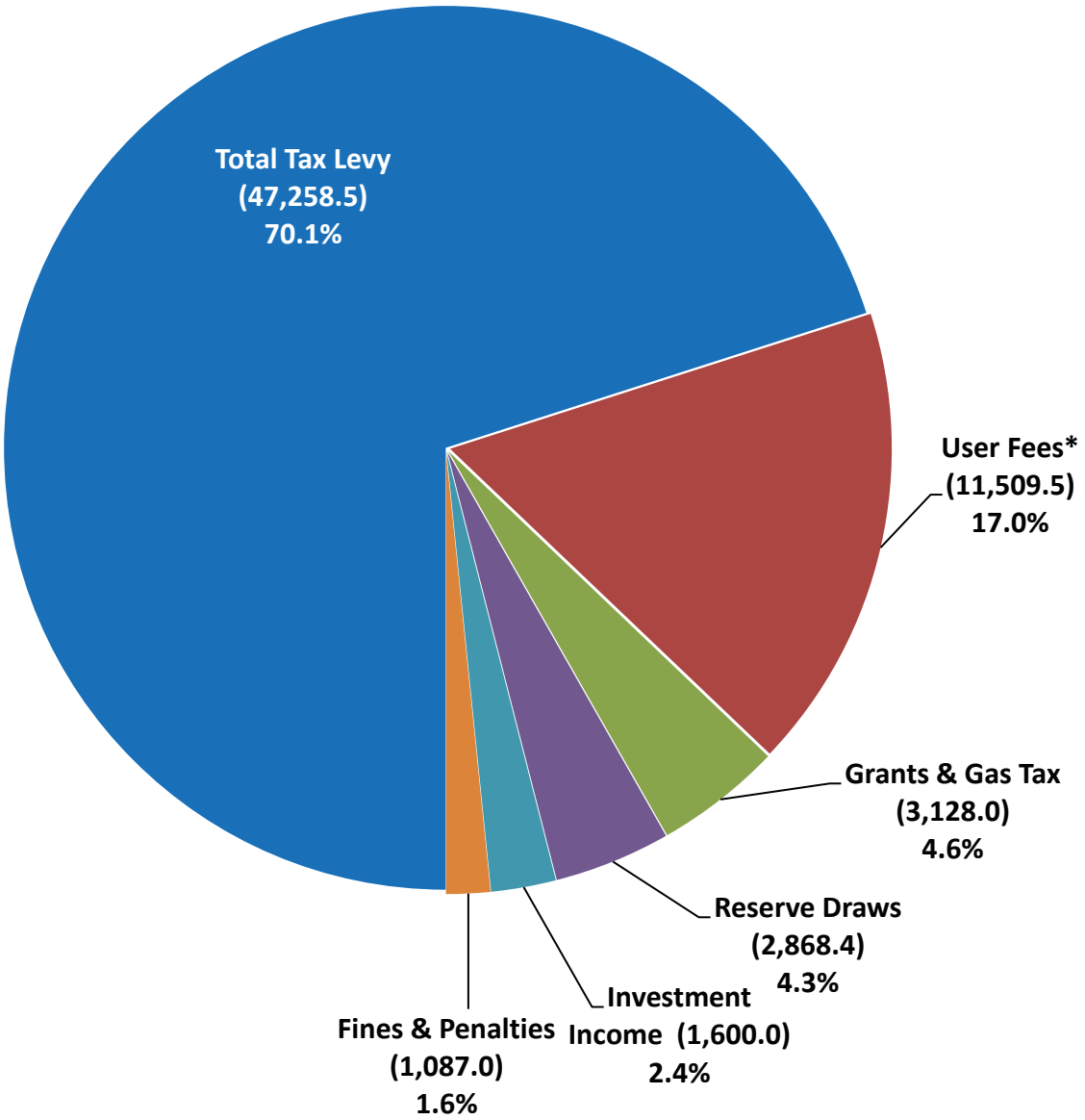
The 3.3% increase to the tax levy translates to an additional $79.71 on a home with an average assessed value of $800,000.

Net 3.3% Tax Increase

Attachment 5

Town of Aurora
2019 Operating Budget
Total Revenues by Source

Shown in $000's



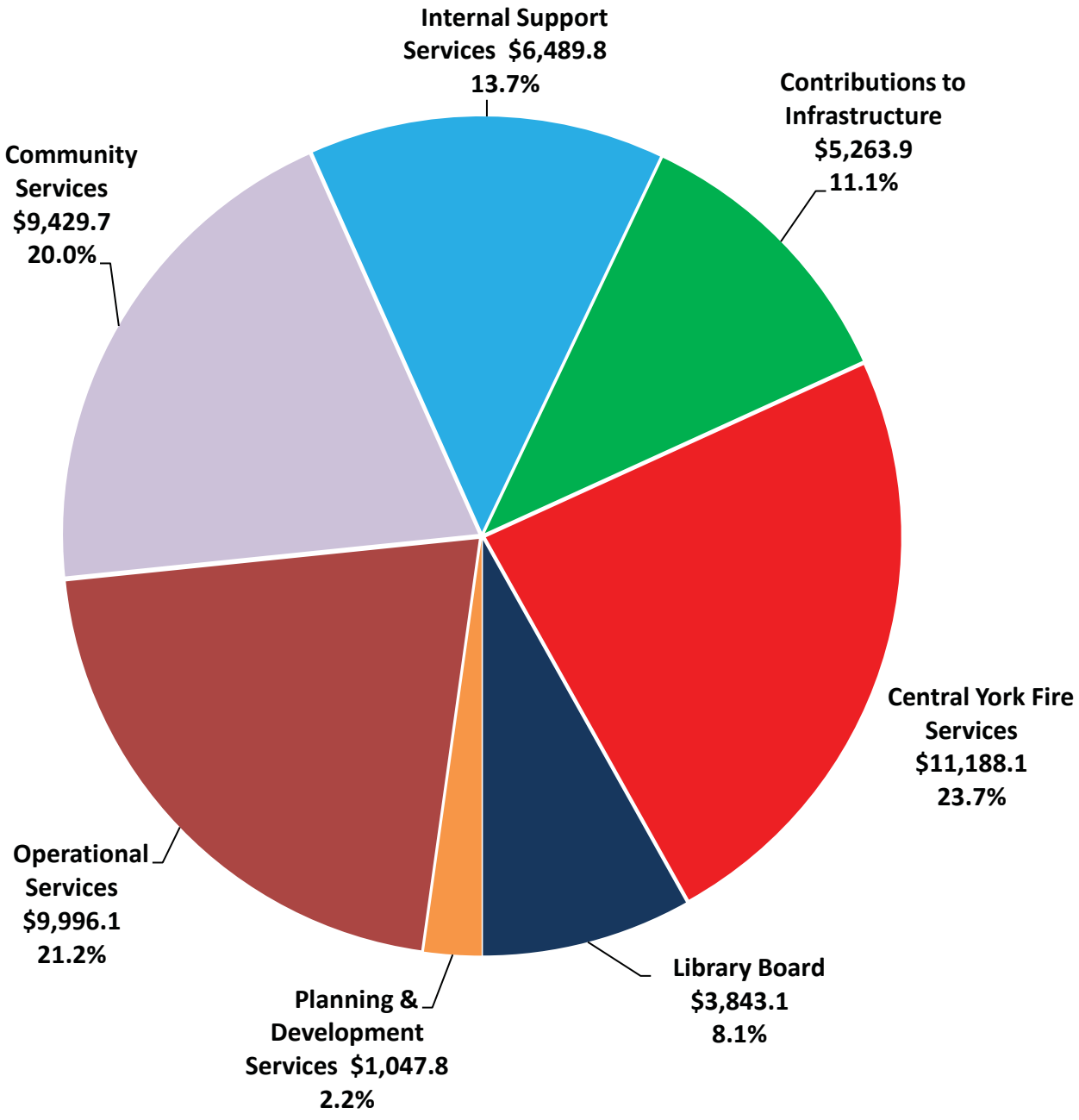
Total: $ 67,454.9

* User Fees include revenue received in relation to the utilization of the town's various service offerings such as its parks and facilities, building permit issuances and development application fees.

Attachment 6

Town of Aurora
2019 Operating Budget
Net Tax Funding by Service

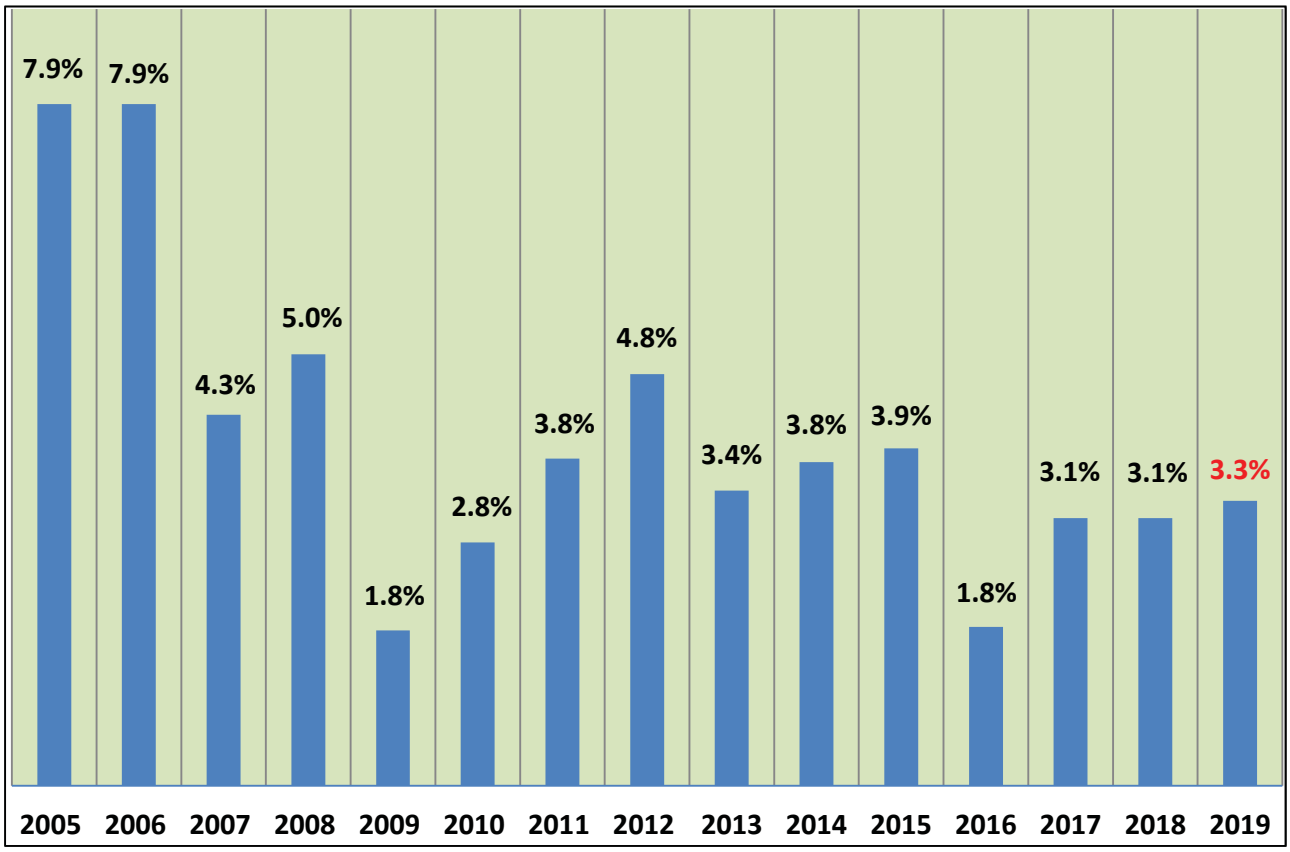
Shown in $000's



Total: $ 47,258.5

Attachment 7

Town of Aurora
2019 Draft Operating Budget
HISTORY OF AURORA TAX RATE INCREASES



Attachment #8

Estimate of Tangible Capital Asset Amortization Expense for 2018:
(Excluding Rate Funded Assets)

Category		Amortization Amount in $'000's	
Tax Supported Assets			
Buildings	$	3,727.6	
Roads/Sidewalks/Street Lighting		3,523.0	
Bridges & Culverts		865.9	
Parks (Land Improvement)		930.4	
Other Vehicles & Equipment		80.1	
Computer Related Equipment		337.3	
Sub Total - Directly Supported Assets			**9,464.3**
Indirectly Supported Assets (from Taxes)			
Fire Vehicles & Equipment		$128.5	
Library Content & Equipment		89.1	
			217.5
Estimated Amortization Expense for 2018			**$ 9,681.8**

Town of Aurora - 2019 Budget

2019 Budget Presentation Differences

"Standard" Cash-Basis Budget vs. Presentation Requirement under P.S.A.S.

In $ 000 's	Town Budget (excl Library)	+	Library Budget	=	Consolidated Municipal "Standard" (cash basis)	Reporting Change	Under PSAB Guidelines (accrual basis)
Revenues:							
Operating - Tax Levy	$ 43,415.4		$ 3,843.1		**$ 47,258.5**	$ -	**$ 47,258.5**
Operating - Receipts From Outside Sources	17,454.6		138.6		**$ 17,593.2**	-	**17,593.2**
Operating - Transfers From Other Funds	2,741.8		-		**$ 2,741.8**	(2,741.8) (1)	**-**
Capital - Receipts From Outside Sources	27,387.3		-		**$ 27,387.3**	-	**27,387.3**
Capital - Transfers From Other Funds	33,176.5		1,105.0		**$ 34,281.5**	(34,281.5) (1)	**-**
Total Revenues	**$ 124,175.6**		**$ 5,086.7**		**$ 129,262.3**	**$ (37,023.3)**	**$ 92,239.0**
Expenses:							
Operating Expenses	$ 52,620.9		$ 3,851.7		**$ 56,472.6**	$ -	**$ 56,472.6**
Operating - Transfers To Capital Funds	5,798.0		130.0		**5,928.0**	5,928.0 (2)	**-**
Operating - Transfers To Other Funds	3,868.9		-		**3,868.9**	3,868.9 (2)	**-**
Operating - Debt Principal Payment	1,040.5		-		**1,040.5**	1,040.5 (3)	**-**
Operating - Debt Interest Payment	283.5		-		**283.5**	-	**283.5**
Tangible Capital Additions	59,583.8		1,105.0		**60,688.8**	60,688.8 (4)	**-**
Non-Tangible Capital Additions	980.0		-		**980.0**	- (5)	**980.0**
Total Expenses	$ 124,175.6		$ 5,086.7		**$ 129,262.3**	$ 71,526.2	**$ 57,736.1**
Annual Surplus / (Deficit) with Exclusions per O.Reg 284/09	**$ -**		**$ -**		**$ -**	**$ 34,502.9**	**$ 34,502.9**

Exclusions Add Back / (Deduct):	
- Amortization of Tangible Capital Assets (4)	$ (9,681.8)
- Post Employee Benefits and Sick Leave liabilities	(230.3)
- Workplace Safety & Insurance Board Benefits	(9.8)
Total Exclusions	**$ (9,921.9)**
Annual Surplus / (Deficit) - full PSAB Compliance - Estimated Audited Financial Statement Result	**$ 24,580.9**

Foot Notes:

1. "Transfers From Other Funds" represents transfers from reserves (Retained Earnings) for expenditures and is not considered a revenue source under accrual accounting.
2. "Transfers To Other Funds" represents the contribution to reserves (Retained Earnings) and is not considered an expense under accrual accounting.
3. "Debt Principal Payments" are considered a repayment of a long term liability and are not considered an expense under accrual accounting - only the related Interest portion remains a valid expense
4. Under accrual accounting, costs related to the acquisition of "Tangible Capital Assets" are recorded on the balance sheet - only the amortization of existing Tangible Assets is included as an expense. This amortization is generally excluded from traditionally prepared, cash basis, municipal budgets.
5. Studies and Reports are examples of non-Tangible Capital Assets and their acquisition is included as an expense.

Under O.Reg 284/09, this schedule is to be presented prior to or as part of the budget approval process

Town of Aurora
Council Report **No. OPS19-009**

Subject: Wildlife Crossing on Henderson Drive

Prepared by: Allan D. Downey, Director of Operations

Department: Operational Services

Date: March 26, 2019

Recommendation

1. **That Report No. OPS19-009 be received;**

2. **That silt fencing be erected on both sides of Henderson Drive in the vicinity of the crossing; and**

3. **That amphibian and reptile crossing measures be incorporated into the design for the reconstruction of Henderson Drive presently scheduled in 2020.**

Executive Summary

This report seeks Council approval to proceed with the installation of silt fencing on Henderson Drive in 2019 and that amphibian and reptile crossing measures be incorporated into the design for the reconstruction of Henderson Drive:

- Staff contacted Lake Simcoe Region Conservation Authority (LSRCA) for information and recommendations;
- Temporary silt fencing will be installed in 2019; and
- Incorporate the recommendation from the Guide into the re-construction of Henderson Drive.

Background

At the March 19, 2019 General Committee, staff were requested to prepare a report on what next steps could be taken to help prevent injury to the turtles crossing between Henderson Drive and report back to Council on March 26, 2019.

Analysis

Staff contacted Lake Simcoe Region Conservation Authority (LSRCA) for information and recommendations.

Staff were in contact with LSRCA and were provided with a “Guide for Implementing Reptile and Amphibian Ecopassages in the Lake Simcoe Watershed” (see attached). This document was produced in 2018 and identifies a number of measures that can be taken to address this issue.

Temporary silt fencing will be installed in 2019.

One of the immediate steps that can be taken is to erect silt fencing on either side of the road to deter turtles from entering the roadway.

The literature from LSRCA indicates that fencing significantly reduces the mortality of wildlife crossing the road; however, is more effective when combined with an ecopassage under the road.

Incorporate the recommendation from the Guide into the re-construction of Henderson Drive.

Although the silt fencing will provide some measure of effectiveness, the longer-term solution is the construction of more permanent infrastructure.

Henderson Drive is presently scheduled for mill and overlay road work in 2020 and, in discussion with Development Engineering staff, the design of more permanent structures could be incorporated into that project. Staff will be presenting Council with budget figures to include these works in the 2020 Capital Budget.

Advisory Committee Review

Not applicable.

Legal Considerations

None.

Financial Implications

The silt fencing and installation is estimated at $1,000 and will be absorbed into the 2019 Operating Budget. The cost of permanent measures will be presented as part of the 2020 Capital Budget as part of the reconstruction of Henderson Drive.

Communications Considerations

There is no external communication required.

Alternative(s) to the Recommendation

1. Alternatives as directed by Council.

Conclusions

The immediate steps proposed will help to address the issue in 2019; however, staff recommend a more permanent solution be incorporated in accordance with recommendations from LSRCA.

Attachments

Attachment #1 – LSRCA's Guide for Implementing Reptile and Amphibian Ecopassages in the Lake Simcoe Watershed

Previous Reports

None.

Pre-submission Review

CAO review on March 25, 2019

Departmental Approval

Allan D. Downey
Director of Operations
Operational Services

Approved for Agenda

for **Doug Nadorozny**
Chief Administrative Officer

Attachment #1

1.0 Introduction

1.1 Background

Population and employment projections suggest that urban development could increase by 50% in the Lake Simcoe watershed by 2041. This shift from rural and natural heritage features, to urban land use can have significant impacts on Ontario's native biodiversity. With increased development comes the need for more transportation infrastructure, which can significantly impact wildlife habitat.

The impacts of roads on wildlife communities generally fall into four categories:

Habitat Degradation

- Invasive species
- Road use contaminants (salt, chemicals from vehicles)
- Light and noise
- Human presence
- Edge effects

Habitat Loss

- Direct removal of habitat by the road footprint
- Removal of breeding habitat, food sources, hibernacula, etc.
- Greater impact on species with a large home range

Reduced Habitat Connectivity

- Barriers to movement
- Some species attempt to cross; some will not or cannot
- Reduced gene flow between populations, impairing their resilience

Wildlife Injury or Mortality

- Vehicle-wildlife collisions (VWCs)
- Dependent on traffic volume, speed, visibility, etc.
- Impacts vary for different species
- Landscape features and road design affect rates of VWCs

1.2 Reptiles and amphibians are the hardest hit

Reptiles (turtles, snakes and lizards) and amphibians (frogs, toads and salamanders) are among those species most at risk from roads. Their life history characteristics require them to migrate between various habitats throughout the year to reach the habitat features they need to survive and reproduce (e.g. mates and breeding or hibernation sites). They are also slow-moving and difficult to see on roads.

In Ontario, almost half of the native species of reptiles and amphibians have been designated 'At Risk' either provincially or federally. This includes all of the native turtle species, and road mortality has been identified as one of the major causes of their decline.

While roads are dangerous to slow-moving reptiles, they also present an opportunity to bask on the warm asphalt, and sandy road shoulders provide ideal nesting habitat for turtles. However, using roads

for these purposes can result in road mortality, injury or nest damage through vehicle-wildlife collisions and routine road maintenance activities (e.g. shoulder grading or mowing).

1.3 Purpose of the guide

This guide was created to assist project managers in incorporating road ecology best management practices (BMPs) into road design, with a focus on using ecopassages to improve habitat connectivity and reduce vehicle-wildlife collisions. Due to their particular susceptibility to roads, as mentioned above, the guide focusses on mitigating impacts on reptile and amphibians. Numerous other guides outline mitigation measures for other groups of wildlife; see Appendices A and B for these resources.

2.0 Road ecology best management practices

Transportation infrastructure is important to support our growing population and the movement of people and goods. So while it's impossible to stop building roads or railways, they can be designed and built in ways that minimize their impacts on wildlife.

Road ecology is the interaction of roads and vehicles with the environment. The incorporation of road ecology best management practices (BMPs) into road design can help build infrastructure that mimics the natural environment and minimizes the disruption of natural processes. Achieving this requires the integrated efforts of transportation planners, policy-makers, engineers and ecologists.

The Ontario Ministry of Transportation has drafted an Environmental Guide for Mitigating Road Impacts to Wildlife (MTO, 2017a), which outlines wildlife mitigation measures which can be incorporated into different stages of road design and operational practices. These are listed in order of preferred options:

1) **Avoidance** – Plan for a route that avoids and/or minimizes impacts on wildlife and ecosystems, including avoiding and buffering road alignments from natural habitat during the Environmental Assessment or preliminary design stage. Planning infrastructure projects close together (e.g. roads and rail) can minimize the amount of habitat affected.

2) **Mitigation** – Identify and implement a suite of mitigation approaches (BMPs) in the road design for habitat protection and facilitating wildlife movement. These measures should be cost-effective, properly located, and sensitive to anticipated future land use changes bordering the road.

3) **Habitat creation and offsetting** – Strategies such as wetland substrate salvage, topsoil salvage, habitat creation or improvements (on and off the right-of-way), and more ecologically-based road vegetation management can benefit wildlife and soften habitat impact.

4) **Monitoring** – Evaluate whether a mitigation strategy for wildlife is effective and strive to determine if wildlife populations are affected by the mitigation, and which designs work best.

Ecopassages are a road ecology mitigation BMP designed to assist wildlife in safely crossing roads, working to minimize road mortality, while increasing habitat connectivity. This guide focusses on implementing wildlife ecopassages as a mitigation measure for reptiles and amphibians; however it is only one of many potential BMPs that can be incorporated into road design and maintenance.

A list of general BMPs for road design, construction, operation and maintenance for reptiles and amphibians is presented in Table 1, and was adapted from the Credit Valley Conservation Fish and Wildlife Crossing Guidelines (CVC, 2017). This list is not exhaustive and the resources in Appendices A and B provide additional BMPs.

It doesn't have to be expensive!

There are a broad range of relatively low-cost solutions to mitigating road effects on wildlife, especially when they are factored into the capital costs of a road project

Best management practices (BMPs) for road design and construction, operation and maintenance phases for reptiles and amphibians

Improving Habitat Connectivity and Reducing Vehicle-Wildlife Collisions

Road Design:

- Avoid building roads near natural heritage features, and where not avoidable, design new roads near the edges of habitat (as opposed to directly through) to reduce fragmentation and potential need for crossings.
- Group linear infrastructure projects together where possible
- Install traffic calming measures (e.g. speed bumps, rumble strips, roundabouts), wildlife crossing signs, and/or animal-vehicle detection systems.
- Incorporate sloped and roughened curbs along roadsides in areas with salamanders and turtles to prevent animals from being trapped in the ROW.
- Modify infrastructure (i.e. curbs, drainage grates, culverts, Jersey barriers) to facilitate wildlife movement.

Construction, Operation and Maintenance:

- Implement seasonal road closures during times of wildlife migration.
- Develop and promote public awareness and education campaigns.
- Wildlife awareness or crossing signage may be placed along roads that bisect habitat.
- Manage roadside vegetation to ensure that drivers and wildlife have a clear field of view.
- Inspect wildlife exclusion fences periodically for damage that could affect the integrity of the fence or allow passage of wildlife. Inspections should occur following spring melt and heavy rain events; this is especially important when using temporary geotextile fencing.
- Ongoing monitoring and maintenance of crossing structures and fencing post-construction, with adaptive management implemented as needed
- In the event that a wildlife rescue is needed, MNRF should be contacted to obtain a Wildlife Scientific Collector's permit

General Road Ecology Considerations

Road Design:

- Minimize footprint of road and length of culverts where feasible.

- Install noise barriers (e.g. soil berms or solid walls) to minimize disturbance to adjacent natural areas.
- Avoid or minimize artificial lighting adjacent to natural areas and wildlife corridors, unless required for human safety. If lighting is required, use downcast and directional options that avoid unnecessarily broadcasting light to the natural area.
- During design, light-sensitive areas (e.g. wetlands with breeding amphibians) should be mapped in order to inform the appropriate placement (or avoidance) of lighting fixtures.
- Consider constructing habitat features beyond the footprint of the road (eg. turtle nesting habitat and snake hibernacula).

Construction, Operation and Maintenance:

- Protect the existing habitat during the construction of the road and crossing structure through adequate erosion and sediment control using biodegradable materials
- Avoid use of salt for winter road maintenance near natural heritage features, especially those adjacent to watercourse crossing structures (i.e. bridges, culverts)
- Provide habitat creation/ offsetting at nearby location if impacts cannot be avoided
- Temporary fencing should be installed along road embankments/shoulders where work is proposed and around stockpiles of gravelly and sandy substrate to prevent turtles from nesting from late May to early July.
- Avoid grading road shoulders during the following turtle nesting and incubation periods:
- Turtle nesting: late May to early July.
- Nest incubation: June to September.
- Do not use fine wire or plastic mesh netting where snakes are present because they are easily entangled and killed in the material.
- Be aware of wildlife moving along roadsides during mowing operations. Where possible, conduct a walk-through to flush out any wildlife before mowing along the roadside.

3.0 Incorporating wildlife ecopassages into the road design process

Opportunities to implement road ecology BMPs occur both when new roads are being designed, and when existing roads are undergoing works (e.g. widening, reconstruction, culvert/bridge replacement, or installation of new barriers).

The recommended process for planning wildlife crossing projects

Step 1 – Identify and prioritize road sections that could negatively impact connectivity or increase mortality of reptile and amphibian populations.

Step 2 – Consult with relevant stakeholders, including conservation authorities, municipalities, and provincial ministries (eg. MTO, MNRF) to determine regulations/permit requirements and to obtain relevant available data.

Step 3 – Identify the species in the area that will be affected by the road project, including potential species at risk. Design a strategy to aid as many species as possible without inadvertently impacting other species.

Step 4 – Design and determine the location of mitigation measures such as crossing structures and fencing by combining ecological, engineering and hydrologic data.

Step 5 – Plan the construction process, considering timing to avoid active wildlife periods, temporary mitigation measures, sediment and erosion control and other relevant aspects of project planning.

Step 6 – Develop a monitoring and maintenance plan to evaluate the effectiveness of the mitigation measures and ensure their ongoing function.

3.1 Identify and prioritize road sections for mitigation

New or proposed road alignments that pass through natural heritage features may benefit from wildlife crossing structures or other road ecology BMPs to preserve habitat connectivity. The LSRCA's Natural Heritage System and Restoration Strategy (LSRCA, 2018a) can help guide project managers in identifying these areas. Additionally, the LSRCA has developed mapping of locations where reptiles and amphibians are more likely to be affected by roads (LSRCA, 2015), and these 'hotspot' maps can be a starting point in identifying areas to incorporate road ecology BMPs. These documents area available on the LSRCA website and hotspot GIS map layers can be obtained by contacting the LSRCA.

The Ontario Reptile and Amphibian Atlas (Ontario Nature, 2018) collects data of these wildlife on roads and is another potential source of road hotspot information.

Future uses of adjacent lands should always be considered when planning mitigation projects. If lands are flagged for future development, they may not be an appropriate ecopassage site in the long term.

3.2 Stakeholder consultation and permitting

Pre-consultation with regulatory agencies at the project outset can identify road ecology opportunities, applicable regulations, policies, and permit requirements. It can also assist in identifying budget implications upfront while improving construction phasing requirements. Ongoing consultation throughout the project can assist with the timely review of submissions, provide available data and scope any required studies.

When planning an ecopassage project, we recommend following these steps to assist in the process:

1. A pre-consultation process is undertaken with LSRCA Planning and Development and/or Regulations staff and interested Regional or Local Municipal staff
2. Available background data (flora/fauna, natural heritage systems, floodplain, hazards etc.) is obtained from agencies such as LSRCA, MNRF, MECP, and Regional and Local Municipalities
3. Surveys are conducted to demonstrate in-depth knowledge of existing conditions (Ecological Land Classification, wetland evaluations, breeding birds and amphibians, road mortality counts, etc.)
4. An assessment is undertaken to determine impacts, crossing selection, alternatives, mitigation measures and monitoring
5. Reporting is completed prior to detailed design

Consultation with local landowners and naturalist groups can provide a source of information and potential volunteers to support monitoring. Garnering early public support of a mitigation project can greatly improve its success and increase general acceptance of road ecology projects.

3.3 Construction planning

Timing of projects should consider sensitive local species and their breeding seasons as shown below in Table 1. These periods are approximate and vary depending on seasonal weather patterns.

Table 1. Approximate sensitive activity periods for reptiles and amphibians in Ontario

Wildlife Group	Sensitive Activity	Approximate Time Period
Turtles	Nesting season	Mid-May to July
Turtles	Hatchling emergence	Mid-August to mid-October
Amphibians	Breeding season	Spring (usually March to June)
Snakes	Emergence from hibernation and breeding	Spring

The Ontario MNRF has also developed timing windows for in-water works to avoid critical spawning periods for fish species.

Another important element of construction planning is erosion and sediment control (E&SC) measures. Applying E&SC best management practices protects adjacent waterbodies from inputs of sediment which can negatively impact fish and wildlife habitat (GGH Conservation Authorities, 2006).

4.0 Wildlife ecopassage design

Properly-designed ecopassages exclude wildlife from the roadway with fencing, which instead directs them to the crossing structure to safely pass over or under the road. In this way, the threat of roads to wildlife and drivers is minimized, and the connectivity between habitats is maximized.

4.1 Crossing structures

For reptiles and amphibians, crossings are generally located under roadways and can consist of a retrofit of existing infrastructure (e.g. drainage culvert) or a purpose-built structure (e.g. a reptile tunnel). In all cases, the crossing system should be designed to enable passage of as many species as possible.

4.1.1 New Crossing Structures

When new roads are being built or existing roads are being rehabilitated or reconstructed, opportunities to install wildlife crossing structures are presented. Depending on the landscape and drainage requirements, crossing structures may not vary much from standard culverts and bridges. Adjustments such as increasing the openness ratio, incorporating a dry passage option, installing a secondary passage structure, or incorporating a grate to improve lighting may achieve wildlife connectivity needs. Table 2 outlines the general types of crossing structures with some associated considerations for each.

Table 2. Ecopassage types and design considerations (adapted from MNRF 2016)

Crossing Type	Design Considerations
Box Tunnel	• Traditionally used for drainage, but can also be modified specifically for amphibian/reptile passage • Tunnels up to 3 m wide or high typically made from precast concrete • Maximum recommended tunnel length of 25 m • Can be open-top or open-grate, open-bottom, or variation of these • Embed tunnels to enable effective fish passage
Arch / Round Tunnel	• Arch tunnels have natural bottoms and are recommended for tunnels ≥ 1.5 m diameter • Round tunnels work well in aquatic conditions for turtles and semi-aquatic snakes. • In terrestrial conditions, round tunnels should be filled 0.3-0.4 m with local soil/debris to create a level crossing surface. • Recommended design for arch tunnels are slightly larger than box tunnels to compensate for the loss of openness as a result of tunnel shape
Large Underpass	• Larger multi-species crossing structures ≥ 3 m wide such as tunnels and bridges, viaducts or overpasses that are generally not prefabricated or precast. • Possible to maintain natural landscape if road is tunneled or elevated (e.g. a viaduct). • Consider when tunnel length will exceed 25 m. • Multi-species strategy for large and small animals.

Openness ratio refers to the amount of light visible at the end of a crossing structure and determines the permeability or attractiveness of a structure for wildlife to cross through. Section 4.3 provides some general guidelines for desired openness ratios. It is calculated as the cross sectional area of the structure entrance (m) divided by its length (m) as shown below:

Box Culvert = (Height X Width) / Length
Corrugated Steel Pipe (CSP) = (πr^2) / Length *

*where π= 3.14 and r= radius of

4.1.2 Retrofitting existing infrastructure

Where existing roads are not scheduled for upgrades but wildlife road mortality is a concern, existing infrastructure (eg. box culverts, large CSPs or bridges) can be retrofitted to facilitate wildlife passage. When considering retrofits, an assessment of the permeability and openness ratio of the structure should first be completed (Kintsch and Cramer, 2011).

Some options for retrofits include installing a dry bench within a culvert to allow for passage of non-aquatic species, removing beaver bafflers or other obstructions, installing wildlife exclusion fencing to direct animals to the structure, and/or adding habitat structures such as turtle nesting beaches, snake hibernacula or salamander boards.

4.2 Fencing

Crossing structures without associated fencing have been shown to be ineffective at reducing wildlife road mortality (Rytwinski et al., 2016). Fencing acts to restrict wildlife access to roadways while

maintaining connectivity across habitats by guiding them towards ecopassages to safely cross under or over the roads. Wildlife exclusion fencing can reduce wildlife road mortality by up to 80% (LSRCA, 2018b). Fencing can also be used as a stand-alone measure to prevent vehicle-wildlife collisions along roads where connectivity is not a concern (e.g. suitable habitat is only on one side of the road).

Several options are available for fencing material and their use depends on the target species. In general, solid permanent material (e.g. concrete, aluminum, plastic), or hardware cloth with ¼ inch mesh or less has been the most effective for excluding reptiles and amphibians. Some available options are shown in Appendix B. Where feasible, construct fencing to exclude as many species as possible.

Fence ends should be designed to deter wildlife from walking around the fence to access the roadway. This can be achieved by extending the fence beyond the natural heritage feature and away from the road in a curved U-shape design. This way, animals are directed back towards the crossing structure.

Ensure that fencing is strong enough to withstand winter conditions, is placed far enough from the road to avoid damage from road maintenance activities, is taller than the spring high water level, and that there are escape ramps for animals trapped in the roadway. Other considerations for fencing design and maintenance are outlined in Section 4.3 below, as well as in MNR (2013) and MNRF (2016).

4.3 Ecopassage and fencing recommendations for reptiles and amphibians

The following guidelines for the design and construction of reptile and amphibian ecopassages were adapted from CVC, 2017.

Openness ratio

- Turtles: recommend ≥0.25, but no less than 0.1
- Amphibians and snakes: recommend ≥0.1, but no less than 0.07

Crossing Structure Dimensions

- Recommend width and height both ≥1m, but no less than 0.5m
- Length ideally less than 25m

Placement/ Spacing of Crossing Structures

- Ideally aligned with predictable movement paths (e.g. annual migration routes)
- Structures should be no more than 50-100m apart for amphibians (depending on migration radius of species) and 150-300m apart for reptiles

Substrate within Crossing Structure

- For dry culverts, install natural substrate with some cover (e.g. native soil, leaf litter, branches, debris, sod) to provide refuge from predators
- Many species prefer/require moist substrate
- Avoid large rocks and rip-rap
- If medium-large sized stone is required, fill interstitial spaces with material appropriate for wildlife footing

Approach to Crossing Structure

- Natural cover but not obstructing entrance
- Minimal/low growing vegetation to maintain clear path and line-of-sight

Fencing

- Solid permanent material (e.g. concrete, aluminum), Animex, ACO or equivalent fencing, or hardware cloth with ¼ inch mesh or less
- Height 0.4-1.2m, depending on jumping/climbing ability of the target species. Recommended minimum height of 30cm for salamanders, 60cm for turtles and 100cm for snakes, frogs and toads
- Include a curved design or a 15cm wide lip along the top edge angled away from the road at 45° to prevent animals from climbing over
- Bottom of fence buried 10-20cm
- Fence should extend 100m on each side of crossing structure and ends should curve back
- Cloth or plastic can be attached to the bottom of chain link fencing

Other Considerations

- Ambient light, temperature, moisture conditions maintained where possible; can be facilitated by incorporating slots/grates (however this could allow road contaminants like salt into the ecopassage)
- Utilize cover structure (i.e. brush piles) at entry and exit of structure while ensuring clear line of sight through the structure is maintained
- Steel is not a desirable material for structures due to its conductivity, which makes it cold during the spring migratory period
- Polymer concrete maintains temperature and moisture conditions
- Turtles prefer crossings with standing water or moderate flow
- Back-fill at road-side of fence to provide an escape route for animals

5.0 Monitoring and long-term maintenance

5.1 Monitoring

Monitoring the effectiveness of wildlife crossing structures is important to determine how well road mitigation measures are working and to identify any potential issues with the design.

An ideal monitoring program is comprised of a **before-after-control-impact design (BACI)** (for example, refer to LSRCA, 2018b). This includes collecting data before and after the ecopassage has been installed, at both mitigation sites and at control sites where there has been no mitigation. This allows researchers to determine with confidence whether a parameter of interest (e.g. road mortality rates, use of ecopassages, population size) has in fact changed, and if it can be attributed to the BMP. Where possible, up to three years of pre- and post-mitigation monitoring is ideal to measure changes in the ecological response, and to rule out any changes due to yearly environmental variation.

A monitoring program can include **road mortality surveys**, which can be conducted by walking, biking or driving along the site. The method used will depend of the road type and traffic conditions and should consider human safety. Mortality surveys should be conducted regularly in order to identify all road-killed individuals since amphibians can quickly degrade on busy roads. The 'Wildlife on Roads' Handbook (Gunson and Schueler, 2018) provides helpful tips for observing different wildlife groups on roads.

Trail cameras are also useful for monitoring wildlife ecopassages or created habitat structures to determine usage by target species. Cameras which are capable of taking motion-detected and time-lapse photos in day and night are the most effective at capturing a wide range of species. Fencing, rocks or other materials can be used to funnel wildlife past the camera to ensure that they are captured. The

use of cameras requires frequent site visits to change batteries and memory cards, as well as time to review the numerous photos they generate, but can be extremely useful in determining the effectiveness of crossing structures and other site features.

Other methods of monitoring reptile and amphibian activity at an ecopassage site include **pitfall traps, mark-recapture, radio-telemetry, and passive data loggers/PIT tag readers**. The applicability of each method depends on the research question, available resources, and the species of interest. A summary of these methods, as well as advantages and disadvantages of each are available in MNRF (2016).

5.2 Maintenance

Maintenance of ecopassages and associated fencing is an often overlooked aspect of road ecology projects; however a lack of maintenance can compromise the structure's function. Maintenance and clearing of culvert debris, fence repairs, cutting back vegetation and repairing erosion / wash-outs are all required to ensure the integrity and proper functioning of ecopassages. A thorough inspection of ecopassages and fencing should occur in early spring following snowmelt to enable any repairs prior to the sensitive activity periods of wildlife (refer to Table 2), followed by ongoing regular inspections.

It is important to assign responsibility and associated budget to maintain ecopassages early in the project design so there is no lag time in implementing a maintenance program. Maintenance should be ongoing throughout the structure's lifespan.

The Ontario Ministry of Transportation has developed a best practices manual for protecting species at risk (including reptiles and amphibians) during road maintenance activities. This manual applies to routine road maintenance as well as ecopassages and wildlife exclusion fencing (MTO, 2017b).

6.0 Lessons Learned

Through the completion of a pilot turtle passage project, the LSRCA has learned some lessons regarding the implementation of wildlife ecopassages, which might be beneficial to others undertaking similar projects. These include:

1. Consider road ecology and conduct pre-consultation early in the road design process.
2. Project design may need to be revised to meet applicable permits and regulations (from municipalities, MTO and/or the LSRCA).
3. Conduct site meetings with those responsible for road maintenance to ensure that any roadside fencing is installed entirely out of the way of any and all road maintenance activities. This will avoid any damage to the fencing from standard road maintenance machines (eg. graders, mowers, snow plows, etc.).
4. Use the tallest fencing possible to exclude as many species as possible.
5. Don't underestimate the amount of time and labour required to install exclusion fencing.
6. Plan ahead for the long-term maintenance of ecopassages and fencing and include it in the project budget. Consider who will be responsible, how often it will be inspected / maintained and what may need to be done (eg. cutting vegetation, fence repairs, clearing culverts, etc.).
7. Order extra fencing, posts or other ecopassage materials to store and have on hand for repairs.
8. If monitoring ecopassages with wildlife cameras, ensure that they are securely attached to permanent fixtures and if possible hidden from view to avoid any theft.

9. Consult and inform nearby landowners on the project and its purpose early on in the process. Interested landowners may volunteer to keep an eye on the site and report any wildlife observed. In some cases they may also volunteer to assist with regular site monitoring.
10. Volunteers will require special considerations (e.g. training, supervision, high visibility clothing).
11. Seek out advice from others in the field, including the conservation authority and the Ontario Road Ecology Group – there is a lot of knowledge and experience available.

7.0 Summary and further information

Considering the effects of roads on the natural environment during the road design process and incorporating road ecology BMPs can reduce the negative impacts of roads on wildlife as well as human health and safety. Early consultation with relevant agencies can greatly improve the efficiency of the project and develop cross-organizational and interdisciplinary relationships.

As roads and other infrastructure continue to expand throughout the watershed and beyond, consideration of road ecology principles can become 'business as usual'. From simple retrofits to dedicated wildlife infrastructure, various options are available. Monitoring and maintenance of any road ecology project is integral to its success.

For further information and resources on road ecology BMPs, including template municipal policies, refer to Appendix A or the LSRCA Road Ecology webpage. For more information on this guide or road ecology in general, please email info@LSRCA.on.ca.

Appendix A – References

Credit Valley Conservation. 2017. CVC Fish and wildlife crossing guidelines. 32 pp.

Greater Golden Horseshoe Conservation Authorities. 2006. Erosion & sediment control guidelines for urban construction. 153 pp.

Gunson, K.E., Schueler, F.W. 2018. Wildlife on roads: A handbook. Eco-Kare International, Peterborough, Ontario, 254 pp.

Kintsch, J. and Cramer, P.C. 2011. Permeability of existing structures for terrestrial wildlife: A passage assessment system. Research Report No. WA-RD 777.1. Washington State Department of Transportation, Olympia, WA.

Lake Simcoe Region Conservation Authority. 2015. Mapping expected road mortality hotspots for wildlife. 31 pp.

Lake Simcoe Region Conservation Authority. 2018a. Natural heritage system and restoration strategy for the Lake Simcoe watershed. 116 pp.

Lake Simcoe Region Conservation Authority. 2018b. Using wildlife ecopassages to reduce turtle road mortality in the Lake Simcoe watershed.

Ontario Ministry of Transportation. 2017a. Environmental guide for mitigating road impacts to wildlife. Updated final report submitted by Eco-Kare International to the Ministry of Transportation, St. Catharines, Ontario. 108 pp.

Ontario Ministry of Transportation. 2017b. MTO best management practices for species at risk protection during maintenance activities. 69 pp.

Ontario Nature. 2018. Ontario reptile and amphibian atlas. https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas/.

Rytwinski T., Soanes K., Jaeger J.A.G., Fahrig L., Findlay C.S., Houlahan J., van der Ree, R. and van der Grift, E.A. 2016. How effective is road mitigation at reducing road-kill? A meta-analysis. PLoS ONE 11(11): e0166941.

Appendix B – Resources

***Note: LSRCA does not endorse any specific products, and only presents some currently available products for informational purposes.**

ACO Wildlife. http://www.acowildlife.us/index.html

Animex Wildlife Mitigation Solutions. https://animexfencing.com

Central Lake Ontario Conservation. 2015. Wildlife corridor protection and enhancement plan. 85 pp.

ERTEC Environmental Systems. http://ertecsystems.com/Products/Wildlife-Exclusion-Fence---Special-Status-Species-Protection

Ontario Ministry of Natural Resources. 2013. Reptile and amphibian exclusion fencing: Best practices, version 1.0. Species at risk branch technical note. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. 11 pp.

Ontario Ministry of Natural Resources and Forestry. April 2016. Best management practices for mitigating the effects of roads on amphibians and reptile species at risk in Ontario. Queen's Printer for Ontario. 112 pp.

Ontario Road Ecology Group. 2010. A Guide to road ecology in Ontario. 72 pp.

Toronto and Region Conservation Authority. 2015. Crossings guideline for valley and stream corridors. 60 pp.

U.S. Department of Transportation. March 2011. Wildlife crossing structure handbook design and evaluation in North America. 223 pp.

Van der Ree, R., Smith, D.J., Grilo, C. 2015. Handbook of road ecology. Wiley Blackwell, West Sussex, UK.

The Corporation of the Town of Aurora

By-law Number XXXX-19

Being a By-law to amend By-law Number 6106-18, to designate a site plan control area.

Whereas on July 24, 2018, the Council of The Corporation of the Town of Aurora (the "Town") enacted By-law Number 6106-18 to designate a site plan control area;

And whereas the Council of the Town deems it necessary and expedient to amend By-law Number 6106-18 to provide additional delegated authority to Town staff;

Now therefore the Council of The Corporation of the Town of Aurora hereby enacts as follows:

1. Section 5 of By-law Number 6106-18 be and is hereby renumbered to 5 (a).

2. The following be added after section 5 (a) of By-law Number 6106-18, as amended:

   "5 (b) The Director may approve, or waive or amend the approval, of the plans and drawings and be authorized to execute any agreements where it is in the opinion of the Director that the proposed development is within the Business Park zone and not abutting an arterial road or Highway 404."

Enacted by Town of Aurora Council this 26th day of March, 2019.

_____
Tom Mrakas, Mayor

_____
Michael de Rond, Town Clerk