

Township of Central Frontenac 2018 Road Needs Study



Prepared for:

The Township of Central Frontenac
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Submitted by:

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1 BACKGROUND

The Township of Central Frontenac commissioned The Greer Galloway Group Inc. to complete a Road Needs Study for all municipal roads within the Township.

The makeup of this type of study is intentionally designed to be general and uncomplicated. It was designed by the Ministry of Transportation so that it could be a useful tool for all municipalities, with varied financial resources, to effectively plan future capital works and improvements to their road infrastructure.

The Ministry of Transportation has created an “Inventory Manual for Municipal Roads” that provides a methodology for this type of study. It relies on the experience of the person conducting the field review and their assessment of road conditions and deficiencies. It is this manual upon which this study is based.

2 PURPOSE

In order to make the most cost-effective use of municipal expenditure on roads, accurate information related to the condition of the roads is required. Accurate assessment of the existing road structure and drainage are the two most important factors that will ultimately determine the type and amount of effort needed to maintain and/or improve the system.

The purpose of this Road Needs Study is to:

1. Collect and inventory information on the condition of the existing road system.; and
2. Based on the gathered information, recommend rehabilitation and construction strategies, and expenditures that will maximize the cost effectiveness of budgets over a period of years.

3 ROAD SYSTEM

The make-up of the municipal road system by surface type is shown in the following table:

	HCB (1)	LCB (2)	Gravel	Total
Length (km)	64	124	355	543
Length (%)	11.8	22.8	65.4	100

(1) HCB: High Class Bituminous (Hot Mix Asphalt)

(2) LCB: Low Class Bituminous (Double Surface Treatment)

Table 1: Road Network by Surface Type

The Municipality has a road system that is made up of semi-urban and rural roadside environments as shown in the following table:

	Urban	Semi-Urban	Rural	Total
Length (km)	1.5	6.4	534.1	543
Length (%)	0.3	1.2	98.5	100

Table 2: Road Network by Roadside Environment

Urban Roads are areas where there is curb and gutter on both sides of the road served with sewers, or curb and gutter on one side served with storm sewers, or paved shoulders with sewers, or subdivisions.

Semi-Urban Roads are areas still within the urban areas without curb and gutter, or sewer systems.

Rural Roads are areas with sparse development and no curb and gutter or sewer systems.

4 METHODOLOGY

The municipal road network is broken down into sections of road that are relatively consistent throughout their length in terms of surface type, condition, speed limit, cross section, or a combination of the above. For example, a road section with a hot mix asphalt surface that changes from good condition to poor condition will be broken up into separate sections or if the speed limit changes for a section of the road, this would be broken out into a separate section.

Field data is obtained through visual examination of the following features: section traffic volume estimates, maintenance demand, surface condition, posted speed limit, right of way, surface and shoulder width, and drainage. A field judgment was made recommending the type of improvement required for each road section. Road sections are evaluated based on surface conditions only, the condition of underground infrastructure is not considered in this assessment.

As this is the first Road Needs Study completed for the Township of Central Frontenac, a section number has been assigned to each road section based on the Townships existing road network maps.

4.1 Appraisal Criteria

The Road Network Inventory was appraised based on a condition rating. The condition rating is developed for each road section based on the following criteria

- Surface condition (out of 10)

- Drainage (out of 15)
- Structural Adequacy (out of 20)
- Maintenance Demand (out of 10)
- Shoulder width (out of 10, rural/semi-urban only)
- Surface width (out of 15 for rural/semi-urban, 25 for urban)

The above criteria used to calculate the condition rating (max 80)

4.2 Needs & Time of Improvement

- Geometrics (minimum tolerable average operating speed)
- Surface type, based on AADT
- Surface width
- Capacity, based on level of service
- Structural adequacy
- Drainage

The time of improvement is related to the earliest identified need in the above criteria

4.3 Rating

Road sections are classified by their recommended time of rehabilitation as “1-5 years”, “6-10 years”, or “adequate” and are also assigned a condition priority rating.

“1-5 Years” Needs

These sections of road are anticipated to need either reconstruction or resurfacing within the next 5 years based on the review of their current conditions. These sections are in poor condition or rapidly deteriorating condition and warrant improvements in the near future. These road sections can be seen in Appendix A.

“6-10 Years” Needs

These sections of road are anticipated to need either reconstruction or resurfacing within the next 6 to 10 years based on the review of their current conditions. These road sections include durable (hotmix) roads in fair condition and shorter life surface treated road surfaces. These road sections can be seen in Appendix B.

“Adequate”

These sections of road have no needs forecasted within a ten-year period.

4.4 Type of Improvement

- Spot road/intersection/drainage
- Resurfacing
- Pulverizing
- Base and surface
- Resurface and Widen
- Reconstruction
- Others...

4.5 Road System Ratings

- Priority Rating
- Priority Guide Number

5 ROAD STRUCTURE AND MAINTENANCE

All road sections in the municipality have a driving surface of hot mix asphalt (High Class Bituminous or HCB), surface treatment (Low Class Bituminous or LCB), or gravel (G/S). Each wearing surface has a different life expectancy, maintenance procedure and associated costs.

Hot Mix Asphalt

Generally, the life expectancy for an asphalt surfaced road is 20 years. However, this will vary depending on the adequacy of the initial design, maintenance program, drainage, traffic volume and traffic type.

Proper maintenance programs will maximize the life expectancy of an asphalt surface and should include the following components:

- Spot improvements to the asphalt surface;
- Spot improvements and maintenance of the roadside ditches; and,
- Crack sealing at the appropriate time.

Surface Treatment

Surface treatment is a cost- effective alternative to hot mix asphalt. A double surface treated road will have a life expectancy of 7 to 10 years if the initial design and application are adequate (surface treatment placed on a poor base, poorly drained area, or other inappropriate condition may have a life expectancy of 5 years or less).

Gravel Surface

Gravel roads, although cheaper to build, have many hidden costs associated with the maintenance of them. Proper maintenance of gravel roads includes the following components:

- Addition of appropriate amounts of gravel at the proper times;
- Drainage
- Grading; and,
- Dust control.

6 COSTING

Many road rehabilitation, maintenance and construction projects can be categorized to describe various types of improvements. These categories lend themselves to preliminary cost estimating in common units such as kilometers, tons, meters, square meters, etc.

For this study benchmark, costing was developed as shown in the following table. The costing was generated from recent construction project pricing, municipal project costs and the experience of the consultant. Costs are per km of road, based on the assumptions listed below.

Item	Surface Type	Cost
<i>Complete Urban Reconstruction</i>	Asphalt	\$950,000/km
<i>Complete Rural Reconstruction</i>	Asphalt	\$375,000/km
	Surface Treatment	\$250,000/km
<i>Resurfacing</i>	Asphalt	\$150,000/km
	Surface Treatment	\$60,000/km
	Gravel	\$20,000/km
<i>Ditching</i>	-	\$50,000/km
<i>Shoulder Rehabilitation</i>	-	\$20,000/km

Table 3: Benchmark Costing Items

- Costs for “Complete Urban Reconstruction” include full base replacement, new 7m wide 50mm hot mix asphalt surface, curb and gutter, sidewalk, and topsoil and sod. Other related costs such as property acquisition, utilities, engineering, etc. are not included.
- Costs for “Complete Rural Reconstruction” include full base replacement and new surface for a 7m wide road. A contingency for miscellaneous items such as localized grade raises, and base replacements is included in this cost.
- Costs for “Resurfacing” include the removal of the existing surface and placement of new surface material (50mm hot mix asphalt, double surface treatment, or 50mm Granular A) assuming a 7m wide road.
- Costs for “Ditching” include ditch excavation for half of the length of the road section. Ditching is only expected to be required for half of the length of the road section due to entrances, existing ditches, high points, etc.
- Costs for Shoulder Rehabilitation include removal and disposal of excess shoulder material and vegetation for the full length of the road section.
- Other related costs such as property acquisition, utilities, engineering, etc. are not included in the Benchmark Costs. Where the municipality feels these factors may impact construction, a 10% markup should be applied to items to cover these professional fees and contingencies.

7 CAPITAL EXPENDITURE PLAN

The prime deliverable of a road needs study is a capital expenditure plan. The capital plan is based on the inventory information and evaluations from the field review and the input of

senior municipal staff that has direct experience and knowledge of the needs, maintenance and use of the roads in the system.

For this study, the capital expenditure plan is in the form of a priority list of road projects for the “Now” period (2020), the “1-5 year” period (2020-2025), and the “6-10 year” period (2026-2030). See Appendix A

A summary of costs for the 1-5 category, broken down between the types of road surfaces is shown below.

	Now
Hot Mix Roads	\$5,730,000.00
Surface Treated Roads	\$3,795,000.00
Gravel and Stone Roads	\$385,000.00
Total Now Needs	\$9,550,000.00

Table 4: 1-5 year Cost Summary (Current Dollars)

For this study to be effective and useful, commitment and adherence to the adopted plan is necessary.

There are three aspects of the capital plan for the Municipality to consider and act on. The first is the project itself – a particular road section and the length of improvement. The second is the recommended improvement and the approach or scope of work to implement it. The third aspect is the estimated cost of the improvement.

Based on the Township large road network and its limited tax base it is recommended that the Township focus future construction projects on upgrading existing rural roads sections with AADT of greater 200 cars per day or greater`. It is recommended that funds spent on existing roads with AADT under 100 be spent on improving ditching and drainage. Water with in/over and around a road base can be the leading cause of the deterioration within a road network. It is recommended that the Township establish a yearly ditching program to improve the existing drainage on the lower volume roads.

Presented in the appendix is a recommended capital expenditure program commencing in 2020. The individual projects included in the capital expenditure plan have been selected, scoped and costed using the field assessments, the benchmark costing noted in **Table 4**, and comments from municipal staff. From year to year, it will be necessary for staff and council to review individual project development, make necessary adjustments in future activity, and reassign budget commitments, as cost estimates are refined, circumstances change, and individual conditions deteriorate.

7.1 Best Management Practices

The key to managing a municipal road network is properly identifying the timing and type of maintenance and rehabilitation strategies. This practice stems from the fact that a pavement's structural integrity does not deteriorate linearly over time. A road structure generally provides a constant, acceptable condition for the first part of its service life before beginning to deteriorate rapidly. In poor examples of road maintenance and preservation, maintenance and rehabilitation measures are not taken until structural failure or noticeable changes in ride quality become apparent. The unfortunate consequence of this example is that maintenance and rehabilitation strategies become increasingly more expensive over the service life of the road structure.

There is opportunity for substantial cost savings when maintenance or rehabilitation strategies are undertaken prior to the road structure becoming compromised. This principle has application to each of the classes of roads maintained by the Municipality. Significant cost savings will result from proactive intervention rather than simply waiting as long as possible before performing maintenance.

8 FIELD REVIEW OBSERVATIONS AND COMMENTS

Municipal roads provide service to all residents – for its farming, tourist, business and institutional needs through connections to other municipal roads and Highway 7. The major urban/ commercial center within the Township is Sharbot Lake. Sharbot Lake serve as a center of residential, commercial, and institutional development to service the surrounding rural areas (there are also a number of smaller hamlet communities along the Hwy #7 and Road 38).

During the field review, roads were found to be in a generally well-maintained state of repair which is a credit to Municipal Public Works Staff charged with the responsibility of operating and maintaining the system.

Many of the existing roads in the township where construction in the late 1800's and early 1900's to accommodate expanding homesteading farming operations, logging operations/camps and mining operations. Because of this and the general presence of bed rock close to the surface, many of the Township roads have been constructed to match the vertical alignment of the existing bedrock. Horizontal alignment has been dictated by the presence of beaver ponds, swamps, lakes and rock out crops. It is not practical to expect the Township to upgrade the vertical and Horizontal alignment of existing road of this nature to todays standards.

The overall condition of the road system – geometric features such as right of way, road widths, rock outcrop encroachments, horizontal curves, hills, ditches, quality of road base construction (depth of gravel) etc. is directly related to municipal revenue that has been allotted to the road infrastructure. The Township of Central Frontenac is similar to many other rural municipalities in the province in that local tax revenue and upper level government support has fallen far short of the financial needs to provide a level of service which meets the needs of the system and the expectations of users.

While a review of municipal budgets and financial commitments was not completed it is likely that greater funds will be needed in the future to maintain the current level of performance.

Potential consequences of delaying/reducing the road maintenance program include:

- Deterioration of road conditions;
- Compromising of road safety;
- Deterioration of the existing level of service to a point at which it will become inadequate;
- Detachment of local communities;
- Diminished tourism and positive public perception;
- Reduced efficiency of movement of goods and services;
- Damage to vehicles due to road conditions;
- Decreased emergency response times.

9 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on the observations of the field review, discussions with senior municipal staff and general knowledge of the region, the following conclusions are put forward.

- The Township of Central Frontenac has approximately 543 km of roads;
- 0.3% of the road system has been constructed to an urban cross section, 1.2% has been constructed to a semi-urban cross-section, and 98.5% of the road system has been constructed to a rural cross section;
- Approximately \$9,550,000.00 is required in 2020-205 for reconstruction and resurfacing projects to maintain the existing level of service;

Recommendations

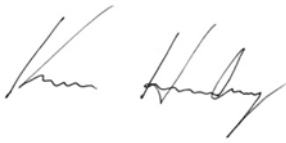
The following recommendations are put forward taking into account: the safety of the users of the system and the corresponding liability risk to the municipality, the cost of and revenue available for capital improvement, and the cost effectiveness of recommended expenditures.

- Prioritize, plan and implement rehabilitation and improvement projects based on the attached capital improvement plan;
- Implement a yearly ditching program to ensure existing drainage system is working correctly as this is the cheapest and easiest way to improve the condition of the road network.
- Upgrade road surfaces from gravel to surface treatment to hot mix asphalt based on proven adequacy of the road base to support the upgraded surface. Commit to base improvement as necessary to ensure its adequacy;

- A regular traffic counting program should be commenced, completing the entire road network on a three to five-year cycle on a continuing basis;
- The condition of the road system should be reviewed on a regular basis in the spring of each year when frost conditions are leaving the roads to obtain realistic and up-graded structural adequacy ratings of the roads before developing the road rehabilitation program for the up-coming year.

GREER GALLOWAY

CONSULTING ENGINEERS



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Project Manager



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SCHEDULE A – MUNICIPALITY ROAD NETWORK PLAN

Municipality Road Network Plan

Street Name	From	To
Access Road	Highway 7 OR Burney Point Road	Town Line Road
Airport Way	Baker Valley Road	Gregory Way
Alf Patterson Road	Crow Lake Road	Oak Bluffs Road
Alf Patterson Road	Oak Bluffs Road	Hansen Lane
Anderson Road North	Old Anderson Road	Crow Lake
Anderson Road South	Old Anderson Road	South Frontenac Boundary
Anne Street	Bridge Street	Arden Road
Antoine Road	Wagner Road OR Cedar Avenue	Antoine Road South End
Arden Road	Clark Road	Newlove Road
Arden Road	Clark Road	Railway Street
Arden Road	Price Road	Highway 7 OR Henderson Road
Arden Road	Railway Street	Price Road
Arden Road	Newlove Road	Southam Road
Arden Road	Southam Road	Cranberry Lake Road
Arden Road	Cranberry Lake Road	Stone Mills Boundary
Ardoch Road	Road 509	Over the hills Road
Ardoch Road	Over the hills Road	North Frontenac Boundary
Arena Boundary Road	Arena Boundary Road West End	Beattie Road
Arena Boundary Road	Beattie Road	N. Oak Flats Road
Armstrong Road	Fall River Road	Cross Road
Armstrong Road	Cross Road	Rock Lake Road
Armstrong Road	Rock Lake Road	Tay Valley Township
Art Duffy Road	North end of Art Duffy	at Zealand Road
Astor Drive	Cranberry Lake Road	Astor Drive North End
Babcock Road	Mclean Road	Richmond Road
Babcock Road	Richmond Road	Middle Road
Babcock Road	Marshall Cota Road	Middle Road
Babcock Road	Marshall Cota Road	Long Lake Road OR Elgin Young Road
Baily Road	Guigie Road	South End
Baker Valley Road	Henderson Road	Airport Way
Baker Valley Road	Airport Way	Harrington Lane
Baker Valley Road	Harrington Lane	Red Oak Rd
Ball Road	Road 38	Hoover Lane
Ball Road	Hoover Lane	Ball Road North End
Bass Lake Road	Frontenac Road OR Ferguson Road	Bass Lake East End
Beattie Road	Arena Boundary Road	Beattie Road North End
Beaver Creek Lane	Richardson Road	Beaver Creek Lane South End
Bebris Road	West End	East End
Bell Line Road	West End Lane	Seouls Corners Lane
Bell Line Road	Seouls Corners Lane	Swamp Road
Bell Line Road	Swamp Road	Highway 7
Bell Line Road	West End Lane	Bolton Lane
Bell Line Road	Bolton Lane	Tamarack Trail
Bell Line Road	Tamarack Trail	Elijah Road
Bell Line Road	Elijah Road	Fanning Lane
Bell Line Road	Fanning Lane	Town Line Road
Bell Line Road	Town Line Road	Road 509
Bell Line Road	Road 509	Macpherson Road
Bell Line Road	Macpherson Road	Zealand Road
Bender Road	Tryon Road	Bender Road West End
Bethany Court	Clark Road	Bethany Court North End
Big Bay Drive	Cranberry Lake Road	Big Bay Drive End
Blue Heron Ridge	West end Blue Heron Ridge	Thrush Trail
Blue Heron Ridge	Thrush Trail	Henderson Rd
Blueberry Road	Hwy 7	North End
Bobby Road	Long Lake Road	Stone House Road OR Dawson Road

Street Name	From	To
Boomhauer Road	Cranberry Lake Road	Boomhauer Road End
Bordenwood Road	Henderson Road	Dead Creek
Bordenwood Road	Dead Creek	Richardson Road
Bordenwood Road	Richardson Road	Bordenwood south ends
Bradley Road	Mountain Grove Road	Bradley Road East End
Brash Lane	Crow Lake Road	Brash Lane South End
Breen Lane	Wilkinson Road	Breen Lane South End
Brewer Road	Frontenac Road	Duncan Lane
Brewer Road	Duncan Lane	Country Lane
Brewer Road	Country Lane	Oakwood Lane
Brewer Road	Oakwood Lane	Road 38
Bridge Street	Elm Tree Road	Anne Street
Brock Road	Mountain Grove Road OR Ferguson Road	Jiggs Way
Brock Road	Jiggs Way	Clark Road
Browns Road	Oak Flats Road	Browns Road South End
Bull Lake Road	Cranberry Lake Road OR Elm Tree Road	Woodland Park Drive
Bull Lake Road	Woodland Park Drive	Elm Tree Road
Burke Settlement Road	Road 509	Over the hills Road
Burke Settlement Road	Over the hills Road	West End
Burney Point Road	Buell Lane Road OR Arthur Lane	Timber Lane
Burney Point Road	Timber Lane	Highway 7
Bush Road	Echo Lake Road	Boat Launch
Camp Oconto Road	Road 38	Camp Oconto Road West End
Cannon Road	Elizabeth Street	Road 38
Cardinal Heights Drive	Clark Road	Phoebe Lane
Cardinal Heights Drive	Phoebe Lane	Cardinal Heights Drive North End
Cedar Avenue	Wagner Road	Cedar Avenue North End
Church Street	Bridge Street	end
Clarendon Road	Road 509	School House Road
Clarendon Road	School House Road	1st section of 672.53m
Clarendon Road	1st section of 672.53m	Accumulative 2nd section 3398.30m
Clarendon Road	3rd -section from section 3398.30m	Willis Armstrong Road
Clarendon Road	Willis Armstrong Road	East End
Clark Road	Brock Road	Clark Road South End
Clark Road	Brock Road	Bethany Court
Clark Road	Bethany Court	Arden Road
Clay Creek Road	Hwy 509	Clay Creek Road north end
Clement Road	Road 38	Wagner Road
Clow Road	Road 38	Road 38
Clow Road	Oak Flats Road	Giles Lane
Clow Road	Giles Lane	Clow Road North End
Columbine Trail	Elm Tree Road	Columbine Trail End
Conboy Road	Hwy 509	Bell Line Road
Connor Road	Henderson Road	Conner Road north end
Country Lane	Brewer Road	Country Lane East End
Coutlee Point Lane	Shibley Road	Coutlee Point Lane east end
Cox Road	Arden Road	Arden Gardens Trail
Cox Road	Arden Gardens Trail	Cox Road South End
Craig Road	Hinchinbrooke Road North	South Frontenac Boundary
Cranberry Lake Road	Arden Road	Astor Drive
Cranberry Lake Road	Astor Drive	Boomhauer Road
Cranberry Lake Road	Boomhauer Road	Bull Lake Road OR Elm Tree Road
Cronk Road	Mountain View Estates Lane	Wagarville Road
Cross Road	Wilson Road	Adjacent Loon Lake at 4111.77 m
Cross Road	Adjacent Loon Lake at 4111.77 m	Armstrong Road
Crotch Lake Trail	Cranberry Lake Road	Crotch Lake Trail End
Crow Lake Road	Road 38	CNR Tracks OR N. Anderson Road
Crow Lake Road	Road 38	Wemp Road

Street Name	From	To
Crow Lake Road	Wemp Road	2246 Crow Lake Road
Crow Lake Road	2246 Crow Lake Road	Anderson Road
Crow Lake Road	Crow Lake Road East	CNR Tracks
Crow Lake Road	Tay Valley Boundary	Crow Lake East
Crow Lake Road	Brash Lane	Boundary
Curls Bay Road	Curls Bay Road South End	Curls Bay Road North End
Davey Road	Oak Flats Road	Davey Road South End
Dawson Road	Bobby Road OR Stone House Road	Dawson Road North End
Dickson Crescent	Dickson Crescent South End	Dickson Crescent North End
Dorothy Peters Road	Dorothy Peters Road South End	Dorothy Peters Road North End
Drew Point Road	Drew Point Road South End	Drew Point Road North End
Ducharme Road	Road 38	Long Lake Road
Dwyer Lane	Dwyer Road	Sparks Lane
Dwyer Lane	Sparks Lane	Dwyer Lane North End
Dwyer Road	Wilkinson Road	Dwyer Road North End
Eagle Lake Road	Road 38	Eagle Lake Road North End
Echo Lake Road	Oak Flats Road	Moore Road
Echo Lake Road	Moore Road	Raymo Road
Echo Lake Road	Fourth Lake Road	Bush Road
Echo Lake Road	Bush Road	Raymo Road
Elgin Young Road	Long Lake Road	Frontenac Road
Elizabeth Street	Elizabeth Street South End	Elizabeth Street North End
Elm Street	Cedar Avenue	Elm Street South End
Elm Tree Road	Bull Lake Road OR Cranberry Lake Road	Wedlock Road
Elm Tree Road	Wedlock Road	Hayes Road OR Hinchey Road
Elm Tree Road	Garrison Lake Road	Scott Road
Elm Tree Road	Scott Road	Gendron Road
Elm Tree Road	Gendron Road	Bull Lake Road
Elm Tree Road	Bull Lake Road	Westgate Road
Elm Tree Road	Westgate Road	Hinchey Road OR Hayes Road
Elm Tree Road	Woodcock Rd	Garrison Lake Road
Elm Tree Road	Arden Road	Woodcock Rd
Evergreen Road	Evergreen Road South End	Evergreen Road North End
Fall River Road	Highway 7	Armstrong Road
Ferguson Road	Mountain Grove Road OR Brock Road	Frontenac Road OR Bass Lake Road
Fifth Lake Road	Bearance Hicks Lane	Fifth Lake Road South End
Fifth Lake Road	Bearance Hicks Lane	Fourth Lake Lane
Fifth Lake Road	Fourth Lake Road	Wagarville Road OR Mclean Road
Fish Creek Road	Oclean Lane	Fish Creek Road East End
Fish Creek Road	Road 38	Oclean Lane
Fishermans Cave Lane	Bull Lake Road	Fishermans Cave Lane End
Fourth Lake Road	Fourth Lake Road South End	Echo Lake Road
Fourth Lake Road	Echo Lake Road	Fifth Lake Road
Fox Road	Babcock Road	Long lake Road
Fream Street	Road 38	Fream Street North End
Frontenac Road	Ducharme Road	Elgin Young Road
Frontenac Road	Elgin Young Road	Tryon Road
Frontenac Road	Tryon Road	Thompson Road
Frontenac Road	Highway 7	Bass Lake Road OR Ferguson Road
Frontenac Road	Bass Lake Road OR Ferguson Road	Dawson Road
Frontenac Road	Dawson Road	Brewer Road
Frontenac Road	Brewer Road	Thompson Road
Gardiners Road	Cranberry Lake Road	Gardiners Road End
Garret Street	Elizabeth Street	Garret Street South End
Garrison Lake Road	Elm Tree Road	spruce trail
Gaylord Road	Henderson Road	North End
Gendron Road	Elm Tree Road	Gendron Road End
Godfrey Road	Godfrey Road South End	Godfrey Road North End
Good Road	Long Lake Road	Good Road North End

Street Name	From	To
Goodfellow Road	Road 38	Villalta Lane
Gordon Crescent	Gordon Crescent South End	Gordon Crescent North End
Graham Road	Henderson	Henderson Road
Gray Road	Mountain Grove Road	Gray Road West End
Gregory Way	Airport Way	Gregory Way East End
Guigue Road	Fall River Road	Warrington Road
Guigue Road	Warrington Road	Guigue Road West End
Hagan Road	Crow Lake Road	Manns Lane
Hamilton Lane	Road 38	Hamilton Lane West End
Hamptons Road	Hamptons Road South End	Hamptons Road North End
Hannah Road	Hannah Road West End	Hannah Road East End
Harold Road	Highway 7	Harold Road North End
Hayes Road	Elm Tree Road	Hayes Road West End
Henderson Road	Hwy 7	Graham Road North End
Henderson Road	Graham Road North End	Hungry Bay Rd
Henderson Road	Hungry Bay Rd	Gaylord Rd
Henderson Road	Gaylord Rd	Kirk Kove Rd
Henderson Road	Kirk Kove Rd	Veley Rd
Henderson Road	Veley Rd	Shorts Road
Henderson Road	Shorts Road	North Frontenac Boundary
Hill Road	Westport Road OR Hinchinbrooke Road North	Hill Road North End
Hill Top Road	Thompson Road	Long Lake Road
Hinchey Road	Elm Tree Road	Hinchey Road North End
Hinchinbrooke Road North	Westport Road	Township of South Frontenac Limits
Homestead Road	Matthew Street	Avery Lane
Howes Lane	Long Lake Road	Howes Lane West End
Hughes Road	Price Road	Highway 7
Hungry Bay Road	Henderson Road	Hungry Bay Road East End
Island View Lane	Long Lake Road	Island View Lane South End
Johnston Road	Price Road	Burnese Lane
Kellar Road	Mountain Grove Road	Kellar Road West End
Kennebec Road	North Addington Limits	Henderson Road
Kingston Line Road	Willis Armstrong Road	County of Lanark Limits
Kirk Kove Road	Henderson Road	Steiger Road
Kirk Kove Road	Steiger Road	Big Gull Lane
Lakeshore Road	Baker Valley Road	Lakeshore Road South End
Leggat Lake Road	Ducharme Road	Leggat Lake Road North End
Legion Road	Cannon Road	Legion Road North End
Lewis Road	Bell Line Road	Maintenance Limits
Long Lake Road	Wagarville Road	Good Road
Long Lake Road	Middle Road	Stinchcombe Road
Long Lake Road	Opeongo Point Lane	Minnies Lane
Long Lake Road	Opeongo Point Lane	Stinchcombe Road
Long Lake Road	Hill Top Road	Fox Road
Long Lake Road	Fox Road	Bobby Road
Long Lake Road	MacCrimmon Road OR Mountain Grove Road	Bobby Road
Long Lake Road	Good Road	Minnies Lane
Long Lake Road	Middle Road	Hill Top Road
Louden Lane (Not in Maps)**	MacCrimmon Road	Louden Road South End
MacCrimmon Road (Varies)	MacCrimmon Road South End	Long Lake Road OR Mountain Grove Road
Macdonnell Road	Willis Armstrong Road	Macdonnell Road South End
Macpherson Road*	Bell Line Road	Macpherson Road North End
Maplewoods Circle	Village Woods Drive	Maplewoods Circle North End
Marshall Cota Road	Babcock Road	Marshall Cota Road South West End
Mary Moore Road (Varies)	South Limits	W.Second Lake Road-10 OR S. Wilkinson Road
Mary Webster Road*	Road 509	South End

Street Name	From	To
Matthew Street	Elizabeth Street	Matthew Street South End
Mclean Road	Stub Creek Lane	Welly Smith Road
Mclean Road (Varies)	Wagarville Road OR Fifth Lake Road	Stub Creek Lane
Mclean Road (Varies)	Welly Smith Road	Babcock Road
Mclean Road (Varies)	Long Lake Road	Derven Lane
Mclean Road (Varies)	Derven Lane	Babcock Road
Mcquaid Road	Fall River Road	East End
Medical Centre Road	Road 38	Matthew Street
Mica Mine Lane	Opeongo Point Lane	Mica Mine Lane North End
Middle Road	Babcock Road	Long Lake Road
Mill Road	Mountain Grove Road	Frontenac Road
Minnies Lane*	Long Lake Road	Minnies Lane South End
Moon Road	Oak Flats Road	Moon Road North End
Moore Road (Varies)	Echo Lake Road	Moore Road West End
Mountain Grove Road	MacCrimmon Road OR Long Lake Road	Kellar Road
Mountain Grove Road	Bradely Road	Highway 7
Mountain Grove Road (varies)	Kellar Road	Bradley Road
Mountvalle Point Road	Guigie Road	West End
Nash Court* Not a road	Arden Road	Nash Court South End
Neadow Road (Varies)	Long Lake Road	Neadow Road North End
Nelson Road*	Burney Point Road	Nelson Road South End
Nordic Road	Henderson Road	Nordic Road East End
North Road	Barr Lane	North Road North End
North Road (Varies)	Highway 7	Barr Lane
Oak Flats Road	Arena Boundary Road	Moon Road
Oak Flats Road	Moon Road	Clow Road
Oak Flats Road	Second Lake Road	Browns Road
Oak Flats Road	Browns Road	Echo Lake Road
Oak Flats Road	Echo Lake Road	Davey Road
Oak Flats Road	Davey Road	Struthers Road
Oak Flats Road	Struthers Road	Clow Road
Old Anderson Road	Crow Lake Road	Anderson Road North
Old Thirteen Island Lake Lane *	Hwy 38	Thirteen Island Lake Road
Old Thirteen Island Lake Road	Westport Road	Old Thirteen Island Lake Road South End
Olden Park Road*	Highway 7	Olden Park Road North End
Opeongo Point Lane	Long Lake Road	Campbell Lane
Opeongo Point Lane	Campbell Lane	Opeongo Point Lane South End
Oso Road	Road 509	Oso Road East End
Over The Hills Road	Ardoch Rd	Boles School Road
Over The Hills Road	Boles School Road	1283 Over the Hills Road
Over The Hills Road*	1283 Over the Hills Road	1128 Over the Hills Road
Over The Hills Road*	1128 Over the Hills Road	1025 Over the Hills Road
Over The Hills Road*	Lindsay Burke Road	445m from Lindsay Burke Road
Parks Road*	Cranberry Lake Road	Parks Road End
Patridge Trail (Not in Maps)**	Blue Heron Ridge	North End
Piccadilly Road	N.Oak Flats Road	Road 38
Pit Road*	Arden Road	Pit Sign
Price Road	Mountain Grove Road	Ridgeland Road
Price Road	Ridgeland Road	Johnston Road
Price Road	Hughes Road	Arden Road
Price Road	Hughes Road	Arden Road
Price Road (Varies)	Johnston Road	Hughes Road
Public Beach Road*	Long Lake Road	Public Beach Road East End
Queen Street*	Arden Road	Queen Street South End
Railway Street	Arden Road	Elm Tree Road
Raymo Road	Echo Lake Road	Wagarville Road
Red Oak Road (Not in Maps)**	Baker Valley Road	Bebriis Road
Richardson Road	Beaver Creek Lane	Henderson Road

Street Name	From	To
Richmond Road	Babcock Road	Richmond Lane
Ridgeland Road (varies)	Price Road	Ridgeland Road South End
Road 38	Road 38 South End	Westport Road
Road 38	Westport Road	Forty Foot Road
Road 38	Forty Foot Road	White Lake Road
Road 38	White Lake Road	Ball Road
Road 38	Ball Road	Phillips Lane
Road 38	Phillips Lane	York Road South End
Road 38	York Road South End	Wagarville Road
Road 38	Wagarville Road	Hannah Road East End
Road 38	Hannah Road East End	Fish Creek Road
Road 38	Fish Creek Road	Fream Street
Road 38	Fream Street	Curls Bay Road North End
Road 38	Curls Bay Road North End	Camp Oconto Road
Road 38	Camp Oconto Road	Vinkle Road
Road 38	Vinkle Road	Crow Lake Road
Road 38	Crow Lake Road	Shibley Road
Road 38	Shibley Road	Clement Road
Road 38	Clement Road	Wagner Road
Road 38	Wagner Road	Wallroth Lane
Road 38	Wallroth Lane	Gordon Crescent North End
Road 38	Gordon Crescent North End	Zealand Road
Road 509	Oso Rd	Township Boundary
Road 509	Conboy Rd	Oso Rd
Road 509	Hwy 7	Conboy Rd
Robert Street	Road 38	Elizabeth Street
Rock Lake Road (Varies)	Armstrong Road	South End
Rossland Lane	Harrington Lane	Rossland Lane East End
Round Lake Road*	Road 509	East End
Roy Benn Lane*	Stinchcombe Road	Roy Benn Lane South End
Rudy Lane*	North Road	Rudy Lane West End
School House Road (varies)	Clarendon Road	Road 509
Scott Road	Elm Tree Road	why #7
Second Lake Road	E.Second Lake Road OR S. Oak Flats Road	Arena Boundary Road
Second Lake Road (Varies)	S.Mary More Road OR N.N. Wilkinson Road	Second Lake Road
See Drive	Cranberry Lake Road	See Drive End
Shibley Road	Road 38	Macleod Lane
Shibley Road	Coutlee Point Lane	Shibley Road North End
Shorts Road*	Henderson Road	Shorts Road East End
Southam Road*	Arden Road	Southam Road North End
St. Georges Lake Road	Road 38	St. Georges Lake Road West End
Steiger Road	Kirk Cove Road	West End
Stinchcombe Road	Babcock Road	Long Lake Road
Stone House Road	Bobby Road OR Dawson Road	Stone House Road South End
Struthers Road	Oak Flats Road	Struthers Road North End
Summit Road	Nelson Road	Summit Road South Road
Thirteen Island Lake Road*	Westport Road	13 Island Lake Lane
Thompson Road (Varies)	Frontenac Road	Long Lake Road
Town Line Road (Not in Maps)**	Access Road	Bell Line Road
Town Line Road (Varies)	Highway 7	Access Road
Trillium Road (Varies)	Wagner Road	Trillium Point Road North End
Tryon Road	Williams Lane	Two Loon Lane
Tryon Road	Frontenac Road	Williams Lane
Tryon Road	Two Loon Lane	Bertrim Lane
Tryon Road	Bertrim Lane	Bender Road
Tryon Road (Varies)	Bender Road	Road 38
Turner Way	Airport Way	Turner Way West End
Veley Road (varies)	Henderson Rd	Boat Launch

Street Name	From	To
Veley Road (varies)	Boat Launch	East End
Village Woods Drive	Hwy 38	Windwood Drove
Vinkle Road (Varies)	Road 38	Inkle Road South End
Wagarville Road	Cronk Road	Raymo Road
Wagarville Road (Slight Vary)	Raymo Road	Road 38
Wagarville Road (varies)	Fifth Lake Road OR Mclean Road	Cronk Road
Wagner Road	Road 38	Clement Road
Wagner Road	Clement Road	Wagner Road North End
Walker Road	Wilkinson Road	Walker Road East End
Waller Lane*	Long Lake Road	Waller Lane North End
Warrington Road	Guigie Road	South End
Wedlock Road*	Elm Tree Road	Wedlock Road End
Wemp Road	Crow Lake Road	Wemp Road North End
Westgate Road (varies)	Elm Tree Road	Highway 7
Westport Road (varies)	Road 38	Hill Road OR Hinchinbrooke Road North
Westport Road (varies)	Hinchinbrooke Road North OR Hill Road	South Frontenac Boundary
Whan Road*	Brewer Road	Whan Road South End
White Lake Road (varies)	Road 38	South Frontenac Boundary
Wilkinson Road	Mary Moore Road OR Second Lake Road	Walker Road
Wilkinson Road	Walker Road	Fourth Lake Lane Road
Willis Armstrong Road (varies)	Clarendon Road	Macdonnell Road
Willis Armstrong Road (varies)	Macdonnell Road	Kingston Line Road
Willis Armstrong Road (varies)	Kingston Line Road	Zealand Road
Willy Smith Road*	Mclean Road	Willy Smith Road South End
Wilmack Road (Varies N vs S)	Highway 7	Wilmack Road South End
Wilson Road	Cross Road	Crow Lake Road
Windwood Drive	Village Woods Drive	Road 38
Wing Crescent	Wing Crescent South End	Wing Crescent North End
WoodCock Road	Elm Tree Road	end
Woodland Park Drive	Bull Lake Road	Woodland Park Drive End
York Road East	York Road South End	York Road North End
York Road West	York Lane South End	York Road North End
Zealand Road	Highway 7	Highway 38
Zealand Road	Highway 7	Bell Line Road
Zealand Road	Bell Line Road	Tay Valley Township

APPENDIX A – 1 – 5 YEAR PLAN

Year 1-5 Reconstruction Plan

Street Name	From	To	Length (km)	Surface Type	Boundary Road	Roadside Environment	Existing Class	Road Needs	Repair Cost
Westport Road	Road 38	Hinchinbrooke Road North	2.10	HCB	N	Rural	500	Ashpalt, Ditching	\$420,000.00
Westport Road	Hinchinbrooke Road North	South Frontenac Boundary	2.00	HCB	N	Rural	500	Ashpalt, Ditching	\$2,340,000.00
			4.10						\$2,760,000.00
Henderson Road	Hwy 7	Graham Road North End	1.10	LCB	N	Rural	400	Surface Treatment, Ditching	\$121,000.00
Henderson Road	Graham Road North End	Hungry Bay Rd	1.30	LCB	N	Rural	400	Surface Treatment, Ditching	\$143,000.00
Henderson Road	Hungry Bay Rd	Gaylord Rd	3.60	LCB	N	Rural	400	Surface Treatment, Ditching	\$396,000.00
Henderson Road	Gaylord Rd	Kirk Kove Rd	2.10	LCB	N	Rural	400	Surface Treatment, Ditching	\$231,000.00
Henderson Road	Kirk Kove Rd	Veley Rd	1.20	LCB	N	Rural	400	Surface Treatment, Ditching	\$132,000.00
Henderson Road	Veley Rd	Shorts Road	4.80	LCB	N	Rural	400	Surface Treatment, Ditching	\$528,000.00
Henderson Road	Shorts Road	North Frontenac Boundary	1.80	LCB	N	Rural	400	Surface Treatment, Ditching	\$198,000.00
			15.90						\$1,749,000.00
Crow Lake Road	2246 Crow Lake Road	Anderson Road	0.90	LCB	N	Rural	300	Paving, Ditching	\$180,000.00
Crow Lake Road	Crow Lake Road East	CNR Tracks	1.40	LCB		Semi-Urban	300	Paving, Urbanization	\$1,330,000.00
Crow Lake Road	Tay Valley Boundary	Crow Lake East	5.50	LCB		Rural	300	Paving Ditching	\$1,100,000.00
									\$2,610,000.00
Second Lake Road	S.Mary More Road	Oak Flats	5.50	G/S	N	Rural	200	Ditching , Granular	\$385,000.00
									\$385,000.00
Arden Road	Newlove Road	Southam Road	1.70	LCB	N	Rural	400	Ditching, Surface Treatment	\$187,000.00
Arden Road	Clark Road	Newlove Road	2.20	LCB	N	Rural	400	Ditching, Surface Treatment	\$242,000.00
Arden Road	Southam Road	Cranberry Lake Road	2.30	LCB	N	Rural	400	Ditching, Surface Treatment	\$253,000.00
									\$682,000.00
Total									\$8,186,000.00

APPENDIX B – 5 – 10 YEAR PLAN

Year 5-10 Reconstruction Plan

Street Name	From	To	Length (km)	Surface Type	Boundary Road	Roadside Environment	Existing Class	Road Needs	Replair Cost
Brock Road	Mountain Grove Road	Jiggs Way	1.70	LCB	N	Rural	200	Ditching, Surface Treatment	\$187,000.00
Brock Road	Jiggs Way	Clark Road	2.50	LCB	N	Rural	200	Ditching, Surface Treatment	\$275,000.00
									\$462,000.00
Zealand Road	Highway 7	Bell Line Road	5.00	LCB	N	Rural	200	Ditching, Surface Treatment	\$550,000.00
									\$550,000.00
Road 509	Oso Rd	Township boundry	6.00	LCB	N	Rural	400	Ditching, Surface Treatment	\$660,000.00
Road 509	Conboy Rd	Oso Rd	2.80	LCB	N	Rural	400	Ditching, Surface Treatment	\$308,000.00
Road 509	Hwy 7	Conboy Rd	2.80	LCB	N	Rural	400	Ditching, Surface Treatment	\$308,000.00
									\$1,276,000.00
Oak Flats Road	Arena Boundary Road	Moon Road	1.60	LCB	N	Rural	300	Ditching, Surface Treatment	\$176,000.00
Oak Flats Road	Moon Road	Clow Road	2.00	LCB	N	Rural	300	Ditching, Surface Treatment	\$220,000.00
Oak Flats Road	Second Lake Road	Browns Road	1.30	G/S	N	Rural	200	Ditching, Surface Treatment	\$143,000.00
Oak Flats Road	Browns Road	Echo Lake Road	0.60	G/S	N	Rural	200	Ditching, Surface Treatment	\$66,000.00
Oak Flats Road	Echo Lake Road	Davey Road	1.10	G/S	N	Rural	200	Ditching, Surface Treatment	\$121,000.00
Oak Flats Road	Davey Road	Struthers Road	1.20	LCB	N	Rural	300	Ditching, Surface Treatment	\$132,000.00
									\$858,000.00
Ardoch Road	Road 509	Over the hills Road	2.20	LCB	N	RURAL	400	Ditching, Surface Treatment	\$242,000.00
Ardoch Road	Over the hills Road	North Frotenac Boundary	3.80	LCB	N	RURAL	400	Ditching, Surface Treatment	\$418,000.00
									\$660,000.00
Elizabeth Street	Elizabeth Street South End	Elizabeth Street North End	0.80	HCB	n	Urban	100	Complete Urban Reconstruction	\$760,000.00
									\$760,000.00
Mill Road	Mountain Grove Road	Frontenac Road	2.00	G/S	N	Rural	100	Ditching, Gravel	\$220,000.00
									\$220,000.00
Total									\$4,786,000.00

APPENDIX C - ADEQUATE

Adequate Road List

Street Name	From	To
Access Road	Highway 7 OR Burney Point Road	Town Line Road
Airport Way	Baker Valley Road	Gregory Way
Alf Patterson Road	Crow Lake Road	Oak Bluffs Road
Alf Patterson Road	Oak Bluffs Road	Hansen Lane
Anderson Road North	Old Anderson Road	Crow Lake
Anderson Road South	Old Anderson Road	South Frontenac Boundary
Anne Street	Bridge Street	Arden Road
Antoine Road	Wagner Road OR Cedar Avenue	Antoine Road South End
Arden Road	Clark Road	Railway Street
Arden Road	Price Road	Highway 7 OR Henderson Road
Arden Road	Railway Street	Price Road
Arden Road	Cranberry Lake Road	Stone Mills Boundary
Arena Boundary Road	Arena Boundary Road West End	Beattie Road
Arena Boundary Road	Beattie Road	N. Oak Flats Road
Armstrong Road	Fall River Road	Cross Road
Armstrong Road	Cross Road	Rock Lake Road
Armstrong Road	Rock Lake Road	Tay Valley Township
Art Duffy Road	North end of Art Duffy	at Zealand Road
Astor Drive	Cranberry Lake Road	Astor Drive North End
Babcock Road	Mclean Road	Richmond Road
Babcock Road	Richmond Road	Middle Road
Babcock Road	Marshall Cota Road	Middle Road
Babcock Road	Marshall Cota Road	Long Lake Road OR Elgin Young Road
Baily Road	Guigie Road	South End
Baker Valley Road	Henderson Road	Airport Way
Baker Valley Road	Airport Way	Harrington Lane
Baker Valley Road	Harrington Lane	Red Oak Rd
Ball Road	Road 38	Hoover Lane
Ball Road	Hoover Lane	Ball Road North End
Bass Lake Road	Frontenac Road OR Ferguson Road	Bass Lake East End
Beattie Road	Arena Boundary Road	Beattie Road North End
Beaver Creek Lane	Richardson Road	Beaver Creek Lane South End
Bebris Road	West End	East End
Bell Line Road	West End Lane	Seouls Corners Lane
Bell Line Road	Seouls Corners Lane	Swamp Road
Bell Line Road	Swamp Road	Highway 7
Bell Line Road	West End Lane	Bolton Lane
Bell Line Road	Bolton Lane	Tamarack Trail
Bell Line Road	Tamarack Trail	Elijah Road
Bell Line Road	Elijah Road	Fanning Lane
Bell Line Road	Fanning Lane	Town Line Road
Bell Line Road	Town Line Road	Road 509
Bell Line Road	Road 509	Macpherson Road
Bell Line Road	Macpherson Road	Zealand Road
Bender Road	Tryon Road	Bender Road West End
Bethany Court	Clark Road	Bethany Court North End
Big Bay Drive	Cranberry Lake Road	Big Bay Drive End
Blue Heron Ridge	West end Blue Heron Ridge	Thrush Trail
Blue Heron Ridge	Thrush Trail	Henderson Rd
Blueberry Road	Hwy 7	North End
Bobby Road	Long Lake Road	Stone House Road OR Dawson Road
Boomhauer Road	Cranberry Lake Road	Boomhauer Road End
Bordenwood Road	Henderson Road	Dead Creek
Bordenwood Road	Dead Creek	Richardson Road
Bordenwood Road	Richardson Road	Bordenwood south ends
Bradley Road	Mountain Grove Road	Bradley Road East End

Street Name	From	To
Brash Lane	Crow Lake Road	Brash Lane South End
Breen Lane	Wilkinson Road	Breen Lane South End
Brewer Road	Frontenac Road	Duncan Lane
Brewer Road	Duncan Lane	Country Lane
Brewer Road	Country Lane	Oakwood Lane
Brewer Road	Oakwood Lane	Road 38
Bridge Street	Elm Tree Road	Anne Street
Browns Road	Oak Flats Road	Browns Road South End
Bull Lake Road	Cranberry Lake Road OR Elm Tree Road	Woodland Park Drive
Bull Lake Road	Woodland Park Drive	Elm Tree Road
Burke Settlement Road	Road 509	Over the hills Road
Burke Settlement Road	Over the hills Road	West End
Burney Point Road	Buell Lane Road OR Arthur Lane	Timber Lane
Burney Point Road	Timber Lane	Highway 7
Bush Road	Echo Lake Road	Boat Launch
Camp Oconto Road	Road 38	Camp Oconto Road West End
Cannon Road	Elizabeth Street	Road 38
Cardinal Heights Drive	Clark Road	Phoebe Lane
Cardinal Heights Drive	Phoebe Lane	Cardinal Heights Drive North End
Cedar Avenue	Wagner Road	Cedar Avenue North End
Church Street	Bridge Street	end
Clarendon Road	Road 509	School House Road
Clarendon Road	School House Road	1st section of 672.53m
Clarendon Road	1st section of 672.53m	Accumulative 2nd section 3398.30m
Clarendon Road	3rd -section from section 3398.30m	Willis Armstrong Road
Clarendon Road	Willis Armstrong Road	East End
Clark Road	Brock Road	Clark Road South End
Clark Road	Brock Road	Bethany Court
Clark Road	Bethany Court	Arden Road
Clay Creek Road	Hwy 509	Clay Creek Road north end
Clement Road	Road 38	Wagner Road
Clow Road	Road 38	Road 38
Clow Road	Oak Flats Road	Giles Lane
Clow Road	Giles Lane	Clow Road North End
Columbine Trail	Elm Tree Road	Columbine Trail End
Conboy Road	Hwy 509	Bell Line Road
Connor Road	Henderson Road	Conner Road north end
Country Lane	Brewer Road	Country Lane East End
Coutlee Point Lane	Shibley Road	Coutlee Point Lane east end
Cox Road	Arden Road	Arden Gardens Trail
Cox Road	Arden Gardens Trail	Cox Road South End
Craig Road	Hinchinbrooke Road North	South Frontenac Boundary
Cranberry Lake Road	Arden Road	Astor Drive
Cranberry Lake Road	Astor Drive	Boomhauer Road
Cranberry Lake Road	Boomhauer Road	Bull Lake Road OR Elm Tree Road
Cronk Road	Mountain View Estates Lane	Wagarville Road
Cross Road	Wilson Road	Adjacent Loon Lake at 4111.77 m
Cross Road	Adjacent Loon Lake at 4111.77 m	Armstrong Road
Crotch Lake Trail	Cranberry Lake Road	Crotch Lake Trail End
Crow Lake Road	Road 38	CNR Tracks OR N. Anderson Road
Crow Lake Road	Road 38	Wemp Road
Crow Lake Road	Wemp Road	2246 Crow Lake Road
Crow Lake Road	Brash Lane	Boundary
Curly Bay Road	Curly Bay Road South End	Curly Bay Road North End
Davey Road	Oak Flats Road	Davey Road South End
Dawson Road	Bobby Road OR Stone House Road	Dawson Road North End
Dickson Crescent	Dickson Crescent South End	Dickson Crescent North End
Dorothy Peters Road	Dorothy Peters Road South End	Dorothy Peters Road North End
Drew Point Road	Drew Point Road South End	Drew Point Road North End

Street Name	From	To
Ducharme Road	Road 38	Long Lake Road
Dwyer Lane	Dwyer Road	Sparks Lane
Dwyer Lane	Sparks Lane	Dwyer Lane North End
Dwyer Road	Wilkinson Road	Dwyer Road North End
Eagle Lake Road	Road 38	Eagle Lake Road North End
Echo Lake Road	Oak Flats Road	Moore Road
Echo Lake Road	Moore Road	Raymo Road
Echo Lake Road	Fourth Lake Road	Bush Road
Echo Lake Road	Bush Road	Raymo Road
Elgin Young Road	Long Lake Road	Frontenac Road
Elm Street	Cedar Avenue	Elm Street South End
Elm Tree Road	Bull Lake Road OR Cranberry Lake Road	Wedlock Road
Elm Tree Road	Wedlock Road	Hayes Road OR Hinchey Road
Elm Tree Road	Garrison Lake Road	Scott Road
Elm Tree Road	Scott Road	Gendron Road
Elm Tree Road	Gendron Road	Bull Lake Road
Elm Tree Road	Bull Lake Road	Westgate Road
Elm Tree Road	Westgate Road	Hinchey Road OR Hayes Road
Elm Tree Road	Woodcock Rd	Garrison Lake Road
Elm Tree Road	Arden Road	Woodcock Rd
Evergreen Road	Evergreen Road South End	Evergreen Road North End
Fall River Road	Highway 7	Armstrong Road
Ferguson Road	Mountain Grove Road OR Brock Road	Frontenac Road OR Bass Lake Road
Fifth Lake Road	Bearance Hicks Lane	Fifth Lake Road South End
Fifth Lake Road	Bearance Hicks Lane	Fourth Lake Lane
Fifth Lake Road	Fourth Lake Road	Wagarville Road OR Mclean Road
Fish Creek Road	Oclean Lane	Fish Creek Road East End
Fish Creek Road	Road 38	Oclean Lane
Fishermans Cave Lane	Bull Lake Road	Fishermans Cave Lane End
Fourth Lake Road	Fourth Lake Road South End	Echo Lake Road
Fourth Lake Road	Echo Lake Road	Fifth Lake Road
Fox Road	Babcock Road	Long lake Road
Fream Street	Road 38	Fream Street North End
Frontenac Road	Ducharme Road	Elgin Young Road
Frontenac Road	Elgin Young Road	Tryon Road
Frontenac Road	Tryon Road	Thompson Road
Frontenac Road	Highway 7	Bass Lake Road OR Ferguson Road
Frontenac Road	Bass Lake Road OR Ferguson Road	Dawson Road
Frontenac Road	Dawson Road	Brewer Road
Frontenac Road	Brewer Road	Thompson Road
Gardiners Road	Cranberry Lake Road	Gardiners Road End
Garret Street	Elizabeth Street	Garret Street South End
Garrison Lake Road	Elm Tree Road	spruce trail
Gaylord Road	Henderson Road	North End
Gendron Road	Elm Tree Road	Gendron Road End
Godfrey Road	Godfrey Road South End	Godfrey Road North End
Good Road	Long Lake Road	Good Road North End
Goodfellow Road	Road 38	Villalta Lane
Gordon Crescent	Gordon Crescent South End	Gordon Crescent North End
Graham Road	Henderson	Henderson Road
Gray Road	Mountain Grove Road	Gray Road West End
Gregory Way	Airport Way	Gregory Way East End
Guigue Road	Fall River Road	Warrington Road
Guigue Road	Warrington Road	Guigue Road West End
Hagan Road	Crow Lake Road	Manns Lane
Hamilton Lane	Road 38	Hamilton Lane West End
Hamptons Road	Hamptons Road South End	Hamptons Road North End
Hannah Road	Hannah Road West End	Hannah Road East End
Harold Road	Highway 7	Harold Road North End

Street Name	From	To
Hayes Road	Elm Tree Road	Hayes Road West End
Hill Road	Westport Road OR Hinchinbrooke Road North	Hill Road North End
Hill Top Road	Thompson Road	Long Lake Road
Hinchey Road	Elm Tree Road	Hinchey Road North End
Hinchinbrooke Road North	Westport Road	Township of South Frontenac Limits
Homestead Road	Matthew Street	Avery Lane
Howes Lane	Long Lake Road	Howes Lane West End
Hughes Road	Price Road	Highway 7
Hungry Bay Road	Henderson Road	Hungry Bay Road East End
Island View Lane	Long Lake Road	Island View Lane South End
Johnston Road	Price Road	Burnese Lane
Kellar Road	Mountain Grove Road	Kellar Road West End
Kennebec Road	North Addington Limits	Henderson Road
Kingston Line Road	Willis Armstrong Road	County of Lanark Limits
Kirk Kove Road	Henderson Road	Steiger Road
Kirk Kove Road	Steiger Road	Big Gull Lane
Lakeshore Road	Baker Valley Road	Lakeshore Road South End
Leggat Lake Road	Ducharme Road	Leggat Lake Road North End
Legion Road	Cannon Road	Legion Road North End
Lewis Road	Bell Line Road	Maintenance Limits
Long Lake Road	Wagarville Road	Good Road
Long Lake Road	Middle Road	Stinchcombe Road
Long Lake Road	Opeongo Point Lane	Minnies Lane
Long Lake Road	Opeongo Point Lane	Stinchcombe Road
Long Lake Road	Hill Top Road	Fox Road
Long Lake Road	Fox Road	Bobby Road
Long Lake Road	MacCrimmon Road OR Mountain Grove Road	Bobby Road
Long Lake Road	Good Road	Minnies Lane
Long Lake Road	Middle Road	Hill Top Road
Louden Lane (Not in Maps)**	MacCrimmon Road	Louden Road South End
MacCrimmon Road (Varies)	MacCrimmon Road South End	Long Lake Road OR Mountain Grove Road
Macdonnell Road	Willis Armstrong Road	Macdonnell Road South End
Macpherson Road*	Bell Line Road	Macpherson Road North End
Maplewoods Circle	Village Woods Drive	Maplewoods Circle North End
Marshall Cota Road	Babcock Road	Marshall Cota Road South West End
Mary Moore Road (Varies)	South Limits	W.Second Lake Road-10 OR S. Wilkinson Road
Mary Webster Road*	Road 509	South End
Matthew Street	Elizabeth Street	Matthew Street South End
Mclean Road	Stub Creek Lane	Welly Smith Road
Mclean Road (Varies)	Wagarville Road OR Fifth Lake Road	Stub Creek Lane
Mclean Road (Varies)	Welly Smith Road	Babcock Road
Mclean Road (Varies)	Long Lake Road	Derven Lane
Mclean Road (Varies)	Derven Lane	Babcock Road
Mcquaid Road	Fall River Road	East End
Medical Centre Road	Road 38	Matthew Street
Mica Mine Lane	Opeongo Point Lane	Mica Mine Lane North End
Middle Road	Babcock Road	Long Lake Road
Minnies Lane*	Long Lake Road	Minnies Lane South End
Moon Road	Oak Flats Road	Moon Road North End
Moore Road (Varies)	Echo Lake Road	Moore Road West End
Mountain Grove Road	MacCrimmon Road OR Long Lake Road	Kellar Road
Mountain Grove Road	Bradely Road	Highway 7
Mountain Grove Road (varies)	Kellar Road	Bradley Road
Mountvalle Point Road	Guigie Road	West End
Nash Court* Not a road	Arden Road	Nash Court South End

Street Name	From	To
Neadow Road (Varies)	Long Lake Road	Neadow Road North End
Nelson Road*	Burney Point Road	Nelson Road South End
Nordic Road	Henderson Road	Nordic Road East End
North Road	Barr Lane	North Road North End
North Road (Varies)	Highway 7	Barr Lane
Oak Flats Road	Struthers Road	Clow Road
Old Anderson Road	Crow Lake Road	Anderson Road North
Old Thirteen Island Lake Lane *	Hwy 38	Thirteen Island Lake Road
Old Thirteen Island Lake Road	Westport Road	Old Thirteen Island Lake Road South End
Olden Park Road*	Highway 7	Olden Park Road North End
Opeongo Point Lane	Long Lake Road	Campbell Lane
Opeongo Point Lane	Campbell Lane	Opeongo Point Lane South End
Oso Road	Road 509	Oso Road East End
Over The Hills Road	Ardoch Rd	Boles School Road
Over The Hills Road	Boles School Road	1283 Over the Hills Road
Over The Hills Road*	1283 Over the Hills Road	1128 Over the Hills Road
Over The Hills Road*	1128 Over the Hills Road	1025 Over the Hills Road
Over The Hills Road*	Lindsay Burke Road	445m from Lindsay Burke Road
Parks Road*	Cranberry Lake Road	Parks Road End
Patridge Trail (Not in Maps)**	Blue Heron Ridge	North End
Piccadilly Road	N.Oak Flats Road	Road 38
Pit Road*	Arden Road	Pit Sign
Price Road	Mountain Grove Road	Ridgeland Road
Price Road	Ridgeland Road	Johnston Road
Price Road	Hughes Road	Arden Road
Price Road	Hughes Road	Arden Road
Price Road (Varies)	Johnston Road	Hughes Road
Public Beach Road*	Long Lake Road	Public Beach Road East End
Queen Street*	Arden Road	Queen Street South End
Railway Street	Arden Road	Elm Tree Road
Raymo Road	Echo Lake Road	Wagarville Road
Red Oak Road (Not in Maps)**	Baker Valley Road	Bebris Road
Richardson Road	Beaver Creek Lane	Henderson Road
Richmond Road	Babcock Road	Richmond Lane
Ridgeland Road (varies)	Price Road	Ridgeland Road South End
Road 38	Road 38 South End	Westport Road
Road 38	Westport Road	Forty Foot Road
Road 38	Forty Foot Road	White Lake Road
Road 38	White Lake Road	Ball Road
Road 38	Ball Road	Phillips Lane
Road 38	Phillips Lane	York Road South End
Road 38	York Road South End	Wagarville Road
Road 38	Wagarville Road	Hannah Road East End
Road 38	Hannah Road East End	Fish Creek Road
Road 38	Fish Creek Road	Fream Street
Road 38	Fream Street	Curls Bay Road North End
Road 38	Curls Bay Road North End	Camp Oconto Road
Road 38	Camp Oconto Road	Vinkle Road
Road 38	Vinkle Road	Crow Lake Road
Road 38	Crow Lake Road	Shibley Road
Road 38	Shibley Road	Clement Road
Road 38	Clement Road	Wagner Road
Road 38	Wagner Road	Wallroth Lane
Road 38	Wallroth Lane	Gordon Crescent North End
Road 38	Gordon Crescent North End	Zealand Road
Robert Street	Road 38	Elizabeth Street
Rock Lake Road (Varies)	Armstrong Road	South End
Rossland Lane	Harrington Lane	Rossland Lane East End
Round Lake Road*	Road 509	East End

Street Name	From	To
Roy Benn Lane*	Stinchcombe Road	Roy Benn Lane South End
Rudy Lane*	North Road	Rudy Lane West End
School House Road (varies)	Clarendon Road	Road 509
Scott Road	Elm Tree Road	why #7
Second Lake Road	E.Second Lake Road OR S. Oak Flats Road	Arena Boundary Road
See Drive	Cranberry Lake Road	See Drive End
Shibley Road	Road 38	Macleod Lane
Shibley Road	Coutlee Point Lane	Shibley Road North End
Shorts Road*	Henderson Road	Shorts Road East End
Southam Road*	Arden Road	Southam Road North End
St. Georges Lake Road	Road 38	St. Georges Lake Road West End
Steiger Road	Kirk Cove Road	West End
Stinchcombe Road	Babcock Road	Long Lake Road
Stone House Road	Bobby Road OR Dawson Road	Stone House Road South End
Struthers Road	Oak Flats Road	Struthers Road North End
Summit Road	Nelson Road	Summit Road South Road
Thirteen Island Lake Road*	Westport Road	13 Island Lake Lane
Thompson Road (Varies)	Frontenac Road	Long Lake Road
Town Line Road (Not in Maps)**	Access Road	Bell Line Road
Town Line Road (Varies)	Highway 7	Access Road
Trillium Road (Varies)	Wagner Road	Trillium Point Road North End
Tryon Road	Williams Lane	Two Loon Lane
Tryon Road	Frontenac Road	Williams Lane
Tryon Road	Two Loon Lane	Bertrim Lane
Tryon Road	Bertrim Lane	Bender Road
Tryon Road (Varies)	Bender Road	Road 38
Turner Way	Airport Way	Turner Way West End
Veley Road (varies)	Henderson Rd	Boat Launch
Veley Road (varies)	Boat Launch	East End
Village Woods Drive	Hwy 38	Windwood Drove
Vinkle Road (Varies)	Road 38	Inkle Road South End
Wagarville Road	Cronk Road	Raymo Road
Wagarville Road (Slight Vary)	Raymo Road	Road 38
Wagarville Road (varies)	Fifth Lake Road OR Mclean Road	Cronk Road
Wagner Road	Road 38	Clement Road
Wagner Road	Clement Road	Wagner Road North End
Walker Road	Wilkinson Road	Walker Road East End
Waller Lane*	Long Lake Road	Waller Lane North End
Warrington Road	Guigie Road	South End
Wedlock Road*	Elm Tree Road	Wedlock Road End
Wemp Road	Crow Lake Road	Wemp Road North End
Westgate Road (varies)	Elm Tree Road	Highway 7
Whan Road*	Brewer Road	Whan Road South End
White Lake Road (varies)	Road 38	South Frontenac Boundary
Wilkinson Road	Mary Moore Road OR Second Lake Road	Walker Road
Wilkinson Road	Walker Road	Fourth Lake Lane Road
Willis Armstrong Road (varies)	Clarendon Road	Macdonnell Road
Willis Armstrong Road (varies)	Macdonnell Road	Kingston Line Road
Willis Armstrong Road (varies)	Kingston Line Road	Zealand Road
Willy Smith Road*	Mclean Road	Willy Smith Road South End
Wilmack Road (Varies N vs S)	Highway 7	Wilmack Road South End
Wilson Road	Cross Road	Crow Lake Road
Windwood Drive	Village Woods Drive	Road 38
Wing Crescent	Wing Crescent South End	Wing Crescent North End
WoodCock Road	Elm Tree Road	end
Woodland Park Drive	Bull Lake Road	Woodland Park Drive End
York Road East	York Road South End	York Road North End
York Road West	York Lane South End	York Road North End

Street Name	From	To
Zealand Road	Highway 7	Highway 38
Zealand Road	Bell Line Road	Tay Valley Township