



Winter Road Maintenance Information

Revised 2009

WINTER CONTROL FOR ROADS WITHIN THE TOWNSHIP OF WELLINGTON NORTH

The Township of Wellington North is responsible for the winter maintenance of 331kms of roads. We annually use approximately 5,600 tonnes of sand (including approx. 700 tonnes of recycled sand), 580 tonnes of salt and approximately 86,000 litres of liquid de-icer for pre-wetting our sand/salt mixture. By pre-wetting, we have reduced our salt usage by approximately 50%.

The Township is committed to providing safe roads for the traveling public during the winter season. The Township tries to utilize methods that are efficient, economical and environmentally friendly to achieve this goal.

This document outlines the Township's methods and procedures used for road maintenance during the winter months.

CONTACT LIST

1.	Twp. Office Kenilworth	Manager of Public Works	Gary Williamson	519-848-3620 c 519-323-7211
2.	Arthur Twp. Works Yard	Foreman	Dale Clark	519-848-2790 c 519-323-8129
3.	Arthur Village Works Yard	Foreman	Andy Morrison	519-848-2340 c 519-323-7042
4.	Mount Forest Works Yard	Foreman	Gary Matthews	519-323-2641 c 519-323-8195
		Plowing Contractor	Ron Reeves	519-323-1241 c 519-323-7150
5.	West Luther Works Yard	Foreman	David Hill	519-848-3450 c 519-323-8131
6.	MTO	Area Supervisor	Ed Fisher	519-848-2213 (Arthur) 519-925-4325 (Shelburne) 519-940-6842 (Cell)
7.	Wellington County	Area Supervisor	Wayne Bridge	519-848-2124 c 519-823-6103
8.	Conn Contractor	Plowing	Jim Robinson	519-323-4577

Note:

Within the Township, Highway #6 and #89 are maintained by the Ministry of Transportation of Ontario with patrolling/maintenance being provided out of the Arthur MTO Yard, under the direction of the area supervisor.

The Wellington County Roads within the Township are patrolled and maintained from the Arthur County Yard, under the direction of the area supervisor.

The Township of Wellington North provides winter maintenance for Wellington County on County Road #15 in West Luther and Sligo Road in Mount Forest. These roads are only maintained to Township standards.

EQUIPMENT AND MATERIAL

Three of the four Township's Works Yards have a sand/salt storage building on site. The exception is the Village of Arthur Works Yard which obtains a portion of its winter sand/salt from the Arthur MTO Yard and the balance from the West Luther Yard.

All storage buildings have sufficient capacity so that we do not need to re-charge them with sand/salt during the winter season. We fill our sand sheds with our winter sand/salt mix during the month of August so the sand is dry when being mixed. This also allows for the clean-up, after the mixing/stacking process, to be done more efficiently.

The winter sand/salt used on rural Township roads is mixed with 5% salt and 14litres/tonne of liquid chlorides. Winter sand/salt used on urban Township roads is mixed with 10% salt and 14litres/tonne of liquid chlorides. Pure salt is never applied to roads maintained by Township equipment.

Material is applied to the rural Township roads at a rate of 150kg/km to 750kg/km depending on weather conditions. It takes approximately 8 tonnes of sand/salt to cover the Village of Arthur and approximately 14 tonnes of sand/salt to cover the Town of Mount Forest for each winter event.

The tandem plow trucks when loaded with sand/salt, carry enough material to complete each individual route. In Arthur Village the single axle sander/plow truck carries enough material to cover the roads within the Village. In Mount Forest it takes two single axle sander/plow truck loads to cover the roads within the Town. The majority of sander/plow trucks are equipped with Dickey-John controls to ensure uniform sand/salt application rates. The Dickey-John controls are calibrated every Fall prior to the winter season and each plow route is bench marked for time and material used per trip at the start of the season. This information is compared to the previous year's information to ensure consistency.

YARD LOCATIONS AND EQUIPMENT LISTS

Arthur Township Yard: 7490 SDRD # 7 West, Kenilworth

Arthur Village Yard: 488 Eliza Street, Arthur
Mount Forest Yard: 381 Main Street North, Mount Forest
West Luther Yard: 8987 Wellington County Road #16

Arthur Township Yard

3 tandem sander/plow trucks
2 graders
1 loader

Arthur Village Yard

1 single axle sander/plow truck
1 backhoe
1 tractor and blower
1 sidewalk maintainer

Mount Forest Yard

1 single axle sander/plow truck
1 single axle sander truck
1 backhoe
1 tractor and blower
2 sidewalk maintainers

West Luther Yard

3 tandem sander/plow trucks
2 graders
1 loader

SNOW PLOW ROUTES

The Township's rural roads are split into six plow routes. Three routes are run out of the Arthur Township Yard and three routes are run out of the West Luther Yard. The rural plow routes and related information are attached to Schedule "A".

Note: Although included in a rural plow route, snow removal in the Village of Conn is done by a contractor using a tractor and blower. A Township truck is then used to complete the street sanding.

In the Village of Arthur, the plow truck starts on the roads Northeast of Smith/George Street and progresses towards roads Southwest of Smith/George Street.

Mount Forest is split into five sections and are listed in the order of plowing:

- 1) North of Hwy#89 and West of Hwy#6,
- 2) North of Hwy #89 and East of Hwy #6,
- 3) South of Hwy #89 and East of Hwy #6,
- 4) South of Hwy #89 and West of Hwy #6 and
- 5) Fringe roads including roads East of Egremont St, Sligo Road including roads North of Sligo Road and roads South of the Saugeen River.

Note: A contractor is also hired with a pay loader equipped with a two-way blade to assist with the plowing of sub-divisions and dead-end streets. A Township truck is then used to sand those streets.

SIDEWALK MAINTENANCE

The Township's Works Yards in the Village of Arthur and the Town of Mount Forest are responsible for the winter maintenance of the sidewalks in their respective areas. Arthur has approximately 13kms of sidewalk and Mount Forest has approximately 20kms of sidewalk. Only the sidewalks within these two urban areas are maintained by the Township during the winter months.

Winter maintenance is accomplished by the use of one sidewalk maintainer in Arthur and two sidewalk maintainers in Mount Forest. Operations include sweeping, plowing with a two-way blade, blowing and the application of abrasive materials when required.

Pure salt is spread on the sidewalks in the downtown cores only. The other sidewalks do not receive sand or salt unless extreme conditions occur (ice/sleet storm).

Snow is removed on a regular basis from the sidewalks and curb lines in the downtown cores of Arthur and Mount Forest. The Foreman for each area decides when the snow removal will be done based on factors as public safety, snow accumulation and weather forecasts. The work is generally done between the hours of 2am and 6am using a large tractor/blower to load trucks. Each urban area has a snow dump site and the snow is hauled to the respective sites. Each Spring, once the snow pile melts the litter and debris is collected from these sites and then disposed of in the appropriate manner.

In certain circumstances when sidewalks are located on both sides of a street, outside of the downtown cores, the Township may choose to only maintain the sidewalk on one side of the street. This decision is based on location, safety issues for pedestrians/vehicles and snow accumulations in that area.

Occasionally, snow may be removed from the boulevards along secondary streets when the accumulation of snow creates safety concerns and/or interferes with the normal snow plowing of the road or sidewalk.

BOUNDARY ROADS

The Township has written Boundary Road Agreements with the Townships of Centre Wellington, East Luther Grand Valley, Mapleton and Southgate.

Township of Centre Wellington

The Township of Centre Wellington maintains Sideroad #25 from County Road #16 East to the E/W Garafraxa Townline.
Wellington North maintains Sideroad #25 from County Road #16 West to Jones Baseline.

Township of Mapleton

The Township of Mapleton maintains Sideroad #6 from County Road #109 South to the Eighteenth Line, the Eighteenth Line from Sideroad #6 East to Sideroad #12 and Sideroad #12 from the Eighteenth Line North to Highway #6. Wellington North maintains Sideroad # 9 from Highway #6 East to Jones Baseline, Jones Baseline from Sideroad #9 South to Sideroad #25.

Township of East Luther Grand Valley (Dufferin County)

The Township's of East Luther Grand Valley and Wellington North alternate years when it comes to performing the maintenance on the three blocks of the East/West Luther Townline that are maintained open year round.

Township of Southgate (Grey County)

The Township of Southgate maintains Southgate #41 from Southgate Road #04 South to the intersection of Wellington Street East. Wellington North maintains London Road from the intersection of Owen Road South to the dead end.

EXTERNAL AGREEMENTS FOR ROAD MAINTENANCE

County of Wellington

Wellington County annually contracts with Wellington North to have the Township perform winter maintenance on County Road #15 from County Road #16 East to the East/West Luther Townline.

Wellington County annually contracts with Wellington North to have the Township perform winter maintenance on Sligo Road in Mount Forest. Since this is a boundary road with West Grey and Southgate, Wellington North has agreements with them to provide the required winter maintenance. Wellington North maintains Sligo Road from Highway #89 going East to the intersection of London Road and Southgate maintains Sligo Road from the intersection of London Road going East to the intersection of Southgate Road #04.

County of Grey

Wellington North annually contracts with the County of Grey to maintain Wellington North's half of the boundary road known as Grey Road #109 for a distance of approximately 1.0 kms East of Highway #6.

Ministry of Transportation (MTO)

Wellington North signs annual agreements with the Ministry of Transportation (MTO) for the Ministry to provide winter maintenance (plowing and sanding) for the highways within the limits of

the Connecting Links for the Village of Arthur and the Town of Mount Forest. These agreements run from Nov 1st to April 1st the following year. In Arthur the agreement covers 1.9kms of Highway #6 within the Village boundaries and in Mount Forest the agreement covers a total of 5.8 kms for Highway #6 and Highway #89 within the Town boundaries.

HIGHWAY AND COUNTY ROAD CLOSURES

The Township Works Department is supplied with “Road Closed Signs” by the Ministry of Transportation (MTO) and Wellington County to be used on their respective roads for emergency road closures.

Highway closures will only occur as a result of direction from the MTO or OPP. County roads will only be closed when directed to do so by the County Staff. In all cases the Township employee(s) must accurately record the location and time they are involved with each closure.

OPERATOR RESPONSIBILITIES

The Township of Wellington North Works Department has thirteen full time staff (incl one employee from the Water Department) and five temporary contract employees working for the Township during the winter season. Annually, prior to the start of the winter season, the Manager of Public Works arranges for training related to winter operations and requires all staff involved in winter operations to participate in this training.

The Foreman or designate from the Works Yard in Arthur, the Foreman or designate from the Works Yard in Mount Forest and a Foreman or designate responsible for the rural roads maintained out of the Arthur Township and West Luther Township Yards are on-call seven days a week during the winter season to provide patrolling and to respond to emergency situations on their respective roads. Week-end patrolling is done at intervals appropriate for the weather conditions.

On-call for the winter season normally begins by November 15th and ends by April 1st the following year.

The person on-call is required to keep records of his patrolling activities. All operators are required to keep daily logs which include information on which roads were maintained, the times at which the work was completed, the type of work performed, kilometers driven/truck or hours/grader. The quantity of sand/salt placed on the roads is also recorded.

Equipment operators must operate the Township’s equipment in a safe and appropriate manner at all times.

Loader operators are responsible to not overload trucks, reduce spillage of sand while loading and to clean up the loading area each time trucks are loaded.

Truck drivers are responsible for vehicle inspections and general vehicle maintenance.

It is every Works Department employee's responsibility:

- a) to ensure that the Township roads are maintained in accordance to the "Minimum Maintenance Standards for Municipal Highways" and to inform their supervisor of any safety concerns that need to be addressed.
- b) to ensure that the guidelines in the Township's "Salt Management Plan" are followed.
- c) to comply with the Township's Occupational Health and Safety Policy; and
- d) to follow the Employment Standards Act and the Hours of Work for drivers set out in the Highway Traffic Act.

GENERAL

Each Spring the sand swept off of the urban streets is re-screened and re-mixed with salt to be re-used as winter sand for the following winter season.

During the winter season, daily weather forecasts are distributed from the Township Office to each Works Yard to assist the Foremen with scheduling the appropriate men and equipment required to meet the expected weather conditions.

All trucks and graders have two-way radios for internal communication and as well the radios are programmed to be able to communicate with Wellington County and the Townships within the County bordering on Wellington North. This allows for better co-ordination of boundary road maintenance during severe weather conditions.

The Rural Foremen meet each Spring and Fall with the Upper Grand District School Board to discuss bussing issues and communication methods to be used when storm conditions occur that affect school bussing on Township roads.

The Manager of Public Works and the Foremen have had training, are familiar with and participate in the Township's Emergency Plan to ensure an effective response should an emergency take place.

In December 2002, the Council of the Township of Wellington North adopted by resolution the "Minimum Maintenance Standards for Municipal Highways".

In accordance with their traffic volumes, the Township roads can be identified as either Class 4, 5 or 6 roads. The appropriate guidelines for each class are followed when responding to the various maintenance activities including winter maintenance, as set out below.

**Minimum Maintenance Standards
For Municipal Highways**

Classification of Highways	
Average Annual Daily Traffic (number of motor vehicles)	Posted or Statutory Speed Limit (kilometers per hour)

		90	80	70	60	50	40
15,000 or more	1	1	1	2	2	2	2
12,000 - 14,999	1	1	1	2	2	3	3
10,000 - 11,999	1	1	2	2	3	3	3
8,000 - 9,999	1	1	2	3	3	3	3
6,000 - 7,999	1	2	2	3	3	3	3
5,000 - 5,999	1	2	2	3	3	3	3
4,000 - 4,999	1	2	3	3	3	3	4
3,000 - 3,999	1	2	3	3	3	4	4
2,000 - 2,999	1	2	3	3	4	4	4
1,000 - 1,999	1	3	3	3	4	4	5
500 - 999	1	3	4	4	4	4	5
200 - 499	1	3	4	4	5	5	5
50 - 199	1	3	4	5	5	5	5
0 - 49	1	3	6	6	6	6	6

	Class 1	Class 2	Class 3	Class 4	Class 5
Routine Patrolling Frequency	3 times every 7 days	2 times every 7 days	Once every 7 days	Once every 14 days	Once every 30 days
Snow Accumulation	Depth: 2.5 cm Time: 4 hours	Depth: 5 cm Time: 6 hours	Depth: 8 cm Time: 12 hours	Depth: 8 cm Time: 16 hours	Depth: 10 cm Time: 24 hours
Icy Roadways	Time: 3 hours	Time: 4 hours	Time: 8 hours	Time: 12 hours	Time: 16 hours

Note: Guidelines used by the Township's staff when responding to winter events/conditions on various road classes are as follows:

ONTARIO REGULATION 239/02

made under the

MUNICIPAL ACT

Made: July 23, 2002

Filed: August 8, 2002

MINIMUM MAINTENANCE STANDARDS FOR MUNICIPAL HIGHWAYS

INTERPRETATION AND APPLICATION

Definitions

1. (1) In this Regulation,

"cm" means centimetres;

"day" means a 24-hour period;

"motor vehicle" has the same meaning as in subsection 1 (1) of the Highway Traffic Act, except that it does not include a motor assisted bicycle;

"non-paved surface" means a surface that is not a paved surface;

(2) Routine patrolling shall be carried out by driving on or by electronically monitoring the highway to check for conditions described in this Regulation.

(3) Routine patrolling is not required between sunset and sunrise.

TABLE

ROUTINE PATROLLING FREQUENCY

Class of Highway	Patrolling Frequency
1	3 times every 7 days
2	2 times every 7 days
3	once every 7 days
4	once every 14 days
5	once every 30 days

Snow accumulation

4. (1) The minimum standard for clearing snow accumulation is,

(a) while the snow continues to accumulate, to deploy resources to clear the snow as soon as practicable after becoming aware of the fact that the snow accumulation on a roadway is greater than the depth set out in the Table to this section; and

(b) after the snow accumulation has ended and after becoming aware that the snow accumulation is greater than the depth set out in the Table to this section, to clear the snow accumulation in accordance with subsections (2) and (3) or subsections (2) and (4), as the case may be, within the time set out in the Table.

(2) The snow accumulation must be cleared to a depth less than or equal to the depth set out in the Table.

(3) The snow accumulation must be cleared from the roadway to within a distance of 0.6 metres inside the outer edges of the roadway.

(4) Despite subsection (3), for a Class 4 highway with two lanes or a Class 5 highway with two lanes, the snow accumulation on the roadway must be cleared to a width of at least 5 metres.

(5) This section,

(a) does not apply to that portion of the roadway designated for parking; and

(b) only applies to a municipality during the season when the municipality performs winter highway maintenance.

(6) In this section,

"snow accumulation" means the natural accumulation of new fallen snow or wind-blown snow that covers more than half a lane width of a roadway.

TABLE

SNOW ACCUMULATION

Class of Highway	Depth	Time
1	2.5 cm	4 hours
2	5 cm	6 hours
3	8 cm	12 hours
4	8 cm	16 hours
5	10 cm	24 hours

Icy roadways

5. (1) The minimum standard for treating icy roadways is,

(a) to deploy resources to treat an icy roadway as soon as practicable after becoming aware that the roadway is icy; and

(b) to treat the icy roadway within the time set out in the Table to this section after becoming aware that the roadway is icy.

(2) This section only applies to a municipality during the season when the municipality performs winter highway maintenance.

TABLE

ICY ROADWAYS

Class of Highway	Time
1	3 hours
2	4 hours
3	8 hours
4	12 hours
5	16 hours

RECOMMENDED TREATMENTS FOR ROAD CLASS "4" ASPHALT AND SURFACE TREATMENT

Temperature Range	Type of Precipitation	Road Surface Condition	Activity	Beginning of Storm	During Storm	After Storm
1 Any Temperature	Dry or Wet Snow	Snowpacked to Centre Bare	Plowing	Yes - 8 cm maintain snowpacked to centre bare conditions	Yes - 8 cm maintain snowpacked to centre bare conditions	Yes - Wing Back Shoulders, Cleanup Intersections
			Sanding	Only if required - on Hills, Curves and Hazardous Locations		Yes - Mainly on Hills, Curves and Intersections
2 Any Temperature	Sleet, Rain or Freezing Rain	Icing and/or Snowpacked to Centre Bare	Plowing	No	No	Remove Slush Accumulation
			Sanding	Occasionally on Hills and Intersections	Yes - Continuous or on Slippery Sections	

RECOMMENDED TREATMENT FOR CLASS "4" GRAVEL ROADS

1 Any Temperature	Dry or Wet Snow	Snowpacked	Plowing	Yes - 8 cm maintain snowpacked	Yes - 8 cm maintain snowpacked	Yes - Wing back Shoulders, Cleanup Intersections
			Sanding	No	No	Yes - Mainly on Hills, curves and Intersections
2 Any Temperature	Sleet, Rain or Freezing Rain	Icing and/or Snowpacked	Scarify	No	Yes - on Snowpacked and Slippery Sections	
			Sanding	Occasionally on Hills and Intersections	Yes - Mainly on Hills, Curves and Intersections	

Recommended treatment for various conditions outlined in this chart should be used in most cases. However wind and unusual temperature fluctuations may necessitate departure from the recommended procedures

Township does not provide 24 hour service

Rural area plowing normally starts at 5am except in Mount Forest where the plowing normally starts at 2am and Arthur Village plowing normally starts at 4am

Township does not use pure salt applications at any time

RECOMMENDED TREATMENTS FOR ROAD CLASS " 5 and 6" GRAVEL SURFACE

Temperature Range	Type of Precipitation	Road Surface Condition	Activity	Beginning of Storm	During Storm	After Storm
1 Any Temperature	Dry or Wet Snow	Snowpacked	Plowing	Yes -10 cm maintain to snowpacked condition	Yes - 10 cm maintain to snowpacked condition	Yes - Wing Back Shoulders, Cleanup Intersections
				No	No	Yes - Mainly on Hills, Curves and Intersections
2 Any Temperature	Sleet, Rain or Freezing Rain	Icing and/or Snowpacked	Scarify	No	Yes - on Snowpacked and Slippery Sections	
				Occasionally on Hills and Intersections	Yes - Mainly on Hills, Curves and Intersections	
			Sanding			

Recommended treatment for various conditions outlined in this chart should be used in most cases. However wind and unusual temperature fluctuations may necessitate departure from the recommended procedures

Township does not provide 24 hour service

Rural area plowing of routes normally starts at 5am except in Mount Forest where the plowing normally starts at 2am and Arthur Village plowing normally starts at 4am

Township maintains Class " 4 " roads first but may include Class " 5 & 6" gravel roads in Class " 4 " plow routes

Schedule A

“PLOW ROUTES FOR RURAL ROADS”

The following information is representation of what occurs when an average storm event occurs. Route plowing times and material usage may all vary depending on the temperature/wind conditions that occur during any storm event. Plowing generally commences no later than 5am from each rural yard.

Kenilworth Works Yard

Roads maintained out of the Kenilworth Works Yard are within the former Arthur Township boundaries. Winter maintenance is performed on these roads by using three plow routes which are identified on the attached map as Routes A, B & C.

	<u>Route Length</u>	<u>Plowing Time</u>	<u>Material Used</u>
Route “A” Info	64 kms	4 hours	7 tonnes
Route “B” Info	61 kms	4 hours	7 tonnes
Route “C” Info	60 kms	4 hours	4 tonnes

West Luther Works Yard

Roads maintained out of the West Luther Works Yard are within the former West Luther Township boundaries but also include a number of roads located South of Wellington County Road #109 in the former Township of West Garafraxa. Winter maintenance is performed on these roads by using three plow routes identified on the attached map as Routes 1, 2 & 3.

	<u>Route Length</u>	<u>Plowing Time</u>	<u>Material Used</u>
Route “1” Info	55 kms	3.5 hours	7 tonnes
Route “2” Info	55 kms	3.5 hours	7 tonnes
Route “3” Info	45 kms	3.5 hours	4 tonnes

Note:

- Village of Arthur and Town of Mount Forest maps are attached for information. Please refer to “Snow Plow Routes” on page #3 for plowing information.
- When required, plowing will commence at 4am in the Village of Arthur and takes approximately 5 hours to complete. Plowing in the Town of Mount Forest commences at 2am and takes approximately 7 hours to complete.

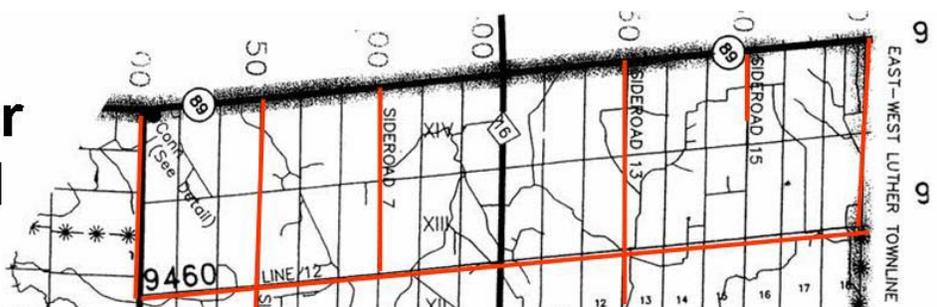
Kenilworth Works Yard

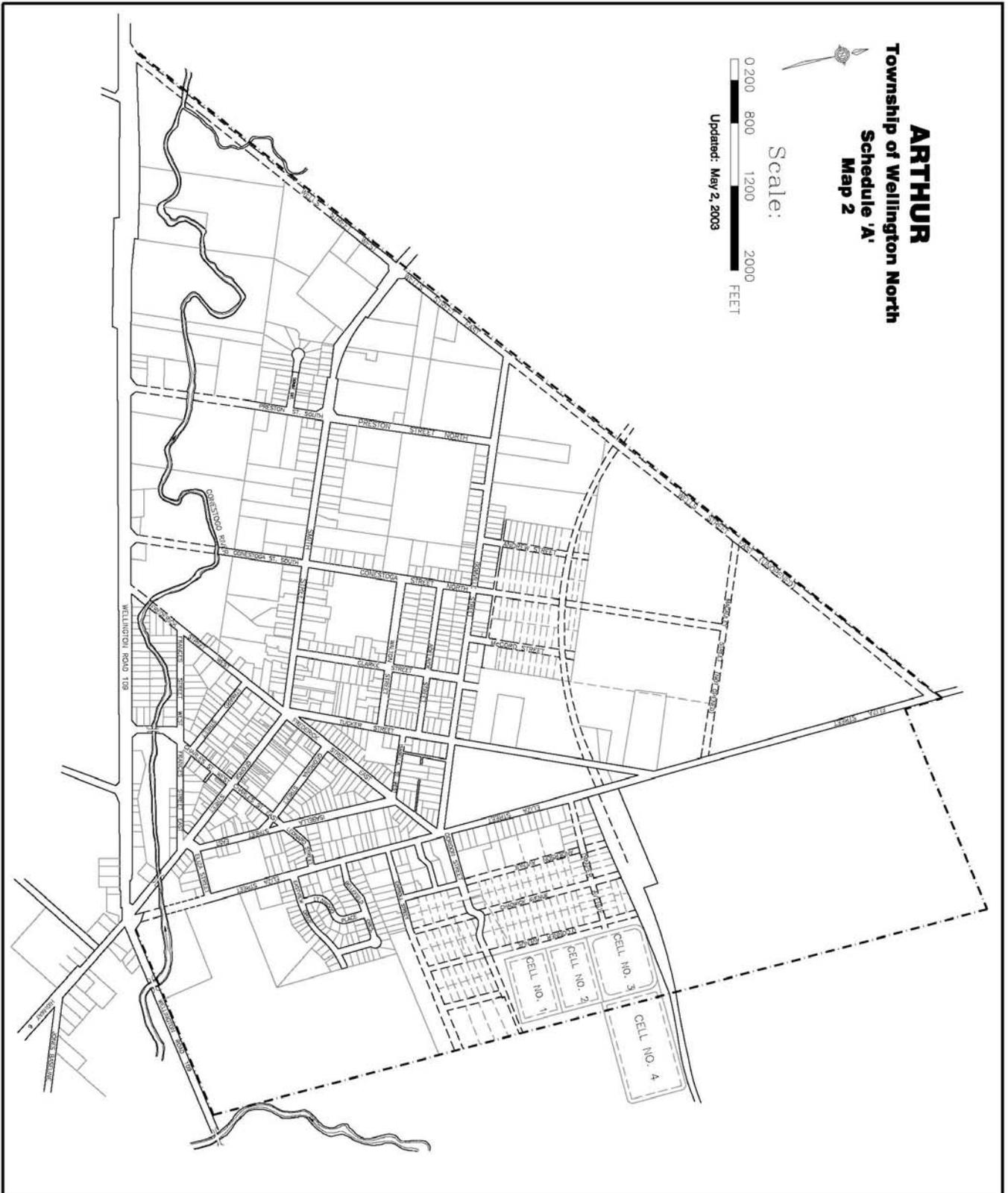
Route “A”  Route “B”  Route “C” 

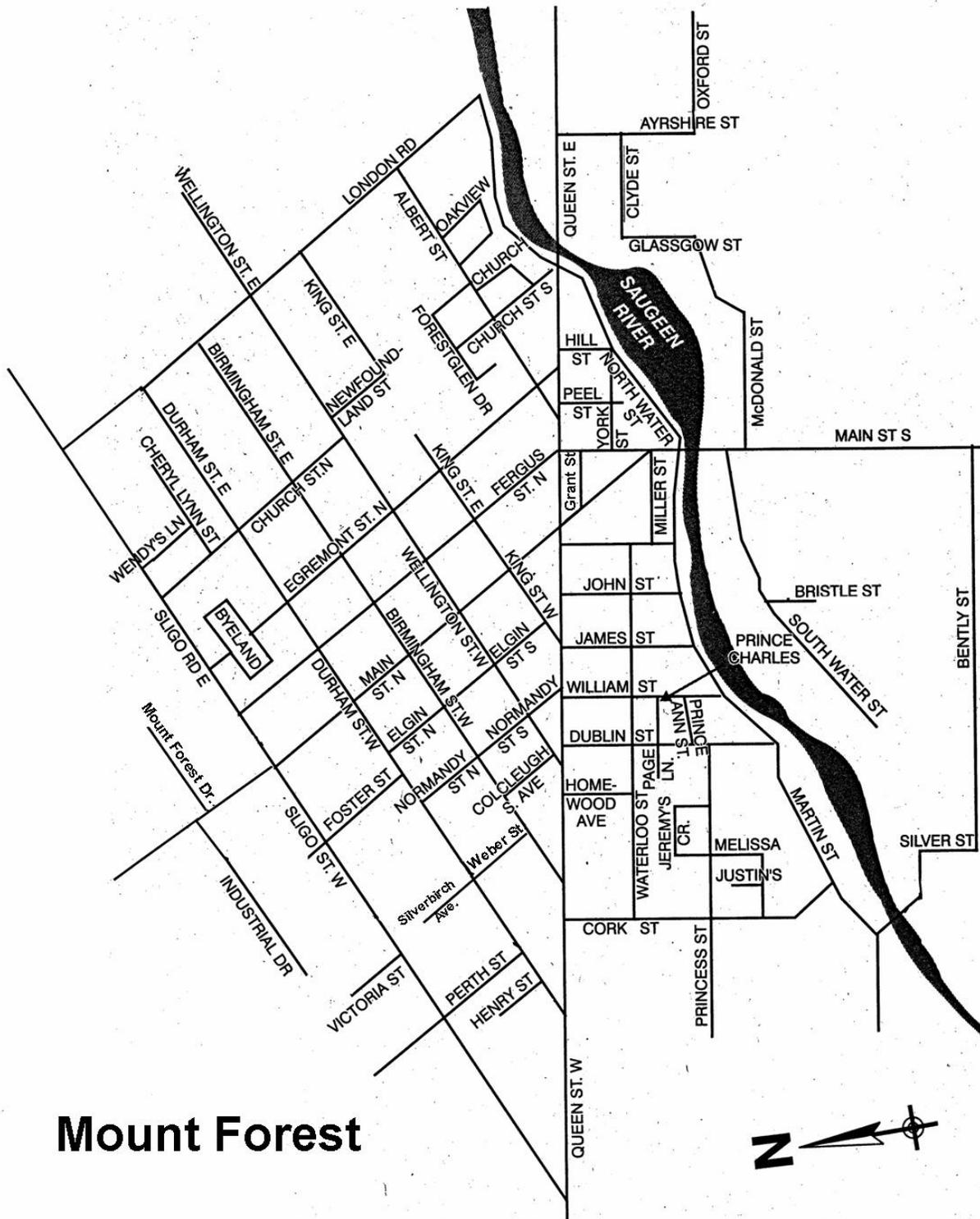
* * - No Winter Maintenance



West Luther Works Yard







Mount Forest

Notes