Appendix A

Safety Review Report

AECOM

County of Lanark

Safety Review Report

draft for discussion

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1. Field Review

This section describes the scope and objectives of the field review. The study approach to undertake the field review is consistent with that recommended in The Canadian Guide to In-service Road Safety Reviews, published by the Transportation Association of Canada (TAC), January 2004.

The field review of the County of Lanark road network was conducted during July and November 2008 on three separate days consisting of twelve hours of driving.

Sites were selected for field review based on their ranking using a Relative Risk approach. Four years of County of Lanark crash data, the annual average daily traffic (AADT) volumes of the road sections and the length of the road were used to assess risk. Due to limitations in the crash data provided, intersections could not be separated out from the road sections.

Risk, in this context, is a measure that reflects the potential for a crash to occur in any given situation, as compared to the overall number of vehicles exposed to the situation. Quantitatively it is equal to the probability of the crash occurring divided by the number of vehicles using the road.

To apply the method, each road section was compared to all similarly classified road sections in Lanark County, i.e. urban, suburban or rural. The risk calculated within the group of roads of similar classification is called the Basic Risk, and the risk calculated when comparing a road section to all road sections in Lanark County is called the Global Risk. The road sections were ranked based on the Global Risk score. The higher the Global Risk score, the greater the risk of collision along the road section.

Global Risk is a numerical score calculated for each road section as a function of the:

- Frequency of crashes within the individual road section and all road sections in the County network;
- Severity of crashes within the individual road section and all road sections in the County network;
- Average Annual Daily Traffic (AADT) along the individual road section, road sections by road classification group, and all road sections in the network;
- Length of the road section; and
- Cost of crashes according to crash severity.

Table 1.1 shows the sites visited, including details on:

- Road name;
- Start and end point of the road section;
- AADT;
- Length of the road section;
- Fatal, injury and property damage only (PDO) collisions in the database;
- Global Risk Score; and
- Ranking based on the Global Risk Score.

Twelve locations were identified for a detailed review:

- Seven road sections classified as suburban;
- Six road sections classified as rural; and
- One road section classified as urban.

When selecting locations for review, consideration was also given to locations which had several collisions in order to allow trends to be identified. One site was dropped from the list since it had only one collision, which was a fatality. Despite having a lower ranking, a single urban road section was included in the site visit to ensure that the field investigation included at least one road section of each type (rural, suburban, and urban). Based on comments by the County of Lanark, another lower ranked road section was included in the field review (March Road between the Ottawa Boundary and Appleton Side Road).

In addition to comparing and prioritizing the road sections, a one-tailed Chi-squared test was used to determine if at a specific road section there was an abnormally high occurrence of crashes with:

- A specific impact type, or
- Under specific lighting conditions, or
- On specific road surface conditions.

The Chi-squared test calculates a Chi-squared value based on the actual number of crashes with a specific characteristic that occurred at the road section and the number of crashes with the same characteristic that are expected to occur at the road section. The expected number of crashes is calculated by comparing the road section of concern with other road sections in its classification (rural, suburban, and urban). The calculated Chi-squared value is compared to a Chi-squared value that represents a pre-determined confidence level. The analysis set at a 95% confidence level.

Table 1.2 shows road sections that have an over-represented characteristic. In addition, any characteristic that was dominant (was greater than 50 percent of the total number of collisions) is shown. These two pieces of information were used to gain more insight into causal factors that may be leading to the occurrence of collisions at the site.

Table 1.1 Details on sites included in field investigation

Asset ID	Road Name	From	To	Roadside Environment	Length (km)	AADT	PDO	Injury	Fatal	Global Risk Score	Rank
12079	McDonalds Corners Road	Mill Avenue	Watsons Crnrs. Rd. (CR 8)	S	0.88	1000	20	0	1	59.945	1
511335	Hwy 511	McIlraith Road (Road 9A)	Tatlock Road	R	2.68	500	8	3	1	38.815	2
19000	Bennett Lake Road	Fallbrook Road (CR 7)	PIN #155	S	0.27	450	9	0	0	25.129	3
12250	Mill Street	Argyle Street South	George Street (CR 511)	S	0.37	1000	15	2	0	19.755	4
12260	Pine Grove Road	Roberts Road	Lanark Village Sign	S	0.29	1450	14	0	0	11.294	6
15099	Fergusons Falls Road	Hamlet Sign East Side	Pine Grove Rd. (CR 12)	R	0.57	750	9	1	0	9.739	7
36000	Bolingbroke Road	Leeds Bndry	Althorpe Road (CR 6)	R	0.71	500	6	1	0	8.861	8
16247	Wolf Grove Road	CR 511	Hopetown Hamlet Limit (60 Max Sign)	S	0.37	1050	5	1	0	7.224	9
511067	Hwy 511	PIN #1325 (Balderson South)	Fallbrook Road (CR 7)	S	0.39	6000	16	10	0	7.065	10
1045	Rideau Ferry Road	CR 21	Millar Brooke Way	R	1.98	4200	23	2	1	6.733	12
511149	South Street 511	South Street (CR 12)	George Street	U	0.08	4000	3	1	0	6.650	13
49000	March Road	Ottawa Bndry	Appleton Side Rd. (CR 17)	R	2.9	7500	37	4	2	5.008	18

Table 1.2 Details on over-represented and dominant collision characteristics

Asset ID	Road Name	From	To	Global Risk Score	Rank	Road Condition Over Representation	Lighting Over Representation	Impact Type Over Representation	Dominant Road Condition	Dominant Lighting
12079	McDonalds Corners Road	Mill Avenue	Watsons Crnrs. Rd. (CR 8)	59.945	1			Angle	Dry	Dark
511335	Hwy 511	McIlraith Road (Road 9A)	Tatlock Road	38.815	2		Daylight	SMV – Stationary Object		Daylight
19000	Bennett Lake Road	Fallbrook Road (CR 7)	PIN #155	25.129	3		Dawn		Dry	
12250	Mill Street	Argyle Street South	George Street (CR 511)	19.755	4				Dry	Daylight
12260	Pine Grove Road	Roberts Road	Lanark Village Sign	11.294	6				Dry	Daylight
15099	Fergusons Falls Road	Hamlet Sign East Side	Pine Grove Rd. (CR 12)	9.739	7				Dry	
36000	Bolingbroke Road	Leeds Bndry	Althorpe Road (CR 6)	8.861	8					
16247	Wolf Grove Road	CR 511	Hopetown Hamlet Limit (60 Max Sign)	7.224	9					Daylight
511067	Hwy 511	PIN #1325 (Balderson South)	Fallbrook Road (CR 7)	7.065	10	Wet		Turning Movement	Dry	
1045	Rideau Ferry Road	CR 21	Millar Brooke Way	6.733	12				Dry	
511149	South Street (CR 511)	South Street (CR 12)	George Street	6.650	13					Daylight
49000	March Road	Ottawa Bndry	Appleton Side Rd. (CR 17)	5.008	18				Dry	

2. Road Safety Assessment

The purpose of the field reviews was to collect data and to gain a first-hand appreciation of the physical and operational characteristics of the County roads. The field review was used as an opportunity to observe the existing traffic control devices and the consistency of their application, as well as to note other characteristics such as:

- Sight distance;
- Pavement and shoulder condition;
- Roadside hazards and roadside protection systems;
- Regulatory signs;
- Warning signs;
- Guide and information signs; and
- Pavement markings.

Where potential specific remedial measures were identified, these were documented in the individual site assessments.

2.1 Horizontal and Vertical Alignment

The County of Lanark road network has a wide variety of road sections ranging from those that are largely straight and flat, which are found mainly in the urbanized areas, to those with a curvilinear alignment combined with rolling terrain. In the latter areas, sight distances at intersections, driveways and some curves are limited. The field investigation did not allow for a detailed calculation of sight distances, although in a number of instances observed sight distances appear to be inadequate for the posted speed, such as shown in **Figure 2.1.**

Figure 2.1 Inadequate sight lines of approaching eastbound traffic (CR 12 at Argyle Street)

There are four different types of sight distance requirements that should be considered at intersections or driveways:

- Stopping sight distance;
- Turning sight distance;
- Departure sight distance; and
- Sight distance for left turns from the major roadway.

Each is discussed below.

Stopping sight distance
The provision of stopping sight distance is considered to be the absolute minimum safety requirement for a road facility and is the distance required to come to a complete stop once a hazard has been observed. Stopping sight distances increase on roads with higher design speeds. Stopping sight distance guidelines are presented in the 1999 Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads.*

Turning sight distance
Turning sight distance is greater than stopping sight distance as it includes the time required for a vehicle to accelerate from a standing position across one lane of oncoming traffic. Turning sight distance provides an increased margin of safety at intersections and driveways. The provision of adequate turning sight distance is more critical than departure sight distance (described below). A left turn across oncoming traffic could result in a high speed impact into the side of the turning vehicle. Given the speed differential, it is likely that the impact would have a high severity outcome. Turning sight distance guidelines are also presented in the 1999 TAC *Geometric Design Guide for Canadian Roads.*

Departure sight distance
Departure sight distance requirements reflect a desired standard. If met, the driver should be able to make the turning movement without disrupting approaching traffic. Given that this movement involves the driver making a particular movement, departure sight distance requirements are greater than stopping sight distance requirements. The required sight distance assumes a two lane roadway and assumes that the turning driver would be able to accelerate to 85% of the speed of approaching traffic already on the road. As such, the sight distance requirement relates more to operations than safety. Achieving the required sight distance would provide for smoother operations and would potentially reduce the risk of rear-end collisions or hazardous overtaking. The likely outcome of a collision between a left or right turning driver entering through traffic would be a lower-speed, rear end-type impact or a run off the road type collision resulting from an evasive manoeuvre. Departure sight distance are also presented in the 1999 TAC *Geometric Design Guide for Canadian Roads*

Sight distance for left turn from major roadway
Adequate sight distance is also required for a vehicle making a left turn from a major roadway to select a suitable gap, start up, cross the path of oncoming traffic, and clear the opposing through lane. This sight distance is also critical, given the significant speed differential between the two vehicles and the likely high severity of the outcome when the approaching vehicle strikes the side of the turning vehicle. Sight distance

for a left turn from a major road can be evaluated using the *AASHTO Geometric Design of Highways and Streets* (2004 edition).

2.2 Pavement and Shoulder Conditions

The condition of the pavement observed in the field varied from good to poor. Extensive cracking and potholes were observed on some roads. Patching of potholes and sealing of cracks were also noted in some areas. With respect to crack sealing, it was noted on some road sections that the crack sealing was obscuring centre line pavement markings, as shown in **Figure 2.2**. This reduces a driver's ability to determine the alignment of the roadway, particularly at night or during adverse weather conditions.

Figure 2.2 Obscured centerline pavement markings due to crack sealing (CR 10)

In rural areas, a gravel shoulder has been provided. According to the 1999 TAC *Geometric Design Guide for Canadian Roads*, rural shoulders are typically between 2.5 – 3.0 metres depending on design hour volumes. Using the TAC reference as a guide, shoulder widths appeared to be adequate along most of the roadways and would allow a driver to safely pull onto the shoulder in an emergency situation. In some areas rutting due to erosion was noticed.

2.3 Roadside Safety and Protection

The field review also included an assessment of roadside safety and fixed object hazards. Standards for minimum roadside clear zones, identification of roadside hazards, and the design and application roadside safety devices in Ontario, are found in the 1993 Ministry of Transportation, Ontario (MTO) document *Roadside Safety Manual*.

Minimum roadside clear zone standards increase on higher speed and higher volume roadways. Additional clearance is required on the outside of horizontal curves. According to the Roadside Safety Manual, the treatment of roadside hazards is usually considered in the following order of preference:

- Remove the hazard;
- Relocate the hazard outside the clear zone;
- Minimize the hazard by making it traversable or, in the case of sign supports and posts, by using breakaway devices;
- Shield the hazard with barriers or crash cushions;
- In the absence of other options, improve awareness of the hazard through delineation or other warning devices; or
- Reduce the posted speed.

In some instances, such as the rock face shown in **Figure 2.4**, fixed object hazards still exist in the clear zone. In the example shown, given an AADT of 500 on this section of CR 511 and a posted speed of 80 km/h, the clear zone should be 4 metres according to the Roadside Safety Manual.

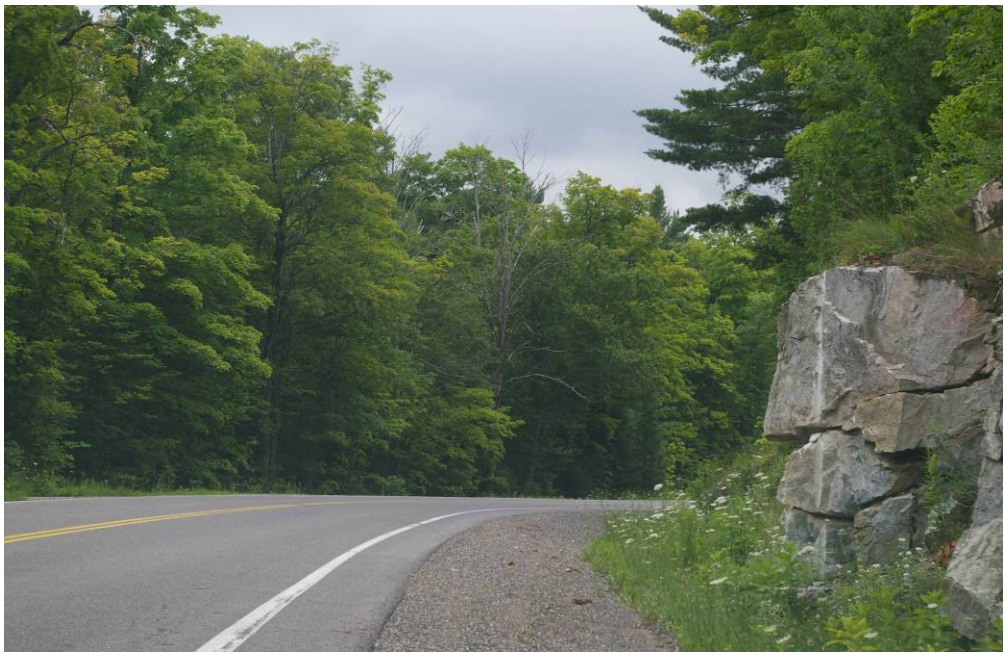

Figure 2.4 Fixed object hazard adjacent to CR 511 near the community of Tatlock

Roadside protection was also reviewed. The County of Lanark uses a combination of three cable guide rail and steel beam guide rail systems on their road network to protect road users who inadvertently leave the roadway from roadside hazards, which may be fixed objects, ditches, or embankments. The scope of the field investigation prevented a detailed examination of roadside protection hazards throughout the County Road network; however, observations indicated opportunities for improving roadside protection. One example is illustrated in **Figure 2.5**. Three cable guide rail has been placed in front of an embankment. In order to adequately protect an errant vehicle from entering the embankment, the guide rail should be extended further upstream and around the far side of the driveway. As well, replacing the three cable guide rail with a stiffer system (e.g. steel beam guide rail) would provide greater protection to vehicles.

Figure 2.5 Three cable guide rail system does not provide adequate protection of embankment

2.4 Regulatory Signs

Regulatory signs were also reviewed, particularly the use of stop signs and posted speed limit signs. Each is discussed below.

Stop signs

At unsignalized intersections, the County of Lanark uses Stop signs on the minor approaches in order to assign the right-of-way to motorists on the through road and makes limited use of all-way Stop signs. The Ontario Traffic Manuals (OTM) were used to provide information on the type and use of signage and pavement markings. The *OTM Book 5 Regulatory Signs* has guidelines on the placement of Stop signs in advance of the intersection and in relationship to the edge of the roadway. In addition, the signs should be visible upstream at least at the minimum stopping sight distance given the design speed of the roadway. In cases where this visibility cannot be practically achieved, a Stop Ahead (Wb-1) sign should be used as per

OTM Book 6 Warning Signs. One example noted was CR 12 at Argyle Street, where a Stop sign has been obscured by roadside foliage.

Posted speed limits

Posted speed limit signs were also reviewed. As stated in the Highway Traffic Act (HTA), under section 128 Rate of Speed – "no person shall drive a motor vehicle at a rate of speed greater than 50 kilometres per hour on a highway within a city, town, village, police village or built-up area." Outside of an urban area, a statutory speed limit of 80 km/h applies. Lower speed limits may be justified on rural roads where there are physical constraints present along the entire length of the roadway, a significant number of driveway accesses or the presence of vulnerable road users in significant numbers.

The review of the County of Lanark road network indicated the general use of 80 km/h posted speed signs along the rural road sections and the use of 50 km/h posted speed signs within built up areas. Posted speed signs appear to generally conform to standards outlined in *OTM Book 5 Regulatory Signs***.**

As a whole, 50 km/h posted speed signs with a BEGINS tab are being used on approaches to built-up areas (e.g County Road 511 through the community of Balderson). Despite the use of a 50 km/h speed zone, it was noted that the roadside environment and roadway itself does not adequately convey a need to slow down due to the wide set back of properties and wide gravel shoulders. **Figure 2.6** and **Figure 2.7** show the roadside environment leading into the community of Balderson. Despite a 50 km/h posted speed, the rural cross section and set back of structures from the road convey the message that higher speeds are still acceptable even though there is the potential for pedestrians crossing the roadway.

Figure 2.6 Roadside environment in the community of Balderson

Figure 2.7 Roadside environment in the community of Balderson

On County Road 36 near the community of Bolingbroke, a 40 km/h speed zone has been used on a rural road section consisting of a number of sharp horizontal curves. It is not likely that drivers are adjusting their speeds accordingly. A more defensible and appropriate solution would be to use the Winding Road (Wa-6) sign along with the Hazard Length Tab (Wa-6t) sign shown in **Figure 2.8** and **Figure 2.9**. This sign, which should be used, indicates a continuous series of curves that may continue for several kilometres.

Figure 2.8 Winding Road Sign (Wa-6)

Figure 2.9 Hazard Length Tab (Wa-6t)

2.5 Warning signs

Two specific issues, which were identified with regard to warning signs, were related to signs that warn of a change in roadway alignment and non-standard warning signs.

Curve warning signs
In the *OTM Book 6 Warning Signs*, roadway alignment signs are described as signs used to warn of changes in road direction. Abrupt turns or curves, or the termination of roadway sections in T-intersections may result in hazardous driving situations unless road users are advised of these conditions in advance.

Field observations indicated that the application of the SHARP CURVE Sign (Wa-2L) and CURVE Sign (Wa-3L) were generally consistent and conformed to the OTM application guidelines. Field observations indicated that some additional signage on specific roadway sections might be beneficial to motorists. In addition to the turn/curve warning signs, some supplementary delineation (chevrons) may be required to highlight the change in horizontal alignment of the roadway.

In addition to the turn/curve warning signs, in situations where a speed reduction is required to negotiate a curve, it is important that the indicated advisory speed be both safe and realistic. Speed advisory signage should be erected based on the prevailing speed of traffic, not the posted maximum speed. Ball-bank indicator tests are the most common and practical way of determining advisory speeds. Conducting ball-bank tests at specific sites was not within the scope of this assignment but observations indicate that there may be some locations within the rural area where these studies should be undertaken by the County.

Two road sections with 90 degree curves (one near Appleton on CR 17 and the other near Blakeney on CR 17) were reviewed. The horizontal curve on CR 17 near Appleton has an oversize curve warning sign with a

speed advisory tab. Chevrons are also used. The other road section near Blakeney, shown in **Figure 2.10**, the curve warning signs appear to have been placed too close to the curve. A checkerboard sign is used in one direction but not in the other. No additional delineation (chevrons or post mounted delineations) is provided through this curve.

Figure 2.10 Horizontal curve on CR 17 near Blakeney

Non-standard warning signs

In addition to curve warning signs, *OTM Book 6 Warning Signs* contains guidance on the selection and application of a number of warning signs in use in the Province of Ontario. Signs contained in the manual are intended to provide advance notice to road users of unexpected and potentially dangerous conditions on or near the road. The manual covers a wide range of hazards. Over the course of the field review, a number of instances of non-standard warning signs were observed. Warning signs that differ from *OTM Book 6* in text and use of symbols are more likely to be misinterpreted by road users, reducing their effectiveness. **Figures 2.11** through **2.13** show three examples of non-standard warning signs found on Lanark County roads.

Figure 2.11 Non-standard curve warning sign (CR 12 in Lanark)

Figure 2.12 Non-standard intersection ahead warning sign (CR 17 approaching the community of Blakeney)

Figure 2.13 Non-standard checkerboard sign (CR 36 near community of Bolingbroke)

In the first example shown in **Figure 2.11**, a sign with the message (DANGEROUS CURVE AHEAD) has been used along with an arrow to warn drivers that they are approaching a curve. The sign does not indicate the degree of curvature or the direction of the curve. It is recommended that the sign be replaced with either the Sharp Curve (Wa-2L or Wa-2R) or Curve sign (Wa-3L or Wa-3R) depending on the outcome of ball bank study.

In the second example shown in **Figure 2.12**, an Intersection Ahead (Wa-11A) has been installed such that the up arrow is pointing to the left. It is assumed that the sign is intended to warn drivers of an approaching intersection. This sign (in its correct application) is to be used to warn drivers on a through road of an approaching intersection at which the intersecting side road is under stop or yield control. The arrowhead at the end of the line symbolizes right-of-way. With the up arrow pointing to the left, drivers may mistakenly believe that the crossing roadway has the right-of-way.

In the third example shown in **Figure 2.13**, a modified Checkerboard sign has been placed at the stem of a T-intersection. The Checkerboard has been modified to show a T-configuration rather than a simple arrow with two heads pointing left and right (Wa-8LR). The modification to the sign configuration reduces its effectiveness at warning drivers that the road they are on does not continue through.

2.6 Guide and Information Signs

Prioritization

The County of Lanark makes use of crossing roadway or street name signs, route markers, destination and tourism signs to assist drivers in navigating along its road network. In terms of prioritization, crossing roadway and route markers should be considered first in the hierarchy of sign placement followed by destination signing to communities while tourism signing should be considered last. The above is illustrated in **Figure 2.14**. Route markers, street names, destination and tourism signing have been combined in a single assembly, increasing driver workload. In this assembly, tourism destination signs have been given greater prominence than the community destination, crossing roadway and route markings. Also, the text in the crossing roadway signs, as shown on the street name blade, has a significantly smaller font than the tourism destination signs.

Figure 2.14 Guide and information signs (Junction of CR 511 and 12)

A review of the guide and information signs also revealed a lack of consistency. For example, some destination tourism signing use brown lettering on a white background while other signs use white lettering on a blue background.

Advance guide signs and turn off crossing roadway signs

Crossing roadway signs, also known as street name signs, identify public roadways that intersect with County Roads at at-grade intersections. Crossing roadway signs provide information on route numbers, roadway names and cardinal direction for the purposes of wayfinding. This signage serves to orient and guide motorists who may have little knowledge of the local area.

To be effective, crossing roadway signage must be conspicuous relative to their surroundings, and therefore easily detected. They must also be legible at a sufficient distance to permit the motorist to read, understand

and respond to the message by reducing speed, making lane changes and preparing to turn at the intersection, should this be part of their intended route.

Generally it was observed that on rural roadways, the crossing roadway signage was not easily visible. There was an absence of advance guide signs and turn-off signs on the higher volume roadways such as CR 511. Advance guide signs and turn-off signs or markers were noted to be absent on some County roads at the approach to Highway 7.

Advance guide signs and turn-off signs provide adequate forewarning of the need to make a turn at an intersection. The signs reduce the sudden slowing or stopping movements of vehicles or abrupt lane changes.

2.7 Pavement markings

The field observations included a review of centerline, edgeline and intersection pavement markings. Pavement markings are refreshed on a regular basis by the County. These observations were made in advance of painting work that had been delayed due to weather conditions.

Directional Dividing Lines (Centre Lines)
Directional Dividing Lines (Centre Lines) are used to designate the portion of a two-way roadway available for traffic traveling in each direction. As outlined in the *OTM Book 11 Pavement, Hazard and Delineation Markings*, there are specific criteria for use on rural roadways. Low-volume, rural roadways must be marked where the pavement width or two-way, peak hour volume exceed a given threshold, on roads with significant night time or tourist traffic or where there is a history of collisions.

Otherwise, the centrelines of rural roadways that do not exceed the thresholds as outlined in *OTM Book 11*, and which do not exhibit the collision, traffic or climatic conditions outlined, need only be marked at specific roadway features (i.e., vertical and horizontal curves, intersections, railway crossings, bridges and other obstructions within the roadway).

A review of County of Lanark centre lines showed that most roads had painted centre lines, although it was noted that the lines were faded along some road sections. In these cases, the center line would be difficult to detect at night or in rainfall.

Ideally, centre line road markings should be reapplied as soon as possible following the resurfacing of the road. Reapplication to roads that are surface treated should be completed when possible, recognizing that excess material may spall off for a period of time. It may also be necessary to reapply markings after surface materials have stabilized.

Edge lines
Edge line markings delineate the outside edges of the traveled pavement. Edge lines adjacent to gravel shoulders and on or adjacent to partially paved shoulders have the potential to reduce shoulder maintenance and collision frequency, while providing effective travel lane delineation, particularly in conditions of poor visibility. Motorists often use edge lines as a guide in poor lighting conditions such as at night or in fog.

The use of edge lines varied from roadway to roadway through the County road network. Where they have been provided, the markings varied widely in condition.

On two-lane roadways, edge lines help motorists stay on the proper path and reduce the likelihood of a vehicle leaving the designated roadway and losing control on a gravel shoulder or pavement edge drop-off. Where shoulders are gravel or partially paved, and where pavement drop-off appears to be an issue, an edge line should be considered. Where the pavement width prior to marking provides 3.6 metres or more per lane, the edge line should be placed at a distance from the pavement edge so that the lane is consistently 3.3 metres wide.

Intersection pavement markings

Intersection markings are used to reduce vehicle and pedestrian conflicts, improve the capacity of the intersection, and clarify information used in driver decision-making. Intersection markings also alert motorists that they are approaching an intersection and give them adequate time to respond. The standard approach markings consist of the following components:

- Stop Bars – used to indicate the point at which a vehicle must stop in compliance with the STOP sign. Must be a solid white retro-reflective line between 30 cm and 60 cm wide;
- Guide Lines – used to guide vehicles though an intersection and delineate the proper course to be taken by vehicles traversing the intersection to help prevent driver confusion;
- Crosswalks – used to define and delineate the path for pedestrians to cross the roadway. In rural areas crosswalks are usually only marked at signalized intersections, but they should be marked at all intersections where there is substantial conflict between vehicle and pedestrian movements.

Treatment of the higher-volume rural intersections and at local roads intersecting with County roads was found to be inconsistent. The practice of providing stop bars and guide lines at all urban and rural intersections was not consistently applied. As stated in the *OTM Book 11, Pavement, Hazard and Delineation Markings*, a stop line (also called a stop bar) must be used at both rural and urban intersections, to indicate the point at which a vehicle must stop in compliance with the stop sign, however, the County is inconsistent with this treatment.

3. Recommendations

3.1 Horizontal and Vertical Alignment

The County of Lanark may wish to consider a prioritized program of reviewing sight distance requirements on their road network and addressing sight distance issues as they are identified. Various low cost means of improving sight distances can be undertaken. These include trimming vegetation and other sight obstructions and installing Intersection Ahead signs. Priority should be given to higher volume and higher speed roadways.

3.2 Pavement and Shoulder Conditions

In terms of pavement and shoulder conditions, the County of Lanark may wish to consider as standard practice that they reapply centre lines and edgelines immediately following any work undertaken to seal pavement cracks. On an annual basis the condition of shoulders should be reviewed to identify ruts and other discontinuities.

3.3 Roadside Safety and Protection

It is suggested that the County of Lanark carry out an inventory of roadside hazards and existing roadside protection systems on a prioritized basis, beginning on higher speed and volume roads first and continuing on to lower speed and volume roads. Roadside hazards should be assessed in terms of the collision risk (considering probability, exposure and consequence) and a list of corresponding remedial treatments should be developed. The list of remedial treatments should be prioritized based on the benefit (expected reduction in collisions based on societal costs) versus the cost (of removing the roadside hazard or installing/upgrading the roadside protection system). Low-cost treatments yielding a high benefit-cost ratio should be undertaken first, followed by medium to high-cost treatments still yielding a high benefit-cost ratio.

Regulatory signs
The County of Lanark should review Stop sign installation at all intersections on their road network in order to ensure that the sign placement meets *OTM Book 5* guidelines and the sign is visible upstream at least the minimum stopping sight distance. If minimum stopping sight distances cannot be met, a Stop Ahead sign should be installed. All foliage growing near a Stop sign should be trimmed.

The County of Lanark should consider developing a rural traffic calming program on County roads entering hamlets where the posted speed has been lowered to 50 km/h. The County of Lanark should consider the use of gateway features (e.g. community signs) and making the character of the roadway more urban (install curb and gutter) in areas where they are attempting to create a lower speed driving environment.

The County of Lanark should consider developing a defensible policy for the setting of speed limits on rural County roads. All rural speed zones with a posted speed of 70 km/h or less should be reviewed for their appropriateness.

Warning signs

It is suggested that the County of Lanark conduct a review of all horizontal curves using a ball bank indicator to determine the need for curve warning signs, speed advisory tabs, and/or chevrons. Where curve warning signs already present, the *OTM Book 6* guidelines should be used to assess whether the sign is the appropriate type, whether its placement is sufficiently in advance of the curve given the posted speed on the roadway and whether a speed advisory tab is warranted. In rural areas that are not illuminated, consideration should be given to the use of chevrons on sharp curves and posted mounted delineators on moderate curves.

It is suggested that the County of Lanark conduct a conformance review of all warning signs in use on County of Lanark roads. All signs should be verified for their conformance to *OTM Book 6* standards. The sign should be placed in according to *OTM Book 6* standards using Tables 3 and 4 which provide guidance on the appropriate placement in warning signs in advance of the hazard.

Guide and Information Signs

It is suggested that the County of Lanark:

- Review all tourist destination signing in order to determine whether tourism destination signs meet existing criteria for placement on the County of Lanark road network;
- Remove and replace all tourism destination signs not meeting existing criteria for placement;
- Consider placing tourism destination signs upstream of the intersection at a location of at least 50 metres away from other regulatory or warning signs as space permits.

It is suggested that the County of Lanark conduct a review of crossing roadway signs on all intersection approaches. Advanced warning using a combination of advance and turn-off signs or through the placement of a single sign in advance of the decision point should be considered with one or more of the following conditions are met:

- The size of the sign limits reading distance to 60 metres or less;
- The sign is only visible to an approaching motorist from a distance of 60 metres or less; or
- The posted speed limit is 50 km/h or greater.

Figure 3.1 illustrates typical advance roadway crossing signage, while **Figure 3.2** illustrates typical crossing roadway signage at the turn-off. Both figures include the road number as well as cardinal direction.

Figure 3.1 Typical advance roadway crossing signage

Figure 3.2 Typical turn-off roadway crossing signage

In urban areas with a posted speed of 50 km/h, an oversize street name blade (100 mm font) may be substituted if the intersection is unsignalized. If the intersection is signalized, mast arm signs may be used as a substitute.

Pavement markings

As per *OTM Book 11* guidelines, the County of Lanark should:

- Review the use of centre lines on their road network.
- Reapply pavement markings as soon as possible following the resurfacing of the road.
- Consider a prioritized program of painting edge lines on higher volume roadways.
- Implement a prioritized pavement marking program to paint intersection markings as per the OTM guidelines, beginning with intersections having higher volumes.

Typical approach markings for STOP controlled rural intersections and STOP Controlled urban intersections are illustrated in **Figure 3.3** and **Figure 3.4**.

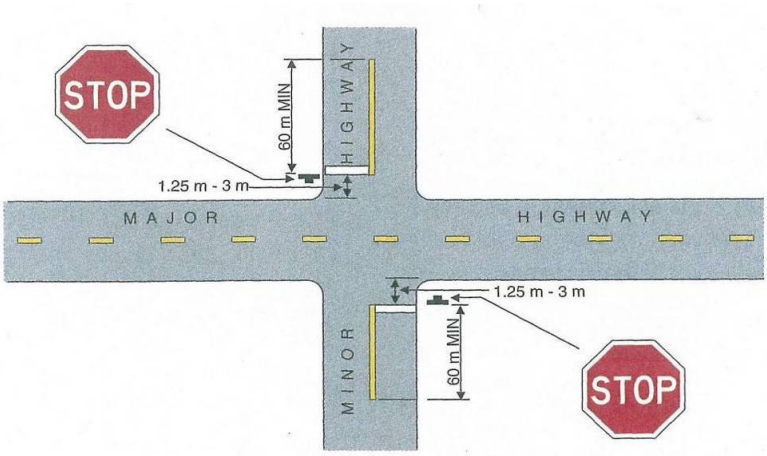

Figure 3.3 Pavement markings at rural intersections

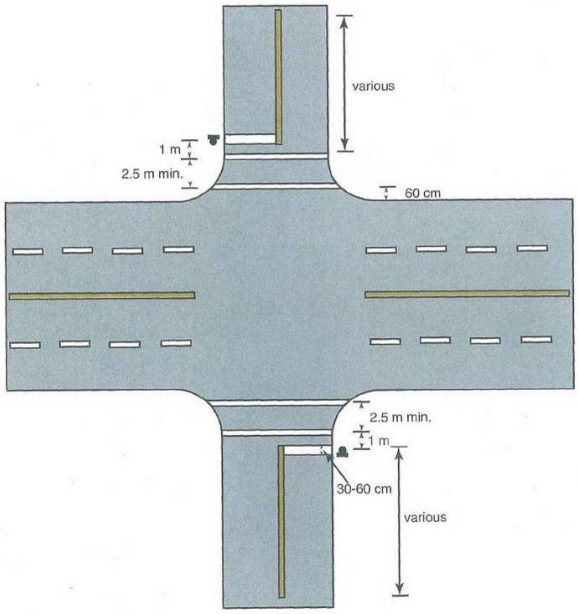

Figure 3.4 Pavement markings at urban intersections

4. Summary

A number of geometric elements and traffic control devices were reviewed in the field. As a result of the field investigation, the following suggestions were made to improve safety along the road network:

- Develop a prioritized program of reviewing sight distance requirements and addressing sight distance issues as they are identified;
- Reapply centre lines and edge lines immediately following any work undertaken to seal pavement cracks;
- On an annual basis review the condition of shoulders to identify ruts and other discontinuities;
- Carry out an inventory of roadside hazards and existing roadside protection systems on a prioritized basis – assess roadside hazards in terms of collision risk and develop a list of corresponding remedial treatments;
- Review Stop sign installations at all intersections to ensure the sign is visible upstream at least the minimum stopping sight distance, install Stop Ahead signs if warranted in accordance with *OTM Book 5* standards;
- Develop a rural traffic calming program on County roads entering hamlets;
- Develop a defensible policy for the setting of speed limits on rural County roads. All rural speed zones with a posted speed of 70 km/h or less should be reviewed for their appropriateness;
- Review all horizontal curves using a ball bank indicators to determine the need for curve warning signs, speed advisory tabs and/or chevrons in accordance with OTM Book 6 standards;
- Conduct a conformance review of all warning signs in use on County of Lanark roads to determine their conformance in terms of size, shape, colour and placement in advance of the hazard in accordance with OTM Book 6 standards;
- Conduct a review of tourism destination signing in order to identify if signs meet existing criteria for placement, removing those to do not meet and replacing those reflecting an earlier standard. Relocate all tourism designation signs to a point upstream of the intersection away from all regulatory and warning signs;
- Use advance and turn-off crossing roadway signs in advance of all intersection;
- Review the use of edgelines and centreline to determine accordance with OTM Book 11 standards; review and reapply edgelines and centrelines on an annual basis if warranted; and
- Review all intersection pavement markings according to OTM Book 11 standards.

5. Intersection Operations

5.1 North Street (CR 10) and Gore Street

The intersection of North Street (CR 10) and Gore Street, located in the Town of Perth, is currently two-way stop controlled on the North Street approach. The County of Lanark has raised concerns over the level of safety at this intersection, particularly with regard to the existing traffic control. Several measures have been implemented to improve safety at the location, including a number of sign upgrades and pavement marking improvements.

The site was visited in July and November 2008 to examine the intersection configuration, sight lines, pavement markings and existing signs. In addition, traffic counts and the collision history were reviewed.

The stop signs on North Street are not ideally placed. The westbound stop sign is located approximately 3 metres in advance of the intersection rather than at the intersection itself. The view of the eastbound stop sign is partially blocked by a trailblazer assembly. **Figures 5.1** and **Figure 5.2** show the eastbound and westbound view of the stop signs.

Figure 5.1 View of stop sign on westbound approach

Figure 5.2 View of stop sign on eastbound approach

A trailblazer assembly mentioned earlier is not standard. Arrows should be placed under the marker along with the direction of travel. Eastbound County Road 10 should be marked with a single arrow pointing up. The word 'TO' should be added above the County Road markers for County Roads 1 and 43 and for westbound County Road 10 along with the appropriate direction of travel.

A set of three transverse pavement markings have been placed on the eastbound and westbound approaches. These markings appear to be the same width and length as stop bars. These markings do not seem to clearly indicate the need to stop as several collisions each year are caused by drivers failing to stop.

North Street and Gore Street each have a straight and flat alignment and meet at right angles. Visibility of the stop signs on North Street is essentially unlimited by the geometry of the road, however, as mentioned previously, the eastbound stop sign is partially blocked by directional signs. Drivers on North Street wishing to make a turn onto Gore Street or proceed straight through the intersection have severely restricted visibility of traffic approaching on Gore Street. Drivers on North Street are required to edge out into Gore Street in order to determine if there is a sufficient gap in traffic. This is due to the presence of structures on all four corners of the intersection. Visibility is further impacted by trees and planters and curbside parking on Gore Street. Parking is permitted along both side of Gore Street on the south approach of the intersection to within approximately 5m of the intersection. On the north approach of the intersection parking is located further from the intersection on the west side of the road due to the entrance to a self-serve car wash. Parking is not permitted on North Street on the approaches to Gore Street.

Figure 5.3 shows an example of a conflict between a passenger vehicle heading north on Gore Street and a truck heading west on North Street. The northbound passenger vehicle has the right-of-way since there is no stop sign on Gore Street. While the truck driver failed to yield the right of way, it is likely that the severely restricted visibility affected his/her ability to choose an appropriate gap in northbound traffic to proceed through the intersection.

Figure 5.3 Conflict between northbound passenger vehicle and westbound truck
(South approach on Gore Street and North Street)

A review of volumes indicates that current hourly counts meet *OTM Book 5 Regulatory Signs* warranting conditions for an all-way stop. All-way stop controls may be considered where the total vehicle volume on all intersection approaches exceeds 500 vehicles per hour for each of any eight hours of the day. Counts provided by the Town of Perth for the intersection from the year 2006 indicate a total volume on all four approaches combined of between 500 and 600 vehicles per hour during the eight hour period of 10 am to 6 pm.

OTM Book 5 Regulatory Signs considers the use of an all-way stop to be appropriate where there is an average of four or more collisions per year over a three-year period that would be corrected by an all-way stop. An all-way stop should correct a right angle collision pattern occurring at the intersection. According to the collision history, there were eight right angle collisions in the most recent three year period (2005 – 2007). Almost all of the collisions involved vehicles on North Street heading west.

However, *OTM Book 5 Regulatory Signs* states that all-way Stop controls should *not* be used "where any other traffic devices controlling right-of-way is permanently in place within 250 metres, with the exception of a Yield sign." Given the close proximity of traffic signals (~ 50 metres) located at the intersection of Gore Street and Foster Street, there is a likelihood that southbound drivers on Gore Street approaching North Street may overlook a stop sign as their attention would be focussed on the traffic signals at Gore Street and Foster Street. As a result, right angle collisions would likely continue to be a concern.

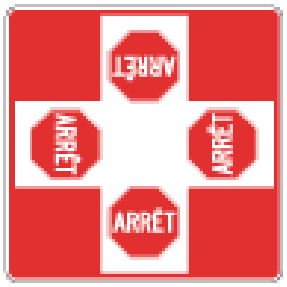

Figure 5.4: All Way Stop Indicator – Province of Quebec

Possible low-cost means of mitigating the collision pattern would involve:

- Moving the trailblazer assembly on the eastbound approach to improve the visibility of the stop sign;
- Moving the stop sign on the westbound approach closer to the intersection;
- Replacing the existing stop sign with an oversized stop sign or placing a sign as illustrated in **Figure 5.4** below the existing stop sign. Similar signs are used regularly in the province of Quebec to indicate the configuration of the intersection. They are affixed under each STOP sign as the ALL-WAY tabs are in Ontario. A modified version of the Quebec All-Way Stop indicator may be more effective in illustrating that the northbound and southbound traffic has the right-of-way and is not required to stop.
- Removing the transverse pavement markings located further upstream of the east and west approaches;
- Removing sight obstructions on Gore Street (planters, trees, parking spaces).

Potential higher cost solutions would involve:

- Installing bulbouts on the northeast and southeast corners of the intersection (on Gore Street) and shifting the crosswalk and stop bar further west into the intersection. The bulbouts would allow drivers on North Street to stop further into the intersection, offering them improved visibility of approaching traffic on Gore Street. The bulbouts would also calm traffic and shorten pedestrian crossing distances across Gore Street. One collision was noted involving a pedestrian crossing Gore Street; or
- Adding a yellow flashing beacon to the intersection (indicating a red on the North Street approaches and a yellow on the Gore Street approaches) to further alert drivers to the limited sightlines and the Stop controls on North Street.

5.2 North Street (CR 10) and Wilson Street

The intersection of North Street (CR 10) and Wilson Street, also located in the Town of Perth, is currently two-way stop controlled on the North Street approach. The County of Lanark requested that the intersection be included in the field investigation to identify any safety concerns and the need for an all-way stop control. The site was visited in November 2008 to examine the intersection configuration, sight lines, pavement markings and existing signs. In addition, traffic counts and the collision history were reviewed.

Stop signs have been placed in appropriate locations on the east and west approach. **Figure 5.5** and **Figure 5.6** shows the eastbound and westbound view of the stop signs. No issues were identified with pavement markings.

Figure 5.5 View of stop sign on westbound approach

Figure 5.6 View of stop sign on eastbound approach

North Street and Wilson Street each have a straight and flat alignment and meet at right angles. Parking is permitted on all four approaches and may block the view of the stop signs on the east and west approaches. Visibility is restricted on the eastbound approach (of northbound and southbound traffic) and on the westbound approach of northbound traffic due to the presence of structures. Where visibility is restricted, motorists are required to edge past the stop bar to obtain a clear view of traffic. Parked vehicles on the north and south approaches may hamper their ability to clearly see approaching traffic.

A review of available traffic volumes was performed in order to determine appropriate traffic control at the intersection. Traffic signal warrants require turning movement count data and this data, which was available for the pm peak period only, indicated that the warrants, as per OTM Book 12 Traffic Signals, are met during the 3 hours of the peak period. In order for the traffic signal justification criteria to be 100% fulfilled, the warrant must be met during 8 hours. Because of the proximity of Foster Street, signals at North Street would require coordination with Foster Street. Further study of the traffic controls at North Street is recommended. A 12 hour turning movement count should be undertaken to confirm the warrants for signals and an analysis should be performed to determine the anticipated queue length for each traffic control option to assess operations of the two adjacent intersections.

The collision history indicates that there were six collisions associated with the intersection between 2003 and 2008. One of which was a right-angle collision associated with the stop sign control and two of which were related to parked vehicles that were too close to the intersection. Given the lack of a collision pattern, it is believed that the intersection is not experiencing any significant safety issues. One possible means of improving sightlines for motorists on the eastbound and westbound approaches would be to restrict curbside parking between Foster Street and North Street on the east side of the road and to remove the one parking spot on the north approach of the intersection.

5.3 Martin Street South (CR 17) and Queen Street (CR 16a)

The intersection of Martin Street South (CR 17) and Queen Street (CR 16A) is located in the Town of Almonte. The intersection is in an urban area and is located 35 metres immediately south of a signalized intersection. The intersection has an unusual Y-shaped configuration. The north leg (Martin Street South) and the west leg (Queen Street) have the dominant flow of traffic and currently have no controls. The south leg (Martin Street South) is stop controlled. **Figure 5.7** shows a view of the intersection from the perspective of a southbound driver stopped at Ottawa Street.

Figure 5.7 View of Martin Street South and Queen Street (north approach)

In addition, a commercial garage is located on the east side of the intersection adjacent to the north leg of the intersection. There is continuous pavement between the roadway and the parking lot of the auto repair business, which increases the potential for conflicts between vehicles on the roadway and vehicles entering or exiting the garage. The lack of clear guidance may also create confusion regarding the exact location of the edge of the roadway. The County of Lanark has raised concerns over the unusual alignment and have suggested changing the south leg of Martin Street South to one-way (northbound only).
The site was visited in July 2008 to examine the intersection configuration, sight lines, pavement markings and existing signs. In addition, traffic counts and the collision history were reviewed.

Given the alignment of Martin Street South, southbound drivers wishing to continue on Martin Street South rather than proceed on Queen Street may mistakenly believe that they have the right of way over the northbound traffic approaching from Queen Street. At least one collision appears to have occurred due to the ambiguity of the right-of-way.

Changing the south leg of Martin Street to one-way (northbound only) as suggested by the County would have a minimal impact on intersection operations since only 5 percent of traffic makes a northbound right from Queen Street to the south leg of Martin Street and only 2 percent of traffic makes a southbound left from the north leg of Martin Street toward the south leg of Martin Street. The construction of the bulb out (to physically prevent southbound movements onto the south leg of Martin Street) along with the Do Not Enter sign and No Right Turn sign should address the problem. In addition, it is suggested that movements into the garage located on the east side of the intersection be channelized by installing curbing.

An alternative means of improving safety at this location would be to install a roundabout.

5.4 George Street (CR 511) and Mill Street (CR 12) and South Street (CR 12) and County Road 511, Township of Lanark Highlands

George Street (CR 511) and Mill Street (CR 12) together with South Street (CR 12) and County Road 511 are a set of offset tee intersections spaced approximately 75 metres apart at the south side of the Village of Lanark. The western intersection (Mill/George/South) is all-way Stop controlled while the eastern intersection (South/CR 511) has a stop sign for westbound South Street and northbound County Road 511. An aerial photo showing the configuration of the offset intersection is shown in **Figure 5.8** where the stop bars can be seen.

Figure 5.8 Intersection configuration

County Road 511 is a major north-south road that connects the Town of Perth and Highway 7 at the south end of the road with Renfrew County, including the ski resort at Calabogie, to the north. According to the

County of Lanark's road inventory database, the AADT on County Road 511 in Lanark Village ranges between 4000 – 5000. In contrast, the AADT on County Road 12 in Lanark Village ranges between 1000 – 1450. The majority of traffic is travelling north and south along County Road 511.

The intersection of George Street (CR 511) and South Street (CR 12), pictured in **Figure 5.9**, further conveys that County Road 511 is the dominant movement since the road curves to the left. A Stop sign is present, however the yellow guide line and stop bar have faded to the point of being non-existent. Motorists were observed proceeding through the Stop sign without stopping. The lack of pavement markings at the time of the July site visit together with the width of the road and the relative inconspicuousness of the Stop sign increases the risk of a southbound motorist proceeding through the Stop sign and striking a vehicle turning left or right from South Street (CR 12) onto County Road 511.

Figure 5.9 All-way stop controlled intersection (CR 511 and CR 12)
Taken on the north approach looking south

If the County of Lanark wishes to continue with the all-way Stop control, they may wish to consider improvements that would further highlight the Stop control such as an oversize Stop sign and increasing the frequency at which they apply intersection markings (yellow guide line and stop bars). It was noted during the November site visit that the pavement markings had been reapplied.

Heading north on County Road 511 approaching County Road 12 (South Street), there is limited advance visibility of the Stop sign due to a vertical crest curve in advance of the intersection. This is illustrated in **Figure 5.10**. A Stop Ahead sign has been placed approximately 200 metres upstream of the intersection. This sign is placed too far from the intersection since *OTM Book 6* recommends a distance of 140 metres. The County of Lanark may consider increasing the height of the Stop sign, placing a No Parking prohibition on the final approach to the intersection and placing the Stop Ahead sign closer to the approach.

Figure 5.10 Stop sign placement on CR 511 approaching CR 12 (South Street) – south approach

Heading west on County Road 511, approaching George Street (CR 511), the Stop sign is partially blocked by a No Parking sign and a hanging flower basket until approximately 50 metres in advance of the intersection as seen in **Figure 5.11**. A Stop Ahead sign has been placed in advance of the intersection; however the visibility of the Stop sign could be improved by relocating the No Parking sign and the hanging basket of flowers.

Figure 5.11 Stop sign placement on CR 511 approaching CR 12 (George St) – east approach

As an alternative to improving the visibility of the Stop signs as discussed in this report, the County of Lanark may wish to consider removing the all-way stop controls on County Road 511 altogether, given that County Road 511 is the dominant road in terms of volumes. This would involve removing the Stop sign and stop bars at County Road 511 (George Street) and County Road 12 (Mill Street) on the north approach and east approach and County Road 511 and County Road 12 (South Street) on the south approach. The pavement markings should be used to reinforce the change in traffic control by using a solid double yellow line on County Road 511 on the approaches to the two intersections and a dashed white line in the intersection.

Issues with trailblazing signs had been identified in Section 2.6 of this report. A specific example of the issues identified with trailblazing signs is shown in Figure 5.12. Route markers, street names, destination and tourism signing have been combined in a single assembly, increasing driver workload. In this assembly, tourism destination signs have been given greater prominence than the community destination, crossing roadway and route markings. The text in the crossing roadway signs as shown on the street name blade has a significantly smaller font than the tourism destination signs. In this particular example the tourist destination signing should be moved to a location in advance of the intersection and the crossing roadway information shown on the street name blade should be given greater prominence.

Figure 5.12 Guide and information signs (Junction of CR 511 and CR 12)

6. References

Ministry of Transportation, Ontario. *Ontario Traffic Manual Book 5 Regulatory Signs*. St. Catharines: MTO, March 2000.

Ministry of Transportation, Ontario. *Ontario Traffic Manual Book 6 Warning Signs*. St. Catharines: MTO, July 2001.

Ministry of Transportation, Ontario. *Ontario Traffic Manual Book 11 Markings and Delineation*. St. Catharines: MTO, March 2000.

Ministry of Transportation, Ontario. *Ontario Traffic Manual Book 12 Traffic Signals*. St. Catharines: MTO, November 2007.

Transportation Association of Canada. *Geometric Design Guide for Canadian Roads*. Ottawa: TAC, 1999.

Ministry of Transportation, Ontario. *Roadside Safety Manual.* Downsview: MTO, 1996.

American Association of State Highway and Transportation Officials. *A Policy on Geometric Design of Highways and Streets*. Washington DC: AASHTO, 2004.

Appendix B

2010 Development Charge Background Study

COUNTY OF LANARK
2010 DEVELOPMENT CHARGE BACKGROUND STUDY

May 11, 2010

(as amended by the June 18, 2010 addendum)

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Planning for growth

CONTENTS

CONTENTS

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

1. Purpose of this Background Study

1.1 This Background Study has been prepared pursuant to Section 10 of the *Development Charges Act, 1997* (DCA) and, together with the proposed by-law, is being made available to the public, as required by Section 12 of the Act, two weeks prior to the public meeting of Council, which is to be held May 26, 2010.

1.2 The charges calculated represent those which can be recovered under the DCA, 1997, based on the County's capital spending plans and other assumptions which are responsive to the requirements of the DCA. A decision is required by Council, after receiving input at the public meeting and any other consultation sessions and receiving the completed study and by-law, as to the magnitude of the charge it wishes to establish, for residential, commercial, industrial and/or institutional development. Property tax, user rate or other funding will be required to finance any potentially DC-recoverable capital costs which are not included in the charge which is adopted.

1.3 Other decisions are also involved in finalizing development charge policy and the by-law, including exemptions, phasing in, indexing, applicability to the redevelopment of land, and the schedule of charges by type of land use. It is the purpose of the public meeting and any other consultation activity, to obtain input on these matters.

2. The 2010 Development Charge Calculation

2.1 Table ES-1 presents the proposed schedule of County-wide charges, based on the costing and related assumptions contained in Appendices B & C. The calculated charges are reflected in the proposed by-law contained in Appendix F.

2.2 Table ES-2 summarizes the County's Development Related Capital Program and the deductions made thereto, in accordance with the DCA. In summary, the gross development-related capital cost of the ten-year program is $2,194,000. Of this amount, $1,195,000 has been determined to be DC-recoverable ($1,163,000 from residential development and $32,000 from industrial/commercial/institutional development (non-residential)). The difference between the gross and DC recoverable amounts comprises the following deductions, pursuant to the *Development Charges Act*:

TABLE ES-1

Service	Per Residential Dwelling Unit				Non-Residential (per sq.ft. of Gross Floor Area)
	Single Detached Dwelling or Semi-Detached Dwelling Unit	Apartment Dwelling Unit - Two Bedroom or Larger	Apartment Dwelling Unit - Bachelor or One Bedroom	Other Dwelling Unit	
Ambulance	$37	$26	$16	$29	0.01
Homes for the Aged	263	$185	$115	$208	
General Government (Studies)	21	$15	$9	$17	0.02
Roads	284	$200	$124	$225	0.26
Total	**$605**	**$426**	**$264**	**$479**	**$0.29**

TABLE ES-2
COUNTY OF LANARK
DC CAPITAL PROGRAM AND DEDUCTIONS

Service	Gross Capital Cost Est.	Less:					Potential DC Recoverable Cost		
		Ineligible re: Level of Service	Benefit to Existing Development	Post Period Capacity	Grants, Subsidies & Other Contributions Attrib. to New Development	Other (e.g. 10% Statutory)	Net Costs Benefiting New Development	Residential Share	Non-Residential Share
Ten Year Services									
Administration (Studies)	100,000	-	-	-	-	2,000	98,000	77,420	20,580
Emergency Medical Services	342,000	-	17,100	-	162,450	16,245	146,205	134,509	11,696
Long Term Care Facilities	1,751,574	-	175,157	-	520,218	105,620	950,579	950,579	-
Total Ten Year Services	2,193,574	-	192,257	-	682,668	123,865	1,194,784	1,162,508	32,276
2010-2028									
Roads	3,000,000	-	660,000	-	-	-	2,340,000	1,804,140	535,860

H:\Lanark County\Development Charges\[Lanark DC 2010.xls]Summ All Services

- $192,000 Benefit to Existing Development
- $683,000 Subsidies, Other Contribution
- $124,000 10% Statutory Deduction

  $999,000

The capital costs of the Roads service is allocated over the 2010 to 2028 period. Of the total $3 million capital program, $660,000 has been deducted as a benefit to existing development. The DC recoverable share of $2.34 million is allocated $1.8 million to residential development and $0.54 million to non-residential development.

3. Council Approvals Sought

3.1 At this stage in the process, the Background Study and proposed DC by-law are being provided for information purposes, as part of the consultation process. At such time as that process is complete and final DC recommendations are made to Council, approval will be sought for:

- the 2010 DC by-law;
- the Background Study, including the development forecast, the development-related capital program, the DC calculation and associated material, subject to any Addendum which may be produced prior to by-law adoption.

3.2 Key policies incorporated into the proposed DC by-law include:

- development charge payment due at the time of building permit issuance;
- annual discretionary indexing of the charges;
- full exemptions for industrial buildings, non-residential farm buildings, places of worship and hospitals;
- full implementation of the calculated rates effective January 1, 2011 (no phasing in or discounting of charges);
- redevelopment credit for buildings that are demolished and replaced or converted within a 5-year period.

4. Acknowledgements

The consultant wishes to acknowledge, with appreciation, the guidance, input and considerable efforts of Kurt Greaves, Stephen Allan and other County operating staff who were involved in the production of this Background Study.

1. INTRODUCTION

1. INTRODUCTION

1.1 Background

1.1.1 Development Charges Act (DCA) Background Study Requirements

The DCA requires that a development charge background study must be completed by County Council before passing a development charge by-law. The mandatory inclusions in such a study are set out in s.10 of the DCA and in s.8 of O.Reg. 82/98, and are as follows:

a) "the estimates under paragraph 1 of subsection 5(1) of the anticipated amount, type and location of development; (addressed in Chapter 3 of this report)

b) the calculations under paragraphs 2 to 8 of subsection 5(1) for each service to which the development charge by-law would relate; (addressed in Chapter 4 of this report)

c) an examination, for each service to which the development charge by-law would relate, of the long term capital and operating costs for capital infrastructure required for the service; (addressed in Appendix D of this report)

d) the following for each service to which the development charge relates:

1. The total of the estimated capital costs relating to the service.

2. The allocation of the costs referred to in paragraph 1 between costs that would benefit new development and costs that would benefit existing development.

3. The total of the estimated capital costs relating to the service that will be incurred during the term of the proposed development charge by-law.

4. The allocation of the costs referred to in paragraph 3 between costs that would benefit new development and costs that would benefit existing development.

5. The estimated and actual value of credits that are being carried forward relating to the service." (O.Reg. 82/98 s.8 and addressed in Chapter 4 of this report)

FIGURE 1-1
SCHEDULE OF KEY DEVELOPMENT CHARGE PROCESS DATES FOR THE COUNTY OF LANARK

		2010
1.	Draft Background Study completed	February
2.	Meeting Notice ad placed in newspaper(s)	By May 5
3.	Proposed By-law and Background Study Available to public	By May 11
4.	Statutory Public Meeting of Council	May 26
5.	Council considers adoption of background study and passage of by-law	June 23
6.	Newspaper notice given of by-law passage	by 20 days after passage
7.	Last day for by-law appeal	40 days after passage
8.	County makes available pamphlet (where by-law not appealed)	by 60 days after inforce date

1.2 *Development Charges Act* Requirements

1.2.1 Introduction

1. Development charges are payments made by new development in municipalities normally as part of the building permit approval and/or the subdivision/severance agreement process. These payments are made by all such new development, unless specifically exempt by the *Development Charges Act* or the County's DC by-law.

2. These payments are made for the initial capital requirements of providing services to new development anticipated over the next decade. All County-funded services are potentially eligible for DC funding, except those specifically excluded via the *Development Charges Act*.

3. "Capital" is defined in the DCA to include the municipal cost to acquire, lease, construct or improve land or facilities, including rolling stock (7+ year life), furniture and equipment (other than computer equipment), library materials as well as related study and financing costs.

4. Each development charge paid is allocated, as a statutory requirement, to those reserve funds, in accordance with the development charge for each service. It is also required that the monies only be expended for the purposes for which the DC was calculated.

5. In calculating the charge, it is necessary to:

    - establish a new development forecast for population and housing, and for employees and floor area;
    - determine and cost the additional services such new development will require and ensure that the program has Council approval;
    - make the cost deductions required by the Act with respect to service level, benefit to existing development, excess capacity, grants and contributions, the statutory 10%, etc.;
    - calculate development charges by type of use and document this in a Background Study and by-law;
    - take the study and proposed by-law through a public process, seeking Council approval thereof.

1.2.2 Development Charge Prerequisites

As per the *Development Charges Act, 1997*, the County can impose development charges for:

1. A County service and funding responsibility other than:

    - cultural or entertainment facilities such as museums, theatres and art galleries;
    - tourism facilities, including convention centres;
    - parkland acquisition;
    - hospital provision;
    - waste management services;
    - Municipal/local board general administration headquarters.

2. A service which will experience an increase in capital needs at least partially attributable to residential and/or non-residential growth in Lanark 2010-2020 (or potentially a longer term planning period in the case of hard services such as Transportation).

3. A service for which County Council has or will (as part of the DC process) approve(d) a capital forecast which includes capital capacity expansion projects as per para. 2.

4. Such capital capacity expansion projects are not fully funded by grants, subsidies or developer contributions or other contributions.

5. Such capital projects involve the acquisition, lease, construction or improvement of land, buildings, including furniture and equipment, studies and borrowing costs (as well as library materials).

6. Such capital projects do not include computer equipment and rolling stock with an estimated useful life of less than 7 years.

7. Such capital costs don't relate to a time beyond the next decade (except in the case of roads).

8. Such capital costs don't serve to increase the future (per capita/employee) level of service beyond the average attained in Lanark over the 2000-2009 period.

1.2.3 The following tabular text sets out the method that must be used to determine development charges. The underlining has been added to the quotations for clarification/ emphasis and is not part of the statute or regulation quoted on the left side of the page. The DC calculation process is also summarized schematically in Figure 1-2 which follows.

SUMMARY OF STATUTORY DEVELOPMENT CHARGE CALCULATION REQUIREMENTS

s.s.5(1) of the DCA (and associated Regulations)		Commentary
Para-graph		
1.	"The anticipated amount, type and location of development, for which development charges can be imposed, must be estimated."	Virtually all municipalities forecast all development (including DC-ineligible) in the first instance. That development is used as the denominator in the DC calculation with the full eligible cost of servicing all such development used as the numerator. That way, growth-related servicing costs are equitably spread over all benefiting development, the municipality does not recover DCs from exempt development and this would ensure that the requirements of s.s.5(6)3 have been met. That is, capital costs have not been offloaded from one type of development to another.
2.	"The increase in the need for service attributable to the anticipated development must be estimated for each service to which the development charge by-law would relate."	This step involves estimating the additional service requirement, individually for roads, ambulance, etc., that is needed by the development increment in paragraph 1. The anticipated development in para. 1 must correspond to the service attribution in para. 2. This involves removing statutorily ineligible development (i.e. municipalities, schools, specified industrial expansions, specified residential intensification and other statutorily exempt public uses) and the servicing cost thereof. However, this would be very difficult to accomplish, particularly because numerous unspecified geographic locations are involved for such development, which makes the servicing cost difficult to identify.

s.s.5(1) of the DCA (and associated Regulations)		Commentary
		As a result, the total cost/total development approach outlined above is used and has the same effect on the DC quantum.
3.	"The estimate under paragraph 2 may include an increase in need only if the council of the municipality has indicated that it intends to ensure that such an increase in need will be met."[1] O.Reg. 82/98 s.3. "For the purposes of paragraph 3 of subsection 5(1) of the Act, the council of a municipality has indicated that it intends to ensure that an increase in the need for service will be met if the increase in service forms part of an official plan, capital forecast or similar expression of the intention of the council and the plan, forecast or similar expression of the intention of the council has been approved by the council."	The capital forecast underpinning the DC calculation must be formally approved by Council in one of the ways indicated in the Regulation.
4.	"The estimate under paragraph 2 must not include an increase that would result in the level of service exceeding the average level of that service provided in the municipality over the 10-year period immediately preceding the preparation of the background study required under section 10.[1] The estimate also must not include an increase in the need for service that relates to a time after the 10-year period immediately following the preparation of the background study unless the service is set out in subsection (5)."	This provision creates a "service level cap" equal to the cost of providing service to the "anticipated development," consistent with the 10-year historical average level of service. In accordance with s.s.5(1)4, services such as emergency medical services, etc., are restricted to a maximum 10-year planning horizon. s.s.5(5) lists water, wastewater, storm water, road, police and fire services. They are not subject to a 10 year planning period cap. Services other than those excluded in s.s.2(4), may be defined by the municipality and, in some cases, grouped into "service categories" for purposes of reserve funds and credits (as per s.7).

[1] The Act notes that the provisions may be further governed by regulations.

s.s.5(1) of the DCA (and associated Regulations)	Commentary
O.Reg. 82/98 s.4(1) "For the purposes of paragraph 4 of subsection 5(1) of the Act, both the quantity and quality of a service shall be taken into account in determining the level of service and the average level of service." s.s.4(1.1) provides that in determining the quality of a service, the replacement cost, exclusive of any allowance for depreciation, shall be the amount used. s.s.4(2) addresses the service level in an excluded geographic area where a service is not provided. s.s.4(4) limits the service level in part of a municipality to the level otherwise applicable to the full municipality. s.s.4(3) modifies the service level cap where a higher level is required by another Act. O.Reg. 206/04 amended s.4 of O.Reg. 82/98 by adding the following subsection: "(1.1) In determining the <u>quality</u> of a service under subsection (1), the <u>replacement cost</u> of municipal capital works, exclusive of any allowance for depreciation, shall be the amount used. (underlining added)	Two "level of service" considerations must be taken into account in satisfying compliance re the 10-year historical average level of service cap. These considerations involve "quantity" (e.g. floor space/capita) and "quality" (e.g. cost per s.m. of floor space). potentially affects area-specific charges affects water and wastewater requirements in particular The Reg. clarifies that the quality level of service measure is to be based on the undepreciated replacement cost of municipal capital works.
5. "The increase in the need for service attributable to the anticipated development must be <u>reduced</u> by the part of that increase that can be met <u>using the municipality's excess capacity, other than</u> excess capacity that the council of the municipality has indicated an intention would be paid for by new development."[2] O.Reg. 82/98 s.5. "For the purposes of paragraph 5 of subsection 5(1)	"Uncommitted excess capacity" is available capacity that obviates (part of) the need for new projects. It is different than "Post Period Capacity," which is <u>not</u> needed by development during the planning period and is provided for the use of subsequent, i.e. post-2019 development, which can be required to fund it through future DCs.

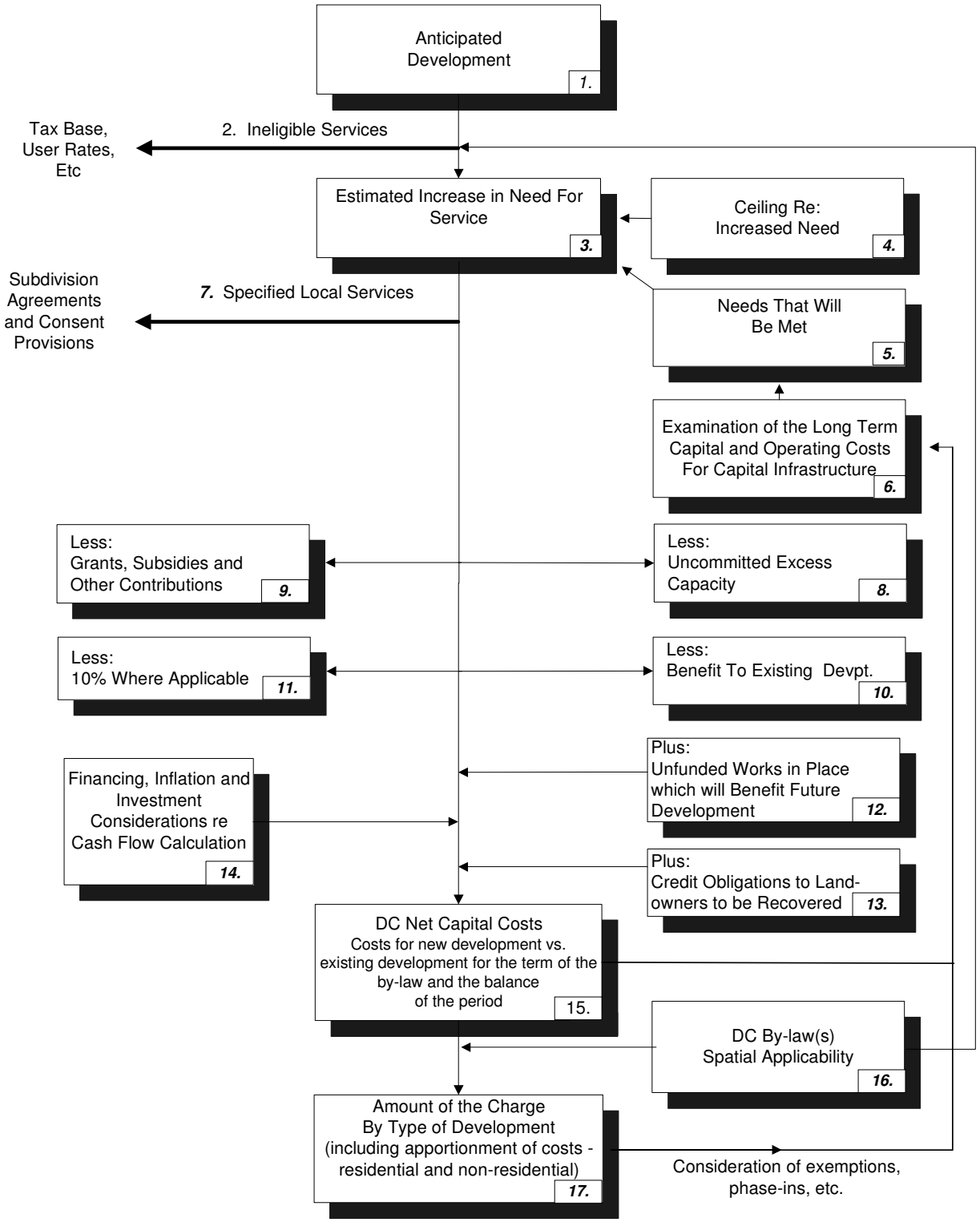
[2] The Act notes that the provisions may be further governed by regulations.

s.s.5(1) of the DCA (and associated Regulations)		Commentary
	of the Act, excess capacity is uncommitted excess capacity unless, either before or at the time the excess capacity was created, the council of the municipality expressed a clear intention that the excess capacity would be paid for by development charges or other similar charges."	The Reg. explains the circumstances under which (part of) the cost of "committed excess capacity," (i.e. infrastructure in the ground from prior DC by-laws or otherwise), can be recovered via future DC's.
6.	"The increase in the need for service must be reduced by the extent to which an increase in service to meet the increased need would benefit existing development."[1] Note: no regulatory clarification has been provided.	Existing development benefits from: • the repair or unexpanded replacement of existing assets; • an increase in average service level or existing operational efficiency; • the elimination of a chronic servicing problem not created by growth; • providing services where none previously existed (e.g. water service).
7.	"The capital costs necessary to provide the increased services must be estimated. The capital costs must be reduced by the reductions set out in subsection (2). What is included as a capital cost is set out in subsection (3)."[1] O.Reg. 82/98 s. 6 indicates that: Unless the person making the grant, subsidy, etc., was specific as to how it is to be applied, the contribution is to be shared between growth and non-growth project components in proportion to the way in which the costs were allocated in s.s.5(1)6. s.s.5(3) defines capital costs to include: • the acquisition or lease of (an interest in) land; • construction, improvement, acquisition or lease (capital component only) costs for buildings/structures/facilities; • 7+ year useful life rolling stock; • FFE, other than computer equipment; • library materials; • studies re above; • DC Background Studies; and • interest on related	s.s.5(2) refers to capital grants, subsidies and other contributions made to a municipality or that Council anticipates will be made in respect of the capital costs. These costs exclude "local services" related to a plan of subdivision or a consent approval, to be installed or paid for by the owner (s.s.2(5)). Includes debt payments related to previously constructed growth-related works.

s.s.5(1) of the DCA (and associated Regulations)		Commentary
	borrowings.	
8.	"The capital cost must be reduced by 10 per cent. This paragraph does not apply to services set out in subsection (5)."	For example, the 10% reduction does apply to: • Ambulance (Emergency Services); • Homes for the Aged; and, • Parks. The purpose of this reduction is undefined, beyond the Province's expressed wish in 1997 to moderate development charge quantum. The exclusion of various services under s.s.2(4) serves a similar purpose. (i.e. Cultural/entertainment facilities, including museums, theatres and art galleries; tourism facilities, including convention centres; parkland acquisition; public hospitals, waste management services; and general administration headquarters for municipalities/local boards).
9.	"Rules must be developed to determine if a development charge is payable in any particular case and to determine the amount of the charge, subject to the limitations set out in subsection (6)." s.s.5(6): "The rules developed under paragraph 9 of subsection (1) to determine if a development charge is payable in any particular case and to determine the amount of the charge are subject to the following restrictions: 1. The rules must be such that the total of the development charges that would be imposed upon the anticipated development is less than or equal to the capital costs determined under paragraphs 2 to 8 of subsection (1) for all the services to which the development charge by-law relates.	These are mandatory DC by-law inclusions as to how the charge is to be applied to development types and circumstances. These are three over-riding tests to be met by the DC by-law. A municipality cannot collect more than the calculated cost for each service (if the amount of development and resultant revenue outpaces the forecast, then address via a reserve fund deduction in the DC calculation in the next round or other appropriate means).

s.s.5(1) of the DCA (and associated Regulations)	Commentary
2. If the rules expressly identify a type of development they must not provide for the type of development to pay development charges that exceed the capital costs, determined under paragraphs 2 to 8 of subsection (1), that arise from the increase in the need for services attributable to the type of development. However, it is not necessary that the amount of the development charge for a particular development be limited to the increase in capital costs, if any, that are attributable to that particular development. 3. If the development charge by-law will exempt a type of development, phase in a development charge, or otherwise provide for a type of development to have a lower development charge than is allowed, the rules for determining development charges may not provide for any resulting shortfall to be made up through higher development charges for other development."	A municipality cannot offload the cost of servicing one type of development onto another type. e.g. Industrial servicing costs cannot be transferred to residential development and single detached unit servicing costs cannot be transferred to apartments. It is not necessary that the average municipal-wide per unit servicing costs funded by the DC reflect the needs of any particular development project. Provides further clarification on the inability of the by-law to offload cost recovery from one type of development to another, in this case from exempt or discounted development to non-exempt development.
10. "The rules may provide for full or partial exemptions for types of development and for the phasing in of development charges. The rules may also provide for the indexing of development charges based on the prescribed index."	Optional by-law inclusions such as authority to set rules on discretionary exemptions, phasing in of DCs and indexing of DCs.

FIGURE 1-2
THE PROCESS OF CALCULATING A DEVELOPMENT CHARGE UNDER THE DCA, 1997



2. CURRENT COUNTY OF LANARK POLICY

2. CURRENT COUNTY OF LANARK POLICY

2.1 Introduction

The County of Lanark does not currently have a development charge by-law in place; however, all of the lower tier municipalities in the County do. The Town of Smiths Falls, which is separated from the County, does not impose development charges.

The following provides a summary of rates in effect as of Jan. 1, 2010, in the lower tier municipalities:

	Residential (per fully serviced single detached unit)	Non-Residential (per sq.ft. of gross floor area)
Beckwith	$3,500	-
Carleton Place	$3,473	$1.77
Drummond-North Elmsley	$2,000	-
Lanark Highlands	$2,865	$2.73
Mississippi Mills	$7,713	$4.14
Montague	$1,400 (in a reg'd plan) $1,900 (outside a reg'd plan	-
Perth	$5,690 + $1,000 area-specific charge	$2.75 + $2.27 area-specific charge
Tay Valley	$2,500	-

2.2 Categories of Residential Development

A municipality may vary a development charge by type of residential unit (i.e. single detached units, townhouses, apartments, etc.). This is usually done to reflect the differences in demand for service resulting from the average number of persons in each unit type. While a number of municipalities in Lanark County impose a single charge regardless of unit type, it is usually a function of the nature of development (e.g. most of the anticipated development is low density singles or semis). There are several municipalities that do provide for separate charges including:

	Categories of Residential Development
Carleton Place	- singles/semi/duplex - non-stacked multiples - stacked multiples 2 bdrm+ - stacked multiples bachelor and 1 brdm

	Categories of Residential Development
	- seniors style - no cooking
Mississippi Mills	- single/semi - apartments with 2 bdrms or more - bachelor and 1 bdrm apartments - multiples

2.3 Non-residential Development Charges

As noted in the table in Section 2.1 above, of the eight lower tier municipalities, four impose some form of non-residential development charge. Each of these municipalities provide exemptions for certain types of non-residential development. These are discussed in Section 2.4 below.

Where applicable, the non-residential charges in the lower tier municipalities are calculated based on the gross floor area of the development. Another less-common approach used in several other municipalities in Ontario is to calculate non-residential charges based on land area. This is often the method imposed for storm water charges.

2.4 Exemptions and Phasing-in of Development Charges

As discussed in Section 1.2, a development charge by-law may provide for an exemption for certain types of development or phasing in of development charges over time provided that any resulting shortfall in revenue cannot be made up by imposing higher charges on other types of development. Some of the exemptions set out in the lower tier DC by-laws include:

- All non-residential development (Beckwith, Drummond-North Elmsley, Montague, Tay Valley);
- Industrial (Mississippi Mills);
- Hospitals (Lanark Highlands, Mississippi Mills, Perth);
- Universities (Lanark Highlands, Perth);
- Cemeteries (Lanark Highlands, Perth);
- Non-profit/affordable housing (Mississippi Mills – partial exemption);
- Non-residential development in the Central Business Core (Carleton Place).

Development charges in the Township of Montague are being phased in over the life of the by-law with increases occurring annually.

2.5 Development Credits

Municipalities often provide credits where existing development is being demolished and replaced or being converted from one use to another. Redevelopment credits are provided in the following Lanark County municipalities:

- Carleton Place;
- Lanark Highlands;
- Mississippi Mills;
- Montague; and
- Perth.

With the exception of Perth, the redevelopment credit is restricted to demolitions that occur within 2 years prior to the new building being constructed.

2.6 Indexing

The *Development Charges Act, 1997* permits a development charge by-law to include a provision for indexing the charges according to a prescribed indexed. This is discussed further in Chapter 6.

All of the lower tier development charge by-laws include indexing provisions on an annual basis. For some of these, the indexing in automatic; however, a number of municipalities provide for discretionary indexing as opposed to mandatory.

3. ANTICIPATED DEVELOPMENT IN THE COUNTY OF LANARK

3. ANTICIPATED DEVELOPMENT

3.1 Requirements of the Act

Chapter 4 provides the methodology for calculating a development charge as per the *Development Charges Act, 1997*. Figure 3-1 presents this methodology graphically. It is noted in the first box of the schematic that in order to determine the development charge that may be imposed, it is a requirement of Section 3.5 (1) of the *Development Charges Act* that "the anticipated amount, type and location of development, for which development charges can be imposed, must be estimated".

The growth forecast contained in this Chapter (with supplemental tables in Appendix A) provides the anticipated development for which Lanark County will be required to provide services for over a 5-year (early 2010-early 2015), 10-year (early 2010-early 2020), and longer-term (early 2010-late 2028) time horizon. The forecast encompasses both a permanent and seasonal[1] population and housing component. For the purpose of this study, seasonal population growth has been downwardly adjusted by a factor of 50%. This adjustment reflects the non-permanent nature of seasonal dwellings and the resulting impacts on historic and future service calculations.[2]

3.2 Basis of Population, Household and Non-Residential Gross Floor Area Forecast

The following growth forecasts were aggregated to compile an overall forecast for Lanark County:

- Township of Beckwith Development Charges Background Study, Allan & Partners Inc., July 2009;
- The Town of Carleton Place – Development Charges, June 2008;
- Township of Drummond/North Elmsley – Development Charges Background Study, ZanderPlan Inc., August 24, 2009;

[1] Defined as housing units which are not permanently occupied year-round such as cottages.
[2] In the case of water, wastewater and stormwater services (not included as part of this DC Background Study), seasonal population is typically included at 100% occupancy.

- Township of Lanark Highlands Development Charges Study, Tunnock Consulting Ltd., September 22, 2009;
- Town of Mississippi Mills 2009 Development Charge Background Study, Watson & Associates Economists Ltd., April 14, 2009;
- Development Charges Study for the Township of Montague, Morehouse Associates, July 2006;
- Town of Perth– Development Charges Background Study, ZanderPlan Inc., October 13, 2009;
- Tay Valley Township – Development Charges Background Study, Allan & Partners Inc., McIntosh Perry Engineering Services Ltd. & Novatech Engineering Consultants, December 22, 2004; and
- County of Lanark Growth and Development (Draft for Discussion), AECOM, November 26, 2008.

Watson & Associates extrapolated annual housing and employment growth trends for the latter part of the forecast period (i.e. post 2021) where local data was missing or insufficient. Annual housing construction is assumed to taper off post 2021 largely due to the aging of the population and labour force. Commercial employment growth and Gross Floor Area (GFA) is also anticipated to slow during the latter portion of the forecast period, reflective of slower population growth. Comparatively, the commercial employment and GFA forecast provided herein for Lanark County is marginally lower than the aggregate of each lower tier development charge forecast to ensure that the County-wide non-residential forecast is not overstated.

In addition to reviewing the above-mentioned documents, the following key indicators were also considered in generating the population, household and non-residential growth forecast:

- 1996, 2001 and 2006 Census data;
- historical residential building permits over the past 10-years;
- proposed residential units in the development approvals process by dwelling type and location;
- historical non-residential building permit values over the past 10-years; and
- 1996, 2001 and 2006 Census employment data.

3.3 Summary of Growth Forecast

A detailed analysis of the residential and non-residential growth forecasts is provided in Appendix A, and the methodology employed is illustrated in Figure 3-1. The discussion provided herein summarizes the anticipated growth for the Municipality and describes the basis for the forecast. The results of the growth forecast analysis are summarized in Table 3-1 and Schedule 3-1. As identified in Table 3-1 and Schedule 3-1, the permanent population is anticipated to reach 62,644 by early 2020 and 67,227 by late 2028. This forecast population growth will result in an increase of 11,406 persons from early 2010 to late 2028[1].

1. Unit Mix (Appendix A – Schedules 2 through 5)

- The unit mix for the Municipality was derived from historical development activity (as per Schedule 6, Appendix A) and local municipal housing forecasts as per current Development Charge Background Studies.

- Based on the above indicators, the early 2010 to late 2028 household growth forecast consists of a unit mix of 88.7% low density (single family and semi-detached), 6.4% medium density (multiples except apartments) and 4.9% high density (apartments).

2. Geographic Location, Appendix A – Schedule 2 and 6

- Schedule *2* summarizes the anticipated amount, type and location of development for Lanark County by municipal area. An increase of 6,175 permanent housing units has been forecast for the area from early 2010 to late 2028. Annual demand for new permanent housing is anticipated to be approximately 325 units per year. An additional 31 seasonal units are forecast annually throughout the County. In accordance with anticipated demand, permanent housing growth has been allocated to the following areas over the 2010 to 2028 forecast period as follows:

Township of Beckwith	11.9%
Town of Carleton Place	20.5%
Township of Drummond – North Elmsley	13.4%
Township of Lanark Highlands	7.6%
Town of Mississippi Mills	24.4%
Township of Montague	3.9%
Town of Perth	8.2%
Township of Tay Valley	10.1%

[1] The population figures used in the calculation of the 2009 Development Charges exclude the net Census Undercount, which is estimated at approximately 4%.

FIGURE 3-1
MARKET- BASED POPULATION AND HOUSEHOLD PROJECTION MODEL

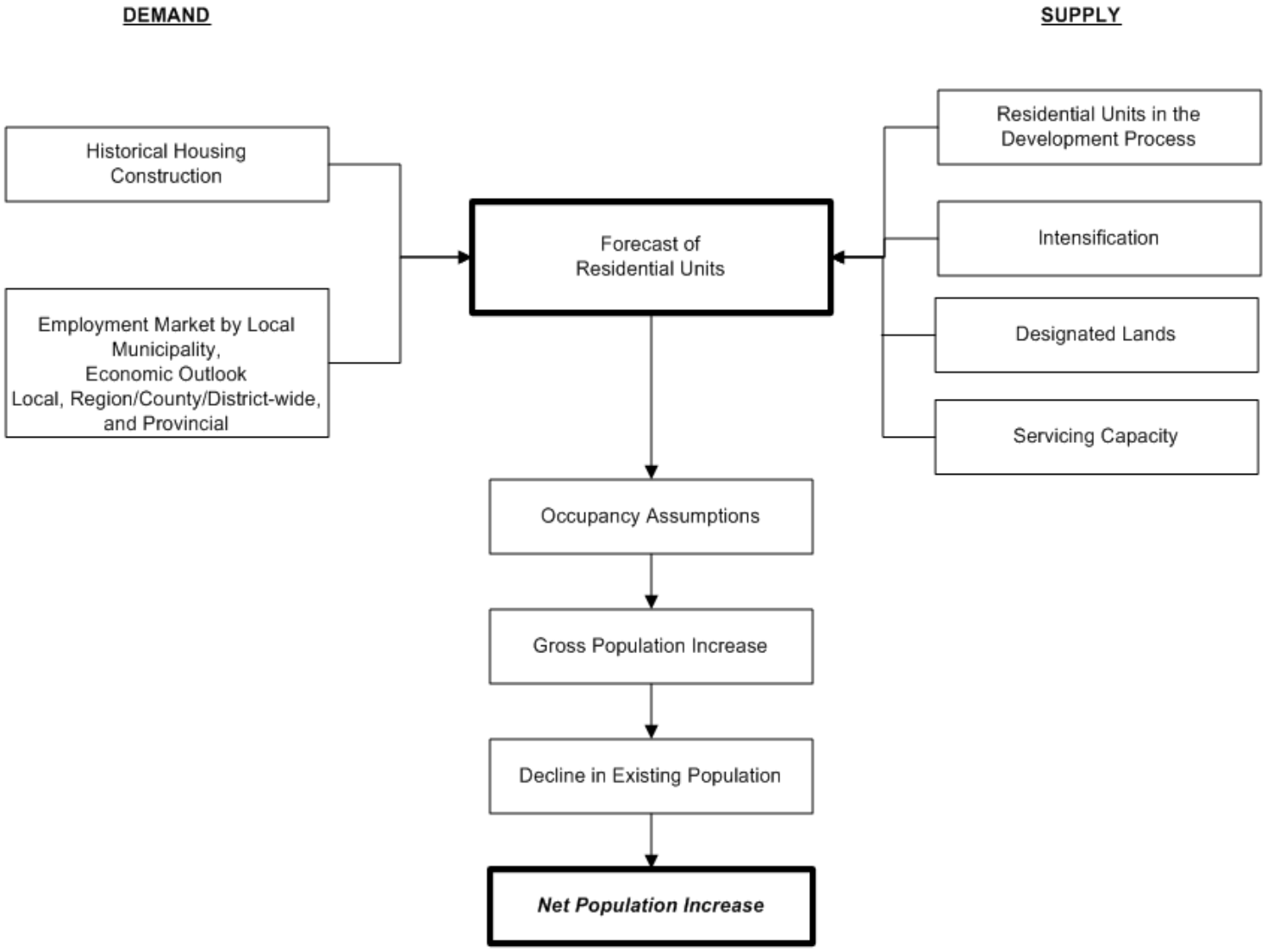
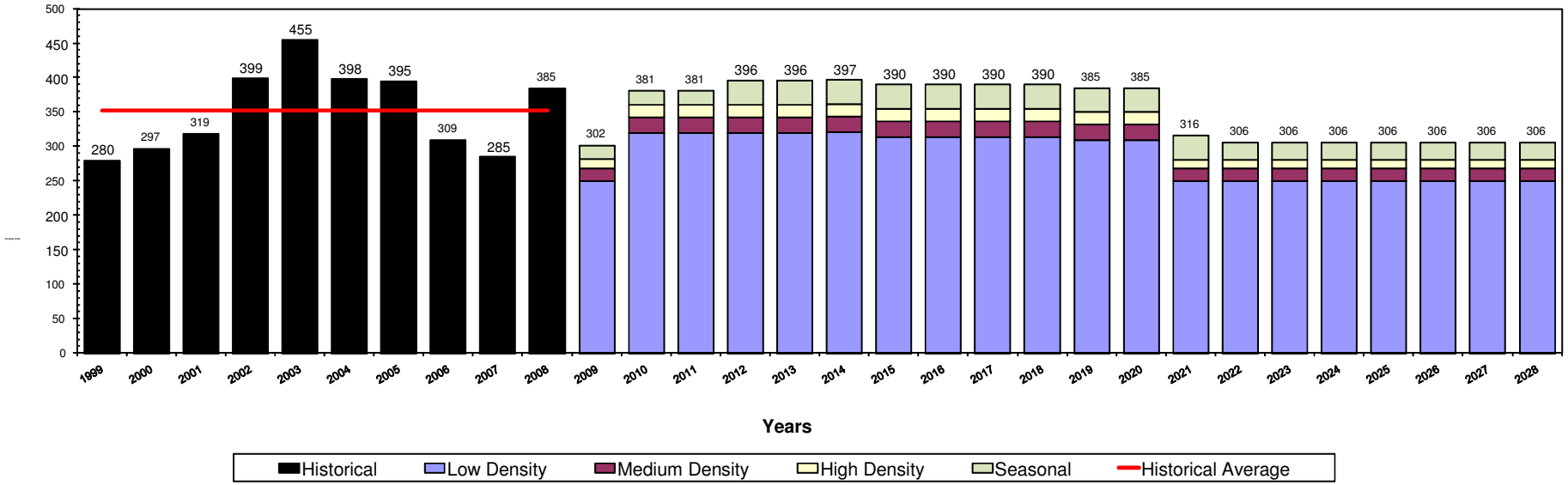


TABLE 3-1
LANARK COUNTY
RESIDENTIAL GROWTH FORECAST SUMMARY (Includes Seasonal Population)

Year	Permanent Population (Excluding Census Undercount)	Permanent Population (Including Census Undercount)[1]	Seasonal Population	50% of Seasonal Population	Total Permament Population + 100% Seasonal	Total Permament Population + 50% Seasonal	Housing Units							Persons Per Unit (Permanent Population - Excluding Undercount)
							Singles & Semi's (Low Density)	Townhomes (Medium Density)	Apartments (High Density)	Other	Total Permament Households	Seasonal Households	Total Households With Seasonal	
Mid 2001	53,355	55,489	13,483	6,742	66,838	60,097	16,905	875	1,960	270	20,010	3,684	23,694	2.67
Mid 2006	55,008	57,208	14,172	7,086	69,180	62,094	18,125	1,055	1,895	285	21,360	3,872	25,232	2.58
Early 2010	55,821	58,054	14,483	7,241	70,303	63,062	19,041	1,121	2,033	285	22,480	3,957	26,437	2.48
Early 2020	62,644	65,149	15,626	7,813	78,270	70,457	22,178	1,349	2,211	285	26,022	4,270	30,292	2.41
Late 2028	67,227	69,916	16,651	8,326	83,878	75,552	24,516	1,518	2,336	285	28,655	4,550	33,204	2.35
Mid 2001 - Mid 2006	**1,653**	**1,719**	**688**	**344**	**2,341**	**1,997**	**1,220**	**180**	**-65**	**15**	**1,350**	**188**	**1,538**	
Mid 2006 - Early 2010	**813**	**845**	**311**	**156**	**1,124**	**968**	**916**	**66**	**138**	**0**	**1,120**	**85**	**1,205**	
Early 2010 - Early 2020	**6,823**	**7,096**	**1,144**	**572**	**7,966**	**7,395**	**3,137**	**228**	**178**	**0**	**3,542**	**313**	**3,855**	
Early 2010 - Late 2028	**11,406**	**11,862**	**2,169**	**1,084**	**13,574**	**12,490**	**5,475**	**397**	**303**	**0**	**6,175**	**593**	**6,767**	

Source: Watson & Associates Economists Ltd., February, 2010.
Note: Population includes a Census Undercount of approximately 4%.

SCHEDULE 3-1
20-YEAR HOUSING FORECAST[1]



Source: Historical housing activity (1999-2008) based on Statistics Canada building permits, Catalogue 64-001-XIB

3. Planning Period

- Both short and longer-term time horizons (5-year, 10-year and buildout) are required for the DC process. The DCA limits the planning horizon for certain services such as ambulance and homes for the aged to a 10-year planning horizon. Roads, water and wastewater services utilize a longer planning period.

4. Population in New Units (Appendix A - Schedules 2 through 5)

- Population in new units are derived from Schedules 2 through 5, which incorporate historical development activity, anticipated units (see unit mix discussion), and 1996, 2001 and 2006 Census data.

- Schedule 7 summarizes the average number of persons per unit (PPU) for permanent housing units by age and type of dwelling based on a 2006 custom census data. The total calculated PPU has been adjusted to account for the downward occupancy trend which has been recently experienced in both new and older units, largely due to the aging of the population. The adjusted 20-year average PPU for each dwelling type is:

    - Low-density: 2.73
    - Medium-density: 2.16
    - High-density: 1.57

5. Existing Units and Population Change (Appendix A - Schedules 2 through 5)

- Existing households for early 2010 are based on the 2006 Census households plus estimated residential units constructed between mid 2006 and early 2010 assuming a six month lag between construction and occupancy (see Schedule 6).

- The decline in average occupancy levels for existing housing units are calculated in Schedules 2 through 5, by aging the existing population over the forecast period.

6. Employment (Appendix A, Schedule 9, 10, 11)

- Employment projections are largely based on the activity rate method, which is defined as the number of jobs in the municipality divided by the number of residents. Key employment sectors include primary, industrial, commercial/population related, institutional, and work at home, which are considered individually below.

- 1996, 2001 and 2006 employment data (place of work) for the Municipality are outlined in *Schedule 9*. 2006 employment is comprised of the following sectors:

- 290 primary (1.9%);
- 2,675 work at home employment (17.3%);
- 3,243 industrial (21.1%);
- 5,658 population related or commercial (36.7%); and
- 3,560 institutional (23.1%).

- This provides a total employment figure (excluding No Fixed Place of Work) of 15,425 based on the 2006 Census. Additional details regarding historical employment trends by sub-sector are summarized in Schedule 11.

- Total employment for the County is anticipated to reach approximately 17,641 by early 2020 and 19,369 by late 2028. This represents an employment increase of 3,710 from early 2010 to late 2028.

7. Non-Residential Sq. Ft. Estimates (Gross Floor Area (GFA), Appendix A, Schedule 9)

- Square footage estimates were calculated in *Schedule 9* based on the following employee density assumptions:

  - 1,100 sq.ft per employee for industrial;
  - 550 sq.ft per employee for commercial; and
  - 700 sq.ft. per employee for institutional employment.

- The GFA forecast is derived from land-based industrial, commercial and institutional employment growth. The forecast incremental Gross Floor Area (GFA) increase for the Municipality is 1,077,800 sq.ft. over the 10-year projection period and 2,083,200 sq.ft. from early 2010 to late 2028.

- The incremental GFA forecast by sector from early 2010 to late 2028 is as follows:

  - Industrial: 22.8%
  - Commercial/population related: 45.2%; and
  - Institutional 32.0%.

4. THE RESULTANT INCREASE IN THE NEED FOR SERVICE

4. THE RESULTANT INCREASE IN THE NEED FOR SERVICE

4.1 Introduction

This chapter addresses the requirements of s.s.5(1) of the DCA, 1997 with respect to the establishment of the estimated increased need for service attributable to the anticipated development, which underpins the development charge calculation. These requirements were detailed in section 1.2 above.

4.2 Services Potentially Involved

Table 4-1 lists the full range of municipal service categories that are eligible for inclusion in the DC calculation.

A number of these services are referenced in s.s.2(4) of the DCA, 1997 as being ineligible for inclusion in development charges. These are shown as "ineligible" on Table 4-1. In addition, two ineligible costs defined in s.s.5(3) of the DCA are "computer equipment" and "rolling stock with an estimated useful life of (less than) seven years..." In addition, local stormwater management and road works are recovered separately under subdivision agreements and related means (as are other local services). Services which are potentially eligible for inclusion by the County are so noted and potential coverage by the County development charge are separately indicated.

4.3 The Increase in the Need for Service

The development charge calculation commences with an estimate of "the increase in the need for service attributable to the anticipated development," for the services to be covered by the by-law. There must be some form of link or attribution between the anticipated development and the estimated increase in the need for service. While the need could conceivably be expressed generally in terms of units of capacity, s.s.5(1)3 (and s.3 of the associated regulation), which requires that Municipal Council indicate that it intends to ensure that such an increase in need will be met, suggests that a project-specific expression of need would normally be applicable.

Descriptive material for the capital requirements for each service addressed by the Background Study is provided in Appendix B.

TABLE 4-1
CATEGORIES OF MUNICIPAL SERVICES
TO POTENTIALLY BE ADDRESSED AS PART OF THE CALCULATION

CATEGORIES OF MUNICIPAL SERVICES	ELIGIBILITY FOR INCLUSION IN THE DC CALCULATION	SERVICE COMPONENTS	MAXIMUM POTENTIAL DC RECOVERY %
1. Services Related to a Highway	T	1.1 Arterial roads	100
	T/Area Municipal/ Dev. Agreements	1.2 Collector roads	100
	Dev. Agreements	1.3 Local roads	100
	T/Dev. Agreements	1.4 Traffic signals	100
	T/ Area Municipal/ Dev. Agreements	1.5 Sidewalks and streetlights	100
2. Other Transportation Services	n/a	2.1 Transit vehicles	90
	n/a	2.2 Other transit infrastructure	90
	T	2.3 Municipal parking spaces - indoor	90
	T	2.4 Municipal parking spaces - outdoor	90
	T	2.5 Works Yards	100
	T	2.6 Rolling stock[1]	100
	n/a	2.7 Ferries	90
	n/a	2.8 Airport facilities	90
3. Storm Water Drainage and Control Services	Area Municipal/Dev. Agreements	3.1 Main channels and drainage trunks	100
	Area Municipal/Dev. Agreements	3.2 Channel connections	0
	Area Municipal/Dev. Agreements	3.3 Retention/detention ponds	0
4. Fire Protection Services	Area Municipal	4.1 Fire stations	100
	Area Municipal	4.2 Fire pumpers, aerials and rescue vehicles	100
	Area Municipal	4.3 Small equipment and gear	100
5. Outdoor Recreation Services (i.e. Parks and Open Space)	Ineligible	5.1 Acquisition of land for parks, woodlots and ESAs	0
	Area Municipal	5.2 Development of local parks	90
	Area Municipal	5.3 Development of district parks	90
	Area Municipal	5.4 Development of Municipal-wide parks	90
	Area Municipal	5.5 Development of special purpose parks	90
	Area Municipal	5.6 Parks rolling stock[1] and yards	90
6. Indoor Recreation Services	Area Municipal	6.1 Arenas, indoor pools, fitness facilities, community centres, etc. (including land)	90
	Area Municipal	6.2 Recreation vehicles and equipment[1]	90
7. Library Services	Area Municipal	7.1 Public library space (incl. furniture and equipment)	90
	Area Municipal	7.2 Library materials	90
8. Electrical Power Services	Ineligible	8.1 Electrical substations	0
	Ineligible	8.2 Electrical distribution system	0
	Ineligible	8.3 Electrical system rolling stock[1]	0

[1] with 7+ year life time
*same percentage as service component to which it pertains
computer equipment excluded throughout

CATEGORIES OF MUNICIPAL SERVICES	ELIGIBILITY FOR INCLUSION IN THE DC CALCULATION	SERVICE COMPONENTS	MAXIMUM POTENTIAL DC RECOVERY %
9. Provision of Cultural, Entertainment and Tourism Facilities and Convention Centres	Ineligible	9.1 Cultural space (e.g. art galleries, museums and theatres)	0
	Ineligible	9.2 Tourism facilities and convention centres	0
10. Waste Water Services	Area Municipal	10.1 Treatment plants	100
	Area Municipal	10.2 Sewage trunks	100
	Area Municipal/Dev. Agreements	10.3 Local systems	100
	Area Municipal	10.4 Vehicles and equipment	100
11. Water Supply Services	Area Municipal	11.1 Treatment plants	100
	Area Municipal	11.2 Distribution systems	100
	Area Municipal/Dev. Agreements	11.3 Local systems	100
12. Waste Management Services	Ineligible	12.1 Collection, transfer vehicles and equipment	0
	Ineligible	12.2 Landfills and other disposal facilities	0
	Ineligible	12.3 Other waste diversion facilities	0
13. Police Services	Area Municipal	13.1 Police detachments	100
	Area Municipal	13.2 Police rolling stock[1]	100
	Area Municipal	13.3 Small equipment and gear	100
14. Homes for the Aged	T	14.1 Homes for the aged space	90
15. Day Care	T	15.1 Day care space	90
16. Health	T	16.1 Health department space	90
17. Social Services	T	17.1 Social service space	90
18. Ambulance	T	18.1 Ambulance station space	90
	T	18.2 Vehicles[1]	90
19. Hospital Provision	Ineligible	19.1 Hospital capital contributions	
20. Provision of Headquarters for the General Administration of Municipalities and Local Boards	Ineligible	20.1 Office space (all HQ Gen. Admin. services)	0
	Ineligible	20.2 Office furniture	0
	Ineligible	20.3 Computer equipment	0
21. Other Services	T	21.1 Studies in connection with acquiring buildings, rolling stock, materials and equipment, and improving land[2] and facilities, including the DC background study cost	0-100
	T	21.2 Interest on money borrowed to pay for growth-related capital	0-100

[1] where a 7+ year life is involved

[2] same percentage as service component to which it pertains

4.4 Local Service Policy

The County's general policy regarding the delineation of local services to be funded through development charges versus local services to be emplaced as a condition of development agreement, is discussed in Appendix B.

4.5 Credits Carried Forward

Section 8 para. 5 of O.Reg. 82/98 indicates that a development charge background study must set out, "The estimated value of credits that are being carried forward relating to the service." s.s.17 para. 4 of the same Regulation indicates that, "...The value of the credit cannot be recovered from future development charges," if the credit pertains to an ineligible service. This implies that a credit for eligible services can be recovered from future development charges. As a result, this provision should be made in the calculation, in order to avoid a funding shortfall with respect to future service needs.

As the County does not currently impose DCs, it does not have any outstanding DC Credit obligations that could affect the development charge calculation.

4.6 Eligible Debt and Committed Excess Capacity

Section 66 of the DCA, 1997 states that, for the purposes of developing a development charge by-law, a debt incurred with respect to an eligible service may be included as a capital cost, subject to any limitations or reductions in the Act. Similarly, s.18 of O.Reg. 82/98 indicates that debt with respect to an ineligible service may be included as a capital cost, subject to several restrictions. It is therefore necessary to review the projects on which the County's long term debt is outstanding, in order to determine whether some or all of those costs are eligible for inclusion in the calculation of the charge.

In order for such costs to be eligible, two conditions must apply. First, they must have funded excess capacity which is able to meet service needs attributable to the anticipated development. Second, the excess capacity must be "committed," that is, either before or at the time it was created, County Council must have expressed a clear intention that it would be paid for by development charges or other similar charges. For example, this may have been done as part of previous development charge processes. This inclusion is referenced as Box 12 in Figure 1-2 ("Unfunded Works") and includes internal borrowing or long term debt.

It is understood that the County does not currently have any outstanding debt that meets these criteria.

4.7 Council's Assurance

In order for an increase in need for service to be included in the DC calculation, County Council must indicate "... that it intends to ensure that such an increase in need will be met" (s.s.5(1)3). This can be done if the increase in service forms part of a Council-approved Official Plan, capital forecast or similar expression of the intention of Council (O.Reg. 82/98 s.3).

The capital program contained herein is subject to Council's approval as part of the DC by-law adoption process. It is anticipated that a number of such projects will evolve over time in response to the specific needs of new development. As a result, the cost, timing and nature of such projects may be altered as part of the County's annual capital budgetary process. It is intended that development charge draws will be made for such projects based on the development-related percentages which have been identified.

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5. DCA CALCULATION REQUIREMENTS

5. DCA CALCULATION REQUIREMENTS

5.1 Introduction

5.1.1 Subsection 5(1) of the DCA sets out the method that must be used to determine development charges. This method specifically calls for five different types of deductions to be made from municipal servicing costs, where applicable, which relate to the need for service attributable to new development anticipated over the planning period. These are:

- level of service cap;
- uncommitted excess capacity;
- benefit to existing development;
- grants, subsidies and other contributions;
- the 10% statutory deduction for "soft services."

5.1.2 Three other calculation deductions are addressed herein as being implicit requirements. These are:

- post-period capacity;
- uncommitted DC reserve fund balances;
- allocation of the total costs between residential and non-residential benefit.

The basis for, and nature of, each of these DC calculation deductions is outlined below and in Appendix B.

5.2 Level of Service Cap

5.2.1 Paragraph 4 of subsection 5(1) of the DCA, 1997 states that the estimate of the increase in the need for service attributable to the anticipated development, made under paragraph 2 must not include an increase that would result in the level of service exceeding the average level provided in the County over the 10 year period preceding the preparation of the background study.

s.s.4(3) of O.Reg. 82/98 provides for an exception, such that:

> "If the average level of service determined is lower than the standard level of service required under another Act, the standard level of service required under the other Act may be deemed ... to be the average level of service."

Section 4 of the Regulation also provides that:

- both the quantity and quality of a service shall be taken into account in determining the average level of service.
- a geographic area of the municipality may be excluded in determining the average level of service, if the service is not provided there and the area is identified in the by-law. However, the average level of service so determined, cannot exceed that which would be determined if the by-law applied to the whole municipality.

A commonly-used quantity measure is units per capita (e.g. lane kms, square feet, m^3 capacity, hectares, etc.), while quality can be measured in terms of cost per unit, engineering standards or recognized performance measurement systems, depending on circumstances.

5.3 Uncommitted Excess Capacity

Paragraph 5 of s.s.5(1) of the DCA requires a deduction from the increase in the need for service attributable to the anticipated development that can be met using the County's "excess capacity", other than excess capacity which is "committed", i.e. where Council has indicated a clear intention that it would be paid for by DCs or other similar charges, before or at the time the capacity was created (s.5 of O.Reg. 82/98).

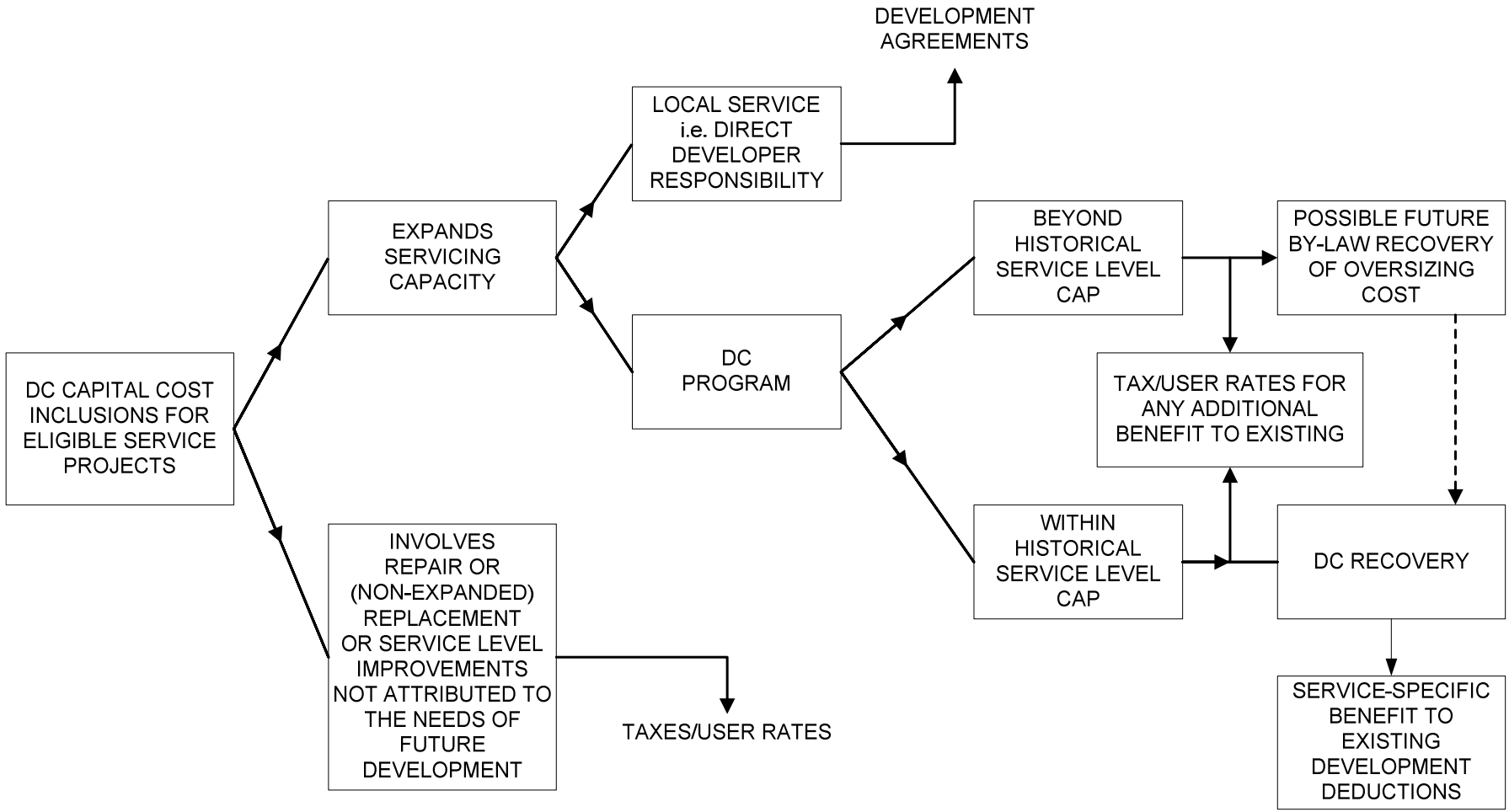
"Excess capacity" is undefined in the Act, but in this case must be able to meet some or all of the increase in need for service, in order to potentially represent a deduction. The deduction of "excess capacity" from the future increase in the need for service, occurs as part of the conceptual planning and feasibility work associated with justifying and sizing new facilities, e.g. if a road widening to accommodate increased traffic is not required because sufficient capacity is already available, then that widening would not be included as an increase in need, in the first instance. Another potential consideration is the relationship between the 2010 level of service and the ten year historical average and/or an operational review of the capacity functioning of a particular facility.

5.4 Benefit to Existing Development

Benefit to existing development deductions have been addressed on a service-specific and project-specific basis. The methodology employed is briefly summarized in Figure 5-1 and discussed in Appendix B.

The primary considerations involved in establishing an appropriate benefit to existing development deduction include:

FIGURE 5-1
COUNTY OF LANARK - 2009 DC BY-LAW UPDATE
BASE RATIONALE FOR BENEFIT TO EXISTING DEVELOPMENT DEDUCTIONS



- Is the project a capacity expansion, necessary to maintain the existing level of municipal service?
- Is the primary service area municipal-wide, large area or small area and how much growth is located in the relevant area?
- Was the project included in previous DC studies and with what level of deduction?
- Is the capital program well beyond the service level cap and to what extent do these projects benefit existing development (rather than representing oversizing for post period recovery)?
- Does the capital expenditure simply represent more of what is already being provided or does it instead offer a broader range of service?
- What is the estimated value of the service change being provided re user proximity, for example?
- Does the project involve a new facility or an existing replacement plus expansion?

5.5 Grants, Subsidies and Other Contributions

s.s.5(1)7 of the DCA requires that the capital costs must be reduced by the reductions set out in subsection (2).

s.s.5(2) states that:

> "The capital costs, determined under para. 7 of subsection (1), must be reduced, in accordance with the regulations, to adjust for capital grants, subsidies and other contributions made to a municipality or that the Council of the municipality anticipates will be made in respect of the capital costs." (underlining added)

Section 6 of O.Reg. 82/98 indicates that any such grant, subsidy or other contribution (including developer contributions) must be used to reduce the s.s.5(1)7 capital costs in the same proportion as the increase in need was reduced under s.s.5(1), para. 6, unless at the time it was made, the person making it expressed a clear intention that all or part be used to benefit existing or new development. In the latter case, a deduction to capital costs must be made, but only to the extent that the funds were intended to benefit new development.

Any grants, subsidies, developer and other contributions anticipated have been reflected in Appendix B, in accordance with the provisions of the Act and Regulation.

5.6 Post-period Capacity

This is a term and a concept which is not specifically referenced in the DCA. It refers the cost of oversized development-related servicing capacity which is not required by development anticipated over the County's planning period, which will clearly benefit development in a **subsequent** planning period and should therefore be (partially) funded by such subsequent

development. This requirement is implicit in s.s.5(1)2 of the DCA, which requires the charge to be based on "the increase in the need for service attributable to the anticipated development…".

The need for any such deduction can be avoided by addressing the needs of a long term or "Buildout" scenario in the case of the hard services and by simply maintaining per capita service levels in the case of other services. Otherwise a post period capacity deduction may be applicable in the case of specific road works which are not operating at standard capacity utilization levels by the end of the planning period.

5.7 DC Reserve Fund Balances

There is no explicit requirement under the DCA calculation method set out in s.s.5(1) to account for the outstanding reserve fund balance as part of making a DC calculation; however, s.35 does restrict the way in which the funds are used in future, i.e.

> "The money in a reserve fund established for a service may be spent only for capital costs determined under paragraphs 2 to 8 of subsection 5(1)."

For services which are subject to a per capita-based, service level "cap," the reserve fund balance at the beginning of the study period should be applied against the development-related costs for which the charge was imposed, once the project is constructed (i.e. the needs of growth which occurred earlier in the by-law period). This cost component is distinct from the development-related costs for the next 10 year period, which underlie the DC calculation herein.

The alternative would involve the municipality seeking to spend all reserve fund monies prior to renewing each by-law, which would often not be a sound basis for capital budgeting. Thus, in future DC studies, the County will use these "soft service" reserve funds for the County's cost share of applicable development-related projects, which are required, but have not yet been undertaken (i.e. the cost of beyond the service level cap and benefit to existing development). This is a way of directing the funds to the project cost share for which they were collected (rather than largely to the benefit of future development, which will continue to generate the need for additional facilities and development charges, directly proportionate to the amount of growth involved).

As the County does not have a DC by-law in place at the present time, there are no DC reserve fund balances to be considered.

When the by-law is updated in future, the uncommitted balance of the County's DC reserve fund for hard services and growth studies, should be applied against future spending requirements.

These deductions are made in the case of hard services (inclusive of "studies" which is not subject to a per capita service level), in that the DC calculation for these services is geared to

funding a large group of development-related works that are being implemented in response to the needs of growth over the long term. While these works are also subject to service level caps, each DC calculation is designed to fund an appropriate share of the overall program of works, over a long term period. Thus, the renewal process involves updating cost estimates and project descriptions, removing completed works and netting reserve fund balances, each time a new hard service DC is calculated.

5.8 Other Deductions

Paragraph 8 of s.s.5(1) of the DCA requires that, "the capital costs must be reduced by 10 per cent." This paragraph does not apply to water supply services, waste water services, storm water drainage and control services, services related to a highway and to police and fire protection services. The County services that the 10% reduction does apply to are ambulance, homes for the aged and growth studies (part) and any related financing costs pertaining to these services.

The 10% is to be netted from the capital costs necessary to provide the increased services, once the other deductions (i.e. ineligible, benefit to existing, landowner contributions, etc.) have been made.

5.9 Cost Differentiation by Type of Development

s.s.5(6)2 of the DCA requires that every "type" of development that is expressly identified in the DC by-law cannot be required to pay development charges that exceed the capital costs arising from the increase in the need for service attributable to that particular type of development.

In the first instance, this allocation involves a split between residential and non-residential benefit. This is typically made based on the ratio of incremental growth in population to the total increment in population and employment, except in the case of homes for the aged and ambulance where service specific allocations are made.

5.10 County-wide vs. Area-specific Charges

Given the nature of the services involved, the proposal is to implement a County-wide development charge subject to the range of development types and geographic exemptions.

6. DEVELOPMENT CHARGE RULES

6. DEVELOPMENT CHARGE RULES

6.1 Introduction

6.1.1 s.s.5(1)9 of the DCA states that rules must be developed:

> "... to determine if a development charge is payable in any particular case and to determine the amount of the charge, subject to the limitations set out in subsection 6."

Paragraph 10 of the section goes on to state that the rules may provide for exemptions, phasing in and/or indexing of development charges.

6.1.2 s.s.5(6) establishes the following restrictions on the rules:

- the total of all DCs that would be imposed on anticipated development must not exceed the capital costs determined under 5(1) 2-8 for all services involved.

- if the rules expressly identify a type of development, they must not provide for it to pay DCs that exceed the capital costs that arise from the increase in the need for service for that type of development. However, this requirement does not relate to any particular development.

  In order to address this requirement, the following conventions have been adopted:

  1. Costs to residential uses have been assigned to different types of residential units based on the average occupancy for each housing type constructed during the first 20 years of occupancy.
  2. Costs are allocated to residential uses (as opposed to non-residential uses) based upon a number of factors, as may be suited to each service-related circumstance and as outlined in Appendix B.

- if the rules provide for a type of development to have a lower development charge than is allowed, the rules for determining development charges may not provide for any resulting shortfall to be made up via other development.

6.1.3 With respect to "the rules", Section 6 of the DCA states that a DC by-law must expressly address the matters referred to above re s.s.5(1) para. 9 and 10, as well as how the rules apply to the redevelopment of land.

6.2 The Amount of the Development Charge Payable in Any Particular Case

6.2.1 The rules for determining if development charges are payable in any particular case and for determining the amount of the development charges involved, are set out in the proposed by-law in Appendix F.

6.2.2 The quantum of the development charge which is payable, is as calculated in Appendices B and C and summarized in the Executive Summary and Schedule B of the proposed by-law.

6.2.3 The rules for determining if development charges are payable in any particular case, are addressed in the by-law and Background Study and deal with matters such as: multiple charges, the connection between servicing needs and development, the list of services for which charges are being imposed, types of development approval triggering the need for the imposition of development charges, the requirements for the installation of local services in addition to payment of the development charge, the method used in calculating development charges for individual developments, the quantum of the charge, the timing of calculation and payment, and the alternative means of payment.

6.3 Development Charge Exemptions

6.3.1 The rules for exemptions, relief and adjustments for the charge are as set out in the proposed by-law in Appendix F.

6.4 Phasing-in of Development Charges

6.4.1 The rules with respect to the phasing-in of the development charges are as set out in the proposed by-law in Appendix F. No phase-in provision has been made at this time.

6.5 Indexing of Development Charges

6.5.1 The rules with respect to the indexing of the development charges are as set out in the proposed by-law in Appendix F, that is, that the charges are to be adjusted annually, as of May 1 each year, commencing May 1, 2011 in accordance with the Statistics Canada Quarterly, Construction Price Statistics (catalogue number 62-007).

6.6 The Application of Development Charges to Redevelopment

6.6.1 The rules with respect to redevelopment are as set out in the proposed by-law in Appendix F. This policy provides a demolition and/or conversion credit formula in the circumstance where a building permit is issued within five years from the date the associated demolition permit has been issued.

7. BY-LAW ADOPTION AND IMPLEMENTATION

7. BY-LAW ADOPTION AND IMPLEMENTATION

7.1 Introduction

This Chapter outlines the process that the County has carried out as part of arriving at development charge policy which is fair and legally defensible, financially appropriate, and has had regard for public comments and possible development implications.

7.2 Long Term Capital and Operating Cost Examination

Subsection 10(2)(c) of the Act requires that a DC Background Study include an examination for each service to which the development charge by-law would relate, of the long term capital and operating costs for capital infrastructure required for the service.

One standard that could be used in scrutinizing the above-referenced costs is the current level of operating costs per capita. Another more detailed standard that goes beyond the specific requirements of the Act, would be the anticipated impact on tax and user rate levels, as determined by the application of a full fiscal impact model.

The revenue to be generated by the DC by-law during its life of up to five years, will be determined by the quantum of the charge, the amount and type of development occurring and the impact of the rules regarding exemptions, phasing in, indexing, land redevelopment, etc. The net stream of revenue which results, in concert with County policy with respect to front-ending agreements and long term debt, will determine the rate at which the County is able to construct the works which underlie the development charge. Consideration of these revenue streams would normally occur as part of the County's annual Capital Budget and Forecasting process.

Appendix D contains the Long Range Capital and Operating Cost examination applicable in this case.

7.3 Consultation

Consultation activity is planned in the form of the public meeting of Council and any associated meetings that may be required.

7.4 The By-law Adoption Process

7.4.1 Public Meeting of Council

Section 12 of the DCA, 1997 indicates that before passing a development charge by-law, Council must hold at least one public meeting, giving at least 20 clear days notice thereof, in accordance with the Regulation. Council must also ensure that the proposed by-law and background report are made available to the public at least two weeks prior to the (first) meeting.

Any person who attends such a meeting may make representations related to the proposed by-law.

If a proposed by-law is changed following such a meeting, the Council must determine whether a further meeting (under this section) is necessary (i.e. if the proposed by-law which is proposed for adoption has been changed in any respect, the Council should formally consider whether an additional public meeting is required, incorporating this determination as part of the final by-law or associated resolution. It is noted that Council's decision, once made, is final and not subject to review by a Court or the OMB.

7.5 By-law Implementation

7.5.1 Introduction

Once the County has calculated the charge, prepared the complete Background Study, carried out the public process and passed a new by-law, the emphasis shifts to implementation matters. These include notices, potential appeals and complaints, credits, front-ending agreements, subdivision agreement conditions and finally the collection of revenues and funding of projects.

The sections which follow, overview requirements in each case.

7.5.2 Notice of Passage

In accordance with s.13 of the DCA, when a DC by-law is passed, the municipal clerk shall give written notice of the passing and of the last day for appealing the by-law (the day that is 40 days after the day it was passed). Such notice must be given not later than 20 days after the day the by-law is passed (i.e. as of the day of newspaper publication or the mailing of the notice).

Section 10 of O.Reg. 82/98 further defines the notice requirements, which are summarized as follows:

- Notice may be given by publication in a newspaper, which is (in the Clerk's opinion) of sufficient circulation to give the public reasonable notice, or by personal service, fax or mail to every owner of land in the area to which the by-law relates.
- s.s.10(4) lists the persons/organizations who must be given notice.
- s.s.10(5) lists the eight items which the notice must cover.

7.5.3 By-law Pamphlet

In addition to the "notice" information, the municipality must prepare a "pamphlet" explaining each development charge by-law in force, setting out:

- a description of the general purpose of the development charges;
- the "rules" for determining if a charge is payable in a particular case and for determining the amount of the charge;
- the services to which the development charges relate; and
- a general description of the general purpose of the Treasurer's statement and where it may be received by the public.

Where a by-law is not appealed to the OMB, the pamphlet must be readied within 60 days after the by-law comes into force. Later dates apply to appealed by-laws.

The County must give one copy of the most recent pamphlet without charge, to any person who requests one.

7.5.4 Appeals

Sections 13-19 of the DCA, 1997 set out requirements relative to making and processing of a DC by-law appeal and OMB Hearing in response to an appeal. Any person or organization may appeal a DC by-law to the OMB by filing with the municipal clerk a notice of appeal, setting out the objection to the by-law and the reasons supporting the objection. This must be done by the last day for appealing the by-law, which is 40 days after the by-law is passed.

7.5.5 Complaints

A person required to pay a development charge, or his agent, may complain to the County Council imposing the charge that:

- the amount of the charge was incorrectly determined;
- the credit to be used against the development charge was incorrectly determined; or
- there was an error in the application of the development charge.

Sections 20-25 of the DCA, 1997 set out the requirements that exist, including the fact that a complaint may not be made later than 90 days after a DC (or any part of it) is payable. A complainant may appeal the decision of Municipal Council to the OMB.

7.5.6 Front-Ending Agreements

The County and one or more landowners may enter into a front-ending agreement, which provides for the costs of a project, which will benefit an area in the municipality to which the DC by-law applies. Such an agreement can provide for the costs to be borne by one or more parties to the agreement who are, in turn, reimbursed in future, by persons who develop land defined in the agreement.

Part III of the DCA, 1997 (Sections 44-57) addresses front-ending agreements and removes some of the obstacles to their use, which were contained in the DCA, 1989. Accordingly, the County assesses whether this mechanism is appropriate for its use, as part of funding projects prior to County funds being available.

7.5.7 Severance and Subdivision Agreement Conditions

Section 59 of the DCA, 1997 prevents a municipality from imposing directly or indirectly, a charge related to development or a requirement to construct a service related to development, by way of a condition or agreement under s.51 or s.53 of the *Planning Act*, except for:

- "local services, related to a plan of subdivision or within the area to which the plan relates, to be installed or paid for by the owner as a condition of approval under section 51 of the *Planning Act*;"

- "local services to be installed or paid for by the owner as a condition of approval under Section 53 of the *Planning Act*."

It is also noted that s.s.59(4) of the DCA, 1997 requires that the municipal approval authority for a draft plan of subdivision under s.s.51(31) of the *Planning Act,* use its power to impose conditions to ensure that the first purchaser of newly subdivided land is informed of all the development charges related to the development, at the time the land is transferred.

APPENDIX A
ANTICIPATED DEVELOPMENT
IN THE COUNTY OF LANARK
2010-2028

APPENDIX A - ANTICIPATED DEVELOPMENT IN THE COUNTY OF LANARK 2009-2019

insert tables

APPENDIX B
DEVELOPMENT CHARGE RECOVERABLE COST CALCULATIONS

Contents

B-1 ROADS AND RELATED

B-1 ROADS AND RELATED

B-1.1 DC Calculation Planning Period

2010 to 2028

B-1.2 Service Coverage and Capital Program

Service Coverage: Improvements to County roads and intersections, as well as new arterial roads. These works were identified in the County's 2009 draft Transportation Masterplan as recommended improvements that are related in whole or part to growth. Two of the projects (Perth arterial road and the McNeely Ave. extension) are currently under the jurisdiction of lower tier municipalities. The County cannot begin imposing development charges for these works until the County has assumed responsibility for the roads.

B-1.3 Local Service and Developer Contribution Policy

Some of the need for services generated by additional development consists of local services related to a planning application. As such, they will be required as a condition of planning approval. The following local service guidelines are proposed to delineate the allocation of capital costs between local service charges to be allocated to the Developer or Development Charges.

1. Arterial Roads (as defined in the Official Plan)

   New roads or the widening of existing roads shall be considered development charges projects.

2. Collector Roads (as defined in the Official Plan)

   i. The oversizing costs of any additional width (over the first 11 m) required for the road surface of new collector roads are considered to be a development charges project.

   ii. The first 11 m of new collector roads and storm water management facilities is considered to be a developer's responsibility.

   iii. Widening of existing collector roads is considered to be a development charges project.

3. Local Roads

New local roads and storm water management facilities are considered to be the developer's responsibility.

4. Traffic Signals, Traffic Control Systems and Intersection Modifications

i. As part of the new construction or widening of County roads and if warranted, traffic signals, traffic control systems and intersection modifications are considered to be development charges projects.

ii. Off-site traffic signals, traffic control systems and intersection modifications, required to meet the needs of projected development growth and resulting in increasing traffic, are considered to be development charges projects, subject to meeting warrants.

iii. Where foreseeable off-site intersection modifications, traffic signals and traffic control systems that are not enforceable under the *Planning Act*, are required as a result of growth, they will be considered development charges projects provided they have been identified within a development charge program. Identification of annual projects within the program will be through the budgetary process.

iv. Traffic signals, traffic control systems and intersection modifications are considered to be part of the construction of the road with the lower designation. As an example, traffic signals and intersection modifications at the intersection of an arterial road and a collector are to be part of the collector road's construction and should follow the guidelines outlined in the road section.

v. Local streets or entrances to specific developments which require traffic signals, traffic control systems or intersection modifications are the developer's responsibility.

5. Streetlights

Streetlights are considered to be a developer's responsibility.

6. Sidewalks

Local Municipality's responsibility.

7. Bike Lanes/Bike Paths

i. Bike lanes within the road allowance are considered to be part of the road construction and should follow the guidelines explained in the road construction section.

ii. Bike paths outside road allowances are considered to be the developer's responsibility if they are part of a plan of subdivision.

8. Noise Abatement Measures

i. Refer to the Policy for the Assessment and Mitigation of Traffic Noise on County Roads.

ii. Subject to 8 i above, on arterial and collector roads, any other noise abatement measures, when warranted (i.e., barriers, berms, etc.), are considered to be development charge projects.

iii. Internal to a development, noise abatement measures are the developer's responsibility.

9. Cost Reimbursement for County In-House Work

Arterial Roads:

Engineering	10%
Project Management	10%
Land	10%
Contingency	15%

Collector Roads:

Engineering	10%
Contingency	15%

No land as these are generally acquired via *Planning Act*

10. Land Acquisition for Roads

i. Land acquisition for arterial or collector roads, to the widths required according to the approved engineering standards, is primarily provided by dedications under the *Planning Act*. In areas where limited or no development is anticipated and direct dedication is unlikely, the land acquisition is considered to be part of the capital cost of the related development charges project.

ii. Land acquisition for grade separations (beyond normal dedication requirements) is considered to be part of the capital cost of the related development charges project.

B-1.4 Level of Service Measurement

The road structure, as approved by Council, designates classes of roads, thereby dictating road widths and structural integrity, based on accepted Engineering principles. Road costs are based on 2009 construction costs and include estimates for granular and asphalt materials, curb and gutter, sidewalks and boulevards, standard street lights, structures (bridges and culverts), storm sewers sized to drain the road system, based on a one year storm and applicable engineering.

The County's historic level of service in terms of length of roadway is 9.24 km/capita (including occupants of seasonal dwellings who are weighted at 50%).

B-1.5 Benefit to Existing Development Deduction

In determining an appropriate deduction to recognize the benefit to existing development, reference was made to the draft Transportation Masterplan and the type of work planned.

For three of the projects, a 20% deduction was applied to reflect nominal benefit to existing development from the improvements, including the cost of resurfacing (and reconstructing) the roads. However, in the case of the intersection improvements to Perth St. and Christian St., a 50% deduction was applied as there are significant existing problems to be addressed.

B-1.6 Post Period/Excess Capacity Deduction

The road improvements identified in the Transportation Masterplan are intended to address the 20-year (2009-2028) needs of the County's transportation network. The DC recoverable share is allocated over the forecast growth from 2010 to 2028. Therefore, no deduction is made for post period capacity.

B-1.7 Provision for Grants, Subsidies and Other Contributions

No grants or subsidies are anticipated for the projects identified.

B-1.8 10% Statutory Deduction

This deduction is not applicable to roads.

B-1.9 Residential vs. Non-Residential Split

Net growth related costs have been allocated between residential and non-residential development based on the share of net population increase as a percentage of the sum of the net population and employment increase (2010-2028) (i.e. 12,490 additional persons and 3,710 additional employees):

$$\frac{\text{12,490 persons}}{\text{12,490 persons + 3,710 employees}} = \begin{matrix}\text{77\% Residential and} \\ \text{23\% Non-residential}\end{matrix}$$

INSERT TABLE kms of county roads (LOS)

Insert TABLE roads (cap cost)

B-2 AMBULANCE (EMERGENCY SERVICES)

B-2.1 AMBULANCE (EMERGENCY SERVICES)

B-2.1 DC Calculation Planning Period

Early 2010 to early 2020

B-2.2 Service Coverage and Capital Program

The capital program for Emergency Services includes the acquisition of two additional land ambulances. No increase to facilities (stations) is anticipated. Ambulances are included in the calculation because the vehicles have an anticipated useful lifetime beyond seven years, based on one shift per day use, which is the normal basis for determining use. The seven years is a DC minimum threshold. The vehicles are actually used "24/7" and as a result, are used for the equivalent of seven years or more.

B-2.3 Local Service and Developer Contribution Policy

Not applicable

B-2.4 Level of Service Measurement

The level of service cap reflects the average level of service per capita, times the forecast population increase for the County. As this service is shared with the Town of Smiths Falls, the Town's population was included in calculating the historic service level. Separate schedules follow for Ambulance facilities (sq.ft./capita) and vehicles/equipment (number per capita).

B-2.5 Benefit to Existing Development Deduction

Where a new vehicle is added, existing areas which are now receiving service may benefit via improved response times. A deduction of 5% has been made to address this benefit.

B-2.6 Post Period/Excess Capacity Deduction

The 2020 DC-funded service level for Ambulance is at or below the County's 10-year average. As a result, no post period capacity is involved.

B-2.7 Provision for Grants, Subsidies and Other Contributions

Provincial funding equal to 50% of the cost of the new vehicles is anticipated; therefore, the growth share of costs has been reduced by 50%. The gross cost for the ambulances excludes the share to be funded by the Town of Smiths Falls (10%).

B-2.8 10% Statutory Deduction

The 10% statutory deduction is applicable to the Ambulance Service and therefore a deduction has been made.

B-2.9 Residential vs. Non-Residential Split

Net growth related costs have been allocated between residential and non-residential development based on the share of net population increase (2010-2020) as a percentage of the sum of the net population and employment increase. Population has been weighted at three times employment to recognize the disproportionate use of this service by residents, in comparison to employees who are in the County 1,500-2,000 hours per year. Therefore, the calculation for the residential share is:

$$\frac{\text{7,395 additional persons X 3}}{\text{(7,395 persons X 3) + 1,982 additional employees}} = \begin{array}{l}\text{92\% residential and} \\ \text{8\% non-residential}\end{array}$$

insert TABLE number of equipped vehicles and items of equipment (LOS)

insert TABLE emergency medical services (cap cost)

insert TABLE sq. ft. of building area LOS

B-3 HOMES FOR THE AGED

B-3 HOMES FOR THE AGED

B-3.1 DC Calculation Planning Period

Early 2010 to early 2020

B-3.2 Service Coverage and Capital Program

The capital program provides for an expansion to the County's Long Term Care facility, Lanark Lodge. Specific plans have not yet been formalized but are expected to involve a 6% increase in floor space to provide additional capacity for residential and/or day services. The estimated cost of the increase is based on $251/sq.ft., consistent with the value of existing space. Therefore, the expansion cost is calculated as 126,420 existing sq.ft. X 6% increase X $251/sq.ft. The gross capital cost for the additional floor area excludes the share to be funded by Smiths Falls (assumed to be 8%). Thus, the City share is $1,751,574.

B-3.3 Local Service and Developer Contribution Policy

Not applicable.

B-3.4 Level of Service Measurement

The level of service for Homes for the Aged is measured in terms of facility space (sq.ft./capita). As this service is shared with the Town of Smiths Falls, the Town's population was included in calculating historic service level.

B-3.5 Benefit to Existing Development Deduction

A benefit to existing development deduction (10%) is applied to make provision for a minor overall access-related service level benefit to existing residents of the County as a whole, as a result of increased capacity.

B-3.6 Post Period/Excess Capacity Deduction

As the capital program is within the average service level required to meet the needs of growth over the next ten years, no deduction is required for post period capacity.

B-3.7 Provision for Grants, Subsidies and Other Contributions

Provincial funding equal to 33% of project costs is anticipated and has been deducted.

B-3.8 10% Statutory Deduction

A 10% deduction has been made from the DC recoverable costs pursuant to s.s.5(1)8 of the DCA.

B-3.9 Residential vs. Non-Residential Split

This service is geared toward residents of the County and their families. On this basis, the residential share of the growth related need is established as 100%.

insert TABLE sq.ft. of building area (LOS)

insert TABLE Long term care facilities (cap cost)

B-4 GENERAL GOVERNMENT (STUDIES)

B-5 GENERAL GOVERNMENT (STUDIES)

B-5.1 DC Calculation Planning Period

Early 2010 to Early 2020

B-5.2 Service Coverage and Capital Program

Coverage: These growth-related studies are potentially applicable to virtually all Departments in the County including Planning, Public Works, Ambulance, Finance and Homes for the Aged.

Capital Program: The capital program for this service provides funding for a limited number of growth studies (e.g. development charge studies) as well as the growth-related portion of other studies (e.g. Official Plan update).

B-5.3 Local Service and Developer Contribution Policy

N/A

B-5.4 Level of Service Measurement

The study requirement is based on statutory requirements (e.g. the DCA), the requirements of the County's Official Plan and overall capital spending levels.

B-5.5 Benefit to Existing Development Deduction

As the gross cost allowance is intended to include only the growth-related component of studies, no deduction for BTE has been made.

B-5.6 Post Period/Excess Capacity Deduction

Not applicable, as the studies require regular updating and replacement.

B-5.7 Provision for Grants, Subsidies and Other Contributions

Any funding support has been netted from the costs for which DC funding is sought.

B-5.8 10% Statutory Deduction

The deduction is nil in the case of the DC Background Studies and those pertaining to roads. A 10% deduction is applicable for corporate studies pertaining to other services. A blended overall deduction of 2% has been used.

B-5.9 Residential vs. Non-Residential Split

Net growth related costs have been allocated between residential and non-residential development based on the share of net population increase as a percentage of the sum of the net population and employment increase.

Over the next ten years, on a County-wide basis, the County's population is expected to increase by 6,395 persons and its workforce by 1,982 employees. Thus, the residential:non-residential allocation has been calculated as:

$$\frac{7{,}395}{7{,}395 \text{ persons} + 1{,}982 \text{ employees}} = \begin{array}{l}79\% \text{ Residential and} \\ 21\% \text{ Non-residential}\end{array}$$

insert TABLE studies (cap cost)

APPENDIX C
DEVELOPMENT CHARGE CALCULATION

APPENDIX C -DEVELOPMENT CHARGE CALCULATION

1. Tables C-1 and C-2 set out the DC calculation by service based on the standard average cost method.

2. Table C-3 summarizes the calculated charge for all services by unit type.

INSERT TABLE C-1

AND TABLE C-2

INSERT TABLE C-3

APPENDIX D
LONG TERM CAPITAL AND OPERATING COST EXAMINATION

APPENDIX D - LONG TERM CAPITAL AND OPERATING COST EXAMINATION

This Appendix presents the examination required under s.s.10(2)(c) of the DCA, 1997 of the long-term capital and operating costs for capital infrastructure required for each service to which the by-law relates.

1. Services

As indicated in the County's proposed development charge by-law, charges are proposed for the following services:

(a) Roads and Related
(b) Emergency Medical Services
(c) Homes for the Aged
(d) Administrative (Development-related Studies)

The three sections which follow address, in turn, the operating cost implications of these services, as well as the capital cost implications (medium and long term). The final section completes the cost examination with a brief commentary on its affordability.

2. Operating Cost Implications

(a) ***Roads and Related*** – The roads program to be partially funded by DCs will involve the addition and widening of a number of roads. The annual cost to maintain additional road length is expected to be $2,219/lane km, including maintenance and snow clearing.

(b) ***Emergency Medical Services*** – Based on experience with existing land ambulances, the annual maintenance costs for the two additional vehicles has been estimated at $58,400 for expenditures such as maintenance, fuel, licence and insurance. Annual cost for staff related to the two additional vehicles is estimated to be less than $1 million.

(c) ***Homes for the Aged*** – The annual operating cost for the expanded portion of Lanark Lodge has been estimated based on 6% of the current costs and revenue. The total cost attributable to the expansion portion, including staffing, maintenance and other expenditures is estimated to be $583,500 annually. Net of 85% funding, the cost would be $87,525 per annum.

(d) ***Administrative*** – The "capital infrastructure" involved, consists of development-related studies. They will be administered and implemented by existing staff and have no additional operating cost implications.

3. Capital Cost Implications

(a) ***Roads and Related*** – Capital funding is expected to occur via a combination of the current budget, development charge and other reserve funds (existing and to be accumulated), with front-end financing as required.

Over the long term, capital repair and replacement expenditures are anticipated, based on the following general schedule:

Resurfacing

Arterial road after 15 years at a cost of $60,000/lane km
Collector and other roads after 18 years at a cost of $50,000/lane km

Reconstruction

Arterial road after 25 years at a cost of $280,000/lane km
Collector and other roads after 30 years at a cost of $200,000/lane km

(b) ***Emergency Medical Facilities*** – Land ambulances would be replaced after 4.5 years.

(c) ***Homes for the Aged*** – Facilities will require substantial repair or replacement after 40 years.

(d) ***Administrative*** – Development-related studies do not, of themselves, have initial or subsequent capital cost implications. The works that they address are covered under other service headings.

4. Affordability Implications

The foregoing sections have examined the long term operating and capital cost implications of the services and infrastructure to which the development charge by-law relates. These requirements are in addition to the operating cost and capital renewal needs of the 2010 base population and existing facilities, although a portion of the capital and operating costs of these new facilities will also be the responsibility of the existing population, based on the benefits to be received.

Over the 10 year period, County population is expected to increase by 12%. Non-residential floor area is forecast to increase by 12% 2010-2020. It is anticipated that revenues from

property taxation, development charges (which only cover a portion of development-related capital costs), user charges and other revenue sources will generally increase proportionately, as a result. These revenue increases will be available to the County on a gradual basis over time, to assist in funding the foregoing, based on the averages below.

Summary of Selected County Revenue Sources
2008

Revenue Category	$	$/capita (2008 Pop. = 62,669)
Taxes (total County)	24,008,359	383
Fees, service charges	3,939,420	63
TOTAL	$27,947,779	$446

APPENDIX E
DEVELOPMENT CHARGE ECONOMIC IMPACT MATERIAL

APPENDIX E - DEVELOPMENT CHARGE ECONOMIC IMPACT MATERIAL

The following summarizes the results of previous research conducted by Watson & Associates concerning the potential impact of (increased) development charges on economic development.

1. Many municipalities impose the full residential DC and, in some cases, discount or exempt only a portion of their non-residential (i.e. industrial/commercial) charges, in the interests of attracting more of such development. Their policy position, implicitly or explicitly, is that the rate of industrial and/or commercial development may be impacted by the quantum of their DCs. Their actions suggest that this is not the case with residential development, or at least that the "growth pays for growth" philosophy is expected to be more operative in that case.

Residential Development Impacts

2. A change in DC quantum is thought by some to reflect itself directly and automatically on house prices. However, in a strong market, house prices reflect demand pressures, more than a simple cost recovery formula. DC increases are absorbed in pricing (and/or land purchase), but may not always be a significant determinant of such pricing, due to overall market dynamics. However, in poor markets, house prices may be unable to fully absorb DC increases. As a result, DC increases may impact profits and/or construction activity. Over a longer period of time, DC increases may result in compensating land price decreases, where the selling price of the final product cannot be increased sufficiently. This is particularly the case where there is a high "value-add" to the undeveloped land value.

3. The potential impact of DC quantum shifts on the residential housing market is also impacted by the competitive environment and by the price and nature of the housing involved. For example, land costs, building forms, the planning process, ease of construction, tax rates, municipal and commercial service levels and lifestyle also vary significantly between markets. It is the cumulative effect of these socio-economic forces which determines whether residential DCs will diminish a municipality's rate of residential growth. This, in turn, raises the question of whether a small reduction in residential growth, resulting from an increase in DC quantum which better equips the County to fund its growth-related servicing needs, is an acceptable trade-off.

4. Housing projects which are geared to the rental market, affordable or assisted housing, or sites which are expensive to service or remediate, could be impacted by a significant increase in DCs. For example, a DC of $1,000 is only 0.5% of a $200,000 housing price, but at the margin, that may be the difference between an acceptable financial

return and one which is not. Thus, there may be housing projects which are made less feasible as a result of a significant increase in DCs.

5. When one plots DC quantums against residential development activity amounts in different municipalities, an indirect cause and effect relationship is not apparent. That is, in part, because municipalities which are attractive, high growth areas, are able to impose high DCs as part of maintaining high service levels. Municipalities with lower market appeal tend to moderate DCs in the hopes of encouraging more growth. However, the primary determinants of the amount of residential development in a municipality generally relate more to serviced/zoned land availability, amenity/lifestyle, access to job opportunities, development industry focus, etc.

Industrial/Commercial Development Impacts

6. The decision as to whether or not Lanark should establish full cost recovery industrial/office/institutional development charges and, if so, how high they should be and whether they should vary between industrial and commercial uses, is an important policy issue. Essentially, it involves a trade-off between increased capital contributions (which must otherwise come from property taxes and/or user rates) and a potential deterrent of indeterminate size to new and expanded development activity within the County.

7. The potential impact of DC quantum shifts on the industrial and commercial market is also impacted by the competitive environment and by the price and nature of the development involved. For example, Durham Region currently partially waives DCs for industrial and office development, but imposes higher municipal taxes on these properties than surrounding municipalities. Land costs, building forms, the planning process, ease of construction, tax rates, municipal and commercial service levels and lifestyle also vary significantly between markets. It is the cumulative effect of these socio-economic forces which determines whether a significant increase to Lanark's industrial and commercial DCs will diminish the rate of growth. Since DCs provide a one-time contribution, while property taxes establish an on-going revenue stream to municipalities, this, in turn, raises the question of whether a reduction in industrial and office development, resulting from an increase in development charges, improves or diminishes the County's financial position.

   Industrial and commercial properties are generally acknowledged as paying more in property taxes than the cost of the municipal services they consume. It is this net positive contribution to municipal revenues that helps support the services and programs the County provides to its residents. The long-term fiscal sustainability of such municipal services is therefore benefited by maintaining a strong industrial and commercial property tax base.

8. Municipalities are generally more concerned with attracting industrial/commercial development, than with residential development, because the former brings local jobs, commercial services, no increased need for some municipal services, economic stimulus and more highly taxed assessment.

   In this regard, industrial development is often given added attention, in comparison with retail and service sector employment, which is generally "population-related". The latter is more captive to urban population centres than industry (for example, the automotive industry, which has located plants in smaller communities such as Alliston, Cambridge and Ingersoll).

9. Industrial site selection analysis generally focuses on non-financial matters, such as transportation access to markets, proximity to labour and suppliers, quality of life/image/ amenity and the suitability of the available real estate. Financial matters are often less important and relate more to land and construction cost, as well as property tax and utility rate costs. DCs are a relatively small component of the latter, but at the margin, can have an impact on a cumulative basis, particularly where property taxes are relatively high.

10. "Market optics" can play a role in a municipality's ability to attract industrial/commercial development. This often relates more to planning approval matters, but having discounted DCs, can be part of sending out a favourable message – once again at a price.

11. Some of the ways that are sometimes used to moderate the negative impacts of non-residential development charges include transition measures such as:

    - "grandfathering" certain types of previous approvals;
    - providing a "grace period" for the introduction of the charge;
    - phasing in the increase in the charge over a period of years;
    - leaving the indexing of the charge as a discretionary annual decision and one which can be waived by Council in poor economic periods;
    - fully or partially exempting those types of development likely to be most negatively impacted by a DC increase (subject to difficulties involved in distinguishing one type of development from another at the point of DC collection).

12. The following schedules provide information regarding development charge rates currently in effect in Lanark County and surrounding areas.

Insert 6 excel tables/schedules

APPENDIX F
PROPOSED COUNTY OF LANARK DEVELOPMENT CHARGE BY-LAW (2010)

THE CORPORATION OF THE COUNTY OF LANARK

BY-LAW NO. 2010-XXX

BEING A BY-LAW OF THE CORPORATION OF THE COUNTY OF LANARK WITH RESPECT TO DEVELOPMENT CHARGES.

WHEREAS section 2(1) of the *Development Charges Act, 1997* (hereinafter called "the Act") enables the Council of a municipality to pass by-laws for the imposition of development charges against land located in the municipality for increased capital costs required because of the increased need for services arising from development in the area to which the by-law applies;

AND WHEREAS the Council of The Corporation of the County of Lanark has made "The County of Lanark 2010 Development Charge Background Study," dated May 11, 2010, prepared by Watson & Associates Economists Ltd., available to the public at least two weeks prior to the public meeting and has given Notice in accordance with section 12 of the Act of its intention to pass a by-law under section 2 thereof and has heard all persons who applied to be heard whether in objection thereto or in support thereof;

AND WHEREAS on June 23, 2010, Council approved the Background Study, as amended, thereby indicating that it intends that the increase in the need for services attributable to the anticipated development will be met, and determined that no further public meetings were required under the Act;

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE COUNTY OF LANARK enacts as follows:

1. In this by-law,

DEFINITIONS

(a) "Act" means the *Development Charges Act, 1997, S.O. 1997, c. 27, as amended;*

(b) "agricultural use" means lands, buildings or structures, excluding any portion thereof used as a dwelling unit or for a commercial use, used or designed or intended for use for the purpose of a *bona fide* farming operation including, but not limited to, animal husbandry, dairying, livestock, fallow, field crops, removal of sod, forestry, fruit farming, greenhouses, horticulture, market gardening, pasturage, poultry keeping, and equestrian facilities;

(c) "apartment dwelling" means a dwelling consisting of four or more dwelling units, which units have a common entrance from street level and common halls and /or stairs, elevators and yards;

(d) "bedroom" means any room used or designed or intended for use as sleeping quarters including but not limited to, a den, a study, a family room or other similar use;

(e) "commercial" means any non-residential development not defined as "industrial" in this by-law;

(f) "Council" means the council of the County;

(g) "County" means the "Corporation of the County of Lanark";

(h) "detached dwelling" means a dwelling containing only a dwelling unit or a dwelling unit and an accessory apartment

(i) "development" includes redevelopment;

(j) "development charge" means a charge imposed pursuant to this by-law adjusted in accordance with Section 13;

(k) "dwelling unit" means a room or group of rooms in a dwelling used or intended to be used as a single independent and separate housekeeping unit containing a kitchen or sanitary facilities, and has a private entrance from outside the dwelling or from a common hallway or stairway inside the dwelling, but does not include a room or suite of rooms in a hotel or motel;

(l) "grade" means the average level of finished ground adjoining a building at all exterior walls;

(m) "gross floor area" means the total floor area, measured between the outside of exterior walls or between the outside of exterior walls and the centre line of party walls dividing the building from another building, of all floors above the average level of finished ground adjoining the building at its exterior walls;

(n) "hospital" means land, buildings or structures used, or designed or intended for use as defined in the Public Hospitals Act, R.S.O. 1990, c. P.40, as amended;

(o) "industrial" means any building used for or in connection with,

(i) manufacturing, producing, processing, storing or distributing something and includes a greenhouse;

(ii) research or development in connection with manufacturing, producing or processing something;

(iii) retail sales by a manufacturer, producer or processor of something manufactured, produced or processed, if the retail sales are at the site where the manufacturing, production or processing takes place; and,

(iii) office for administrative purposes, if carried out with respect to manufacturing, producing, processing, storage or distribution and in or attached to the building or structure used for that manufacturing, producing, storage or distribution;

(p) "non-residential use" means land, buildings or structures or portions thereof used, or designed or intended for a use other than a residential use;

(q) "other dwelling" means any residential dwelling which is not a detached dwelling, a semi-detached dwelling, or an apartment dwelling;

(r) "place of worship" means that part of a building or structure used for worship and that is exempt from taxation as a place of worship under the Assessment Act, R.S.O. 1990, c. A.31, as amended;

(s) "residential use" means land or buildings or structures or part thereof of any kind whatsoever used, designed or intended to be used as a residence for one or more individuals but does not include a hotel or motel;

(t) "semi-detached dwelling" means the whole of a dwelling divided vertically both above grade and below grade into two separate dwelling units.

2. SCHEDULE OF DEVELOPMENT CHARGES

(1) Subject to the provisions of this by-law, development charges against land shall be calculated and collected in accordance with the base rates set out in Schedule B, which relate to the services set out in Schedule A.

(2) The development charge with respect to the use of any land, buildings or structures shall be calculated as follows:

(a) in the case of residential development, or the residential portion of a mixed-use development, based upon the number and type of dwelling units, in accordance with Schedule B;

(b) in the case of non-residential development, or the non-residential portion of a mixed-use development, based upon the number of square feet of gross floor area of such development, in accordance with Schedule B.

(3) Council hereby determines that the development of land, buildings or structures for residential and non-residential uses have required or will require the provision, enlargement, expansion or improvement of the services referenced in Schedule A.

(4) This by-law does not provide for the phasing in of the base rates in Schedule B.

3. APPLICABLE LANDS

(1) Subject to subsections (2), (3), (4) and (7), this by-law applies to all lands in the County, whether or not the land or use is exempt from taxation under Section 3 of the *Assessment Act*, 1990, c.A..31.

(2) This by-law shall not apply to:

(a) land that is owned by and used for purposes of:

(i) a board as defined in subsection 1(1) of the *Education Act*;

(ii) the County, or any local board thereof;

(iii) An area municipality, or any local board thereof in the County;

(b) the development of a non-residential farm building used for bona fide agricultural use;

(c) a place of worship and land used in connection therewith;

(d) a hospital;

(e) an industrial building.

(3) This by-law shall not apply to:

(a) a temporary use permitted under a zoning by-law amendment enacted under section 39 of the *Planning Act*;

(b) temporary erection of a building without foundation as defined in the *Building Code Act* for a period not exceeding six (6) consecutive months and not more than six (6) months in any one calendar year on a site;

(c) development where, by comparison with the land at any time within five years previous to the imposition of the charge:

(i) no additional dwelling units are being created;

(ii) no additional non-residential gross floor area is being added.

(4) Section 2 of this by-law shall not apply to that category of exempt development described in s.s. 2(3) of the *Act* , namely:

(a) the enlargement of an existing dwelling unit or the creation of one or two additional dwelling units in an existing detached dwelling; or

(b) the creation of one additional dwelling unit in any other existing residential building.

(5) Notwithstanding subsection (4)(a), development charges shall be calculated and collected in accordance with Schedule B where the total residential gross floor area of the additional one or two dwelling units is greater than the total gross floor area of the existing dwelling unit.

(6) Notwithstanding subsection (4)(b), development charges shall be calculated and collected in accordance with Schedule B, where the additional dwelling unit has a residential gross floor area greater than,

(a) in the case of a semi-detached house, the gross floor area of the existing smallest dwelling unit, and

(b) in the case of any other residential building, the residential gross floor area of the smallest dwelling unit contained in the residential building.

(7) Section 2 of this by-law shall not apply to that category of exempt development described in s.4 of th*e Act,* and s.1 of O.Reg. 82/98, namely:

(a) the enlargement of the gross floor area of an existing industrial building, if the gross floor area is enlarged by 50 percent or less;

(b) for the purpose of (a), the terms "gross floor area" and "existing industrial building" shall have the same meaning as those terms have in O.Reg. 82/98 under the Act.

(c) Notwithstanding subsection (a), if the gross floor area is enlarged by more than 50 per cent, development charges shall be payable and collected and the amount payable shall be calculated in accordance with s.4(3) of the Act.

(8) That where a conflict exists between the provisions of this by-law and any other agreement between the County and the owner, with respect to land to be charged under this by-law, the provisions of such agreement prevail to the extent of the conflict.

4. APPLICATION OF CHARGES

(1) Subject to subsection (2), development charges shall apply to, and shall be calculated, paid and collected in accordance with the provisions of this by-law in respect of land to be developed for residential and non-residential uses within the geographical limits of the County, where,

(a) the development requires,

(i) the passing of a zoning by-law or an amendment thereto under Section 34 of the *Planning Act,* R.S.O. 1990, cP.13, as amended (the "*Planning Act*");

(ii) the approval of a minor variance under Section 45 of the *Planning Act*;

(iii) a conveyance of land to which a by-law passed under subsection 50(7) of the *Planning Act* applies;

(iv) the approval of a plan of subdivision under Section 51 of the *Planning Act*;

(v) a consent under Section 53 of the *Planning Act*;

(vi) the approval of a description under Section 9 of the *Condominium Act*, 1998 S.O. c. 19, as amended; or

(vii) the issuing of a permit under the *Building Code Act,* 1992 S.O. c. 23, as amended, in relation to a building or structure.

(2) Subsection (1) shall not apply in respect of local services as described in s.s.59(2) (a) and (b) of the Act;

5. LOCAL SERVICE INSTALLATION

Nothing in this by-law prevents Council from requiring, as a condition of any approval under s. 41, 51 or 53 of the *Planning Act.,* that the owner, at his or her own expense, shall install or pay for such local services, as Council may require, or that the owner pay for the local connection to a water, sanitary sewer or storm drainage facility related to the approval or within the area to which the approval relates.

6. MULTIPLE CHARGES

(1) Where two or more of the actions described in Section 4(1) of this by-law are required before land to which a development charge applies can be developed, only one development charge shall be calculated, paid and collected in accordance with the provisions of this by-law.

(2) Notwithstanding subsection (1), if two or more of the actions described in Section 4(1) of this by-law occur at different times, and if the subsequent action has the effect of increasing the need for municipal services as set out in Schedule A, an additional development charge shall be calculated and collected in accordance with the provisions of this by-law.

(3) If a development does not require a building permit but does require one or more of the actions described in Subsection 4(1) of this by-law, then the development charge shall nonetheless be payable in respect of any increased or additional development permitted by such action.

7. SERVICES IN LIEU

Council may authorize an owner, through an agreement under s.38 of the Act, to substitute such part of the development charge applicable to the owner's development as may be specified in the agreement, by the provision at the sole expense of the owner, of services in lieu. Such agreement shall further specify that where the owner provides services in lieu in accordance with the agreement, Council shall give to the owner a credit, without interest, against the development charge in accordance with the agreement provisions and the provisions of s.39 of the Act, equal to the reasonable cost to the owner of providing the services in lieu, as determined by the County. In no case shall the agreement provide for a credit which exceeds the total development charge payable by an owner to the County in respect of the development to which the agreement relates.

8. DEVELOPMENT CHARGE REDEVELOPMENT CREDITS

(1) Where residential space is being converted to non-residential space, the development charge equivalent that would have been payable on the residential space shall be deducted from the charge calculated on the non-residential space being added.

(2) Where non-residential space is being converted to residential space, the development charge equivalent that would have been payable on the non-residential space shall be deducted from the charge calculated on the residential units being added.

(3) An owner who has obtained a demolition permit and demolished existing dwelling units or a non-residential building or structure in accordance with the provisions of the *Building Code Act* shall not be subject to the development charge with respect to the development being replaced, provided that the building permit for the replacement residential units or non-residential building or structure is issued not more than 5 years after the date of issuance of the demolition permit and provided that any dwelling units or non-residential floor area created in excess of what was demolished shall be subject to the development charge imposed under section 2.

(4) No redevelopment credit shall be made in excess of the development charge payable for a redevelopment.

9. TIMING OF CALCULATION AND PAYMENT

(1) Development charges shall be calculated and payable in full in money or by provision of services as may be agreed upon, or by credit granted by the Act, on the date that the first building permit is issued in relation to a building or structure on land to which a development charge applies.

(2) Where development charges apply to land in relation to which a building permit is required, the building permit shall not be issued until the development charge has been paid in full to the County.

(3) Notwithstanding subsections (1) and (2), an owner and the County of Lanark may enter into an agreement to provide for the payment in full of a development charge before building permit issuance or later than the issuing of a building permit.

(4) If a development does not require a building permit, the development charge shall be calculated and paid in full at the rate in effect at the time the approval is granted as a condition of the earliest of any of the approvals required for the development and enumerated in Section 4 of this by-law.

10. BY-LAW REGISTRATION

This By-law or a certified copy of this by-law may be registered against the title to any land to which this by-law applies.

11. RESERVE FUNDS

(1) Monies received from payment of development charges shall be maintained in a separate reserve fund for each service designated in Schedule "A," plus interest earned thereon.

(2) Monies received for the payment of development charges shall be used only in accordance with the provisions of s.35 of the Act.

(3) Where any development charge, or part thereof, remains unpaid after the due date, the amount unpaid shall be added to the tax roll and shall be collected as taxes.

(4) Where any unpaid development charges are collected as taxes under subsection (3), the monies so collected shall be credited to the development charge reserve fund or funds referred to in subsection (1).

(5) The Treasurer of the County shall, commencing in 2011 for the 2010 year, furnish to Council a statement in respect of the reserve funds established hereunder for the prior year, containing the information set out in Sections 12 and 13 of O.Reg. 82/98, or any amending regulation.

12. BY-LAW AMENDMENT OR REPEAL

(1) Where this by-law or any development charge prescribed thereunder is amended or repealed by order of the Ontario Municipal Board or by resolution of the Council, the County Treasurer shall calculate forthwith the amount of any overpayment to be refunded as a result of said amendment or repeal.

(2) Refunds that are required to be paid under subsection (1) shall be paid to the registered owner of the land on the date on which the refund is paid.

(3) Refunds that are required to be paid under subsection (1) shall be paid with interest to be calculated as follows:

(a) interest shall be calculated from the date on which the overpayment was collected to the day on which the refund is paid;

(b) interest shall be paid at the Bank of Canada rate in effect on the date of enactment of this by-law.

13. DEVELOPMENT CHARGE SCHEDULE INDEXING

The development charges referred to in Schedule “B” may be adjusted annually, without amendment to this by-law, commencing on May 1, 2011, and annually thereafter on May 1, while this by-law is in force, in accordance with the most recent twelve month change in the Statistics Canada Quarterly, “Construction Price Statistics”.

14. BY-LAW ADMINISTRATION

This by-law shall be administered by the County Treasurer.

15. SCHEDULES TO THE BY-LAW

The following schedules to this by-law form an integral part of this by-law:

Schedule A - Designated Municipal Services Under this By-law

Schedule B - Schedule of Development Charges

16. DATE BY-LAW EFFECTIVE

This by-law shall come into force and effect on January 1, 2011.

17. SEVERABILITY

If, for any reason, any provision, section, subsection or paragraph of this by-law is held to be invalid, it is hereby declared to be the intention of Council that all of the remainder of this by-law shall continue in full force and effect until repealed, re-enacted or amended, in whole or in part or dealt with in any other way.

18. SHORT TITLE

This by-law may be cited as the "Lanark County Development Charge By-law"

READ A FIRST, SECOND AND THIRD TIME AND FINALLY PASSED THIS __th DAY OF _____, 2010.

_____
WARDEN

_____
CLERK

SCHEDULE "A"

(To Development Charges By-law 2010-XXX)

DESIGNATED MUNICIPAL SERVICES UNDER THIS BY-LAW

1. Roads and Related
2. Ambulance (Emergency Services)
3. Homes for the Aged
4. General Government (Studies)

SCHEDULE "B"

SCHEDULE OF DEVELOPMENT CHARGES

(To Development Charges By-law 2010-XXX)

Service	Per Residential Dwelling Unit				Non-Residential (per sq.ft. of Gross Floor Area)
	Single Detached Dwelling or Semi-Detached Dwelling Unit	Apartment Dwelling Unit - Two Bedroom or Larger	Apartment Dwelling Unit - Bachelor or One Bedroom	Other Dwelling Unit	
Ambulance	$37	$26	$16	$29	0.01
Homes for the Aged	263	$185	$115	$208	
General Government (Studies)	21	$15	$9	$17	0.02
Roads	284	$200	$124	$225	0.26
Total	**$605**	**$426**	**$264**	**$479**	**$0.29**

H:\Lanark County\Development Charges\[Lanark DC 2010.xls]By-law