



Queanbeyan City Council TRACKS Model

South Jerrabomberra and
Queanbeyan Traffic Analysis 2014

Part 4 – Selected Road Network Improvements Contributions Analysis Report

December 2014

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Quality Assurance Statement

Prepared by:

Dave Hunter

Senior Principal Transportation
Engineer



Reviewed by:

Grant Smith

Principal Consultant



Approved for Issue by:

Dave Hunter

Senior Principal Transportation
Engineer



Status: Final Report

Date: 4 December 2014

PO Box 8615, Riccarton, Christchurch 8440
New Zealand

P: +64 3 348 3215

www.tdg.co.nz

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2031 AM and PM Total Volume Plots for Each Network Improvement

1. Introduction

Part 4 of the South Jerrabomberra and Queanbeyan Traffic Analysis 2014 involved the analysis of the contribution modelled traffic from each part of Queanbeyan and ACT makes to the total flow passing through each of the requirement network improvements determined in Part 3 of the South Jerrabomberra and Queanbeyan Traffic Analysis 2014. The study brief requested that the analysis involve track modelled traffic to and from a number of separate elements of the Queanbeyan and ACT system. This would enable the Queanbeyan City Council (QCC) to determine what percentage of traffic each element contributes to each improvement project.

This analysis involved disaggregating the total flow through each 2031 improvement into its constituent parts representing various expected land use developments, additional housing infill and background existing ACT and Queanbeyan traffic. For the purposes of this analysis it was requested that traffic be broken down into twelve groups representing the following:

- Googong (GOG)
- Poplars (POP)
- Tralee North (TRN)
- Tralee South (TRS)
- Forrest / Morrison (FOR)
- Walsh (WAL)
- Environa (ENV)
- HQJOC (HQJ)
- Jumping Creek Estate (JCE)
- All Other Development (DEV)
- ACT (ACT)
- All Other Queanbeyan Users (QUE)

The contributions each of the above groups make to the traffic flow through each improvement project has been presented in tables detailing traffic volume and percentage of the total traffic each group contributes.

2. Timeline of Required Network Improvements

Part 3 of the South Jerrabomberra and Queanbeyan Traffic Analysis 2014 assessed the appropriate timing of implementation of improvement works. Many of the improvements were proposed to upgrade a road or intersection suffering from a poor level of service. However, several new routes were also proposed as a means of creating additional capacity thereby relieving other areas of congestion. An iterative process was used to add additional works at each year of the analysis to address deficiencies as they arose.

When a level of service (LOS) of E or worse was predicted for an intersection or length of road at the end of each future period, it indicated the likely need for construction of an improvement work aimed at resolving that deficiency within that future period. Based on this premise, improvement works were progressively added to the Queanbeyan network for each period until deficiencies in the network were fixed.

Table 1 and Table 2 show the updated implementation timing of each of the proposed improvement works as a result of this analysis.

INTERSECTION IMPROVEMENT TIMING								
Location	By 2014	By 2016	By 2018	By 2020	By 2022	By 2024	By 2026	By 2031
Lanyon Dr/Canberra Ave			✓					
Lanyon Dr/Gilmore Rd				✓				
Kings Hwy/Yass Rd/Bungendore Rd			✓					
Old Cooma Rd/Googong Rd				✓				
Tomsitt Dr/Sth Jerrabomberra Rd						✓		
Canberra Ave/Cameron Rd								✓
Lanyon Dr/Tomsitt Dr			✓					
Yass Rd/Shropshire St								✓
Yass Rd/Hinckman St							✓	
Yass Rd/Silva Ave							✓	
Yass Rd/Thuralilly St								✓

Table 1: Intersection Improvement Timing

ROAD IMPROVEMENT TIMING								
Location	By 2014	By 2016	By 2018	By 2020	By 2022	By 2024	By 2026	By 2031
4L Old Cooma Rd (Googong to ELP)					✓			
2L Ellerton Extension			✓					
4L Cooma St (ELP to Southbar)								✓
4L Sth Jerrabomberra Northern Access Rd to 3 rd Roundabout								✓

Table 2: Road Improvement Timing

3. Network Improvement Contributions

An important element of this study was to determine the contribution that each part of the modelled network makes to the flows passing through each network improvement project. This was undertaken by separating trips to and from each development group, as detailed in the introduction, from all other trips. These separated development group trips were assigned to the 2031 AM and PM peak model networks as individual “classes” of trips so that the routes they take to get from their origin to destination can be tracked.

This process enabled flow diagrams to be created for each improvement project showing the total flow through the project as well as the flow from each individual development group. The proportion of the total flow, through a project, made by each development is that developments contribution proportion.

A number of assumptions were made regarding the distribution of flows:

- All flows *to and from* the new developments, throughout the entire model area, were attributed to the new developments only. In other words, no matter where a trip came from or went to, if one end of that trip was to or from a new development the trip was entirely the responsibility of that new development. However, where a trip went *between* new developments, the responsibility for that trip was split 50/50 between them and both developments took equal responsibility for the trip;
- All of the flows to and from the remaining QCC and ACT areas (not the new developments) were attributed to QCC and ACT respectively and represented “background” trips between existing areas. Again, where a trip went between QCC and ACT zones, it was split 50/50 between QCC and ACT and each authority took equal responsibility for the trip.

The total flow diagrams for each of the improvement projects are shown in the attached Appendix A for 2031 AM and PM peak periods.

The volumes and relative contributions made by each development group to the total flow through each improvement project are tabulated below in Table 3 to Table 12 for each improvement project separately as follows:

- 2031 AM and PM peaks – 4L Old Cooma Rd (Googong Rd to ELP);
- 2031 AM and PM peaks – 2L Ellerton Rd Extension;
- 2031 AM and PM peaks – 4L Cooma St (ELP to Southbar Rd);
- 2031 AM and PM peaks – 4L Sth Jerrabomberra Northern Access Rd (Tomsitt Dr to 3rd Roundabout);
- 2031 AM and PM peaks – Lanyon Dr/Canberra Ave Traffic Signals;
- 2031 AM and PM peaks – Kings Hwy/Yass Rd/Bungendore Rd Traffic Signals;
- 2031 AM and PM peaks – Old Cooma Rd/Googong Rd Roundabout;
- 2031 AM and PM peaks – Tomsitt Dr/Sth Jerrabomberra Rd Additional Approach Lane;
- 2031 AM and PM peaks – Canberra Ave/Cameron Rd Additional Approach Lane;
- 2031 AM and PM peaks – Lanyon Dr/Tomsitt Dr Traffic Signals.

Minor projects involving right turn bans have not been included in the analysis.

The flows used in the following tables are the combined 2031 AM and PM peak one hour flows and therefore represents the total modelled flow over the two peak hours.

For road link improvements the flows detailed in the following tables are the total two-way hourly flow at the busiest location along the improvement length. For intersection improvements the flows are the total inbound hourly flow.

4L OLD COOMA RD		
Development Group	2031 Combined AM and PM Peak Hour Flows	
	Volume	Percentage
Googong (GOG)	4247	77.4%
Poplars (POP)	208	3.8%
Tralee North (TRN)	18	0.3%
Tralee South (TRS)	26	0.5%
Forrest / Morrison (FOR)	4	0.1%
Walsh (WAL)	4	0.1%
Environa (ENV)	46	0.8%
HQJOC (HQJ)	52	0.9%
Jumping Creek Estate (JCE)	28	0.5%
All Other Development (DEV)	114	2.1%
ACT (ACT)	341	6.2%
All Other Queanbeyan Users (QUE)	400	7.3%
TOTAL	5487	100.0%

Table 3: 4L Old Cooma Rd (Googong Rd to ELP)

2L ELLERTON EXTENSION		
Development Group	2031 Combined AM and PM Peak Hour Flows	
	Volume	Percentage
Googong (GOG)	988	64.2%
Poplars (POP)	40	2.6%
Tralee North (TRN)	3	0.2%
Tralee South (TRS)	3	0.2%
Forrest / Morrison (FOR)	0	0.0%
Walsh (WAL)	0	0.0%
Environa (ENV)	9	0.6%
HQJOC (HQJ)	77	5.0%
Jumping Creek Estate (JCE)	86	5.6%
All Other Development (DEV)	37	2.4%
ACT (ACT)	75	4.9%
All Other Queanbeyan Users (QUE)	217	14.1%
TOTAL	1538	100.0%

Table 4: 2L Ellerton Extension

4L COOMA ST		
Development Group	2031 Combined AM and PM Peak Hour Flows	
	Volume	Percentage
Googong (GOG)	2083	51.2%
Poplars (POP)	35	0.9%
Tralee North (TRN)	3	0.1%
Tralee South (TRS)	6	0.1%
Forrest / Morrison (FOR)	1	0.0%
Walsh (WAL)	0	0.0%
Environa (ENV)	8	0.2%
HQJOC (HQJ)	17	0.4%
Jumping Creek Estate (JCE)	167	4.1%
All Other Development (DEV)	97	2.4%
ACT (ACT)	307	7.5%
All Other Queanbeyan Users (QUE)	1345	33.0%
TOTAL	4070	100.0%

Table 5: 4L Cooma St (ELP to Southbar Rd)

4L STH JERRABOMBERRA NORTHERN ACCESS		
Development Group	2031 Combined AM and PM Peak Hour Flows	
	Volume	Percentage
Googong (GOG)	219	4.9%
Poplars (POP)	2881	64.4%
Tralee North (TRN)	213	4.8%
Tralee South (TRS)	475	10.6%
Forrest / Morrison (FOR)	71	1.6%
Walsh (WAL)	49	1.1%
Environa (ENV)	536	12.0%
HQJOC (HQJ)	17	0.4%
Jumping Creek Estate (JCE)	15	0.3%
All Other Development (DEV)	0	0.0%
ACT (ACT)	0	0.0%
All Other Queanbeyan Users (QUE)	0	0.0%
TOTAL	4475	100.0%

Table 6: 4L Sth Jerrabomberra Northern Access Rd

LANYON DR / CANBERRA AVE		
Development Group	2031 Combined AM and PM Peak Hour Flows	
	Volume	Percentage
Googong (GOG)	750	10.3%
Poplars (POP)	433	6.0%
Tralee North (TRN)	41	0.6%
Tralee South (TRS)	169	2.3%
Forrest / Morrison (FOR)	32	0.4%
Walsh (WAL)	35	0.5%
Environa (ENV)	103	1.4%
HQJOC (HQJ)	198	2.7%
Jumping Creek Estate (JCE)	70	1.0%
All Other Development (DEV)	255	3.5%
ACT (ACT)	2346	32.3%
All Other Queanbeyan Users (QUE)	2835	39.0%
TOTAL	7270	100.0%

Table 7: Lanyon Dr / Canberra Ave Traffic Signals

KINGS HWY / YASS RD / BUNGENDORE RD		
Development Group	2031 Combined AM and PM Peak Hour Flows	
	Volume	Percentage
Googong (GOG)	852	12.1%
Poplars (POP)	103	1.5%
Tralee North (TRN)	11	0.2%
Tralee South (TRS)	38	0.5%
Forrest / Morrison (FOR)	6	0.1%
Walsh (WAL)	8	0.1%
Environa (ENV)	30	0.4%
HQJOC (HQJ)	1040	14.8%
Jumping Creek Estate (JCE)	84	1.2%
All Other Development (DEV)	308	4.4%
ACT (ACT)	2328	33.1%
All Other Queanbeyan Users (QUE)	2226	31.6%
TOTAL	7038	100.0%

Table 8: Kings Hwy / Yass Rd / Bungendore Rd Traffic Signals

OLD COOMA RD / GOOGONG RD		
Development Group	2031 Combined AM and PM Peak Hour Flows	
	Volume	Percentage
Googong (GOG)	4417	81.8%
Poplars (POP)	192	3.6%
Tralee North (TRN)	17	0.3%
Tralee South (TRS)	25	0.5%
Forrest / Morrison (FOR)	4	0.1%
Walsh (WAL)	4	0.1%
Environa (ENV)	44	0.8%
HQJOC (HQJ)	50	0.9%
Jumping Creek Estate (JCE)	25	0.5%
All Other Development (DEV)	111	2.1%
ACT (ACT)	301	5.6%
All Other Queanbeyan Users (QUE)	214	4.0%
TOTAL	5400	100.0%

Table 9: Old Cooma Rd / Googong Rd Roundabout

TOMSITT DR / STH JERRABOMBERRA RD		
Development Group	2031 Combined AM and PM Peak Hour Flows	
	Volume	Percentage
Googong (GOG)	628	8.4%
Poplars (POP)	2881	38.5%
Tralee North (TRN)	213	2.8%
Tralee South (TRS)	475	6.3%
Forrest / Morrison (FOR)	71	0.9%
Walsh (WAL)	50	0.7%
Environa (ENV)	536	7.2%
HQJOC (HQJ)	17	0.2%
Jumping Creek Estate (JCE)	35	0.5%
All Other Development (DEV)	26	0.3%
ACT (ACT)	1216	16.2%
All Other Queanbeyan Users (QUE)	1344	17.9%
TOTAL	7491	100.0%

Table 10: Tompsitt Dr / Sth Jerrabomberra Rd Additional Approach Lane

CANBERRA AVE / CAMERON RD		
Development Group	2031 Combined AM and PM Peak Hour Flows	
	Volume	Percentage
Googong (GOG)	461	9.9%
Poplars (POP)	233	5.0%
Tralee North (TRN)	23	0.5%
Tralee South (TRS)	95	2.0%
Forrest / Morrison (FOR)	19	0.4%
Walsh (WAL)	23	0.5%
Environa (ENV)	60	1.3%
HQJOC (HQJ)	248	5.3%
Jumping Creek Estate (JCE)	41	0.9%
All Other Development (DEV)	173	3.7%
ACT (ACT)	1081	23.3%
All Other Queanbeyan Users (QUE)	2182	47.0%
TOTAL	4641	100.0%

Table 11: Canberra Ave / Cameron Rd Additional Approach Lane

LANYON DR / TOMPSITT DR		
Development Group	2031 Combined AM and PM Peak Hour Flows	
	Volume	Percentage
Googong (GOG)	411	5.3%
Poplars (POP)	1914	24.9%
Tralee North (TRN)	133	1.7%
Tralee South (TRS)	345	4.5%
Forrest / Morrison (FOR)	52	0.7%
Walsh (WAL)	58	0.8%
Environa (ENV)	333	4.3%
HQJOC (HQJ)	147	1.9%
Jumping Creek Estate (JCE)	19	0.2%
All Other Development (DEV)	99	1.3%
ACT (ACT)	2169	28.2%
All Other Queanbeyan Users (QUE)	2009	26.1%
TOTAL	7691	100.0%

Table 12: Lanyon Dr / Tomsitt Dr Traffic Signals

Appendix A

2031 AM and PM Total Volume Plots for Each Network Improvement



4L Old Cooma Rd
 2031 AMP I Hour Volume



1



4L Old Cooma Rd
 2031 PMP I Hour Volume





2L Ellerton Extension
2031 AMP I Hour Volume

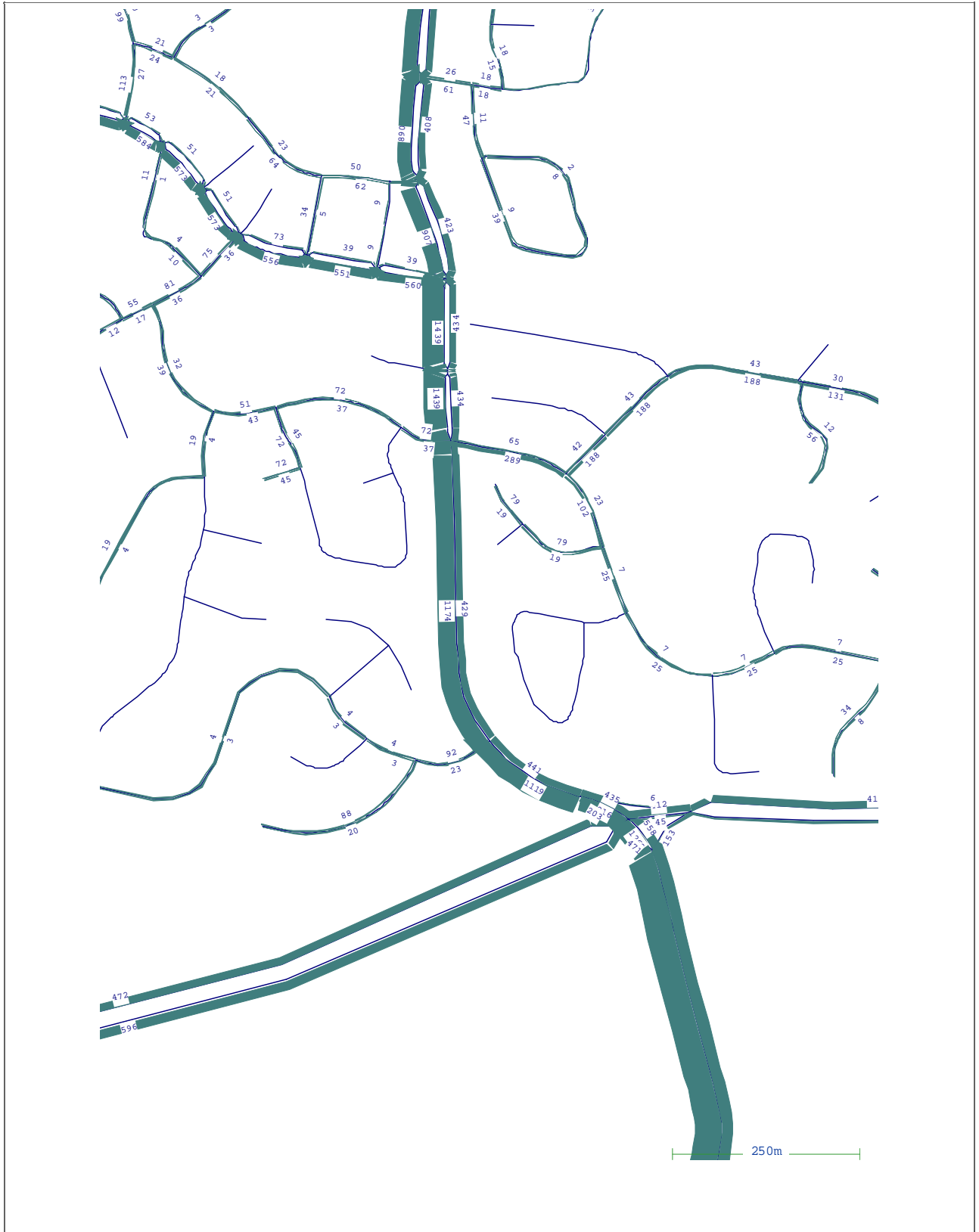


3



2L Ellerton Extension
2031 PMP 1 Hour Volume

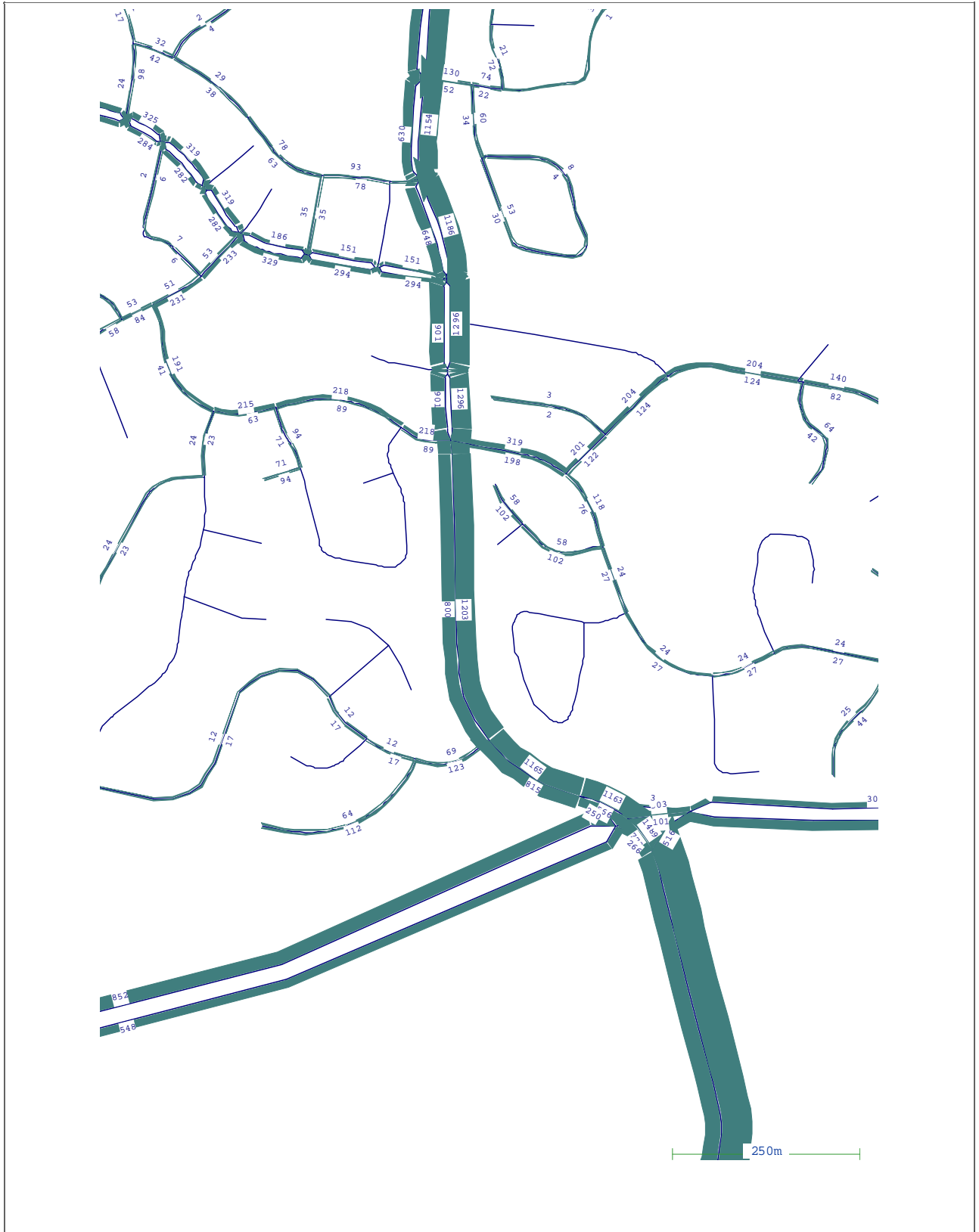




4L Cooma St
 2031 AMP I Hour Volume



5



4L Cooma St
 2031 PMP I Hour Volume



6



4L Sth Jerrabomberra Northern Access
 2031 AMP I Hour Volume



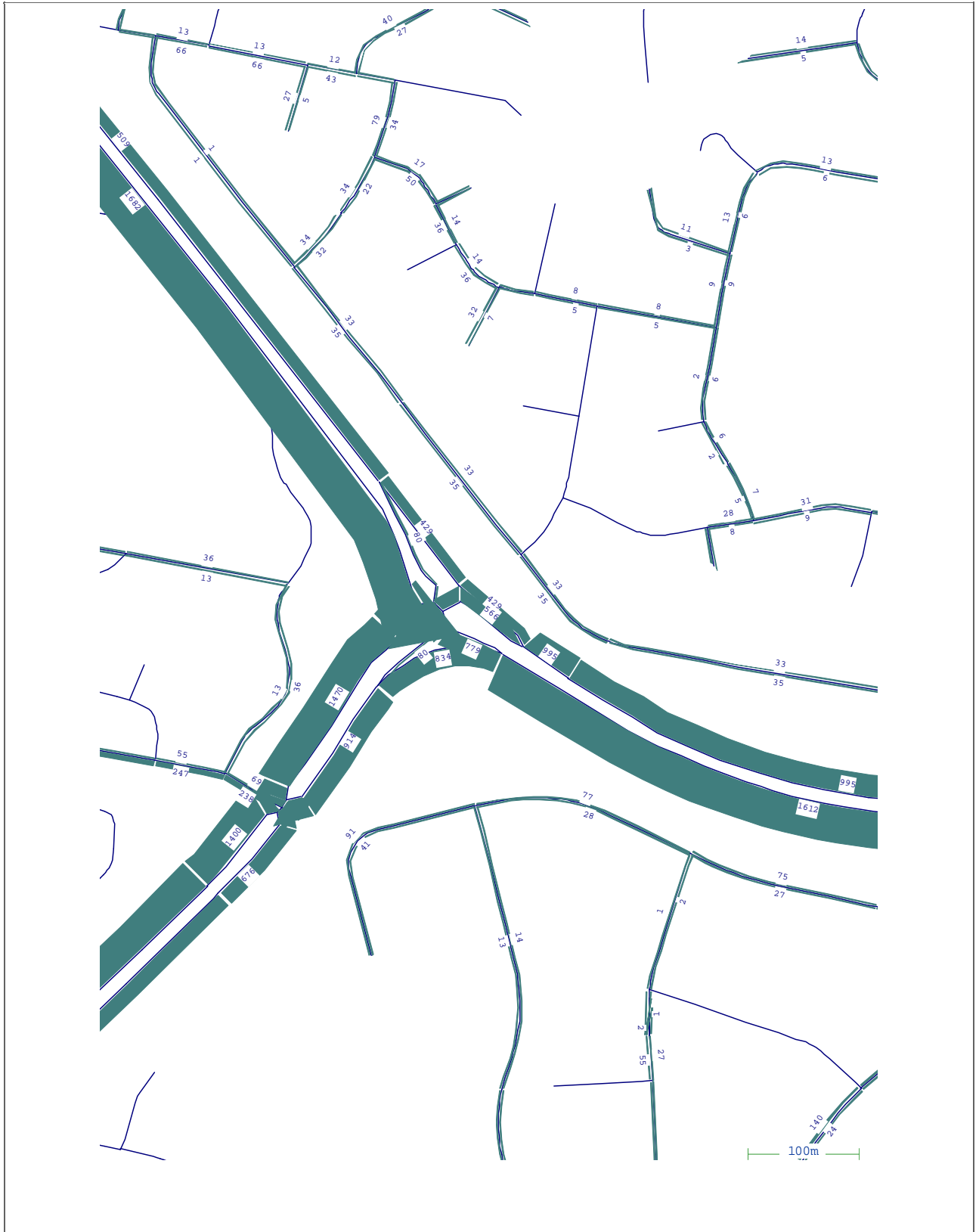
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4L Sth Jerrabomberra Northern Access
 2031 PMP 1 Hour Volume



8



Lanyon Dr / Canberra Ave
2031 AMP I Hour Volume



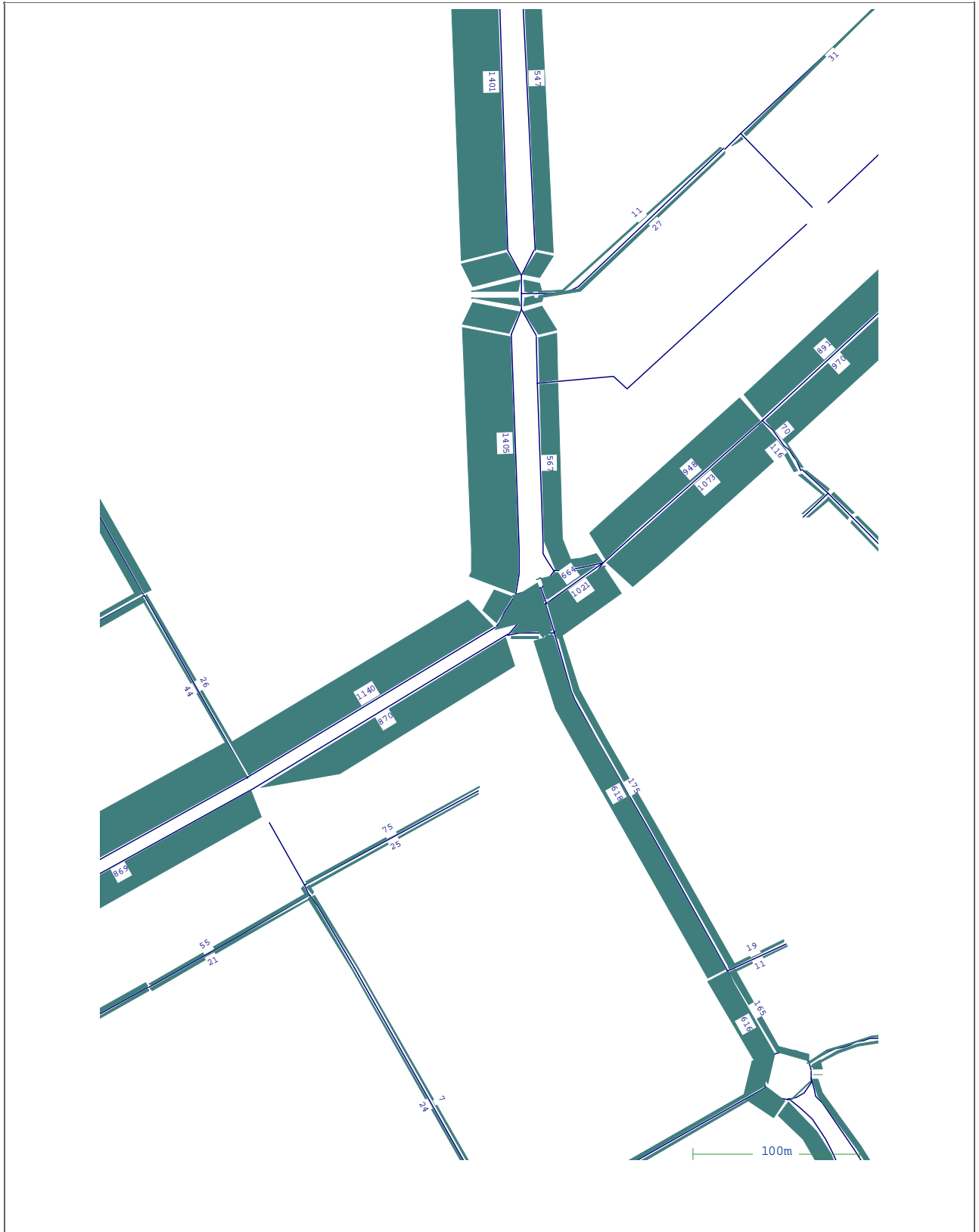
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Lanyon Dr / Canberra Ave
 2031 PMP I Hour Volume



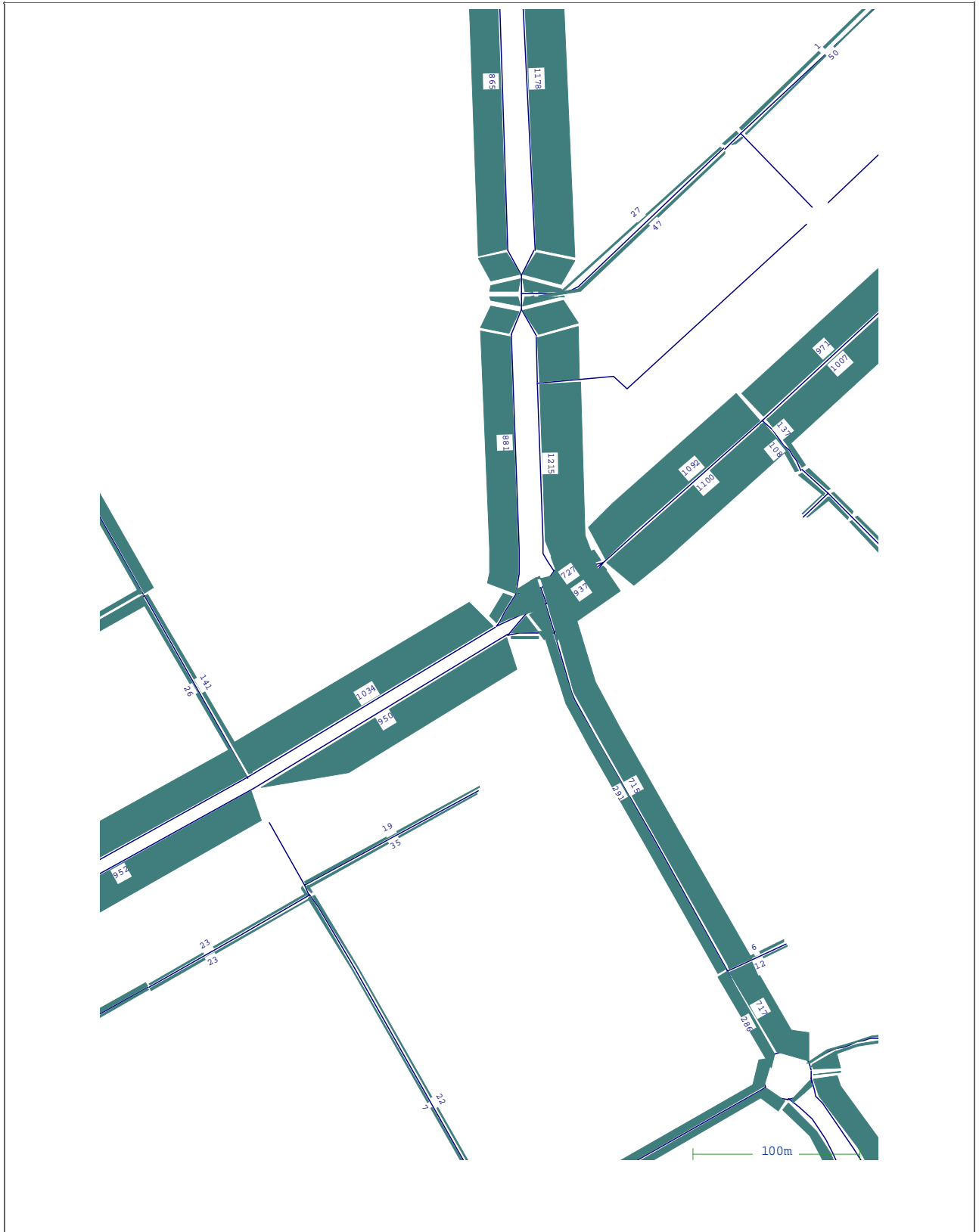
10



Kings Hwy/Yass Rd/Bungendore Rd
 2031 AMP I Hour Volume



11



Kings Hwy/Yass Rd/Bungendore Rd
 2031 PMP I Hour Volume






Old Cooma Rd/Googong Rd
 2031 AMP I Hour Volume



13



Old Cooma Rd/Googong Rd 2031 PMP I Hour Volume		14
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Tomsitt Dr/Sth Jerrabomberra Rd
 2031 AMP I Hour Volume



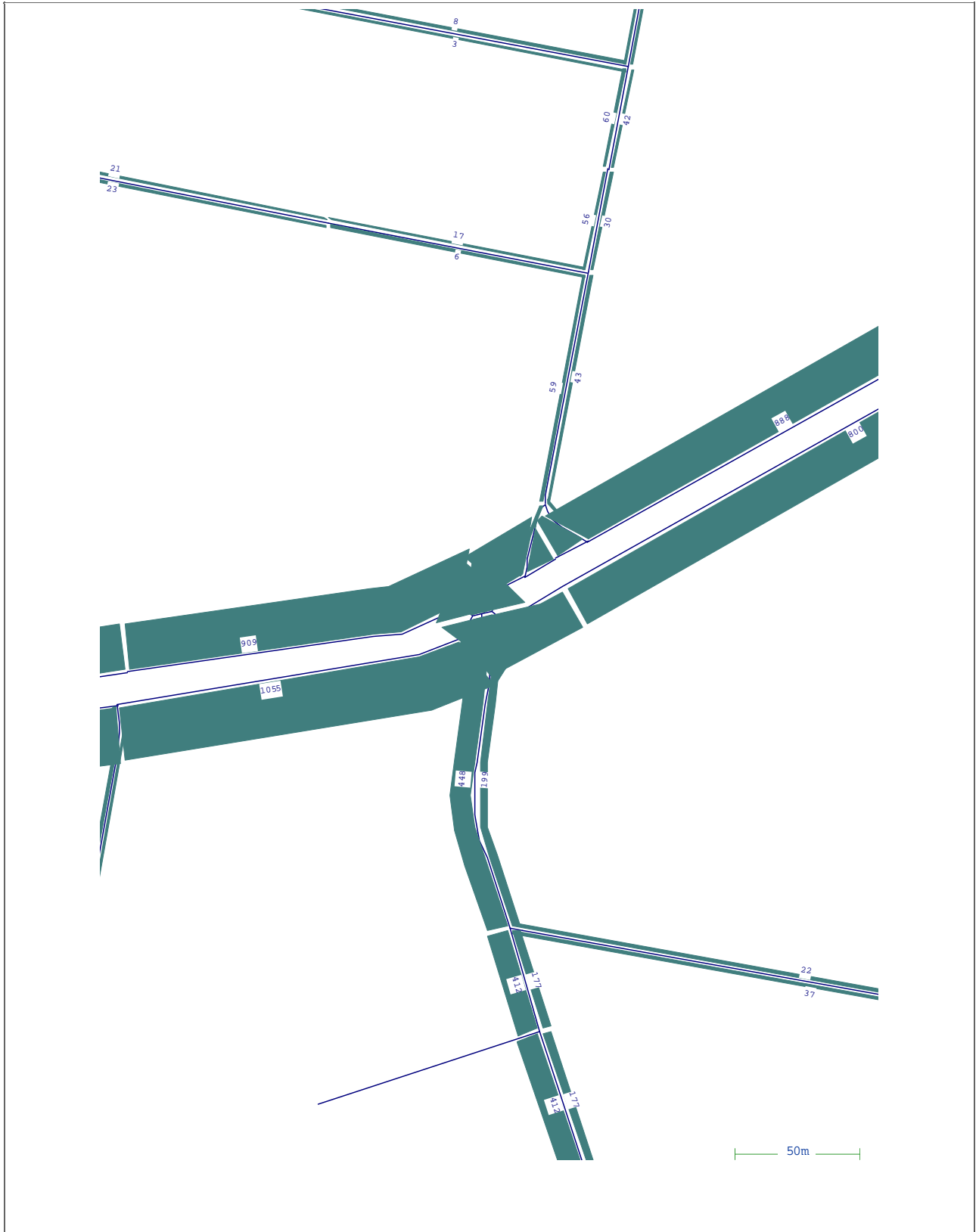
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Tomsitt Dr/Sth Jerrabomberra Rd
 2031 PMP I Hour Volume



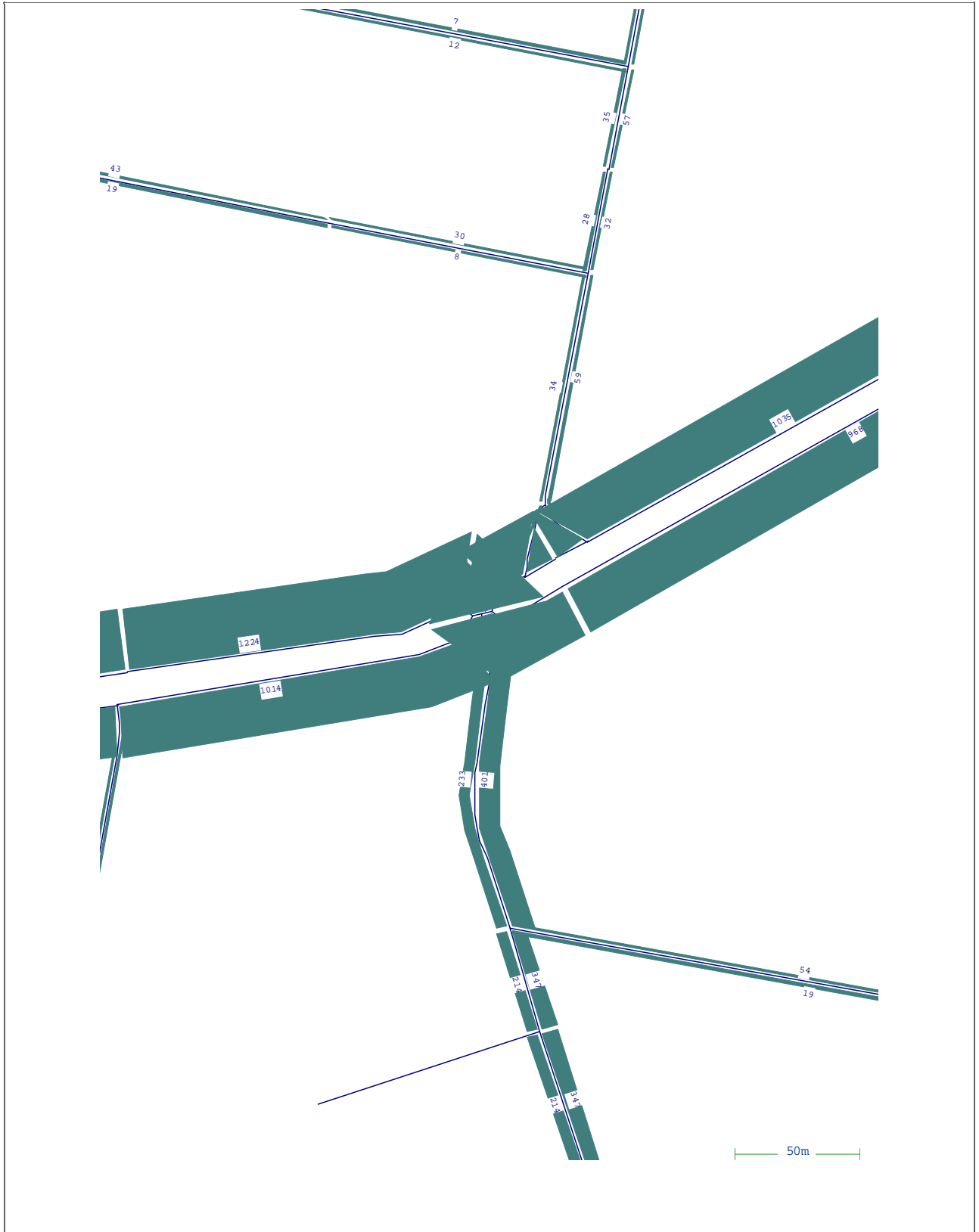
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Canberra Ave/Cameron Rd
2031 AMP I Hour Volume



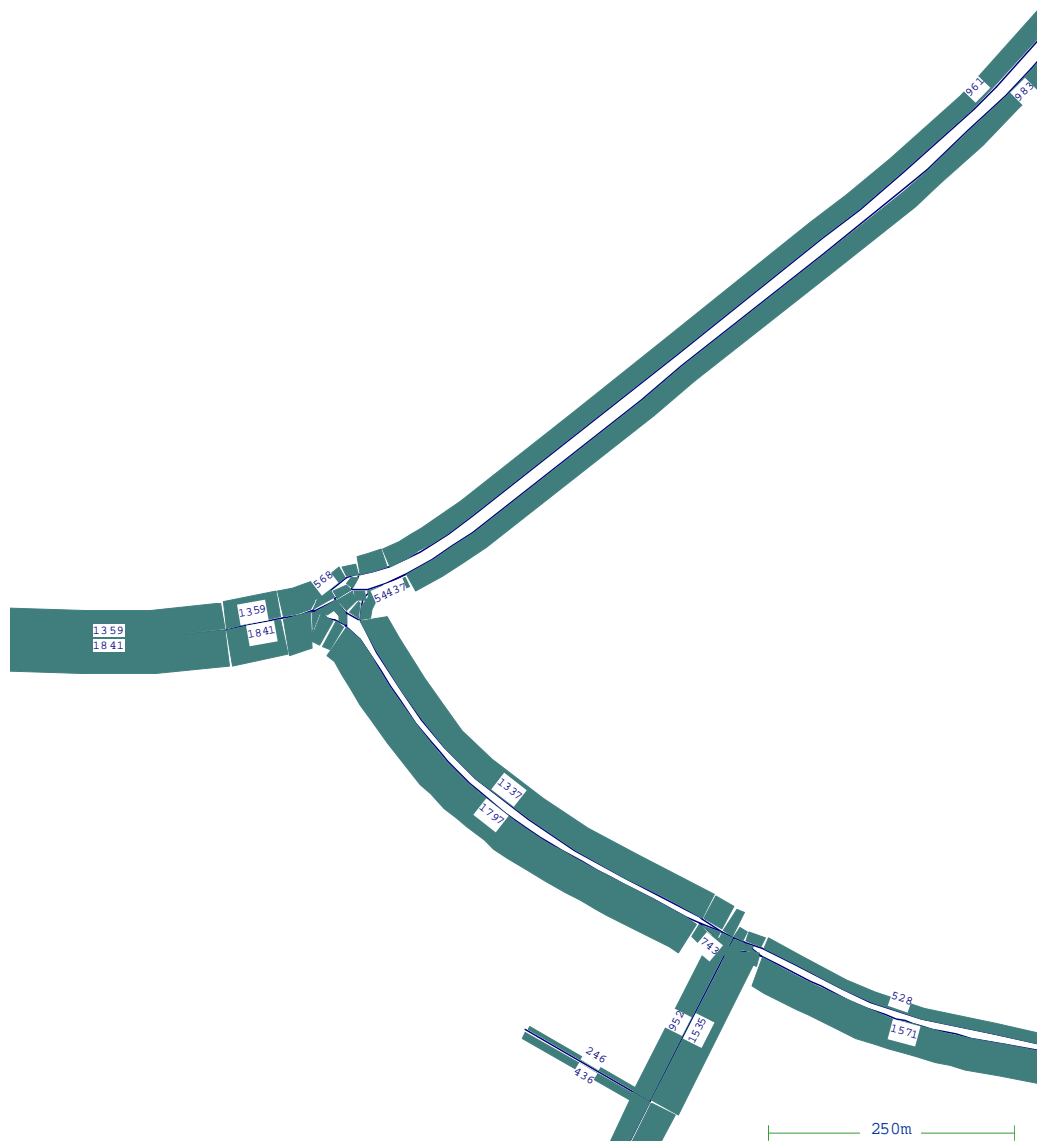
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Canberra Ave/Cameron Rd
 2031 PMP I Hour Volume



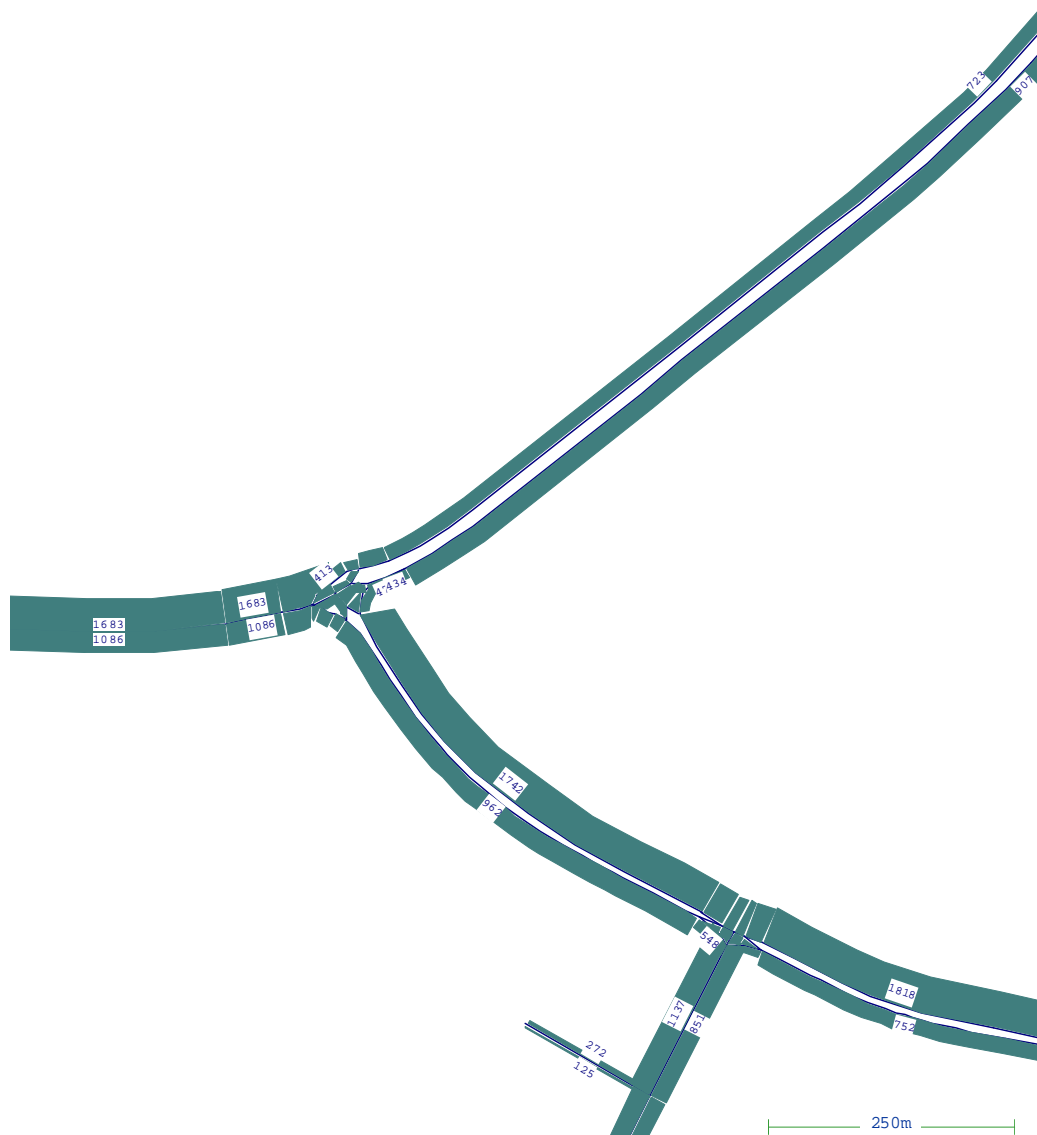
18



Lanyon Dr/Tomsitt Dr
2031 AMP I Hour Volume



19



Lanyon Dr/Tomsitt Dr
2031 PMP I Hour Volume



20