Foxground and Berry bypass

NSW GOVERNMENT — Transport Roads & Maritime Services

Berry Alliance Community Forum

Overview of the Victoria Street Origin-Destination (O-D) Surveys

David Bohm

Senior Transport Planner

AECOM

July 11, 2012

The aim of this presentation is to explain the Victoria Street O-D survey process, and summarise the data collected in May 2012 and presented at the Berry Alliance Community Forum on 14 June 2012:

- O-D survey objectives;

- O-D survey timing;

- O-D data capture process;

- O-D data processing and analysis.

- O-D survey results.

Victoria Street O-D Survey Objectives

Objectives of the O-D survey process:

- Capture existing Victoria Street traffic patterns and volumes during typical weekday and weekend peak hours.

- Use this additional information to further develop detailed traffic modelling of Victoria Street and other local roads impacted by the Foxground and Berry bypass (FBB) project.

- Use this traffic modelling to inform the Berry community of existing Victoria Street traffic patterns and volumes, and guide decisions considering the relative potential impacts of closure (or non-closure) of Victoria Street.
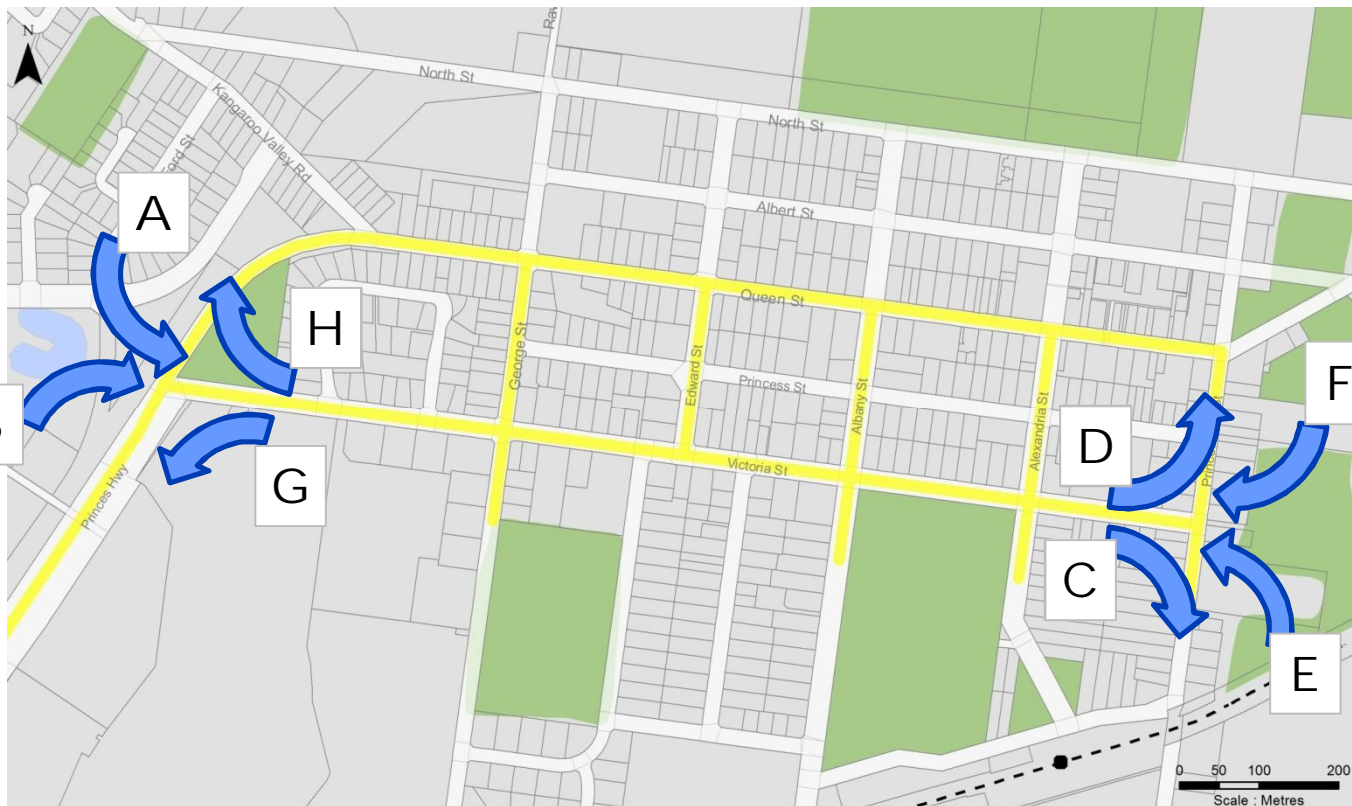
Victoria Street O-D Survey Timing

RMS commissioned an independent, local traffic surveying company to undertake surveys during the following days and times:

- Thursday 3 May 2012 & Friday 4 May 2012:
  - 8 to 10 AM
  - 3 to 6 PM
  - Traffic patterns and volumes during typical weekdays; e.g. trips to and from work, schools, shops, etc.

- Sunday 6 May 2012:
  - 10 AM to 1 PM.
  - Traffic patterns and volumes during a Berry Country Fair day – typically days with the largest volumes of traffic on Victoria Street due to vehicles arriving to and departing from the Berry Showground and the area immediately surrounding it.

Victoria Street O-D Survey Data Capture

During the surveyed periods the following information was collected:

- The time, registration and travel movement of all vehicles turning into and out of Victoria Street at both the eastern and western ends.

Example:

Time	Reg.	Mov.
08:01	RMSXX1	B
08:01	RMSXX2	B
08:06	RMSXX3	A
08:06	RMSXX4	B
08:08	RMSXX5	B
08:12	RMSXX6	B
08:18	RMSXX7	B
08:20	RMSXX8	B
08:20	RMSXX9	B
...	...	...

Victoria Street O-D Survey Data Capture

During the surveyed periods the following information was collected:

- Intersection Turning Counts; the total number and type of vehicles turning at the Victoria Street intersections with the highway and Prince Alfred Street.

Example:
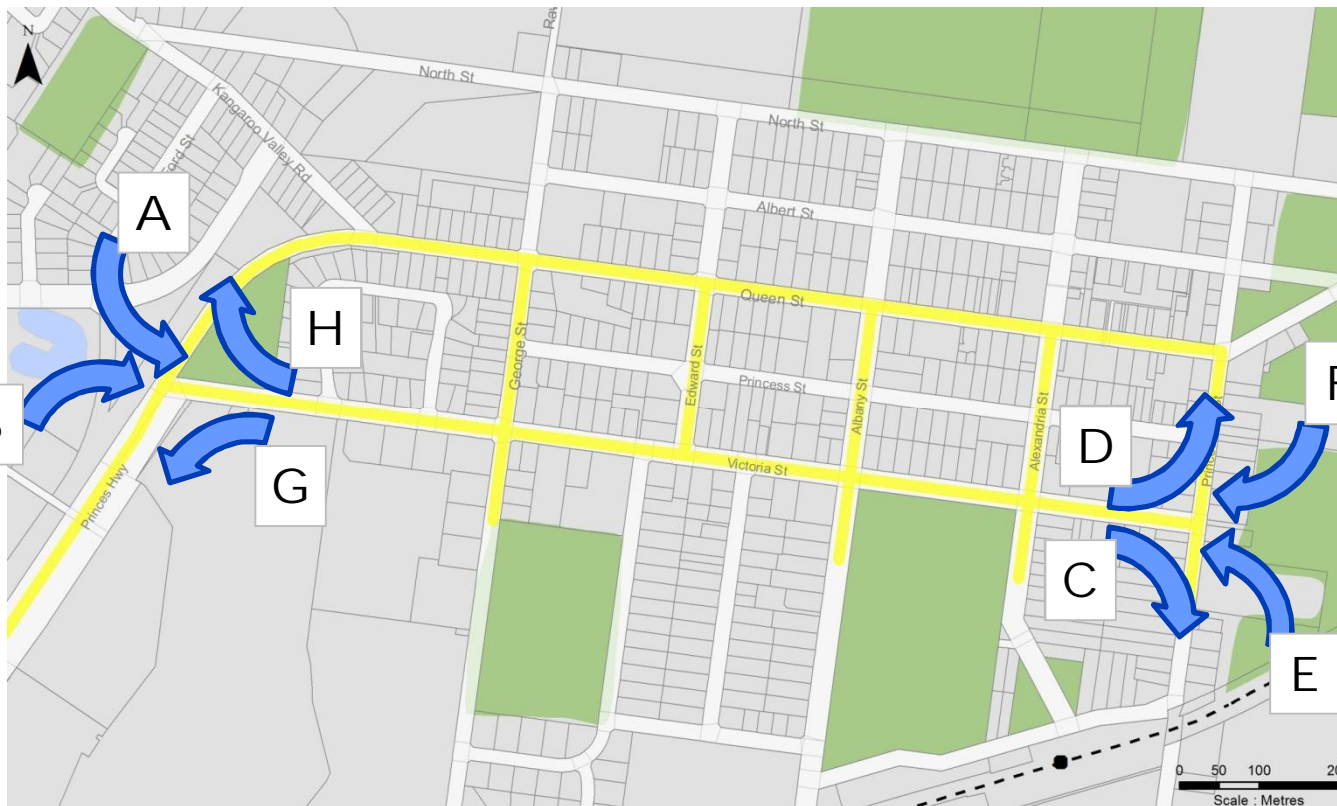
Time	Cars	Heavy (Rigid)	Buses	Heavy (Semi-trailer)	Total
Movement A					
08:00 – 09:00	6	0	0	0	**6**
09:00 – 10:00	7	0	0	0	**7**
Movement B					
08:00 – 09:00	34	1	2	0	**37**
09:00 – 10:00	66	2	0	0	**68**
Movement C					
…	…	…	…	…	…

Victoria Street O-D Survey Data Capture

During the surveyed periods the following information was collected:

- Automatic Traffic Counts 'tubes' maintained by Shoalhaven Council on local roads in Berry to record traffic volumes, including both ends of Victoria Street.

Example:

Note: Figure shows total vehicles per day in both directions

All of the data collected was reviewed and cross-checked to ensure its accuracy and validity. This included:

- Initial manual check of the data to identify any obvious errors or omissions.

- Cross-checking of survey data:
  - Do the volumes of number plates recorded match the Intersection Turning Counts?
  - Do both of these surveys match corresponding data from the Automatic Traffic Counts?

- Sense-check data against previous survey data:
  - Do the surveys indicate similar traffic volumes and turning movements when compared to previous surveys? For example:
    - Are traffic volumes recorded on Victoria Street higher at the western end than the eastern end?
  - Do the surveys show similar trends between traffic volumes and turning movements on different days? For example:
    - Are peak traffic volumes recorded on Victoria Street higher on Sunday (Berry Country Fair) than during weekdays?

Victoria Street O-D Survey Data Processing and Analysis

Following the checking and validation of data, the number plate matching process was performed to determine relative local and 'through' traffic volumes.
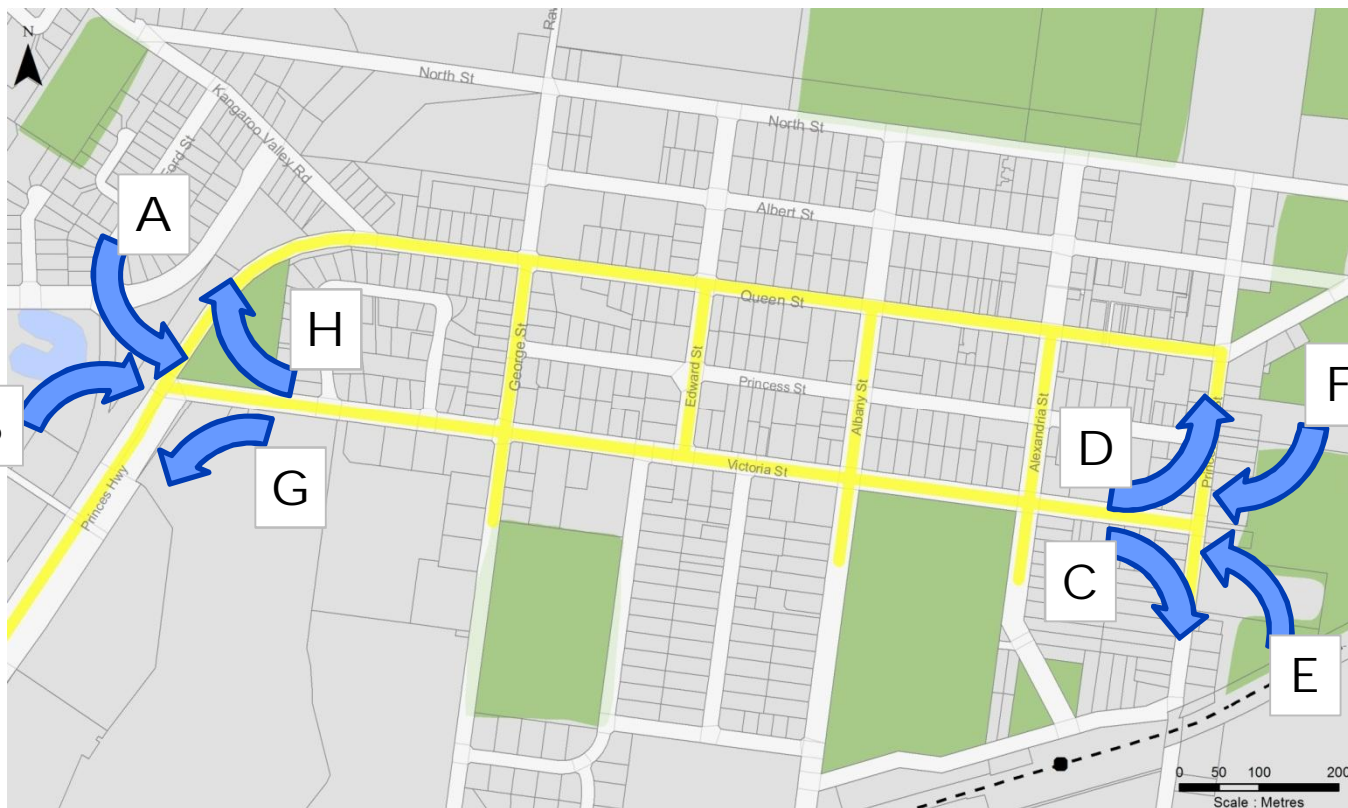
Local Traffic:
e.g. A Only, B Only, etc.

Registration recorded for only a single movement to/from Victoria Street.

Through Traffic:
e.g. A / B to C / D, etc.

Registration recorded and matched at both ends of Victoria Street within a specified timeframe; most 'through' movements travelled along Victoria Street in 2 minutes or less.

Victoria Street O-D Survey Data Processing and Analysis – Thursday AM Eastbound Example

Example:

Step 1: Align data (times, registrations and movements) for matching

Time	Registration	Movement (Western end)		Time	Registration	Movement (Eastern end)
…				…		
09:04	RMSXX1	B		09:04	-	-
09:04	RMSXX2	B		09:04	-	-
09:04	RMSXX3	B		09:04	-	-
09:05	RMSXX4	B		09:05	-	-
09:05	RMSXX5	B		09:05	-	-
09:05	RMSXX6	B		09:05	-	-
09:05	RMSXX7	A		09:05	-	-
09:06	RMSXX8	B		09:06	RMSXX1	D
09:06	RMSXX9	B		09:06	-	-
09:07	RMSX10	B		09:07	-	-
09:08	RMSX11	B		09:08	RMSX16	C
09:09	RMSX12	B		09:09	RMSX17	D
09:09	RMSX13	B		09:09	-	-
09:10	-	-		09:10	RMSX18	D
09:11	RMSX14	B		09:11	-	-
09:12	RMSX15	A		09:12	RM5X14	D
…				…		
09:14	-	-		09:14	RMSXX6	D

Victoria Street O-D Survey Data Processing and Analysis – Thursday AM Eastbound Example

Example:

Step 2: Automatic matching using computer software (exact matches only)

Time	Registration	Movement (Western end)		Time	Registration	Movement (Eastern end)
...				...		
09:04	RMSXX1	B		09:04	-	-
09:04	RMSXX2	B		09:04	-	-
09:04	RMSXX3	B		09:04	-	-
09:05	RMSXX4	B		09:05	-	-
09:05	RMSXX5	B		09:05	-	-
09:05	RMSXX6	B		09:05	-	-
09:05	RMSXX7	A		09:05	-	-
09:06	RMSXX8	B		09:06	RMSXX1	D
09:06	RMSXX9	B		09:06	-	-
09:07	RMSX10	B		09:07	-	-
09:08	RMSX11	B		09:08	RMSX16	C
09:09	RMSX12	B		09:09	RMSX17	D
09:09	RMSX13	B		09:09	-	-
09:10	-	-		09:10	RMSX18	D
09:11	RMSX14	B		09:11	-	-
09:12	RMSX15	A		09:12	RM5X14	D
...				...		
09:14	-	-		09:14	RMSXX6	D

Match (Automatic)

No match

Victoria Street O-D Survey Data Processing and Analysis – Thursday AM Eastbound Example

NSW GOVERNMENT | **Transport** Roads & Maritime Services

Example:

Step 3: Check automatic matching and additional manual matching (identifies and corrects minor errors during data collection)

Time	Registration	Movement (Western end)		Time	Registration	Movement (Eastern end)
...				...		
09:04	RMSXX1	B		09:04	-	-
09:04	RMSXX2	B		09:04	-	-
09:04	RMSXX3	B		09:04	-	-
09:05	RMSXX4	B		09:05	-	-
09:05	RMSXX5	B		09:05	-	-
09:05	RMSXX6	B		09:05	-	-
09:05	RMSXX7	A		09:05	-	-
09:06	RMSXX8	B		09:06	RMSXX1	D
09:06	RMSXX9	B		09:06	-	-
09:07	RMSX10	B		09:07	-	-
09:08	RMSX11	B		09:08	RMSX16	C
09:09	RMSX12	B		09:09	RMSX17	D
09:09	RMSX13	B		09:09	-	-
09:10	-	-		09:10	RMSX18	D
09:11	RMSX14	B		09:11	-	-
09:12	RMSX15	A		09:12	RM5X14	D
...				...		
09:14	-	-		09:14	RMSXX6	D

S / 5 recorded during survey. Corrected during manual check.

Legend:
- Match (Automatic)
- Match (Manual)
- No match

Victoria Street O-D Survey Data Processing and Analysis – Thursday AM Eastbound Example

Example:

Step 4: Identify typical travel time for through movements (approx. 2 minutes or less)

Time	Registration	Movement (Western end)		Time	Registration	Movement (Eastern end)
…				…		
09:04	RMSXX1	B		09:04	-	-
09:04	RMSXX2	B		09:04	-	-
09:04	RMSXX3	B		09:04	-	-
09:05	RMSXX4	B	2 minutes	09:05	-	-
09:05	RMSXX5	B		09:05	-	-
09:05	RMSXX6	B		09:05	-	-
09:05	RMSXX7	A		09:05	-	-
09:06	RMSXX8	B		09:06	RMSXX1	D
09:06	RMSXX9	B		09:06	-	-
09:07	RMSX10	B		09:07	-	-
09:08	RMSX11	B	9 minutes	09:08	RMSX16	C
09:09	RMSX12	B		09:09	RMSX17	D
09:09	RMSX13	B		09:09	-	-
09:10	-	-		09:10	RMSX18	D
09:11	RMSX14	B	1 minute	09:11	-	-
09:12	RMSX15	A		09:12	RM5X14	D
…				…		
09:14	-	-		09:14	RMSXX6	D

Match (Automatic)
Match (Manual)
No match

Victoria Street O-D Survey Data Processing and Analysis – Thursday AM Eastbound Example

NSW GOVERNMENT | **Transport** Roads & Maritime Services

Example:

Step 5: Remove matches with excessive travel times; these trips include a stop on/around Victoria Street and are not through traffic.

Time	Registration	Movement (Western end)		Time	Registration	Movement (Eastern end)
…				…		
09:04	RMSXX1	B		09:04	-	-
09:04	RMSXX2	B		09:04	-	-
09:04	RMSXX3	B		09:04	-	-
09:05	RMSXX4	B		09:05	-	-
09:05	RMSXX5	B		09:05	-	-
09:05	RMSXX6	B		09:05	-	-
09:05	RMSXX7	A		09:05	-	-
09:06	RMSXX8	B		09:06	RMSXX1	D
09:06	RMSXX9	B		09:06	-	-
09:07	RMSX10	B		09:07	-	-
09:08	RMSX11	B		09:08	RMSX16	C
09:09	RMSX12	B		09:09	RMSX17	D
09:09	RMSX13	B		09:09	-	-
09:10	-	-		09:10	RMSX18	D
09:11	RMSX14	B		09:11	-	-
09:12	RMSX15	A		09:12	RM5X14	D
…				…		
09:14	-	-		09:14	RMSXX6	D

Through

Includes stop

Through

Match (Automatic)
Match (Manual)
No match (Corrected)
No match

Victoria Street O-D Survey Data Processing and Analysis – Thursday AM Eastbound Example

Example:

Step 6: Summarise total movements and matched through movements.

Time	Registration	Movement (Western end)	Time	Registration	Movement (Eastern end)
...			...		
09:04	RMSXX1	B			-
09:04	RMSXX2	B	09:04	-	-
09:04	RMSXX3	B	09:04	-	-
09:05	RMSXX4	B	09:05	-	-
09:05	RMSXX5	B	09:05		
09:05	RMSXX6	B	09:05		
09:05	RMSXX7	A	09:05	-	-
09:06	RMSXX8	B	09:06	RMSXX1	D
09:06	RMSXX9	B	09:06	-	-
09:07	RMSX10	B	09:07	-	-
09:08	RMSX11	B	09:08	RMSX16	C
09:09	RMSX12	B	09:09	RMSX17	D
09:09	RMSX13	B	09:09	-	-
09:10	-	-	09:10	RMSX18	D
09:11	RMSX14	B	09:11	-	-
09:12	RMSX15	A	09:12	RM5X14	D
...			...		
09:14	-	-	09:14	RMSXX6	D

Total movements (A&B): 15

Through movements (A&B to C&D): 2

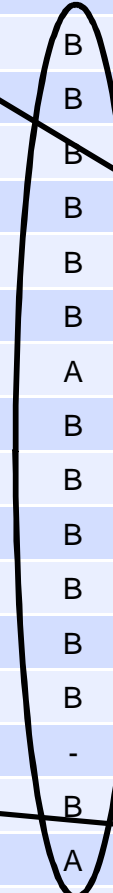B to D

B to D

Legend:
- Match (Automatic)
- Match (Manual)
- No match (Corrected)
- No match

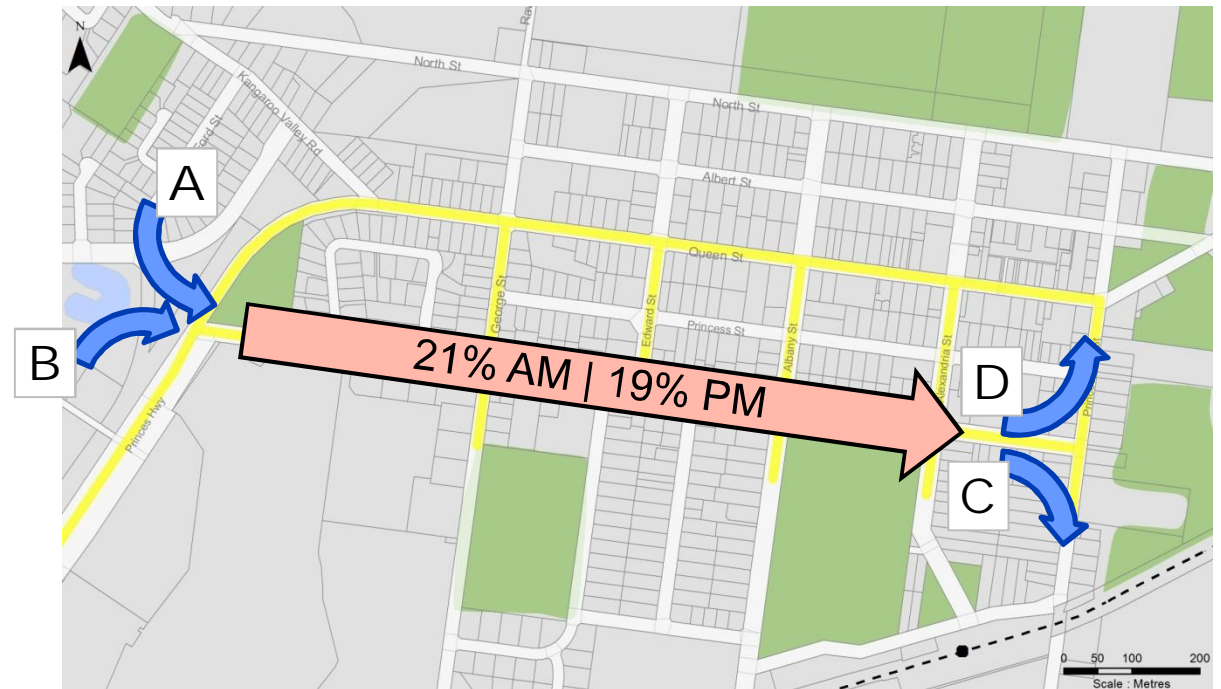# Victoria Street O-D Survey Results

Thursday 3 May – Eastbound Through Traffic

From	To	Vehicles (8-10 AM)	% Total (A&B)
A & B	Total	118	100%
A	C	1	1%
A	D	0	0%
B	C	8	7%
B	D	16	14%
A & B	C & D	25	21%

From	To	Vehicles (3-6 PM)	% Total (A&B)
A & B	Total	236	100%
A	C	0	0%
A	D	1	0%
B	C	30	13%
B	D	14	6%
A & B	C & D	45	19%

21% AM | 19% PM

Thursday 3 May – Westbound Through Traffic

From	To	Vehicles (8-10 AM)	% Total (G&H)
Total	G & H	145	100%
E	G	16	11%
E	H	1	1%
F	G	17	11%
F	H	0	0%
E & F	**G & H**	**34**	**23%**

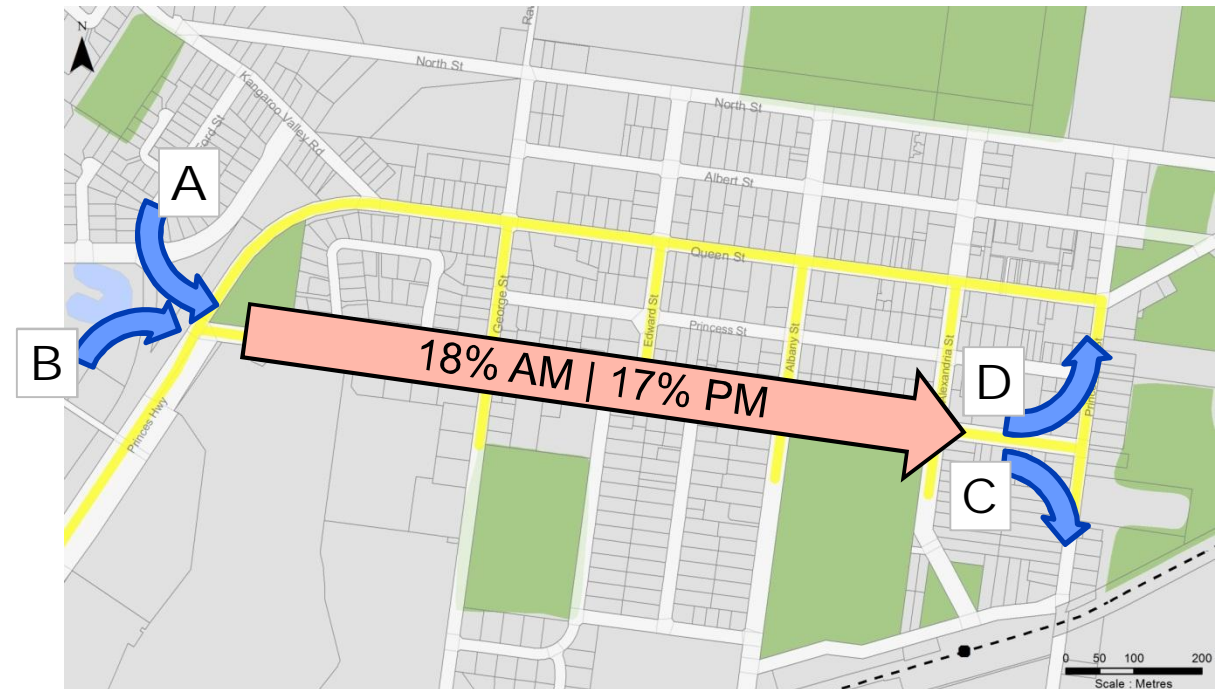| From	To	Vehicles (3-6 PM)	% Total (G&H)
Total	G & H	264	100%
E	G	30	12%
E	H	0	0%
F	G	22	8%
F	H	0	0%
E & F	**G & H**	**52**	**20%**
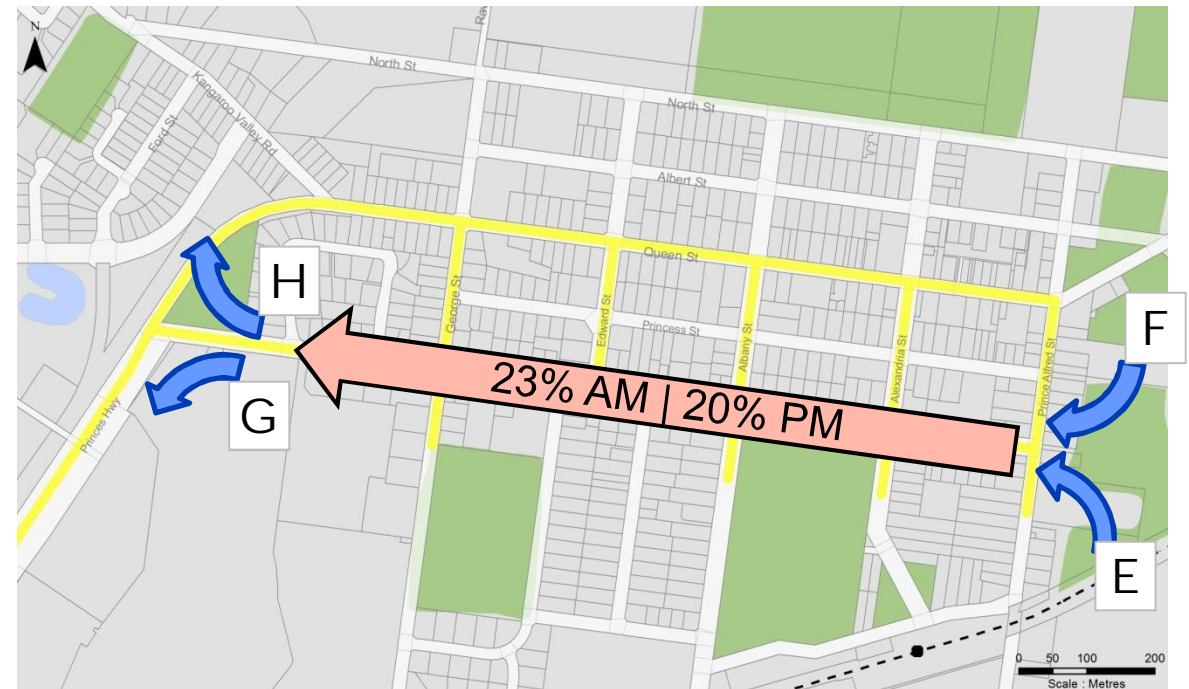
Victoria Street O-D Survey Results

Friday 4 May – Eastbound Through Traffic

From	To	Vehicles (8-10 AM)	% Total (A&B)
A & B	Total	151	100%
A	C	1	1%
A	D	0	0%
B	C	17	11%
B	D	9	6%
A & B	**C & D**	**27**	**18%**

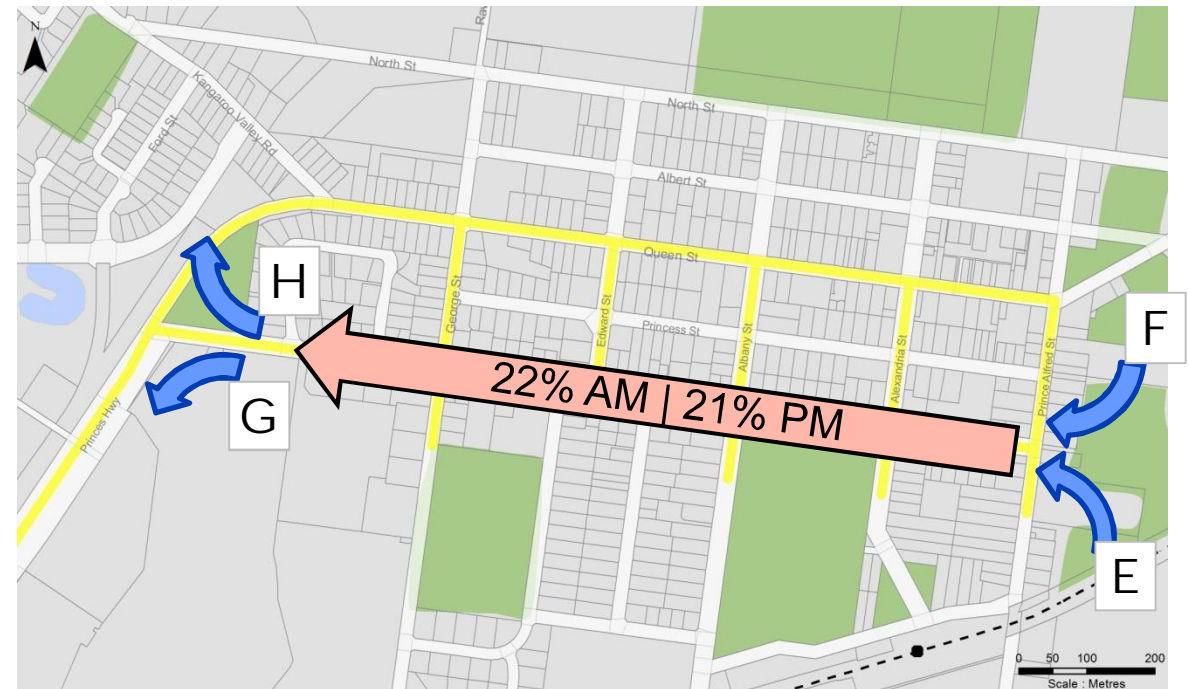| From	To	Vehicles (3-6 PM)	% Total (A&B)
A & B	Total	236	100%
A	C	1	1%
A	D	0	0%
B	C	19	8%
B	D	19	8%
A & B	**C & D**	**39**	**17%**

18% AM | 17% PM

Victoria Street O-D Survey Results

Friday 4 May – Westbound Through Traffic

From	To	Vehicles (8-10 AM)	% Total (G&H)
Total	G & H	162	100%
E	G	14	9%
E	H	1	1%
F	G	19	11%
F	H	1	1%
E & F	**G & H**	**35**	**22%**

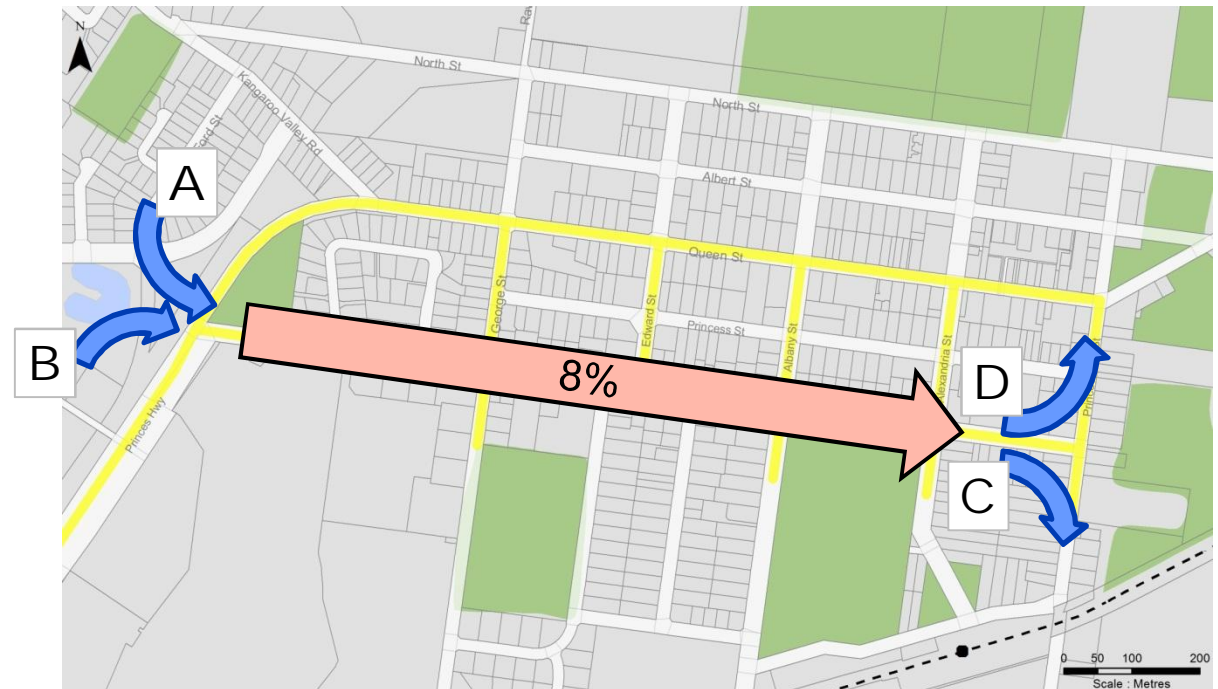| From	To	Vehicles (3-6 PM)	% Total (G&H)
Total	G & H	259	100%
E	G	29	11%
E	H	0	0%
F	G	26	10%
F	H	0	0%
E & F	**G & H**	**55**	**21%**

22% AM | 21% PM

Victoria Street O-D Survey Results

Sunday 6 May – Eastbound Through Traffic

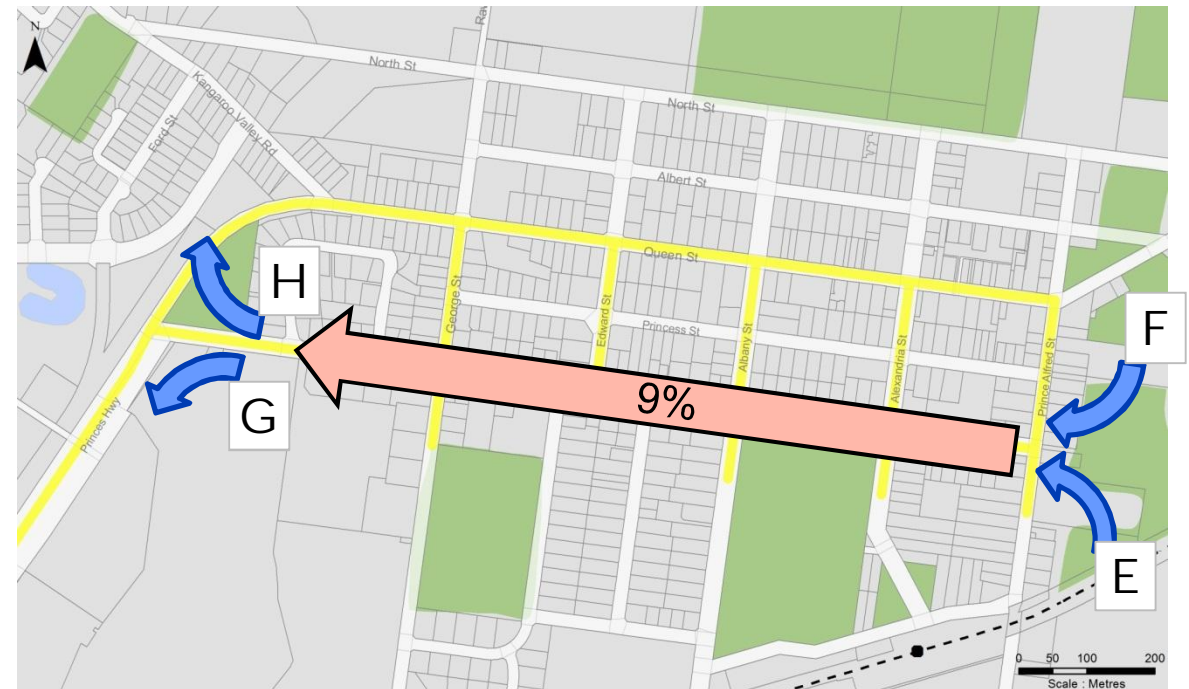| From	To	Vehicles (10 AM - 1PM)	% Total (A&B)
A & B	Total	675	100%
A	C	10	1%
A	D	1	0%
B	C	4	1%
B	D	41	6%
A & B	**C & D**	**56**	**8%**

Victoria Street O-D Survey Results

Sunday 6 May – Westbound Through Traffic

From	To	Vehicles (10 AM - 1PM)	% Total (G&H)
Total	G & H	667	100%
E	G	15	2%
E	H	2	1%
F	G	43	6%
F	H	0	0%
E & F	**G & H**	**60**	**9%**

Existing Conditions - Victoria Street 'Through' Traffic – Thu 3 May & Fri 4 May (Weekday AM & PM periods)

77-83% of vehicles either stop or turn off before the other end of Victoria Street.

77-83%

17-23%

17-23% of vehicles travel the entire length of Victoria Street.

Scale : Metres
0   50   100   200
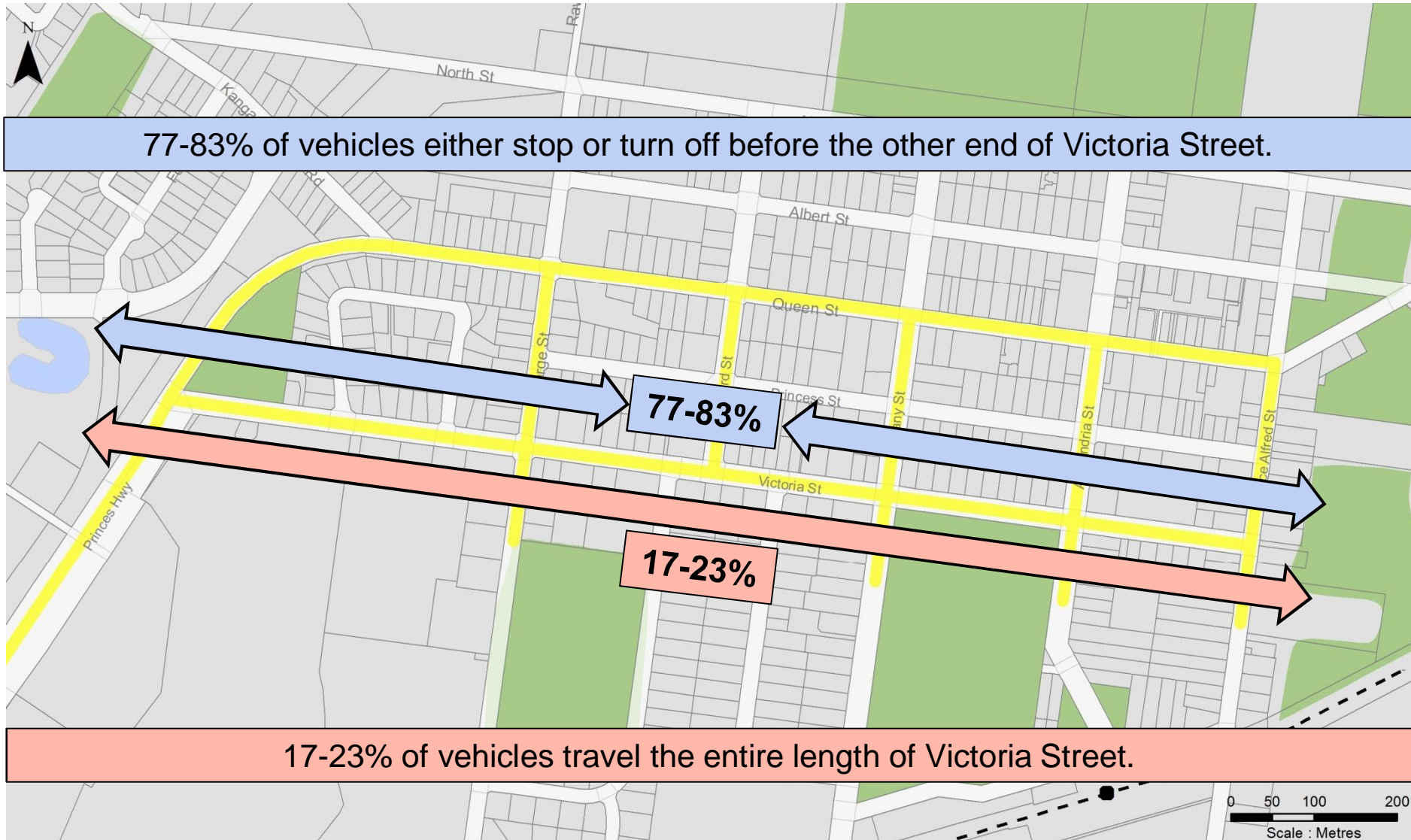
Existing Conditions - Victoria Street 'Through' Traffic – Sunday 6 May (Berry Country Fair)

NSW GOVERNMENT | Transport Roads & Maritime Services

91-92% of vehicles either stop or turn off before the other end of Victoria Street.

91-92%

8-9%

8-9% of vehicles travel the entire length of Victoria Street.

Scale : Metres
0 50 100 200