



OPERATIONS COMMITTEE
Tuesday, February 14, 2023 – 1:00 p.m.
County of Renfrew Administration Building
AGENDA

1. Call to order.
 2. Land acknowledgement.
 3. Roll call.
 4. Disclosure of pecuniary interest and general nature thereof.
 5. Adoption of minutes of previous meeting held on January 9, 2023 (attached).
 6. Delegations:
 - a) 1:00 p.m. – John Steckly – Town of Arnprior to discuss the cost share opportunity for County Road 2 (Daniel Street), Galvin Street and Edey intersection improvement.
 7. Public Works and Engineering Department Page
 - a) Department Report 2
 - b) Infrastructure Division Report 74
 - c) Operations Division Report 91
 8. New Business.
 9. Closed Meeting: litigation or potential litigation, including matters before administrative tribunals, affecting the municipality or local board (County Road 24 Rehabilitation).
 10. Date of next meeting (Tuesday, March 7, 2023) and adjournment.
- NOTE:**
- a) Budget Workshop – Wednesday, February 22, 2023 and Thursday, February 23, 2023.
 - b) **County Council: Wednesday, March 1, 2023.**
 - c) Submissions received from the public, either orally or in writing may become part of the public record.

COUNTY OF RENFREW

PUBLIC WORKS AND ENGINEERING DEPARTMENT REPORT

TO: Operations Committee

FROM: Lee Perkins, C.E.T., MBA, Director of Public Works and Engineering

DATE: February 14, 2023

SUBJECT: Department Report

INFORMATION

1. County Council 2023 Road/Bridge Construction Tour

Plans are underway to schedule a full day 'Road Tour' with County Council during the month of August 2023 to review this years' road and bridge construction projects. This Road Tour will provide an opportunity for Council to witness the wide expanse of projects undertaken annually on roads, bridges, and structure culverts. With the guidance of the Asset Management Plan, approximately \$25 million of improvements will be completed in 2023. Staff will provide an update in March on a proposed date.

2. Request for Road Assumption – Township of McNab/Braeside

Attached as Appendix I is a letter dated May 3, 2022 from the Township of McNab/Braeside requesting the County of Renfrew assume Campbell Drive. Reference maps are attached as Appendix II.

Attached as Appendix III is a letter dated February 8, 2023 from the Township of McNab/Braeside outlining the redefined limits and rationale for Campbell Drive to be transferred to the County of Renfrew's road inventory.

The resulting traffic counts from August 9, 2022 through to August 17, 2002, attached as Appendix IV shows the Annual Average Daily Traffic (AADT) was 1,346 vehicles. The Speed Study attached as Appendix V indicates that 84.8% of vehicles are travelling in excess of the posted speed limit.

Currently, the Department utilizes the Ontario Good Roads Association (OGRA) Road Rationalization criteria and weighting system, attached as Appendix VI in evaluating assumption requests. This document highlights the 12 criteria and associated weightings to assess whether or not a roadway meets Upper-Tier road standards as an urban centre collector or an urban arterial extension. It also identifies a cumulative "cutoff" point rating of 6 for the evaluation process. Using the theory that the road must meet either

the criteria for urban centre connector or the criteria for urban arterial extension worth 3 points (Criterion 1), plus all four criteria for traffic speed (Criterion 9), road surfaces (Criterion 10), traffic volumes (Criterion 11) and road right-of-way (Criterion 12) worth a combination of 3 points, or another combination of criteria to have a total weight of 6.

Attached as Appendix VII are the results for the roadway a total of 11 points out of a possible 15 was obtained using all criteria as outlined in the OGRA document. Using the five specific Criterion 7, 9, 10, 11 and 12, Campbell Drive scores 6 out of a possible 6 for a rating of 100%. A total of 100% is required by the OGRA standards for an Upper-Tier to assume the roadway.

Please note that this roadway is currently in poor condition, with a distance of 7.2 km using the 2022 benchmark for pulverize and pave - full depth surface reclamation with 50 mm of Granular A and 100 mm of hot mix, includes shouldering and ditching will cost approximately \$478,000 per kilometre for a total of \$3,441,600 and once assumed will place an extra expense on the County's 10-Year Asset Management Plan.

Historically, the following three principals have been employed in road rationalization reviews:

- Upper-Tier roads, that are primary transportation corridors, should provide continuous roadway services throughout the County;
- Upper-Tier roads should be capable of being upgraded to a reasonable standard, consistent with the service provided;
- Upper-Tier roads should represent the shortest practical route along existing roads and streets.

Since the County does not have regular maintenance operations on this roadway, it will be necessary to enter into an inter-municipal, cost-sharing arrangement with the Township of McNab/Braeside with respect to maintenance operations such as winter control, street sweeping, etc. Similar agreements are currently in place with the Towns of Arnprior, Deep River and Renfrew.

The following summarizes the respective roles and responsibilities of the local Municipality and the County:

County of Renfrew

- approves signage within the right-of-way;
- issues right-of-way work permits;
- controls pedestrian crossings/traffic control signals (in keeping with policies);
- shares responsibility with the Town for storm sewer maintenance/rehabilitation.

Township of McNab/Braeside

- sidewalk construction and maintenance;
- underground infrastructure (e.g. watermains, sanitary sewers, storm sewers--shared with County);
- maintenance, installation, operation of streetlights;
- snow removal (County does not remove snow from its roadways);
- driveway entrances are the responsibility of the individual property owners.

In October 2022, the Operations Committee passed Resolution No. OP-C-22-10-112 “THAT the Operations Committee recommends that Resolution No. OP-C-22-10-111 be tabled until February 2023; AND FURTHER THAT staff develop a policy that provides provisions for conditions of a lower tier road prior to being uploaded to the County.”

As the Draft Road Rationalization Policy may affect the Township of McNab/Braeside’s request for the County to assume Campbell Drive going forward, staff propose to defer a recommendation for this request until April.

3. Policy PW-19 – Road Rationalization

Attached as Appendix VIII is Policy PW-19 – Road Rationalization which staff has developed based on the Ontario Good Roads Association, February 1998 Road Rationalization Guidelines (see Appendix VI for reference). Specific requirements that are to be met and are included in the “Terms of Reference” are:

- Consider road condition and compensation throughout the discussion of road transfers. A municipality may upgrade the roadway or provide the estimated amount of money for rehabilitation to the County.
- Pavement must meet or exceed the current County’s Pavement Condition Index (PCI) of 70.
- Road Structure must meet or exceed the current County’s standard specification as outlined in Policy PW-01 – Roadway Classification and Design. The County may request geotechnical testing from the municipality to confirm roadway structure.
- Involve the local municipalities in the decision-making process by encouraging feedback and comments.

Staff are requesting that comments be returned to Director Lee Perkins by February 28, 2023 in order to be considered as part of the final Policy to be presented to the Operations Committee and County Council in March 2023 for approval.

4. Policy PW-01 – Road Classification and Design

Attached as Appendix IX is a bold and strikeout draft copy of Corporate Policy PW-01 Road Classification and Design. With a recent request from a partner Municipality for the transfer of a potential Township Road into the County Road inventory it was observed that Policy PW-01 required a complete review. The revised Policy is designed

to address not only the classification of a particular roadway but the design criteria as required for the volume of usage.

Staff are requesting that comments be returned to Director Lee Perkins by February 28, 2023 in order to be considered as part of the final Policy to be presented to the Operations Committee and County Council in March 2023 for approval.

5. Notice of Study Commencement

Attached as Appendix X is a Notice of Study Commencement for the Preliminary Design and Class Environmental Assessment Study for the improvements to the intersection of Highway 60 and Lake Dore Road/Kokomis Road located in the Township of North Algona Wilberforce.

BY-LAWS

6. Alterations to County Roads and Structures

Recommendation: THAT the Operations Committee recommends that County Council pass a By-law approving the alterations to County Roads and Structures.

Background

Section 35 of the Municipal Act 2001, S.O. 2001, c.25, as amended allows a municipality to pass By-laws removing or restricting the common law right-of-passage by the public over a highway and the common law right-of-access to the highway by an owner of land abutting a highway. For several of our 2023 capital projects, the work may include temporary or permanent changes, alterations or restrictions to the use of the highway, or to private entrances. These works, therefore, should be authorized by By-law.

Approval of the alterations to a highway is intended to be the final step in the design process, wherein the Committee and Council authorize the work to proceed, subject to the budget and tender process. The approval is intended to apply only to those Capital Projects, which would result in alterations to the highway that could affect a person's access to and from their land, or that could significantly restrict or alter the use of the highway for a period of time. Only those projects that involve significant alterations are presented for approval.

The approval of the alterations deals solely with the nature and extent of the work and does not approve funding or contract awards for the work. The approval of funding and contracts for the work would remain a part of the normal budget, tendering, review and approval processes. Temporary road closures or lane restrictions, and entrance closures may be required during construction. All existing entrances will be reinstated. Schedule I to the By-law outlines the projects that will involve changes to the highways and infrastructures which could affect the common law right-of-passage over the highway, or vehicle access to an adjacent private property.

7. **Infrastructure Division**

Attached as Appendix XI is the Infrastructure Division Report, prepared by Mr. Taylor Hanrath, Manager of Infrastructure, providing an update on activities.

8. **Operations Division**

Attached as Appendix XII is the Operations Division Report, prepared by Mr. Richard Bolduc, Manager of Operations, providing an update on activities.

RESOLUTIONS

9. **Public Works and Engineering Department Draft 2023 Budget**

Recommendation: THAT the Operations Committee recommends that the Draft 2023 Public Works and Engineering Budget be approved and forwarded to the February 22, 2023 County Council Budget Workshop for approval.

Background

Attached as Appendix XIII is the Draft 2023 Budget for the Public Works and Engineering Department for the review and consideration of the Committee. Mr. Perkins will provide an overview of the Draft Budget at the meeting.

10. **Restructure of Public Works and Engineering Department**

Recommendation: THAT the Operations Committee approves the proposed Restructuring of the Public Works and Engineering Department as presented in the attached Business Case as follows:

- Restructuring of the Public Works and Engineering Department;
- Renaming of the Infrastructure Division to the Capital Works Division;
- Enactment of three new positions – a Civil Designer (Group 6, 1,820 hours), a third Engineering Technician (Group 6, 1,820 hours), and an Operations Coordinator (Group 7, 1,820 hours); and
- Establishment of the current part-time Administrative Assistant II position as a full-time position (Group 3, 910 hours).

AND FURTHER THAT this recommendation be brought forward to the February 22, 2023 County Council Budget Workshop for approval; AND FURTHER THAT a report be presented during the 2025 budget cycle evaluating the progress, benefits, and impacts associated with the changes resulting from this Business Case.

Background

Attached as Appendix XIV is a Business Case outlining the proposed restructuring of the Public Works and Engineering Department for the review and consideration of the Committee.

11. **Intersection Realignment – County Road 2 (Daniel Street South) – Town of Arnprior**

Recommendation: THAT the Operations Committee prioritize the Daniel Street Intersection project for the 2023 Budget; AND FURTHER THAT staff ready options for Capital Works projects deferral for the 2023 Budget Workshop discussions.

Background

In December of 2020, the Town of Arnprior submitted a written request to the County that the County participate in and financially contribute to a project along County Road 2 (Daniel Street South) to realign the intersection with Edey Street and Galvin Street. This request, and past similar requests, triggered discussion on how the County may fund projects in response to growth along County infrastructure. The current Asset Management Plan does not take growth into consideration. It is laid out in order to maintain the County's current assets to similar geometry and does not allocate funds for expansion, twinning, or widening of assets as a result of growth in local Municipalities. As such, the request at the time did not proceed; however, a traffic median was installed per requirements of the County with an ongoing development on Galvin Street as a measure to restrict left turns on to Galvin Street from Daniel Street South.

Figure 1 below provides an aerial view of the offset intersection.



Figure 1 - Aerial view of intersection of County Road 2 (Daniel St. S.) with Edey St. and Galvin St.

Since this aerial photo was taken, in 2021 the right-in right-out median has been constructed for Galvin Street as a temporary measure to reduce traffic congestion at the offset intersection.

The Town of Arnprior has identified that increased traffic volumes and the offset layout conditions at the intersection of County Road 2 (Daniel Street South) with Galvin Street and Edey Street have led to unsafe conditions for traffic and pedestrians. In 2020, the Town engaged Stantec Engineering to review and evaluate design alternatives for the intersection. A copy of Stantec's report resulting from the study on the intersection is included as Appendix XV. Four options are identified and evaluated in the report as listed below:

1. Realigned Signalised Intersection;
2. Right-In/Right-Out;
3. Offset Signalized Intersection; and
4. Roundabout.

Of the four alternatives above, Option 2 was the quickest and least cost to enact and, as previously discussed, was constructed in 2021. However, the only alternative that improved the safety of the intersection overall, met the needs of traffic conditions now and in the future, AND maintained full access to each street was Option 1. However, Option 1 also required significant property purchases, greater design, greater utility considerations, higher construction costs, and thus greater time to implement than Options 2 and 3.

Since the development of this study, the Town of Arnprior has moved forward with soliciting the services of an Engineering Consultant for detailed design of Option 1 and completed property purchases in order to facilitate its construction. The Town plans to move forward with construction for Option 1 in 2023 and has submitted a request for the County of Renfrew to contribute to the project for the infrastructure under the County's responsibility being improved in the project. The below general formula has been utilized to establish responsibilities for construction cost estimates:

1. The County shall be responsible for:
 - i) The construction of an urban cross-section up to the minimum "Geometric Design Standards for Undivided Urban Roads in Ontario" (i.e., two driving and one parking lane), but in no case less than the centre 7.0 m of any County Road in an urban area.
 - ii) The construction of curbs and gutters.
 - iii) The construction of the paved boulevard between curb and sidewalk to a maximum of 0.5 m width.

- iv) The construction of catchbasins and the portion of storm sewers required to drain the County Road. (In no case will the County drain land more than 25 m from the centreline of the road.)
 - v) The construction of a full rural section within any urban area.
 - vi) The remaining costs of those works covered by Section 5, requested by the local municipality, and deemed feasible and economical by the Director of Public Works and Engineering, or designate.
2. Land acquisition when land is required to accommodate the road section specified in 1i) shall be the responsibility of the County.
 3. The County shall be responsible for utility relocation costs as outlined in the Public Service Works on Highways Act, R.S.O. 1990, c. P.49, as amended.
 4. The local municipality shall be responsible for:
 - i) 100% of the construction of all sidewalks (Section 55 of the Municipal Act, 2001, as amended).
 - ii) The construction of that portion of storm sewers over and above that required for County Road drainage, based on the following:

Local share % = 100% less County's Share %

County Share = $\frac{\text{Theoretical pipe diameter to accommodate CRD*}}{\text{Actual pipe diameter to accommodate full drainage area}} \times 100\%$

*CRD – County Road Drainage
 - iii) 100% of the cost of all local services, such as water or sanitary sewerage works.
 - iv) 100% of that portion of the paved boulevard between curb and sidewalk beyond 0.5 m.
 - v) Land acquisition when required to accommodate road elements beyond that specified in Section 1).
 - vi) 50% of the construction of additional parking lanes.
 - vii) 100% of the construction of paved shoulders whether behind curbs and/or gutters or not.
 - viii) Engineering in proportion with the cost of its share of the project.
 - ix) There will be a 7% administration charge on County "in-house" (but not contracted) work.
 5. The County shall enter into an agreement for any proposed reconstruction (under the auspices of Section 20(1) of the Municipal Act, 2001, as amended). Costs shall be borne according to this agreement.

At the January 2023 meeting of Operations Committee, staff were directed to develop a funding Business Case for improvements at the intersection of County Road 2 (Daniel Street South) with Edey Street and Galvin Street to be included as part of the discussions regarding the 2023 budget.

Discussion

Figure 2 below illustrates the design proposed realigned intersection:

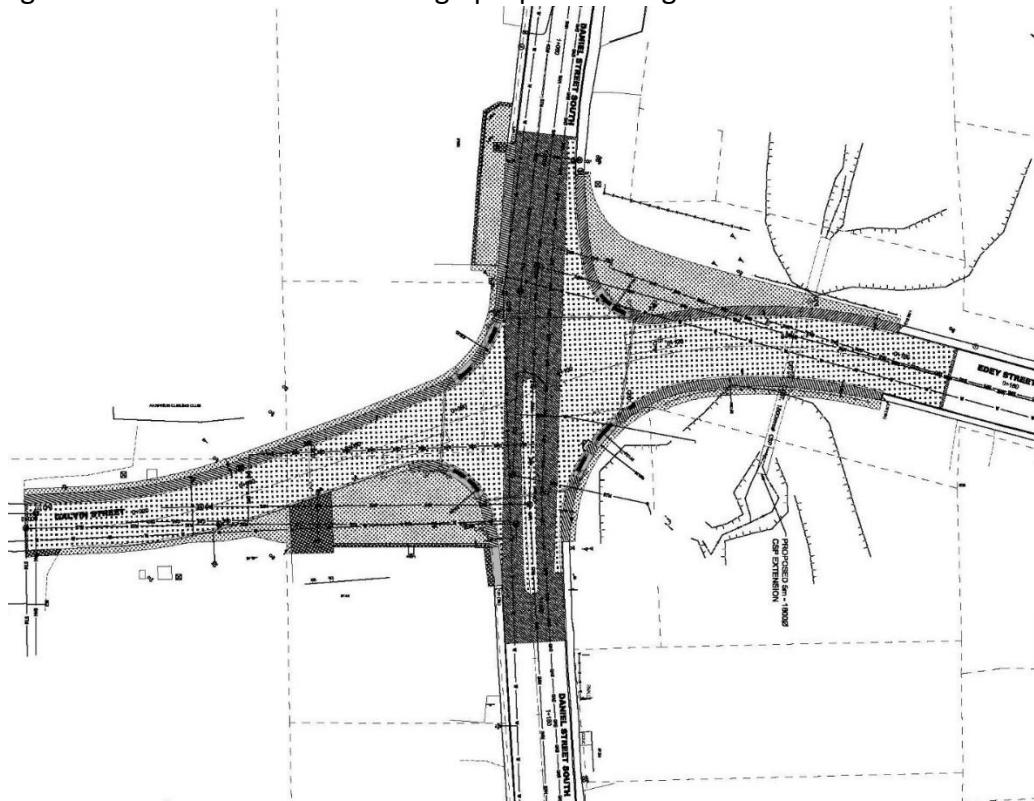


Figure 2 - Plan view of realigned intersection of County Road 2 (Daniel Street South) with Galvin St. and Edey St.

The current proposed 2023 budget does not allocate funds to contribute to this project; however, as per direction, staff have developed items to be taken under consideration for the project.

Safety

Overall, realignment of the intersection would improve safety immediately and even more in the future when compared with the current layout.

i) Increased Traffic

The Town of Arnprior has been identified as the second fastest growing community in Eastern Ontario. This will continue to lead to greater traffic volumes on all roads in the Town, especially on County Roads as they are the 'collector' and 'arterial' roads meant for the transport of people, goods, and services in an efficient and safe manner.

As traffic continues to increase on County Road 2 (Daniel Street South), Edey Street, and Galvin Street, safety deficiencies such as those listed under ii and iii below would increase in severity.

The right-in/right-out on Galvin Street at Daniel Street S. has caused an increase in traffic at a nearby intersection, James Street at Daniel Street S. Sightline at James Street are similar to that at Galvin with the only benefit for the use of James Street being that it is not part of an offset intersection.

ii) Geometry

The current skew of the intersecting side streets (Edey and Galvin) does not provide great sightlines when entering County Road 2 (Daniel Street South). Though the right-in/right-out mitigates this issue at this time, as traffic volumes increase it may lead to queuing or accidents as a result of drivers rushing to get out of side streets.

iii) Turning Movements

Though the right-in/right-out has been constructed by a Developer at the intersection in order to limit traffic using Galvin Street from causing queuing on Daniel Street, it has not operated as original intent was as a number of vehicles have cut over the median or gone around it using the oncoming lane or nearby parking lot. This has led to several reported near misses at the intersection.

2023 Budget

The County of Renfrew saw a significant increase in construction costs in 2022. As a result, benchmark costs were reviewed and updated in order to ensure that the budgets allocated for 2023 met the current market. In order to reduce the negative impact on the County's Long-term Financial Plan, any significant additions to the 2023 budget must be balanced with project deferrals of equal or greater value.

The County's contribution to the intersection realignment has been estimated to be approximately \$700,000. In order to facilitate the addition of this significant cost, adjustments would be required to projects currently proposed in the proposed 2023 Capital Budget.

Asset Management

As previously discussed, the County's Asset Management Plan (AMP) is predicated on maintaining the County's Road infrastructure in its current, or near its current, geometry. As such, items such as intersection realignment like this are not included in the AMP. County Road 2 (Daniel Street South), in the area of the intersection, from County Road 1 (Madawaska Boulevard) to County Road 10 (Baskin Drive West) is currently planned for "mill and pave" in 2025 at an estimated cost of \$738,474. However, the realignment of the intersection would be over and above these planned works and would not negatively impact these planned works if completed sooner.

As a result of projects being deferred, this would have a 'trickle-down' affect within the 10-year Asset Management Plan. As projects are moved from 2023 to 2024, projects planned for 2024 must be moved to 2025, and so on throughout the AMP.

Conclusion

Realignment of the intersection would provide an immediate safety improvement to a high-volume County Road and would provide greater safety benefits as traffic volumes continue to grow. Though \$700,000 is a substantial sum, it can be accommodated with the identified budget adjustments. It is staff's conclusion that the cost of contributing to the intersection realignment at the intersection of County Road 2 (Daniel Street South) and Galvin Street/Edey Street is outweighed by the safety benefits and traffic flow improvements.

12. Carry-Over from 2022 Capital Plan to 2023 Capital Plan

Recommendation: THAT the Operations Committee approves the carry-over of two projects from the 2022 Capital Plan as follows:

- County Road 24 (White Water Road) from Highway 17 to County Road 40 (Greenwood Road) in the amount of \$388,000; and,
- County Road 517 (Dafoe Road) from Serran Road to County Road 62 (Combermere Road) in the amount of \$70,000.

AND FURTHER THAT this recommendation be brought forward to the February 22, 2023 County Council Budget Workshop for approval.

Background

Following a review of the outstanding 2022 Capital Plan projects it was noted that two projects, County Road 24 (White Water Road) from Highway 17 to County Road 40 (Greenwood Road) in the Township of Laurentian Valley and County Road 517 (Dafoe Road) from Serran Road to County Road 62 (Combermere Road) in the Township of Madawaska Valley, were inadvertently omitted from the 2023 Capital Plan as carry-overs from 2022. These carry-over charges are required in order to complete these projects which were started in 2022.



Regular Council Meeting Resolution Form

Date: May 3, 2022 No: RESOLUTION - 179-2022


Moved by Deputy Mayor Brian Armsden Disposition: CARRIED

Seconded by Councillor Heather Lang Item No: 11.2

Description: Transfer of Campbell Drive to the County of Renfrew

RESOLUTION:

THAT Council request the transfer of Campbell Drive from Usborne Street to Highway 417 to the County of Renfrew.


MAYOR

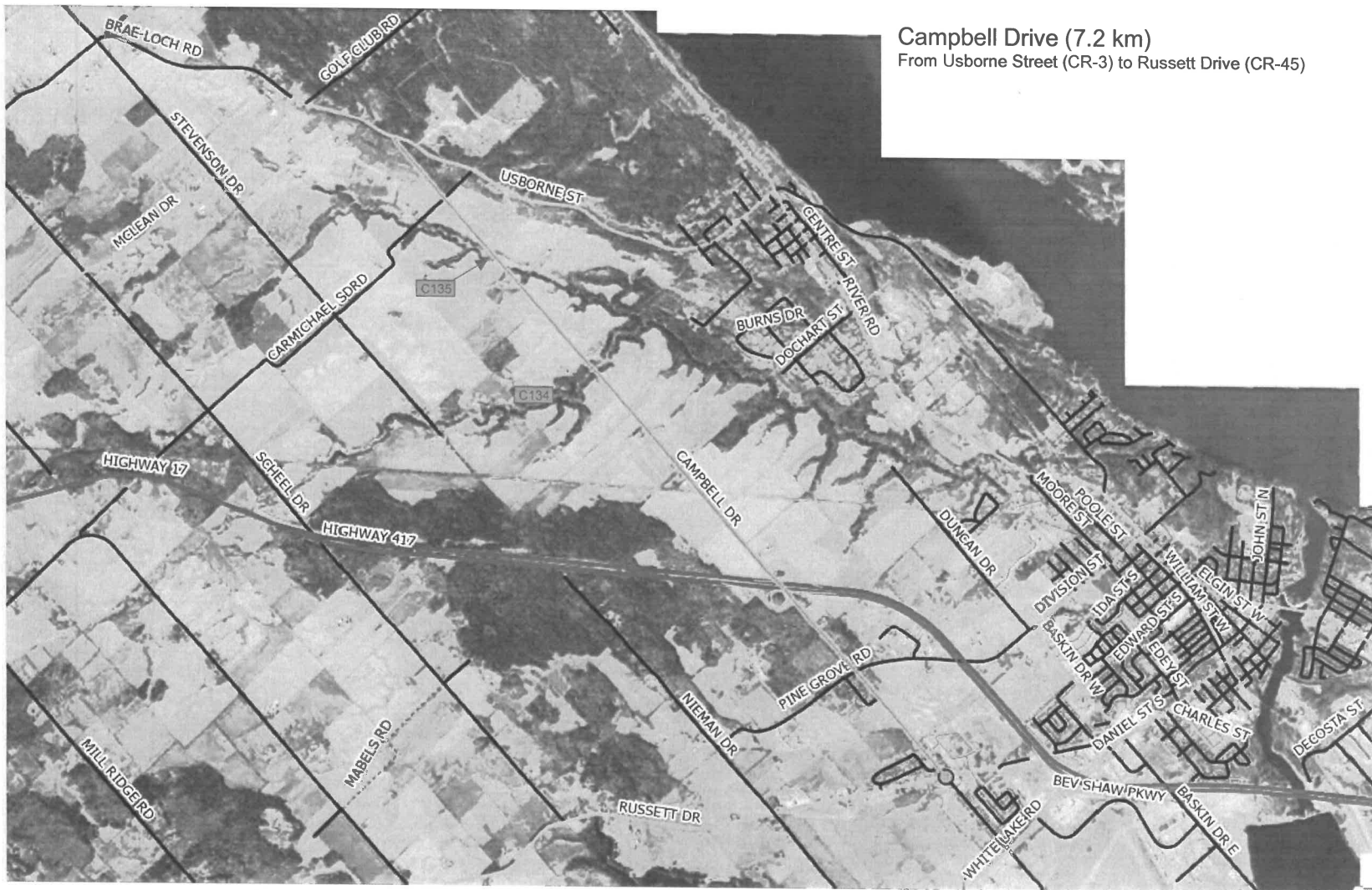
Recorded Vote Requested by:

Declaration of Pecuniary Interest:

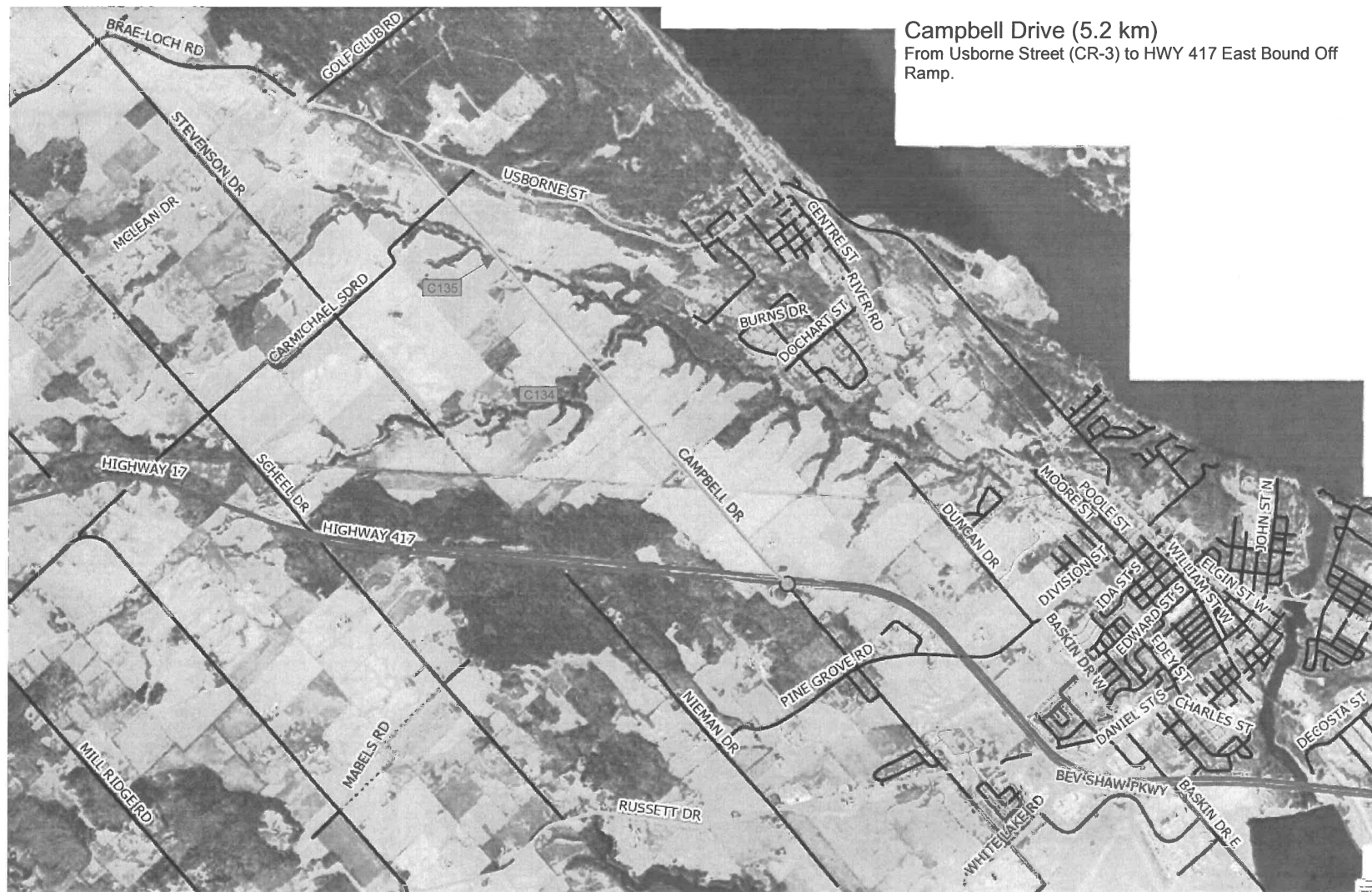
	Yea	Nay
T. Peckett	_____	_____
B. Armsden	_____	_____
H. Lang	_____	_____
S. Brum	_____	_____
O. Jacob	_____	_____

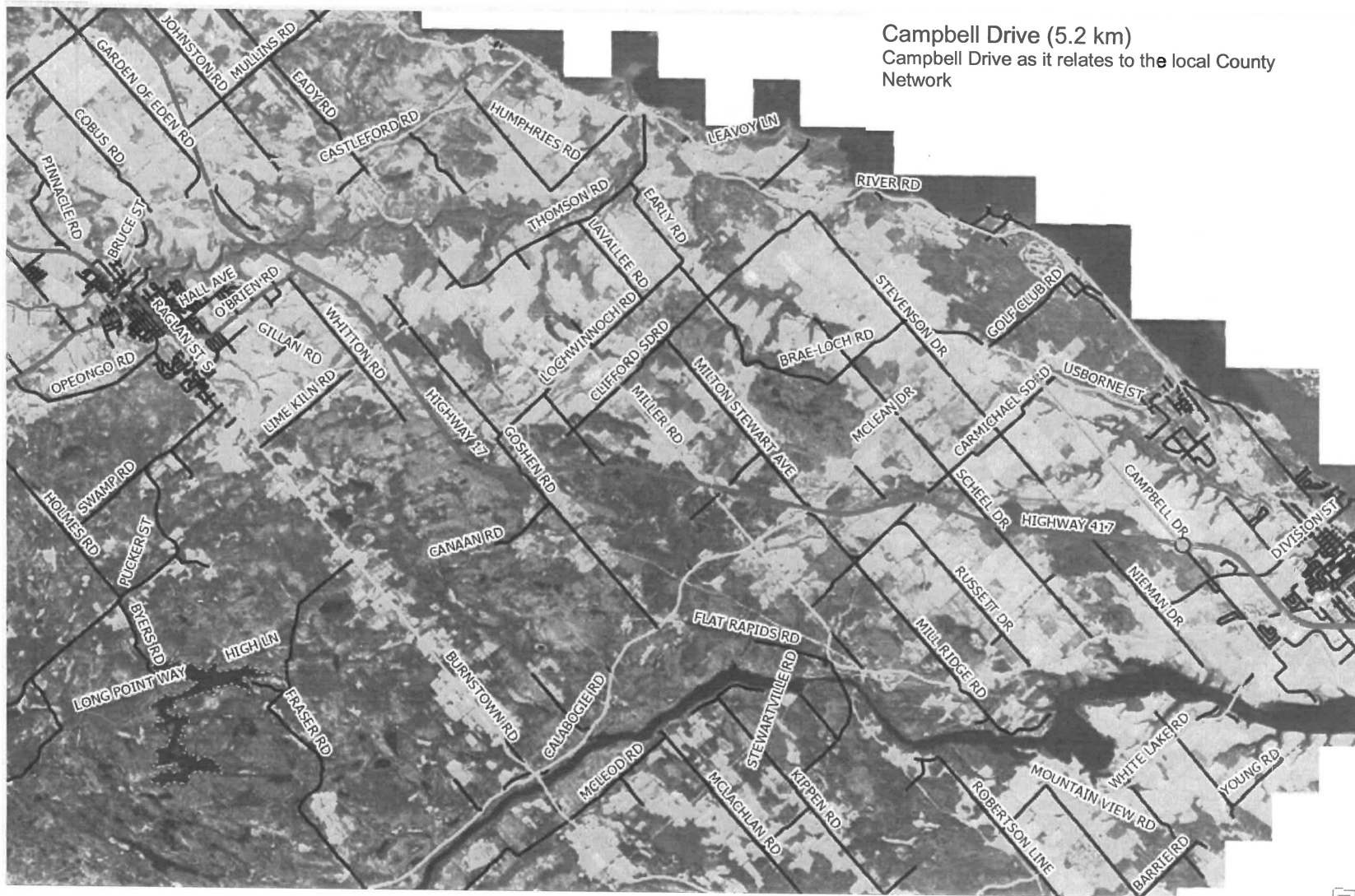
Disclosed his/her/their interest(s), vacated
he/her/their seat(s),
abstained from discussion and did not vote



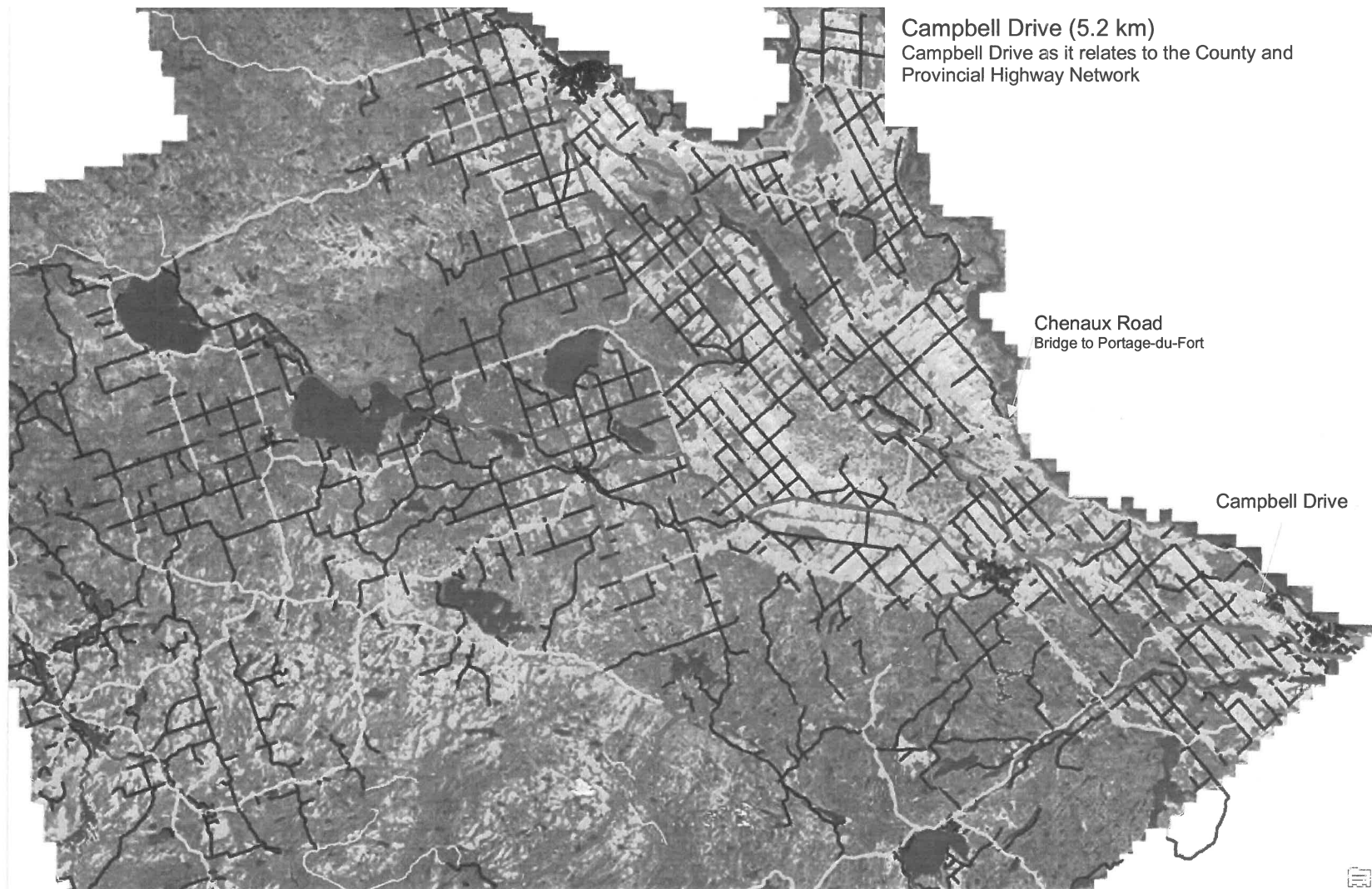


Campbell Drive (7.2 km)
From Usborne Street (CR-3) to Russett Drive (CR-45)





Campbell Drive (5.2 km)
Campbell Drive as it relates to the local County
Network





Appendix Numbers Revised to Reflect Committee Report

February 8, 2023

The Township of McNab/Braeside desires to provide all new and returning County of Renfrew's Operations Committee Members an update to further clarify and highlight the need of the County to proceed with the assumption of Campbell Drive into the County Road System.

Background

In May 2022, the Council for the Township of McNab/Braeside voted unanimously to pass a resolution recommending that a request be made to transfer Campbell Drive from Usborne Street to Highway 417 to the County of Renfrew. (Appendix I)

At the October 11, 2022 Operations Committee meeting, County staff provided a recommendation to the Operations Committee which endorsed that assumption of Campbell Drive into the County Road System. This recommendation was based on County Policy and utilizing the Ontario Good Roads Association (OGRA) Road Rationalization criteria and weighting system. (Appendix II) (Appendix VI)

The Operations Committee voted to table the resolution until February 2023 and for staff to develop additional policies. (Appendix III) (See October 11, 2022 Minutes located on Website)

Discussion

As part of the County Operations Committee package the extent of Campbell Drive to be assumed by the County of Renfrew was shown to be from Usborne Street (CR-3) to White Lake Road (CR-2). The total distance for this would be a total of 7.2 kilometers.

We would like it to be known that the Township has only requested that Campbell Drive between Usborne Street (CR-3) and Highway 417 be considered for assumption by the County. This of would be a total of 5.2 km.

The difference between the two options noted above is significant and results in 2.0 km or 28% less road being assumed by the County. (Appendix IV) This change will also result in a significant reduction in any previously anticipated asset management costs associated with the assumption of the road. (Appendix II)

From the traffic studies completed by the County an average annual daily traffic volume of 1346 vehicles has been determined for Campbell Drive between Usborne Street and Highway 417. The level of traffic on Campbell Drive exceeds a large number of roads already included in the County system and is comparable to most Collector roads. (Appendix V). (Appendix IV)

With the Highway 417 twinning west of Arnprior and the completion of the Campbell Drive interchange in 2016, the fact is that Campbell Drive no longer functions as a lower tier local road. The interchange has created a safe and viable access for many road users that currently reside north of the Highway 417/17 and between Braeside in the east and Chenaux to the west. The road users are not bound by one local jurisdiction. This is consistent with most roads providing access to a series 400 Highway. Interchanges are constructed in locations where they will service a high

number of users and as a result are typically connected to the County Road network which can safely support the traffic volume and service expectations of those users.

Final Remarks

As outlined in the OGRA Road rationalization document the upper tier (County) roads are primarily transportation corridors which provide continuous roadway service throughout the county or region and that the County road system is to reflects the realities of today and beyond.

For the last 7 years, Campbell Drive has functioned as a 'County Road' and has provided safe and convenient access to Highway 417 for many road users beyond the borders of the Township of McNab/Braeside. To ensure that appropriate maintenance and level of service continues into the future it is reasonable that Campbell Drive between Usborne Street and Highway 417 be assumed into the County Road System as it meets the road rationalization criteria.

Similar for any lower tier municipality within the County of Renfrew, to place the financial burden of maintenance and upgrading a 'County Road' on a single lower tier local municipality will result in lower levels of service, inconsistent expectations of all road users and does not support continued economic growth within the County.

County of Renfrew
Public Works and Engineering

Page 1

Campbell Drive - 1.5km south of Usborne Street

Site Code:
Station ID:

Latitude: 0' 0.0000 South

Start Time	08-Aug-22		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB
12:00 AM	*	*	*	*	0	4	1	2	0	1	9	2	4	7	3	3
01:00	*	*	*	*	0	0	0	1	2	0	2	2	2	3	1	1
02:00	*	*	*	*	2	0	0	0	2	2	2	1	1	3	1	1
03:00	*	*	*	*	1	0	2	0	1	0	1	2	1	2	1	1
04:00	*	*	*	*	9	0	9	1	10	1	1	0	1	0	6	0
05:00	*	*	*	*	64	5	55	5	34	3	4	2	1	2	32	3
06:00	*	*	*	*	59	13	75	12	68	15	13	12	7	6	44	12
07:00	*	*	*	*	59	25	66	27	49	24	25	18	13	10	42	21
08:00	*	*	*	*	57	35	57	38	44	37	24	30	19	19	40	32
09:00	*	*	*	*	47	46	48	29	46	36	42	31	33	23	43	33
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11:00	*	*	*	*	42	42	40	39	31	42	40	49	47	47	40	44
12:00 PM	*	*	*	*	33	48	37	31	41	42	24	53	44	66	36	48
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09:00	*	*	7	22	9	20	14	23	13	21	10	22	11	19	11	21
10:00	*	*	5	7	7	21	8	17	10	8	13	11	2	8	8	12
11:00	*	*	0	5	2	4	5	7	2	17	3	5	2	7	2	8
Lane	0	0	218	349	712	743	719	720	683	801	475	572	605	531	636	674
Day	0		567		1455		1439		1484		1047		1136		1310	
AM Peak	-	-	-	-	05:00	09:00	06:00	11:00	06:00	11:00	09:00	11:00	10:00	11:00	06:00	11:00
Vol.	-	-	-	-	64	46	75	39	68	42	42	49	52	47	44	44
PM Peak	-	-	15:00	16:00	15:00	17:00	15:00	16:00	16:00	15:00	17:00	12:00	14:00	12:00	15:00	16:00
Vol.	-	-	53	92	64	90	52	93	50	100	39	53	62	66	49	76

County of Renfrew
Public Works and Engineering

Page 2

Campbell Drive - 1.5km south of Usborne Street

Site Code:
Station ID:

Latitude: 0' 0.0000 South

Start Time	15-Aug-22		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB
12:00 AM	1	1	0	0	0	4	*	*	*	*	*	*	*	*	0	2
01:00	0	0	0	1	0	1	*	*	*	*	*	*	*	*	0	1
02:00	1	0	0	0	1	1	*	*	*	*	*	*	*	*	1	0
03:00	1	0	2	0	1	0	*	*	*	*	*	*	*	*	1	0
04:00	13	0	9	0	10	0	*	*	*	*	*	*	*	*	11	0
05:00	55	12	57	3	48	3	*	*	*	*	*	*	*	*	53	6
06:00	84	19	71	21	69	15	*	*	*	*	*	*	*	*	75	18
07:00	72	17	71	21	72	11	*	*	*	*	*	*	*	*	72	16
08:00	48	33	59	34	45	40	*	*	*	*	*	*	*	*	51	36
09:00	21	39	43	45	44	50	*	*	*	*	*	*	*	*	36	45
10:00	27	40	44	37	37	46	*	*	*	*	*	*	*	*	36	41
11:00	31	49	38	38	37	41	*	*	*	*	*	*	*	*	35	43
12:00 PM	44	31	39	36	31	39	*	*	*	*	*	*	*	*	38	35
01:00	37	30	32	40	38	33	*	*	*	*	*	*	*	*	36	34
02:00	30	36	42	44	*	*	*	*	*	*	*	*	*	*	36	40
03:00	51	66	40	62	*	*	*	*	*	*	*	*	*	*	46	64
04:00	42	88	37	118	*	*	*	*	*	*	*	*	*	*	40	103
05:00	43	92	39	79	*	*	*	*	*	*	*	*	*	*	41	86
06:00	36	42	38	76	*	*	*	*	*	*	*	*	*	*	37	59
07:00	17	30	24	36	*	*	*	*	*	*	*	*	*	*	20	33
08:00	9	23	22	36	*	*	*	*	*	*	*	*	*	*	16	30
09:00	10	14	13	24	*	*	*	*	*	*	*	*	*	*	12	19
10:00	2	6	4	6	*	*	*	*	*	*	*	*	*	*	3	6
11:00	1	4	2	9	*	*	*	*	*	*	*	*	*	*	2	6
Lane Day	676	672	726	766	433	284	0	0	0	0	0	0	0	0	698	723
	1348		1492		717		0		0		0		0		1421	
AM Peak	06:00	11:00	06:00	09:00	07:00	09:00	-	-	-	-	-	-	-	-	06:00	09:00
Vol.	84	49	71	45	72	50	-	-	-	-	-	-	-	-	75	45
PM Peak	15:00	17:00	14:00	16:00	13:00	12:00	-	-	-	-	-	-	-	-	15:00	16:00
Vol.	51	92	42	118	38	39	-	-	-	-	-	-	-	-	46	103

Comb. Total	1348	2059	2172	1439	1484	1047	1136	2731
ADT	ADT 1,346	AADT 1,346						

County of Renfrew
Public Works and Engineering

Page 1

Campbell Drive - 1.5km south of Usborne Street
Speed Study

Site Code:
Station ID:

Latitude: 0' 0.0000 South

SB, NB

Start Time	1 24	25 32	33 40	41 48	49 56	57 64	65 72	73 80	81 88	89 96	97 104	105 112	113 120	121 9999	Total
08-09-22	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	0	0	0	1	0	2	0	16	36	25	25	5	2	1	113
16:00	2	0	0	0	1	0	11	11	32	37	26	14	4	3	141
17:00	0	0	0	0	0	1	0	8	33	36	35	9	2	1	125
18:00	0	0	0	0	0	0	3	4	18	11	10	11	2	1	60
19:00	0	0	0	0	0	1	2	4	12	10	8	4	1	3	45
20:00	0	0	0	0	1	1	2	6	9	7	3	5	3	0	37
21:00	0	0	0	0	0	1	1	5	7	2	9	2	1	1	29
22:00	0	0	0	0	1	1	0	0	3	5	2	0	0	0	12
23:00	0	0	0	0	0	0	0	0	0	2	2	1	0	0	5
Total	2	0	0	1	3	7	19	54	150	135	120	51	15	10	567

Daily

15th Percentile : 79 KPH
50th Percentile : 90 KPH
85th Percentile : 102 KPH
95th Percentile : 109 KPH

Mean Speed(Average) : 91 KPH
15 KPH Pace Speed : 81-95 KPH
Number in Pace : 268
Percent in Pace : 47.3%
Number of Vehicles > 80 KPH : 481
Percent of Vehicles > 80 KPH : 84.8%

**County of Renfrew
Public Works and Engineering**

Page 2

**Campbell Drive - 1.5km south of Usborne Street
Speed Study**

Site Code:
Station ID:

Latitude: 0' 0.0000 South

SB, NB

Start Time	1	25	33	41	49	57	65	73	81	89	97	105	113	121	Total
	24	32	40	48	56	64	72	80	88	96	104	112	120	9999	
08-10-22	0	0	0	0	0	0	1	1	1	1	0	0	0	0	4
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2
03:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	0	1	2	4	2	0	0	9
05:00	0	0	0	0	1	0	0	4	10	15	23	11	3	2	69
06:00	0	0	0	0	1	0	2	0	15	20	16	12	3	3	72
07:00	0	0	0	0	0	0	0	8	23	16	19	9	3	6	84
08:00	0	0	0	0	0	0	14	6	20	23	15	8	4	2	92
09:00	0	0	0	0	0	1	2	16	27	18	21	6	2	0	93
10:00	0	0	3	0	0	1	2	9	25	15	16	3	0	1	75
11:00	1	0	0	0	0	0	6	13	27	19	13	4	0	1	84
12 PM	0	0	0	0	1	0	3	11	18	16	20	9	3	0	81
13:00	0	0	0	0	0	1	5	13	17	23	8	1	1	0	69
14:00	0	0	0	0	0	0	2	8	22	21	15	4	2	1	75
15:00	0	0	1	0	0	1	2	16	32	25	33	8	9	1	128
16:00	0	0	1	0	0	0	4	9	43	28	37	9	2	0	133
17:00	1	1	4	0	0	0	4	11	30	31	35	14	6	3	140
18:00	0	0	0	1	1	4	4	5	6	14	16	9	4	2	66
19:00	0	0	0	0	0	1	1	6	10	19	9	3	4	1	54
20:00	0	0	0	1	0	3	5	9	13	16	10	3	1	0	61
21:00	0	0	0	0	0	0	1	7	6	3	7	5	0	0	29
22:00	4	0	0	0	0	0	3	5	2	5	6	1	1	1	28
23:00	0	0	0	0	0	0	0	0	2	2	1	1	0	0	6
Total	6	1	9	2	4	12	61	157	352	332	325	122	48	24	1455

Daily

15th Percentile : 78 KPH
50th Percentile : 90 KPH
85th Percentile : 102 KPH
95th Percentile : 110 KPH

Mean Speed(Average) : 91 KPH
15 KPH Pace Speed : 81-95 KPH
Number in Pace : 642
Percent in Pace : 44.1%
Number of Vehicles > 80 KPH : 1203
Percent of Vehicles > 80 KPH : 82.7%

County of Renfrew
Public Works and Engineering

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Campbell Drive - 1.5km south of Usborne Street
Speed Study

Site Code:
Station ID:

Latitude: 0' 0.0000 South

SB, NB

Start Time	1	25	33	41	49	57	65	73	81	89	97	105	113	121	Total
	24	32	40	48	56	64	72	80	88	96	104	112	120	9999	
08-11-22	0	0	0	0	0	0	0	0	0	1	1	0	1	0	3
01:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
04:00	0	0	0	0	0	0	0	2	1	4	2	0	1	0	10
05:00	0	0	0	0	0	0	1	5	14	8	14	15	3	0	60
06:00	0	0	0	0	0	0	0	2	11	23	34	9	7	1	87
07:00	0	0	0	0	0	2	2	17	12	22	26	8	1	3	93
08:00	0	0	0	0	0	0	5	13	19	21	20	11	5	1	95
09:00	0	0	1	0	0	0	5	9	20	13	21	6	1	1	77
10:00	0	0	0	0	0	1	2	8	28	10	16	6	1	1	73
11:00	0	0	0	0	0	0	5	10	22	20	17	4	0	1	79
12 PM	1	0	0	0	0	2	3	10	17	10	14	6	3	2	68
13:00	0	0	0	0	0	1	3	13	20	16	18	2	3	1	77
14:00	0	0	0	1	0	3	7	8	17	16	17	3	2	0	74
15:00	0	0	0	0	6	0	7	14	30	20	37	14	3	2	133
16:00	0	0	0	0	0	0	0	14	22	30	51	13	1	1	132
17:00	0	0	0	0	0	1	2	11	21	37	27	8	6	1	114
18:00	0	0	0	0	0	0	3	5	11	14	21	16	4	2	76
19:00	0	0	0	0	0	1	0	7	15	11	12	6	2	1	55
20:00	0	0	0	0	0	2	0	6	12	17	9	6	2	2	56
21:00	0	0	0	0	0	2	0	5	15	5	8	0	1	1	37
22:00	0	0	0	0	2	0	4	4	5	5	4	1	0	0	25
23:00	0	0	0	0	0	0	2	2	3	2	2	0	0	1	12
Total	1	0	1	1	8	15	51	165	317	305	371	135	47	22	1439

Daily

15th Percentile : 78 KPH
 50th Percentile : 91 KPH
 85th Percentile : 103 KPH
 95th Percentile : 110 KPH

Mean Speed(Average) : 92 KPH
 15 KPH Pace Speed : 90-104 KPH
 Number in Pace : 638
 Percent in Pace : 44.3%
 Number of Vehicles > 80 KPH : 1197
 Percent of Vehicles > 80 KPH : 83.2%

**County of Renfrew
Public Works and Engineering**

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**Campbell Drive - 1.5km south of Usborne Street
Speed Study**

Site Code:
Station ID:

Latitude: 0' 0.0000 South

SB, NB

Start Time	1 24	25 32	33 40	41 48	49 56	57 64	65 72	73 80	81 88	89 96	97 104	105 112	113 120	121 9999	Total
08-12-22	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
01:00	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
02:00	0	0	0	0	0	0	0	3	0	1	0	0	0	0	4
03:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	0	1	1	7	0	2	0	11
05:00	0	0	0	0	0	1	2	0	9	5	10	8	2	0	37
06:00	0	0	0	0	0	0	2	5	9	22	21	11	9	4	83
07:00	0	0	1	0	0	0	1	7	17	12	20	12	2	1	73
08:00	0	0	0	0	0	4	5	13	25	12	12	7	2	1	81
09:00	0	0	0	0	0	0	7	13	20	19	19	4	0	0	82
10:00	0	0	0	0	2	2	3	10	23	13	20	6	0	0	79
11:00	0	0	0	0	1	0	1	11	18	20	14	7	1	0	73
12 PM	0	0	0	0	0	0	0	13	26	21	12	8	3	0	83
13:00	0	0	0	0	1	0	1	12	21	26	16	7	5	0	89
14:00	0	0	0	1	4	0	3	15	21	30	24	9	2	0	109
15:00	0	0	0	0	0	0	5	9	36	34	43	12	3	2	144
16:00	0	0	0	0	0	1	6	18	37	35	28	16	4	3	148
17:00	0	0	0	0	0	2	1	14	30	20	26	18	4	1	116
18:00	1	1	0	0	0	2	3	8	29	15	14	10	1	2	86
19:00	1	0	0	0	0	1	0	6	10	13	12	6	0	0	49
20:00	0	0	0	0	0	0	3	14	20	12	8	2	2	1	62
21:00	0	0	0	0	0	2	1	7	12	5	3	2	0	2	34
22:00	0	0	0	0	0	0	1	4	7	3	2	0	1	0	18
23:00	0	0	0	0	0	0	3	5	6	4	1	0	0	0	19
Total	2	1	1	1	8	15	49	187	380	323	312	145	43	17	1484

Daily

15th Percentile : 78 KPH
50th Percentile : 90 KPH
85th Percentile : 103 KPH
95th Percentile : 110 KPH

Mean Speed(Average) : 91 KPH
15 KPH Pace Speed : 81-95 KPH
Number in Pace : 663
Percent in Pace : 44.7%
Number of Vehicles > 80 KPH : 1220
Percent of Vehicles > 80 KPH : 82.2%

County of Renfrew
Public Works and Engineering

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Campbell Drive - 1.5km south of Usborne Street
Speed Study

Site Code:
Station ID:

Latitude: 0' 0.0000 South

SB, NB

Start	1	25	33	41	49	57	65	73	81	89	97	105	113	121	
Time	24	32	40	48	56	64	72	80	88	96	104	112	120	9999	Total
08-13-															
22	0	0	0	0	0	1	0	1	4	3	0	2	0	0	11
01:00	0	0	0	0	0	0	0	0	2	1	1	0	0	0	4
02:00	0	0	0	0	0	0	0	1	0	0	1	1	0	0	3
03:00	0	0	0	0	0	0	0	1	0	0	0	0	2	0	3
04:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
05:00	0	0	0	0	0	0	0	0	2	2	0	1	1	0	6
06:00	0	0	0	0	0	0	0	5	7	3	6	3	1	0	25
07:00	0	0	0	0	0	0	3	4	8	8	11	7	2	0	43
08:00	0	0	0	0	2	0	3	8	8	10	14	9	0	0	54
09:00	0	0	0	0	0	1	2	8	20	17	17	8	0	0	73
10:00	0	0	0	0	1	0	3	13	18	9	15	9	3	0	71
11:00	0	0	1	0	3	3	2	12	31	13	12	6	5	1	89
12 PM	0	1	0	0	0	1	4	14	14	17	14	10	2	0	77
13:00	0	1	1	0	0	3	0	11	20	16	15	5	4	0	76
14:00	0	1	0	0	1	3	1	14	22	17	12	6	4	0	81
15:00	0	0	0	0	0	3	2	8	19	11	16	15	1	0	75
16:00	0	0	0	0	0	0	0	7	11	16	25	6	4	0	69
17:00	0	1	0	0	0	0	3	6	25	18	14	3	1	0	71
18:00	1	0	2	0	0	3	1	5	16	9	11	9	5	1	63
19:00	0	1	0	0	0	0	2	7	17	7	9	4	1	1	49
20:00	0	0	0	0	1	0	2	11	9	8	6	0	1	1	39
21:00	0	0	0	0	0	1	2	7	7	8	3	2	2	0	32
22:00	0	0	0	0	0	1	1	1	9	6	4	0	2	0	24
23:00	0	0	0	0	0	0	0	3	2	1	2	0	0	0	8
Total	1	5	4	0	8	20	31	148	271	200	208	106	41	4	1047

Daily

15th Percentile : 76 KPH
 50th Percentile : 89 KPH
 85th Percentile : 103 KPH
 95th Percentile : 111 KPH

Mean Speed(Average) : 90 KPH
 15 KPH Pace Speed : 81-95 KPH
 Number in Pace : 446
 Percent in Pace : 42.6%
 Number of Vehicles > 80 KPH : 830
 Percent of Vehicles > 80 KPH : 79.3%

County of Renfrew
Public Works and Engineering

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Campbell Drive - 1.5km south of Usborne Street
Speed Study

Site Code:
Station ID:

Latitude: 0' 0.0000 South

SB, NB

Start Time	1 24	25 32	33 40	41 48	49 56	57 64	65 72	73 80	81 88	89 96	97 104	105 112	113 120	121 9999	Total
08-14-22	0	0	0	0	0	0	2	1	2	1	2	2	1	0	11
01:00	0	0	0	0	0	0	1	1	0	0	1	2	0	0	5
02:00	0	0	0	0	0	0	0	0	2	1	1	0	0	0	4
03:00	0	0	0	0	0	1	0	0	0	1	1	0	0	0	3
04:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
05:00	0	0	0	0	0	1	0	0	1	0	1	0	0	0	3
06:00	0	0	0	0	0	0	0	2	3	6	1	0	1	0	13
07:00	0	0	0	0	0	0	0	2	6	5	8	2	0	0	23
08:00	0	0	0	0	0	0	3	7	9	8	8	2	1	0	38
09:00	0	2	0	0	0	0	1	7	14	13	13	3	2	1	56
10:00	0	0	1	0	0	1	4	10	19	23	14	12	2	0	86
11:00	1	0	0	0	1	1	7	14	18	30	14	5	2	1	94
12 PM	1	0	1	0	0	1	0	19	39	16	24	8	1	0	110
13:00	0	7	1	0	1	2	8	10	20	18	15	13	3	1	99
14:00	0	0	0	1	0	1	1	13	21	41	21	8	6	0	113
15:00	0	1	0	1	0	1	5	7	32	17	20	5	3	0	92
16:00	0	1	0	0	0	2	2	9	16	27	24	5	4	0	90
17:00	0	0	1	0	0	0	5	5	12	14	13	3	3	0	56
18:00	0	0	0	0	0	0	2	2	15	25	14	13	3	0	74
19:00	0	0	0	0	0	1	0	14	16	18	14	4	2	1	70
20:00	0	0	0	0	0	0	5	9	13	9	5	5	0	0	46
21:00	0	0	0	0	0	1	5	4	8	4	5	3	0	0	30
22:00	0	0	0	0	0	0	0	2	1	4	2	1	0	0	10
23:00	0	0	0	0	0	0	1	0	2	3	2	1	0	0	9
Total	2	11	4	2	2	13	52	138	270	284	223	97	34	4	1136

Daily

15th Percentile : 76 KPH
50th Percentile : 90 KPH
85th Percentile : 102 KPH
95th Percentile : 110 KPH

Mean Speed(Average) : 90 KPH

15 KPH Pace Speed : 82-96 KPH

Number in Pace : 520

Percent in Pace : 45.8%

Number of Vehicles > 80 KPH : 912

Percent of Vehicles > 80 KPH : 80.3%

County of Renfrew
Public Works and Engineering

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Campbell Drive - 1.5km south of Usborne Street
Speed Study

Site Code:
Station ID:

Latitude: 0' 0.0000 South

SB, NB

Start Time	1 24	25 32	33 40	41 48	49 56	57 64	65 72	73 80	81 88	89 96	97 104	105 112	113 120	121 9999	Total
08-15-22	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
03:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	0	1	4	4	3	0	1	13
05:00	0	0	0	0	0	0	1	8	8	10	28	7	5	0	67
06:00	0	0	0	0	0	1	0	10	18	23	38	9	1	3	103
07:00	0	0	0	0	0	0	2	5	16	23	24	12	5	2	89
08:00	1	1	0	0	0	1	5	7	22	16	17	7	3	1	81
09:00	3	0	0	0	1	1	3	15	14	12	8	1	1	1	60
10:00	0	0	0	0	0	1	7	15	17	14	9	4	0	0	67
11:00	0	1	0	0	0	2	3	14	28	16	12	4	0	0	80
12 PM	0	0	1	0	0	1	4	13	21	16	13	4	2	0	75
13:00	1	0	1	0	0	0	2	10	13	22	11	5	2	0	67
14:00	0	1	1	0	0	3	6	14	14	13	10	2	1	1	66
15:00	0	0	0	1	2	1	7	23	34	23	22	2	2	0	117
16:00	0	0	0	0	0	0	3	15	34	31	29	17	1	0	130
17:00	0	0	0	1	0	2	1	8	32	42	34	13	1	1	135
18:00	0	0	0	0	0	0	3	14	20	16	19	2	4	0	78
19:00	0	0	0	0	0	1	4	5	12	7	11	2	5	0	47
20:00	0	0	0	0	0	2	1	7	9	3	7	1	2	0	32
21:00	0	0	0	0	0	0	0	3	8	6	5	2	0	0	24
22:00	0	0	0	0	0	1	1	2	1	2	1	0	0	0	8
23:00	0	0	0	0	0	0	0	1	1	1	1	0	1	0	5
Total	5	3	3	2	3	17	53	189	324	301	304	98	36	10	1348

Daily

15th Percentile : 76 KPH
50th Percentile : 89 KPH
85th Percentile : 102 KPH
95th Percentile : 109 KPH

Mean Speed(Average) : 90 KPH
15 KPH Pace Speed : 81-95 KPH
Number in Pace : 587
Percent in Pace : 43.5%
Number of Vehicles > 80 KPH : 1073
Percent of Vehicles > 80 KPH : 79.6%

County of Renfrew
Public Works and Engineering

Page 8

Campbell Drive - 1.5km south of Usborne Street
Speed Study

Site Code:
Station ID:

Latitude: 0' 0.0000 South

SB, NB

Start	1	25	33	41	49	57	65	73	81	89	97	105	113	121	
Time	24	32	40	48	56	64	72	80	88	96	104	112	120	9999	Total
08-16-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
04:00	0	0	0	0	0	0	0	0	2	1	4	1	1	0	9
05:00	0	0	0	0	0	0	1	3	5	9	23	14	4	1	60
06:00	0	0	0	0	0	1	4	3	13	20	29	16	2	4	92
07:00	0	0	0	0	0	0	3	6	19	25	23	11	2	3	92
08:00	0	0	0	0	0	0	4	21	20	20	16	10	2	0	93
09:00	1	0	0	0	4	5	6	9	18	24	15	3	3	0	88
10:00	0	1	1	0	2	1	1	17	25	6	19	6	2	0	81
11:00	0	2	2	4	1	2	11	12	22	7	7	5	1	0	76
12 PM	0	0	0	0	1	3	5	6	19	18	12	6	4	1	75
13:00	0	0	1	0	1	0	5	14	17	14	14	3	3	0	72
14:00	0	0	0	0	0	4	14	11	16	14	17	7	1	2	86
15:00	0	0	2	0	0	3	1	14	21	23	25	9	3	1	102
16:00	0	0	1	0	0	1	5	13	41	51	26	15	2	0	155
17:00	0	0	0	0	0	2	4	11	28	24	30	17	2	0	118
18:00	0	0	2	0	0	1	5	17	28	25	20	11	4	1	114
19:00	0	0	0	0	0	1	11	11	8	11	11	2	2	3	60
20:00	0	0	0	0	1	0	1	10	21	13	8	2	1	1	58
21:00	0	0	0	2	0	0	5	4	9	11	2	3	1	0	37
22:00	0	0	0	0	0	0	1	2	1	3	1	2	0	0	10
23:00	0	0	0	0	0	0	4	2	1	0	2	2	0	0	11
Total	1	3	9	6	10	24	91	186	335	321	304	145	40	17	1492

Daily

15th Percentile : 75 KPH
50th Percentile : 89 KPH
85th Percentile : 103 KPH
95th Percentile : 110 KPH

Mean Speed(Average) : 90 KPH

15 KPH Pace Speed : 81-95 KPH

Number in Pace : 616

Percent in Pace : 41.3%

Number of Vehicles > 80 KPH : 1162

Percent of Vehicles > 80 KPH : 77.9%

County of Renfrew
Public Works and Engineering

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Campbell Drive - 1.5km south of Usborne Street
Speed Study

Site Code:
Station ID:

Latitude: 0' 0.0000 South

SB, NB

Start Time	1 24	25 32	33 40	41 48	49 56	57 64	65 72	73 80	81 88	89 96	97 104	105 112	113 120	121 9999	Total
08-17-22	0	0	0	0	1	0	0	0	1	0	1	0	0	1	4
01:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	1	2	3	3	0	1	0	10
05:00	0	0	0	0	0	0	2	4	4	11	13	10	5	2	51
06:00	1	0	0	0	0	0	3	1	19	16	25	8	10	1	84
07:00	0	0	0	0	0	0	1	6	13	25	22	8	4	4	83
08:00	0	0	0	0	0	0	0	17	24	16	16	6	4	2	85
09:00	0	0	0	0	0	3	3	13	36	19	15	3	1	1	94
10:00	0	0	2	0	0	1	4	15	20	17	17	5	1	1	83
11:00	0	0	0	0	1	1	4	11	17	21	15	5	1	2	78
12 PM	0	0	0	0	0	2	5	8	23	11	11	7	3	0	70
13:00	0	0	1	0	0	1	5	10	20	19	13	1	1	0	71
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	1	0	3	0	2	8	27	86	181	160	151	53	31	14	717

Daily

15th Percentile : 77 KPH
50th Percentile : 90 KPH
85th Percentile : 102 KPH
95th Percentile : 111 KPH

Mean Speed(Average) : 91 KPH
15 KPH Pace Speed : 81-95 KPH
Number in Pace : 321
Percent in Pace : 44.8%
Number of Vehicles > 80 KPH : 590
Percent of Vehicles > 80 KPH : 82.3%

Grand Total	21	24	34	15	48	131	434	1310	2580	2361	2318	952	335	122	10685
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Overall

15th Percentile : 77 KPH
50th Percentile : 90 KPH
85th Percentile : 102 KPH
95th Percentile : 110 KPH

Mean Speed(Average) : 90 KPH
15 KPH Pace Speed : 81-95 KPH
Number in Pace : 4646
Percent in Pace : 43.5%
Number of Vehicles > 80 KPH : 8668
Percent of Vehicles > 80 KPH : 81.1%

1.9 Road Rationalization

1.9.1 THE CONCEPT OF ROAD RATIONALIZATION

When first established the “Kings Highway System” provided a major inter-centre connector. A County or regional road system provide this same service on a reduced scale, connecting smaller centres of population and providing a “farm to market” road link. The local road acted as the final link in the system providing access to the abutting properties. These roles have changed very little over time. However, in many areas of the province significant changes in settlement patterns, population and employment have left some areas with designation of roads that is no longer appropriate. The Province of Ontario have taken the lead in the re-designation of their road system and has began to shift responsibility for some roads to the local, county and regional levels.

Road service providers are requested to demonstrate accountability for road maintenance services. The efficient and effective delivery of road services is a priority of municipal customers (the road user and taxpayer). One step in demonstrating accountability is in rationalizing road jurisdiction between a County (Region) and local municipalities. This rationalization will ensure that local roads serve primarily a local function and County (Regional) roads serve a through traffic function. Another benefit to the transferring of roads is a County (Regional) road that is a low priority to the upper tier, once transferred, may become a high priority for the local municipality and see significant improvements over time. Likewise a high volume local road carrying primarily through traffic may receive higher levels of service than the local municipality was able to provide.

The road rationalizing method as shown in this report permits a review of the road system within an county (region). The outcome of the review is a determination of the appropriate jurisdiction of a road or road section.

1.9.2 BY-LAWS

Each County or Regional municipality has been granted the power under the Public Transportation and Highway Improvement Act or their respective Regional Act to establish, maintain, add or remove designated roads from or to their county or regional road system.

The Public Transportation and Highway Improvement Act (PTHIA) provides for the establishment of a county road system. The county road systems were established in the early years of this century by by-laws passed by each council. The roads which comprise a county road system established under the PTHIA are county roads whether they be in a town, a village or a township. When the task of determining what alterations have been made to the physical system or when it is desirable to review municipal service delivery, a new system can be designated by a new establishing by-law. In effect, the slate is wiped clean and the road system starts afresh.

1.9.3 PRINCIPLES OF ROAD RATIONALIZATION

- Upper Tier roads, which are primarily transportation corridors, should provide continuous roadway service throughout the county or region.
- Upper Tier roads should be capable of being upgraded to a reasonable standard consistent with the service to be provided.
- Upper Tier roads should be along the shortest practical route, along existing roads and streets.

1.9.4 GOAL OF A ROAD RATIONALIZATION STUDY

- To develop a County (Regional) Road System that reflects the realities of today and beyond.

1.9.5 TERMS OF REFERENCE

- Conduct a road rationalization study, evaluating criteria prepared by the Ministry of Transportation in their document “Upper Tier Road Classification Criteria”. Modifying the criteria based on information as shown in this document.
- This review will focus on the efficient and effective delivery of all road services within the county or region.
- Transfer roads to the local municipalities which serve primarily a local function.
- Transfer roads to the County (Region) which primarily serve a through traffic (regional) function.
- Consider road condition and compensation throughout the discussion of road transfers.
- Involve the local municipalities in the decision making process by encouraging feedback and comments.

1.9.6 METHODOLOGY

The review of every road section within the county and local municipalities will be time consuming and probably unnecessary. By each local municipality identifying roads that they believe serve a through traffic function will save a time consuming road by road analysis.

- Review the criteria as shown in figure 1.9.7 and modify to meet specific municipal requirements.
- Apply the criteria to all existing county (regional) roads and roads identified by the local municipalities as candidates for upper tier road classification.
- Weight the criteria as shown in this document.

- Determine “cut-off” weight for inclusion of individual road sections in the County (Regional) system.
- Develop a County (Regional) road system.
- Determine the needs to be addressed (i.e. surface condition) prior to the transfer of roads to the local municipality or the acceptance of roads by the county (region)
- Determine impact on local municipalities as well as county or region.
- Present findings to council.

1.9.7 CRITERIA AND THE WEIGHTS APPLIED

Criterion 1 *Urban Center Connector*

Connect Urban Centres to each other or to a Kings Highway unless such a service is now provided by a Kings Highway.

Weighting Applied = 3

Criterion 2 *Kings Highway/Upper Tier Connector*

Connect major commercial and industrial areas, universities, hospitals, international border crossings and provincial boundaries, etc. to a Kings Highway or Upper Tier road.

Weighting Applied = 2

Criterion 3 *Heavy Industry Service*

Provide service within 4 km. of consistent major attractors or generators of heavy vehicles.

Weighting Applied = 2

Criterion 4 *Barrier Service*

Provide service parallel to and across major barriers to free traffic movement such as freeways, watercourse or congested areas.

Weighting Applied = 1

Criterion 5 *Resort Criterion*

Provide service within 4 km. of a major resort and/or recreational areas

Weighting Applied = 1

Criterion 6 *Urban Cell Service*

Provide service in urban areas within the cells formed by the Kings Highways and the streets selected by the above criteria, provided that the traffic demand existing on the street is considered predominantly for through traffic.

Weighting Applied = 0

Criterion 7 *Urban Arterial Extension*

Provide service on those roads which are extensions of urban arterial streets, from the urban limits to the first intersection where the AADT is below 700 vehicles per day, then connect to an upper tier road or a Kings Highway by the shortest route.

Weighting Applied = 3

Criterion 8 *Rural Cell Service*

Provide service in rural areas within the cells formed by the Kings Highways and the roads selected by the above criteria.

Weighting Applied = 0

Criterion 9 *Traffic Speed*

Provide service on roads where the speed limit is 80km/hr.

Weighting Applied = 1

Criterion 10 *Road Surface*

Provide service on roads with an asphalt surface.

Weighting Applied = 0.5

Criterion 11 *Traffic Volume*

Provide service on roads with current traffic volumes greater than 1000 vehicles per day.

Weighting Applied = 0.5

Criterion 12 *Road Right of Way*

Provide service on roads with at least a 66 foot wide right of way.

Weighting Applied = 1

1.9.8 APPLICATION GUIDELINES

Criterion 1 (Urban Centre Connector) and Criterion 7 (Urban Arterial Extension) are considered the most important criteria, as upper tier roads should serve as inter-municipal corridors to connect the small urban centres within the county or region. In order to apply criterion 1 a determination of what constitutes an urban centre is required.

Criterion 1 *Urban Centre Connector*

This criterion is intended to identify roads which provide service to and from centres having commercial and possibly industrial development.

Urban centres are areas of concentrated development, not “ribbon” development.

The criterion is not intended to be applied to residential subdivisions which are developing in rural areas. When the residential development grows to a sufficient size, upper tier road service may be considered through the application of all of the criteria.

Criterion 2 *Kings Highway/Upper Tier Road Connector*

The intent of this criterion is to extend the Kings Highway or upper tier road to connect to the facilities mentioned and not to provide for lateral connections between highways/upper tier roads.

Major institutional/commercial/industrial complexes are areas generating more than 1000 vehicle trips per day.

Criterion 3 *Heavy Industry Service*

It is not intended that it be an upper tier responsibility to provide service to the entrance of every attractor or generator of heavy vehicles in an area. Rather, it is intended that upper tier service be provided close to the

industry and that the distribution within the area of the industry be a lower tier responsibility.

“Close to” means within a distance of approximately 4.0km.

“Consistent major attractor or generator”, in the case of gravel pits and quarries, is defined as approximately 9 months or more of operation per year.

Landfill sites under the jurisdiction of, or serving the upper tier municipality, may also be considered as attractors of heavy vehicles and may be serviced by upper tier roads.

Criterion 4 *Barrier Service*

The intent of this criterion is to alleviate traffic on local roads by providing service parallel to or across barriers to traffic movement where upper tier service is justified. The barrier must be an obstacle to traffic wishing to cross it and it must be feasible to cross (i.e. freeways by interchanges and rivers by bridges)

Service is provided “parallel to” only if there is no other upper tier or provincial road providing that service within a reasonable distance and only along roadways which are used to reach barrier crossings.

Criterion 5 *Resort Criterion*

The intent of this criterion is to provide upper tier service close to resort/recreational areas or to a lower tier road system that distributes the traffic.

“Close to” means within a distance of approximately 4.0km from the edge of the resort development.

A major resort/recreational area is an area generating a minimum of 700 vehicle trips per day during normal season of operation.

Criterion 6 *Urban Cell Service*

The intent of this criterion is to identify roads in the cell under consideration at the spacing noted. The roads so identified must function predominately for through movement of traffic.

Roads which function as minor collectors for trips with origin and destination within the cell should be rejected.

The cell population density considered in identifying the appropriate spacing should be either the daytime or night time population whichever is greater.

Population Density	Additional service required when spacing of roads is greater than
less than 40 persons/hectare	2000m
between 40 and 125 persons/ha	1200m

Criterion 6 and 8 are not included in the original application of criteria but could be used as a rationale for including additional roads or road sections to complete the road network. The reasoning behind excluding this criterion in the original application is due to the good condition of most local roads and the fact the majority of population has access to a motor vehicle or alternate transportation services (i.e. transit).

Criterion 7 *Urban Arterial Extension*

The intent of this criterion is to provide for the extension of urban arterial streets into the rural areas to connect with an upper tier road or a Kings Highway. Traffic counts should be taken on both sides of the intersection with the upper tier and the extension continued through the

intersection, only if both AADT's equal or exceed 700 vehicles per day.

Criterion 8 *Rural Cell Service*

The intent of this criterion is to provide upper tier service within the cell formed by the application of criteria 1 - 7 inclusive at spacing related to population density within the cells.

Upper Tier roads or provincial highways in the subject upper tier or in adjacent upper tiers act as rural cell boundaries.

Population Density	Additional service required when spacing of roads is greater than
less than 1 person/km ²	no additional service
1 person/km ²	25 km
between 1 and 4 persons/km ²	20 km
between 4 and 8 persons/km ²	15 km
between 8 and 16 persons/km ²	10 km
greater than 16 persons/km ²	6 km

Criterion 9 *Traffic Speeds*

This criterion is intended to identify those roads which have a speed limit of 80 km/h. This is deemed to be a desirable speed limit allowing roads which predominately serve as inter-municipal links in a road network to do so efficiently.

Criterion 10 *Road Surfaces*

This criterion is intended to identify those roads with an asphalt surface. These roads were deemed to be more appropriate to serve as upper tier roads, as this surface material would be more durable to withstand the greater traffic volumes, heavier vehicles and higher speeds as anticipated on upper tier roads.

Criterion 11 *Traffic Volumes*

This criterion was intended to identify roads with current traffic volumes greater than 1000 vehicles per day.

Criterion 12 *Road Right of Way*

The intent of this criterion is to identify roads with a right of way width of 66 feet. It is appropriate to be considered for an upper tier road designation that the road have at least a standard right of way.

Apply each of the criteria in section 1.9.7 to the existing upper tier road system and to local roads identified by each municipality as a provider of through traffic service. Criterion 6 and 8 are not included in the original application of criteria but could be used as a rationale for including additional roads or road sections to complete the road network.

1.9.9 CUT-OFF WEIGHT

After the criteria has been applied to each road being analyzed it is possible to determine how much weight each road has accumulated. By setting a minimum weighting of six points, a cut-off threshold is established for including a road in the upper tier system.

This would mean that to qualify for upper tier designation a road must meet either the criteria for Urban Centre Connector or the criteria for Urban Arterial Extension worth 3 points, plus all four criteria for Traffic Speed, Road Surface, Traffic Volume and Road Right-of-Way worth a combined total of 3 points, or another combination of criteria to have a total weight of 6. This becomes the yardstick to be used for recommending the redesignation of roads.

Criteria	Weight	YES/NO	Score	Rational
Criterion 1 - Urban Centre Connector	3	NO	0	This would be an Arterial Connector between County Roads 45 & 3
Criterion 2 - King's Highway/Upper Teir Connector	2	YES	2	This would be an Arterial Connector between County Roads 45 & 3
Criterion 3 - Heavy Industry Service	2	YES	2	Pit Traffic and future industrial park expansion
Criterion 4 - Barrier Service	1	NO	0	Very little improvement in traffic flow
Criterion 5 - Resort Criterion	1	NO	1	No resort involved
Criterion 6 - Urban Cell Service	0	NO	0	This would be a Connector between County Roads
Criterion 7 - Urban Arterial Extension	3	YES	3	Arterial Connection
Criterion 8 - Rural Cell Service	0	YES	0	Currently being used for residential access
Criterion 9 - Traffic Speed	1	YES	1	Speed limit varies throughout the corridor
Criterion 10 - Road Surface	0.5	YES	0.5	a varried of hard surface treatments are currently being used.
Criterion 11 - Traffic Volume	0.5	YES	0.5	>1000 ADDT
Criterion 12 - Road Right-of-Way	1	YES	1	Varries throughout corridor.
Totals	15		11	

* To qualify for upper tier designation a road must meet either the criteria for urban centre connector or the criteria for urban arterial extension worth 3 points, plus all four criteria for traffic speed, road surface, traffic volume and road right- of-way worth a combined total of 3 points, or another combination of criteria to have a total weight of 6. This becomes the yardstick to be used for recommending the redesignation of roads.

Criterion 1 - Urban Centre Connector	3	NO	0	This would be an Arterial Connector between County Roads 45 & 3
Criterion 7 - Urban Arterial Extension	3	YES	3	Arterial Connection
Criterion 9 - Traffic Speed	1	YES	1	Speed limit varies throughout the corridor
Criterion 10 - Road Surface	0.5	YES	0.5	a varried of hard surface treatments are currently being used.
Criterion 11 - Traffic Volume	0.5	YES	0.5	>1000 ADDT
Criterion 12 - Road Right-of-Way	1	YES	1	Varries throughout corridor.
Totals			6	

CORPORATE POLICIES AND PROCEDURES			
SECTION: Public Works & Engineering			POLICY #: PW-19
POLICY: Road Rationalization			
DATE: February 2023	REV. DATE:	COVERAGE: All County Roads	PAGE #: 1 of 14

POLICY STATEMENT

The County of Renfrew believes that a roadway network performs most efficiently and effectively when the roads comprising that network are designed, built and operated to serve their intended purposes.

When first established the “Kings Highway System” provided a major inter-centre connector. The County Road system provides this same service on a reduced scale, connecting smaller centres of population and providing a “farm to market” road link. The local road acts as the final link in the system providing access to the abutting properties. These roles have changed very little over time. However, in many areas of the province significant changes in settlement patterns, population and employment have left some areas with designation of roads that is no longer appropriate.

The efficient and effective delivery of road services is a priority of municipal customers (the road user and taxpayer). One step in demonstrating accountability is in rationalizing road jurisdiction between a County and local municipalities. This rationalization policy will ensure that local roads serve primarily a local function and County roads serve a through traffic function. Another benefit to the transferring of roads is that a County road that is a low priority to the upper tier, once transferred, may become a high priority for the local municipality and see significant improvements over time.

The road rationalizing method as shown in this Policy permits a review of the road system within the County. The outcome of the review is a determination of the appropriate jurisdiction of a road or road section. Likewise a high volume local road carrying primarily through traffic may receive higher levels of service than the local municipality was able to provide.

Each County or Regional municipality has been granted the power under the Public Transportation and Highway Improvement Act or their respective Regional Act to establish, maintain, add or remove designated roads from or to their county or regional road system.

The Public Transportation and Highway Improvement Act (PTHIA) provides for the establishment of a county road system. The county road systems were established in the early years of this century by by-laws passed by each council. The roads which comprise a county road system established under the PTHIA are county roads whether they be in a town, a village or a township. When the task of determining what alterations have been made to the physical system or when it is desirable to review municipal service delivery, a new system can be

CORPORATE POLICIES AND PROCEDURES			
SECTION: Public Works & Engineering		POLICY #: PW-19	
POLICY: Road Rationalization			
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designated by a new establishing by-law. In effect, the slate is wiped clean and the road system starts afresh.

POLICY CONTENT

PRINCIPLES OF ROAD RATIONALIZATION

- Upper tier roads, which are primarily transportation corridors, should provide continuous roadway service throughout the County.
- Upper tier roads should be capable of being upgraded to a reasonable standard consistent with the service to be provided.
- Upper tier roads should be along the shortest practical route, along existing roads and streets.

TERMS OF REFERENCE

- Evaluating criteria as outlined in the Application Guidelines.
- The request for Road Rationalization must be made as a Resolution of the lower tier municipality to the County to begin the process.
- The review will focus on the efficient and effective delivery of all road services within the County.
- Transfer roads to the local municipalities which serve primarily a local function.
- Transfer roads to the County which primarily serve a through traffic function.
- Consider road condition and compensation throughout the discussion of road transfers. A municipality may upgrade the roadway or provide the estimated amount of money for rehabilitation to the County.
- Pavement must meet or exceed the current County's Pavement Condition Index (PCI) of 70.
- Road Structure must meet or exceed the current County's standard specification as outlined in ***Policy PW-01, Roadway Classification and Design***. The County may request geotechnical testing from the municipality to confirm roadway structure.

CORPORATE POLICIES AND PROCEDURES			
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- Involve the local municipalities in the decision making process by encouraging feedback and comments.

METHODOLOGY

The review of every road section within the County and local municipalities will be time consuming and probably unnecessary. By each local municipality identifying roads that they believe serve a through traffic function will save a time consuming road by road analysis.

- Review the criteria as shown in CRITERION AND THE WEIGHTS APPLIED and modify to meet specific municipal requirements.
- Apply the criteria to all existing County roads and roads identified by the local municipalities as candidates for upper tier road classification.
- Weight the criteria as shown in this document.
- Determine “cut-off” weight for inclusion of individual road sections in the County system.
- Develop a County road system.
- Determine the needs to be addressed (i.e. surface condition) prior to the transfer of roads to the local municipality or the acceptance of roads by the county.
- Determine impact on local municipalities as well as County.
- Present findings to Operations Committee and County Council.

CRITERIA AND THE WEIGHTS APPLIED

Criterion 1 Urban Center Connector

Connect Urban Centres to each other or to a Kings Highway unless such a service is now provided by a Kings Highway.

Weighting Applied = 3

Criterion 2 Kings Highway/Upper Tier Connector

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Connect major commercial and industrial areas, universities, hospitals, international border crossings and provincial boundaries, etc. to a Kings Highway or Upper tier road.

Weighting Applied = 2

Criterion 3 Heavy Industry Service

Provide service within 4 kilometres of **consistent major attractors or generators** of heavy vehicles.

Weighting Applied = 2

Criterion 4 Barrier Service

Provide service parallel to and across major barriers to free traffic movement such as **freeways, watercourse or congested areas.**

Weighting Applied = 1

Criterion 5 Resort Criterion

Provide service within 4 kilometres of a major resort and/or recreational areas.

Weighting Applied = 1

Criterion 6 Urban Cell Service

Provide service in urban areas within the cells formed by the Kings Highways and **the streets selected** by the above criteria, provided that the traffic demand **existing on the** street is considered predominantly for through traffic.

Weighting Applied = 0

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Criterion 7 Urban Arterial Extension

Provide service on those roads which are extensions of urban arterial streets, from the urban limits to the first intersection where the Average Annual Daily Traffic (AADT) is below 700 vehicles per day, then connect to an upper tier road or a Kings Highway by the shortest route.

Weighting Applied = 3

Criterion 8 Rural Cell Service

Provide service in rural areas within the cells formed by the Kings Highways and the roads selected by the above criteria.

Weighting Applied = 0

Criterion 9 Traffic Speed

Provide service on roads where the speed limit is 80km/hr.

Weighting Applied = 1

Criterion 10 Road Surface

Provide service on roads with an asphalt surface.

Weighting Applied = 0.5

Criterion 11 Traffic Volume

Provide service on roads with current traffic volumes greater than 1000 vehicles per day.

Weighting Applied = 0.5

Criterion 12 Road Right of Way

Provide service on roads with at least a 66 foot wide right of way.

Weighting Applied = 1

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APPLICATION PROCEDURE

Criterion 1 (Urban Centre Connector) and Criterion 7 (Urban Arterial Extension) are considered the most important criteria, as upper tier roads should serve as inter-municipal corridors to connect the small urban centres within the County. In order to apply Criterion 1 a determination of what constitutes an urban centre is required.

Criterion 1 Urban Centre Connector

This criterion is intended to identify roads which provide service to and from centres having commercial and possibly industrial development.

Urban centres are areas of concentrated development, not “ribbon” development.

The criterion is not intended to be applied to residential subdivisions which are developing in rural areas. When the residential development grows to a sufficient size, upper tier road service may be considered through the application of all of the criteria.

Criterion 2 Kings Highway/Upper Tier Road Connector

The intent of this criterion is to extend the Kings Highway or upper tier road to connect to the facilities mentioned and not to provide for lateral connections between highways/upper tier roads.

Major institutional/commercial/industrial complexes are areas generating more than 1000 vehicle trips per day.

Criterion 3 Heavy Industry Service

It is not intended that it be an upper tier responsibility to provide service to the entrance of every attractor or generator of heavy vehicles in an area. Rather, it is intended that upper tier service be provided close to the industry and that the distribution within the area of the industry be a lower tier responsibility.

“Close to” means within a distance of approximately 4.0 kilometres.

“Consistent major attractor or generator”, in the case of gravel pits and quarries, is defined as approximately 9 months or more of operation per year.

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Landfill sites under the jurisdiction of, or serving the upper tier **municipality, may also be** considered as attractors of heavy vehicles and may be serviced **by upper tier roads.**

Criterion 4 Barrier Service

The intent of this criterion is to alleviate traffic on **local roads by providing service** parallel to or across barriers to traffic movement where upper tier service is justified. The barrier must be an obstacle to traffic wishing to cross it and it must be feasible to cross (i.e. freeways by interchanges and rivers by bridges).

Service is provided “parallel to” **only if there is no other upper tier or provincial road** providing that service within a reasonable distance and only along roadways which are used to reach barrier crossings.

Criterion 5 Resort Criterion

The intent of this criterion is to provide upper tier service close to resort/recreational areas or to a lower tier road system that distributes the traffic.

“Close to” **means within a distance of approximately 4.0 kilometres** from the edge of the resort development.

A **major resort/recreational area is an area** generating a minimum of 700 vehicle trips per day during normal season of operation.

Criterion 6 Urban Cell Service

The intent of this criterion is to identify roads in the cell under consideration at the spacing noted. The roads so identified must function predominately for through movement of traffic.

Roads which function as minor collectors for trips with origin and destination within the cell should be rejected.

The cell population density considered in identifying the appropriate spacing should be either the daytime or night time population whichever is greater.

Population Density

Additional service
Required when spacing
of roads is greater

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than

less than 40 persons/hectare	2000m
between 40 and 125 persons/ha	1200m

Criterion 7 Urban Arterial Extension

The intent of this criterion is to provide for the extension of urban arterial streets into the rural areas to connect with an upper tier road or a Kings Highway. Traffic counts should be taken on both sides of the intersection with the upper tier and the extension continued through the intersection, only if both AADTs equal or exceed 700 vehicles per day.

Criterion 8 Rural Cell Service

The intent of this criterion is to provide upper tier service within the cell formed by the application of criteria 1 - 7 inclusive at spacing related to population density within the cells.

Upper tier roads or provincial highways in the subject upper tier or in adjacent upper tiers act as rural cell boundaries.

Population Density	Additional service Required when spacing of roads is greater than
--------------------	--

less than 1 person/km ²	no additional service
1 person/ km ²	25 km
between 1 and 4 persons/km ²	20 km
between 4 and 8 persons/km ²	15 km
between 8 and 16 persons/km ²	10 km
greater than 16 persons/km ²	6 km

Criterion 9 Traffic Speeds

This criterion is intended to identify those roads which have a speed limit of 80 km/h. This is deemed to be a desirable speed limit allowing roads which predominately serve as inter-municipal links in a road network to do so efficiently.

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Criterion 10 Road Surfaces

This criterion is intended to identify those roads with an asphalt surface. These roads were deemed to be more appropriate to serve as upper tier roads, as this surface material would be more durable to withstand the greater traffic volumes, heavier vehicles and higher speeds as anticipated on upper tier roads.

Criterion 11 Traffic Volumes

This criterion was intended to identify roads with current traffic volumes greater than 1,000 vehicles per day.

Criterion 12 Road Right of Way

The intent of this criterion is to identify roads with a right of way width of 20.1 metres (66 feet). It is appropriate to be considered for an upper tier road designation that the road have at least a standard right of way.

Apply each of the criteria in this section to the existing upper tier road system and to local roads identified by each municipality as a provider of through traffic service. Criterion 6 and 8 are not included in the original application of criteria but could be used as a rationale for including additional roads or road sections to complete the road network. C The reasoning behind excluding this criterion in the original application is due to the good condition of most local roads and the fact the majority of population has access to a motor vehicle or alternate transportation services (i.e. transit).

After the criteria has been applied to each road being analyzed it is possible to determine how much weight each road has accumulated. By setting a minimum weighting of six points, a cut-off threshold is established for including a road in the upper tier system.

This would mean that to qualify for upper tier designation a road must meet either the criteria for Urban Centre Connector or the criteria for Urban Arterial Extension worth 3 points, plus all four criteria for Traffic Speed, Road Surface, Traffic Volume and Road Right-of-Way worth a combined total of 3 points, or another combination of criteria to have a total weight of 6. This becomes the yardstick to be used for recommending the re-designation of roads.

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POLICY STATEMENT

The County of Renfrew (County) believes that a roadway network performs most efficiently and effectively when the roads comprising that network are designed, built and operated to serve their intended purposes.

A classification system designates roads into different groups according to the type of service each group is intended to provide. By grouping roads with similar function and adopting a consistent set of standards, the County of Renfrew can improve transportation planning, road design, road maintenance, and road operations.

Therefore, this Policy dictates hierarchical systems of roadway classification, which shall apply to all roadways in the County Road system for maintenance and design.

POLICY DEFINITIONS

Arterial Road: Roads whose primary function is to move traffic. Property access is very much a secondary consideration and may be restricted. A distinction may be made between major and minor arterials depending on the volume and nature of the traffic.

Collector: Roads whose function is both traffic movement and property access. A balanced approach between these often conflicting needs is to be taken.

Laneways: Roads typically found in an urban environment providing access to the rear of properties in the town core areas.

Local Roads: Roads whose function is primarily to provide access to property. Traffic movement is very much a secondary consideration.

Rural Roadways: Roadways passing through largely undeveloped areas and having an open drainage system.

Seasonal Roads: Roads typically of the rural variety which are not maintained during the winter months. In the months during which the roads are accessible they serve the same function as a local roadway.

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Semi-Urban Roadways: Roadways passing through areas where the degree of development is approaching full development along a substantial portion of its length and may include those portions within an urban municipality or settlement. Such roads generally have an open drainage system but may be approaching or meeting warrants for drainage by closed (piped) systems. For Design Classification purposes, these roadways are grouped with Rural Roadways.

Significant Weather Event: An approaching or occurring weather hazard with the potential to pose a significant danger to users of the highways within a municipality.

Urban Roadways: Roads passing through areas where the degree of development is at or near full development along a substantial portion of its length and shall include those portions of road within an urban municipality or settlement. Such roads generally consist of curbs and gutters adjacent to the traveled portion of the roadway. Drainage is generally accommodated by a closed (piped) system.

POLICY CONTENT

1.0 MAINTENANCE CLASSIFICATIONS

Ontario Regulation 239/02, Minimum Maintenance Standards for Municipal Highways, under the Municipal Act provides a classification system for roads which must be used in establishing the minimum maintenance standards for all municipal roads.

The County shall annually review the classifications of County Road sections based on Regulation 239/02 and ensure the 'maintenance classification' for each section of road is up to date. The County also has approved 'Roadway Service Standards' which were developed to meet or exceed the requirements of Regulation 239/02. The County shall adhere to the requirements of the County Roadway Service Standards, as amended.

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2.0 DESIGN CLASSIFICATIONS

For design and asset management planning purposes, all roads in the County's road system shall be classified according to their roadside environment and function within the system. In establishing the design classification of County road sections, the characteristics provided in Table 1 and Table 2 shall be used for rural roadways and urban roadways respectively.

The characteristics for design classifications of County Roads dictated in Table 1 and Table 2 have been adapted from the Transportation Association of Canada (TAC) Geometric Design Manual. Table 1 and Table 2 of this Policy are for establishing the design classification for County Roads only. When undertaking design for County Roads, or considering requests which would result in changes to County Roads, the additional restrictions recommended by the TAC Geometric Design Manual for each road classification shall be taken into consideration.

The Design Classifications shall be used to establish consistent minimum design criteria and target life-cycle best practices for County Roads.

The ~~County Engineer~~ **Director of Public Works & Engineering, or designate**, shall maintain the roadway ~~ongoingly~~ design classification of each road section and make any necessary classification changes annually. Major review and updates to this Policy shall be undertaken in conjunction with each rationalization update, which is to be conducted every five years, or as directed by County Council.

Table 1
RURAL ROAD DESIGN CLASSIFICATIONS

TAC Classification (County Design Class)	Freeway (R4)	Arterial (R3)	Collector (R2)	Local (R1)
AADT	≥12,000	<12,000	<5,000	<1,000
Posted Speed (km/h)	50 – 120	50 – 90	40 – 80	40 – 80
Connections	freeways arterials	freeways. arterials, collectors	arterials, collectors, locals	collectors, locals

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Table 2
URBAN ROAD DESIGN CLASSIFICATIONS

TAC Classification (County Design Class)	Freeway / Expressway (U4)	Major Arterial (U4)	Minor Arterial (U3)	Collector (U2)	Local (U1)	Lane (U1)
AADT	>12,000	12,000 – 30,000	<12,000	<5000	<3,000	<500
Posted Speed (km/h)	80 – 110	50 – 80	40 – 80	40 – 80	≤50	≤30
Connections	freeways arterials	freeways. arterials, collectors	freeways. arterials, collectors	arterials, collectors, locals	collectors, locals	locals, lanes

3.0 DESIGN STANDARDS

Design standards for roads relate to safety and the longevity of the road in its current and future uses. The design standards for County Roads have been developed to ensure consistency across all sections in the system and that the design and construction of County Roads is becoming of their purpose, improving safety for all users.

3.1 Minimum and Desired Standards

The design standards for County Roads are based on the design classification of the individual road sections and have been developed incorporating MTO Design Manuals, the TAC Geometric Design Guide for Canadian Roads, and AASHTO Guide to Design of Pavement Structures. The minimum and desired standards considered in the design of County Road sections shall be as per Table 3.

Table 3
Minimum and Desired Design Standards

Standard	Rural		Urban	
	Minimum	Desired	Minimum	Desired
Design Speed (km/h)	R1 – 60 R2-R4 – 80	90	50	60

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Standard	Rural		Urban	
	Minimum	Desired	Minimum	Desired
Lane Width (m)	3.25	3.5	3.25	3.5
Hardened Shoulder / Clearance Width (m)	0.5	R1 & R2 – 1.0 R3 & R4 – 1.5	0.1	1.0
Overall Shoulder Width (m)	1.5	2.0	N/A	N/A
Alignment Adequacy	Fair with Warning Signs	Good	Fair with Warning Signs	Good
Right of Way (ROW) Width (m)	20	26	20	26
Surface Composition (mm of HMA)	R1 – 30 R2 – 80 R3 – 120 R4 – 130	R1 – 40 R2 – 100 R3 – 130 R4 – 140	U1 – 40 U2 – 80 U3 – 120 U4 – 130	U1 – 80 U2 – 100 U3 – 130 U4 – 140
Base Composition	150mm Granular 'A' over 350mm Granular 'B' or equivalent sub-base			

*Unless identified otherwise, values apply to all Design Classifications

*HMA = Hot Mix Asphalt

The County's Asset Management Plan does not incorporate growth and typically projects costs are based on rehabilitation to similar geometry. As such, though capacity is evaluated during road section evaluations, it is not considered during design of a road section. Where minimum design standards are determined to not being met on a road section, efforts shall be made to have this corrected during design and construction on that road section and budgeted for accordingly.

When determining the design standard to be utilized, the County shall consider a twenty (20) year forecast of growth in traffic based on historical data. A typical value to be utilized is a growth rate of 1.5% unless determined otherwise based on increased growth in certain areas of the County.

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3.2 Desired Road Cross-Sections

Included as Appendix A is a drawing illustrating the desired typical cross-sections for each design class. Circumstances may arise where the dimensions shown in the desired cross-sections may not be met; however, the proposed altered cross-section shall provide equivalent or greater strength of the corresponding desired typical cross-section and meet all other minimum design standards for the design classification of the road.

4.0 BEST PRACTICES

Best Practices should be structured with the goal that the right treatment takes place during the correct conditions for the life-cycle of a road in order to ensure that the return on investments in the County Road system is maximized. Achieving the recommended best practices outlined in this section may be limited due to the availability of funding or the prioritization of safety improvements. However, these Best Practices shall be used as a guideline when updating the County's Capital Asset Management Plan for Roads.

4.1 Road Improvement Methods

There are various types of improvement methods available in order to improve the condition of roads, and others continue to be developed. County staff shall continue to monitor new improvement methods which come available in the market and may present opportunities for Council consideration to pilot methods which may be considered viable economically and of benefit to County Roads.

The typical improvement methods currently considered on County Roads are provided in Table 4.

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Table 4
Available Road Improvement Strategies

Improvement Type	Typical Improvements	General Description
Maintenance	- Crack Sealing; - Patching;	Operational maintenance to seal cracks and patch potholes.
Preventative Maintenance	- Microsurfacing; - Surface Treatment Overlay; - Slurry Seal;	Capital 'maintenance' to seal the roadway and prolong the service life of asphalt.
Minor Rehabilitation	- HMA Overlay; - Mill & Pave;	Capital resurfacing to prolong service life of road overall. Will include drainage improvements.
Major Rehabilitation	- Pulverize & Pave; - Base & Surface;	Capital replacement of surface with base rehabilitation and/or stabilization. Will include drainage improvements.
Reconstruction	- Full Reconstruction; - Partial Reconstruction;	Replacement of surface, unsuitable base material, and drainage infrastructure.

Each improvement type provides certain benefits when applied at the appropriate time in the life-cycle of a roadway; however, there are also certain restrictions which must be considered when planning road improvements as provided below.

Maintenance improvements are typically relatively the lowest cost improvement type and provide the greatest return on investment (ROI) if undertaken as soon as necessary. Maintenance improvements, early in the life-cycle of the road surface, will prevent accelerated deterioration of the surface from water infiltration and freeze-thaw action. However, undertaking maintenance later in the lifecycle of the road, when PCI has fallen below 85, should only be considered as a holding pattern as it would no longer provide the increased service life it would if done sooner. Maintenance improvements should be planned to occur throughout the life of a road as needed but prioritized 4 – 5 years after a new surface is applied via minor rehabilitation, major rehabilitation, or reconstruction.

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Preventative maintenance improvements are typically the lowest cost Capital improvement which can be undertaken on roads. Preventative maintenance treatments will seal all cracks in the surface of the roadway to prevent water infiltration and significantly decrease deterioration from freeze-thaw action. However, undertaking preventative maintenance on a roadway with a PCI below 70, poor drainage, evident base issues, or poor alignment should only be considered as a holding pattern as it would not substantially improve the roadway or extend its service life. In order to maximize ROI, preventative maintenance should be planned to occur 8 – 10 years after a new surface is applied via minor rehabilitation, major rehabilitation, or reconstruction, when the PCI is 70 – 85.

Minor rehabilitation improvements typically come at a mid-range cost but can substantially prolong the service life of a road if completed at the right time in its life-cycle. Minor rehabilitation will provide a new surface and added strength to the roadway. However, undertaking minor rehabilitation on a roadway where there is evident base issues or where the PCI has fallen below 50 should only be considered as a holding pattern as it would only temporarily improve the road condition and relatively low service life extension for the expense. In order to maximize ROI, minor rehabilitation should be planned to occur 18 - 22 years after a new surface is applied via major rehabilitation, or reconstruction (8 – 14 years after preventative maintenance), when the PCI of the road is 50 – 65.

Major rehabilitation improvements typically come at a higher-range cost but will completely replace the road surface and substantially prolong the service life of a road so long as the base granular of the road are structurally sound. However, a greater treatment than major rehabilitation should be considered if there are poor alignments, a large amount of urban drainage infrastructure in poor condition, or substantial base issues over a large section of the road. In order to maximize ROI, major rehabilitation should be planned take place after the PCI has fallen below 45.

Reconstruction is the highest relative cost road improvement type on any road class. It will require complete removal and replacement of the existing surface, a substantial amount of base granular, and most if not all drainage infrastructure. Reconstruction should only be considered on roads with poor alignment, completely deteriorated/poor

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base structure, poor drainage infrastructure, and/or where minimum design standards cannot be achieved using another method. In order to maximize ROI, reconstruction (if required) should be planned to occur after the PCI has fallen below 40.

4.2 Life-Cycle Management

Managing the life-cycle of a roadway involves following best practices, to ensure that the treatment being applied for a particular section of road is appropriate for the condition and design standard for the road, and that it is the most cost efficient treatment at that stage in the road's life-cycle.

Figure 1 below, provides a graphical comparison of three different life-cycle scenarios, comparing the age of a road with its condition. The three different scenarios are as follows:

- “Do Nothing” – life-cycle of a newly constructed road where no improvement takes place at any point throughout its design life;
- “No Major or REC” – life-cycle of a newly constructed road where no large capital costs are incurred through Major Rehabilitation or Reconstruction and only Preventative Maintenance or Minor Rehabilitation takes place throughout the design life of the road; and
- “Best Practices” – life-cycle of a newly constructed road where the ‘return on investment’ is prioritized and the most beneficial improvement type takes place at the correct moment in the design life of the road.

It should be noted that Reconstruction should still be considered where a roadway has significant base issues, un-safe alignment, or other issues which cause the road section to not meet minimum design standards. Following reconstruction, the life-cycle could then be managed to target the Best Practices scenario.

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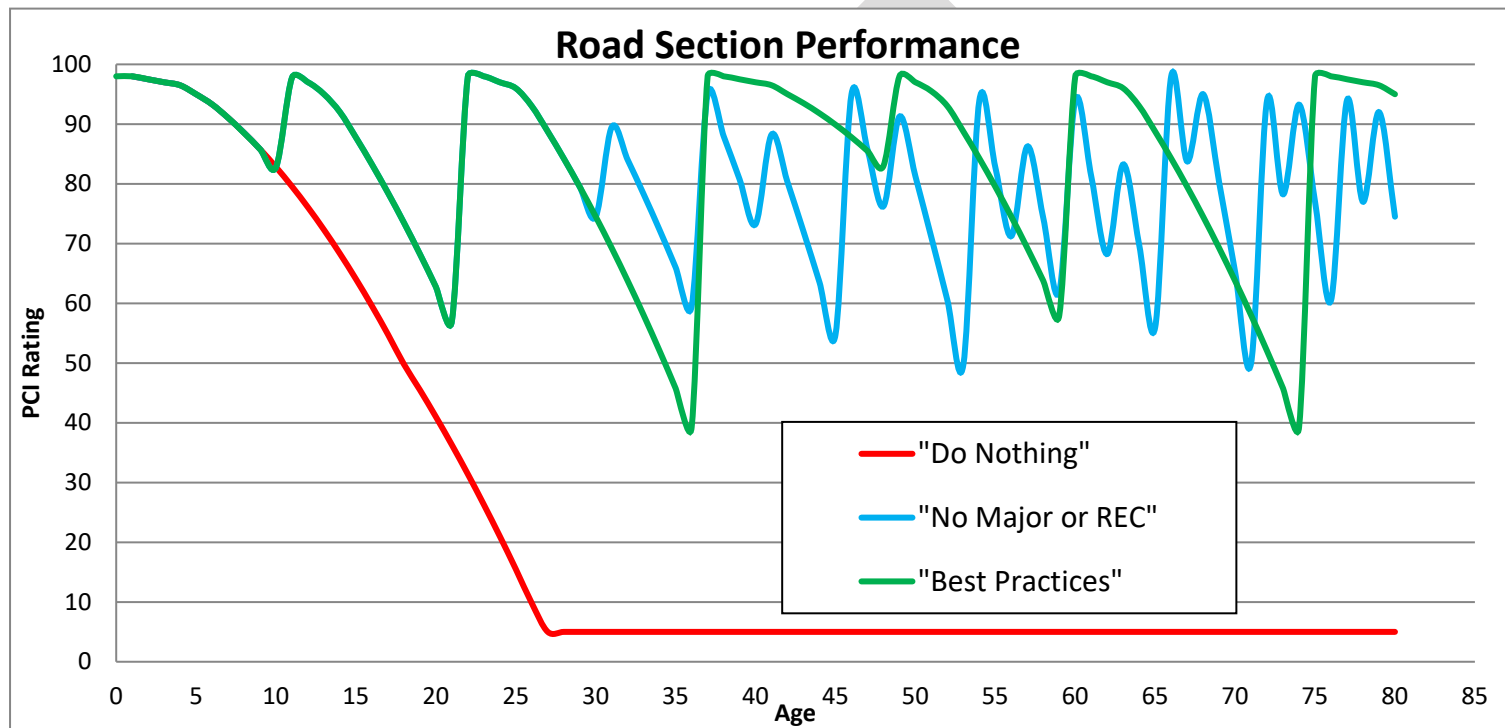


Figure 1 - Graphical Comparison of Road Deterioration based on Different Life-Cycle Scenarios

APPENDIX A **DESIRED DESIGN STANDARD TYPICAL CROSS-SECTIONS**

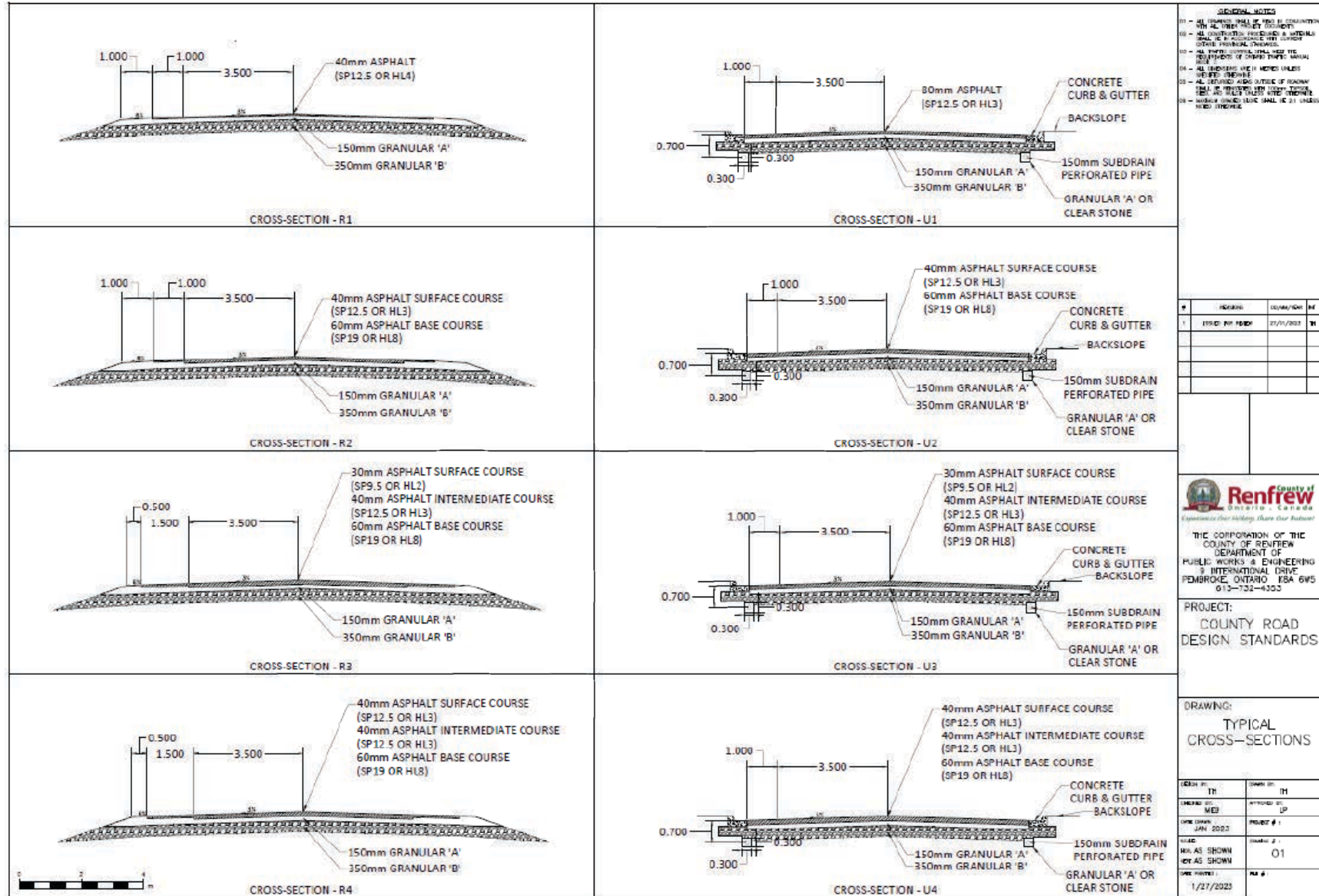


Table-1
CHARACTERISTICS OF RURAL ROAD CLASSIFICATIONS

CHARACTERIS TIC	URBAN FREEWAYS	URBAN ARTERIALS	URBAN COLLECTORS	URBAN LOCALS	ALLEY WAYS
Traffic Service	optimum mobility	traffic movement primary consideration	traffic movement & land access equal importance	traffic movement secondary consideration	little or no consideration
Land Service	no access	land access secondary consideration	traffic movement and land access equal importance	land access primary consideration	Primary consideration
Range of Traffic Volume A.A.D.T.	≥ 15,000	major 10,000– 14,999 minor 4,000– 9,999	major 1,000– 3,999 minor 200–999	50–199	0–49
Traffic Flow	free flow	Uninterrupted flow except at signals	interrupted flow	interrupted flow	interrupted flow
Design Speed	90–110 km/h	70–90 km/h	60–90 km/h	50–90 km/h	≤ 50 km/h
Average Running Speed Off-peak Conditions	80–100 km/h	60–80 km/h	60–80 km/h	50–80 km/h	≤ 50 km/h
Vehicle Type	all types heavy trucks average 20– 30%	all types up to 20% trucks	all types up to 30% trucks mostly single unit type	predominantly passenger cars and light to medium trucks and occasional heavy trucks	passenger cars and light trucks, rarely heavy trucks
Percentage of Total Length	up to 5	5–10	10–20	75 approx.	up to 5
Connects to	freeways arterials collectors	all classifications	all classifications	Arterials collectors locals	locals
Accommodati on for Pedestrians	not permitted	permitted some special provision in semi-urban	no special provisions	permitted no special provisions	permitted no special provisions

CHARACTERISTIC	URBAN FREEWAYS	URBAN ARTERIALS	URBAN COLLECTORS	URBAN LOCALS	ALLEY WAYS
(Local Responsibility)					
Accommodation for Cyclists	not permitted	areas additional lane width where volumes warrant	no special provisions	no special accommodation	no special accommodation
Parking Restrictions	not permitted exception emergencies	prohibited under normal circumstances	permitted some restrictions may apply	no restrictions	no restrictions
Typical Intersection Spacing	800—1600 m	200—800 m	120 m	60 m	60 m
Desirable Right-of-way Widths	≥ 30 m	26—30 m	20—26 m	20 m	≤ 20 m

*Adopted from Geometric Design Manual for Canadian Roads Transportation Association of Canada

Table 2
CHARACTERISTICS OF URBAN ROAD CLASSIFICATIONS

CHARACTERISTIC	URBAN FREEWAYS	URBAN ARTERIALS	URBAN COLLECTORS	URBAN LOCALS	ALLEYWAYS
Traffic Service	optimum mobility	traffic movement primary consideration	traffic movement & land access equal importance	traffic movement secondary consideration	little or no consideration
Land Service	no access	land access secondary consideration	traffic movement and land access equal importance	land access primary consideration	Primary consideration
Range of Traffic Volume A.A.D.T.	more than 20,000	major 15,000- 20,000 minor 10,000- 14,999	major 4,000- 9,999 minor 500- 3,999	50-499	0-49
Traffic Flow	free flow	Uninterrupted flow except at signals and cross walks	interrupted flow	interrupted flow	interrupted flow
Design Speed	70-110 km/h	50-90 km/h	60-70 km/h	50-60 km/h	≤ 50 km/h
Average Running Speed Off-peak Conditions	60-100 km/h	50-80 km/h	50-60 km/h	40-50 km/h	≤ 50 km/h
Vehicle Type	all types up to 20% trucks	all types up to 20% trucks	all types	passenger and service vehicles	passenger and service vehicles
Percentage of Total Length	up to 10	up to 30	up to 30	70 approx.	up to 5
Connects to	freeways arterials	freeways arterials collectors	arterials collectors locals	collectors locals	locals collectors
Accommodation for Pedestrians (Local Responsibility)	not permitted	sidewalks where warranted	sidewalks where warranted	sidewalks may or may not be provided	no special provisions

CHARACTERISTIC	URBAN FREEWAYS	URBAN ARTERIALS	URBAN COLLECTORS	URBAN LOCALS	ALLEYWAYS
Accommodation for Cyclists	not permitted	permit some additional lane width may be provided	where warranted	no special accommodati on	no special accommodati on
Parking Restrictions	not permitted	permitted some restrictions may apply	permitted some restrictions may apply	permitted on-site only	may not be permitted
Typical Intersection Spacing	800—1600 m	200—400 m	120 m	60 m	as required
Desirable Right-of- way Widths	≥ 30 m	26—30 m	20—26 m	20 m	≤ 20 m

*Adopted from Geometric Guide for Canadian Roads Transportation Association of Canada

February 1, 2023

Ministry of Transportation, Ontario
Notice of Study Commencement
Preliminary Design and Class Environmental Assessment Study
Highway 60 and Lake Dore Road/Kokomis Road Intersection Improvements
Township of North Algona Wilberforce, County of Renfrew
MTO Project Reference: GWP 4137-21-00

The Ministry of Transportation, Ontario (MTO) has retained Dillon Consulting Limited (Dillon) to conduct a Preliminary Design and Class Environmental Assessment (EA) Study for improvements to the intersection of Highway 60 and Lake Dore Road /Kokomis Road located in the Township of North Algona Wilberforce, County of Renfrew. The purpose of this study is to generate and evaluate options to improve the operational and geometric conditions of this intersection.

The study is being completed in accordance with the MTO Class EA for Provincial Transportation Facilities (2000) as a Group "B" undertaking. Group "B" projects are considered approved, subject to compliance with the Class EA. Public consultation is an important part of the study. Two Public Information Centres (PICs) will be held to seek input on the study and share project updates at key milestones.

A Transportation Environmental Study Report (TESR) will be prepared for a 30-day public review period towards the end of the study. The TESR will document the consultation, describe the evaluation and selection of the TPA, provide details on the Preliminary Design of the TPA and outline environmental mitigation measures and provisions that have been incorporated into the design.

Additional project details are included in the enclosed notice.

Please contact the undersigned at 519-438-1288 ext. 1268 or Hwy60LakeDoreRd@dillon.ca if you have any questions regarding the project, or would like information regarding next steps.

Sincerely,

DILLON CONSULTING LIMITED



Adele Mochrie, B.Sc.
for Stephen Peck, P.Eng.
Project Manager

cc: Mark Pedlar, MTO Project Manager
Steve Baczyk, MTO Environmental Planner

ANM:rrk
Enclosure

Our file: 22-4551



177 Colonnade Road
Nepean, ON
K2E 7J4
Telephone
613.745.2213
Fax
613.745.3491

NOTICE OF STUDY COMMENCEMENT

Preliminary Design and Class Environmental Assessment Study Highway 60 and Lake Dore Road/Kokomis Road Intersection Improvements

Township of North Algona Wilberforce, County of Renfrew
(GWP 4137-21-00)



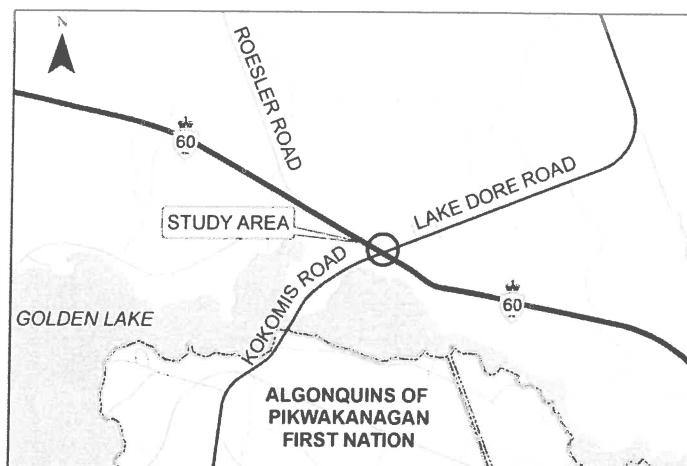
The Project

The Ministry of Transportation, Ontario (MTO) has retained Dillon Consulting Limited to conduct a Preliminary Design and Class Environmental Assessment (EA) Study for improvements to the intersection of Highway 60 and Lake Dore Road /Kokomis Road located in the Township of North Algona Wilberforce, County of Renfrew. The purpose of this study is to generate and evaluate options to improve the operational and geometric conditions of this intersection.

The Process

The study is being completed in accordance with the MTO *Class EA for Provincial Transportation Facilities* (2000) as a Group "B" undertaking. Group "B" projects are considered approved, subject to compliance with the Class EA. The EA process involves the collection and integration of input from various engineering and scientific studies, as well as public, Indigenous and agency consultation.

Public consultation is an important part of the study. Two Public Information Centres (PICs) will be held to seek input on the study and share project updates at key milestones.



A Transportation Environmental Study Report (TESR) will be prepared for a 30-day public review period towards the end of the study. The TESR will document the consultation completed as part of the study, describe the evaluation and selection of the Technically Preferred Alternative (TPA), provide details on the Preliminary Design of the TPA and outline environmental mitigation measures and provisions that have been incorporated into the design.

Project information including the Class EA process, design alternatives and project team contact details will be posted on the project website at www.Hwy60LakeDoreRd.com. The website will be updated as the project progresses.

Comments

The Project Team is interested in receiving any comments or concerns that you have regarding this project. The website includes a 'Contact Us' page for you to request to be added to the project Contact List and a link to submit your comments to the project team. If you have any accessibility requirements in order to participate in this project, or would like to speak with a project team member directly, please contact one of the team members listed below.

Mark Pedlar, Project Manager
Ministry of Transportation, Ontario
1355 John Counter Boulevard
Kingston, Ontario, K7L 0E5
Tel.: 1-613-449-0531
Email: Mark.Pedlar@Ontario.ca

Stephen Peck, P.Eng., Project Manager
Dillon Consulting Limited
177 Colonnade Road
Nepean, Ontario, K2E 7J4
Tel.: 416-229-4646 Ext. 2016
Email: Hwy60LakeDoreRd@Dillon.ca

Comments and information collected during the project will be used in accordance with the *Freedom of Information and Protection of Privacy Act* and *Access to Information Act*. With the exception of personal information, all comments will become part of the public record.

COUNTY OF RENFREW

BY-LAW NUMBER

**A BY-LAW TO ALTER HIGHWAYS AND STRUCTURES
IN THE COUNTY OF RENFREW**

WHEREAS the Municipal Act, 2001, S.O. 2001, c.25 as amended, provides for the construction and maintenance of County Roads and Bridges;

AND WHEREAS Section 35 of the Municipal Act, 2001, S.O. 2001, c.25, requires the Council to pass a by-law authorizing the removal or restriction of the common law right-of-passage by the public over a highway and the common law right-of-access to the highway by an owner of land abutting a highway;

AND WHEREAS the alterations to various County Roads and Structures were reviewed and accepted by the Operations Committee as part of the 2023 Capital Works Program.

NOW THEREFORE the Council of the Corporation of the County of Renfrew hereby enacts:

1. That the Council of the County of Renfrew approves of the alterations to County Roads and Structures as detailed on Schedule "I" attached to this By-law.
2. That this By-law shall come into force and take effect upon the passing thereof.

READ a first time this 1st day of March 2023.

READ a second time this 1st day of March 2023.

READ a third time and finally passed this 1st day of March 2023.

PETER EMON, WARDEN

CRAIG KELLEY, CLERK

Schedule I

<u>Road/ Structure No.</u>	<u>Name</u>	<u>From</u>	<u>To</u>	<u>Municipality(ies)</u>	<u>Type</u>
1	River Road	Lochwinnoch Road	Algonquin Trail	McNab/Braeside and Horton	Rehabilitation
20	Bruce Street	Highway 60	Highway 17	Renfrew	Rehabilitation
24	White Water Road	Highway 17	County Road 40 (Greenwood Road)	Laurentian Valley	Rehabilitation
24	White Water Road	Stafford Third Line	Highway 17	Laurentian Valley	Rehabilitation
30	Lake Dore Road	Highway 60	Sperberg Road	North Algona/Wilberforce	Rehabilitation
37	Murphy Road	Highway 17	County Road 26 (Doran Road)	Petawawa	Rehabilitation
37	Murphy Road	County Road 26 (Doran Road)	County Road 51 (Petawawa Boulevard)	Petawawa	Rehabilitation
42	Forest Lea Road	Highway 17	County Road 51 (Pembroke Street West)	Laurentian Valley	Rehabilitation
58	Round Lake Road	Deer Trail Road	B101 (Bonnechere River Bridge)	Killaloe, Hagarty and Richards	Rehabilitation
65	Centennial Lake Road	2872 Centennial Lake Road	Black Donald Access Point	Greater Madawaska	Rehabilitation
508	Calabogie Road	County Road 34 (Norton Road)	Mill Street	Greater Madawaska	Rehabilitation
508	Calabogie Road	Goshen Road	Highway 17	McNab/Braeside	Rehabilitation
512	Foymount Road	B257 (Harrington Creek Bridge)	Miller Road	Bonnechere Valley	Reconstruction
515	Palmer Road	Finch road	County Road 514 (Schutt Road)	Madawaska Valley and Brudenell, Lyndoch and Raglan	Rehabilitation
517	Dafoe Road	Coulas Road	Serran Road	Madawaska Valley	Rehabilitation

<u>Road/ Structure No.</u>	<u>Name</u>	<u>From</u>	<u>To</u>	<u>Municipality(ies)</u>	<u>Type</u>
517	Dafoe Road	Serran Road	County Road 62 (Combermere Road)	Madawaska Valley	Rehabilitation
635	Swisha Road	Highway 17	Interprovincial Bridge	Laurentian Hills	Rehabilitation
B044	Douglas Bridge	County Road 5 (Stone Road)		Admaston/Bromley	Rehabilitation
B064	Pilgrim Road Bridge	Pilgrim Road		Brudenell, Lyndoch and Raglan	Rehabilitation
B257	Harrington Creek Bridge	County Road 512 (Foymount Road)		Bonnechere Valley	Rehabilitation
B310	Ski Hill Bridge	County Road 58 (Round Lake Road)		Laurentian Valley	Rehabilitation
C025	Borne Road Culvert	Borne Road		Laurentian Valley	Rehabilitation
C115	Dunlop Crescent Dual Culvert	Dunlop Crescent		Head, Clara and Maria	Rehabilitation
C137	Hanson Creek Culverts	Robertson Line		McNab/Braeside	Rehabilitation
C191	Dicks Road Culvert	Dicks Road		Laurentian Valley	Rehabilitation
C197	Etmanskies Swamp Culvert	County Road 62 (John Street)		Madawaska Valley	Rehabilitation
C204	Bellows Creek Culvert	County Road 12 (Westmeath Road)		Whitewater Region	Rehabilitation
C325	Neilson Creek Culvert	Lake Clear Road		Bonnechere Valley	Rehabilitation

INFRASTRUCTURE DIVISION REPORT

Prepared By: Taylor Hanrath, Manager of Infrastructure

Prepared for: Operations Committee

February 14, 2023

INFORMATION

1. Policy PW-02 – Bridges

Attached as Appendix IN-I is a draft revised Policy PW-02 - Bridges, for consideration and input. Staff request comments be returned by February 28, 2023 to Taylor Hanrath, in order to be considered as part of the final Policy to be presented to the Operation Committee and County Council in March 2023 meeting for approval.

At the June 2022 meeting of Operations Committee, two (2) County Structures, B232 (Cochrane Creek Bridge) on Cement Bridge Road in the Township of North Algona Wilberforce and C051 (Harris Creek Bridge) on Proven Line in the Township of Admaston/Bromley, which are scheduled for works in 2024 and do not meet criteria of the County's current Bridge Policy PW-02, were presented. As per the current Policy PW-02, "All bridges under the jurisdiction and control of the County, which cease to meet the definition of a bridge after reconstruction, shall return to the jurisdiction of the roadway authority upon completion of the construction and acceptance of the finished works by the County Engineer" and furthermore "all bridge structures under the jurisdiction of the County must be situated on a public right of way, which is maintained year round and has a minimum Average Annual Daily Traffic (AADT) volume of 100 vehicles." Both of these structures are located on seasonally maintained roads with AADT far below 100. Committee requested staff provide a report that lists the structures not meeting the criteria of Policy PW-02 at a future meeting of Operations Committee.

At the September 2022 meeting of Operations Committee, staff identified that there are 55 County Structures located on local roads with an AADT less than 100, and 9 of those County Structures are located on, or at the transition to, a seasonally maintained road. Staff were directed to draft a revised Bridge Policy to be presented at a later meeting of Operations Committee for consideration.

The revised Policy PW-02 - Bridges, removes the requirements for minimum traffic volumes on County Structures. However, the requirement for County Structures being located on maintained roadways has been maintained in the draft Policy PW-02. Of the 252 current County Structures (75 bridges, 177 culvert structures), this would potentially impact 9 structures when they come due for replacement. County Structures located on seasonally maintained roads have a large, long-term, financial impact and typically have alternative access (not requiring the bridge/crossing), provide access for a single, or limited, seasonal occupant(s), or may be replaced in a more economical means while no longer being considered a bridge. These County Structures, per the revised Policy, would be maintained as County Structures until such time that

they are reconstructed, and preliminary design will explore alternatives for such structures which may be of benefit to both the County and the affected local Municipality for consideration of Operations Committee.

2. Request for Proposal (RFP) PWC-2023-06 – Culvert Supply for Replacement of C115 (Dunlop Crescent Dual Culvert)

The County of Renfrew Public Works and Engineering Department issued a Request for Proposals for twin, 22m long, 2.8m wide, 1.95m high CSPA culverts to nine companies. Proposals were received until 2:00 p.m., January 31, 2023 and the results are as follows:

1. Armtec Incorporated, Cambridge, Ontario	\$81,314.20
2. Atlantic Industries Limited, Ayr, Ontario	128,487.36
3. Devron Sales Limited, Welland, Ontario	154,847.48
All amounts exclude applicable taxes	

Procurement of the services included in this RFP followed the requirements set out in Policy GA-01 – Procurement of Goods and Services.

C115 (Dunlop Crescent Dual Culvert), which is located on Dunlop Crescent in the United Townships of Head, Clara and Maria, outlets onto the Ottawa River, where water levels are controlled by multiple upstream dams. In an effort to reduce scope of construction for dewatering, it is recommended that replacement of this structure be undertaken from March 20 to April 7, 2023, when water levels are 2.5m lower than their typical levels. The necessary approvals have been received from the Department of Fisheries and Oceans (DFO) and the Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) for replacement to occur in this time. Due to the failed condition of the structure, the bottom of the pipe required emergency works in the Fall of 2022 and it is not recommended that replacement be postponed to a later year.

The cost for this project is \$81,314.20 plus HST. Though the 2023 Capital Budget has not yet been approved, \$415,000 has been proposed for the replacement of C115 (Dunlop Crescent Dual Culvert). Staff confirm that there are sufficient funds proposed in the 2023 Capital Budget to complete the project as proposed.

In accordance with the County of Renfrew Policy GA-01 for the Procurement of Goods and Services, purchases resulting from Request for Proposals with results less than \$100,000 require approval from the Chief Administrative Officer (CAO). As such approval has been attained per the requirements of Policy GA-01.

Construction for replacement of C115 (Dunlop Crescent Dual Culvert) is planned to be undertaken by the County's Day Labour Construction staff, overseen by the Construction Supervisor.

BY-LAWS

3. PWC-2023-25 – Rehabilitation of County Structure C025 (Borne Road Culvert)

Recommendation: THAT the Operations Committee recommends that Contract PWC-2023-25 as submitted by 1956466 Ontario Inc. (JWK Contracting), Pembroke, Ontario for the rehabilitation of County Structure C025 (Borne Road Culvert) in the amount of \$613,882.20, plus HST be approved, pending budget approval; AND FURTHER THAT County Council pass a By-law to Authorize Execution of the Contract.

Background

County Structure C025 (Borne Road Culvert) is located on Borne Road, 0.75 km west of County Road 58 (Round Lake Road), in the Township of Laurentian Valley.

A Request for Tender was issued for the rehabilitation of Borne Road Culvert. Tenders were received until 2:00 p.m., February 2, 2023, and the results are as follows:

1. 1956466 Ontario Inc. (JWK), Pembroke, Ontario	\$613,882.20
2. Goldie Mohr Ltd., Ottawa, Ontario	\$679,269.00
3. Neptune Security Services Inc., Mississauga, Ontario	\$715,810.00
4. Premier North Ltd., Huntsville, Ontario	\$757,818.00
5. Bonnechere Excavating Inc., Renfrew, Ontario	\$777,959.50
6. Crains' Construction Ltd., Maberly, Ontario	\$928,616.00
7. Fidelity Engineering & Construction Inc., Colborne, Ontario	\$1,080,000.00
8. Louis W. Bray Construction Ltd., Vars, Ontario	\$1,249,618.60
All amounts exclude applicable taxes	

Financial Implications

The 2023 Capital Budget has yet to be approved; however, funds in the amount of \$800,000 have been proposed for the rehabilitation of County Structure C025 (Borne Road Culvert). A comparison of the 2023 proposed budget and projected costs is provided in the following table:

C025 (Borne Road Culvert)			
	2023 Budget	Low Tender Projected	Variance Over/(Under)
Construction	650,000.00	613,882.20	(36,117.80)
Engineering - Design/Tendering	10,000.00	10,000.00	-
Project Administration & Construction Supervision	80,000.00	80,000.00	-
Material Testing (Allowance)	10,000.00	10,000.00	-
Contingency	38,755.00	30,694.11	(8,060.89)
Applicable Taxes	11,245.00	10,620.16	(624.84)
Total	800,000.00	755,196.47	(44,803.53)
*Projected costs are based on Tender results, internal costs, and line painting			

Staff confirm that there are sufficient funds proposed in the 2023 Capital Budget to complete the project as tendered.

4. **PWC-2023-64 – Rehabilitation of County Structure B064 (Pilgrim Road Bridge)**

Recommendation: THAT the Operations Committee recommends that Contract PWC-2023-64 as submitted by Bonnechere Excavating Incorporated, Renfrew, Ontario for rehabilitation of County Structure B064 (Pilgrim Road Bridge) in the amount of \$398,505 plus HST be approved, pending budget approval; AND FURTHER THAT County Council pass a By-law to Authorize Execution of the Contract.

Background

County Structure B064 (Pilgrim Road Bridge) is located on Pilgrim Road, 0.5 km east of Guiney Road, in the Township of Brudenell, Lyndoch and Raglan.

A Request for Tender was issued for the rehabilitation of Pilgrim Road Bridge. Tenders were received until 2:00 p.m., February 2, 2023 and the results of the submissions were as follows:

1. Bonnechere Excavating Inc., Renfrew, Ontario	\$398,505.00
2. Willis Kerr Contracting Ltd., Mountain, Ontario	\$399,648.50
3. Ross and Anglin Ltd., Ottawa, Ontario	\$434,234.00
4. 2585284 Ontario Inc. (Beton), Toronto, Ontario	\$482,350.00
5. 2274084 Ontario Ltd. (GMP), Markham, Ontario	\$526,632.82
6. Dalcon Constructors Ltd., Ottawa, Ontario	\$560,564.00
All amounts exclude applicable taxes	

Financial Implications

The 2023 Capital Budget has yet to be approved; however, funds in the amount of \$380,000 has been proposed for the rehabilitation of County Structure B064 (Pilgrim Road Bridge). A comparison of the 2023 proposed budget and projected costs is provided in the following table:

B064 (Pilgrim Road Bridge)			
	2023 Budget	Low Tender Projected	Variance Over/(Under)
Construction	315,000.00	398,505.00	83,505.00
Engineering - Design/Tendering	2,000.00	1,000.00	(1,000.00)
Project Administration & Construction Supervision	35,000.00	35,000.00	-
Material Testing (Allowance)	5,000.00	5,000.00	-
Contingency	16,910.40	19,925.25	3,014.85
Applicable Taxes	6,089.60	7,516.94	1,427.34
Total	380,000.00	466,947.19	86,947.19
*Projected costs are based on Tender results, internal costs, and line painting			

As per the above table, additional funds in the amount of \$86,947.19 are required over what has been proposed for B064 (Pilgrim Road Bridge) in the 2023 Capital Budget. However, staff confirm that prices are competitive, and it is beneficial to move forward with construction in 2023 rather than defer and risk greater construction costs in the future due to greater deterioration.

Corporate Policies and Procedures				
DEPARTMENT: Public Works and Engineering				POLICY #: PW-02
POLICY: Bridges Bridge Design and Construction				
DATE CREATED: April 2001	REVIEW DATE: February 2023	REVISION DATE:	COVERAGE: County Structures and Bridges on Local Municipal Roads	PAGE #: 1 of 10

POLICY STATEMENT

The County of Renfrew (County), as the upper tier Municipality, has responsibility for all bridges located on either local Municipal roads or County roads within the boundaries of the County. This Policy outlines the criteria that must be met for new, existing, or replaced bridges to be considered County Structures. This Policy also outlines the standard to which County Structures must be designed and the procedure to be followed should a replaced bridge no longer meet the criteria to be a County Structure.

POLICY DEFINITIONS

Approach: The portion of a roadway or pathway leading to a bridge and includes all appurtenances belonging thereto. The portion under jurisdiction of the County, for County Structures, shall be 30m as measured from the outer most extreme of the structure. ~~The portion under the jurisdiction of the bridge authority shall be as specified in the relevant legislation measured from the outer most extreme of the structure.~~

Bridge: A structure, or series of structures, ~~which provides a roadway or walkway for the passage of vehicles and pedestrians across an obstruction, gap or facility, which has a cumulative span of 3.0 m or greater~~ having a cumulative span of 3.0 m or greater, which provides a roadway or walkway for the passage of vehicles and pedestrians across an obstruction, gap or facility.

Low Volume Road: Roadway supporting an Average Annual Daily Traffic (AADT) of less than 400.

Functional Road Classification: A hierarchal grouping of roads according to the function they serve within the overall road system. Refer to Policy PW-01 (Road Classification System) for complete definitions ~~of each road class.~~

Return Period: The average period in years between occurrences of a discharge (flow) equalling or exceeding a given value, also referred to as the 'Design Flood Event Period'.

Corporate Policies and Procedures				
DEPARTMENT: Public Works and Engineering				POLICY #: PW-02
POLICY: Bridges Bridge Design and Construction				
DATE CREATED: April 2001	REVIEW DATE: February 2023	REVISION DATE:	COVERAGE: County Structures and Bridges on Local Municipal Roads	PAGE #: 2 of 10

PROCEDURE

1. COUNTY STRUCTURE CRITERIA

Bridges, to qualify as a County Structure, must meet the following criteria:

- Be located within the municipal boundaries of the County of Renfrew;
- Be located within a public right-of-way, which is maintained year round; and
- Have a cumulative span of 3 metres, or greater.

1.1. Criteria No Longer Being Met

All crossings, designed in accordance with this Policy, which cease to meet the criteria of a County Structure after reconstruction, shall return to the jurisdiction of the local roadway authority.

During preliminary design for the crossing, the County of Renfrew shall maintain discussions with the local Municipality. Should it be identified during preliminary design that the subject bridge does not meet the criteria of a County Structure, County staff shall ensure reasonable alternatives to either remove the crossing while maintaining adequate access to each site or maintain the structure in its current status are explored. These alternatives shall be presented to Operations Committee and the local Municipality for consideration and input prior to commencing with detailed design of a preferred alternative.

Following construction, transfer to the local roadway authority shall commence upon acceptance of the finished works by representatives of the County and the local road authority. An amending By-law shall be passed by County Council to finalize the transfer to the local road authority.

1.2. Requests for Assumption as County Structure

Where a crossing, that is not considered a County Structure, requires replacement and it is anticipated that the replacement crossing will meet criteria of a County Structure, a hydraulic design meeting the provisions of this Policy shall be completed. The cost of

Corporate Policies and Procedures				
DEPARTMENT: Public Works and Engineering				POLICY #: PW-02
POLICY: Bridges Bridge Design and Construction				
DATE CREATED: April 2001	REVIEW DATE: February 2023	REVISION DATE:	COVERAGE: County Structures and Bridges on Local Municipal Roads	PAGE #: 3 of 10

the hydraulic design shall be the responsibility of the local municipality. Where the proposed replacement crossing is confirmed to meet the criteria of a County Structure, the local municipality may request the structure be assumed by the County.

All requests for assumption as a County Structure shall be submitted, with hydraulic design, for review by the County Director of Public Works and Engineering, or designate. Following review, a recommendation regarding assumption as a County Structure shall be presented to the County's Operations Committee by the Director of Public Works and Engineering, or designate. The recommendation of the Operations Committee shall be subsequently presented to County Council for approval. The County shall be the ultimate authority in determining whether or not a proposed replacement structure will qualify as a County Structure.

Following approval of the assumption of a proposed replacement crossing as a County Structure, the cost of the design and construction of the replacement structure shall be shared equally between the County and the local Municipality. The structure shall be replaced subject to availability of funding and other priorities within the Asset Management Plan of both the local Municipality and the County. Maintenance and monitoring of the condition of the crossing shall remain the responsibility of the local Municipality until such time that construction for replacement of the crossing commences. However, except where an emergent need for replacement should arise, coordination of design, supervision of construction, and overall project management shall be the responsibility of the County.

Following replacement, an amending By-law shall be passed by County Council to finalize the transfer to the County. Until such time as the structure is transferred to the County, it shall remain under the jurisdiction of the local road authority.

2. DESIGN OF COUNTY STRUCTURES

As per Ontario Regulation 104/97, Standards for Bridges, as amended, of the Public Transportation and Highway Improvement Act (PTHIA), all bridges shall be designed in accordance with the most current version of the Canadian Highway Bridge Design Code

Corporate Policies and Procedures				
DEPARTMENT: Public Works and Engineering				POLICY #: PW-02
POLICY: Bridges Bridge Design and Construction				
DATE CREATED: April 2001	REVIEW DATE: February 2023	REVISION DATE:	COVERAGE: County Structures and Bridges on Local Municipal Roads	PAGE #: 4 of 10

(CHBDC) as amended by the Ontario Ministry of Transportation (MTO) Structural Manual.

All bridge crossings over water shall have a hydraulic design completed in accordance with the provisions of this Policy. Bridges shall be designed to convey flows having a design return period as defined in Table 1 below, with the proper design soffit clearance and freeboard as stipulated in the MTO Highway Drainage Design Standards, as amended.

Table 1

Design Return Periods	Design Return Period (Years)	
	Rural Roads	Urban Roads
Arterials	50	100
Collector	25	50
Locals	10	25
Seasonal/Alley	5	10

A 100-year return period shall be used as a check-flow for the design of all new or reconstructed County Structures to ensure that the travelled road over the bridge is not overtopped during such an event.

2.1. County Structures on Low Volume Roads

MTO Structural Manual Guidelines for the Design of Bridges on Low Volume Roads, as amended, shall be taken into consideration for all County Structures where the current and the 10-year projected Annual Average Daily Traffic (AADT) does not exceed 400.

Corporate Policies and Procedures				
DEPARTMENT: Public Works and Engineering				POLICY #: PW-02
POLICY: Bridges Bridge Design and Construction				
DATE CREATED: April 2001	REVIEW DATE: February 2023	REVISION DATE:	COVERAGE: County Structures and Bridges on Local Municipal Roads	PAGE #: 5 of 10

3. RESPONSIBILITIES

3.1. County Structures

Design of and construction on a County Structure, or a new crossing anticipated to meet criteria to be a County Structure, shall be prepared under the supervision of, and approved by, a Professional Engineer licensed in the Province of Ontario. The Director of Public Works and Engineering, or designate, shall oversee and approve design and construction on all County Structures, or on new crossings anticipated to meet criteria to be a County Structure.

In reconstructing a County Structure, the County shall carry out the construction of the approaches so as to meet the design standards in force at that time. Should the work be required to extend beyond the 30m statutory limit of authority to meet these design standards, the County shall be responsible for all costs associated with the works.

A local road authority may, with approval of the County, undertake works on behalf of the County on a County Structure and its approaches. The County shall reimburse the cost of the works applicable to the structure and the portion of the approaches under the jurisdiction of the County.

3.2. Bridges on Local Municipal Roads

Where a bridge is under the jurisdiction of the local roadway authority (as it does not meet criteria to be a County Structure), the County may undertake, on behalf of the local roadway authority, the required biennial inspections of the bridge and provide recommendations for the required posting or maintenance of the structure to the local roadway authority. The local roadway authority shall be required, if it elects to have the County undertake the biennial inspections and provide recommendations regarding load postings, maintenance, etc., to enter into an indemnification agreement with the County holding the County harmless from any action or claims arising from the County's recommendations, etc.

Corporate Policies and Procedures				
DEPARTMENT: Public Works and Engineering				POLICY #: PW-02
POLICY: Bridges Bridge Design and Construction				
DATE CREATED: April 2001	REVIEW DATE: February 2023	REVISION DATE:	COVERAGE: County Structures and Bridges on Local Municipal Roads	PAGE #: 6 of 10

The local municipality will be responsible for establishing the level of service to be provided at the crossing and to fund, manage and maintain the bridge in the manner that is most suitable for the local use.

4. REFERENCES

- **Municipal Act, 2001, c. 25, as amended** – ~~Municipal Act Chapter M45 RSO 1990~~
- Bridges Act Chapter B12-RSO 1990, **as amended**
- Public Transportation and Highway Improvement Act Chapter P50-RSO 1990, **as amended**
- Canadian Highway Bridge Design Code ~~CSA S6-00~~, **as amended**
- **MTO Structural Manual**
- ~~MTO Drainage Management Manual~~

Corporate Policies and Procedures				
DEPARTMENT: Public Works and Engineering				POLICY #: PW-02
POLICY: Bridges Bridge Design and Construction				
DATE CREATED: April 2001	REVIEW DATE: February 2023	REVISION DATE:	COVERAGE: County Structures and Bridges on Local Municipal Roads	PAGE #: 7 of 10

All highway bridges shall be designed in accordance with the Canadian Highway Bridge Design Code CSA S6-00 as may be amended from time to time. In addition, all bridges over water shall be designed to convey flows having a return period as follows:

Functional Roadway Classification	Design Return Period (Years)	
	Rural Roads	Urban Roads
Arterials	50	100
Collector	25	50
Locals	10	25
Seasonal/Alley	5	10

The design and construction of a new bridge and modifications to existing bridges shall be prepared under the supervision of and shall be approved by the County Engineer.

All bridges under the jurisdiction and control of the County, which cease to meet the definition of a bridge after reconstruction, shall return to the jurisdiction of the roadway authority upon completion of the construction and acceptance of the finished works by the County Engineer. An amending by-law will be passed by County Council to affect the transfer to the local road authority.

All highway structures designed in accordance with the provisions of this policy and meeting the definition of a bridge shall upon the recommendation of the County Engineer and with the approval of the Operations Committee and County Council, be given a county bridge status. The structure shall then be reconstructed by the County subject to the availability of funding and other priorities within the County Road System. Until such time as the structure is adopted by the County, it shall remain under the jurisdiction of the local road authority.

All bridge structures under the jurisdiction and control of the County must be situated on a public road right-of-way, which is maintained year-round and has a minimum Average Annual Daily Traffic (AADT) volume of 100 vehicles.

Corporate Policies and Procedures				
DEPARTMENT: Public Works and Engineering				POLICY #: PW-02
POLICY: Bridges Bridge Design and Construction				
DATE CREATED: April 2001	REVIEW DATE: February 2023	REVISION DATE:	COVERAGE: County Structures and Bridges on Local Municipal Roads	PAGE #: 8 of 10

In reconstructing a bridge, the County shall carry out the construction of the approaches so as to meet the design standards in force at that time. ~~Should the work extend beyond the 30 m statutory limit of authority, the County will be responsible for all costs associated with the works.~~

A local road authority may with approval of the County, undertake works on behalf of the County on a bridge and its approaches. ~~The County shall cover the cost of the works applicable to the structure and the portion of the approaches under the jurisdiction of the County.~~

IMPLEMENTATION:

Construction and Reconstruction of Bridges

Local Municipal Structures Meeting the Definition of a Bridge and situated on All-Season Maintained Roadways:

County bridge structures must be situated on a public right-of-way subject to all-season maintenance and have minimum Average Annual Daily Traffic (AADT) volume of 100 vehicles.

Where a highway structure located on a local municipal roadway is to be replaced, a hydraulic design shall be prepared in accordance with the provisions detailed in the policy. The cost of the hydraulic design and the review of the design by County staff shall be at the expense of the local municipality.

Where the proposed replacement structure will meet the definition of a bridge, the local municipality may request the structure to be adopted by the County. All requests will be reviewed by the County Engineer and a recommendation regarding assumption will be forwarded to the Operations Committee. Operations Committee's recommendation will subsequently be forwarded to County Council for approval. It is emphasized that the County of Renfrew will be the ultimate authority in determining whether or not the structure (being requested for assumption) qualifies as a County structure.

When the structure is approved for adoption by the County, the cost of the design and replacement or repair shall be shared equally between the County and the local municipality. Subsequent to the replacement, the bridge structure shall be under the jurisdiction of the

Corporate Policies and Procedures				
DEPARTMENT: Public Works and Engineering				POLICY #: PW-02
POLICY: Bridges Bridge Design and Construction				
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County thereafter. The timing of the replacement or repair of the structure shall be at the discretion of the County and subject to the availability of funding and other priorities.

Until such time as the structure is replaced or repaired, it shall remain under the jurisdiction of the local municipality in which it is situate. Maintenance of the structure during this period shall rest with the local municipality.

Local Municipal Structures Meeting the Definition of a Bridge on Seasonal Roads

Where a structure meeting the definition of a bridge is located on a seasonal road, the County may undertake, on behalf of the local municipality, the required biannual inspections of the structure and provide recommendations for the required posting or maintenance of the structure to the local municipality. The local municipality will be required, if it elects, to have the County undertake the bi-annual inspections and provide recommendations regarding load postings, maintenance, etc., enter into an indemnification agreement with the County holding the County harmless from any action or claims arising from the County's recommendations, etc.

The local municipality will be responsible for establishing the level of service to be provided at the crossing and to fund, manage and maintain the structure in the manner that is most suitable for the local use.

County Structures on Local Roads No Longer Meeting the Definition of a Bridge

The County shall design and reconstruct all bridges under its jurisdiction in accordance with the provisions contained in this policy. Where a replacement structure will no longer meet the definition of a bridge, the County Engineer will recommend to the Operations Committee and County Council that the structure be deleted from the County Road System.

Subject to the approval of the Operations Committee and County Council, the replacement structure shall be designed and reconstructed. Upon acceptance of the works by the County Engineer and subject to the passage of an amending by law, the jurisdiction over the structure shall revert to the authority or authorities having jurisdiction over the roadway.

Works on Bridge Approaches

Works in Conjunction with a Bridge Replacement

Corporate Policies and Procedures				
DEPARTMENT: Public Works and Engineering				POLICY #: PW-02
POLICY: Bridges Bridge Design and Construction				
DATE CREATED: April 2001	REVIEW DATE: February 2023	REVISION DATE:	COVERAGE: County Structures and Bridges on Local Municipal Roads	PAGE #: 10 of 10

~~Where the County replaces a bridge, it shall design and construct the approaches in accordance with the standards in force at the time of the work. Where it is necessary for the works to extend beyond the 30 m limits of County jurisdiction in order to meet the design standards, the County may, with the consent of the local road authority, reconstruct the approaches. The extended work on the approach shall be at no cost to the local road authority except as it relates to the acquisition of right of way to accommodate the works.~~

Local Road Works

~~Where a local road authority proposes to undertake works on the approach to a bridge, it shall give notice of its intent to do so to the County Engineer. Where it is in the interest of the County to do so, the County Engineer may with the approval of the Operations Committee and/or County Council, request works to be done on the approaches to and over the bridge. All cost associated with the works so requested shall be born by the County, subject to funding availability.~~

COUNTY OF RENFREW

BY-LAW NUMBER

**A BY-LAW FOR THE EXECUTION OF CONTRACT PWC-2023-25
REHABILITATION OF COUNTY STRUCTURE C025 (BORNE ROAD CULVERT)**

WHEREAS under Section 11 of the Municipal Act, 2001, S.O. 2001, c.25, as amended, the Municipal Corporation of the County of Renfrew has the authority to pass by-laws to enter into contracts to construct and maintain County Roads and Bridges;

AND WHEREAS public tenders were requested for the rehabilitation of County Structure C025 (Borne Road Culvert) under Contract PWC-2023-25 in accordance with County of Renfrew Corporate Policy GA-01 Procurement of Goods and Services;

AND WHEREAS the tender submitted by 1956466 Ontario Inc. (JWK Contracting), Pembroke, Ontario was reviewed and accepted by the Operations Committee.

NOW THEREFORE the Council of the Corporation of the County of Renfrew hereby enacts:

1. THAT the Council of the County of Renfrew approve of the awarding of Contract PWC-2023-25 for the rehabilitation of County Structure C025 (Borne Road Culvert) as submitted by 1956466 Ontario Inc. (JWK Contracting), Pembroke, Ontario in the amount of \$613,882.20 plus HST.
2. THAT the Warden and Clerk be empowered to do and execute all things, papers and documents necessary to the execution of the said contract.
3. THAT this By-law shall come into force and take effect upon the passing thereof.

READ a first time this 1st day of March 2023.

READ a second time this 1st day of March 2023.

READ a third time and finally passed this 1st day of March 2023.

PETER EMON, WARDEN

CRAIG KELLEY, CLERK

COUNTY OF RENFREW

BY-LAW NUMBER

**A BY-LAW FOR THE EXECUTION OF CONTRACT PWC-2023-64
REHABILITATION OF COUNTY STRUCTURE B064 (PILGRIM ROAD BRIDGE)**

WHEREAS under Section 11 of the Municipal Act, 2001, S.O. 2001, c.25, as amended, the Municipal Corporation of the County of Renfrew has the authority to pass by-laws to enter into contracts to construct and maintain County Roads and Bridges;

AND WHEREAS public tenders were requested for the rehabilitation of County Structure B064 (Pilgrim Road Bridge) under Contract PWC-2023-64 in accordance with County of Renfrew Corporate Policy GA-01 Procurement of Goods and Services;

AND WHEREAS the tender submitted by Bonnechere Excavating Incorporated, Renfrew, Ontario was reviewed and accepted by the Operations Committee.

NOW THEREFORE the Council of the Corporation of the County of Renfrew hereby enacts:

1. THAT the Council of the County of Renfrew approve of the awarding of Contract PWC-2023-64 for the rehabilitation of County Structure B064 (Pilgrim Road Bridge) as submitted by Bonnechere Excavating Incorporated, Renfrew, Ontario in the amount of \$398,505 plus HST.
2. THAT the Warden and Clerk be empowered to do and execute all things, papers and documents necessary to the execution of the said contract.
3. THAT this By-law shall come into force and take effect upon the passing thereof.

READ a first time this 1st day of March 2023.

READ a second time this 1st day of March 2023.

READ a third time and finally passed this 1st day of March 2023.

PETER EMON, WARDEN

CRAIG KELLEY, CLERK

OPERATIONS DIVISION REPORT

Prepared by: Richard Bolduc, A.Sc.T., Manager of Operations

Prepared for: Operations Committee

February 14, 2023

INFORMATION

1. Winter Operations

The months of December and January provided a variety of winter weather conditions that required staff responses. Table 1 provides a summary of winter events, material usage and precipitation amount for the months of November through January. Table 2 outlines the Significant Weather Events declared to date for the 2022/2023 winter season. Staff continues to be ready to respond to winter events as they occur.

Table 1

Month	No. of Event Days		Type of Event (days)			(tonnes)		Precipitation	
	Weekday	Weekend	Snow	Blowing Snow	Freezing Rain	Salt	Sand	Weather Station	Amount (mm)
Nov	8	2	9	0	5	1,128	215.9	Petawawa Bancroft	31.8 62.1
Dec	16	7	20	4	2	4,792	999	Petawawa Bancroft	29.6 35.2
Jan	21	6	24	5	7	6,456	3,972	Petawawa Bancroft	15.8 26.2
Totals	45	15	53	9	14	12375	5187	Petawawa Bancroft	77.2 123.5

Table 2

Start			End			Reason
Month	Day	Time	Month	Day	Time	
Dec	22	10:22 AM	Dec	25	12:13 PM	Snow
Jan	4	11:19 AM	Jan	5	1:47 PM	Ice/Snow
Jan	12	7:51 AM	Jan	14	8:43 AM	Snow
Jan	25	12:39 PM	Jan	26	1:27 PM	Snow

As requested at the January Committee, staff prepared the following Table which provides a summary of the winter events and precipitation amounts since the 2018/2019 winter season. In viewing the data provided, it must be noted that the precipitation recorded are the totals of a mixture of snow, rain and freezing rain, etc. The Table also provides a summary of the type of events which were responded to, as well as the type and amount of material used during the response.

Year	Month	No. of Event Days		Type of Event (days)			(tonnes)		Precipitation (mm)	
		Weekday	Weekend	Snow	Blowing	Freezing	Salt	Sand	Petawawa	Bancroft
Station	Station									
2022	Nov	8	2	9	0	5	1,127.5	215.9	31.8	62.1
2021	Nov	7	2	7	0	7	65.6	588.7	41.0	62.2
2020	Nov	8	3	9	0	3	1,749.0	312.0	39.0	86.8
2019	Nov	13	0	9	0	4	1,770.0	49.0	23.5	48.8
2018	Nov	15	4	17	1	3	4,060.0	229.0	63.0	105.0
2022	Dec	16	7	20	4	2	4,792.0	998.9	29.6	35.2
2021	Dec	18	8	19	1	8	5,565.4	1679.9	55.0	78.9
2020	Dec	18	11	19	0	6	5,227.0	1359.0	56.0	94.9
2019	Dec	18	8	20	3	7	5,101.0	1616.0	43.5	68.5
2018	Dec	19	9	20	6	6	5,633.0	1659.0	53.0	64.0
2023	Jan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2022	Jan	16	3	17	2	2	4,354.2	2186.4	33.2	52.2
2021	Jan	15	6	17	2	5	3,322.3	2121.6	5.0	34.8
2020	Jan	16	6	19	8	7	5,089.0	2146.0	57.5	127.1
2019	Jan	22	5	26	12	17	5,264.0	6015.0	49.0	72.0
2023	Feb	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2022	Feb	16	7	14	12	4	5,803.3	1724.4	57.4	100.8
2021	Feb	14	6	19	8	3	4,279.3	1464.2	38.0	58.0
2020	Feb	13	5	15	9	1	3,754.0	1165.0	52.0	53.8
2019	Feb	23	5	13	4	7	5,772.0	1275.0	71.0	91.0
2023	Mar	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2022	Mar	11	5	12	5	6	3,022.4	1205.1	15.4	10.6
2021	Mar	8	1	9	3	3	554.8	703.0	35.0	54.9
2020	Mar	7	0	7	3	0	987.3	325.0	23.4	23.5
2019	Mar	8	7	15	7	3	2,185.0	336.0	46.0	66.0

2. Spring Load Restrictions

County of Renfrew By-law 11-12 is a By-law to Designate a Reduced Load Period on County Roads and pertains to spring load restrictions which may be imposed commencing March 1 and extend to May 31. Over the coming weeks, staff will be monitoring the spring weather conditions to determine the optimum time to impose the spring load restrictions. The County will be placing notices in the local newspapers and on the website to advise haulers of the spring load restrictions.

3. **Quotations and Tenders**

A letter was circulated to the local municipal staff advising them of the planned tenders and requesting that if they would like to participate to provide a response to the questionnaire included as part of the letter by February 3, 2023. The tenders included in the circulation and balance of the tenders that form part of the approved budget will be released from the Operations Division starting in early March. As of February 3, 2023, the Operations Division received six responses.

4. **Municipal Cooperation**

a) Algonquins of Pikwakanagan

The Algonquins of Pikwakanagan required the use of one of the two backup combination plow/spreader tandem trucks for winter operations. This backup truck was returned to the County on January 11, 2023.

b) Township of Laurentian Valley

The Township of Laurentian Valley required use of one of the County tractors and one sweeper attachment for trail maintenance. The use of the tractor and sweeper attachment has been extended until February 15, 2023.

5. **Fleet Management**

a) Replacement of Light Duty Trucks

Three of eight trucks from the 2022 Light Duty Truck Tender, awarded to Valley Truck and Spring Service, Pembroke, Ontario, were delivered on December 20, 2022 and were placed into service on January 16, 2023. The Department is still awaiting delivery of the remaining five trucks.

b) Offset Roller

The Department is still awaiting additional components from the Offset Roller Quotation, awarded to Cubex Ltd.

c) Shoulder Spreader

The Department is still awaiting additional components from the Shoulder Spreader Quotation, awarded to Cubex Ltd.

d) Backhoe

The Department is awaiting the delivery of the Backhoe, awarded to J.R. Brisson Equipment Ltd.

COUNTY OF RENFREW
2023 BUDGET
GENERAL REVENUE FUND

	<u>Budget</u> <u>Enhancement</u>	<u>2023 Budget -</u> <u>2.5%</u>	<u>2023 Budget -</u> <u>2.5% target</u> <u>pressure</u>	<u>2023 Budget -</u> <u>Baseline</u>	<u>2022 Budget</u>	<u>Variance \$</u>	<u>Unchanged</u> <u>Service</u> <u>Variance %</u>	<u>2.5% target</u> <u>Variance %</u>	<u>2021 Actual</u>	<u>2020 Actual</u>	<u>2019 Actual</u>
PUBLIC WORKS	363,387	9,721,655	(179,000)	9,900,655	9,129,022	771,633	8.5%	6.5%	8,419,448	15,617,614	14,360,558
Operations Committee	363,387	9,721,655	(179,000)	9,900,655	9,129,022	771,633	8.5%	6.5%	8,419,448	15,617,614	14,360,558

**COUNTY OF RENFREW
2023 BUDGET
GENERAL REVENUE FUND**

	<u>Budget</u> <u>Enhancement</u>	<u>2023 Budget -</u> <u>2.5%</u>	<u>2023 Budget -</u> <u>2.5% target</u> <u>pressure</u>	<u>2023 Budget -</u> <u>Baseline</u>	<u>2022 Budget</u>	<u>Variance \$</u>	<u>Unchanged</u> <u>Service</u> <u>Variance %</u>	<u>2.5% target</u> <u>Variance %</u>	<u>2021 Actual</u>	<u>2020 Actual</u>	<u>2019 Actual</u>
<u>PUBLIC WORKS</u>	<u>363,387</u>	<u>9,721,655</u>	<u>(179,000)</u>	<u>9,900,655</u>	<u>9,129,022</u>	<u>771,633</u>	<u>8.5%</u>	<u>6.5%</u>	<u>8,419,448</u>	<u>15,617,614</u>	<u>14,360,558</u>
Administration	175,857	1,142,571	(64,000)	1,206,571	1,124,616	81,955	7.3%	1.6%	1,036,719	1,067,418	1,019,123
Infrastructure Management		695,266		695,266	546,055	149,211	27.3%	27.3%	605,555	526,884	401,582
Depreciation		9,800,000		9,800,000	9,700,000	100,000	1.0%	1.0%	9,688,279	9,507,822	9,277,309
Equipment		1,487,328	(10,000)	1,497,328	1,266,900	230,428	18.2%	17.4%	1,255,976	1,150,841	1,262,845
Housing		162,000	(75,000)	237,000	186,550	50,450	27.0%	-13.2%	138,840	144,230	143,448
Maintenance		6,512,490	(30,000)	6,542,490	6,079,901	462,589	7.6%	7.1%	5,472,444	5,324,663	5,699,487
Donations In Kind		0		0	0	0			(364,900)		0
Recoveries - Federal		0		0	0	0					0
Recoveries - Other		(75,000)		(75,000)	(75,000)	0	0.0%	0.0%	(148,363)	(90,864)	(101,249)
Recoveries - Provincial		(2,815,973)		(2,815,973)	(2,739,384)	(76,589)	2.8%	2.8%	(1,357,505)	(1,357,505)	(1,317,960)
Surplus Adjustment - Trf To Reserves		0		0	0	0				250,000	0
Surplus Adjustment - Capital	187,530	33,984,064		33,984,064	26,492,939	7,491,125	28.3%	28.3%	14,279,920	21,332,595	12,260,528
Surplus Adjustment - Temp Loan		(4,490,190)		(4,490,190)	0	(4,490,190)			(23,882)	(2,121,974)	(2,409,146)
Surplus Adjustment - Depreciation		(9,800,000)		(9,800,000)	(9,700,000)	(100,000)	1.0%	1.0%	(9,688,279)	(9,507,822)	(9,277,309)
Surplus Adjustment - Trf From Reserves		(26,880,901)		(26,880,901)	(23,753,555)	(3,127,346)	13.2%	13.2%	(12,475,356)	(10,608,674)	(2,598,100)

**COUNTY OF RENFREW
2023 BUDGET
GENERAL REVENUE FUND**

	<u>Budget Enhancement</u>	<u>2023 Budget - 2.5%</u>	<u>2023 Budget - 2.5% target pressure</u>	<u>2023 Budget - Baseline</u>	<u>2022 Budget</u>	<u>Variance \$</u>	<u>Variance %</u>	<u>Variance 2.5%</u>	<u>2021 Actual</u>	<u>2020 Actual</u>	<u>2019 Actual</u>
<u>INFRASTRUCTURE MANAGEMENT</u>	<u>0</u>	<u>695,266</u>	<u>0</u>	<u>695,266</u>	<u>546,055</u>	<u>149,211</u>	<u>27.3%</u>	<u>27.3%</u>	<u>605,555</u>	<u>526,884</u>	<u>401,581</u>
Salaries		296,246		296,246	291,947	4,299	1.5%	1.5%	322,496	233,079	258,772
Benefits		82,020		82,020	74,653	7,367	9.9%	9.9%	80,005	53,159	62,685
COVID		0		0					2,946	63,548	
Capital Projects - Under Threshold		0		0	0	0			72,062	53,221	16,065
Legal - Right of Way		0		0		0				0	0
Misc		6,000		6,000	6,000	0	0.0%	0.0%	4,755	3,121	3,934
Recoveries		0		0		0			(11,973)	(1,829)	0
Infrastructure Management		283,000		283,000	142,400	140,600	98.7%	98.7%	110,103	114,199	45,924
Supplies		28,000		28,000	31,055	(3,055)	-9.8%	-9.8%	25,161	8,386	14,201
<u>ADMINISTRATION</u>	<u>175,857</u>	<u>1,142,571</u>	<u>(64,000)</u>	<u>1,206,571</u>	<u>1,124,616</u>	<u>81,955</u>	<u>7.3%</u>	<u>1.6%</u>	<u>1,094,996</u>	<u>1,067,420</u>	<u>1,019,123</u>
Salaries	115,110	531,479		531,479	494,074	37,405	7.6%	7.6%	477,499	533,255	441,851
Benefits	34,747	147,772		147,772	130,816	16,956	13.0%	13.0%	133,281	146,897	128,888
Advertising		10,000	(12,000)	22,000	22,000	0	0.0%	-54.5%	19,468	35,355	14,274
Answering Service		4,600		4,600	4,600	0	0.0%	0.0%	5,645	4,318	4,963
Cell Telephone/Pager		13,200		13,200	13,200	0	0.0%	0.0%	11,079	11,607	13,260
Communications (Radio System)		37,000	(35,000)	72,000	71,750	250	0.3%	-48.4%	68,339	88,161	63,378
Computer Supplies	20,000	60,000		60,000	58,200	1,800	3.1%	3.1%	68,550	73,684	53,200
Conferences & Conventions		7,500		7,500	7,200	300	4.2%	4.2%	304	2,939	8,849
Courier		770		770	770	0	0.0%	0.0%	576	1,159	455
COVID		0		0						3,232	
Health & Safety (Protection)	3,000	42,000		42,000	42,000	0	0.0%	0.0%	37,988	38,062	35,292
Insurance		159,500		159,500	141,156	18,344	13.0%	13.0%	128,324	105,420	102,876
Insurance Claims		35,000		35,000	35,000	0	0.0%	0.0%	63,924	19,302	46,598
Internet		5,100		5,100	5,100	0	0.0%	0.0%	2,941	3,046	6,605
Legal Fees		20,500		20,500	20,500	0	0.0%	0.0%	23,574	13,790	3,942
Membership Fees	1,000	9,000		9,000	9,000	0	0.0%	0.0%	7,501	8,012	6,648
Office Equipment Replacement		4,000	(7,000)	11,000	4,100	6,900	168.3%	-2.4%	193	1,667	3,495
Office Supplies/Publications/Awards		10,000		10,000	10,000	0	0.0%	0.0%	10,028	7,302	12,954
Photocopier Supplies/Maint		4,200		4,200	4,200	0	0.0%	0.0%	3,069	1,256	2,521
Postage		450		450	450	0	0.0%	0.0%	321	383	303
Recoveries		0				0				(490)	(60)
Recoveries - County		0				0					0
Recoveries - Provincial - one time		0							(20,094)	(72,013)	
Recruitment		0	(10,000)	10,000	10,000	0	0.0%		20,275	16,489	26,763
Surplus Adjustment - Capital Equipment		0		0	0	0					0
Surplus Adjustment - From Reserves		0		0	0	0					
Staff Training	2,000	20,000		20,000	20,000	0	0.0%	0.0%	17,736	9,855	21,216
Telephone		11,200		11,200	11,200	0	0.0%	0.0%	8,462	9,287	8,686
Travel		9,300		9,300	9,300	0	0.0%	0.0%	6,013	5,445	12,166

**COUNTY OF RENFREW
2023 BUDGET
GENERAL REVENUE FUND**

	<u>Budget Enhancement</u>	<u>2023 Budget - 2.5%</u>	<u>2023 Budget - 2.5% target pressure</u>	<u>2023 Budget - Baseline</u>	<u>2022 Budget</u>	<u>Variance \$</u>	<u>Variance %</u>	<u>Variance 2.5%</u>	<u>2021 Actual</u>	<u>2020 Actual</u>	<u>2019 Actual</u>
<u>MAINTENANCE</u>	<u>0</u>	<u>6,512,490</u>	<u>(30,000)</u>	<u>6,542,490</u>	<u>6,079,901</u>	<u>462,589</u>	<u>7.6%</u>	<u>7.1%</u>	<u>5,472,444</u>	<u>5,324,662</u>	<u>5,699,486</u>
Salaries		2,288,842		2,288,842	1,961,627	327,215	16.7%	16.7%	1,896,580	1,849,803	1,862,591
Benefits		660,648		660,648	525,001	135,647	25.8%	25.8%	524,404	469,933	466,392
Bridges and Culverts		40,000		40,000	40,000	0	0.0%	0.0%	36,675	31,999	71,450
Roadside Maintenance		150,000	(30,000)	180,000	180,000	0	0.0%	-16.7%	133,259	110,233	89,326
Hard Top Maintenance		385,000		385,000	360,000	25,000	6.9%	6.9%	382,158	224,214	267,836
Winter Control		2,290,000		2,290,000	2,315,273	(25,273)	-1.1%	-1.1%	1,887,767	2,183,574	2,501,106
Safety Devices		798,000		798,000	798,000	0	0.0%	0.0%	726,695	519,718	524,840
Misc		0		0	0	0			96		0
Surplus Adjustment - Trf To Reserves		0		0	0	0					0
Recoveries		(100,000)		(100,000)	(100,000)	0	0.0%	0.0%	(115,190)	(64,812)	(84,055)
<u>EQUIPMENT</u>	<u>0</u>	<u>1,487,328</u>	<u>(10,000)</u>	<u>1,497,328</u>	<u>1,266,900</u>	<u>230,428</u>	<u>18.2%</u>	<u>17.4%</u>	<u>1,255,976</u>	<u>1,279,754</u>	<u>1,980,497</u>
Salaries		235,137		235,137	215,202	19,935	9.3%	9.3%	216,864	212,490	214,004
Benefits		78,300		78,300	67,244	11,056	16.4%	16.4%	66,484	60,505	57,366
Salary Allocations		(103,112)		(103,112)	(92,876)	(10,236)	11.0%	11.0%	(90,232)	(87,329)	(86,452)
COVID		0		0					58,278		
Small Equipment, Misc		55,600	(10,000)	65,600	65,600	0	0.0%	-15.2%	83,338	40,081	54,541
Vehicle Operating Costs - Fuel		635,000		635,000	435,000	200,000	46.0%	46.0%	478,382	368,174	435,520
Vehicle Operating Costs-Insurance		51,403		51,403	46,730	4,673	10.0%	10.0%	46,730	41,586	38,812
Vehicle Operating Costs-Repairs		500,000		500,000	500,000	0	0.0%	0.0%	433,568	485,964	517,322
Vehicle Operating Costs-Licence		65,000		65,000	60,000	5,000	8.3%	8.3%	55,277	60,293	58,956
Vehicle Operating Revenue		(15,000)		(15,000)	(20,000)	5,000	-25.0%	-25.0%	(14,000)	(17,600)	(12,845)
Recoveries - Provincial - one time		0							(58,278)		
Surplus Adjustment - Capital Equipment		2,753,073		2,753,073	1,895,000	858,073	45.3%	45.3%	383,761	1,018,613	717,652
Surplus Adjustment - Trf To Reserves		0				0					0
Surplus Adjustment - Trf From Reserves		(2,753,073)		(2,753,073)	(1,895,000)	(858,073)	45.3%	45.3%	(383,761)	(889,700)	0
Recoveries		(15,000)		(15,000)	(10,000)	(5,000)	50.0%	50.0%	(20,435)	(13,323)	(14,379)
<u>HOUSING</u>	<u>0</u>	<u>162,000</u>	<u>(75,000)</u>	<u>237,000</u>	<u>186,550</u>	<u>50,450</u>	<u>27.0%</u>	<u>-13.2%</u>	<u>138,840</u>	<u>243,447</u>	<u>400,869</u>
Operating Expenses		162,000	(75,000)	237,000	162,000	75,000	46.3%	0.0%	137,859	121,009	134,260
COVID		0		0					1,150	5,233	
Surplus Adjustment - Capital		317,000		317,000	317,000	0	0.0%	0.0%	250,138	284,740	257,421
Surplus Adjustment - Trf From Reserves		(317,000)		(317,000)	(317,000)	0	0.0%	0.0%	(250,138)	(185,525)	0
Major Repairs - Under Threshold		0		0	24,550	(24,550)	-100.0%			18,184	9,671
Recoveries		0		0		0			(169)	(194)	(483)

**COUNTY OF RENFREW
2023 BUDGET
GENERAL REVENUE FUND**

	<u>Budget Enhancement</u>	<u>2023 Budget - 2.5%</u>	<u>2023 Budget - 2.5% target pressure</u>	<u>2023 Budget - Baseline</u>	<u>2022 Budget</u>	<u>Variance \$</u>	<u>Variance %</u>	<u>Variance 2.5%</u>	<u>2021 Actual</u>	<u>2020 Actual</u>	<u>2019 Actual</u>
OTHER	187,530	30,913,991	0	30,913,991	24,280,939	6,633,052	27.3%	27.3%	13,587,743	20,279,243	11,285,456
Depreciation		9,800,000		9,800,000	9,700,000	100,000	1.0%	1.0%	9,688,279	9,507,822	9,277,309
Surplus Adjustment - Depreciation		(9,800,000)		(9,800,000)	(9,700,000)	(100,000)	1.0%	1.0%	(9,688,279)	(9,507,822)	(9,277,309)
Surplus Adjustment - Capital Construction	187,530	30,913,991		30,913,991	24,280,939	6,633,052	27.3%	27.3%	13,587,743	20,029,243	11,285,456
Surplus Adjustment - TRF to Reserves		0		0		0				250,000	0
CONSTRUCTION - LABOUR CLEARING AC	(0)	0	0	0	0	0	-		0	0	0
Salaries	141,266	448,253		448,253	378,429	69,824	18.5%	18.5%	480,976	441,292	419,446
Benefits	46,264	116,938		116,938	71,844	45,094	62.8%	62.8%	67,917	79,635	76,283
Charge to Capital Construction above	(187,530)	(565,190)		(565,190)	(450,273)	(114,917)	25.5%	25.5%	(548,893)	(520,927)	(495,729)
TOTAL EXPENDITURES	363,387	40,913,646	(179,000)	41,092,646	33,484,961	7,607,685	22.7%	22.7%	22,155,554	28,721,410	20,787,012
ROADS REVENUES											
Municipal Contribution - Operating	363,387	9,721,655	(179,000)	9,900,655	9,129,022	771,633	8.5%	6.5%	8,419,448	8,442,167	8,416,088
Municipal Contribution - Capital		0			0	0				7,175,450	5,944,470
Provincial Grants & Subsidies		2,815,973		2,815,973	2,739,384	76,589	2.8%	2.8%	1,357,505	1,357,505	1,317,960
Surplus Adjustment - TRF from Reserves		20,896,167		20,896,167	16,063,139	4,833,028	30.1%	30.1%	9,048,240	3,473,628	471,848
Surplus Adjustment - TRF from Gas Tax Reserves		2,914,661		2,914,661	5,478,416	(2,563,755)	-46.8%	-46.8%	2,793,217	6,059,822	2,126,252
Surplus Adjustment - Temp Loan		4,490,190		4,490,190		4,490,190			23,882	2,121,974	2,409,146
Federal Grants & Subsidies		0		0	0	0					0
Donations in Kind		0		0	0	0			364,900		0
Misc		75,000		75,000	75,000	0	0.0%	0.0%	148,362	90,864	101,248
TOTAL REVENUES	363,387	40,913,646	(179,000)	41,092,646	33,484,961	7,607,685	22.7%	22.7%	22,155,554	28,721,410	20,787,012
Municipal Surplus / (Deficit)	0	0	0	0	0	0	0.0%	0.0%	0	(0)	0

County of Renfrew
Schedule of Reserves
2023 BUDGET

		Audited Balance 31-Dec-21	2022 Budget Reserve Changes	Known Adjustments In 2022	Estimated Balance 31-Dec-22	Prop-Pembroke	Property-RCP	Property - Base	Prop- Arnprior	IT	POA	Trails	PW	xxx	Transfers To	Transfers From	SDIP	Net Change	Estimated Balance 31-Dec-22	c = capital reserve	S=shared
Child Care	Mitigation	1,534,682			1,534,682													0	1,534,682		s
Ec Dev	RED	35,000			35,000													0	35,000		
Trail	Algonquin Trail	54,125			54,125													0	54,125		
General	Building Reserve	3,528,757	(641,734)	400,000 f	3,287,023	(253,000)	(985,630)	114,134	83,375				(317,000)				(1,358,121)	1,928,902	c		
General	Development Reserve	8,780			8,780													0	8,780	c	
General	Federal Gas Tax Reserve	0	(2,685,199)	2,685,199 a	0								(2,914,661)		2,914,661			0	0		
General	Insurance	150,000			150,000													0	150,000		
General	Reforestation Reserve	235,894	(8,100)		227,794											(24,100)	(24,100)	203,694	c	s	
General	OPP Bldg	808,540	66,169		874,709										62,625	(41,000)		21,625	896,334	c	
General	Sick leave	69,458			69,458													0	69,458		
General	TCA Renewal Reserve	17,526,393	(3,217,371)	3,306,073 b	17,615,095					(17,000)	(11,000)		(14,410,409)		7,360,198		466,473	(6,611,738)	11,003,357	c	
General	Working Capital	19,378,284	(2,051,000)		17,327,284	(40,000)						(2,225,538)						(2,265,538)	15,061,746	c	
General	WSIB Sched 2	621,547			621,547													0	621,547		
General	Cannabis Reserve	149,979			149,979													0	149,979		
General	Ontario Winter Games	200,000			200,000													0	200,000		
Housing	Non Profit Capital	116,222			116,222													0	116,222		s
Housing	Severance	146,992			146,992													0	146,992		s
Paramedic	Infrastructure	2,229,761	(794,000)	1,605,000 c	3,040,761										1,200,000	(2,445,000)		(1,245,000)	1,795,761	c	s
Paramedic	Community Paramedic	738,884			738,884													0	738,884		s
Paramedic	Severance	1,378,862			1,378,862													0	1,378,862		s
Paramedic	WSIB Sched 2	0			0													0	0		s
Public Works	Capital	0			0								(9,238,831)		9,238,831			0	0	c	
Public Works	Winter Control	250,000			250,000													0	250,000		
Social Service	Fiscal Pressure	339,942			339,942													0	339,942		s
County Of Renfrew		49,502,102	(9,331,235)	7,996,272	48,167,139	(293,000)	(985,630)	114,134	83,375	(17,000)	(11,000)	(2,225,538)	(26,880,901)	0	20,776,315	(2,510,100)	466,473	(11,482,872)	36,684,267		
BM	WSIB Sched 2	545,768	49,024		594,792										49,024			49,024	643,816		s
BM	Butterfly	149,318	(25,000)		124,318													0	124,318	c	s
BM	Unallocated	3,248,734	(361,800)	65,000 d	2,951,934												(626,500)	(626,500)	2,325,434	c	s
BM	LTC CMI Stabilization	248,242			248,242													0	248,242		s
BM	Equip	100,000			100,000													0	100,000	c	s
Bonnechere Manor		4,292,062	(337,776)	65,000	4,019,286		0	0	0	0	0	0	0	0	49,024	(626,500)	0	(577,476)	3,441,810		
ML	Butterfly	159,419	(159,419)		0													0	0	c	s
ML	WSIB Sched 2	228,442			228,442													0	228,442		s
ML	Unallocated	947,809	(426,341)	227,600 e	749,068												(703,600)	(703,600)	45,468	c	s
ML	LTC CMI Stabilization	0	100,614		100,614													0	100,614		s
ML	Equip	38,782			38,782													0	38,782	c	s
ML	Sick leave	186,402			186,402													0	186,402		s
Miramichi Lodge		1,560,854	(485,146)	227,600	1,303,308		0	0	0	0	0	0	0	0	0	(703,600)	0	(703,600)	599,708		
Opeongo	Capital	0			0													0	0	c	s
RCHC	Capital	3,870,674	(1,482,665)	236,000 g	2,624,009												(1,204,200)	(1,204,200)	1,419,809	c	s
RCHC	AHP Reserve	0			0													0	0		s
RCHC	AHP Admin Reserve	0			0													0	0		s
RCHC	Home Ownership	0			0													0	0		s
RCHC	Working Capital	50,000			50,000													0	50,000	c	s
RCHC	WSIB Sched 2	148,483			148,483													0	148,483		s
Renfrew County Housing Corp		4,069,157	(1,482,665)	236,000	2,822,492		0	0	0	0	0	0	0	0	0	(1,204,200)	0	(1,204,200)	1,618,292		
Total Surplus Adjustment		59,424,175	(11,636,822)	8,524,872	56,312,225	(293,000)	(985,630)	114,134	83,375	(17,000)	(11,000)	(2,225,538)	(26,880,901)	0	20,825,339	(5,044,400)	466,473	(13,968,148)	42,344,077		
Capital Reserves Only		52,281,145	(9,101,261)	5,839,673	49,019,557	(293,000)	(985,630)	114,134	83,375	(17,000)	(11,000)	(2,225,538)	(23,966,240)	0	17,861,654	(5,044,400)	466,473	(14,017,172)	35,002,385		

County of Renfrew
2023 Budget

								Sources of Financing						
								Pembroke	Provincial	Gas Tax Res				
Department	Primary Category	Detail	Detail	Location/Other	or Risk	10 Year Plan	Budget \$	Taxation/Other	Share	Grant	Reserve	Reserves	Debt	Total
BM	Buildings	D2030 - Sanitary Waste		Municipal sanitary Lift station	Low	10,000	10,000					10,000		10,000
BM	Buildings	E2010 - Fixed Furnishings		kitchen cabinets 2 x servery 2 x cabinets in staff	Low	25,000	25,000					25,000		25,000
BM	Buildings	D4010 - Sprinklers		sprinklers	Low	30,000	30,000					30,000		30,000
BM	Buildings	E1042 - Laundry Room Equipment		3 washers new dryer 2016	Low	30,000	30,000					30,000		30,000
BM	Buildings	D5033 - Telephone Systems		new NEC system, partial cf	Low	180,000	160,000					160,000		160,000
BM	Buildings	Buterfly project		2021 & 2022 carryover			25,000					25,000		25,000
BM	Buildings	d3055-fin tube radiation	heaters in all rooms	2022 carryover			20,000					20,000		20,000
BM	Equipment	portable phones		2022 carryover			20,000					20,000		20,000
BM	Equipment	Wireless access points x 19					16,500					16,500		16,500
BM	Buildings	B30 - Roofing		washed river stone over single EPDM roof memt	Low	290,000	290,000					290,000		290,000
BM Total						565,000	626,500	0	0	0	0	626,500	0	626,500
IT	Equipment	server-virtual replacement		CAB			17,000					17,000		17,000
IT Total						0	17,000	0	0	0	0	17,000	0	17,000
ML	Buildings	C3020 - Floor Finishes		Ceramic flooring (ceramic repair 1st Floor)	Low	10,000	10,000					10,000		10,000
ML	Buildings	D3034 - Study - Air Conditioning Units		Eng. Study / tender		25,000	25,000					25,000		25,000
ML	Buildings	D1011 - Passage Elevators - Hydraulic		68 special purpose lifts from 160 kg - 455 kg ten	Medium	26,000	26,000					26,000		26,000
ML	Buildings	D5092 - Emergency Power & Generation Systems		500 Kw Emergency Generator - New Tranfer Sw	Low	35,000	35,000					35,000		35,000
ML	Buildings	C3020 - Floor Finishes		carpet rolled - Final phase of resident floor repla	Low	40,000	40,000					40,000		40,000
ML	Building	D-Services - Mechanical		carryover 2022 - Make-Up AHU			27,600					27,600		27,600
ML	Buildings	D3045 - Exhaust Ventilation Systems		VAV boxes - 43 VAVs Resident Areas Phase Tw	Medium	90,000	90,000					90,000		90,000
ML	Buildings	D3043 - Hydronic Distribution Systems		Hydronic valve controllers upgrade Phase Four	Low	160,000	160,000					160,000		160,000
ML	Buildings	hotwater boilers		carryover 2022 - \$200K, deferred to 2026		0	0					0		0
ML	Buildings	Butterfly Dementia care unit renovations		deferred re COVID and contractor issues, partial cf		161,000	60,000					60,000		60,000
ML	Buildings	D5032 - Intercommunications And Paging		Nurse call - Austco systsem - Phase #1- 2022 & i	Low	200,000	200,000					200,000		200,000
ML	Land Improvement	G2030 - Pedestrian Paving		concrete sidewalk and patio	Low	30,000	30,000					30,000		30,000
ML Total						777,000	703,600	0	0	0	0	703,600	0	703,600
POA	Equipment	AV Equipment for Hybrid Court	Original Equipment was Temp Pandemic		Low		11,000					11,000		11,000
POA Total						0	11,000	0	0	0	0	11,000	0	11,000
Paramedic	Equipment	es_0713-pc.workgroup	tuffbook laptop				6,000					6,000		6,000
Paramedic	Equipment	es_0768-pc.workgroup	tuffbook laptop				6,000					6,000		6,000
Paramedic	Equipment	es_0714-pc.workgroup	tuffbook laptop				6,000					6,000		6,000
Paramedic	Equipment	es_1063-pc.workgroup	tuffbook laptop				6,000					6,000		6,000
Paramedic	Equipment	es_0754-pc.workgroup	tuffbook laptop				6,000					6,000		6,000
Paramedic	Vehicles	ATV-18-8054008	POLARIS 4X4 SIDE BY SIDE			30,000	30,000					30,000		30,000
Paramedic	Vehicles	ERV-18-F286261	TRUCK GMC SIERRA		H	120,000	150,000					150,000		150,000
Paramedic	Vehicles	ERV-18-R375167	TRUCK CHEV TAHOE		H	120,000	120,000					120,000		120,000
Paramedic	Vehicles	ERV-18-R375824	TRUCK CHEV TAHOE		H	120,000	120,000					120,000		120,000
Paramedic	Vehicles	ERV-18-R376195	TRUCK CHEV TAHOE		M	120,000	120,000					120,000		120,000
Paramedic	Vehicles		Ford Expedition	new replacements			120,000					120,000		120,000
Paramedic	Vehicles		FORD F250	new replacements			150,000					150,000		150,000
Paramedic	Vehicles	AMBU-17-9774496	AMBULANCE DEMERS TYPE II	carryover \$235,000			235,000					235,000		235,000
Paramedic	Vehicles	AMBU-18-9774473	AMBULANCE DEMERS TYPE III	carryover \$235,000			235,000					235,000		235,000
Paramedic	Vehicles	AMBU-18-9774474	AMBULANCE DEMERS TYPE III	carryover \$235,000			235,000					235,000		235,000
Paramedic	Vehicles	AMBU-18-9774495	AMBULANCE DEMERS TYPE III (+stretc	carryover \$300,000			300,000					300,000		300,000
Paramedic	Vehicles	AMBU-18-9774497	AMBULANCE DEMERS TYPE III (+stretc	carryover \$300,000			300,000					300,000		300,000
Paramedic	Vehicles	AMBU-19-N044507	AMBULANCE DEMERS TYPE III (+stretc	carryover \$300,000			300,000					300,000		300,000
Paramedic	Vehicles	AMBU-19-N053032	AMBULANCE DEMERS TYPE III	supply issues - not delivered until 2024	H	235,000								0
Paramedic	Vehicles	AMBU-19-N053279	AMBULANCE DEMERS TYPE III	supply issues - not delivered until 2024	M	235,000								0
Paramedic	Vehicles	AMBU-19-N054530	AMBULANCE DEMERS TYPE III	supply issues - not delivered until 2024	L	235,000								0
Paramedic	Vehicles	AMBU-19-N053540	AMBULANCE DEMERS TYPE III	supply issues - not delivered until 2024	L	235,000								0
Paramedic	Vehicles	AMBU-18-9774498	AMBULANCE DEMERS TYPE III	supply issues - not delivered until 2024	L	235,000								0
Paramedic Total						1,685,000	2,445,000	0	0	0	0	2,445,000	0	2,445,000
Prop-ArnBase	Land Improvement	parking lot		Paramedic base Arnprior		10,000	10,000					10,000		10,000
Prop-ArnBase Total						10,000	10,000	0	0	0	0	10,000	0	10,000
Prop-BBBBase	Land Improvement	crack sealing	under threeshold	Paramedic base Barry's Bay		5,000	0					0		0
Prop-BBBBase Total						5,000	0	0	0	0	0	0	0	0
Prop-CAB	Buildings	door opener	funded CF	CAB			59,000			59,000				59,000
Prop-CAB	Buildings	consulting on new PS base	6% of \$3M base	CAB			180,000					180,000		180,000
Prop-CAB	Buildings	generator transfer switch		CAB		33,000	33,000					33,000		33,000
Prop-CAB	Furniture	office conference furniture		CAB		27,500	0							0
Prop-CAB	Vehicles	LDT	LDTR-12-S287312	TRUCK PICKUP DODGE RAM 1500 4X2	Low	40,000	40,000					40,000		40,000
Prop-CAB Total						100,500	312,000	0	0	59,000	0	253,000	0	312,000
Prop-DeepBase	Buildings	lighting	under threeshold	Paramedic base Deep river		5,500	0					0		0
Prop-DeepBase	Land Improvement	crack sealing	under threeshold	Paramedic base Deep river		5,000	0					0		0
Prop-DeepBase Total						10,500	0	0	0	0	0	0		0
Prop-OPP	Equipment	HVAC		OPP - Renfrew		11,000	11,000					11,000		11,000

County of Renfrew
2023 Budget

						Road 70	Sources of Financing							
						Bridge 70								
						Culvert 70	Revised							
Department	Primary Category	Detail	Detail	Location/Other	or Risk	10 Year Plan	Budget \$	Taxation/Other	Share	Grant	Reserve	Reserves	Debt	Total
Prop-OPP	Land Improvement	parking lot remediation		OPP - Renfrew		16,500	30,000					30,000		30,000
Prop-OPP Total						27,500	41,000	0	0	0	0	41,000	0	41,000
Prop-PetBase	Buildings	floor sealing		Paramedic base Petawawa		17,600	17,600					17,600		17,600
Prop-PetBase	Land Improvement	crack sealing		Paramedic base Petawawa		20,000	20,000					20,000		20,000
Prop-PetBase Total						37,600	37,600	0	0	0	0	37,600	0	37,600
Prop-RCP	Buildings	roofing		RCP		341,000	341,000					341,000		341,000
Prop-RCP	Buildings	PS storage building	carry over of \$200K	RCP		200,000	425,000					425,000		425,000
Prop-RCP	Equipment	rooftop HVAC units x 2	carry over of \$150K	RCP		220,000	220,000					220,000		220,000
Prop-RCP	Land Improvement	parking lot	carry over of \$50k	RCP		50,000	50,000					50,000		50,000
Prop-RCP	Land Improvement	crack sealing		RCP		13,200	13,200					13,200		13,200
Prop-RCP Total						824,200	1,049,200	0	0	0	0	1,049,200	0	1,049,200
PW	Bridge	B007	Butler Bridge	Butler Road	72	1,700,000	20,000					20,000		20,000
PW	Bridge	B044	Douglas Bridge	5	66	1,800,000	1,800,000					1,800,000		1,800,000
PW	Bridge	B064	Pilgrim Road Bridge	2022 budget carry over \$139K	64	380,000	380,000					380,000		380,000
PW	Bridge	B102	Brennans Creek Bridge	512	62	825,000	10,000					10,000		10,000
PW	Bridge	B108	Tramore Bridge	Tramore Road	72	400,000	20,000					20,000		20,000
PW	Bridge	B156	Burnt Bridge	Burnt Bridge Road	62	530,000	53,000					53,000		53,000
PW	Bridge	B232	Cochrane Creek Bridge	Cement Bridge Road	38	500,000	50,000					50,000		50,000
PW	Bridge	B257	Harrington Creek Bridge	2022 budget carry over \$800K	24	800,000	800,000					800,000		800,000
PW	Bridge	B310	Ski Hill Bridge	58	67	1,200,000	1,200,000					1,200,000		1,200,000
PW	Bridge	B103	O'Grady Bridge	O'Grady Settlement Road	52	26,500	26,500					26,500		26,500
PW	Bridge	B145	Combermere Bridge		64	280,000	280,000					280,000		280,000
PW	Bridge	B181	Peter Black Bridge	24	61	180,000	180,000					180,000		180,000
PW	Bridge		General Bridge Repairs			200,000	100,000					100,000		100,000
PW	Buildings	Calabogie	Gas/Diesel Tanks & Pumps	Fuel Inventory & Dispensing System	Low	25,000	25,000					25,000		25,000
PW	Buildings	Calabogie	Property, General Yard & Signs	Site Condition Assessment	Low	15,000	0					0		0
PW	Buildings	Cobden	Gas/Diesel Tanks & Pumps	Proper enclosure around oil tank	Medium	25,000	25,000					25,000		25,000
PW	Buildings	Cobden	Property, General Yard & Signs	Site Condition Assessment	Medium	15,000	0					0		0
PW	Buildings	Cobden	Waste Oil Tank, Catch, & Structure	Proper enclosure around oil tank	Medium	25,000	25,000					25,000		25,000
PW	Buildings	Cobden	Furnace				32,000					32,000		32,000
PW	Buildings	Goshen	Gas/Diesel Tanks & Pumps	Fuel Inventory & Dispensing System	Low	25,000	25,000					25,000		25,000
PW	Buildings	Goshen	Property, General Yard & Signs	Site Condition Assessment	Low	15,000	0					0		0
PW	Buildings	Goshen	Waste Oil Tank, Catch, & Structure	Proper enclosure around oil tank	Medium	25,000	25,000					25,000		25,000
PW	Buildings	Southwest	Gas/Diesel Tanks & Pumps	Fuel Inventory & Dispensing System	Low	25,000	25,000					25,000		25,000
PW	Buildings	Southwest	Property, General Yard & Signs	Site Condition Assessment	Low	15,000	0					0		0
PW	Buildings	Southwest	Toilets, Sinks, Piping, etc	Architectural Review & design for Washroom	Low	30,000	30,000					30,000		30,000
PW	Buildings	Southwest	Waste Oil Tank, Catch, & Structure	Proper enclosure around oil tank	Medium	25,000	25,000					25,000		25,000
PW	Buildings	White Water	Gas/Diesel Tanks & Pumps	Fuel Inventory & Dispensing System	Medium	25,000	25,000					25,000		25,000
PW	Buildings	White Water	Property, General Yard & Signs	Site Condition Assessment	Medium	15,000	0					0		0
PW	Buildings	White Water	Toilets, Sinks, Piping, etc	Architectural Review & design for Washroom	Low	30,000	30,000					30,000		30,000
PW	Buildings	White Water	Waste Oil Tank, Catch, & Structure	Proper enclosure around oil tank	Medium	25,000	25,000					25,000		25,000
PW	Culverts	C001	Berlanquet Creek Culvert	5	65	400,000	40,000					40,000		40,000
PW	Culverts	C025	Borne Road Culvert	Borne Road	28.5	800,000	800,000					800,000		800,000
PW	Culverts	C115	Dunlop Crescent Dual Culvert	Dunlop Crescent	37	415,000	415,000					415,000		415,000
PW	Culverts	C134	Campbell Drive Culvert	Campbell Drive	39	600,000	0					0		0
PW	Culverts	C137	Hanson Creek Culverts	carryover 82K	53.79	600,000	600,000					600,000		600,000
PW	Culverts	C191	Dicks Road Culvert	Dicks Road	18	200,000	200,000					200,000		200,000
PW	Culverts	C197	Etmanskie Swamp Culvert	carryover \$1M	43.74	1,300,000	1,300,000					1,300,000		1,300,000
PW	Culverts	C204	Bellowes Creek Culvert	12	40.5	540,000	600,000					600,000		600,000
PW	Culverts	C325	Neilson Creek Culvert	Clear Lake Road	18	450,000	450,000					450,000		450,000
PW	Culverts	C040	Snake River Culvert	8	67	25,000	25,000					25,000		25,000
PW	Culverts	C051	Harris Creek Culvert	Proven Line	21	20,000	20,000					20,000		20,000
PW	Culverts	C062	John Watson Culvert 2	John Watson Road	25	45,000	45,000					45,000		45,000
PW	Culverts	C130	Lochiel Creek Culvert North	63	25.5	40,000	40,000					40,000		40,000
PW	Culverts	C136	Robertson Twin Pipes	Robertson Line	43	61,000	61,000					61,000		61,000
PW	Culverts	C201	Broomes Creek Culvert	7	16	200,000	200,000					200,000		200,000
PW	Culverts	C215	Elm Creek Culverts	Snake River Line	21	36,000	36,000					36,000		36,000
PW	Culverts	C221	Kenny's Culvert	Pleasant Valley Road	48.14	20,000	20,000					20,000		20,000
PW	Culverts	C229	Burnt Bridge	Burnt Bridge Road	42.64	30,500	0					0		0
PW	Culverts	C250	Pleasant Valley Culvert	Grants Settlement Road	64.1	80,000	0					0		0
PW	Culverts	C268	St. Columbkille's Culvert	58	59	90,000	90,000					90,000		90,000
PW	Equipment	U-body water tank					36,000					36,000		36,000
PW	Equipment	Roller 3'					55,000					55,000		55,000
PW	Equipment	Forestry Mulcher Attachment					50,000					50,000		50,000
PW	Equipment	Forestry Mulcher Attachment					50,000					50,000		50,000
PW	Equipment	Offset Roller					81,000					81,000		81,000

County of Renfrew
2023 Budget

					Road 70			Sources of Financing						
					Bridge 70									
					Culvert 70	Revised	Budget \$	Pembroke Provincial Gas Tax Res						Total
Department	Primary Category	Detail	Detail	Location/Other	or Risk	10 Year Plan		Taxation/Other	Share	Grant	Reserve	Reserves	Debt	
PW	Equipment	Road Winener					110,000					110,000		110,000
PW	Equipment	Offset Roller	2022 budget carry over	tendering as of Oct 2022			80,153					80,153		80,153
PW	Equipment	Road Shoulder MC	2022 budget carry over	tendering as of Oct 2022			95,440					95,440		95,440
PW	Roads		Intersections			200,000	200,000					200,000		200,000
PW	Roads		Scratch Coat			750,000	750,000					750,000		750,000
PW	Roads	1	River Road	Lochwinnoch Rd-to-Storie Rd	27.1	603,077	603,077					603,077		603,077
PW	Roads	1	River Road	Storie Rd-to-County CP Trail	21.5	533,930	533,930					533,930		533,930
PW	Roads	6	Gillan Rd	Hwy 60 (O'Brien Rd)-to-Jamieson Lane	72.9	192,214						0		0
PW	Roads	6	Gillan Rd	Jamieson Lane-to-Lime Kiln Rd	67.7	300,902						0		0
PW	Roads	6	Gillan Rd	Lime Kiln Rd-to-Hwy 17	57.7	134,160						0		0
PW	Roads	6	Lochwinnoch Rd	Hwy 17-to-Thomson Rd	69.4	356,315						0		0
PW	Roads	6	Lochwinnoch Rd	Thomson Rd-to-Yantha Rd	70.1	469,159						0		0
PW	Roads	6	Lochwinnoch Rd	Yantha Rd-to-Miller Rd	75.3	201,641						0		0
PW	Roads	20	Bruce St	Hwy 60-to-Urban Limit	71.4	93,065	93,065					93,065		93,065
PW	Roads	20	Bruce St	Urban Limit-to-Cobus Rd	68	239,014	239,014					239,014		239,014
PW	Roads	20	Bruce St	Cobus Rd-to-Hwy 17	66.4	207,480	207,480					207,480		207,480
PW	Roads	21	Beachburg Rd	Hila Rd-to-City Rd 12 (Westmeath Rd)	73.8	272,617						0		0
PW	Roads	21	Beachburg Rd	Cty Rd 12 (Westmeath Rd)-to-Finchley Rd	74.3	397,720						0		0
PW	Roads	23	Highland Rd	Sawmill Rd-to-Frank St	47.8	166,970						0		0
PW	Roads	23	Highland Rd	Frank St-to-City Rd 2 (White Lake Rd)	46.9	472,610						0		0
PW	Roads	24	White Water Rd	Stafford Third Line-to-Hwy 17	49.4	1,309,911	1,309,911			833,791		476,120		1,309,911
PW	Roads	30	Lake Dore Rd	Hwy 60-to-St. John's Church Steps	42.9	631,856	631,856					631,856		631,856
PW	Roads	30	Lake Dore Rd	St. John's Church Steps-to-Lovers Lane	20.3	961,944	961,944					961,944		961,944
PW	Roads	30	Lake Dore Rd	Lovers Lane-to-Sperberg Rd	30.7	935,748	935,748					935,748		935,748
PW	Roads	37	Murphy Rd	Hwy 17-to-City Rd 26 (Doran St)	17.9	1,077,840	1,077,840			669,263		408,577		1,077,840
PW	Roads	37	Murphy Rd	Cty Rd 26 (Doran St)-to-City Rd 51 (Petawawa B	31.5	490,588	490,588					490,588		490,588
PW	Roads	42	Forest Lea Rd	Hwy 17-to-B Line Rd	75.5	389,298	389,298					389,298		389,298
PW	Roads	42	Forest Lea Rd	B Line Rd-to-Meadowbrook Dr West Junction	61.6	256,330	256,330					256,330		256,330
PW	Roads	42	Forest Lea Rd	Meadowbrook Dr West Junction-to-City Rd 51 (P	75	113,724	113,724					113,724		113,724
PW	Roads	45	Russett Dr	Vanjumar Rd-to-Nieman Dr	47	604,500								0
PW	Roads	45	Russett Dr	Nieman Dr-to-Scheel Dr	56.8	561,100								0
PW	Roads	58	Round Lake Rd	Deer Trail Rd-to-Turners Rd	45.5	763,470	763,470			763,470				763,470
PW	Roads	58	Round Lake Rd	Turners Rd-to-Bonnechere R Bdge W Exp Jnt	54.3	494,010	494,010			494,010				494,010
PW	Roads	65	Centennial Lake Rd	2872 Centennial Lake Rd-to-Black Donald Accoe	14.5	686,230	686,230			686,230				686,230
PW	Roads	508	Calabogie Rd	Cty Rd 34 (Norton Rd)-to-Mill St	34.5	918,160	918,160					918,160		918,160
PW	Roads	508	Calabogie Rd	Goshen Rd-to-Nabarr Rd	45.2	430,564	430,564					430,564		430,564
PW	Roads	508	Calabogie Rd	Nabarr Rd-to-City Rd 63 (Stewartville Rd)	58.9	418,982	418,982					418,982		418,982
PW	Roads	508	Calabogie Rd	Cty Rd 63 (Stewartville Rd)-to-Hwy 17	52.5	401,799	401,799					401,799		401,799
PW	Roads	512	Foymount Rd	2022 budget carry over 1.8M								0		0
PW	Roads	512	Foymount Rd	B257-to-Lake Clear Rd	5	1,032,960	1,032,960						1,032,960	1,032,960
PW	Roads	512	Foymount Rd	Lake Clear Rd-to-Buelow Rd	5	802,230	802,230						802,230	802,230
PW	Roads	512	Foymount Rd	Buelow Rd-to-Verch Rd	5	1,605,930	1,605,930						1,605,930	1,605,930
PW	Roads	512	Foymount Rd	Verch Rd-to-Miller Rd (Heidemans Lumber)	5	1,049,070	1,049,070						1,049,070	1,049,070
PW	Roads	515	Palmer Rd	Riverside Dr-to-McPhee Bay Rd	45.2	688,599								0
PW	Roads	515	Palmer Rd	McPhee Bay Rd-to-Finch Rd	62.5	650,867								0
PW	Roads	515	Palmer Rd	Finch Rd-to-Palmer Rapids Dam Rd	48.9	609,194	1,585,870			1,585,870				1,585,870
PW	Roads	515	Palmer Rd	Palmer Rapids S Urban Lmt-to-Palmer Rapids N	47.9	183,700	183,700				183,700			183,700
PW	Roads	515	Palmer Rd	Palmer Rapids N Urban Lmt-to-City Rd 514 (Sch	67.4	311,300	311,300				311,300			311,300
PW	Roads	517	Dafoe Rd	Radcliffe Twp (Coulas Rd)-to-CA 2049	19.6	421,000	421,000					421,000		421,000
PW	Roads	517	Dafoe Rd	CA 2049-to-Peplinskie Rd	17.3	505,200	505,200					505,200		505,200
PW	Roads	517	Dafoe Rd	Peplinskie Rd-to-Serran Rd	12.7	348,210	348,210					348,210		348,210
PW	Roads	635	Swisha Rd	Hwy 17-to-Interprovincial Bdge S Exp Jnt	74.7	300,000	300,000					300,000		300,000
PW	Vehicles	LDT	LDTR-16-Z335214		Low	42,000	42,000					42,000		42,000
PW	Vehicles	HDT	HDTR-07-J653946	6 Ton Truck	Medium	326,000	326,000					326,000		326,000
PW	Vehicles	HDT	HDTR-08-J105697	6 Ton Truck	Medium	386,000	386,000					386,000		386,000
PW	Vehicles	HDT	HDTR-09-J239888	6 Ton Truck	Low	400,000	400,000					400,000		400,000
PW	Vehicles	Tractor	TRAC-02-L25212	Southwest	High	125,000	125,000					125,000		125,000
PW	Vehicles	Loader	New - Additional		Extreme	500,000	500,000					500,000		500,000
PW	Vehicles	Trailer	New - Additional	Enclosed Cargo 20'	Low	25,000	25,000					25,000		25,000
PW	Vehicles	HDT	2022 budget carry over	617-09 plow truck			391,480					391,480		391,480
PW Total						42,483,189	33,984,064	0	0	2,612,973	2,914,661	23,966,240	4490190	33,984,064
RCHC	Buildings	425 Nelson Street	B2010 - Exterior Walls	brick work	does not qualify	12,240	0					0		0
RCHC	Buildings	150 Elizabeth Street North	D2095 - Domestic Water Heaters	2 X 200 GAL Tank		15,000	15,000					15,000		15,000
RCHC	Buildings	59 Wallace Street - Site	G4020 - Site Lighting	Site lighting*	carryover	25,000	25,000					25,000		25,000
RCHC	Buildings	236 Hall Vent Stacks	critical			25,000	25,000					25,000		25,000
RCHC	Buildings	44 Lorne Street	B2030 - Exterior Doors	exterior doors.	carryover	26,000	26,000					26,000		26,000

County of Renfrew
2023 Budget

Road 70							Sources of Financing							
Bridge 70							Pembroke Provincial Gas Tax Res							
Culvert 70							Taxation/Other Share Grant Reserve Reserves Debt Total							
Department	Primary Category	Detail	Detail	Location/Other	or Risk	Revised 10 Year Plan	Budget \$							
RCHC	Buildings	150 Elizabeth Street North	B2030 - Exterior Doors	Fire Exit Door	carryover	35,000	35,000					35,000		35,000
RCHC	Buildings	425 Nelson Street	fire system consultant		does not qualify	50,000	0					0		0
RCHC	Buildings	75 Stafford Street	D4010 - Sprinklers	Partial sprinkler system.		50,000	50,000					50,000		50,000
RCHC	Buildings	k Cres, 596-598 Frank Dench St	Electrical	does not meet current electrical code		50,000	50,000					50,000		50,000
RCHC	Buildings	26 Spruce Family steps				50,000	50,000					50,000		50,000
RCHC	Buildings	New install bathroom fans	Do 50 in 2023		does not qualify	50,000	0					0		0
RCHC	Buildings	Extension to garage at Lorne				50,000	50,000					50,000		50,000
RCHC	Buildings	75 Stafford Street	C1070 - Plumbing fixture Refurbishment		carryover	75,000	75,000					75,000		75,000
RCHC	Buildings	ey, 220/350 Arith Blvd - (14) Dupl	Roofing	Asphalt shingle roofing.	carryover	75,000	75,000					75,000		75,000
RCHC	Buildings	0-1144 Lea St - (2) Townhome Bl	B30 - Roofing	Asphalt shingles.		90,000	90,000					90,000		90,000
RCHC	Buildings	260 Elizabeth Street North	A20 - Basement Construction	Structural issues		100,000	100,000					100,000		100,000
RCHC	Buildings	0-1144 Lea St - (2) Townhome Bl	B2020 - Exterior Windows	All, based on sample units		125,000	125,000					125,000		125,000
RCHC	Buildings	41 Vimy Building shift				150,000	150,000					150,000		150,000
RCHC	Buildings	1030-1106 Lea St - (4) Townhon B30 - Roofing		Asphalt shingles.		200,000	200,000					200,000		200,000
RCHC	Buildings	demolition and rebuild - 202 cecil			OHPI		546,000			546,000				546,000
RCHC	Buildings	lee & douglas new build		RCHC contribution	COCHI		2,350,000			2,350,000				2,350,000
RCHC	Vehicles	TRAC-09-LAWN02	Tractor 510 MacKay/515 River Rd		Low	8,600	8,600					8,600		8,600
RCHC	Vehicles	TRAC-06-LAWN05	Lawn tractor 425 Nelson		Low	8,600	8,600					8,600		8,600
RCHC	Vehicles	LTDR-15-N107755	VAN MTCE NISSAN		Low	46,000	46,000					46,000		46,000
RCHC Total						1,316,440	4,100,200	0	0	2,896,000	0	1,204,200	0	4,100,200
Grand Total						47,841,929	43,337,164	0	0	5,567,973	2,914,661	30,364,340	4490190	43,337,164



BUSINESS CASE - STAFFING REPORT

Date: February 14, 2023

Department: Public Works and Engineering

Report Prepared by: Taylor Hanrath

PROPOSAL

- Restructure Public Works and Engineering Department, moving Supervisor – Technical Services and Engineering Technicians under the Infrastructure Division;
- Rename Infrastructure Division to Capital Works Division;
- Establish and hire three (3) new full-time positions within the Public Works and Engineering Department, with a start date of March 2023, as detailed below:
 - Civil Designer, reporting to the Manager of Capital Works (formerly Infrastructure)
 - Group 6
 - 1,820 Hours (annual)
 - Engineering Technician, reporting to the Supervisor – Technical Services
 - Group 6
 - 1,820 Hours (annual)
 - Operations Coordinator, reporting to the Manager of Operations
 - Group 7
 - 1,820 Hours (annual)
- Establish the current part-time Administrative Assistant II as a full-time position as detailed below:
 - Group 3
 - 910 Hours (annual)

POSITIONS

Union ☐

Non-Union ☒

Increase in positions as follows:

- Civil Designer, Group 6, 1,820 hours
- Engineering Technician, Group 6, 1,820 hours
- Operations Coordinator, Group 7, 1,820 hours
- Administrative Assistant II (from PT to FT), Group 3, 910 hours

SUMMARY

- Background
- Discussion

Background

The County of Renfrew incurs design schedule difficulties and significant costs annually for the services of Engineering Consultants in support of Capital projects. Staff currently in the Public Works and Engineering Department have the capability to complete designs and supervise construction for most road rehabilitation and culvert structure replacement projects. However, there is no staff member dedicated to undertake design

and construction supervision for culvert structures and the Technical Team, who currently consist of the Supervisor – Technical Services and two Engineering Technicians, have exceeded their project capacity.

Current infrastructure staff have completed designs for a number of culvert structures in recent years, including C058 (Constant Creek Culverts), C142 (Quade Creek Culvert), C222 (Pleasant Valley Steel Arch), C300 (Wolfe Road Twin Pipes), and C302 (Wingle Creek Culvert). However, as there is no dedicated staff member for designing these structures, staff must work as a team on each design, as time permits, and are only able to complete one (1) design, or less, per year. In the past five years, from 2016 – 2021, the County has expended \$1,236,981 on Consultant Services for various culvert structures and has projected similar or rising costs going forward.

The Technical Team has surpassed their capacity for design and supervision of road rehabilitation projects, and the need for these projects continues to increase into the future. In order to save time on designs, roads have been designed to match existing. By doing this, certain items of the road design are not evaluated during the investigation and design for roads completed in house. Additionally, due to the sheer volume of works, road rehab projects that have typically been designed or supervised in house in the past have required the services of Consultants as the Technical Team did not have capacity to complete them. In 2022, the design of County Road 21 (Beachburg Road) incurred a cost of \$77,535.96, while the construction supervision of County Roads 65 (Centennial Lake Road) and 512 (Foymount Road) are projected to incur costs of \$36,900 and \$42,000 respectively.

Discussion

A Civil Designer could realize substantial benefits to the design and supervision for culvert structures and simple bridges by allowing some of these typically contracted services to be completed internally. The benefits of establishing a Civil Designer position in the Public Works and Engineering Department may include those listed below:

- Design flexibility – changes can be made to the design throughout the process without incurring great additional costs or requiring agreement amendments;
- Higher quality designs – Consultants typically review three alternatives during preliminary design, while County staff typically review ten or more;
- Schedule Control – designs could begin immediately when budget approval occurs, and would not require RFPs and further approvals, or to be fit into a busy Consultant schedule;
- Savings on Consultant Services;
- Assistance to other Departments – designs for minor repairs to assets such as bridges along Algonquin or K&P Recreational Trail could be completed in house;

- Assistance to local Municipalities – on larger cross-culverts, where a structure may be warranted, the hydrology could be quickly checked in house and, if a structure is warranted, the design could be completed by the County at significant savings to the local Municipality.

If design for culvert structures are completed internally, it is estimated that approximately \$10,000 in Consultant Services per structure would still be required for items such as Geotechnical Studies or Design Reviews in support of the designs. However, this is significantly less than the \$30,000 – \$54,500 projected cost per structure for design services on the eight (8) culvert structures in 2022 that could have been designed in house. As shown in Table 1 below, it is estimated that significant savings may be realized so long as a minimum of four (4) culvert structure designs could be completed in house annually.

Table 1 - Comparison of Internal vs. Consultant Costs - Structures	2022 Comparison		Min. for Savings Comparison	
	Internal Design	Consultants	Internal Design	Consultants
No. of Structures Designed	8		4	
Average Per Structure Consultant Cost	\$10,000	\$36,000	\$10,000	\$36,000
Salary Costs Associated with Design	\$93,675		\$93,675	
Total Design Costs	\$173,675	\$288,000	\$133,675	\$144,000

A third Engineering Technician joining the Technical Team will significantly improve the thoroughness of review completed on road rehabilitation design, improve design schedules for roads, improve safety on roads, and negate increases in design costs due to the need for Consultant Services on road rehabilitation projects.

It is estimated that, while including evaluation of roadside safety, road alignment, signage, and sightlines in road designs, the current Technical Team could complete design and construction supervision on up to 20 km of road annually. Consultant services, using costs received for County Road 21 (Beachburg Road) rehabilitation design in 2022, could cost an estimated \$31,138.94/km for design on road rehabilitation projects. Consultant services, using County Road 65 (Centennial Lake Road) and County Road 512 (Foymount Road), could cost an estimated \$10,007.22/km for construction supervision on road rehabilitation projects. As shown in Table 2 below, in addition to the other benefits discussed, significant savings may be realized so long as the County continues to undertake the design of a minimum of 2.5 km more than what is currently achievable with current staffing (22.5 km total or more) internally with the third Engineering Technician position established.

Table 2 - Comparison of Internal vs. Consultant Costs - Roads	2022 Comparison	Min. for Savings Comparison
--	------------------------	------------------------------------

	Internal Design	Consultants	Internal Design	Consultants
Length of Roads Designed over 20km	16.4		2.3	
Average Per km Consultant Design Cost		\$31,138.94		\$31,138.94
Average Per km Consultant Supervision Cost		\$10,007.22		\$10,007.22
Salary Costs Associated with Design & Construction Supervision	\$93,675.00		\$93,675.00	
Total Design Costs	\$93,675.00	\$674,797.04	\$93,675	\$94,636.17
<p>As outlined above, shifting of the current Technical Team under the Capital Works Division, and establishment of two (2) new positions within that Division, will provide substantial benefits to the County of Renfrew. However, shifting of the Technical Team under the Capital Works Division leaves a gap in the Operations Division as programs like patrol facility repairs, AVL system, RWIS, and others require specialized staff input to maintain. New Operations programs, such as electronic road patrol and digital service records, require a great deal of time to research and enact but would provide great benefit to the Operations Division overall. Therefore, in order to restructure the Department to include all Road and Structure Capital Works under a single division, a new position is required within the Operations Division as well, an Operations Coordinator. All of the Operations programs require careful and detailed oversight. Programs such as the maintenance and repairs at the Patrol facilities, the Automated Vehicle Location (AVL) system, the Regional Weather Information System (RWIS), and the Health and Safety program for Operations staff require a dedicated staff member to ensure they are maintained. Additionally, an Operations Coordinator would permit advancements in the Division such as the enactment of electronic road patrol, digital service records, digit work/service orders, and more programs that could realize substantial efficiencies and/or savings within the Division in the future. Additionally the Operations Coordinator would provide the below benefits:</p> <ul style="list-style-type: none"> • Assistance to other Departments – developing maintenance programs for the Algonquin and K&P Recreational Trails; • Assistance to local Municipalities – developing or advancing Operations Programs with staff of local Municipalities. <p>The completion of more designs internally will increase the administrative workload as items such as Preliminary Design Reports (PDRs), more Payment Certificates, and specifications will now be drafted, formatted, and reviewed internally as well. As such, it is proposed that the Administrative Assistant II, currently under the Infrastructure Division, which is currently part-time be established as a full-time position.</p>				

Table 3 below provides a summary of potential savings based on the 2022 Capital Program as well as minimum amount of design and construction supervision required to be completed internally in order to achieve savings from typical Consultant Costs with the proposed Departmental restructuring and staffing changes.

Table 3 - Comparison of Internal vs. Consultant Costs - Overall	2022 Comparison		Min. for Savings Comparison	
	Internal Design	Consultants	Internal Design	Consultants
No. of Structures Designed	8		4	
Average Per Structure Consultant Cost	\$10,000.00	\$36,000.00	\$10,000.00	\$36,000.00
Length of Roads Designed (over 20km)	16.4		5.7	
Average Per km Consultant Cost		\$41,146.16		\$41,146.16
Civil Designer Salary & Benefits	\$93,675.00		\$93,675.00	
Engineering Technician Salary & Benefits	\$93,675.00		\$93,675.00	
Operations Coordinator Salary & Benefits	\$101,089.00		\$101,089.00	
Administrative Assistant II Salary & Benefits increase	\$48,769.00		\$48,769.00	
Total Costs	\$417,208.00	\$962,797.02	\$377,208.00	\$378,533.11

As per above, substantial savings, in addition to benefits such as improved designs, improved design schedules, and the ability to assist Local Municipalities, could be achieved by the County of Renfrew through restructuring the Public Works and Engineering Department, moving the part-time Administrative Assistant II to full-time, and enacting three new positions – a Civil Designer, a third Engineering Technician, and an Operations Coordinator.

Though the proposal will significantly reduce Consultant Services, the need for such services cannot be eliminated. Consultants shall still be required for items requiring specialized skills such as bridge rehabilitation, road reconstruction, materials testing, geotechnical investigations, and other items outside the scope achievable with staff.

RECOMMENDATION	<p>THAT the Operations Committee support the following within the Public Works & Engineering Department:</p> <ul style="list-style-type: none">• Restructuring of the Public Works & Engineering Department;• Renaming of the Infrastructure Division to the Capital Works Division;• Enactment of three new positions – a Civil Designer (Group 6, 1,820 hours), a third Engineering Technician (Group 6, 1,820 hours), and an Operations Coordinator (Group 7, 1,820 hours); and• Establishment of the current part-time Administrative Assistant II position as a full-time position (Group 3, 910 hours). <p>AND THAT this be brought forward to the February 22, 2023 County Council Budget Workshop for approval; AND FURTHER THAT a report be completed and presented in 2025 budget cycle evaluating the progress, benefits, and impacts associated with the changes resulting from this Business Case.</p>																								
FINANCIAL CONSIDERATIONS	<p>The annual cost of the Civil Designer is \$93,675. The cost of the Civil Designer is proposed to be applied to the projects on which they work, and would be allocated from the Capital budget for the projects each year similar to costs associated with Consultant services and Engineering Technician salaries now.</p> <p>The annual cost of the Engineering Technician is \$93,675. The cost of the added Engineering Technician is proposed to be applied to the projects on which they work, and would be allocated from the Capital budget for the projects each year similar to Consultant Costs and Engineering Technicians now.</p> <p>The annual cost of the Operations Coordinator is \$101,089. The cost of the Operations Coordinator is proposed to be applied to the Maintenance budget.</p> <p>The annual cost increase of moving the part-time Administrative Assistant II to full time is \$48,768. The additional cost of the full-time Administrative Assistant is proposed to be applied to the Administration budget.</p> <p>Additional costs for items such as establishment of work/office space and purchasing of necessary equipment such as computers are approximately \$23,000 for the three new positions.</p> <table><tr><td></td><td><u>HRS</u></td><td><u>Salary/Benefits</u></td></tr><tr><td>Civil Designer</td><td>1,820</td><td>\$ 93,675</td></tr><tr><td>Engineering Technician</td><td><u>1,820</u></td><td><u>\$ 93,675</u></td></tr><tr><td>Total PW Capital Budget Enhancement</td><td>3,640</td><td>\$187,530</td></tr><tr><td>Operations Coordinator</td><td>1,820</td><td>\$101,089</td></tr><tr><td>Administrative Assistant II</td><td>910</td><td>\$ 48,768</td></tr><tr><td>Computer Supplies</td><td><u> </u></td><td><u>\$ 23,000</u></td></tr><tr><td>Total PW Administration Budget Enhancement</td><td>2,730</td><td>\$175,857</td></tr></table>		<u>HRS</u>	<u>Salary/Benefits</u>	Civil Designer	1,820	\$ 93,675	Engineering Technician	<u>1,820</u>	<u>\$ 93,675</u>	Total PW Capital Budget Enhancement	3,640	\$187,530	Operations Coordinator	1,820	\$101,089	Administrative Assistant II	910	\$ 48,768	Computer Supplies	<u> </u>	<u>\$ 23,000</u>	Total PW Administration Budget Enhancement	2,730	\$175,857
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Total PW Administration Budget Enhancement	2,730	\$175,857																							

To:	John Steckly, A.Sc.T. General Manager Operations Town of Arnprior 105 Elgin Street W.	From:	Angelo Renon Stantec Consulting Ltd 400 – 1331 Clyde Ave Ottawa, ON
File:	163601380	Date:	September 9, 2020

Reference: Edey Street \ Galvin Street \ Daniel Street Intersection Review

1.0 INTRODUCTION

Stantec Consulting Ltd (Stantec) has been retained by the Town of Arnprior (Town) to undertake a review of the intersections of Edey Street and Daniel Street as well as Galvin Street and Daniel Street. As part of this review, Stantec will review \ develop options to realign the intersections as well provide comment on other options (right-in\right out, staggered signalized intersection, roundabout) that may be considered at this location. Stantec understands that the Galvin Street \ Daniel Street intersection has been designated as one of two primary entrances for the new Fairgrounds subdivision in the Town of Arnprior. The developments will include 161 residential units with a mix of unit types including single-detached (43), semi-detached (84) and townhomes (28). For descriptive purposes for this report, Daniel St is considered to be oriented in a north-south direction with Edey St located on the west side of Daniel St and Galvin St located on the east side of Daniel St.

As part of the new Fairgrounds development the Town has requested that Stantec's mandate includes the development of a realigned intersection at Edey St \ Galvin St \ Daniel St and discussion of 3 other Options. A cost estimate will be developed for these options.

1.1 SITE DESCRIPTION

The location of the study area, identified in Figure 1, includes Daniel Street and its intersection with Edey St and Galvin St. Area roadways serve the needs of commuter traffic and local commercial traffic on Edey St. The Edey St \ Daniel St intersection is signalized, while the existing Galvin St \ Daniel St intersection is a stop control (for Galvin St).

Existing Roadways

Daniel Street South is a north-south arterial roadway that provides access to Highway 417. Within the study area, Daniel Street South has a three-lane cross-section, with the center lane acting as a two-way left-turn lane, and auxiliary right-turn lanes provided at major intersections (Daniel Street /Baskin Drive). South of Baskin Drive, Daniel Street has a five-lane cross-section. The posted speed limit is 40 km/h north of Baskin Drive and 50 km/h south of Baskin Drive.

Edey Street is an east-west urban local roadway that extends from Daniel Street in the east to Edward Street South in the west. Edey Street has a two-lane cross-section and sidewalks at the north and south sides. The posted speed limit is 40 km/h.

Reference: Edey Street \ Galvin Street \ Daniel Street Intersection Review

Galvin Street is an east-west local roadway that extends from the Site in the east to Daniel Street South in the west. Galvin Street has a two-lane cross-section and continuous access to Michelson Auto Centre parking lot at the north. Galvin St will be one of the two main access roads for the new Fairground development. A 40 km/h speed limit is proposed.

The study area also includes:

- Arnprior Motor Inn located directly across Edey St. The traffic signal includes one of the two entrances to the Arnprior Motor Inn.
- A garage (Michelson Auto Centre) located in the north-east quadrant of Galvin St \ Daniel St intersection
- Arnprior Curling Club located behind the Arnprior Motor Inn on Galvin St.
- There is a ravine with a 1600 csp culvert located on Edey St approximately 47m from the intersection with Daniel St.

Existing Intersections

Daniel Street / Edey Street

The Daniel Street / Edey Street intersection is a signalized 'T'-intersection with pedestrian crossings on all approaches. On the east side of the intersection an entrance to the Arnprior Motor Inn connects to the intersection and is controlled by the traffic control signals. The southbound approach consists of a shared left/through/right lane. The northbound approach consists of a through and dedicated left-turn lane. The eastbound approach consists of a shared left/through/right lane. There is a southern driveway from Daniel Street South to the Arnprior Motor Inn approximately 30 metres south of the intersection. All movements are permitted at this location.

Daniel Street / Galvin Street

The Daniel Street South/Galvin Street intersection is an unsignalized 'T' intersection with stop control on the minor approach. The southbound approach consists of a shared through/left-turn lane. The northbound approach consists of a shared through/right-turn lane. The westbound approach is the minor approach and consists of a shared left/through/right lane. All movements are permitted at this location. Upon completion of the development left turns out at this location will be restricted based on the Traffic Impact Study.

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Reference: Edey Street \ Galvin Street \ Daniel Street Intersection Review

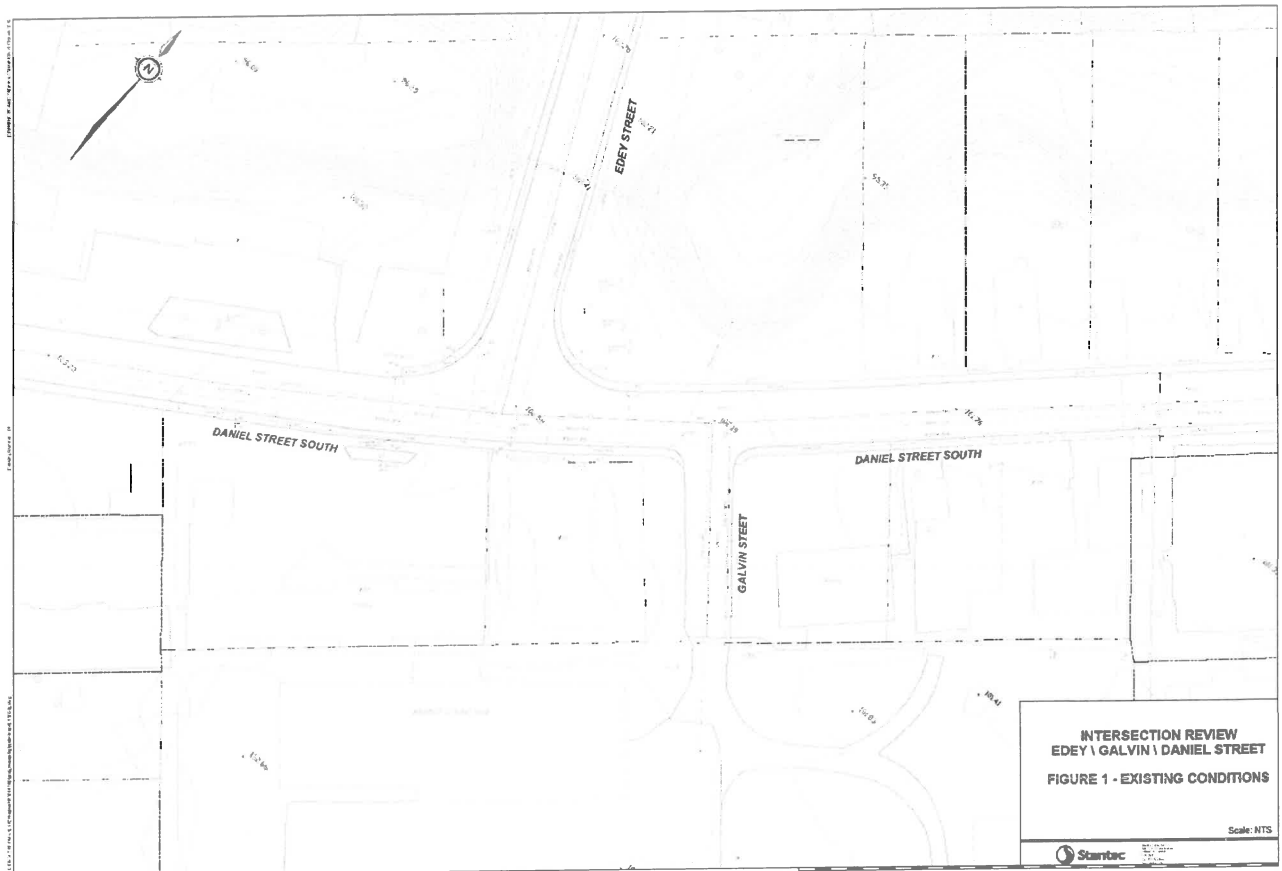


Figure 1 – Project Location

Photos of the site can be found in Appendix A – Photos.

1.1.1 Project Objectives

The project objectives are:

- Develop realigned signalized intersection option
- Discuss other intersection options
- Identify and discuss constraints and impacts of option
- Determine Class Environmental Assessment (EA) requirements

Reference: Edey Street \ Galvin Street \ Daniel Street Intersection Review

1.1.2 Municipal Class Environmental Assessment Implications

Within the Municipal Class Environmental Assessment document, published by the Municipal Engineers Association in 2011 (with 2013 errata corrections), the Municipal Road Projects schedules in Appendix 1 outline the different types of road projects and the EA requirements for each. The project descriptions that are most suitable for the intersection improvements for the Edey St \ Galvin St \ Daniel St is as follows:

12. a) *Construction of localized operational improvements at specific locations (e.g. the realignment of the intersection)*

13. *Installation, construction or reconstruction of traffic control devices (e.g. signing, signalization)*

For the construction of localized operational improvements, these projects fall under a Schedule A+ process and have no prescribed cost limit. These projects are pre-approved and require notification to the public prior to implementation.

For the installation of traffic control devices, these projects fall under a Schedule A process and have a prescribed cost limit of \$9.5 million before triggering a Schedule B process. It is anticipated that the intersection improvements for this location will be under the \$9.5 million limit. Schedule A activities are pre-approved. The proponents may proceed without following the procedures set out in any other part of the Municipal Class EA.

2.0 PROJECT OPTIONS

The study required the development of the realigned signalized intersection option and discussion of 3 other intersection options.

2.1 INTERSECTION OPTIONS

Four Options have been identified at this intersection:

- Option 1 – Realigned signalized intersection. Stantec will review and develop an option for the realignment and signalization of this intersection.
- Option 2A – Right-in, Right-out access to Galvin St. Signals at Edey St to remain as is.
- Option 2B - Right-in, Right-out access to Galvin St. Signals at Edey St to remain as is. As part of this option, new signals will be added at Daniel St \ James St.
- Option 3 – Offset signalized intersection at Edey St \ Galvin St \ Daniel St.

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Reference: Edey Street \ Galvin Street \ Daniel Street Intersection Review

- Option 4 – Roundabout at Edey St \ Galvin St \ Daniel St.

2.2 DESIGN CRITERIA

Standards

The Transportation Association of Canada's (TAC) *Geometric Design Guide for Canadian Roads* and the Ontario Ministry of Transportation (MTO) *Geometric Design Standards for Ontario Highways* were the primary design standards used to establish the design criteria to be used for this intersection review.

The proposed Design Criteria below is also based on the following:

- TAC's Geometric Design Guide for Canadian Road, 2017
- Ontario Highway Traffic Act, R.S.O. 1990
- Ontario Traffic Manual – Books 1, 2, 5, 11, 12, 15, 18.

The items below identify the proposed design criteria required for the proposed intersection Options.

Daniel Street

Element	Design Standard
Roadway Classification	UAU (Urban Arterial Undivided)
Posted Speed	40 km/hr
Design Speed	50 km/hr
Design Vehicle	Aerial Fire Truck
Minimum Stopping Sight Distance	65 m
Equivalent Minimum "K" Factor – Crest (SSD)	13

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Reference: Edey Street \ Galvin Street \ Daniel Street Intersection Review

Equivalent Minimum "K" Factor – Sag (Headlight Control)	10
Radius Minimum	80 m
Minimum Radius for 50 km\hr D.S. for Normal Crown	150 m
Pavement Width	2 @ 5.35m (south of Edey St) 2 @ 3.50m – 3.75m (north of Edey St)
Sidewalk Width	1.5m
Approach Grades at Intersection	0.5% - 3%
Maximum Grade through Intersection	0.5%-2.0%
Boulevard / Green Zone Width	0.5m-5.0m
Cycling Facility	Shared lane

Edey Street

Element	Design Standard
Roadway Classification	ULU (Urban Local Undivided)
Posted Speed	40 km\hr
Design Speed	40 km\hr
Design Vehicle	Aerial Fire Truck

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Reference: Edey Street \ Galvin Street \ Daniel Street Intersection Review

Minimum Stopping Sight Distance	50 m
Equivalent Minimum "K" Factor – Crest (SSD)	11
Equivalent Minimum "K" Factor – Sag (Headlight Control)	9
Radius Minimum	50 m
Minimum Radius for 50 km\hr D.S. for Normal Crown	120 m
Pavement Width	2 @ 5.35m
Sidewalk Width	1.5m
Approach Grades at Intersection	0.5% - 3%
Maximum Grade through Intersection	0.5%-2.0%
Boulevard / Green Zone Width	0.5m-5.0m
Cycling Facility	Shared lane

Galvin Street

Element	Design Standard
Roadway Classification	ULU (Urban Local Undivided)
Posted Speed	40 km\hr

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Reference: Edey Street \ Galvin Street \ Daniel Street Intersection Review

Design Speed	40 km\hr
Design Vehicle	Aerial Fire Truck
Minimum Stopping Sight Distance	50 m
Equivalent Minimum "K" Factor – Crest (SSD)	11
Equivalent Minimum "K" Factor – Sag (Headlight Control)	9
Radius Minimum	50 m
Minimum Radius for 50 km\hr D.S. for Normal Crown	120 m
Pavement Width	2 @ 4.50m
Sidewalk Width	1.5m
Approach Grades at Intersection	0.5% - 3%
Maximum Grade through Intersection	0.5%-2.0%
Boulevard / Green Zone Width	0.5m-5.0m
Cycling Facility	Shared lane

Reference: Edey Street \ Galvin Street \ Daniel Street Intersection Review

2.2.1 Description of Options

2.2.1.1 Option 1 – Realigned Signalized Intersection

Option 1 includes realigning Edey St and Galvin St, intersecting Daniel St at a skew of 70°. Edey St and Galvin St are currently at an offset of 39.6m. Ideally, intersections should be at a skew angle of 90° with a 70° angle as a minimum. A realigned intersection has been developed based on a 70° intersection skew angle. Refer to Figure 2 in Appendix B for the layout for this option. Increasing skew angle results in substantial property impacts as well as substantial impacts to the Arnprior Curling Club and the large culvert. The alignment has been developed with horizontal curves with a radius of 95.0 m, resulting in a reverse crown (which connects to intersection at standard grades as noted in the design criteria). The realigned signalized intersection results in stop blocks being located offset from the pedestrian crossing lines in order to accommodate turning movements (Figure 3-5). The design vehicle used is an aerial fire truck. The realigned intersection results in:

- Relocation of above ground utilities (Hydro One and Bell poles) and underground (gas, Bell)
- Adjustment and relocation of catchbasins (storm sewer modifications to match realignment). Drainage will be addressed by connecting to the existing storm sewer system.
- Relocation of fire hydrant and adjustment to water valves
- Impacts to ravine and extension of the 1600mm CPS culvert by 4 – 5 m
- Entrance modifications including closure of one of the entrances at the Arnprior Motor Inn and modification to the Michelson Auto Centre Galvin Street entrance.
- Property acquisition. Property will be required in the south-east quadrant (vacant lot 79) and Arnprior Curling Club. There may be property impacts in the north-west quadrant due to culvert extension.
- Installation of traffic signals
- Dedicated cycling infrastructure is not included with the improvements.
- Guide rail to be re-instated adjacent to ravine.

2.2.1.2 Option 2A – Right-in, Right-out access at Galvin St.

Option 2 was identified in the 10 Galvin Street – James Street Signal Warrant Technical Memorandum (September 12, 2019) prepared by CGH Transportation. This option includes:

Reference: Edey Street \ Galvin Street \ Daniel Street Intersection Review

- The addition of a concrete median between the northbound and southbound lanes of Daniel St and will begin at the Edey St intersection. The existing roadway width through this area varies between 10.70m and 9.70m. Minor roadway widening will be required to accommodate the new median.
- Existing traffic signals at Edey St to remain as is.
- This option limits the number of movements in and out of the development.

2.2.1.3 Option 2B – Right-in, Right-out access at Galvin St including New Traffic Signals at Daniel St and James St.

Option 2 was identified in the 10 Galvin Street – James Street Signal Warrant Technical Memorandum (September 12, 2019) prepared by CGH Transportation. This option includes:

- The addition of a concrete median between the northbound and southbound lanes of Daniel St and will begin at the Edey St intersection. The existing roadway width through this area varies between 10.70m and 9.70m. Minor roadway widening will be required to accommodate the new median.
- Existing traffic signals at Edey St to remain as is.
- This option includes the addition of new traffic signals at Daniel St and James Street.
- This option limits the number of movements in and out of the development.

2.2.1.4 Option 3 – Offset signalized intersection at Edey St \ Galvin St \ Daniel St.

Option 3 was discussed in the 10 Galvin Street – James Street Signal Warrant Technical Memorandum (September 12, 2019) prepared by CGH Transportation. The technical memorandum includes input from Partham Engineering (engineering firm specialized in design and installation of traffic control signals and illumination) that identifies issues with implementing signals at Galvin St. Specifically Partham identifies the following:

"This is not an ideal location to implement traffic signals. If traffic signals are added at Daniel St and Galvin St, they would need to operate from one controller at Daniel St and Edey St. Ideally the controller setup would provide an extended green signal on Daniel St EB at Galvin St and on Daniel St WB at Edey St. This is required to reduce the number of rear-end collisions caused by closely spaced signals. But this setup would cause an "amber trap" situation on Daniel St eastbound at Edey St and Daniel St westbound at Galvin St. The eastbound direction is shown an amber while the opposing westbound direction is still shown an extended green signal. Motorists facing the eastbound amber signal assume westbound motorists also have an amber signal and that traffic will stop. This leads to a potential for angle type accidents. This same condition would exist for Daniel St eastbound at Galvin St.

Reference: Edey Street \ Galvin Street \ Daniel Street Intersection Review

The second option would be to eliminate the extended green operation and display amber to all directions on Daniel St at the same time. Due to the close spacing of signals motorists may react differently. Some may try to stop between signals while other will try to clear the intersection. This can lead to rear-end type collisions.

Closely spaced signals such as these will always cause traffic related issues. If traffic signals are not warranted at Daniel St and Galvin St then consideration should be given to not install signals."

This option can be found in various municipalities throughout Ontario and is still being implemented. It is not a preferred option due to safety issues.

2.2.1.5 Option 4 – Roundabout at Edey St \ Galvin St \ Daniel St.

A functional design study would be required to fully assess the feasibility of a roundabout at this location. Based on our preliminary review of the traffic volumes, roadway geometrics and site constraints, offset intersections are not ideal candidates for roundabouts. Based on the information provided, an inscribed circle diameter of 52.0m and an island diameter (including truck apron) of 39.0m would be required resulting in a larger footprint impact than the proposed realigned intersection. The roundabout would impact the following quadrants from a property perspective:

- South-east quadrant including the Arnprior Motor Inn
- North-east quadrant
- North-west quadrant

Impacts will include:

- Relocation of above ground utilities (Hydro One and Bell poles) and underground (gas, Bell)
- Adjustment and relocation of catchbasins (storm sewer modifications to match realignment)
- Relocation of fire hydrant and adjustment to water valves
- Impacts to ravine and extension of the 1600mm CPS culvert by 5 - 6 m
- Entrance modifications including closure of one of the entrances at the Arnprior Motor Inn and modification to the Michelson Auto Centre Galvin Street entrance.
- Property acquisition. Property will be required in the south-east quadrant (vacant lot 78 and 79) , Arnprior Curling Club and potential impact to Arnprior Motor Inn property. There may also be property impacts in the north-west quadrant due to culvert extension.

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Reference: Edey Street \ Galvin Street \ Daniel Street Intersection Review

3.0 COST ESTIMATES

Class C cost estimates have been developed for each alternative and are summarized below in Table 1 below. Table 1 can also be found in Appendix C.

Table 1 - "Class C" Cost Estimates

Section	Description	Option 1 Realigned Intersection	Option 2A Right-in \ Right- Out	Option 2B Right-in \ Right- Out w New Intersection at Daniel \ James	Option 3 Offset Intersection	Option 4 Roundabout
A	General	\$ 10,000.00	\$ 5,000.00	\$ 5,000.00	\$ 8,000.00	\$ 20,000.00
B	Removals	\$ 95,000.00				\$ 115,000.00
C	Storm	\$ 80,000.00	\$ -	\$ -		\$ 135,000.00
D	Road ¹	\$ 313,000.00	\$ 25,000.00	\$ 100,000.00	\$ 30,000.00	\$ 555,000.00
E	Landscaping	\$ 16,000.00	\$ -	\$ 5,000.00	\$ 4,000.00	\$ 35,000.00
F	Traffic Signals ²	\$ 185,000.00	\$ -	\$ 195,000.00	\$ 120,000.00	
G	Streetlighting ³	\$ 35,000.00	\$ -	\$ 40,000.00	\$ 30,000.00	\$ 140,000.00
Estimated Construction Tender Total		\$ 734,000.00	\$ 30,000.00	\$ 345,000.00	\$ 192,000.00	\$ 1,000,000.00
Engineering Services (20% of Construction Total)		\$ 146,800.00	\$ 6,000.00	\$ 69,000.00	\$ 38,400.00	\$ 200,000.00
Utilities		\$ 22,000.00	\$ -	\$ 20,000.00	\$ -	\$ 38,000.00
Property ⁴		TBD	\$ -	\$ -	\$ -	TBD
Town Internal Costs (5% of Construction Total)		\$ 36,700.00	\$ 1,500.00	\$ 17,250.00	\$ 9,600.00	\$ 50,000.00
Miscellaneous (5% of Construction Total)		\$ 36,700.00	\$ 1,500.00	\$ 17,250.00	\$ 9,600.00	\$ 50,000.00
Sub-Total		\$ 976,200.00	\$ 39,000.00	\$ 468,500.00	\$ 249,600.00	\$ 1,338,000.00
Contingency (20%)		\$ 195,240.00	\$ 7,800.00	\$ 93,700.00	\$ 49,920.00	\$ 267,600.00
Total		\$ 1,171,440.00	\$ 46,800.00	\$ 562,200.00	\$ 299,520.00	\$ 1,605,600.00

¹ Assume 2 lifts 60 mm SuperPave, 150mm Granular A, 400mm Granular B, Type II

² Does not include cost for PXO at roundabout

³ Assume that streetlighting will entail of 400W equivalent LED luminaires in all splitter islands within the intersection and with a spacing of 35m to 50m on each of the approaches

⁴ Property costs unknown for Option 1 and Option 4

3.1 COMPARATIVE REVIEW OF INTERSECTION DESIGN OPTIONS

Using the information available, including topographic mapping, utility information, conceptual designs of the options were developed for the Edey St \ Galvin St \ Daniel St intersection.

The following provides a high-level review of the intersection options identified in this memo. Six key criteria will be used to summarize each alternative. These include:

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Reference: Edey Street \ Galvin Street \ Daniel Street Intersection Review

Safety Improvements:

The safety improvement potential of the traffic control options was evaluated.

- Option 1 – Realigned signalized intersection. The traffic signal option is expected to improve safety on the sideroads as the eastbound and westbound movements would operate under dedicated signal phases. The intersection skew angle (70°) does not provide the best geometry resulting in reduced sight triangles.
- Option 2A – Right-in, Right-out access to Galvin St. This option is relatively neutral in terms of safety improvements. It results in a reduced number of movements and thus a reduction in potential conflicts at the Galvin St intersection but increases number of vehicles accessing and leaving the development through the James St \ Daniel St intersection.
- Option 2B – Right-in, Right-out access to Galvin St including new traffic signals at Daniel St and James St. This option is relatively neutral in terms of safety improvements. It results in a reduced number of movements and thus a reduction in potential conflicts. It also directs certain movement to the development through James St \ Daniel St intersection. The addition of traffic signals at James St \ Daniel St improves the safety at the intersection given the existing sight line constraints that are present there.
- Option 3 – Staggered signalized intersection at Edey St \ Galvin St \ Daniel St. This option is not recommended given that it creates additional safety concerns.
- Option 4 – Roundabout at Edey St \ Galvin St \ Daniel St. The roundabout option is expected to improve the overall safety at the intersection as it reduces the conflict points from 32 points to 8 points. In addition, the roundabout design option is expected to result in reduced speeds at all entry approaches.

Traffic Operations:

Based on the traffic operational analysis in 10 Galvin Street – James Street Signal Warrant Technical Memorandum (September 12, 2019) prepared by CGH Transportation, the signalized intersection options are anticipated to operate acceptably under projected future conditions. The right-in \ right-out will also function based on the CGH Transportation Technical Memorandum but will direct traffic to James Street. As part of the right-in \ right-out option (Option 2B), traffic signals will be installed at the intersection of Daniel St and James Street. It should be noted that there are sightline issues at the intersection of James St and Daniel Street that will need to be addressed \ mitigated. It is assumed that the roundabout would also be able to operate acceptably under project future conditions.

Site Access:

Site access arrangements were evaluated for all options, particularly for the existing garage, motor inn as well as access to the community.

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Reference: Edey Street \ Galvin Street \ Daniel Street Intersection Review

- Option 1 – Realigned signalized intersection. This option will result in adjustment of the Michelson Auto Centre entrance. Stantec is recommending the closure of one of the entrances to the Arnprior Motor Inn.
- Option 2A – Right-in, Right-out access to Galvin St. This option is relatively neutral in terms of site access. There are no access impacts to nearby sites. It is noted that this option limits the movements into the Fairground development at Galvin St.
- Option 2B – Right-in, Right-out access to Galvin St including new traffic signals at Daniel St and James St. This option is relatively neutral in terms of site access. There are no access impacts to nearby sites. It is noted that this option limits the movements into the Fairground development at Galvin St.
- Option 3 – Staggered signalized intersection at Edey St \ Galvin St \ Daniel St. Site access is not impacted by this option.
- Option 4 – Roundabout at Edey St \ Galvin St \ Daniel St. Site access to the Arnprior Motor Inn and Michelson Auto Centre will be impacted.

Utility Impacts:

Impacts to existing utilities were reviewed for all options.

- Option 1 – Realigned signalized intersection. Three utility poles are directly impacted by this option, resulting in relocation of up to 6 utility poles. Illumination poles are also impacted.
- Option 2A – Right-in, Right-out access to Galvin St. It is anticipated that no utilities are impacted under this option.
- Option 2B – Right-in, Right-out access to Galvin St including new traffic signals at Daniel St and James St. It is anticipated that no utilities are impacted under this option. A preliminary design is required to determine property and utility impacts at this location.
- Option 3 – Staggered signalized intersection at Edey St \ Galvin St \ Daniel St. It is anticipated that one utility pole will be impacted by this option. Underground utility plant is not anticipated to be impacted.
- Option 4 – Roundabout at Edey St \ Galvin St \ Daniel St. Four utility poles are directly impacted by this option, resulting in relocation of up to 6 utility poles. Illumination poles are also impacted. Underground utility plant is not anticipated to be impacted.

Land Requirements:

Property impacts were reviewed for each option.

Reference: Edey Street \ Galvin Street \ Daniel Street Intersection Review

- Option 1 – Realigned signalized intersection. This option results in the property impacts on the north-west quadrant, and the south-east quadrant including the Arnprior Curling Club.
- Option 2A Right-in, Right-out access to Galvin St. Signals at Edey St to remain as is. No property impacts resulting from this option
- Option 2B Right-in, Right-out access to Galvin St including new traffic signals at Daniel St and James St. Signals at Edey St to remain as is. No property impacts resulting from this option
- Option 3 – Staggered signalized intersection at Edey St \ Galvin St \ Daniel St. It is anticipated that no property impacts will result from this option. A preliminary design is required to determine property and utility impacts at this location.
- Option 4 – Roundabout at Edey St \ Galvin St \ Daniel St. This option results in the property impacts on the north-west quadrant, and the south-east quadrant including the Arnprior Curling Club and the Arnprior Motor Inn.

Costs / Implementation:

'Class C' cost estimates were prepared for the options using typical unit prices (based on local municipal client 2019 rates); these estimates considered all the improvements identified for each design option.

- Option 1 – Realigned signalized intersection. Improvement costs are moderate.
- Option 2A – Right-in, Right-out access to Galvin St. Improvement costs for this option are low.
- Option 2B – Right-in, Right-out access to Galvin St including new traffic signals at Daniel St and James St. Improvement costs for this option are low.
- Option 3 – Staggered signalized intersection at Edey St \ Galvin St \ Daniel St. Improvement costs for this option are moderate.
- Option 4 – Roundabout at Edey St \ Galvin St \ Daniel St. Improvement costs for this option are high.

4.0 REVIEW OF OPTIONS

This section provides an overview of the intersection Options.

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Reference: Edey Street \ Galvin Street \ Daniel Street Intersection Review

4.1 COMPARATIVE REVIEW OF INTERSECTION DESIGN OPTIONS

Table 2 in Appendix D provides a comparative review and summary of the intersection design options. It should be noted that a functional design study has not been completed for each option. This review provides identifies the strengths and weaknesses for each option and provides magnitude of costs for each.

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Attachment: Appendix A - Photos
Appendix B – Figure 2 – 5 - Realigned Signalized Intersection \ Turning Templates
Appendix C – Class C Cost Estimates
Appendix D - Comparative Review of Intersection Design Options

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