

For Information Only

Winter Sidewalk Maintenance Enhancements

Presented To: Operations Committee

Presented: Monday, Feb 01, 2016

Report Date: Wednesday, Jan 20, 2016

Type: Correspondence for Information Only

Resolution

For Information Only

Background

See attached report for information.

Signed By

Report Prepared By

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General Manager of Infrastructure
Services
Digitally Signed Jan 20, 16

Recommended by the Department

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1. Background

To respond to many questions and concerns received by Councillors and the public regarding sidewalk policies and standards, it was deemed appropriate to bring a report forward to Council.

Council has identified the importance of year-round mobility for pedestrians with an emphasis on a healthy community, and supporting alternative forms of transportation in a sustainable economic manner. Council further resolved that the City of Greater Sudbury accept the challenge to become the most pedestrian friendly City in Ontario by 2015 (Resolution #2007-226). With increasing frequency, residents of our community have been expressing interest in a more active transportation network. These comments are received at various infrastructure public consultation sessions, at various advisory group meetings, and to some extent through the ACR system. In keeping with Council's resolution and the interests of the community, it is recommended that the City move towards an enhanced sidewalk network and enhanced winter sidewalk maintenance. Staff recommend the development of an implementation plan with the assistance of extensive community consultation that covers all geographic areas of the city to establish the recommended increase in funding in this service area over a five year period. The public consultation will be designed to include development of strategies for new sidewalk development, rationalization of existing sidewalk winter maintenance and enhanced winter sidewalk maintenance, including establishing criteria for prioritization of the implementation plan.

There are approximately 425 kilometres of sidewalk connecting neighbourhoods within the City. The City provides winter maintenance to approximately 325 kilometres (75%) of these sidewalks. There are approximately 45 kilometres of 1.2 metres (4-foot) wide sidewalks and 55 kilometres of 1.5 metre (5-foot) wide sidewalks scattered throughout the City that remain unmaintained during the winter months. In order to maintain narrow (1.2 m width) sidewalks, specialty plowing equipment is required. The majority of the 1.2 metre wide sidewalks are located in the communities of Coniston, Copper Cliff, Falconbridge, Garson, Levack, Lively, and Onaping. In many instances, the City inherited these sidewalks which were initially constructed by local mining companies to their respective standards of the time.

In addition, there are many walkways that connect to parks and roads that do not have winter maintenance.

1.1 Winter Sidewalk Maintenance Service Level

Winter sidewalk maintenance involves plowing and sanding sidewalks to reduce slip hazards and provide safe passage for pedestrians during the winter months.

City policy dictates that sidewalks be plowed and sanded once a snow accumulation of 8 centimetres (cm) has fallen or they are to be sanded when ice is detected. The City's current service level allows up to 24 hours after a winter storm has ended to complete a single pass on any of the maintained sidewalks. Sidewalks will remain snow packed throughout the winter.

During non-events, sidewalks are patrolled by road supervisors on a regular basis and spot plowed and/or sanded as deemed necessary.

Winter maintenance service levels provided throughout the City are the same service levels provided by the former area municipalities prior to amalgamation. Since amalgamation, all new

sidewalks, including walkways between roads, that link to an existing maintained sidewalk network receive year-round maintenance.

1.2 Winter Sidewalk Maintenance Equipment

Sidewalk winter maintenance is performed with Municipal Tractors (MT's). Operators utilize a straight blade plow or a snow blower depending on weather conditions and available snow storage. They maintain a sidewalk width of approximately 1.5 metres per pass. When plowing with a straight blade, snow is directed either towards the road or property line. Either option is chosen depending on existing circumstances. Snow blowing is required when there is no snow storage available for sidewalk plowing or during heavy snow falls due to the depth of snow.

The City employs a single shift for each sidewalk route. As such, winter maintenance of sidewalks has been designed to the following schedule;

- Time to plow and sand after an 8 cm accumulation of snow = 8 hours
- Time to snow blow and sand after an 8 cm accumulation of snow = 12 hours
- Time to sand after ice is detected = 8 hours (no plowing or snow blowing)

Sidewalk Snow Blowing



Sidewalk Plowing



1.3 Current Sidewalk Maintenance Times / Distances

The City provides winter maintenance on approximately 325 kilometres of sidewalk, which are divided into 19 routes. Service data for these routes from six randomly chosen snow storms during the 2012/2013 winter is summarized in Table 1. The 2012/2013 winter was deemed to be a normal / typical Sudbury winter. Table 1 indicates the average time to plow and sand a single pass during a typical 8 cm snow storm including total “deadhead” time. “Deadhead” time refers to the unproductive time that exists within each sidewalk maintenance route. “Deadhead” time includes, but is not limited to, travel time between a depot and a sidewalk route, travel time between sidewalk locations within each route, time to fuel and conduct circle checks. During severe winter storm conditions, “deadhead” time increases when additional sanding is required on sidewalks and the MT's must travel back to their respective depots on multiple occasions to reload with sand in these circumstances.

Naturally, servicing sidewalks located farther away from a maintenance depot increases “deadhead” time. Communities such as Azilda, Broder, Coniston, Copper Cliff, Falconbridge, Garson, Val Caron and Val Therese are situated a significant distance away from the closest depot. In order to meet service times, these areas maintain less sidewalks than those found in communities closer to a maintenance depot such as Downtown Sudbury, Gatchell, Lively and most of New Sudbury. Travel time between sidewalk locations and travel time to and from each respective depot for winter sand contributes quite significantly to “deadhead” time. Appendix 2 provides a list of presently maintained sidewalk routes throughout the City.

As depicted in Table 1, the MT's are fully utilized for the majority of the City's sidewalks routes.

Table 1 – Summary of six (6) random snow storms during the 2012 / 2013 winter season

Maintenance Sections	Sidewalk Routes	General Route Area Description	Plow & Sand Only (Hrs.)
			Includes "deadhead" Time
			(typical 8 cm snow storm)
South	1 ODD	Nepahwin Lake Area (Regent, Paris, Walford, Loaches)	13.0
	1 EVEN		
	2 ODD	Old Hospital Area (Paris, York, Ontario, Riverside)	7.3
	2 EVEN		
	3 ODD	Copper Cliff / Gatchell Area (Southview, Lorne)	10.3
	3 EVEN		
	4 ODD	Downtown Area (St. Anne, Elm, Elgin, Durham, Paris, Brady)	7.7 (Note 1)
	4 EVEN		
	5 ODD	Westend Area (Elm, Lorne, Douglas, Regent, Beatty)	10.0
	5 EVEN		
	6 ODD	Donovan Area (Frood, Burton, Jean, Kathleen, Lansdowne)	10.0
	6 EVEN		
	7 ODD	Flour Mill West (Notre Dame, Kathleen, Morin, College, Cambrian Hts.)	9.0
	7 EVEN		
	8	Southend (Long Lk., Algonquin, Brenda, Martindale, Country Side)	10.3
SE	1	Garson / Skead Road / Coniston	10.7
	2	Minnow Lake (Kingsway, Howey, Bancroft, Second)	10.0
	3	Flour Mill East / Lasalle West (Mountain, Notre Dame, Lasalle, Arthur)	8.3
	4	New Sudbury East (Lasalle, Madison, B. Downe, Auger, Falconbridge)	8.0
	5	New Sudbury West (Lasalle, Barry Downe, Woodbine, Attlee, Gemmell)	8.5
SW	1	Lively	8.4
NE	1	Valley East (Val Caron, Val Therese, Blezard, McCrear Hts.)	10.3
	2	Capreol / Hanmer	6.0
NW	1	Azilda	7.8
	2	Chelmsford	11.3 (Note 2)
	3A & 3B	Levack & Dowling	6.6

Note 1: Two MT's are required due to the additional sidewalk width in the downtown area

Note 2: A single operator is utilized for the Levack and Dowling sidewalk routes.

1.4 Comparison to Other Northern Municipalities

The City's average sidewalk route length is very similar to other Northern Ontario municipalities. The other municipalities maintain between 70% and 100% of their sidewalks. Table 2 provides a summary of winter sidewalk maintenance in some other Northern Ontario municipalities. Many of these municipalities use the unmaintained sidewalks for snow storage during the winter periods. This provides a cost savings to these municipalities.

Table 2 – Comparison of Winter Sidewalk Maintenance in other Northern Ontario Municipalities

Plowing and Abrasives Application Comparison of Large Northern Ontario Municipalities							
Road Authority	Snow Plowing	Sidewalk Priority	Snow Accumulation Trigger	Response for a Single Pass	Abrasives Applied	Other Notes	Avg. Approx. Length
Greater Sudbury	Sidewalks	All Maintained Sidewalks	8 cm	4 to 24 Hrs.	Sand	19 Routes	28 km
Downtown Sudbury sidewalks are maintained weekly (Mon. - Fri) from midnight to 8am. City maintains 325 kilometres of 425 kilometres of sidewalk. 1 shift is utilized.							
Timmins	Sidewalks	All Maintained Sidewalks	8 - 10 cm	8 - 16 Hrs.	Sand	6 Routes	22 Km
Priority sidewalks are maintained on a daily basis (Mon - Fri). One (1) shift is utilized. Approximately 50% of all sidewalks are maintained in winter. Rest are used for snow storage.							
North Bay	Sidewalks	All Maintained Sidewalks	8 cm	Up to 12 Hrs.	Sand	5 Routes	26 Km
All sidewalks are maintained. Total length is 130 kilometres. 8 hour turnaround. Average route length is ~26 kilometers long established sidewalk beats. 1 shift is utilized.							
Sault Ste Marie	Sidewalks	All Maintained Sidewalks	5 cm	Up to 12 Hrs.	Sand	9 Routes	26 Km
Total of 328 kilometres sidewalks of which 231 kilometres are maintained (~70%). MT units are utilized on 9 routes. Avg. route length is ~28 kilometres (longest is 30 kilometres). 1 shift (snow or shine) from 4 a.m. to noon weekly (Mon to Fri).							
Thunder Bay	Sidewalks	High Priority Sidewalks	5 cm	14 - 36 Hrs.	Salt or Sand	15 Total Routes	30 Km
	Sidewalks	Low Priority Sidewalks	5 cm	Up to 72 Hrs.			
All sidewalks are maintained. Approximately 493 Kilometres. All sidewalks are 5 foot (1.5m) wide. Average beat length is 30 Kilometres. 8am - 4.30pm sidewalk shift is utilized and a night shift if required.							
MMS ¹	Sidewalks	There is no provincial minimum standard for winter sidewalk maintenance (snow events)					

¹ Minimum Maintenance Standards according to the Municipal Act of Ontario

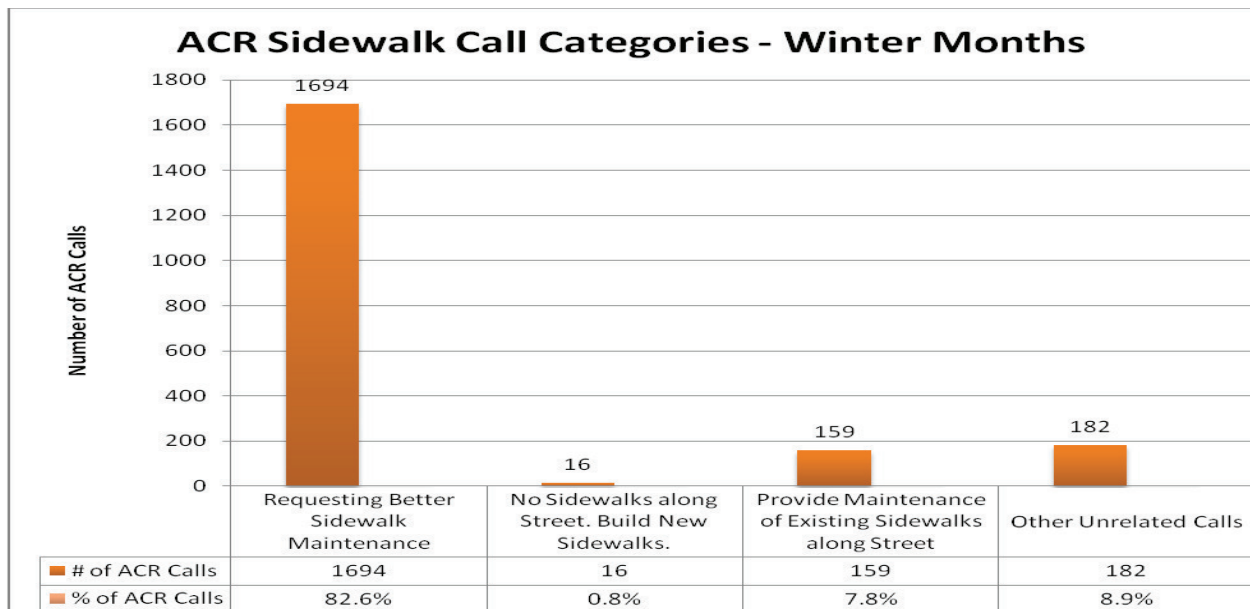
Considering Sudbury's added "deadhead" time due to its vast geography, the City's sidewalk route lengths and route completion times are consistent with other Northern Ontario municipalities. Many Southern Ontario communities have similar sidewalk route lengths. Some make it a requirement that their citizens maintain municipal sidewalks fronting their property.

1.5 Active Citizens Requests – Sidewalk Winter Maintenance

A review of all the calls recorded by the Active Citizen Requests (ACR) system pertaining to sidewalk winter maintenance indicated that 2,051 calls were received over the past five (5) years. These calls were apportioned and divided into the following categories:

- Requesting better Sidewalk Maintenance (i.e. icy, not plowed, need sanding) –1,694 (82%)
- Install New Sidewalks (i.e. splash pad only, have to walk on road etc) – 16 (1%)
- Maintain Existing Sidewalks (i.e. plows one side only, no plowing currently) – 159 (8%)
- Other Sidewalks complaints/concerns (i.e. lawn and other damage, spills) – 182 (9%)

Chart 1 – ACR Call Categories for Sidewalk Winter Maintenance (2008 – 2013)



The category labeled “Provide Maintenance of Existing Sidewalks along Street” includes service requests to maintain existing sidewalks that presently do not receive winter maintenance. They predominantly include sidewalks on residential streets that do not link to an existing sidewalk maintenance route, sidewalks on both sides of residential streets, 1.2 metre wide sidewalk maintenance (39 of the 159 calls), sidewalks that do not belong to the City (21 of the 159 calls) and sidewalk maintenance requests that have already been granted (81 of the 159 calls).

Table 3 provides a further breakdown of ACR calls received for “Provide Maintenance of Existing Sidewalks along Street” on residential streets.

Table 3 - ACR - Requesting Winter Maintenance of Existing Sidewalks (2008 - 2013)

Description	ACR Calls		Maintenance Section				
	# of Calls	% of All Calls	S	SE	SW	NE	NW
The City is presently maintaining (by 2014) some of the unmaintained sidewalks	81	4%	45	22	1	12	1
Provide Maintenance of 1.5 metre Sidewalks	18	1%	6	9	2	1	0
Provide Maintenance of 1.2 metre Sidewalks	39	2%	0	20	16	1	2
Provide Other Maintenance (MTO Sidewalks, not warranted)	21	1%	5	13	2	0	1
Total ACR Calls	159	8%					

Of the 159 ACR calls received over the past five (5) years, requesting sidewalk maintenance of existing unmaintained sidewalks, only 57 calls for maintenance have gone unfulfilled. To put it in perspective, only 3% of all ACR calls received over the past five (5) years ask that the City maintain existing sidewalks on residential streets that presently do not receive winter maintenance.

1.6 Existing Capacity for Sidewalk Winter Maintenance

The winter sidewalk maintenance budget was approximately \$831,000 in 2013 and \$848,000 in 2007. Over that same period of time approximately 28.5 kilometres of new sidewalk have been added to the existing winter sidewalk maintenance routes in accordance with current City policy. Figure 1 of Appendix 1 illustrates the recently (2007 – 2013) added sidewalks. Over the course of this period the number of pieces of sidewalk maintenance equipment remained the same, therefore no capital expenditures were required. This is an indication that the current sidewalk winter maintenance policy has provided flexibility to expand sidewalk winter maintenance in order to meet the growth of the City over the past few years with minimal impacts to the Operating Budget.

However, Table 1 indicates that actual service times have reached and / or exceeded design times for winter sidewalk maintenance. Table 2 indicates that the City's sidewalk route lengths are comparable with other northern municipalities. Both tables suggest that there is no further capacity available within the current service model to continue to expand winter maintenance of new sidewalks.

1.7 Implications of Maintaining Additional Sidewalk Routes

1.7.1 Equipment and Labour Requirements

There is approximately 100 kilometres of unmaintained sidewalk within the City. The majority of unmaintained sidewalks are located in areas where “deadhead” time is significant (i.e. Azilda, Broder, Coniston, Copper Cliff, Falconbridge, Garson, Val Caron and Val Therese communities) or where there are 1.2 meter wide sidewalks (i.e. Coniston, Copper Cliff, Falconbridge, Garson, Levack, Lively, and Onaping communities). Providing winter maintenance for these sidewalks will require the creation of new (additional) sidewalk routes.

In some instances, two (2) separate sidewalk routes may be required within the same community because it involves maintenance of both 1.2 metre and 1.5 metre wide sidewalks (i.e. Coniston, Copper Cliff, Garson and Lively). As such, a total of six (6) additional sidewalk winter maintenance routes need to be created in order to maintain all municipal sidewalks.

Six (6) additional MT's along with six (6) additional temporary employees will be required to facilitate the enhanced service standard described. The full implementation capital acquisition cost is approximately \$900,000 (\$150,000 per MT).

At full implementation, the associated annual maintenance and labour cost is approximately \$210,000 (\$35,000 per MT) and \$210,000 (\$35,000 per operator) respectfully. The maintenance cost includes additional fuel usage and repair costs.

The above cost estimates are based on providing the service with City Staff. The future implementation plan will consider contract services or a blended service. The above cost estimates do not include all walkways between parks and roads.

1.7.2 Direct and Indirect Impacts of Enhanced Sidewalk Winter Maintenance

Unmaintained sidewalks function as snow storage for roadway snow. Once winter maintenance of these sidewalks commences, additional roadway snow removal may be required depending on the severity of any given winter season. The cost associated with performing the additional

snow removal is not included in this report because it varies from year to year and is difficult to quantify.

Both Sides of Sidewalk Plowed (Montague St., north of Jean St.)



Narrower Road Width (requires more snow removal)

One Side of Sidewalk Plowed (Montague St., south of Jean St.)



Wider Road Width (requires less snow removal)

Many sidewalks are located adjacent to Transit bus stops. Although the City currently maintains several hundred bus stops, a large number remain unmaintained. Hence, additional sidewalk maintenance will inevitably result in additional bus stop snow removal. This will have an impact on the Transit operating budget.

Additional winter maintenance of sidewalks may impact lane width thereby reducing day time on-street parking and residential parking on narrower streets (i.e. Donovan, West end, Flour Mill and Garson areas).

Residents who receive the enhanced sidewalk maintenance service will have to get accustomed to a second windrow of snow at the end of their driveway.

Advanced communication of the service change can mitigate the downsides of additional winter sidewalk maintenance while promoting the positive outcomes.

2. Conclusion

Council has identified the importance of year-round mobility for pedestrians with an emphasis on a healthy community, and supporting alternative forms of transportation in a sustainable economic manner. Council further resolved that the City of Greater Sudbury accept the challenge to become the most pedestrian friendly City in Ontario by 2015 (Resolution #2007-226). With increasing frequency, residents of our community have been expressing interest in a more active transportation network. These comments are received at various infrastructure public consultation sessions, at various advisory group meetings, and to some extent through the ACR system. In keeping with Council's resolution and the interests of the community, it is recommended that a plan for winter sidewalk maintenance enhancements be developed using extensive community consultation and engagement.

The mandate of the public consultation process will be to review new sidewalk development, rationalization of existing sidewalk winter maintenance and enhanced winter sidewalk

maintenance, including establishing criteria for prioritization of the implementation plan. A report will be prepared for deliberation during the 2016 budget and subsequent budgets.

The implementation plan will consider a phased approach, which could take five or more years to implement. Phasing reduces the impact to the City's budget in any one year, and allows staff some time to optimize winter maintenance operations in each operating section to accommodate the new policy. The greatest disadvantage of a phased approach is the reality that there will be varied levels of service throughout the City until full implementation has been achieved. The implementation plan will provide recommendations for prioritization of new winter sidewalk maintenance routes, allowing Council to consider strategies for staging service levels.

Appendices

- Appendix 1: Figure 1 - Newly (within the past five (5) years) maintained 1.5 metre wide sidewalks
- Appendix 2: All current sidewalk maintenance routes

Newly Maintained Sidewalks

— Maintained Sidewalks — 28.5 km Newly Maintained Sidewalks (2007-2013)

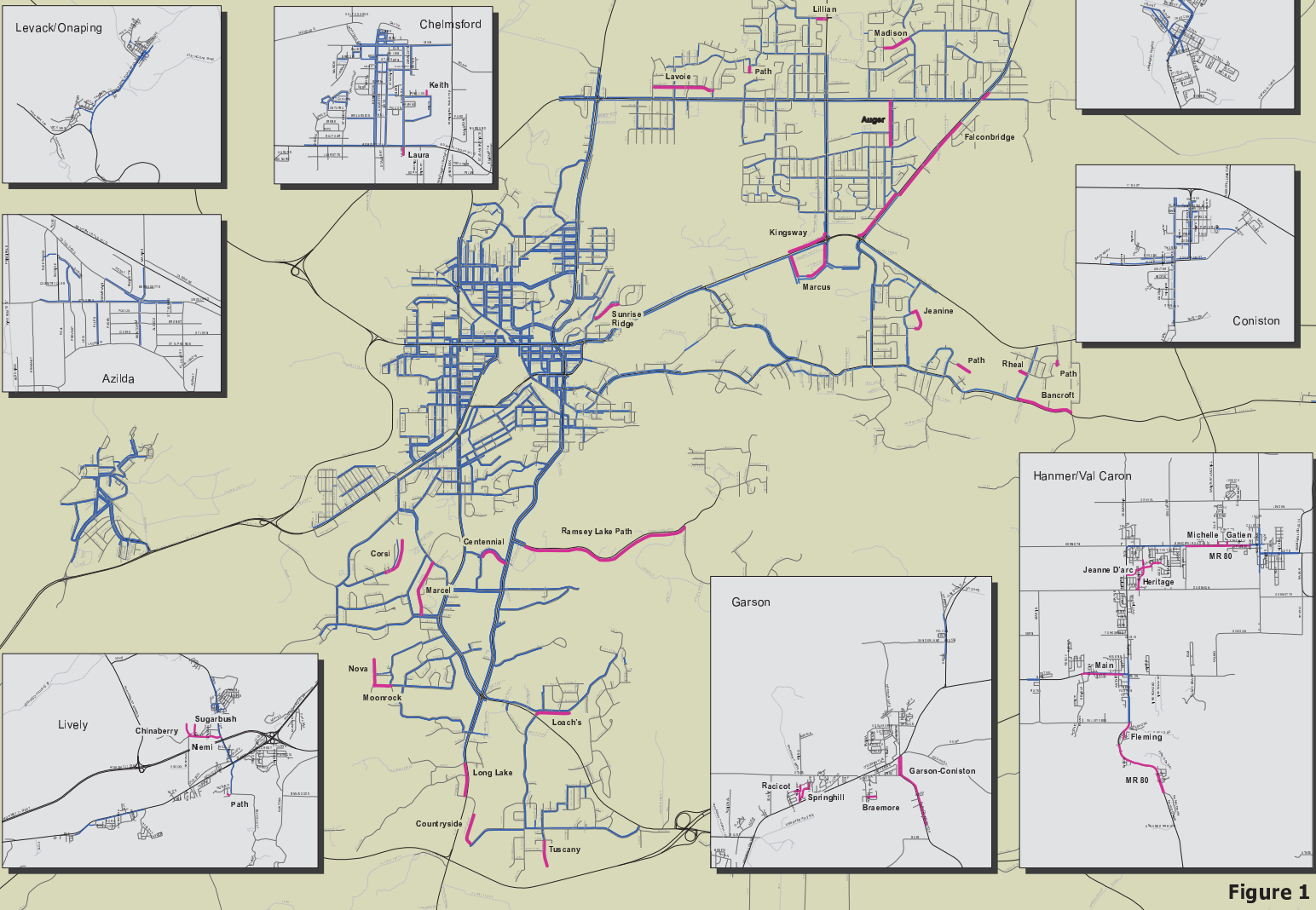
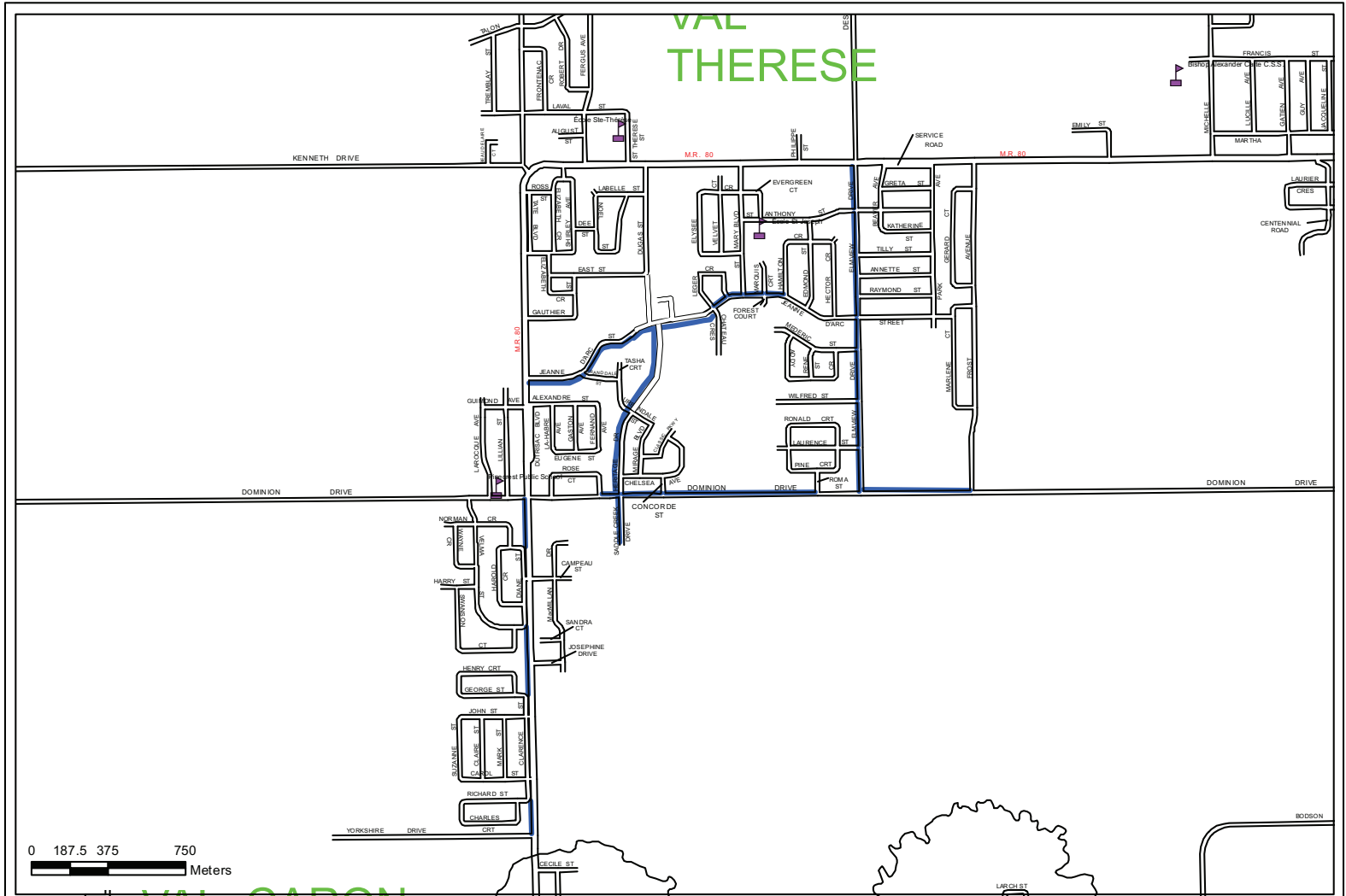


Figure 1



NORTHEAST SECTION 2013-2014

Date: October 28, 2013
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SIDEWALK 1

1 of 3
 Vehicle: S-1252

BLEZARD VALLEY

VAL CARON

RIVER

WHITSON

0 162.5 325 650
Meters

NORTHEAST SECTION 2013-2014

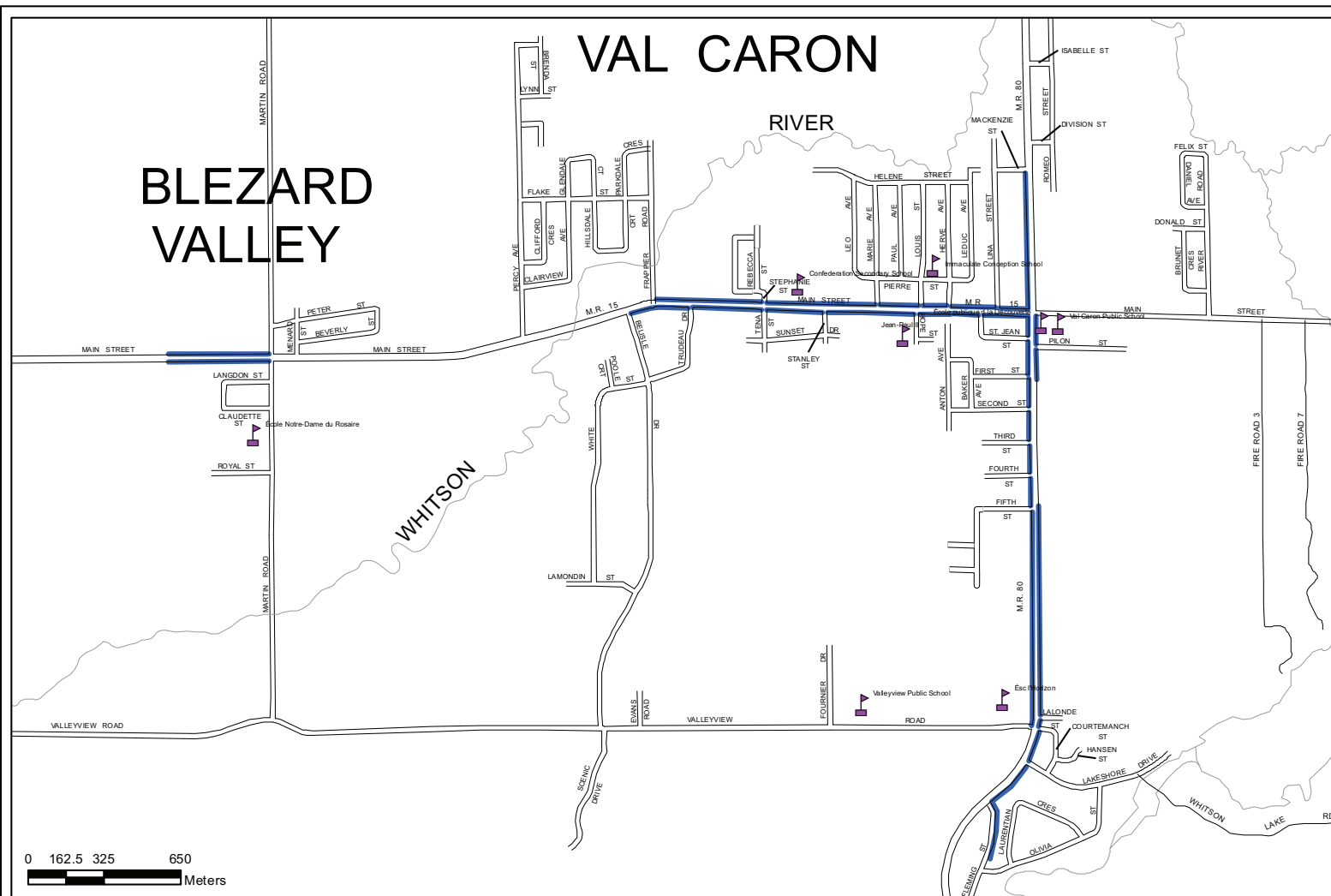
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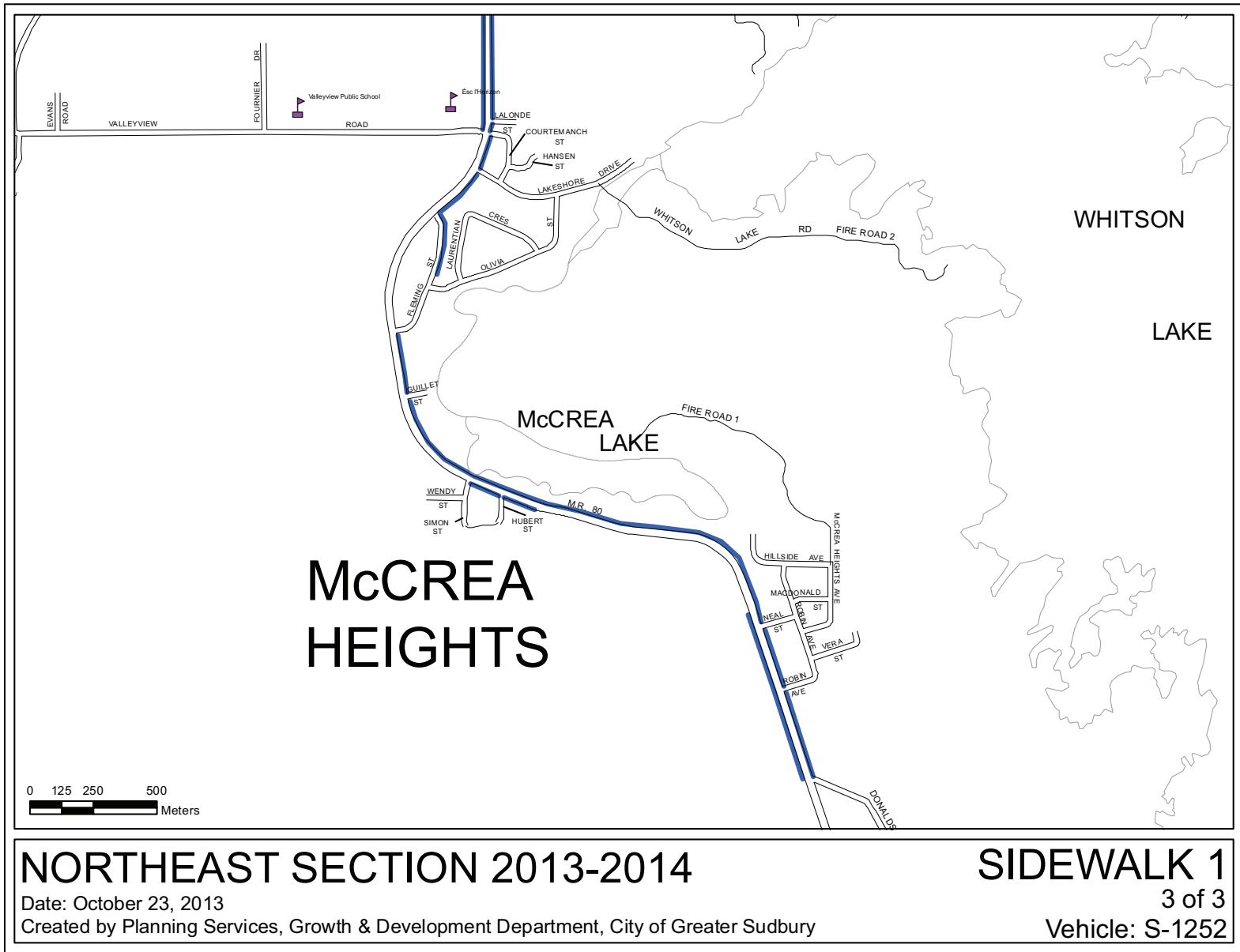
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SIDEWALK 1

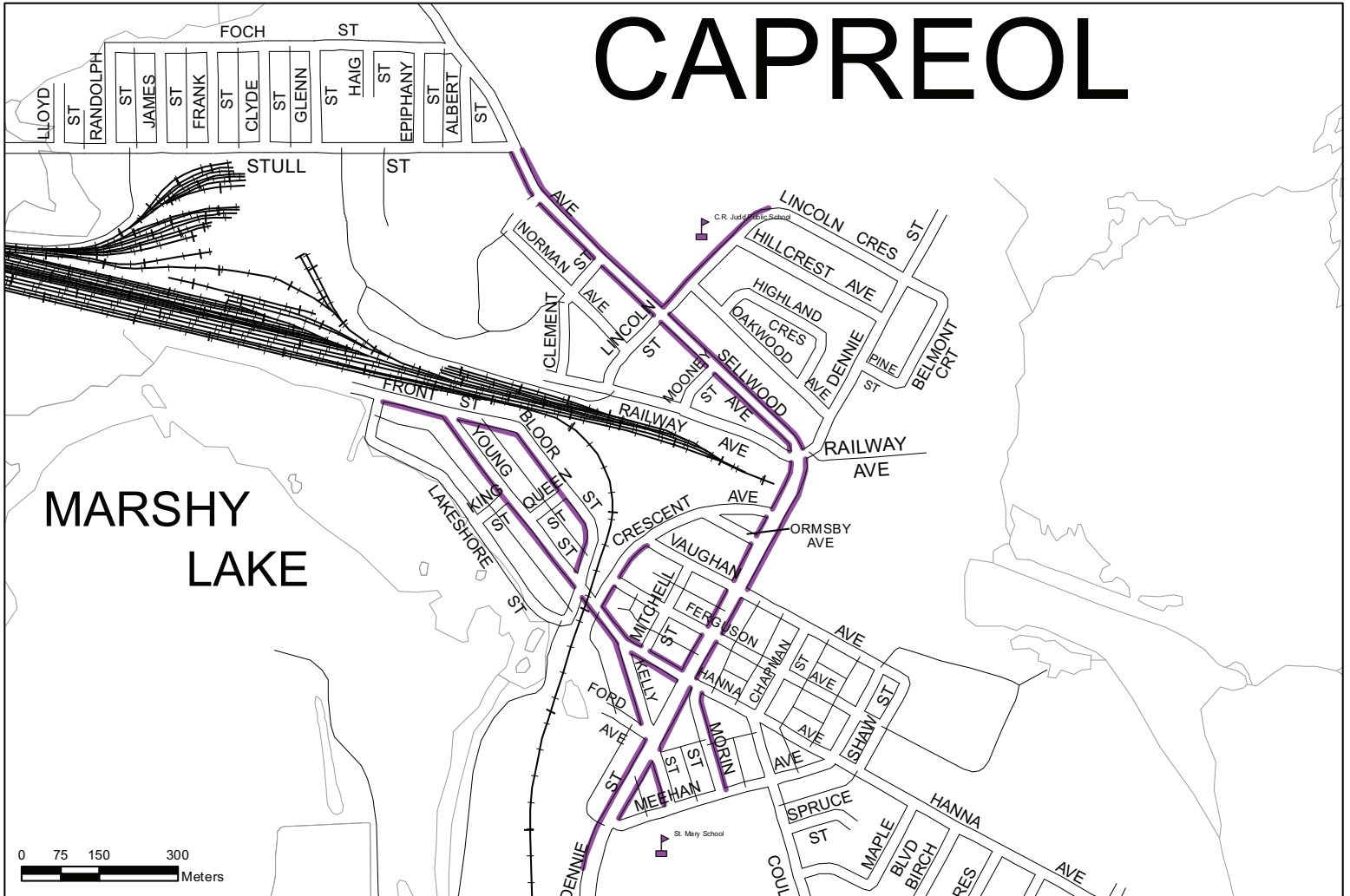
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Vehicle: S-1252





CAPREOL



NORTHEAST SECTION 2013-2014

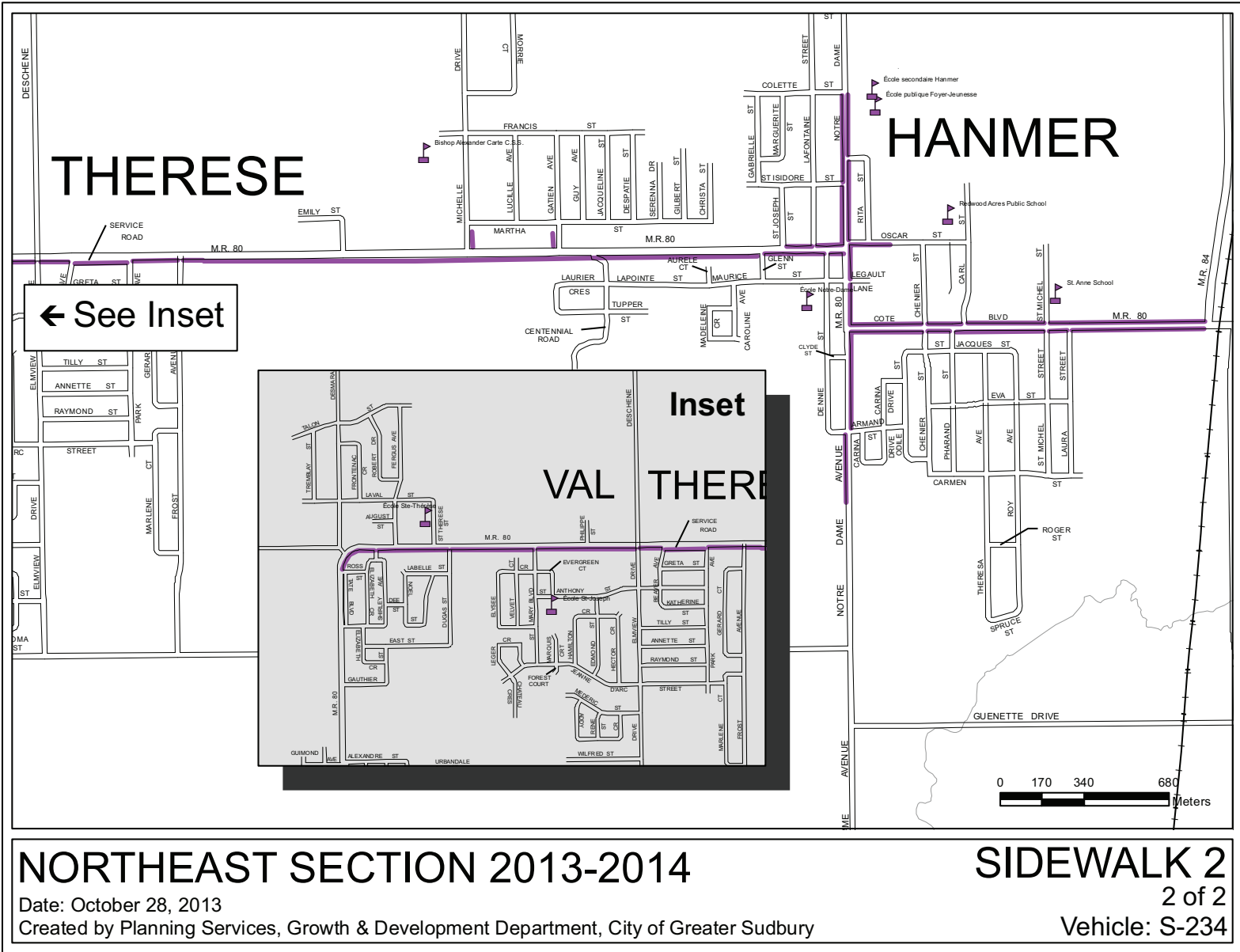
Date: October 23, 2013

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SIDEWALK 2

1 of 2

Vehicle: S-234



AZILDA

A detailed map of the Azilda area. The map shows a network of streets including Fleetwood, Ros St, Shawn St, Rainside Ave, Leo St, Champlain St, Paquette St, Donat St, Carriere St, Bernadette St, Marier St, St. Thomas, Swedlund St, Notre Dame St, East St, Joliette Ave, Birch St, Donald St, Oak St, Ple St, Charlebois St, Clearview St, St. Jean, Brunet St, Poulin St, Montcalm St, West St, Laurier St, Puskas St, Ellen St, Prevost St, Paul St, West St, Brabant St, and Junction Ave. A red line highlights a specific route starting from the top left, passing through Rainside Ave, Leo St, Champlain St, and then following a path through the center of the map. A purple icon representing a school is located near the intersection of Bernadette St and Marier St, and another purple icon representing a school is located near the intersection of Joliette Ave and Charlebois St. A scale bar at the bottom left indicates distances of 0, 75, 150, and 300 meters.

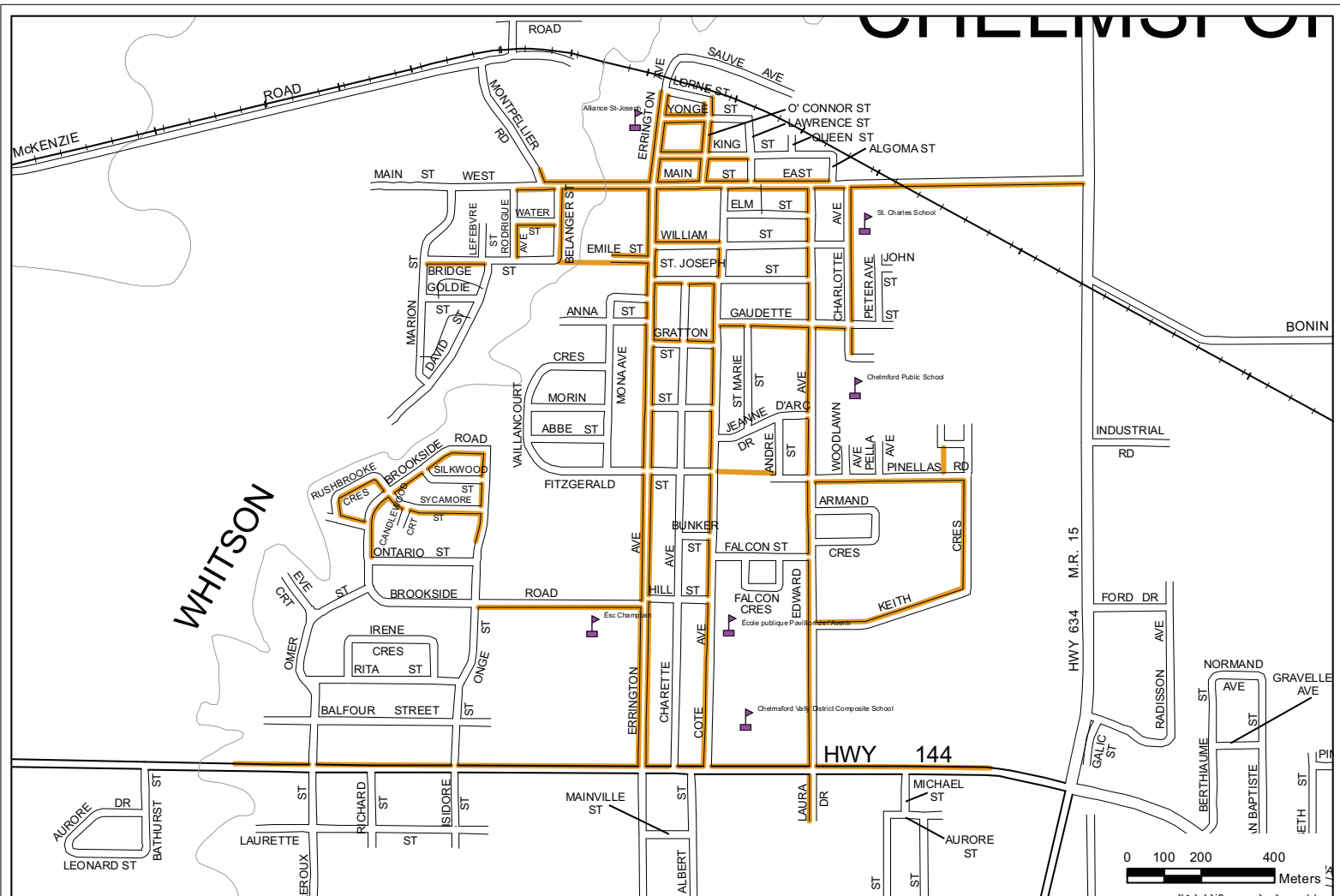
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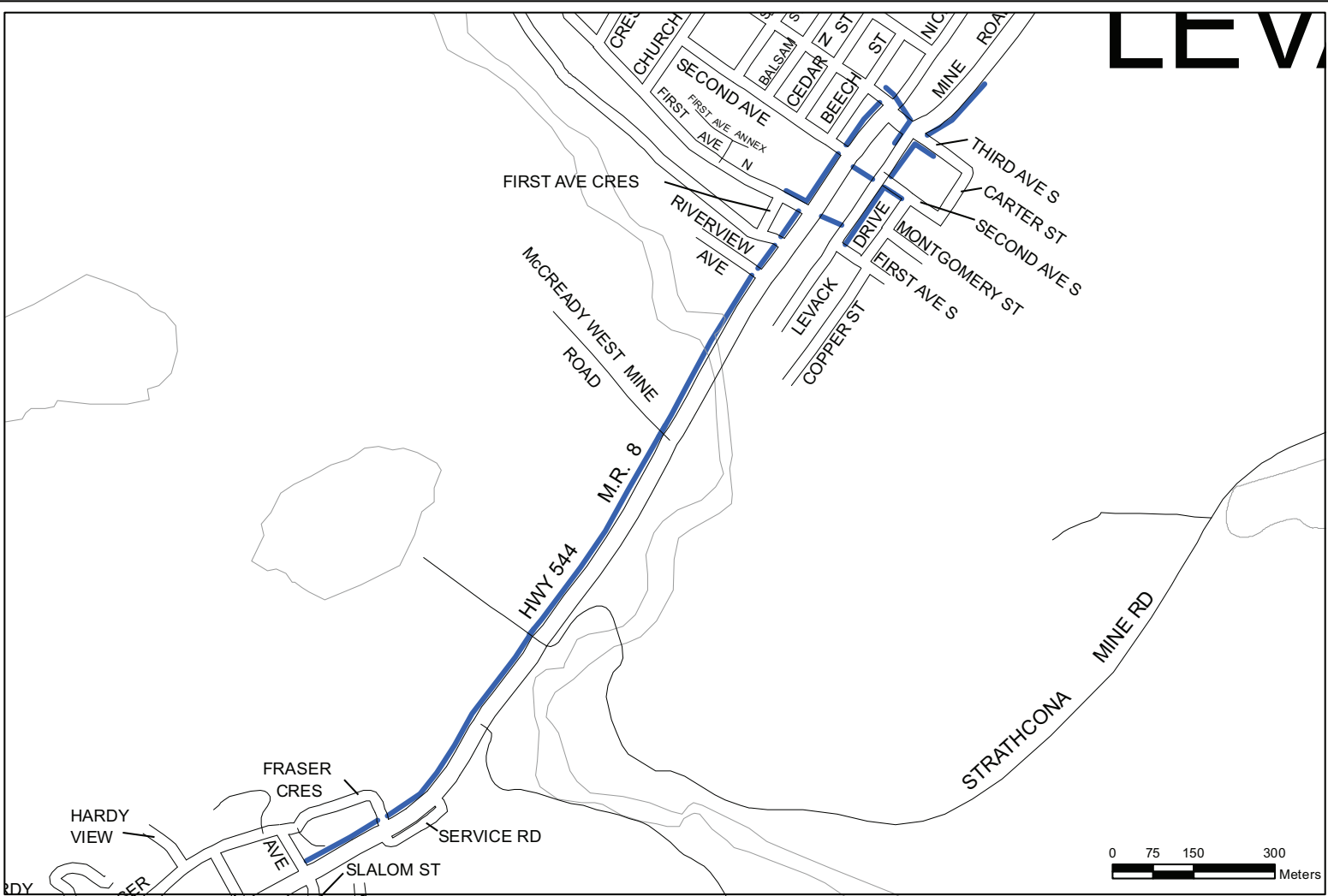
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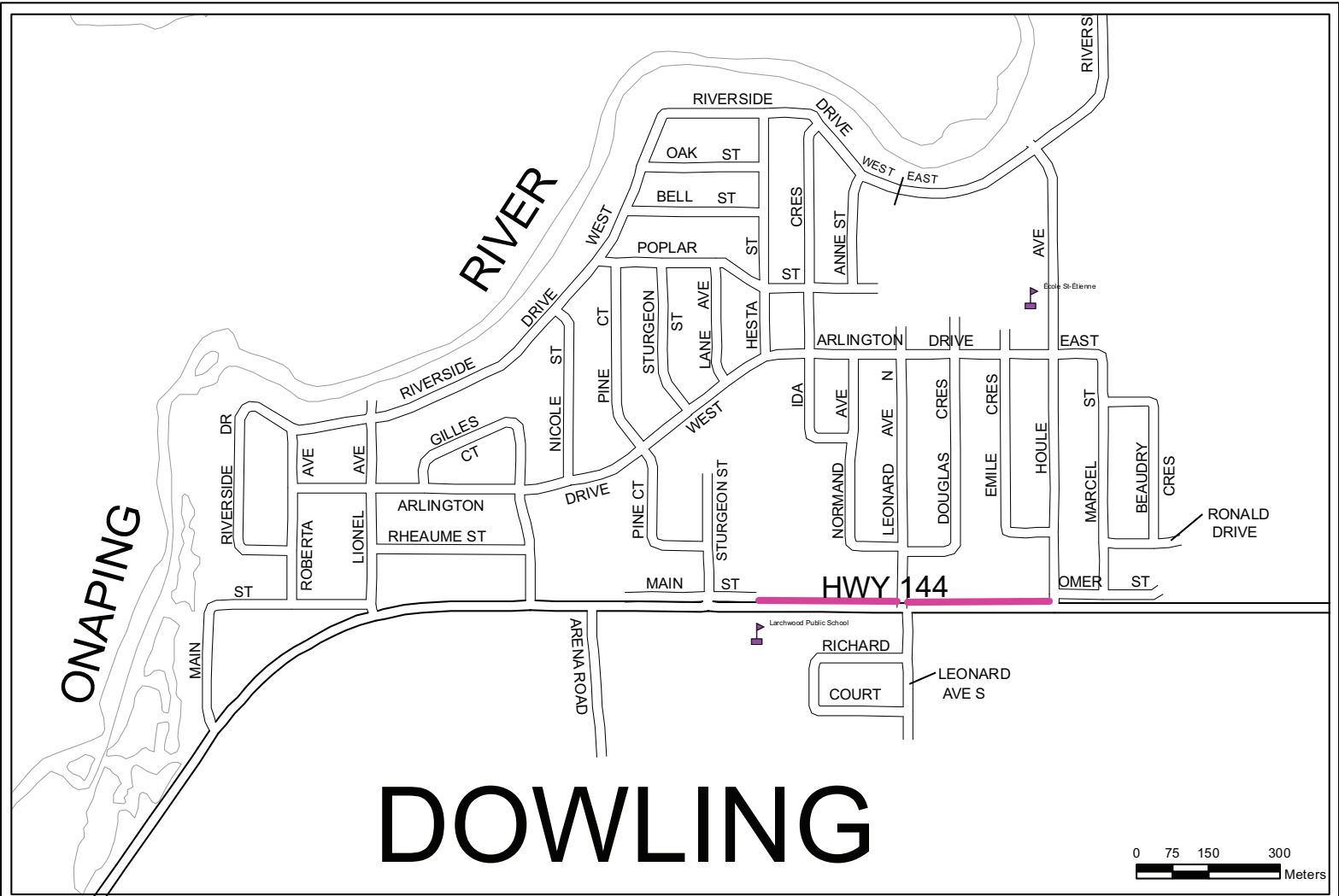


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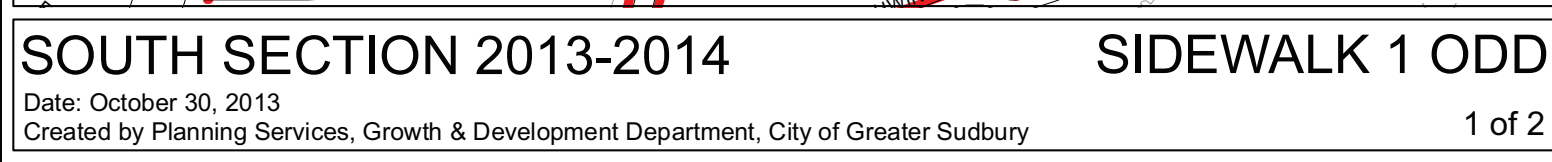


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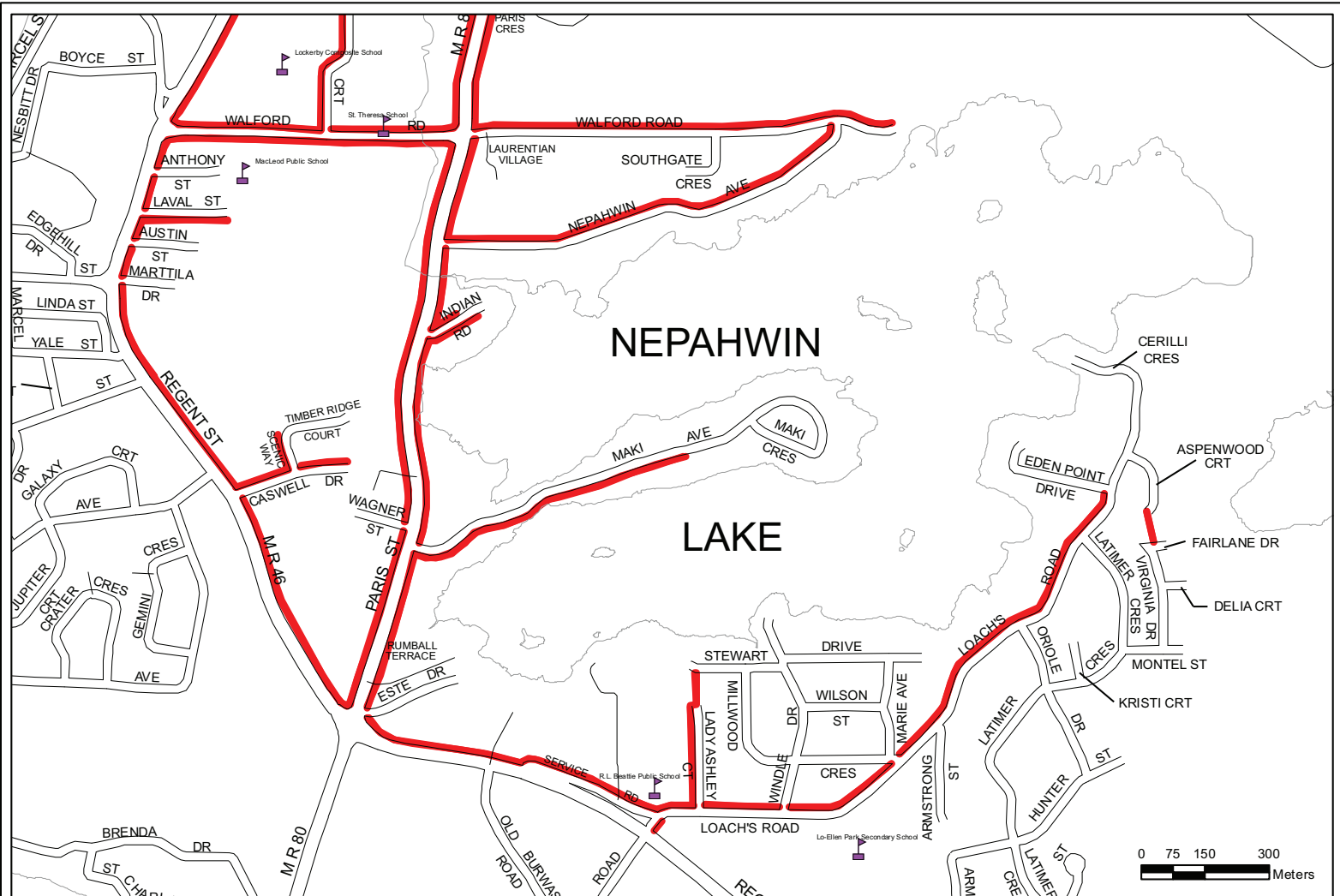
SIDEWALK 4

Vehicle: Spare Unit S259



SIDEWALK 1 ODD

1 of 2



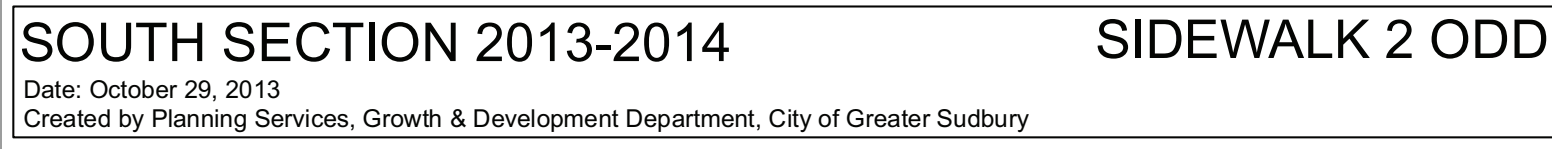
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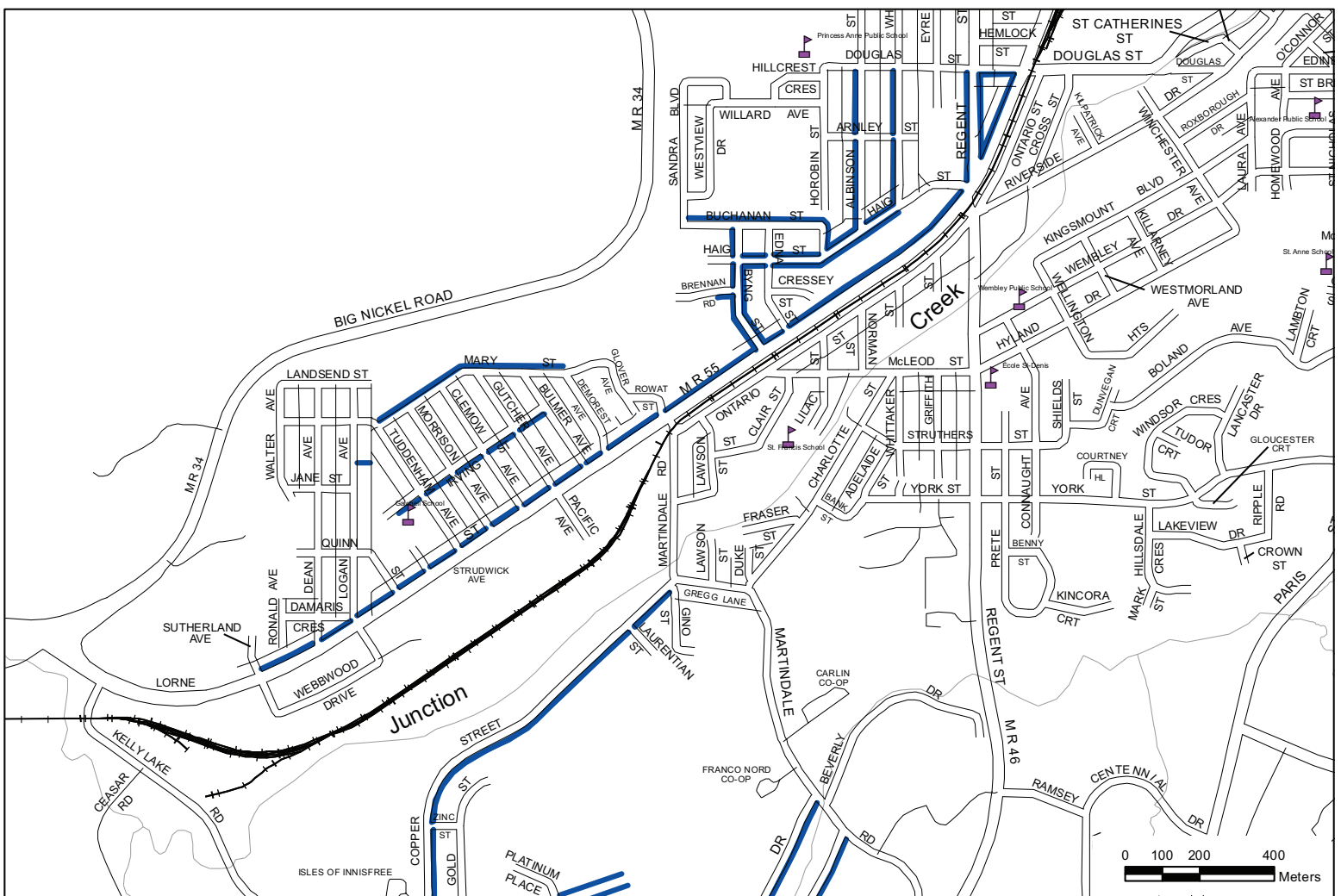
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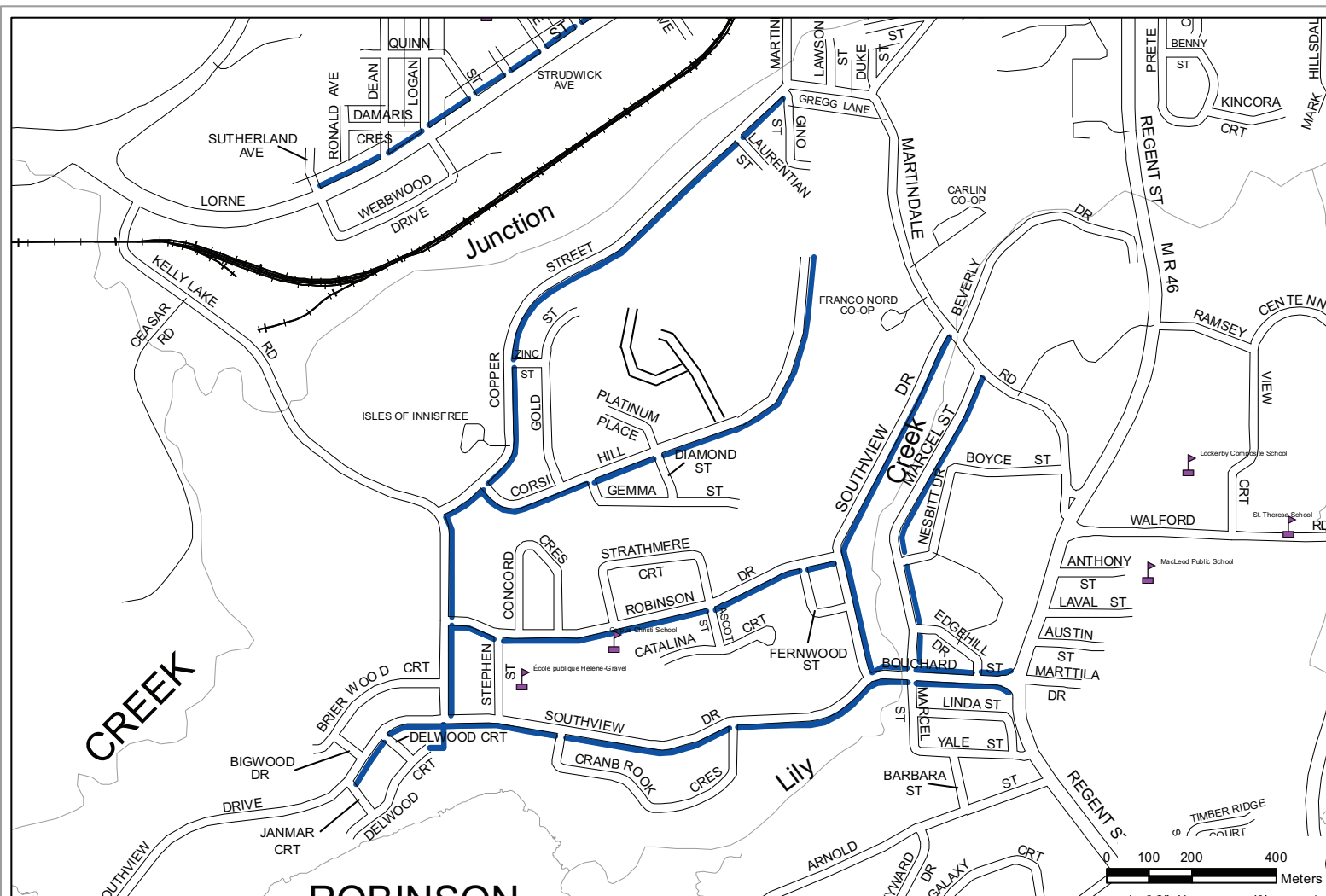




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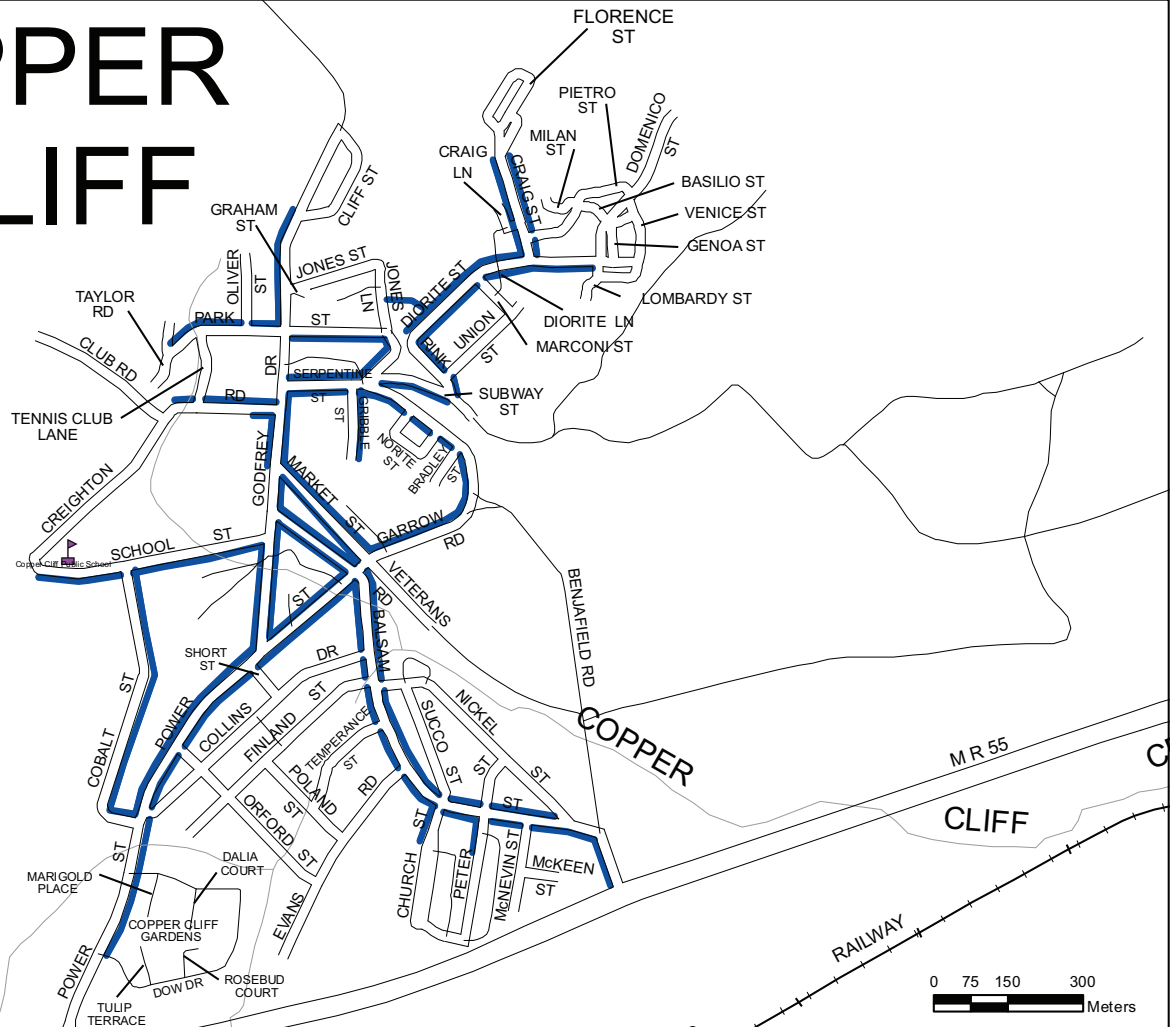
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COPPER CLIFF



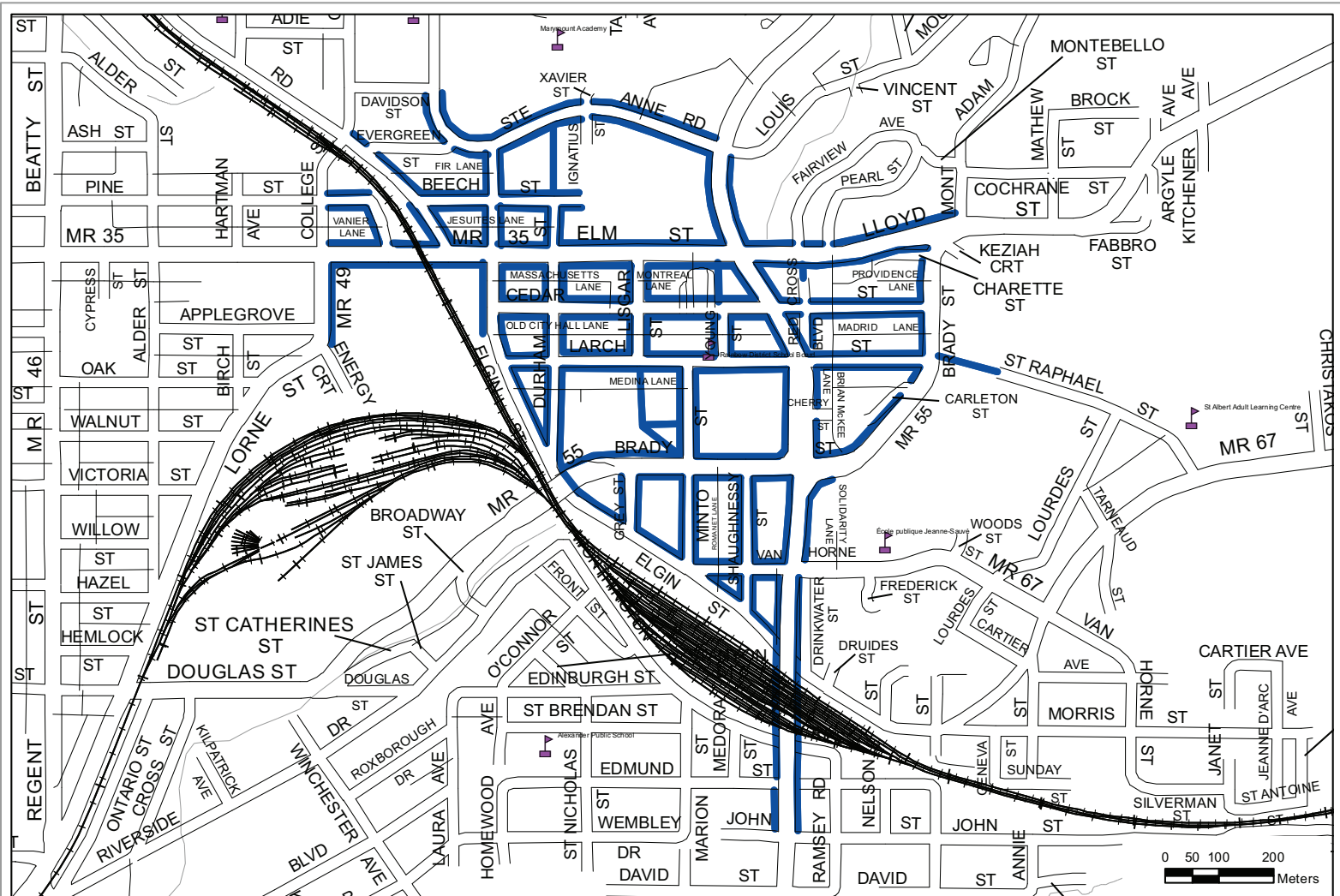
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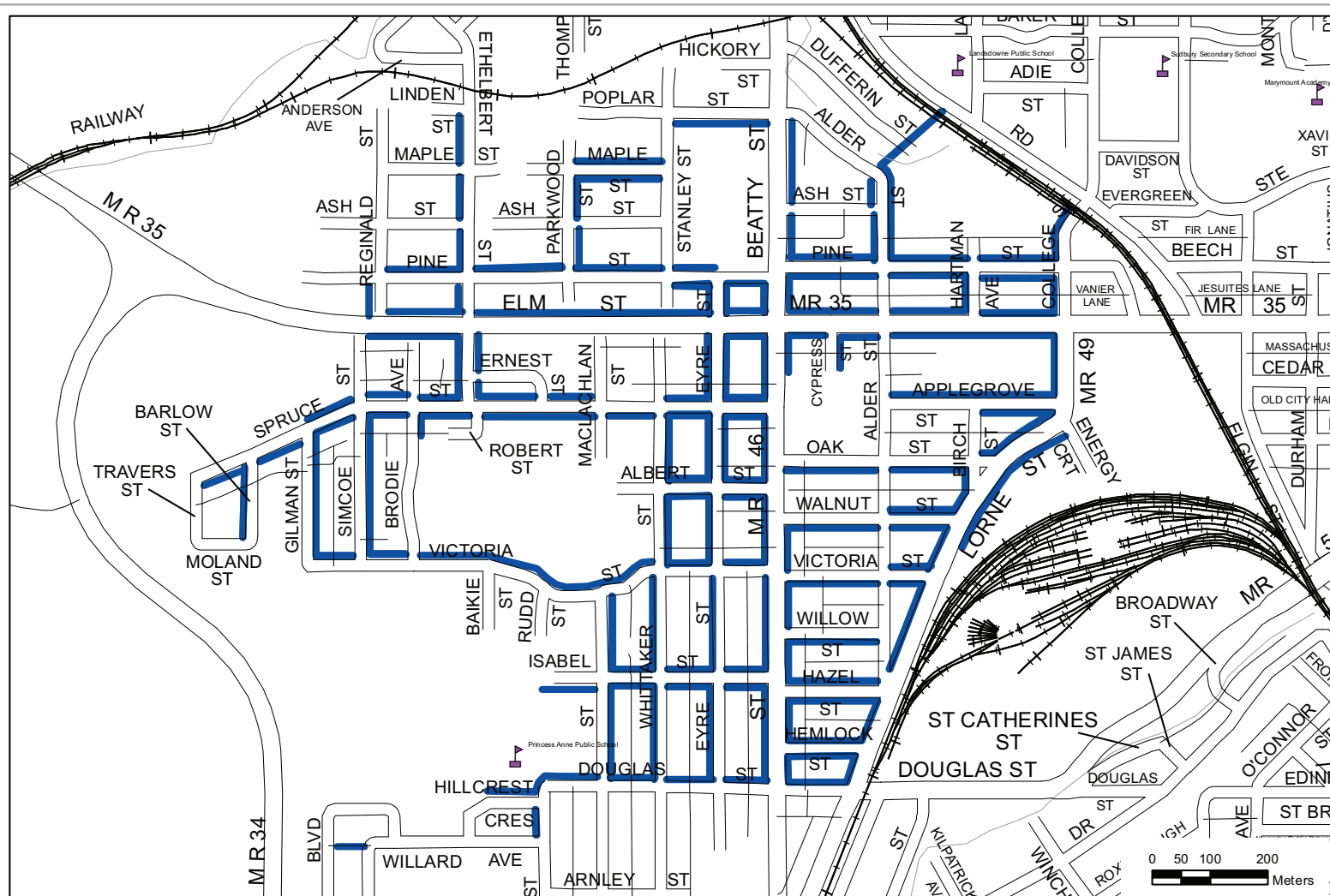


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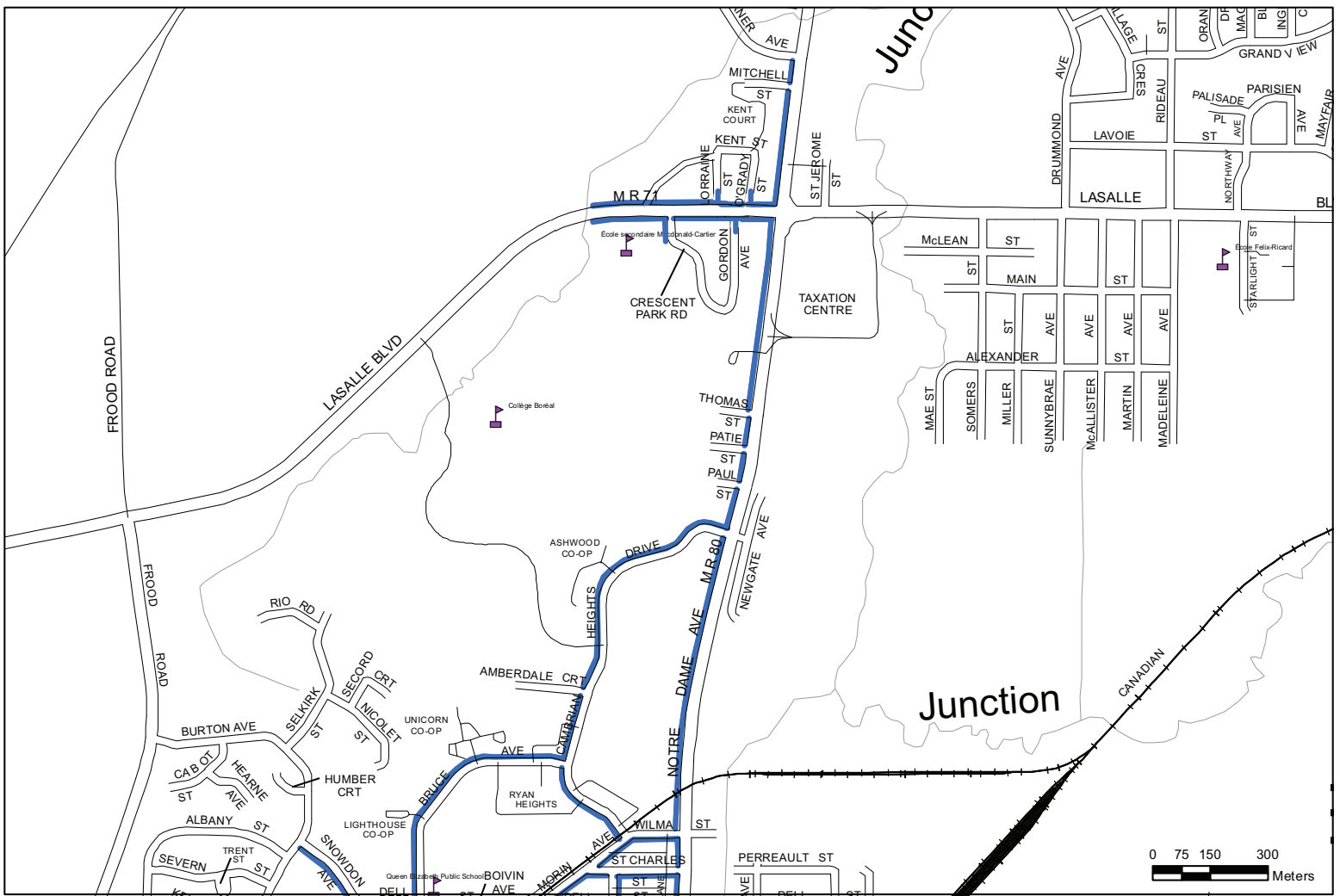
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SIDEWALK 5 ODD

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SIDEWALK 6 ODD

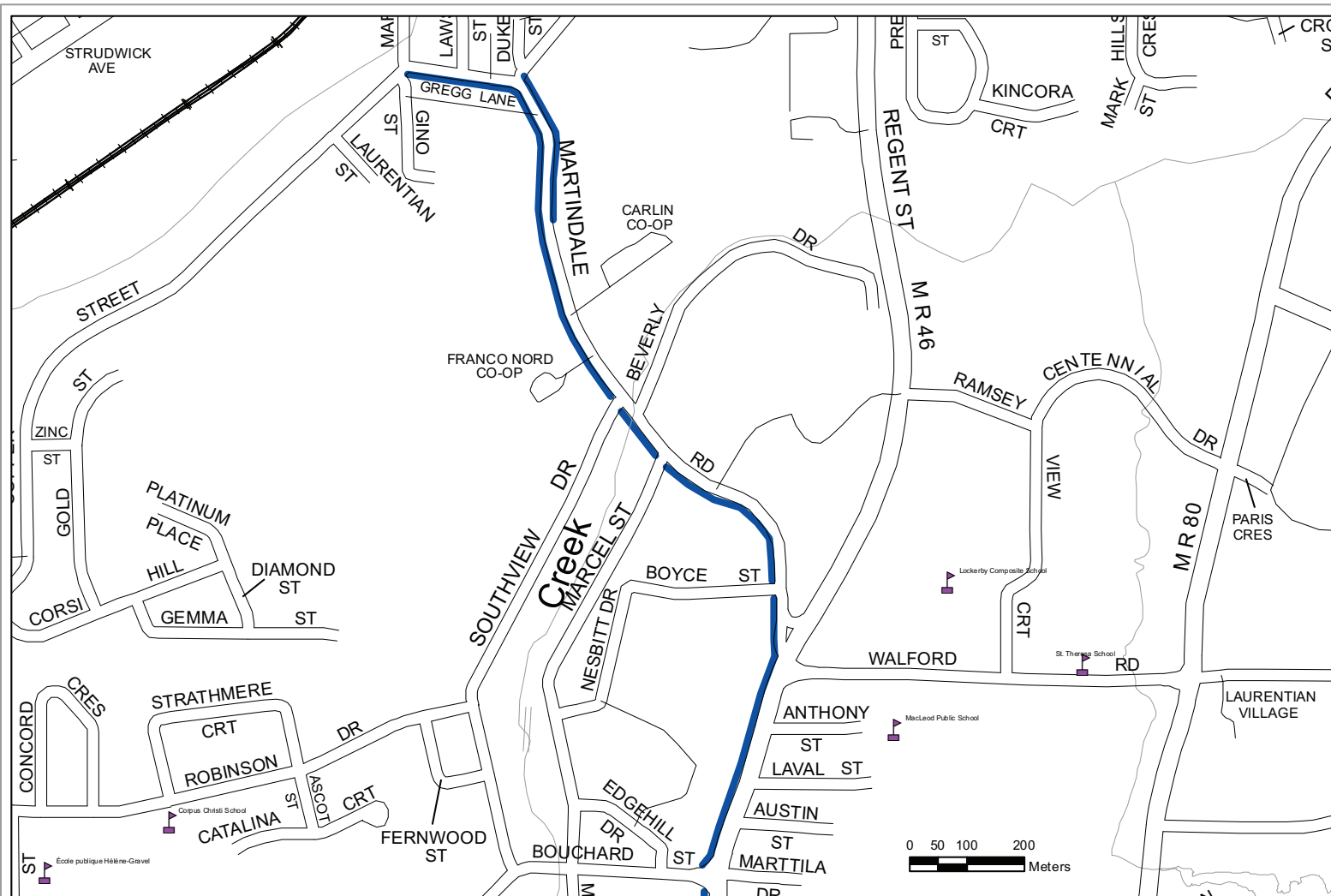


SOUTH SECTION 2013-2014

SIDEWALK 7 ODD

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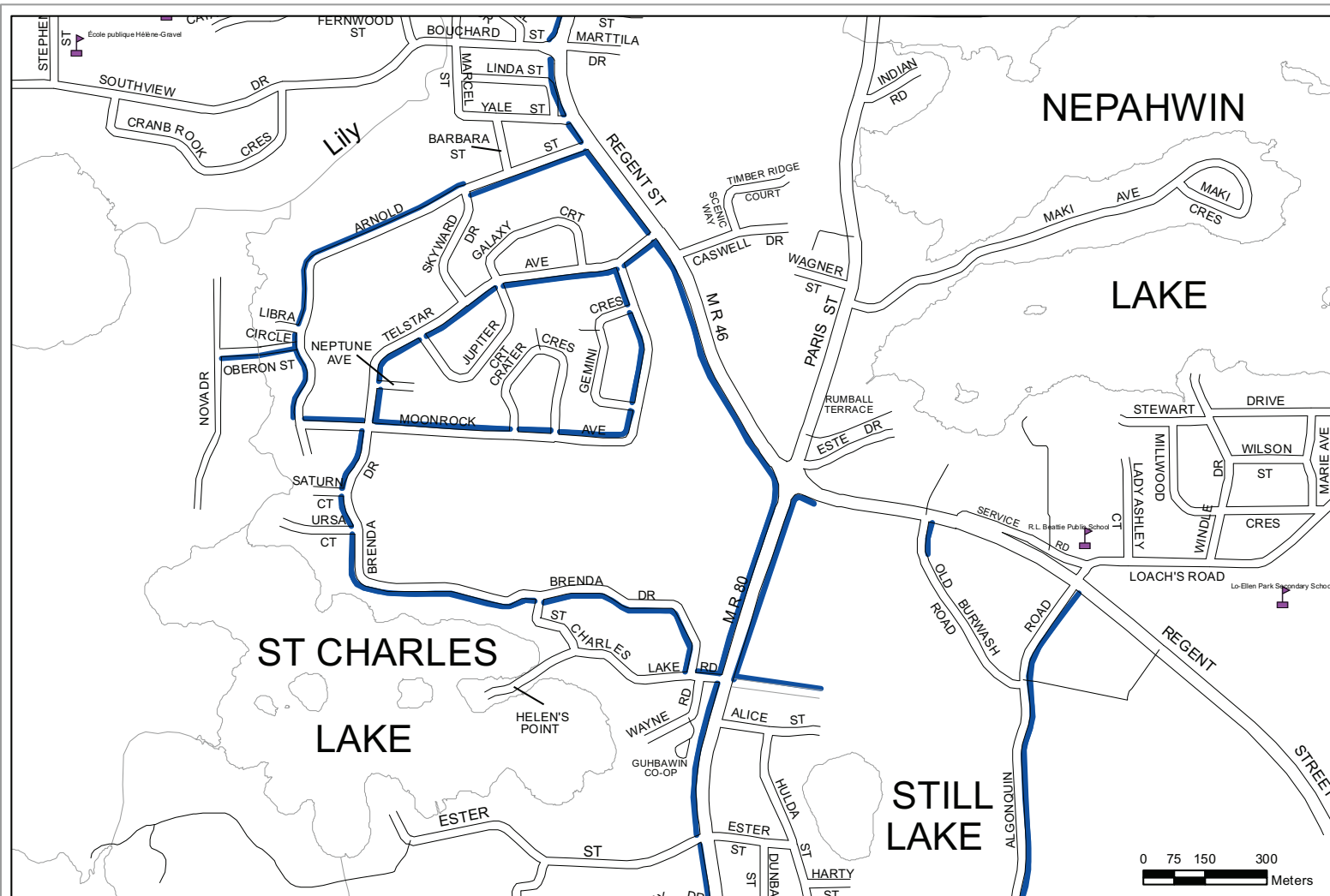
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SIDEWALK 8 ODD

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1 of 3



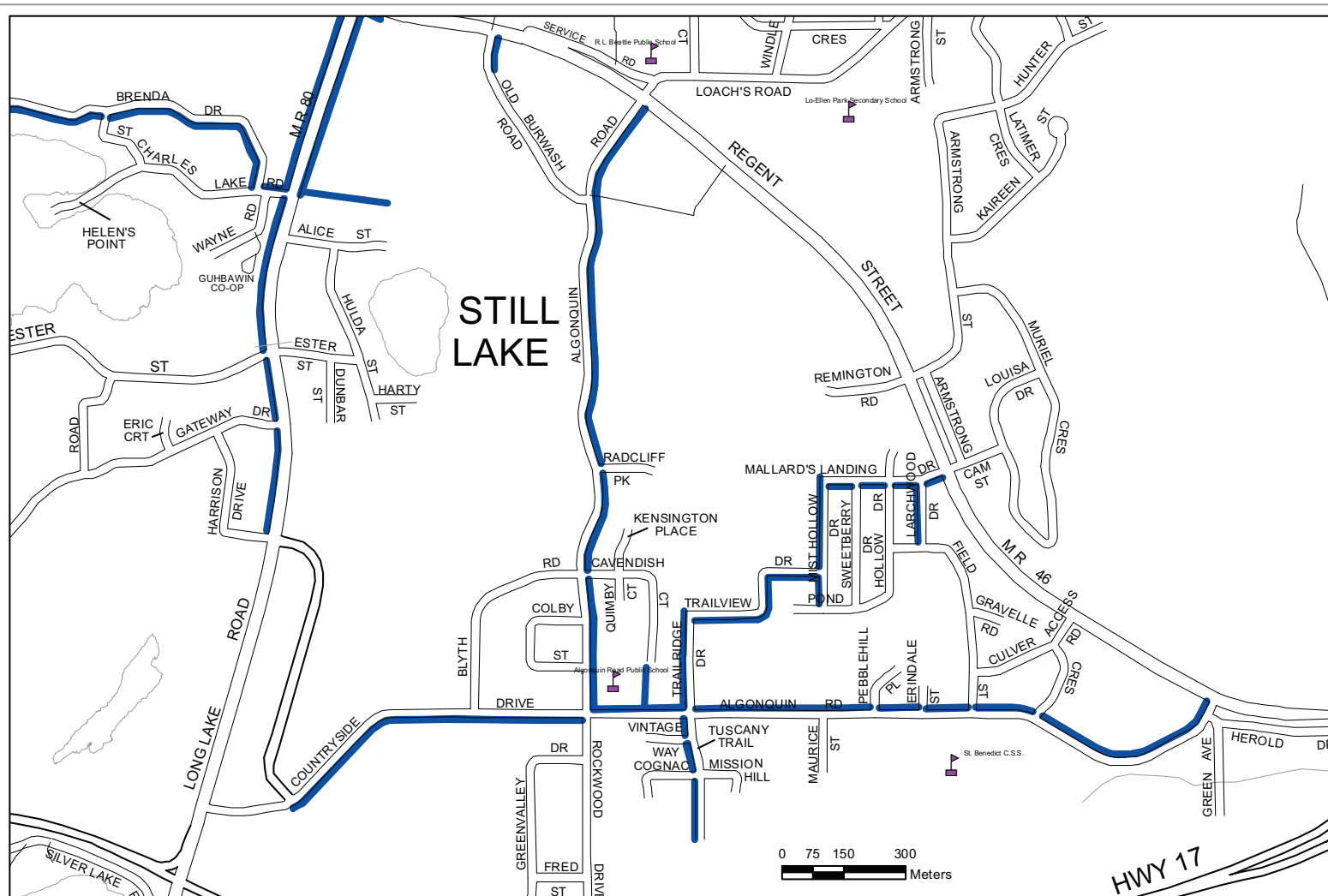
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SIDEWALK 8 ODD

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SOUTH SECTION 2013-2014

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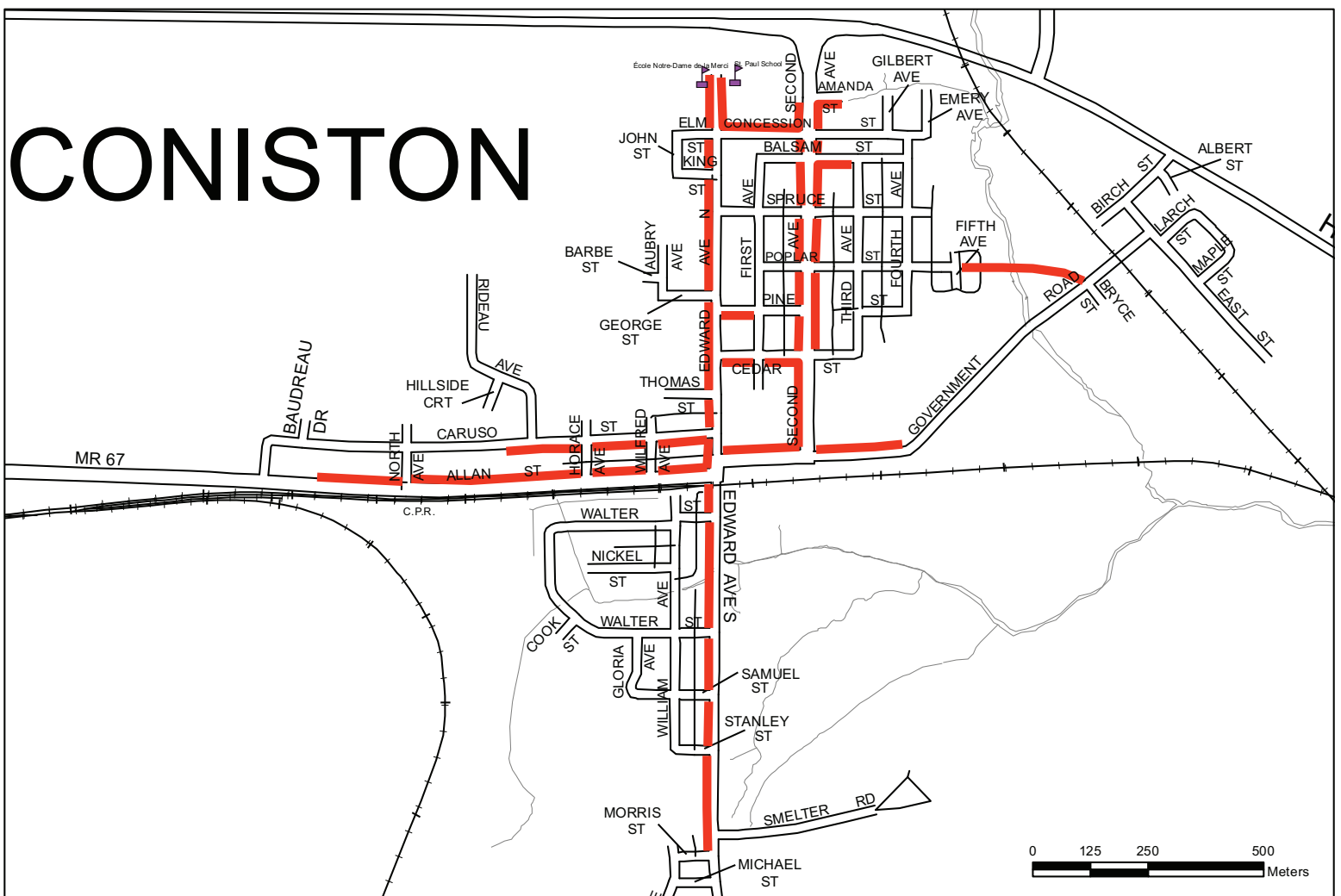
GARSON

This map illustrates the Garson neighborhood, featuring a network of streets and a highlighted red route. The route begins at the bottom left, following Falconbridge Drive, then turns right onto Ashgrove Street, and continues through a series of streets including Racicot Drive, Larchwood Avenue, and O'Neil Drive West. It then turns right onto O'Neil Drive, passing through a residential area with streets like Victoria Street and Primrose Street, before turning right onto Church Street. The route continues along Church Street, passing the Northern Elementary School, and then turns right onto Garson-Coniston Road. Finally, it turns right onto Jones Street and ends at the bottom right. The map also shows other streets such as Annapolis Drive, Heino Road, and Goodwill Drive. A scale bar at the bottom right indicates distances in meters (0, 130, 260, 520).

Vehicle: S257



CONISTON



SOUTHEAST SECTION 2013-2014

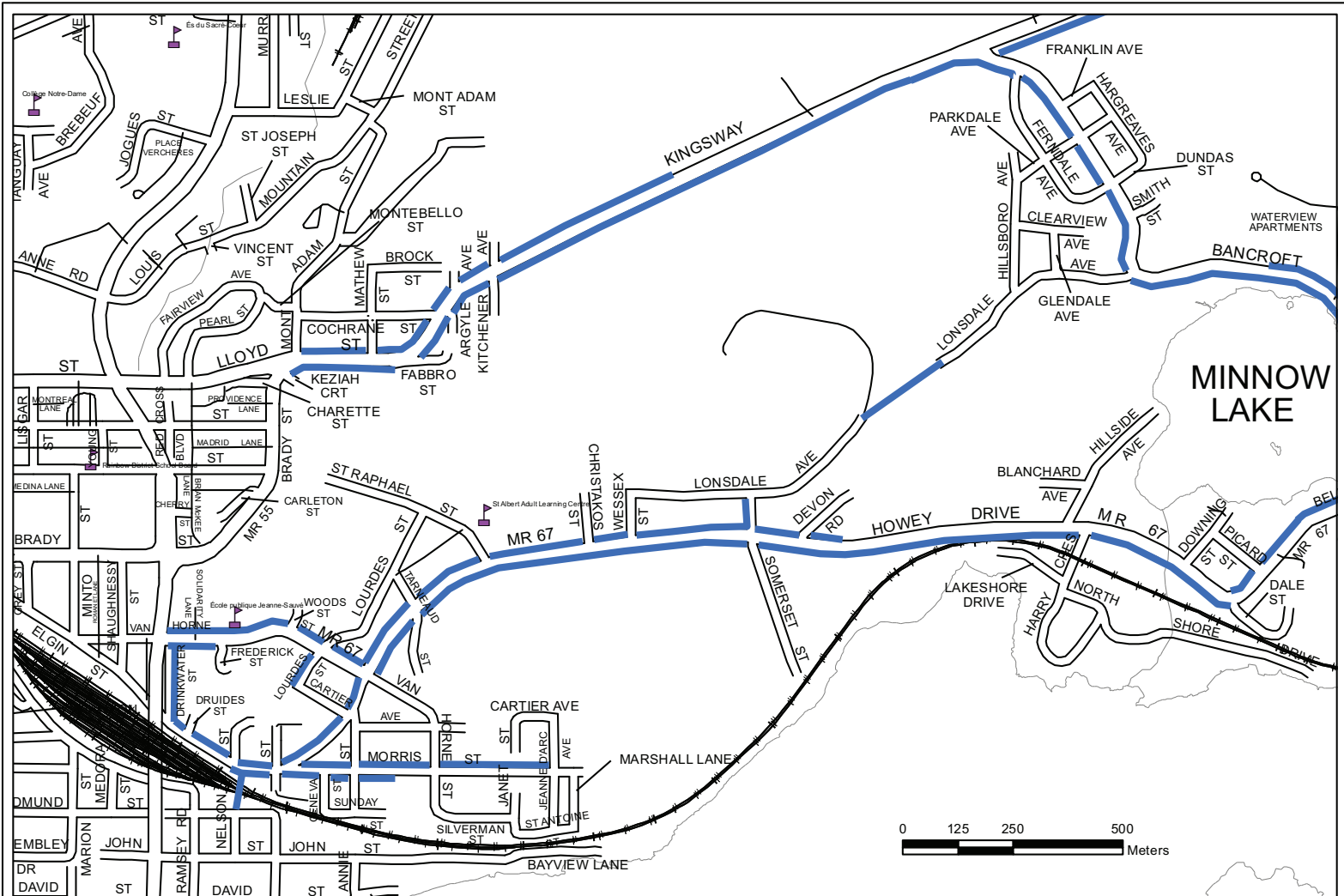
Date: October 17, 2013

Created by Planning Services, Growth & Development Department, City of Greater Sudbury

SIDEWALK 1C

1 of 1

Vehicle: S257



SOUTHEAST SECTION 2013-2014

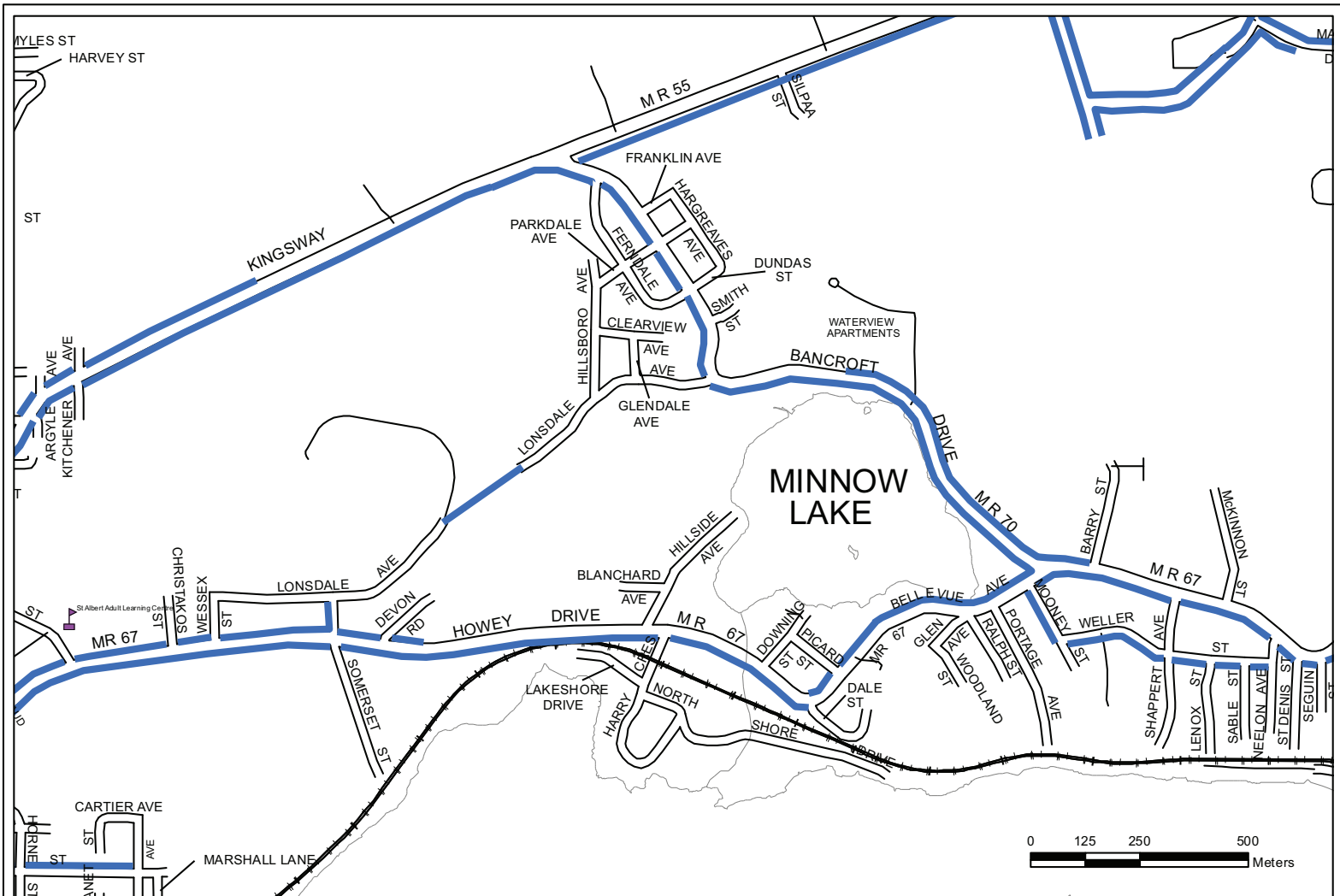
SIDEWALK 2A EVEN

Date: October 17, 2013

Created by Planning Services, Growth & Development Department, City of Greater Sudbury

1 of 1

Vehicle: S244



SOUTHEAST SECTION 2013-2014

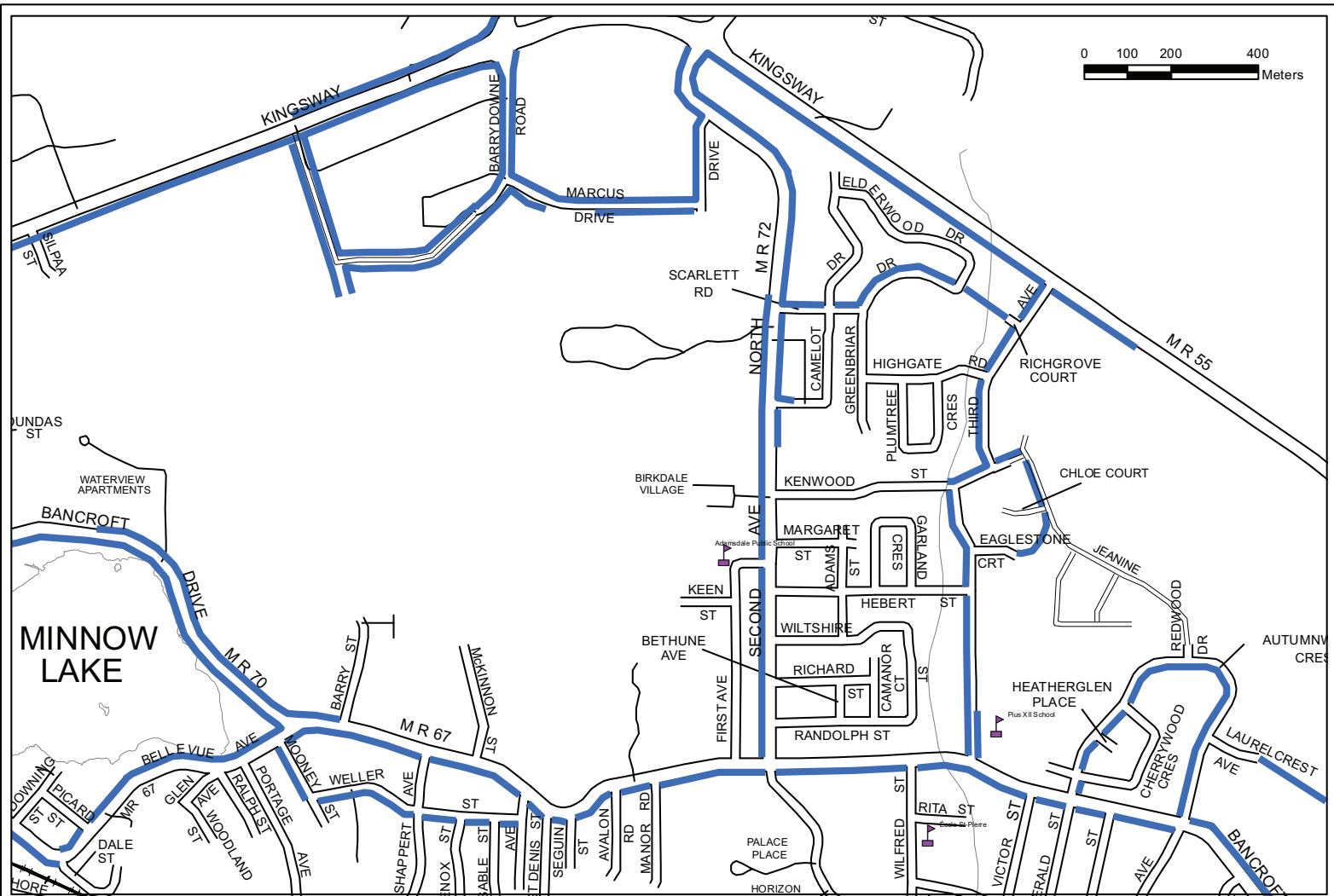
SIDEWALK 2B EVEN

Date: October 24, 2013

Created by Planning Services, Growth & Development Department, City of Greater Sudbury

1 of 1

Vehicle: S244



SOUTHEAST SECTION 2013-2014

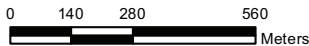
SIDEWALK 2C EVEN

Date: October 17, 2013

Created by Planning Services, Growth & Development Department, City of Greater Sudbury

1 of 1

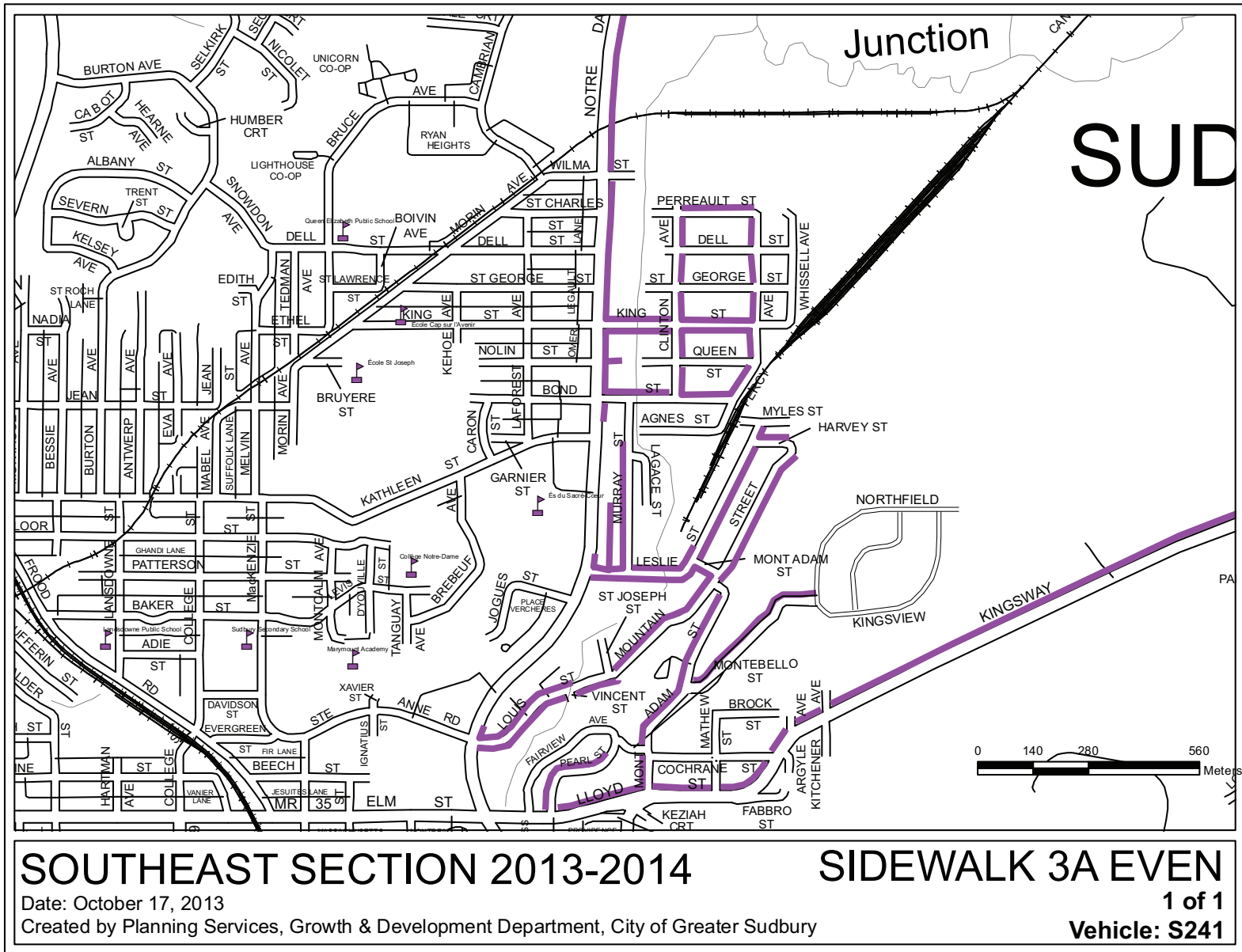
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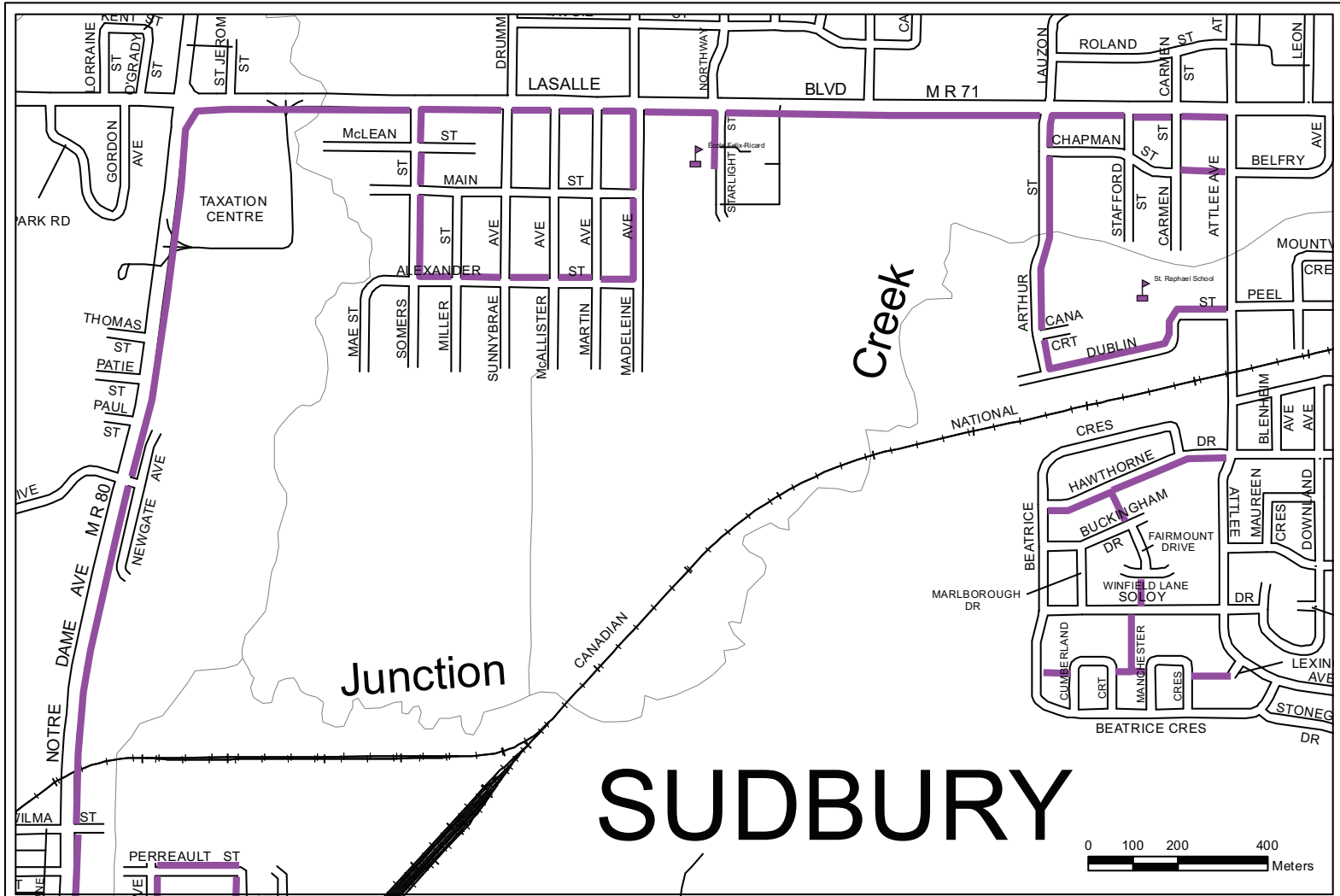


SIDEWALK 2D EVEN

1 of 1

Vehicle: S244





SOUTHEAST SECTION 2013-2014

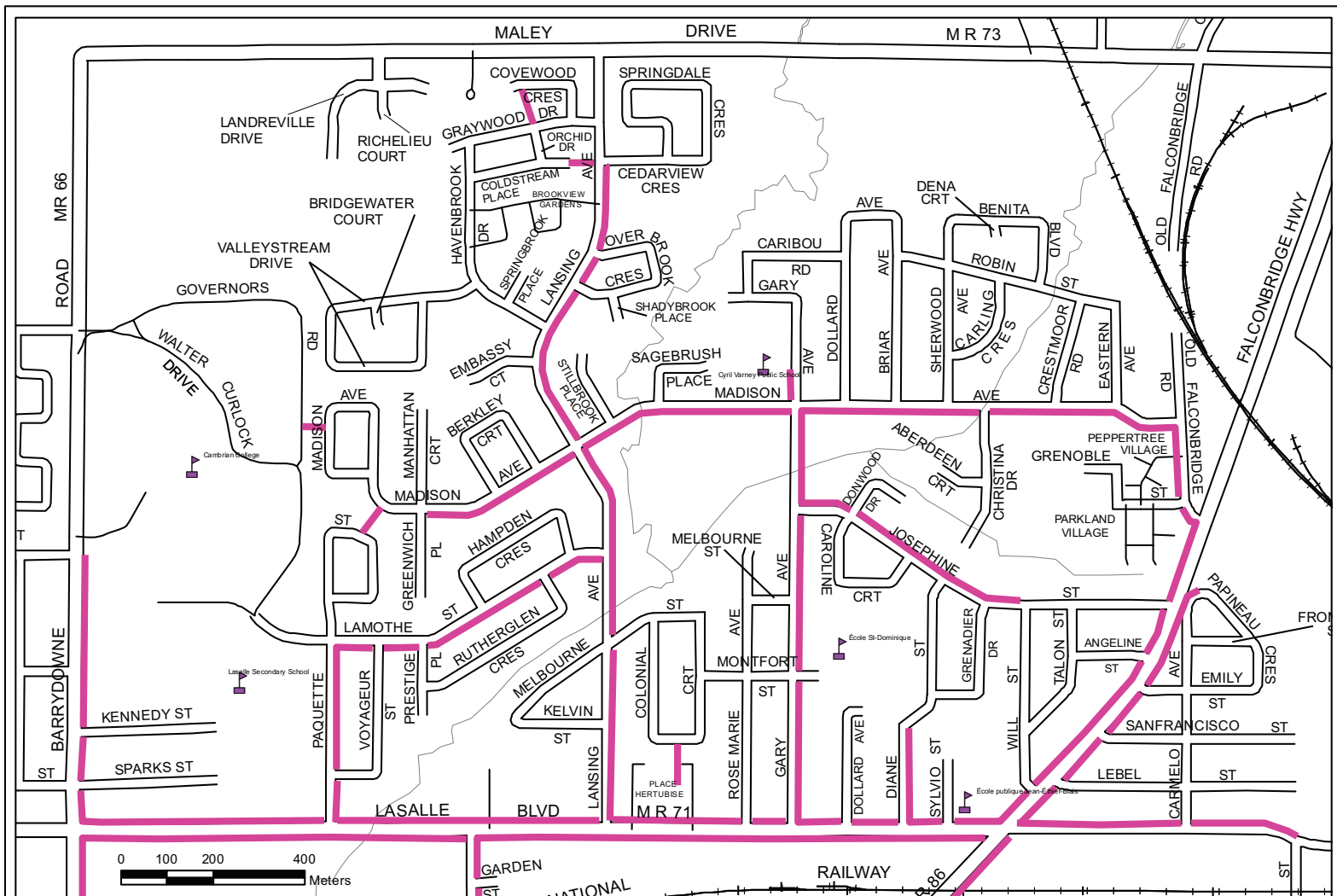
SIDEWALK 3B EVEN

Date: October 17, 2013

Created by Planning Services, Growth & Development Department, City of Greater Sudbury

1 of 1

Vehicle: S241



SOUTHEAST SECTION 2013-2014

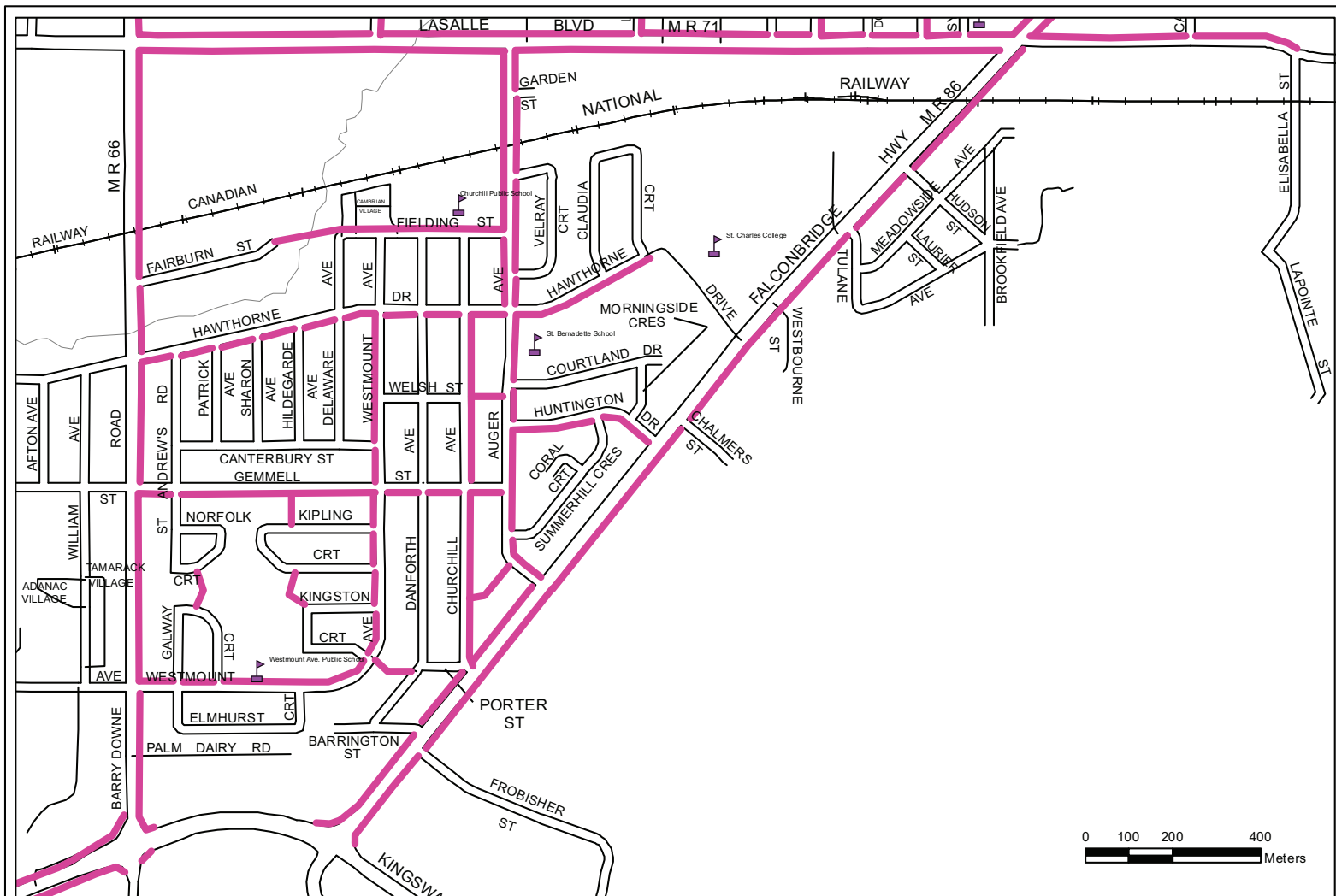
SIDEWALK 4A EVEN

Date: October 17, 2013

Created by Planning Services, Growth & Development Department, City of Greater Sudbury

1 of 1

Vehicle: S237



SOUTHEAST SECTION 2013-2014

SIDEWALK 4B EVEN

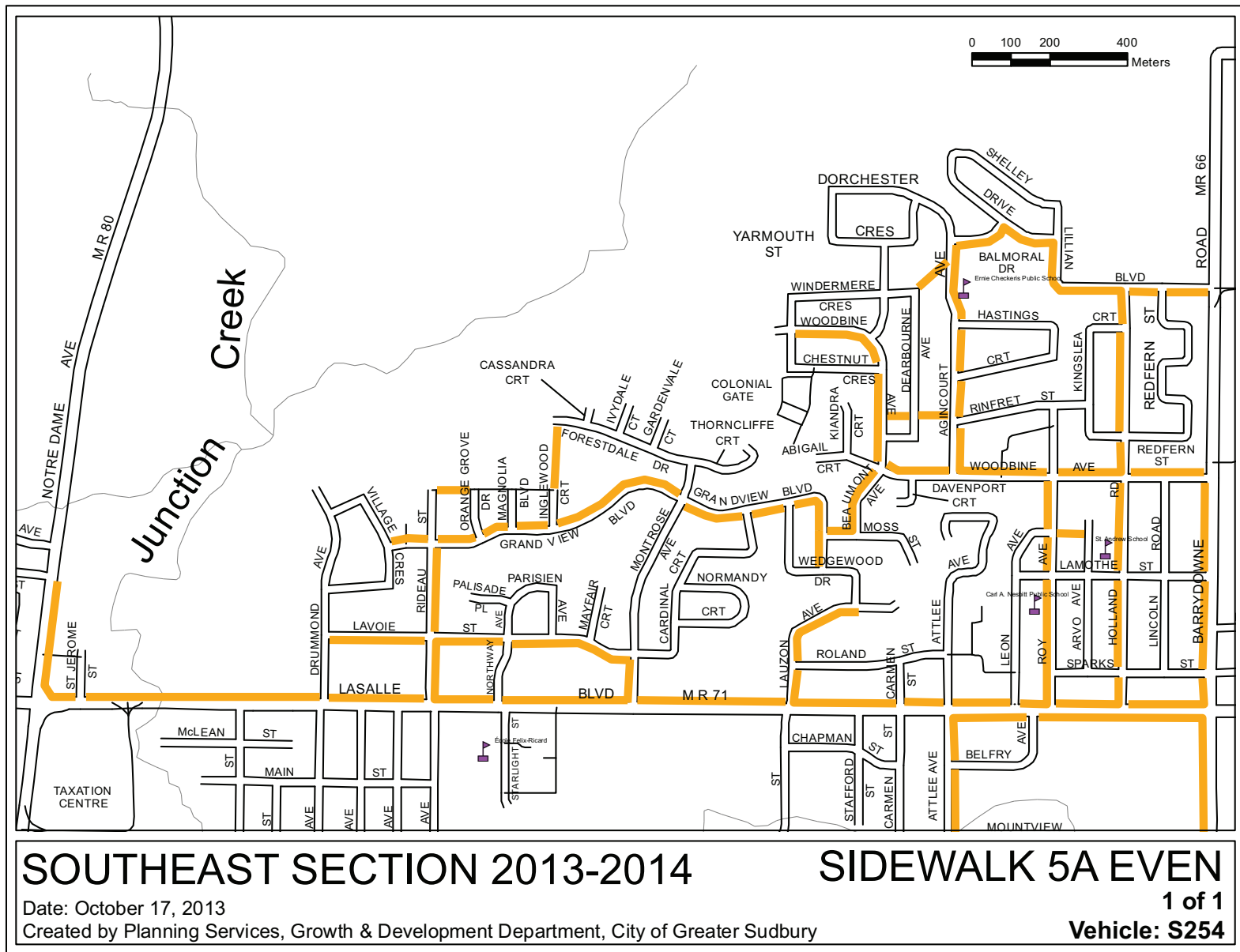
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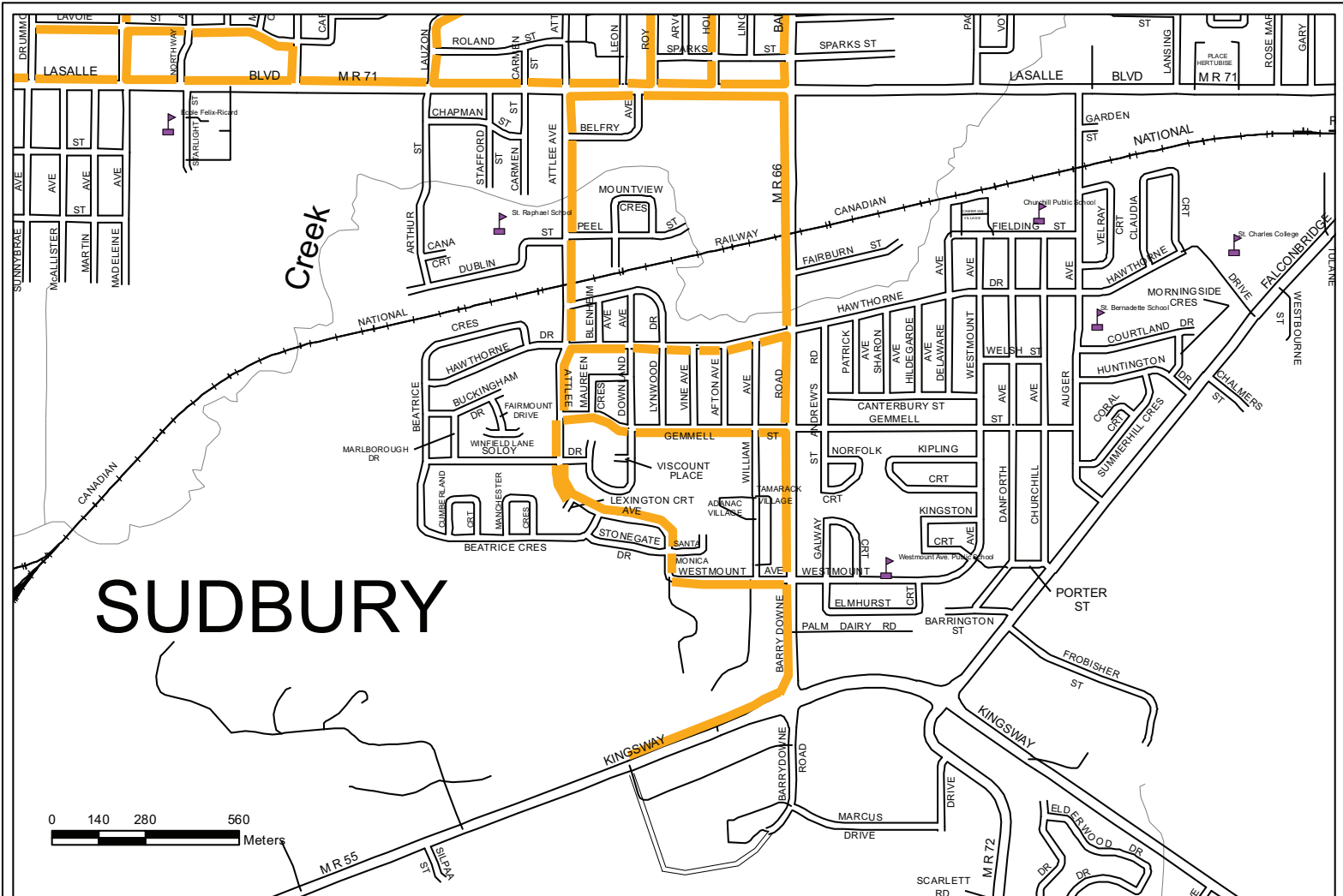
Created by Planning Services, Growth & Development Department, City of Greater Sudbury

1 of 1

Vehicle: S237

Vehicle: S237





SOUTHEAST SECTION 2013-2014

SIDEWALK 5B EVEN

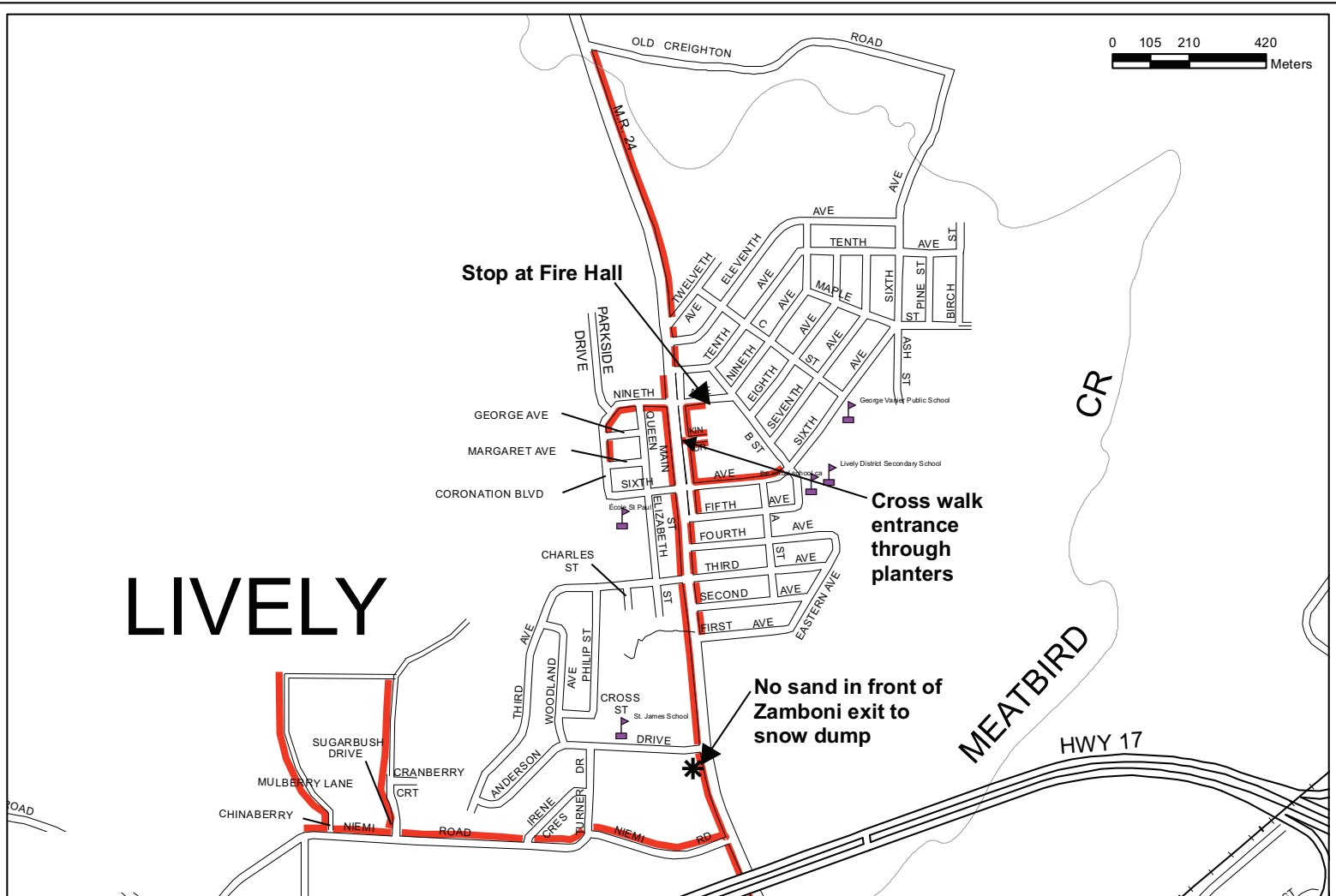
Date: October 24, 2013

Created by Planning Services, Growth & Development Department, City of Greater Sudbury

1 of 1

Vehicle: S254

LIVELY



SOUTHWEST SECTION 2013-2014

SIDEWALK 1

Date: November 1, 2013

Created by Planning Services, Growth & Development Department, City of Greater Sudbury

1 of 3



SIDEWALK 1

2 of 3

Created by Planning Services, Growth & Development Department, City of Greater Sudbury

