The Corporation of the County of Wellington
Roads Committee
Agenda

September 8, 2015
9:00 am
County Administration Centre
Keith Room

Members: Warden Bridge; Councillors Williamson (Chair), Breen, Driscoll, Linton

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Next meeting date October 13, 2015 or at the call of the Chair.

County of Wellington

Roads and Engineering

Statement of Operations as of

31 Aug 2015

	Annual Budget	August Actual $	YTD Actual $	YTD Actual %	Remaining Budget
Revenue					
Municipal Recoveries	$715,000	$1,188	$456,647	64%	$258,353
User Fees & Charges	$210,000	$5,053	$75,516	36%	$134,484
Sales Revenue	$400,000	$0	$210,922	53%	$189,078
Internal Recoveries	$1,750,000	$99,396	$1,301,481	74%	$448,519
Total Revenue	**$3,075,000**	**$105,637**	**$2,044,566**	**66%**	**$1,030,434**
Expenditures					
Salaries, Wages and Benefits	$4,870,400	$305,402	$3,521,774	72%	$1,348,626
Supplies, Material & Equipment	$3,749,500	$150,515	$3,529,845	94%	$219,655
Purchased Services	$1,389,700	$88,350	$1,023,320	74%	$366,380
Insurance & Financial	$293,400	$0	$292,098	100%	$1,302
Minor Capital Expenses	$713,200	$189,371	$557,829	78%	$155,371
Debt Charges	$226,500	$0	$135,374	60%	$91,126
Internal Charges	$1,655,300	$73,031	$1,259,273	76%	$396,027
Total Expenditures	**$12,898,000**	**$806,669**	**$10,319,513**	**80%**	**$2,578,487**
NET OPERATING COST / (REVENUE)	$9,823,000	$701,032	$8,274,947	84%	$1,548,053
Transfers					
Transfers from Reserves	$(226,500)	$0	$0	0%	$(226,500)
Transfer to Capital	$8,819,900	$0	$8,819,900	100%	$0
Transfer to Reserves	$2,264,200	$210,922	$1,945,122	86%	$319,078
Total Transfers	**$10,857,600**	**$210,922**	**$10,765,022**	**99%**	**$92,578**
NET COST (REVENUE)	**$20,680,600**	**$911,954**	**$19,039,969**	**92%**	**$1,640,631**

County of Wellington

02-September-2015

Roads and Engineering

Capital Work-in-Progress Expenditures By Departments

All Open Projects For The Period Ending August 31, 2015

	Approved Budget	August Actual	LIFE-TO-DATE ACTUALS Current Year	Previous Years	Total	% of Budget	Remaining Budget
Roads General							
Roads Equipment 2015	$1,781,000	$70,552	$1,653,993	$0	$1,653,993	93 %	$127,007
Various Shop Repairs 2015	$100,000	$0	$0	$0	$0	0 %	$100,000
Rebuild Drayton Shop	$500,000	$67,196	$74,940	$0	$74,940	15 %	$425,060
Rebuild/Renovate Erin Shop	$125,000	$0	$0	$20,667	$20,667	17 %	$104,333
Subtotal Roads General	**$2,506,000**	**$137,748**	**$1,728,933**	**$20,667**	**$1,749,600**	**70%**	**$756,400**
Engineering							
WR18 @ WR26 Intersection Imprv	$50,000	$0	$0	$0	$0	0 %	$50,000
WR18 Geddes St Elora, Strm Swr	$50,000	$0	$0	$0	$0	0 %	$50,000
WR18 Geddes St Elora, RtngWall	$50,000	$0	$12,573	$0	$12,573	25 %	$37,427
WR21, Inverhaugh, Storm Sewer	$50,000	$0	$0	$0	$0	0 %	$50,000
WR29 @ WR22, Intersection Impr	$50,000	$0	$0	$0	$0	0 %	$50,000
WR32 Puslinch Lake, Struct Des	$50,000	$0	$0	$0	$0	0 %	$50,000
WR35 N of 401, Struct Design	$50,000	$0	$0	$0	$0	0 %	$50,000
Asset Management	$35,000	$0	$15,608	$0	$15,608	45 %	$19,392
Subtotal Engineering	**$385,000**	**$0**	**$28,182**	**$0**	**$28,182**	**7%**	**$356,818**
Growth Related Construction							
WR 30 at Road 3, Signals & L	$120,000	$0	$30	$38,937	$38,967	32 %	$81,033
WR 46, WR 34 to 401	$1,800,000	$35,835	$173,355	$113,327	$286,681	16 %	$1,513,319
WR 124, Passing Lane N of 125	$200,000	$0	$0	$32,010	$32,010	16 %	$167,990
WR7 Psng Lanes Elora/Ponsonby	$2,950,000	$603	$22,733	$3,023,211	$3,045,944	103 %	-$95,944
WR7 PL Design Salem to Tev	$150,000	$13,044	$22,387	$5,838	$28,226	19 %	$121,774
WR109 @ WR5 Intersection	$50,000	$0	$7,619	$10,074	$17,693	35 %	$32,307
WR124 @ Whitelaw Intersection	$50,000	$0	$0	$7,410	$7,410	15 %	$42,590
WR124 @ Guelph Rd 1 Inter	$50,000	$0	$0	$6,283	$6,283	13 %	$43,717
WR 46 Maltby to WR 34 2 km	$1,100,000	$0	$3,825	$236,886	$240,710	22 %	$859,290
Subtotal Growth Related Constructi	**$6,470,000**	**$49,482**	**$229,949**	**$3,473,976**	**$3,703,924**	**57%**	**$2,766,076**

County of Wellington

02-September-2015

Roads and Engineering

Capital Work-in-Progress Expenditures By Departments

All Open Projects For The Period Ending August 31, 2015

			LIFE-TO-DATE ACTUALS				
	Approved Budget	August Actual	Current Year	Previous Years	Total	% of Budget	Remaining Budget
Roads Construction							
WR 50, 3rd Line to WR 24	$2,425,000	$6,640	$7,616	$488,024	$495,640	20 %	$1,929,360
WR14, Eliza & Frederick Arthur	$2,793,300	$238,137	$310,263	$781,797	$1,092,060	39 %	$1,701,240
WR 29, Wellington/Halton Bound	$1,956,500	$4,874	$86,334	$1,891,290	$1,977,624	101 %	-$21,124
WR 10, McGivern St Moorefield	$150,000	$2,747	$26,296	$25,688	$51,984	35 %	$98,016
WR109 AT WR7 Int Improvmnts	$100,000	$0	$0	$18,359	$18,359	18 %	$81,641
WR109, HWY89 S to end of curb	$2,725,500	$52,673	$529,268	$10,230	$539,498	20 %	$2,186,002
WR109 WR7 Traffic Imp Study	$50,000	$0	$8,451	$19,680	$28,131	56 %	$21,869
WR123, WR109 Traffic Imp Study	$50,000	$0	$0	$0	$0	0 %	$50,000
WR12 @ WR8 Intersection Improv	$990,000	$101,408	$232,951	$14,999	$247,951	25 %	$742,049
WR86, COG to WR9 Traffic Study	$50,000	$0	$0	$0	$0	0 %	$50,000
WR86 @ WR12 Intersection	$100,000	$0	$0	$0	$0	0 %	$100,000
WR109 @ WR16 Intersection	$50,000	$0	$0	$17,450	$17,450	35 %	$32,550
WR51, WR7 @ Hwy 6 2.3km	$100,000	$0	$0	$0	$0	0 %	$100,000
WR124, Concept Plan	$35,000	$0	$3,953	$23,100	$27,052	77 %	$7,948
WR8 Main St Drayton Strm Sewer	$50,000	$28,657	$28,657	$0	$28,657	57 %	$21,343
WR50, Hwy 7 to railway tracks	$50,000	$0	$0	$0	$0	0 %	$50,000
WR25 - WR52 to WR42 7.0km	$850,000	$0	$0	$267,122	$267,122	31 %	$582,878
Subtotal Roads Construction	**$12,525,300**	**$435,136**	**$1,233,789**	**$3,557,738**	**$4,791,527**	**38%**	**$7,733,773**

County of Wellington

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Roads and Engineering

Capital Work-in-Progress Expenditures By Departments

All Open Projects For The Period Ending August 31, 2015

	Approved Budget	August Actual	LIFE-TO-DATE ACTUALS Current Year	Previous Years	Total	% of Budget	Remaining Budget
Bridges							
WR87, Maitland O'flow B87137	$630,400	$7,431	$177,305	$42,226	$219,530	35 %	$410,870
WR87, Maitland R Bridge 87138	$1,664,800	$1,446	$435,277	$75,158	$510,435	31 %	$1,154,365
WR124, Bridge 124135	$200,000	$482	$17,041	$61,810	$78,851	39 %	$121,149
WR36, Bridge 36122	$100,000	$0	$13,492	$39,151	$52,643	53 %	$47,357
WR109, Bridge 109132	$225,000	$0	$0	$0	$0	0 %	$225,000
WR35, Paddock Bridge 35087	$200,000	$421	$1,207	$32,909	$34,116	17 %	$165,884
WR6, B006010, design rehab	$450,000	$171,727	$227,541	$73,886	$301,426	67 %	$148,574
WR7, Bosworth Bridge 07028	$150,000	$361	$9,016	$30,251	$39,268	26 %	$110,732
WR8, Main St Bridge 008089	$50,000	$237	$38,948	$18,166	$57,113	114 %	-$7,113
WR10, Moorefield Bridge 010023	$425,000	$7,016	$338,954	$43,705	$382,659	90 %	$42,341
WR10, Wyandot Bridge 010024	$575,000	$30,944	$233,716	$48,392	$282,107	49 %	$292,893
WR16, Penford Bridge 16038	$100,000	$238	$7,675	$21,208	$28,883	29 %	$71,117
WR30, Bridge 030124	$200,000	$1,029	$2,185	$11,701	$13,886	7 %	$186,114
WR21,Badley Bridge,021057 sdwk	$725,000	$17,798	$173,269	$0	$173,269	24 %	$551,731
WR36 Bridge36086, design and	$50,000	$0	$215	$0	$215	0 %	$49,785
WR86 Conestogo Bridge 86125	$1,200,000	$0	$83,207	$0	$83,207	7 %	$1,116,793
2015 Various Bridge & Culvert	$200,000	$86,445	$86,445	$0	$86,445	43 %	$113,555
WR109 Mallet River Brdg 109129	$50,000	$0	$0	$0	$0	0 %	$50,000
WR27, Bridge 27106 Replacement	$565,000	$116,950	$197,065	$26,243	$223,308	40 %	$341,692
Subtotal Bridges	**$7,760,200**	**$442,526**	**$2,042,557**	**$524,806**	**$2,567,363**	**33%**	**$5,192,837**

County of Wellington

02-September-2015

Roads and Engineering

Capital Work-in-Progress Expenditures By Departments

All Open Projects For The Period Ending August 31, 2015

	Approved Budget	August Actual	LIFE-TO-DATE ACTUALS Current Year	Previous Years	Total	% of Budget	Remaining Budget
Culverts							
WR18, Culvert 18021, D & Liner	$350,000	$1,202	$2,073	$45,072	$47,145	13 %	$302,855
WR6, Culvert 06081 replace	$75,000	$10,091	$10,864	$2,211	$13,075	17 %	$61,925
WR11 Culvert, 1.7km S of 6th L	$50,000	$736	$1,943	$18,522	$20,465	41 %	$29,535
WR22, Culvert east of WR23	$710,000	$288,868	$550,023	$94,835	$644,858	91 %	$65,142
WR5, Culvert 0.9km s 7th line	$200,000	$107,772	$110,431	$6,118	$116,549	58 %	$83,451
WR11, Culvert 111020	$400,000	$740	$48,407	$20,085	$68,492	17 %	$331,508
WR12, Culvert 12086	$25,000	$1,005	$2,026	$3,499	$5,525	22 %	$19,475
WR12, Culvert 12087	$50,000	$0	$0	$7,633	$7,633	15 %	$42,367
WR5 Culvert 050780, Design and	$50,000	$0	$0	$0	$0	0 %	$50,000
WR7 Culvert 071270, design and	$50,000	$0	$0	$0	$0	0 %	$50,000
WR7 Mncpl Drain Clvrt, 330 m E	$50,000	$0	$1,070	$0	$1,070	2 %	$48,930
WR11, Clvrt 11092, design and	$50,000	$0	$0	$0	$0	0 %	$50,000
WR109 Clvrt 109142, design and	$50,000	$0	$0	$0	$0	0 %	$50,000
Subtotal Culverts	**$2,110,000**	**$410,414**	**$726,837**	**$197,974**	**$924,812**	**44%**	**$1,185,188**
County Bridges on Local Roads							
E-W Luther TL Bridge 000101	$600,000	$0	$3,934	$48,310	$52,244	9 %	$547,756
E/W Luther TL,Hays Brdg 000001	$50,000	$0	$0	$0	$0	0 %	$50,000
Subtotal County Bridges on Local R	**$650,000**	**$0**	**$3,934**	**$48,310**	**$52,244**	**8%**	**$597,756**
Roads Resurfacing							
WR16, WR15 to Hwy89 5.4km	$647,300	$428	$428	$764,377	$764,805	118 %	-$117,505
WR124, COG to Era pvmt preserv	$912,600	$7,717	$7,717	$1,019,354	$1,027,071	113 %	-$114,471
WR32, WR124 to hwy 7, 5.3 km	$2,400,000	$628,607	$646,098	$0	$646,098	27 %	$1,753,902
WR87, Hwy23 to Minto/Howick	$100,000	$0	$0	$0	$0	0 %	$100,000
WR124, Guelph to Reg. Waterloo	$150,000	$0	$0	$0	$0	0 %	$150,000
WR10, Conc 8 to 4 5.4km	$1,300,000	$561,299	$578,205	$0	$578,205	44 %	$721,795
Subtotal Roads Resurfacing	**$5,509,900**	**$1,198,050**	**$1,232,447**	**$1,783,731**	**$3,016,179**	**55%**	**$2,493,721**
Total Roads and Engineering	**$37,916,400**	**$2,673,357**	**$7,226,628**	**$9,607,201**	**$16,833,830**	**44 %**	**$21,082,570**

COUNTY OF WELLINGTON

COMMITTEE REPORT

To: Chair and Members of the Roads Committee
From: Ken DeHart, County Treasurer
Date: Tuesday, September 08, 2015
Subject: **Ontario Community Infrastructure Fund (OCIF) & Small Communities Fund (SCF) Intake 2**

Background:

On July 28, 2015 the Ontario government announced that it will be accepting expressions of interest for infrastructure funding for municipalities under the permanent Ontario Community Infrastructure Fund (OCIF) and Building Canada Fund – Small Communities Fund (SCF). These programmes will flow $100 million annually (OCIF) and $272 million from the federal and provincial governments (SCF) to municipal infrastructure projects. Ontario has identified two components to the OCIF programme, with $50 million formula based, and $50 million application based. In November 2014 the County was notified that its formula based allocation will be $464,800 annually for the next three years.

Application based funds are available for eligible municipalities for critical roads, bridge and water projects identified under asset management plans. As with past programmes there is a two-stage application process with OCIF expressions of interest (EOI) due by September 11, 2015 and SCF due September 30, 2015. Applicants that pass the EOI process will be given the opportunity to submit a full application; dates have yet to be announced.

Programme Criteria:

OCIF

- Municipalities with a population of less than 100,000 as determined by 2011 census data are eligible
- Submission of 2013 and 2014 Financial Information Returns (FIR) to the Ministry
- Provincial funding of up to 90% of total eligible costs to a maximum of $2 million Provincial share
- Projects must be completed by December 2017

SCF

- Ontario Municipalities with a population of less than 100,000
- Road and Bridge projects need to meet the following federal requirements:
    - An interprovincial or international corridor or new construction with average annual daily traffic volume of 3,000 or greater
    - Provide access to border crossings, sea ports, airports, railway yards or intermodal facilities
    - Related to natural resource development opportunities: or
    - A road – rail grade separation on one of the above roadways.
- Maximum federal and provincial contribution is two-thirds of total eligible costs
- Projects to be completed by October 31, 2021

EOI will be assessed based on the following:

- Evidence of current or future health and /or safety issue, **and**
- Applicant's economic conditions and fiscal situation based on FIR and Statistics Canada data.
- Consideration will be given to municipalities that are proactively investing in infrastructure

Staff have reviewed the programme criteria and will be submitting an EOI under the OCIF programme for the rehabilitation of WR11 Culvert 111020 and the replacement of the Badley Bridge under the SCF programme.

Recommendation:

That the Ontario Community Infrastructure Fund & Small Communities Fund Intake 2 report be received as information.

Respectfully submitted,

Ken DeHart, CPA, CGA
County Treasurer

COUNTY OF WELLINGTON

COMMITTEE REPORT

To: Chair and Members of the Roads Committee
From: Mark Bolzon, Manager Purchasing and Risk Management Services
Date: Tuesday, September 8, 2015
Subject: **Roads Committee – Part B Tender Award Wellington Road 46**

Background:

At the August 2015 meeting of the Roads Committee the following recommendations were approved –

> *That Part A of County of Wellington Project No. CW2015-039 a tender for the Reconstruction Wellington Road 46 (Brock Road) from Highway 401 to 400 m North of McLean Road, in the County of Wellington be awarded to Regional Sewer and Watermain Ltd., of Cambridge, at their total tendered amount of $570,335.00 exclusive of HST @ 13%; and*
>
> *That the additional funding required to complete the project be included in the 2016 Budget; and*
>
> *That the CAO and County Engineer be authorized to sign the construction agreements for Part A;*
>
> *That Part B be taken to the Roads Committee in September for approval along with a recommendation for 2016 Capital Funding.*

With the approval of the recommendation staff awarded Part A of the contract to Regional Sewer and Water Main Ltd., of Cambridge, with Part A to be completed in 2015 and a Part B to be completed in 2016.

Part A includes all of the storm sewer. The main storm line is under the west shoulder and should be able to be installed with only reducing the four-lane road to three-lanes. Catch basin laterals will also be installed across the road and traffic will have to be managed to complete this work. The benefits of completing this work in the late summer or early fall of 2015 would allow any settlements over the new storm sewer to occur over the winter before paving operations in 2016. Completing the storm sewer in 2015 will also speed up the process to complete the remaining work in 2016. The storm sewer installation will between Highway 401 and McLean Road. There is no storm sewer north of McLean Road.

Part B of the work includes the removal of the existing asphalt, widening of shoulders, curbs, intersection improvements including turning lanes, centre left turning lane (5th lane), paved shoulders and repaving of the road.

Future works include reconstruction of WR46 north of McLean Road to WR 34, which will be planned for and included in the Five-Year Capital Plan.

On Thursday, July 23, 2015 three (3) tender submissions were received from the following contractors, with prices shown exclusive of HST @ 13% -

CONTRACTOR	TOTAL PART A	TOTAL PART B	TOTAL TENDERED AMOUNT
Regional Sewer and Watermain Ltd., Cambridge	$570,335.00	$2,571,653.25	$3,141,988.25
Capital Paving Inc., Guelph	$797,857.14	$2,638,464.15	$3,436,321.29
Cox Construction Limited, Guelph	$755,129.66	$2,760,865.18	$3,515,994.84

The submissions were all in order and staff are recommending awarding the contract to the lowest bidder meeting the specifications – Regional Sewer and Watermain Ltd., of Cambridge, at their total tendered amount of $3,141,988.25 exclusive of HST @ 13%.

As approved, the original recommendation authorized staff to award Part A of the contract with Part B to be brought forward to the Roads Committee in September including a Financial Summary for the project funding in 2015 and 2016.

Recommendation:

That Part B of County of Wellington Project No. CW2015-039 a tender for the Reconstruction Wellington Road 46 (Brock Road) from Highway 401 to 400 m North of McLean Road, in the County of Wellington be awarded to Regional Sewer and Watermain Ltd., of Cambridge, at their total tendered amount of $2,571.653.25 exclusive of HST @ 13% (for a total contract amount of $3,141,988.25; and

That the additional funding required to complete the project be included in the 2016 and 2017 Budgets; and

That the Financial Summary as attached be approved; and

That the Warden and County Clerk be authorized to sign the final construction agreements for Part B.

Respectfully submitted,

Mark Bolzon
Manager, Purchasing and Risk Management Services

COUNTY OF WELLINGTON
CAPITAL PROJECT EXPENDITURE AND FINANCING SCHEDULE

Project name: WR46, WR34 to 401
Project number : 21100181

PROJECT COSTS

	Part A	Part B	Total
Tendered Construction Cost*	$580,000	$2,617,000	$3,197,000
Previously Incurred Professional Fees	$143,500	$143,500	$287,000
Professional Fees	$50,000	$150,000	$200,000
County Labour & Materials	$5,000	$10,000	$15,000
Contingency	$56,000	$130,000	$186,000
Untendered work WR34 to McLean Road			$2,115,000
Project total	$834,500	$3,050,500	$6,000,000

* includes net cost to County of HST

PROJECT BUDGET APPROVALS AND FINANCING

	Gross cost	Tax Levy	Roads DC Reserve
2010 Capital Budget	$ 100,000	$ 48,600	$ 51,400
2011 Capital Budget	$ 50,000	$ 50,000	
2012 Capital Budget	$ 50,000	$ 40,000	$ 10,000
2014 Capital Budget	$ 1,000,000	$ 748,000	$ 252,000
2015 Capital Budget	$ 600,000	$ 486,000	$ 114,000
	$ 1,800,000	$ 1,372,600	$ 427,400
2016 Budget Request	$ 2,085,000	$ 1,729,000	$ 356,000
2017 Budget Request	$ 2,115,000	$ 1,753,000	$ 362,000
Revised cost and sources of financing	$ 6,000,000	$ 4,854,600	$ 1,145,400

COUNTY OF WELLINGTON

COMMITTEE REPORT

To: Chair and Members of the Roads Committee
From: Gordon J. Ough, P. Eng., County Engineer
Date: Tuesday, September 08, 2015
Subject: **County of Wellington Level of Service – 2015 Update**

Background:

In 2004, Council adopted a Roads Level of Service report that incorporated the Province's Minimum Maintenance Standards.

Some changes have recently been made to the Province's Minimum Maintenance Standards and staff has made the necessary amendments to the County of Wellington Level of Service to incorporate the changes.

Recommendation:

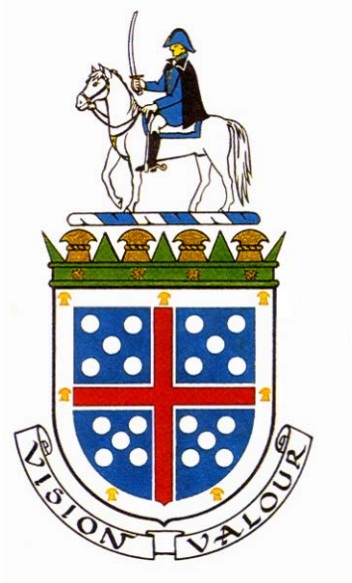
That the attached Level of Service be adopted for road maintenance.

Respectfully submitted,

Gordon J. Ough, P. Eng.
County Engineer

COUNTY OF WELLINGTON

LEVEL OF SERVICE



Engineering Services-Roads Division

Adopted by County Council September 23, 2004
Updated 2015

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Level of Service (LOS)

CLASSIFICATION OF HIGHWAYS

Objective

The major objectives for the CLASSIFICATION OF HIGHWAYS for the County Road network are:

- To establish appropriate levels-of service for a wide variety of County Roads
- To promote consistency throughout the County
- To ensure the appropriate allocation of resources to respond to maintenance activities

Summary

Purpose

1. For the purpose of these LOS every highway under the jurisdiction of the County of Wellington has been classified in the Table to this section as a Class 1, Class 2, Class 3, Class 4, Class 5 or Class 6 highway, based on the speed limit applicable to it and the average daily traffic on it. *(Note most County Roads are Classified as Class 2, 3, and 4 with one Classified as Class 1. At this time there is no Class 5 or Class 6 roads under County jurisdiction).*

2. For the purposes of subsection (2) and the Table to this section, the average annual daily traffic on a highway or part of a highway under County jurisdiction shall be determined,

    a. By counting and averaging the daily two-way traffic on the highway or part of a highway or
    b. By estimating the average daily two-way traffic on the highway or part of the highway.
    c. The County is deemed to be aware of a fact if, in the absence of actual knowledge of the fact, circumstances are such that we ought reasonably to be aware of the fact.

Level of Service (LOS)

Application

1. The following standard set out the LOS of repair for various classes of County Roads within the various jurisdictions in the County of Wellington.

2. The standards of repair as set out in these LOS are applicable only in respect of motor vehicles using the highway.

TABLE
CLASSIFICATION OF HIGHWAYS

Average Annual Daily Traffic (number of motor vehicles)	Posted or Statutory Speed Limit (kilometres per hour)						
	100	90	80	70	60	50	40
15,000 or more	1	1	1	2	2	2	2
12,000 – 14,999	1	1	1	2	2	3	3
10,000 – 11,999	1	1	2	2	3	3	3
8,000 – 9,999	1	1	2	3	3	3	3
6,000 – 7,999	1	2	2	3	3	3	3
5,000 – 5,999	1	2	2	3	3	3	3
4,000 – 4,999	1	2	3	3	3	3	4
3,000 – 3,999	1	2	3	3	3	4	4
2,000 – 2,999	1	2	3	3	4	4	4
1,000 – 1,999	1	3	3	3	4	4	5
500 – 999	1	3	4	4	4	4	5
200 – 499	1	3	4	4	5	5	5
50 – 199	1	3	4	5	5	5	5
0 – 49	1	3	6	6	6	6	6

Level of Service (LOS)

BITUMINOUS AND SURFACE TREATED SURFACES

Objective

The major objectives for maintaining Rural and Urban BITUMINOUS AND SURFACE TREATED SURFACES are:

- To provide a smooth safe riding surface.
- To eliminate hazards to vehicular traffic.
- To protect the investment in the road surface.

Summary

The level-of-service for Rural and Urban BITUMINOUS AND SURFACE TREATED SURFACES shall be in accordance with the following:

1. All potholes of a size sufficient to cause damage or hazard to vehicular or pedestrian traffic shall be repaired either by filling with a temporary cold asphalt preparation or by use of a permanent patching material; i.e., asphalt or epoxy concrete. If a pothole exceeds both the surface area and the depth set out in Table 1 or 2 below as appropriate, the minimum LOS is to repair the pothole within the time set out in Table 1 or 2 after becoming aware of the fact. A pothole shall be deemed to be repaired if its surface area or depth is less than or equal to that set out in Table 1 or 2 as appropriate

TABLE 1
POTHOLES ON PAVED SURFACE OF ROADWAY

Class of Highway	Surface Area	Depth	Time
1	600 cm^2	8 cm	4 days
2	800 cm^2	8 cm	4 days
3	1000 cm^2	8 cm	7 days
4	1000 cm^2	8 cm	14 days

Level of Service (LOS)

TABLE 2
POTHOLES ON NON-PAVED SURFACE OF ROADWAY

Class of Highway	Surface Area	Depth	Time
3	1500 cm²	8 cm	7 days
4	1500 cm²	10 cm	14 days

2. If a surface discontinuity, other than a surface discontinuity on a bridge deck, exceeds the height set out in Table 2 in this section, the minimum LOS is to repair the surface discontinuity within the time set out in the Table after becoming aware of the fact.

TABLE 2
SURFACE DISCONTINUITIES

Class of Highway	Height	Time
1	5 cm	2 days
2	5 cm	2 days
3	5 cm	7 days
4	5cm	21 days

3. Crack sealing shall be carried out to seal those cracks, which will cause premature deterioration of the road surface. All major cracks appearing in newly resurfaced roads shall be filled. Severe alligatored or checked surfaces will not be crack sealed. They shall be resurfaced with hot mix asphalt or surface treated using an acceptable method consistent with the rest of the road surface. If a crack on the paved surface of a roadway is greater, for a continuous distance of three metres or more, than both the width and depth set out in Table 3 in this section, the minimum LOS is to repair the crack within the time set out in the table

after becoming aware of the fact. A crack shall be deemed to be repaired if its width or depth is less than or equal to that set out in the Table.

TABLE 3
CRACKS

Class of Highway	Width	Depth	Time
1	5 cm	5 cm	30 days
2	5 cm	5 cm	30 days
3	5 cm	5 cm	60 days
4	5 cm	5 cm	180 days

4. Ruts or corrugations, bumps and depressions occurring on the traveled portion of the road in the wheel paths, at bridge approaches, catchbasins, manholes, etc. shall be repaired through the routine road surface maintenance program. Severe bumps or depressions i.e., railway crossings, bridge expansion joints, etc. that cannot immediately be repaired shall be signed accordingly with the appropriate warning device.

5. The cause of freestanding water on the roadway shall be investigated and eliminated, repaired, or signed.

6. Broken pavement edges and raveled areas shall be repaired if the damaged area extends a significant distance onto the traveled portion such that it constitutes a hazard to vehicular traffic.

7. Loose gravel on the road surface (including paved areas designated for cyclists) shall be removed through regular manual and/or machine sweeping activities.

Where the above conditions have been identified and cannot be repaired immediately, appropriate warning devices shall be erected.

Level of Service (LOS)

GRAVEL SURFACES

Objective

The major objectives for maintaining GRAVEL SURFACES are:

- To provide a smooth, safe riding surface.
- To eliminate hazards to vehicular traffic.
- To protect the investment in the road surface.

Summary

The level-of-service for GRAVEL SURFACES shall be in accordance with the following:

1. The cause of soft or wet areas that move under traffic shall be eliminated or repaired either by base repair or installation of sub drainage facilities.

2. The causes of water lying on the surface or running across the surface shall be corrected.

3. A 2% crossfall will be maintained as close as practicable through the regular activity of road grading. Roads will be graded throughout the frost-free months as required; i.e., during period of thaw in wintertime or after heavy rainfall.

4. Potholes and washboard conditions shall be corrected by regular road grading.

5. Excessively dusty conditions shall be corrected through the application of an approved liquid dust palliative. Spot conditions may be corrected through the use of flake material spread either by mechanical spreader or manually. Generally liquid products are applied early in the season depending on weather conditions. Liquid products are applied as a dust control agent;

    a. Where dusty conditions cause a nuisance or present a health hazard to property owners, particularly in rural areas.
    b. Where a dusty condition is hazardous to traffic.

Level of Service (LOS)

c. Where there is a need to stabilize the road surface and restrict the loss of fines from the gravel.

6. Gravel shall be added to the road on a program basis or when the subbase material is beginning to show through the surface course and/or when surface deterioration constitutes a hazard to vehicular traffic.

Level of Service (LOS)

SHOULDERS – ASPHALT OR SURFACE TREATED

Objective

The major objectives for maintaining ASPHALT OR SURFACE TREATED SHOULDERS are:

- To maintain a smooth safe shoulder that is relatively free from defects.
- To safely accommodate emergency stopping of vehicles.
- To provide a safe location for buggy traffic and cyclists.
- To provide lateral support of base and surface courses.
- To control dusty conditions and rutting at the pavement edge.
- To improve drainage from the roadway.
- To prevent shoulder rutting and erosion.

Summary

The level-of-service for ASPHALT OR SURFACE TREATED SHOULDERS shall be in accordance with the following:

1. A uniform crossfall shall be maintained on all shoulders (see LOS entitled Table of Correct Shoulder Crossfall).

2. Pavement and shoulder edges shall be maintained flush.

3. The cause of water ponding shall be eliminated or repaired.

4. Washouts and shoulder undermining caused by heavy rainfall shall be scheduled for repair as soon as practicable after the storm.

5. At serious washouts constituting a hazard, appropriate warning signs shall be erected if repairs cannot be made immediately.

Level of Service (LOS)

6. Shoulder edge failures, breaks and raveled areas shall be repaired through routine shoulder/surface maintenance activities.

7. If a pothole in a shoulder exceeds both the surface area and depth set out in Table 1 in this section, the minimum LOS is to repair the pothole within the time set out in Table 1 after becoming aware of the fact.

   A pothole shall be deemed to be repaired if its surface area or depth is less than or equal to that set out in Table 1below.

TABLE 1
POTHOLES ON PAVED OR NON-PAVED SURFACE OF SHOULDER

Class of Highway	Surface Area	Depth	Time
1	1500 cm²	8 cm	7 days
2	1500 cm²	8 cm	7 days
3	1500 cm²	8 cm	14 days
4	1500 cm²	10 cm	30 days

Level of Service (LOS)

GRAVEL SHOULDERS

Objective

The major objectives for maintaining GRAVEL SHOULDERS are:

- To maintain a smooth, safe shoulder.
- To safely accommodate emergency stopping of vehicles.
- To provide lateral support of base and surface courses.

Summary

The level-of-service for GRAVEL SHOULDERS shall be in accordance with the following:

1. Persistently soft or wet areas of shoulder shall be repaired.

2. Correct crossfall shall be maintained on all shoulders.

3. Shoulder drop-off, ruts and washed areas shall be corrected by the continuous activity of shoulder grading throughout the frost free months.

   If a shoulder drop-off is deeper, for a continuous distance of 20 metres or more, than the depth set out in Table 1 in this section, the minimum standard is to repair the shoulder drop-off within the time set out in the Table after becoming aware of the fact.

   A shoulder drop-off shall be deemed to be repaired if its depth is less than or equal to that set out in the Table.

   In this section, “shoulder drop-off” means the vertical differential, where the paved surface of the roadway is higher than the surface of the shoulder, between the paved surface of the roadway and the paved or non-paved surface of the shoulder.

Level of Service (LOS)

TABLE 1
SHOULDER DROP-OFFS

Class of Highway	Depth	Time
1	8 cm	4 days
2	8 cm	4 days
3	8 cm	7 days
4	8 cm	14 days

4. Shoulders shall be graded as required to achieve the above LOS beginning the first week in April and continuing until freeze-up (generally mid November).

5. Gravel windrow of pavement edge, outside shoulder edge or under guide rail will be eliminated.

6. Excessively dusty conditions shall be corrected by the application of approved liquid or flake dust control products at a rate suitable for the conditions and type of material used. Dust control agents shall be applied where:

    a. Dusty conditions cause a nuisance or present a health hazard to property owners.
    b. Where dusty conditions present a hazard to traffic.
    c. In front of commercial establishments, i.e., truck stops, implement dealers, etc.
    d. At entrances to settlement areas.

7. Washouts and shoulder undermining caused by heavy rainfall shall be scheduled for repair as soon as practicable after the storm. At serious washouts constituting a hazard, appropriate warning signs shall be erected until such time as repairs can be made.

8. Gravel shall be added to shoulders on a program basis or when grading or windrow reclamation can not bring back enough gravel to maintain the proper crossfall.

Level of Service (LOS)

TABLES OF CORRECT SHOULDER CROSSFALL

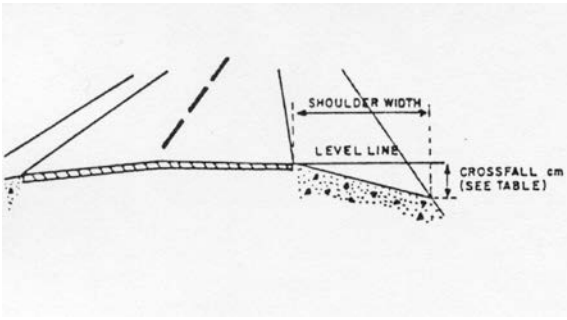


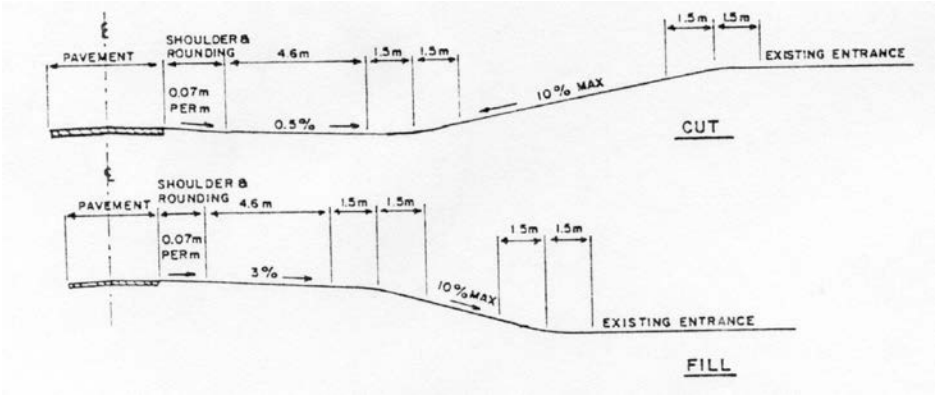
TABLE OF SHOULDER CROSSFALL

SHOULDER WIDTH	ALLOWABLE TOTAL CROSSFALL ON STRAIGHT ROAD		
	MIN	STD.	MAX.
1.2 m	5cm	8cm	10cm
1.8m	8cm	11cm	15cm
2.4m	10cm	15cm	20cm
3m	13cm	19cm	25cm

TABLE OF SHOULDER CROSSFALL

SHOULDER WIDTH	ALLOWABLE ON OUTSIDE SHOULDER OF CURVES		
	MIN.	STD.	MAX.
1.2m	3cm	4cm	5cm
1.8m	3cm	5cm	8cm
2.4m	5cm	8cm	10cm
3m	8cm	10cm	13cm

CORRECT CROSSFALL AT DRIVEWAY ENTRANCES



Level of Service (LOS)

DITCHES

Objective

The major objectives for DITCH maintenance are:

- To maintain the drainage system so as to control and remove surface water within the right-of-way limits.
- To prevent erosion of shoulders and side slopes.
- To maintain a stable road base.
- To mitigate the damage to fish habitats downstream.

Summary

The level-of-service for DITCH maintenance shall be in accordance with the following:

1. Obstructions in the flow line shall be removed.

2. The Area Foreman or their designate under the regular Road Patrol activity shall regularly inspect ditches.

3. Ditches shall be cleaned of debris and vegetation as required to ensure free flow of water.

4. Ditch grade lines shall have a uniform fall to prevent localized ponding.

5. Vegetation growing in the ditch line constituting an obstruction to the free flow of water shall be cut or removed as necessary.

6. Side slopes shall be as uniform as practicable and corrected where necessary.

7. Eroded slopes shall be corrected and the cause of erosion shall be eliminated wherever practicable.

8. Ditches shall be filled where effective drainage has been accomplished by other means.

Level of Service (LOS)

CULVERTS

Objectives

The major objectives for CULVERT MAINTENANCE are:

- To keep culverts clean – free from debris – and functioning properly.
- To ensure the flow of surface water running in natural streams, collected on the high side of the right-of-way, or running down the ditch line, under roads, streets or driveway entrances.

Summary

The level-of-service for CULVERT MAINTENANCE shall be in accordance with the following:

1. Obstructions restricting the flow of water through culverts shall be removed.

2. Culverts shall be regularly inspected, through the regular Road Patrol activity, and cleaned of debris if constricting flow. In particular, this activity shall be performed during October and November prior to the winter season, and prior to and during the spring run off.

3. Culverts shall, in addition, be inspected after heavy storms or periods of high run off, and corrective measures taken if necessary.

4. During storms and floods, critical areas shall be patrolled and culvert inlets kept clear.

5. Badly worn, broken or damaged culverts shall be repaired or replaced as soon as practicable.

6. Culvert aprons and head walls which are broken shall be repaired.

7. Damaged embankments at culvert inlets or outlets shall be repaired.

8. Culverts that are not required because proper drainage has been achieved by other means shall be removed or buried at the discretion of the Engineer.

Level of Service (LOS)

9. Supervisory personnel performing regular patrols shall notify the proper authorities if they observe unauthorized culvert installation on municipal property.

10. Application shall be made by the property owner to the Roads Division of the County Engineering Services Department, if an entrance culvert is desired where none presently exists.

11. Installation of new culverts if approved shall then be made by the owner's contractor under the supervision of the Area Foreman.

12. The property owner is responsible for the cost of installation.

13. Subsequent maintenance of the culvert shall be the responsibility of the County.

14. An entrance permit must be obtained before any entrance can be constructed on a County right-of-way.

Level of Service (LOS)

STORM SEWER CLEANING / REPAIR

Objective

The major objectives for the CLEANING AND REPAIR OF STORM SEWERS are:

- To prevent public health hazards and inconvenience through interruptions in the service for which the sewer system is provided.
- To protect the public investment in the sewer system by maintaining maximum capacities and by extending the useful life of the system.
- To prevent unnecessary damage to public and private property and pollution of the environment.

Summary

The level-of-service for the CLEANING AND REPAIR OF STORM SEWERS shall be in accordance with the following:

Cleaning

1. Excessive accumulations of silt in storm sewers shall be removed.

2. Sewers shall be cleaned on an annual program basis and based on local conditions and inspection findings.

3. Sewers shall be regularly inspected for needed repairs or cleaning on an annual program basis. The extent of the maintenance program in any one year will depend on programmed construction activities and budgetary considerations.

4. Non-programmed cleaning shall be undertaken using an appropriate method, as required, to alleviate local problem conditions.

5. Storm sewer outfalls shall be inspected and cleaned each year.

Level of Service (LOS)

Repair

1. Pipes severely cracked or collapsed shall be replaced.

2. Pipes cracked to an extent permitting excessive infiltration or exfiltration which may cause voids around the pipe shall be replaced or repaired.

3. Pipes having step joints of more than 25mm shall be assessed to their need for immediate replacement or scheduled for replacement in conjunction with road reconstruction.

4. Connections protruding into the sewer main which restrict the capacity of the pipe or prevent effective inspection shall be corrected to form a smooth uninterrupted surface within the main sewer pipe.

5. Outfalls shall be repaired when necessary as reported from routine visual inspections.

Level of Service (LOS)

MANHOLE REPAIR

Objective

The major objectives for REPAIRING MANHOLES are:

- To protect the public investment in the sewer systems by maintaining maximum capacities and by extending the useful life of the sewer systems.
- To provide safe, convenient access to the sewer systems to facilitate servicing, cleaning, measuring flows and testing effluents.
- To maintain the manholes in a structurally sound condition to permit safe passage of traffic with a minimum of interference.

Summary

The level-of-service for MANHOLE REPAIRS shall be in accordance with the following:

1. All storm sewer manholes shall be inspected once per year for structural adequacy, height of manhole lid and frame, steps, benching, channels, and flow. All defects should be noted and scheduled for repair either on program or immediate basis.

2. Castings protruding 5 cm or more above the traveled portion of the road shall be corrected.

3. Castings depressed to a depth that may constitute a hazard to vehicular traffic shall be repaired.

4. Loose and/or noisy lids shall be corrected.

5. Manhole steps that are broken, deteriorated or otherwise in an unsafe condition shall be replaced.

6. Manhole walls, lids, castings, etc. shall be maintained in a structurally sound condition.

7. Excessive infiltration or exfiltration in manholes shall be corrected as quickly as practicable.

Level of Service (LOS)

8. Benching and channels shall be smooth throughout the manhole.

9. All repairs or alterations to manholes shall be in accordance with the MTO OPSS as applicable.

Level of Service (LOS)

CATCHBASIN CLEANING AND REPAIR

Objective

The major objectives for the maintenance of CATCHBASINS are:

- To clean out basins before their sump capacity has been exceeded thereby allowing dirt and debris to collect in the storm sewer mains.
- To periodically clean catchbasins and inlets so that gratings, openings, traps and outlets are kept free from obstructions which might interfere with the free flow of runoff.
- To repair basins as required and adjust basins which are causing problems on the road surface.
- Private drains will not generally be allowed on the County ROW. If they are present they will be the responsibility of the owner of the private drain to keep the drain in repair.

Summary

The level-of-service for CATCHBASIN CLEANING AND REPAIRS shall be in accordance with the following:

<u>Cleaning</u>

1. All catchbasins shall be inspected yearly and cleaned where this inspection indicates a need.

2. It may be necessary in local areas to clean catchbasins and inlets more often due to:

    a. Restricted sump capacities.
    b. Amount of dirt and debris reaching the road surface.
    c. Planned frequency of road cleaning.

3. During or after a heavy rainfall, problem basins shall be checked.

4. Repairs to basins shall be carried out when necessary.

Level of Service (LOS)

5. Catchbasins which have deteriorated to the extent that they restrict the free flow of water and endanger the safe flow of traffic shall be rebuilt to current standards.

6. Catchbasins shall be checked before the winter season for interference with snow plowing operations.

Repairs

1. Catchbasins shall be repaired whenever there are loose bricks, shifted frames or wherever significant structural failure has occurred.

2. Castings that are cracked or broken shall be repaired or replaced.

Level of Service (LOS)

CURBS AND GUTTERS

Objectives

The major objectives for CURB AND GUTTER MAINTENANCE are:

- To facilitate the removal of surface water from the wearing surface.
- To prevent water from spilling over and eroding side slopes.

Summary

The level-of-service for CURB AND GUTTER shall be in accordance with the following:

General

1. A curb and gutter repair program shall be maintained annually to fix spalled areas and broken heaved or depressed sections which may interfere with drainage, and preserve the investment in the road.

Concrete and Asphalt Curb and Gutter

1. Shall be maintained in a condition such that it continues to serve its intended purpose.

2. Shall be inspected by windshield inspection yearly. Sections warranting repair will be considered for inclusion in annual maintenance/repair program.

3. Long sections of damaged or deteriorated curb and gutter shall be scheduled for replacement in conjunction with the road reconstruction program.

Level of Service (LOS)

BRIDGE MAINTENANCE

Objective

The major objectives for BRIDGE MAINTENANCE are:

- To provide continuing adequate levels of safety.
- To preserve the investment in existing bridge structures.
- To upgrade and improve existing facilities as may be economically practical through minor maintenance work.

Summary

The level-of-service BRIDGE MAINTENANCE shall be in accordance with the following:

1. Bridges shall be inspected visually with emphasis on structural components once each year.

2. Cleaning and flushing of expansion joints and bearings, bridge decks, sidewalks, parapet walls and railings shall be carried out on all bridges annually in the spring after winter operations are completed.

3. Bridge drains shall be inspected at least once per year and cleaned if required.

4. Bridge seats, rollers, and other expansion elements that do not function properly shall be repaired.

5. If a surface discontinuity on a bridge deck exceeds 5 cm, the minimum LOS is to deploy resources as soon as practicable after becoming aware of the fact to repair the surface discontinuity on the bridge deck.

6. Exposed metal surfaces on structures shall be prevented from corroding by treatment in an appropriate manner.

Level of Service (LOS)

7. Spalled areas or any other deterioration where reinforcing steel is exposed shall be repaired in an approved manner.

   If a bridge deck spall exceeds both the surface area and depth set out in the Table to this section, the minimum LOS is to repair the bridge deck spall within the time set out in the Table after becoming aware of the fact.

   A bridge deck spall shall be deemed to be repaired if its surface area or depth is less than or equal to that set out in the Table below.

   In this section, "bridge deck spall" means a cavity left by one or more fragments detaching from the paved surface of the roadway or shoulder of a bridge.

TABLE
BRIDGE DECK SPALLS

Class of Highway	Surface Area	Depth	Time
1	600 cm²	8 cm	4 days
2	800 cm²	8 cm	4 days
3	1000 cm²	8 cm	7 days
4	1000 cm²	8 cm	7 days

8. Pilings which show deterioration caused by erosion or corrosion shall be repaired or replaced.

9. Damage to structures resulting from traffic accidents or deterioration shall be repaired and/or damaged sections replaced.

Level of Service (LOS)

UTILITY CROSSINGS

Objective

The major objective for UTILITY CROSSINGS is:

- To maintain the base and surface of the County road and where necessary repair the same if an open cut is required..

Summary

The level-of-service for UTILITY CROSSING shall be in accordance with the following:

1. Utility shall whenever possible installed by directional boring to eliminate cutting the road surface.
2. If utility cuts are necessary they shall be backfilled and temporary repairs made to the street surface by the utility company making the utility repair or installation as per current County Roads Occupancy Permit.

3. Minimum depth of granular subbase, base and asphalt surface shall be as follows:

a.	Subbase	300 mm	Granular B
b.	Base	150 mm	Granular A
c.	Surface	75 mm	Hot mix asphalt

4. Cost of the backfill and temporary surface patch up to one year after the installation or until the surface is permanently repaired shall be the responsibility of the utility company.

5. The cost of permanent surface patch shall be the responsibility of the utility company.

Level of Service (LOS)

STREET CLEANING

Objective

The major objectives for STREET CLEANING are:

- To prevent annoyance to general public arising from road dirt and dust.
- To prevent injuries to pedestrians and damage to property and vehicles caused by loose objects being thrown up by traffic.
- To promote safety by removing debris which could cause a hazard for cyclists or vehicular traffic.
- To prevent clogging of storm sewers.
- To reduce health hazards caused by pollutants and chemical wastes in road dirt.
- To enhance the appearance of the community.

Summary

The level-of-service for STREET CLEANING shall be in accordance with the following:

Rural Intersections

1. Generally sweeping will be done by County forces at rural intersections in the spring of each year and from time to time to minimize loose gravel on road surface.

Settlement Areas

1. The County will contract the street sweeping to a private contractor to sweep Curb and Gutters and intersections of roads under the jurisdiction of the County as part of the spring cleanup.

Level of Service (LOS)

Urban Areas

1. The County will contract the street sweeping of County Roads to private contractors or the local municipality, if they have street sweeping equipment which ever is appropriate.
2. The County will pay one half the cost of such sweeping with the municipality paying the other one half.
3. The sweeping will be done in early spring at the first opportunity after winter operations have ceased.
4. If possible or practicable, the sweeping operation should take place prior too or after normal business hours of the local community to minimize dust, noise, and operational conflicts with pedestrians and vehicles.

Special Events

As required for special functions, i.e., parades, community festivals, etc.

Level of Service (LOS)

DEBRIS PICKUP

Objective

The major objectives for DEBRIS PICKUP are:

- To keep the roadside and traveled surface in a clean and safe condition by removing unsightly and hazardous objects.
- To allow for maximum productivity in grass mowing.
- To help ensure proper operation of drainage courses.

Summary

The level-of-service for DEBRIS PICKUP shall be in accordance with the following:

1. Hazardous debris such as vehicle related debris, cans, bottles, paper, animal carcasses, branches and other trash on the roadside or within the median shall be removed as required.

   If there is debris on a roadway, the minimum LOS is to deploy resources, as soon as practicable after becoming aware of the fact, to remove the debris. "Debris" means any material or object on a roadway that; "is not an integral part of the roadway or has not been intentionally placed on the roadway by a municipality" or "is reasonably likely to cause damage to a motor vehicle or to injure a person in a motor vehicle".

2. Large stones or boulders in the ditch or on the shoulder shall be removed.

3. Debris shall not be allowed to disrupt mowing operations or obstruct drainage ways.

4. Debris shall not be allowed to accumulate on any road in order to discourage dumping.

Level of Service (LOS)

5. All roadsides shall have hazardous debris picked up at least once each year in the Spring before mowing operations begin.

6. Litter is not considered as hazardous debris and is not routinely picked up by County staff. The County encourages membership in the County's Adopt-A-Road program. This is a public service program established in 1993 for volunteers to enhance the litter collection activities by picking up litter along County road right-of ways. It is a program in which environmentally conscious citizens, community and civic organizations, private businesses and industry can contribute to a cleaner and more beautiful road system.

Level of Service (LOS)

GRASS CONTROL

Objective

The major objectives for GRASS CONTROL are:

- To aid in the control of noxious weeds and brush.
- To improve roadside drainage.
- To aid in controlling drifting of snow.
- To improve visibility at intersections.
- To improve the general appearance of the roadside.

Summary

The level-of-service for GRASS CONTROL shall be in accordance with the following:

Rural

1. Cutting shall be scheduled to begin on or around the first week in June and shall continue until all the roads have received the first cut. The grass at the beginning of this round should be approximately 300 mm high at the shoulder edge and will be cut to the lowest height that an industrial mower can manage (generally 75mm – 100mm).

2. A second cut will be done on approaches to bridges and problem areas where appropriate.

3. Generally, intersections will be cut to the right-of-way to improve visibility.

Urban

1. Cut full right-of-way (where practicable) at all County approaches to Settlement Areas.

2. The County will not cut within urban areas. The local municipality will undertake this activity.

Level of Service (LOS)

NOTE: It may be necessary in high Wild Carrot and Milkweed areas to spot mow later on in the year. This touchup or cleanup round shall only take place after all roads have received their first cut.

Level of Service (LOS)

WEED, BRUSH, and TREE CONTROL

Objective

The major objectives of WEED, BRUSH, and TREE CONTROL are:

- To prevent the spread of noxious weeds.
- To maintain adequate sightlines at intersections.
- To aid in the control of drifting snow.
- To generally improve the appearance of the roadway and to preserve as far as practicable the natural state of the surroundings.
- To eliminate the hazard of dead trees or limbs falling on the roadway.

Summary

The level-of-service for WEED, BRUSH, and TREE CONTROL shall be in accordance with the following:

Weed Control

1. Noxious weed patches shall be identified and eliminated by either cutting or spraying before they can mature or spread to adjacent properties.

2. Weeds and brush shall be eliminated using mechanical weed trimmers under guide rails, at structures or headwalls, rip rap under bridges, at culvert or storm sewer outlets, on traffic islands and medians, around sign posts and adjacent to noise walls and subdivision fencing.
3. Vegetation obscuring sight distance to traffic signals and signs, across the inside of curves, and at intersections shall be trimmed.

4. All weed spraying shall be carried out by a qualified Weed Control Company in accordance with MOE guidelines spraying half of the County one year and the other half the following year.

Level of Service (LOS)

5. Brush Control

1. Brush growth within the right-of-way that restricts drainage and sight distances or contributes to ice and snow formation on or near the traveled surface shall be removed.

Trees

1. Dangerous trees on the right-of-way shall be removed.

2. Dead trees beyond the limits of the right-of way, or unsound limbs that may fall on or across the roadway shall be removed. Trees located outside of the right-of-way may be removed if, in the opinion of the County, the tree or branches pose a danger to the health and safety of any person using the roadway. A dangerous tree or branch may be removed immediately and without notice to the owner of the land upon which the tree is located if, in the opinion of the County, it poses an immediate danger to the health and safety of any person using the roadway. See Section 62 and 62.1 of the Municipal Act.

3. If a resident refuses to allow us to cut a dangerous tree we shall ask them to sign a Tree Cutting Release Agreement which requires them to acknowledge that we have informed them of the potential danger in not correcting the problem and requires them to release and save harmless the County from legal action.

4. Stumps should be removed in the spring following the date of the tree removal. They shall be cut below the ground line where practicable or flush with the ground otherwise.

5. New trees shall be planted on a two-for-one basis wherever a tree is removed so long as their location does not present a hazard or contribute to snow drifting.

6. Trees obscuring traffic signals and signs or the view across the inside of curves, at intersecting roads, or at road approaches shall be trimmed or removed.

Level of Service (LOS)

PAVEMENT MARKINGS

Objective

The major objectives for PAVEMENT MARKINGS are:

- To convey information to motorists without diverting their attention from the roadway.
- To regulate, warn, guide, and/or channelize traffic on the County Road system.
- To supplement the regulations or warnings of other traffic control devices such as traffic signs and signals.
- To aid in the safe and orderly flow of vehicular traffic, pedestrian traffic and cyclists on the County Road system.

Summary

The level-of-service for PAVEMENT MARKINGS shall be in accordance with the following:

1. The application for those items listed below will be once every year on rural County Roads by a qualified Contactor and monitored by a Contract Administrator who will undertake quality control tests as necessary. The Contractor will be required to do further application if necessary on heavily traveled roads. Note: Items below marked with an * are generally done by County forces once per year only, except at heavily traveled intersections when a second application may be necessary.

    a. Directional dividing lines and lane lines.
    b. Approaches to signalized intersections and interchanges.
    c. Stop bars.*
    d. Crosswalk lines.*
    e. Railway crossings.*
    f. School crossings.*
    g. Pedestrian crossover markings.*
    h. Edge line where pavement width permits

Level of Service (LOS)

2. The County is not responsible for painting parking stalls or other similar markings on any County Road. This will be the responsibility of the appropriate Local municipality.

3. On County Roads where reconstruction, repairing, resurfacing or extensive patching or crack sealing is being carried out the markings will be placed or replaced as soon as practicable after the final surface is laid. However, if any delay is anticipated between the laying of initial and final surfaces, such that the safe movement of traffic is affected, pavement markings may be placed on the initial surface.

4. These markings will be repainted at least once before the following winter season if required.

5. All pavement markings on the County Road system will be monitored regularly to determine their adequacy, appropriateness and effectiveness.

Level of Service (LOS)

TRAFFIC CONTROL SIGNALS AND FLASHING BEACONS

Objective

The major objectives for TRAFFIC CONTROL SIGNALS are:

- To alternate vehicular and pedestrian right-of-way at intersections and mid-block locations.
- To maximize intersection efficiency in terms of delay, hazards.
- To aid in the safe and orderly flow of traffic.

The major objectives for FLASHING BEACONS are:

- To warn motorists of hazardous locations.
- To supplement other traffic control devices such as traffic control signs and pavement markings.

Summary

The level-of-service for maintaining TRAFFIC CONTROL SIGNALS AND BEACONS shall be in accordance with the following:

1. Forces will be deployed as soon as is practicable after becoming aware of any of the following defects to repair or replace the defective components:

    a. One or more displays show conflicting signal indications.
    b. The angle of a traffic control signal or pedestrian control indication has been changed in such a way that the traffic or pedestrian facing it does not have clear visibility of the information conveyed or that it conveys confusing information to traffic or pedestrians facing other directions.
    c. A phase required allowing a pedestrian or vehicle to safely travel through an intersection fails to occur.
    d. There are phase or cycle timing errors interfering with the ability of a pedestrian or vehicle to safely travel through the intersection.

Level of Service (LOS)

e. There is a power failure in the traffic control signal system.
f. The traffic control signal cabinet has been displaced from its proper position.
g. There is a failure of any of the traffic control signal support structures.
h. A signal lamp or pedestrian control indication is not functioning.
i. Signals are flashing when flashing mode is not part of the normal signal operation.
j. Any damage occurs to the traffic control signal equipment which impairs the visibility of the signals, constitutes a hazard, or impairs the structural adequacy of the supporting equipment.
k. Any failure of beacons on the County Road system.

2. Routine Preventative Maintenance will be as follows:

   a. All Traffic Signal and Pedestrian lamps (with the exception of LED's) shall be changed once annually.
   b. All lenses and reflectors shall be thoroughly cleaned once per year. This annual service shall include general inspection, mechanical performance and accuracy check, replacement of worn or defective parts, cleaning and repainting.
   c. All traffic signals and beacons with be inspected and maintained by a Certified IMSA Contractor who shall produce an annual report on their condition to the County

3. The following traffic control system sub-systems shall be inspected, tested and maintained every twelve months:

   a. The display sub-system, consisting of traffic signal and pedestrian crossing heads, physical support structures and support cables.
   b. The traffic control sub-system; including the traffic control signal cabinet and internal devices such as timer, detection devices, and associated hardware, but excluding conflict monitors.
   c. The external detection sub-system consisting of detection sensors for all vehicles, including emergency and railway vehicles and pedestrian push-buttons.

4. Conflict monitoring shall be inspected, tested and maintained every five to seven months and at least twice per year.

Level of Service (LOS)

TRAFFIC CONTROL SIGNS

Objective

The major objectives for the maintenance of TRAFFIC CONTROL SIGNS are:

- To regulate, warn, guide, channelize, and/or provide information necessary for route selection.
- To aid in the safe and orderly flow of vehicle and pedestrian traffic on the County Road system.
- To supplement the regulations or warnings of other traffic control devices such as traffic signals and pavement markings.
- To implement the provision of the HTA.

Summary

The level-of-service for TRAFFIC CONTROL SIGN PLACEMENT shall be in accordance with the following:

1. Traffic control signs will be erected on all new County Roads before they are opened to traffic.

2. Additional new traffic control signs necessitated by amendments to the County Traffic By-laws will be erected as soon as practicable after the by-law becomes effective.

The level-of-service for TRAFFIC CONTROL SIGN MAINTENANCE shall be in accordance with the following:

1. If any sign of a type listed below is illegible, improperly oriented or missing, forces shall be deployed as soon as practicable after becoming aware of the fact to repair or replace the sign;

Stop Curve Sign with Advisory Speed Tab

Level of Service (LOS)

Stop Ahead	Do Not Enter
Yield	Checkerboard
Yield Ahead	Traffic Signal Ahead – New
Yield Ahead – New	Stop Ahead – New
Load Restricted Bridge	

2. If a regulatory or warning sign other than a sign listed above is illegible, improperly oriented or missing, the minimum LOS is to repair or replace the sign within the time set out in Table 1 to this section after becoming aware of the fact.

TABLE 1
REGULATORY AND WARNING SIGNS

Class of Highway	Time
1	7 days
2	14 days
3	21 days
4	30 days

3. All damaged, missing, defaced or illegible detour/construction traffic control signs shall be replaced or repaired immediately upon notification.

4. All traffic signs not mentioned above, which are damaged, defaced, missing or illegible shall be replaced or repaired as soon as practicable during normal working hours.

5. All traffic control signs erected on the County Road system shall be in accordance with the requirements of the Highway Traffic Act and the Ontario Traffic Manual and shall be checked to see they meet the retro-reflectivity requirements.

6. All traffic control signs on the County road system shall be monitored regularly to determine their appropriateness, effectiveness, and condition.

Level of Service (LOS)

Note: In this section,

“regulatory sign” has the same meaning as in the *Ontario Traffic Manual Book 5* published July 2001 by the Ministry of Transportation.

“warning sign” has the same meaning as in the *Ontario Traffic Manual Book 6* published July 2001 by the Ministry of Transportation.

Level of Service (LOS)

GUIDE RAIL/GUIDE POSTS

Objective

The major objectives for GUIDE RAIL/GUIDE POST MAINTENANCE are as follows:

- To effectively serve as guides to vehicular traffic.
- To define sharp curves.
- To safeguard traffic.

Summary

The level-of-service for GUIDE RAIL/GUIDE POST MAINTENANCE shall be in accordance with the following:

General

Guide Rail or Guide posts and cable are installed on those sections of the County Road system where vehicles accidentally leaving the highway might be subjected to considerable danger. Generally such points are fills on steep grades, long through fills, or fills on sharp curvatures. Their need is also recognized at abrupt changes in shoulder width and at approaches to structures.

Steel Beam Guide Rail

1. Steel beam guide rail shall be installed as per applicable Ministry of Transportation OPSS standards.

2. All steel beam sections shall be inspected as part of the regular road patrol activity and any defects shall be noted and scheduled for repair.

Level of Service (LOS)

3. New steel beam sections shall be installed on a program basis or in conjunction with road or structure reconstruction projects.

Cable Guide Rail

1. Cable guide rail shall be installed as per applicable Ministry of Transportation OPSS.

2. Cable guide rail shall be installed on a program basis or in conjunction with road reconstruction projects.

3. Cable guide rail sections shall be inspected as part of the regular road patrol activity and any broken or damaged sections scheduled for repair.

In winter months

4. Snow shall be plowed or blown away from the front of the guide rail systems so as to eliminate the potential for ramping by errant vehicles and also to ensure the systems work as designed.

5. Snow shall be removed from the edge of concrete barrier walls in accordance with the approved response times for snow removal as set out for the particular road classification.

Level of Service (LOS)

WEATHER MONITORING

Objective

The main objective of WEATHER MONITORING is to assist our operation by giving us advance notice of forecasted weather

Summary

The level of service for WEATHER MONITORING shall be in accordance to the following:

1. From October 1 to April 30, the minimum standard is to monitor the weather, both current and forecast to occur in the next 24 hours, once every shift or three times per calendar day, whichever is more frequent, at intervals determined by the municipality. O. Reg. 47/13, s. 3.

2. From May 1 to September 30, the minimum standard is to monitor the weather, both current and forecast to occur in the next 24 hours, once per calendar day. O. Reg. 47/13, s. 3.

Level of Service (LOS)

WINTER OPERATIONS

Objective

The major objectives for WINTER OPERATIONS are:

- To reduce the hazards of icy/snow covered road conditions to the community.
- To comply with legislation applicable with winter maintenance.
- To reduce economic losses to the community and industry caused delays to the community during icy/snow covered road conditions.
- To facilitate the movement of emergency vehicles during the winter weather conditions.
- To reduce the impacts to the environment and the drinking water supply through the proper storage, use and disposal of road salt and associated deicing/anti-icing chemicals.
- To maintain safe, passable school bus routes.
- To maintain safe, passable routes for buggies and cyclists.
- To maintain routes to Winter recreation areas.

Summary

The level-of-service for WINTER OPERATIONS shall be in accordance with the following:

General

1. A 24 hour emergency answering/dispatch service shall be maintained November to April each year. It shall be staffed with competent personnel experienced in winter operations and able to dispatch necessary maintenance forces as required.

2. All calls shall be logged on a special form provided for this purpose. It shall indicate the time of call, who from and action taken.

3. All calls received from County of Wellington OPP shall be forwarded to the Foreman or Operator in the applicable maintenance Area and appropriate action taken if practicable.

Level of Service (LOS)

4. Plowing and sanding/salting routes shall be established and reviewed and/or revised annually to provide for the most efficient use of staff and equipment.

5. As time permits between storms, snow shall be loaded and/or blown;

    a. To widen the roadway and provide for the safe movement of vehicular traffic when the road width is constricted by snow windrows.
    b. To minimize the hazards of high snow banks to traffic in locations such as intersections and driveways.
    c. To provide room for on-street parking.
    d. To minimize hazards to pedestrians in such locations as intersections, bus stops, and the downtown core areas.
    e. To facilitate drainage where snow banks are blocking catchbasins.
    f. To remove snow that has been plowed onto sidewalks where no boulevard area exists between the roadway and sidewalk for the storage of snow.

6. Snow fence may be erected at locations where snow drift is a major problem requiring high maintenance.

    Efforts shall be made to contact property owners prior to entering private property to erect snow fence however, the Municipal Act 2001, c.25, s.60 provides that the County may, at any reasonable time, enter upon any land within the municipality or within the adjoining municipality and lying along any highway under its jurisdiction, for the purpose of erecting and maintaining a snow fence.

Snow Accumulation

1. The minimum LOS for clearing snow accumulation is;

    a. after becoming aware of the fact that the snow accumulation on the roadway is greater than the depth set out in the Table to this section, to deploy snow-clearing resources as soon as practicable; and

Level of Service (LOS)

b. after the snow accumulation has ended, to clear the snow to a depth less than or equal to the depth set out in the Table within the time set out in the Table,

(i) to provide a minimum lane width of the lesser of three metres for each lane or the actual lane width, or

(ii) on a Class 4 or Class 5 highway with two lanes, to provide a total width of at least five metres.

c. The depth of snow will be determined by monitoring the weather and preforming visual observations.

d.The County will deploy resources to plow and apply materials as necessary including but not limited to DLA, salting and or sanding. This does not apply to that portion of the roadway for parking,

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TABLE
SNOW ACCUMULATION

Class of Highway	Depth	Time
1	2.5 cm	4 hours
2	5 cm	6 hours
3	8 cm	12 hours
4	8 cm	16 hours

Ice formation on roadways and icy roadways

1 The minimum standard for the prevention of ice formation on roadways is doing the following in the 24-hour period preceding an alleged formation of ice on a roadway:

Level of Service (LOS)

a. Monitor the weather.

b. Patrol

c. If we determine there is a substantial probability of ice forming on a roadway, treat the roadway to prevent ice formation within the time set out in the Table to this section, starting from the time we determines is the appropriate time to deploy resources for that purpose.

d. The County will apply sand and or salt plus Freeze Point Depressants as necessary within the time set out in the following Table for Icy Roadways.

TABLE
ICY ROADWAYS

Class of Highway	Time
1	3 hours
2	4 hours
3	8 hours
4	12 hours

Road Classification

Winter maintenance needs are dependent on several factors including traffic volumes, speed, type, winter maintenance experience and the objective for each road.

To ensure the appropriate allocation of resources to promote consistency throughout the County, the County Road network has been classified into six classes based on the posted/regulated speed and the annual average daily traffic. *(Note most County Roads are classified as Class 2, 3, and 4 with one Classified as Class 1. At this time there is no Class 5 or Class 6 roads under County jurisdiction).*

Level of Service (LOS)

TABLE
CLASSIFICATION OF HIGHWAYS

Average Annual Daily Traffic (number of motor vehicles)	Posted or Statutory Speed Limit (kilometres per hour)						
	100	90	80	70	60	50	40
15,000 or more	1	1	1	2	2	2	2
12,000 – 14,999	1	1	1	2	2	3	3
10,000 – 11,999	1	1	2	2	3	3	3
8,000 – 9,999	1	1	2	3	3	3	3
6,000 – 7,999	1	2	2	3	3	3	3
5,000 – 5,999	1	2	2	3	3	3	3
4,000 – 4,999	1	2	3	3	3	3	4
3,000 – 3,999	1	2	3	3	3	4	4
2,000 – 2,999	1	2	3	3	4	4	4
1,000 – 1,999	1	3	3	3	4	4	5
500 – 999	1	3	4	4	4	4	5
200 – 499	1	3	4	4	5	5	5
50 – 199	1	3	4	5	5	5	5
0 – 49	1	3	6	6	6	6	6

Level of Service (LOS)

ROAD PATROL

Objective

The major objectives for ROAD PATROL are:

- To ensure that all roads are inspected on a regular basis.
- To observe and record defects requiring action.
- To ensure that the road is maintained in a safe condition.

Summary

The level-of-service for ROAD PATROL shall be in accordance with the following:

Patrolling

1. The LOS for the frequency of routine patrolling of highways is set out in the Table to this section.

2. Patrolling shall be carried out by driving on the highway to check for the following conditions:

    a. Snow accumulation
    b. Icy roadways
    c. Potholes on road surface and paved or unpaved shoulders
    d. Shoulder drop-offs
    e. Cracks
    f. Debris
    g. Luminaries
    h. Signs
    i. Traffic control signal systems and sub systems
    j. Bridge deck spalls

Level of Service (LOS)

k. Surface discontinuities on roads and bridge decks

TABLE
PATROLLING FREQUENCY

Class of Highway	Patrolling Frequency
1	3 times every 7 days
2	2 times every 7 days
3	Once every 7 days
4	Once every 14 days

Summer

1. All County roads shall be patrolled as per the above table. Area Foremen/Sub-Foremen or designated employee shall visually inspect the road and roadside from the vehicle and shall note major problems and problem areas on the form.

2. The Area Foreman/Sub foreman shall arrange for the repair of noted works that present hazards to vehicular or pedestrian traffic or to private or public property.

3. They shall carefully record all major road defects and actions taken to correct same. Special investigations carried out as a result of accident claims shall be documented on a separate report form and forwarded to the Operations Manager.

4. Identified problems or concerns that are not of an immediate nature will be brought up for discussion at staff or scheduling meetings or shall be discussed with the Superintendent for advice and action to be taken.

Winter

1. In addition to the above procedures snow control personnel shall cover all roads in their assigned areas as per frequencies set out in the above table or more often depending on severity of winter conditions. In addition, road condition reports shall be received from winter maintenance crews during the performance of their winter control activities.

Level of Service (LOS)

2. Snow control personnel shall report the Road conditions regularly to Central Garage to be recorded on a Road Weather Report.

Level of Service (LOS)

LUMINAIRES

Objective

The major objectives for LUMINAIRES are:

- To ensure street lights are inspected regularly and functioning as required.
- To ensure that street lighting is adequate and effective.
- To aid in the flow of traffic by providing visibility for motorists.

Summary

1. In this section,

   "conventional illumination" means lighting, other than high mast illumination, where there are one or more luminaries per pole;

   "high mast illumination" means lighting where there are three or more luminaries per pole and the height of the pole exceeds 20 metres;

   "luminaries" means a complete lighting unit consisting of,

   a. a lamp, and

   b. parts designed to distribute the light, to position or protect the lamp and to connect the lamp to the power supply.

Level of Service (LOS)

TABLE
LUMINAIRES

Class of Highway	Time
1	7 days
2	7 days
3	14 days
4	14 days

Luminaries

2. For conventional illumination, if three or more consecutive luminaries on a highway are not functioning, the LOS is to repair the luminaries within the time set out in the Table to this section after becoming aware of the fact.

3. For conventional illumination and high mast illumination, if 30 per cent or more of the luminaries on any kilometre of highway are not functioning, the LOS is to repair the luminaries within the time set out in the Table to this section after becoming aware of the fact.

4. Despite subsection (3), for high mast illumination, if all of the luminaries on consecutive poles are not functioning, the LOS is to deploy resources as soon as practicable after becoming aware of the fact to repair the luminaries.

5. The County has contracted the inspection and maintenance of all Luminaries to a IMSA Certified contractor who will inspect, maintain and report to us annually.

6. Luminaries shall be deemed to be repaired,

    a. for the purpose of subsection (1), if the number of non-functioning consecutive luminaries does not exceed two;

Level of Service (LOS)

b. for the purpose of subsection (2), if more than 70 per cent of luminaries on any kilometre of highway are functioning;

c. for the purpose of subsection (3), if one or more of the luminaries on consecutive poles are functioning;

d. for the purpose of subsection (4), if more than 50 per cent of luminaries on any kilometre of highway are functioning.

7. Subsections (2) and (3) only apply to,

a. Class 1 and Class 2 highways; and

b. Class 3, and Class 4 highways with a speed of 80 kilometres per hour or more.

COUNTY OF WELLINGTON

COMMITTEE REPORT

To: Chair and Members of the Roads Committee
From: Gordon J. Ough, P.Eng., County Engineer
Date: Tuesday, September 08, 2015
Subject: **Caldwell Bridge, Wellington Road 43 (Scotland Street), Fergus, Sidewalk and Minor Repairs**

Background:

In December of 2014 the County engaged a specialized consultant to complete a visual and dimensional survey and structural investigation of the Caldwell Bridge on Wellington Road 43 (Scotland Street), Fergus. (The same consultant completed the visual and dimensional survey and structural investigation of the Badley Bridge in Elora as well.) From the December investigation it was determined that there were numerous areas of concern with respect to the concrete sidewalk. To determine the full extent of the issues, the County hired a qualified bridge Contractor and utilizing a specialized truck rented from the 407, access was gained under the bridge to hammer sound the concrete.

Ultimately it was determined that the entire concrete sidewalk would have to be replaced as the County does not wish to have a similar situation occur as occurred with the Badley Bridge wherein we have to close the sidewalk.

Based on the work completed at the Badley Bridge, the estimated costs for the sidewalk replacement and various other repairs that are necessary is in the $100,000 range. True costs will be paid on a time and material basis as invoice by Owen King Limited, an approved Wellington County bridge Contractor, who is currently underway with the replacement. The repairs/replacement work is expected to be completed in early to mid September.

Costs will be covered under three accounts; various bridge and culvert repairs, miscellaneous bridge repairs and miscellaneous construction (current total of the three accounts at the time of preparation of this report, is $210,000).

Recommendation:

That this report be accepted for information.

Respectfully submitted,

Gordon J. Ough, P. Eng.
County Engineer

COUNTY OF WELLINGTON

COMMITTEE REPORT

To: Chair and Members of the Roads Committee
From: [Gordon J. Ough, P.Eng.], [County Engineer]
Date: Tuesday, September 08, 2015
Subject: **The Use of the Texas Style Open Railing for Bridge Parapet Walls in Urban Areas**

Background:

In 2004 the Irvine River Bridge, David Street, Elora was replaced and the 1867 constructed pier was rehabilitated to carry the new bridge deck. As a part of the replacement and rehabilitation the new parapet wall on the bridge was designed to have a look and feel of the original history of the 1867 pier. The parapet was constructed as the Texas style open railing that appears to have church windows along its length. (See photo below.)

Prior to the replacement of the Tower Street Bridge in Fergus in 2014, County staff asked for the opinion of members of Centre Wellington Council as to what they would like for the parapet wall on the bridge. From discussions it was determined that the Texas style railing was the preferred option. The railing had the look and feel that Council thought was appropriate for their community and it would link the two communities of Elora and Fergus together as the two bridges would share a common feature. (See photo below.)

The County is in the process of rehabilitating another urban bridge in the Village of Drayton. Again members of Council were asked which type of parapet wall they would like on the rehabilitated bridge and the Texas style railing was the preferred option. As requested, the Texas style railing will be designed to be incorporated for the bridge rehabilitation.

Staff are recommending that when urban bridges (13 or 14 of 106 total bridges) in the future require replacement or rehabilitation that the Texas style open railing be the preferred choice for the parapet wall. Utilizing the same parapet wall for all urban bridges will create a feature that is distinct to Wellington County and link communities of Wellington together as they will have a common feature. The additional cost for the railing is estimated at $350/lineal metre.

Recommendation:

That the Texas style open railing be the preferred parapet wall option for urban bridges within Wellington County.

Respectfully submitted,

Gordon J. Ough, P. Eng.
County Engineer