



**WELCOME TO
MATRIX
TRAFFIC AND
TRANSPORT DATA**

KEVIN JOHN

DIRECTOR | MARKET DEVELOPMENT

DONGGUEN LEE

NZ | PROJECT MANAGER

MATRIX
TRAFFIC AND
TRANSPORT DATA



Matrix **Hubs**

KUALA LUMPUR

BALI

QLD

WA

ACT

NSW

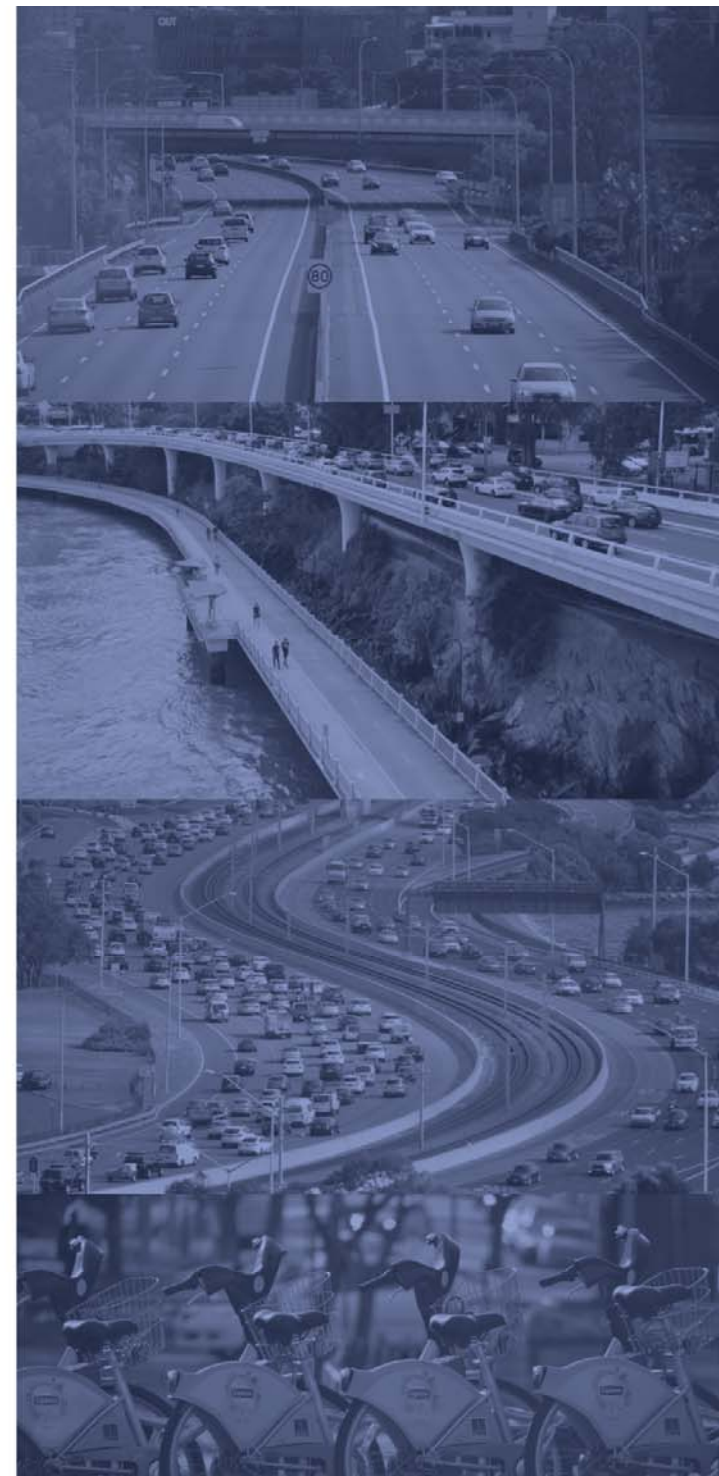
VIC

TAS

NEW ZEALAND



ISO 9001 ACCREDITATION



SERVICES



Matrix is a full service traffic survey firm offering a complete range of quantitative and qualitative services across consumer, business and specialist markets. Field and data processing operations are conducted "in-house" to ensure the highest standards of quality and control.



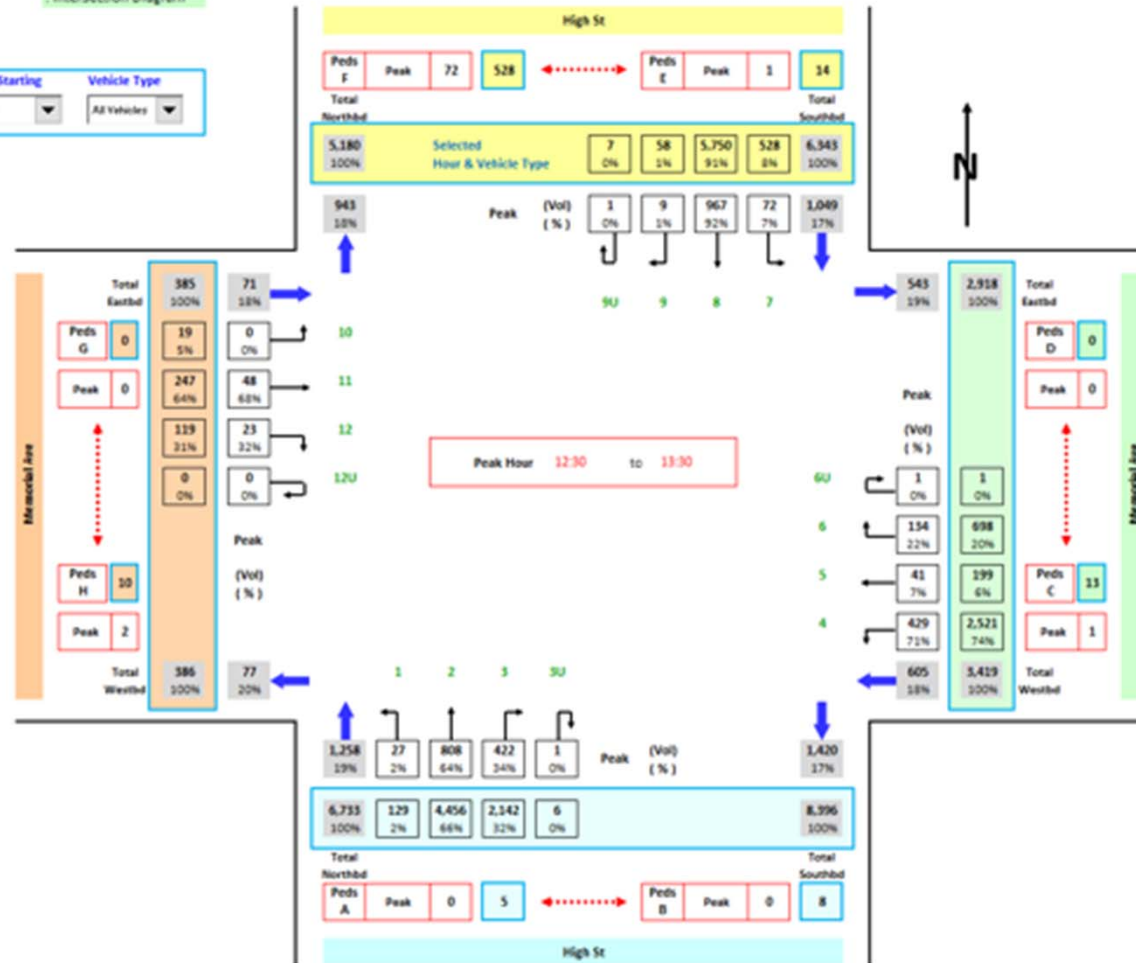
SURVEY PROCEDURES



INTERSECTION COUNTS DIAGRAM

Day/Date : Sat, 23rd Jun 2018
 Weather : Fine
 Description : Classified Intersection Count
 Intersection Diagram

Hour Starting: Vehicle Type:



INTERSECTION COUNT FLOW DIAGRAM

Search By Time and Classification

AM/PM	Start Time	End Time	Classification
AM	1:00	9:30	All vehicles

Volume Forecasting

% * 0 = original survey data
 (e.g. input 20 for volume increase 20% or -20 for volume decrease 20%)

1 Site No.



INTERSECTION COUNT FLOW DIAGRAM



Box Hill IC - Traffic Flows

Search By Time and Classification

Day: 24hrs
Start Time: 0:00
End Time: 24:00
Classification: All vehicles

Volume Forecasting

0% * 0 = original survey data
(e.g. Input 20 for volume increase 20% or -20 for volume decrease 20%)

Turning Movements

Flow-diagram

1 Site No.



INTERSECTION COUNT FLOW DIAGRAM



Box Hill IC - Traffic Flows

Search By Time and Classification

Day: 24hrs
 Start Time: 0:00
 End Time: 24:00
 Classification: All vehicles

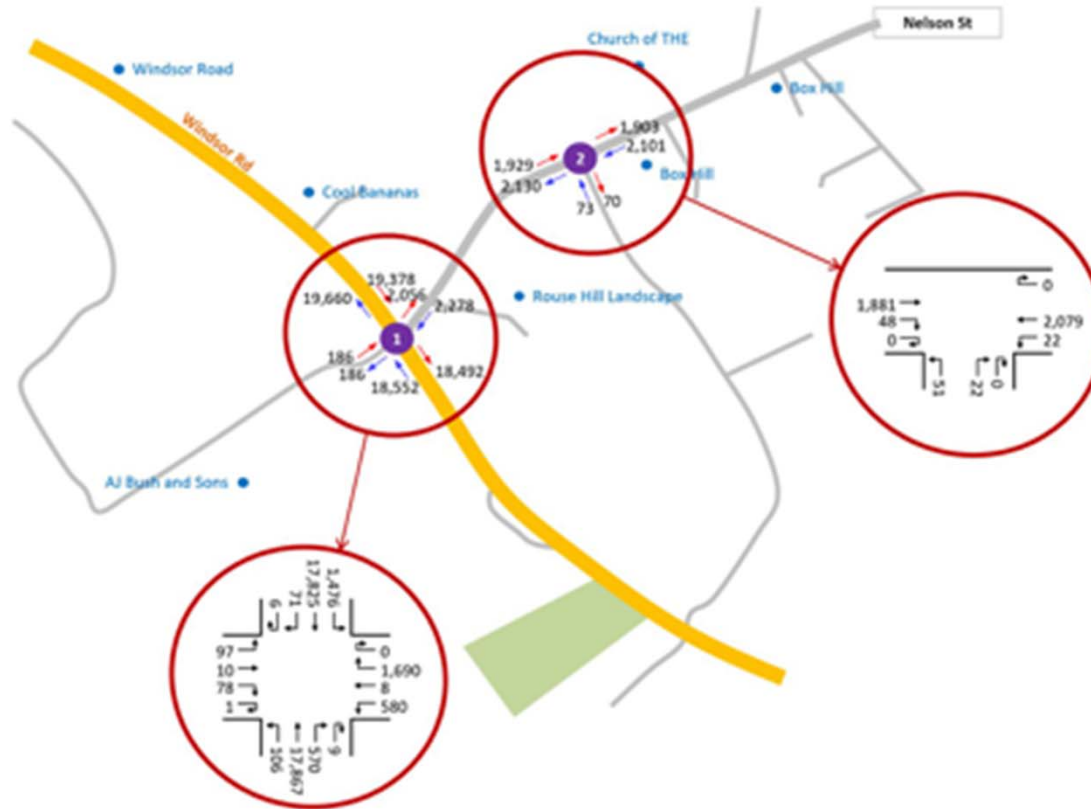
Volume Forecasting

0% * 0 = original survey data
 (e.g. input 20 for volume increase 20% or -20 for volume decrease 20%)

Turning Movements

Flow-diagram

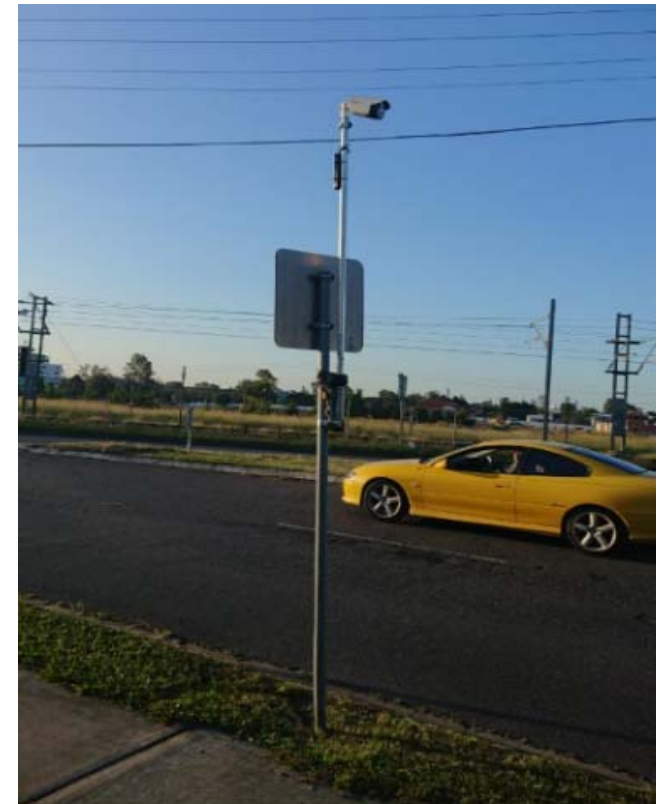
1 Site No.



ORIGIN DESTINATION (OD) SURVEY CAMERA

Matrix uses customised cameras to capture and collect number plate data for as long as 48 hours. Using the video collection method eliminates the need to expose manual surveyors next to high volume roads.

The video is time stamped to show the time, number plate and vehicle type. Both, trip and time matrices, are produced in tabular and graphical formats to show vehicle movements throughout the survey area. Surveys range from small LATM studies to large network studies. Matrix has over 200 cameras specific for number plate surveys.



OD MATRIX

O-D Matches - Class 1 - Light Vehicle

Time Period 7:00 18:00	Destination Station	10W	1E	2W	3W	5S	6W	7W	8W	Total	Percentage Matched
Origin Station	Volume	1125	2847	24	70	165	741	250	1043	6265	
10E	1320	13	935	0	2	1	1	1	3	956	72.4%
1W	2687	770	152	16	40	27	62	14	150	1231	45.8%
2E	59	0	48	0	0	0	0	0	0	48	81.4%
3E	23	0	17	0	0	0	0	0	0	17	73.9%
4E	86	0	50	0	1	0	2	1	0	54	62.8%
5N	221	0	16	0	0	0	176	0	0	192	86.9%
6E	670	5	235	0	4	0	2	4	13	263	39.3%
7E	270	0	38	0	0	0	0	7	26	71	26.3%
8E	906	5	119	0	0	0	0	10	19	153	16.9%
Total	6242	793	1610	16	47	28	243	37	211	2985	47.8%
Percentage Matched		70.5%	56.6%	66.7%	67.1%	17.0%	32.8%	14.8%	20.2%	47.6%	

O-D Matches - Total Vehicles

Time Period 7:00 18:00	Destination Station	10W	1E	2W	3W	5S	6W	7W	8W	Total	Percentage Matched
Origin Station	Volume	1168	2908	24	70	166	748	254	1066	6404	
10E	1360	13	954	0	2	1	1	3	3	977	71.8%
1W	2744	782	156	16	40	27	62	14	156	1253	45.7%
2E	59	0	48	0	0	0	0	0	0	48	81.4%
3E	23	0	17	0	0	0	0	0	0	17	73.9%
4E	86	0	50	0	1	0	2	1	0	54	62.8%
5N	222	0	16	0	0	0	177	0	0	193	86.9%
6E	679	5	241	0	4	0	2	4	13	269	39.6%
7E	275	0	39	0	0	0	0	7	26	72	26.2%
8E	920	5	121	0	0	0	0	10	22	158	17.2%
Total	6368	805	1642	16	47	28	244	39	220	3041	47.8%
Percentage Matched		68.9%	56.5%	66.7%	67.1%	16.9%	32.6%	15.4%	20.6%	47.5%	



OD MATRIX

TRAVEL TIME DATA

Survey Date: Saturday 7/04/2018

Origin: 2En5

Destination: 2Ex5

AM

Time Period	Average Travel Time	Minimum Travel Time	10 Percentile	20 Percentile	30 Percentile	40 Percentile	Median Travel Time (50 Percentile)	60 Percentile	70 Percentile	80 Percentile	90 Percentile	Maximum Travel Time
7:00 - 8:00	0:16:05	0:04:02	0:04:22	0:04:27	0:04:33	0:04:38	0:04:43	0:04:49	0:05:14	0:11:25	0:27:53	3:12:55
8:00 - 9:00	0:18:34	0:03:59	0:04:24	0:04:30	0:04:38	0:04:43	0:04:54	0:05:01	0:09:10	0:15:17	0:30:09	7:26:14
9:00 - 10:00	0:17:03	0:04:14	0:04:41	0:04:49	0:04:56	0:05:03	0:05:14	0:05:26	0:07:54	0:18:30	0:29:43	8:18:17
10:00 - 11:00	0:18:55	0:04:16	0:04:50	0:04:59	0:05:05	0:05:15	0:05:28	0:06:00	0:11:48	0:23:24	0:43:32	6:40:39
11:00 - 12:00	0:19:18	0:04:20	0:04:53	0:05:05	0:05:13	0:05:21	0:05:30	0:05:55	0:11:18	0:20:56	0:44:22	6:31:06
12:00 - 13:00	0:22:44	0:04:32	0:05:03	0:05:11	0:05:19	0:05:29	0:05:42	0:06:02	0:10:13	0:17:42	0:52:24	5:14:19
13:00 - 14:00	0:17:06	0:04:33	0:04:54	0:05:02	0:05:08	0:05:14	0:05:23	0:05:40	0:09:40	0:15:14	0:49:02	4:36:00
14:00 - 15:00	0:16:09	0:04:25	0:04:53	0:05:03	0:05:10	0:05:17	0:05:24	0:05:36	0:08:05	0:16:08	0:37:02	3:31:14
15:00 - 16:00	0:14:41	0:04:08	0:04:39	0:04:45	0:04:50	0:04:56	0:05:02	0:05:13	0:05:58	0:14:47	0:32:48	3:51:04
16:00 - 17:00	0:11:55	0:01:10	0:04:36	0:04:48	0:04:53	0:04:56	0:05:02	0:05:13	0:05:42	0:13:39	0:27:02	1:56:51
17:00 - 18:00	0:08:24	0:04:12	0:04:33	0:04:40	0:04:45	0:04:50	0:04:56	0:05:03	0:05:09	0:06:15	0:15:16	1:05:25
18:00 - 19:00	0:06:17	0:04:00	0:04:18	0:04:31	0:04:37	0:04:44	0:04:50	0:04:56	0:05:04	0:05:29	0:11:09	0:22:25
7:00 - 19:00	0:16:30	0:01:10	0:04:40	0:04:51	0:04:59	0:05:07	0:05:17	0:05:31	0:08:02	0:15:35	0:36:27	8:18:17



OD FLOW DIAGRAM

Origin : **9 : Wellington Street - north of Racecourse Road** Origin Volume **215**

Time : AM_Total

Origin

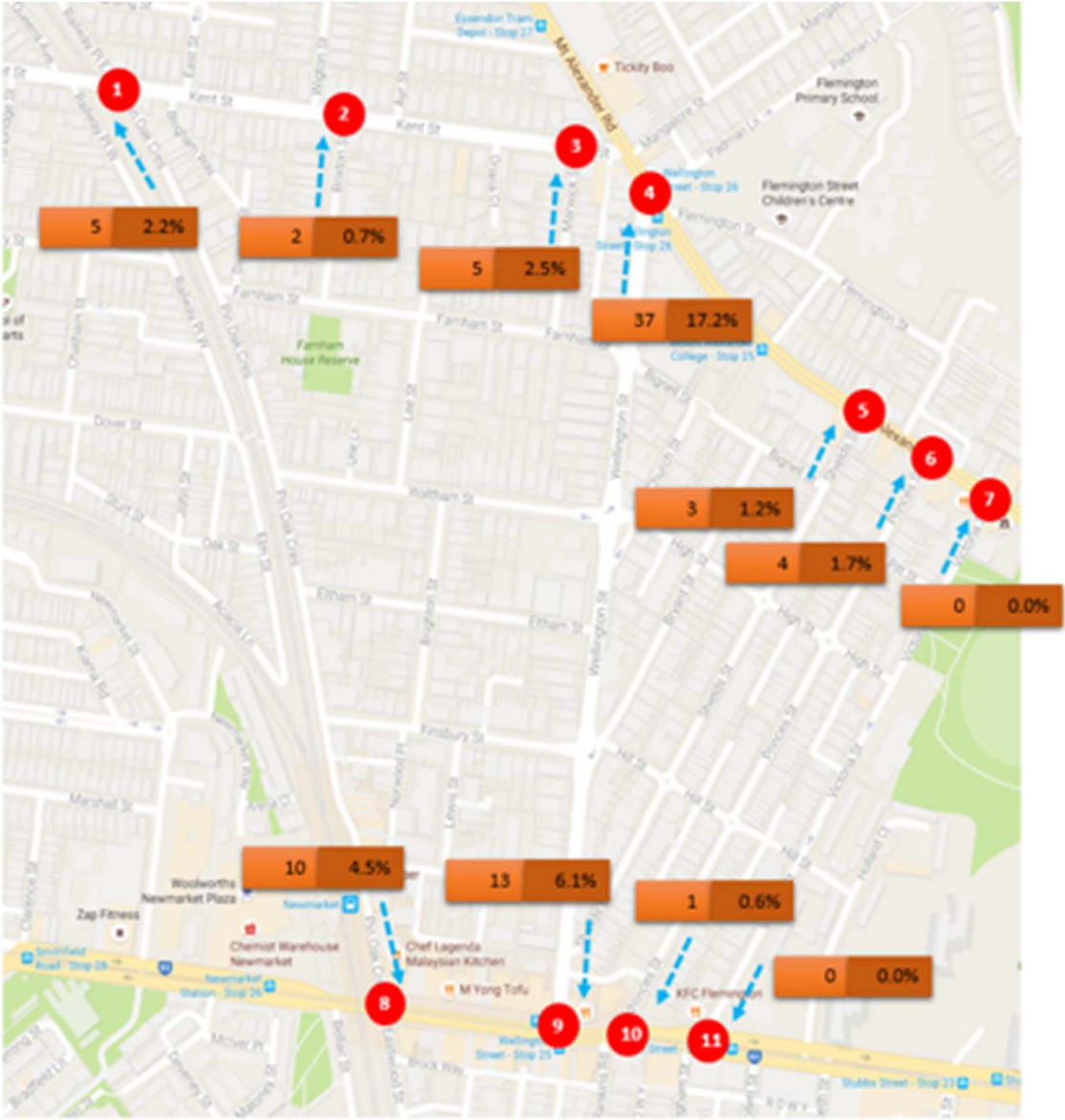
Hour Commencing



1 Map ID.

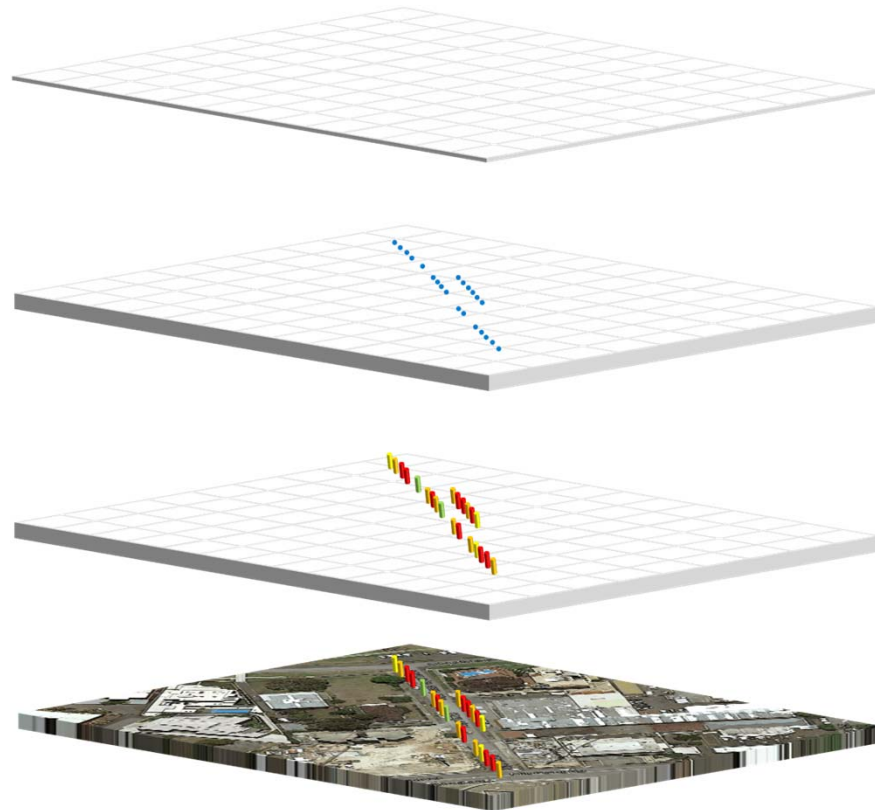
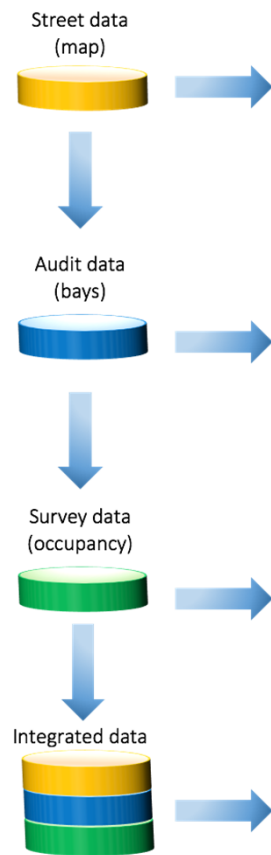
---> Destination

Matched plates expanded for incomplete



GIS DATA

AERIAL IMAGERY



BASE LAYER GIS DATA

BAY LOCATIONS, PARKING TYPES, RESTRICTIONS



SURVEY DATA

OCCUPANCY



Survey data can also show Duration of Stay and Turnover
Can be represented as daily averages or specific time intervals

PARKING OCCUPANCY

SURVEY DATA



- Bay Data can be aggregated into zones
- Zones can also be used for off-street parking (e.g. total off-street zone, not individual bays)
- In the example above, yellow zones are on-street blue zones are off-street

PARKING OCCUPANCY

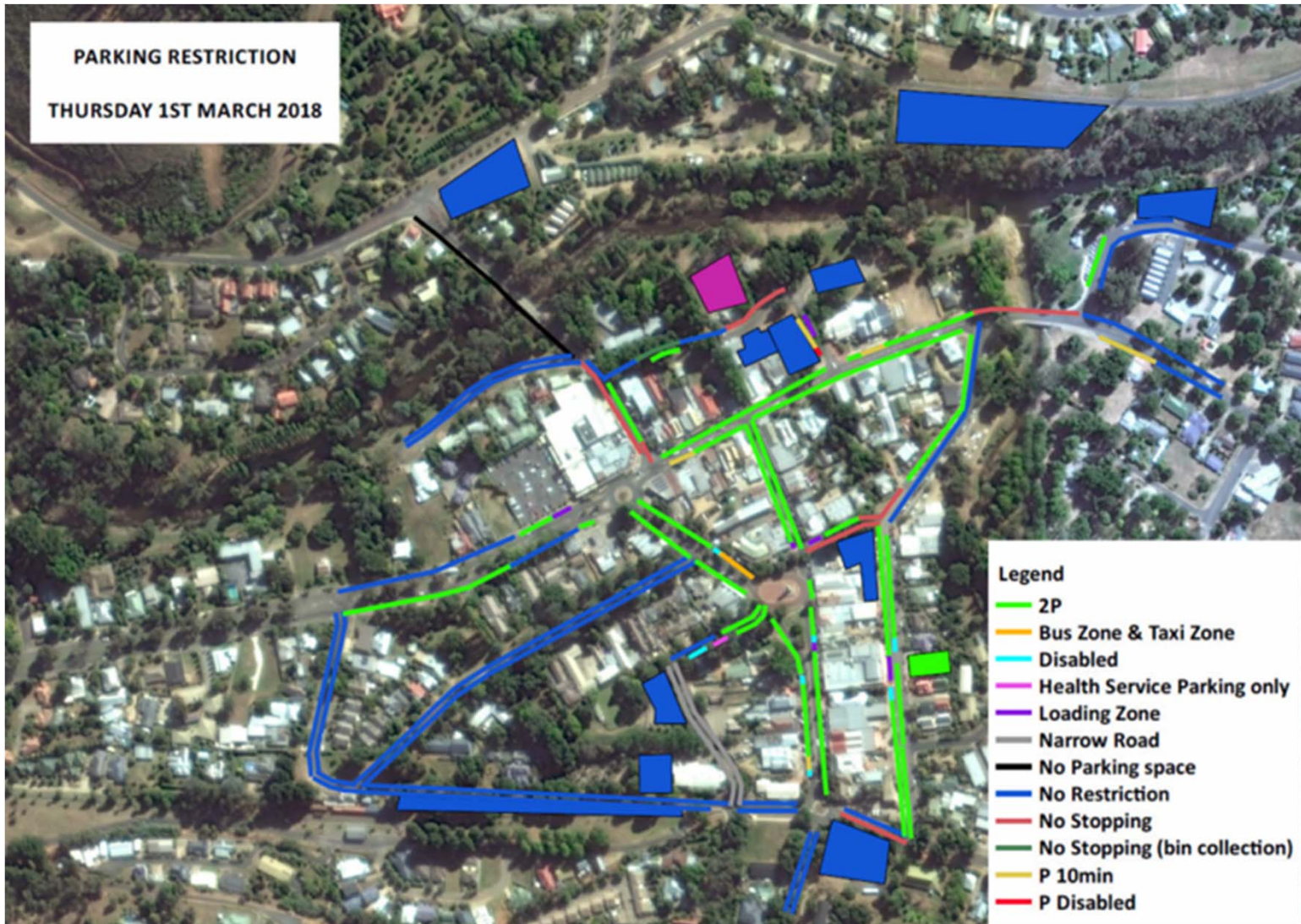
SURVEY DATA



Zone Occupancy Level: ■ 80% to 100% ■ 60% to 80% ■ 40% to 60% ■ 20% to 40% ■ < 20% ■ Unoccupied

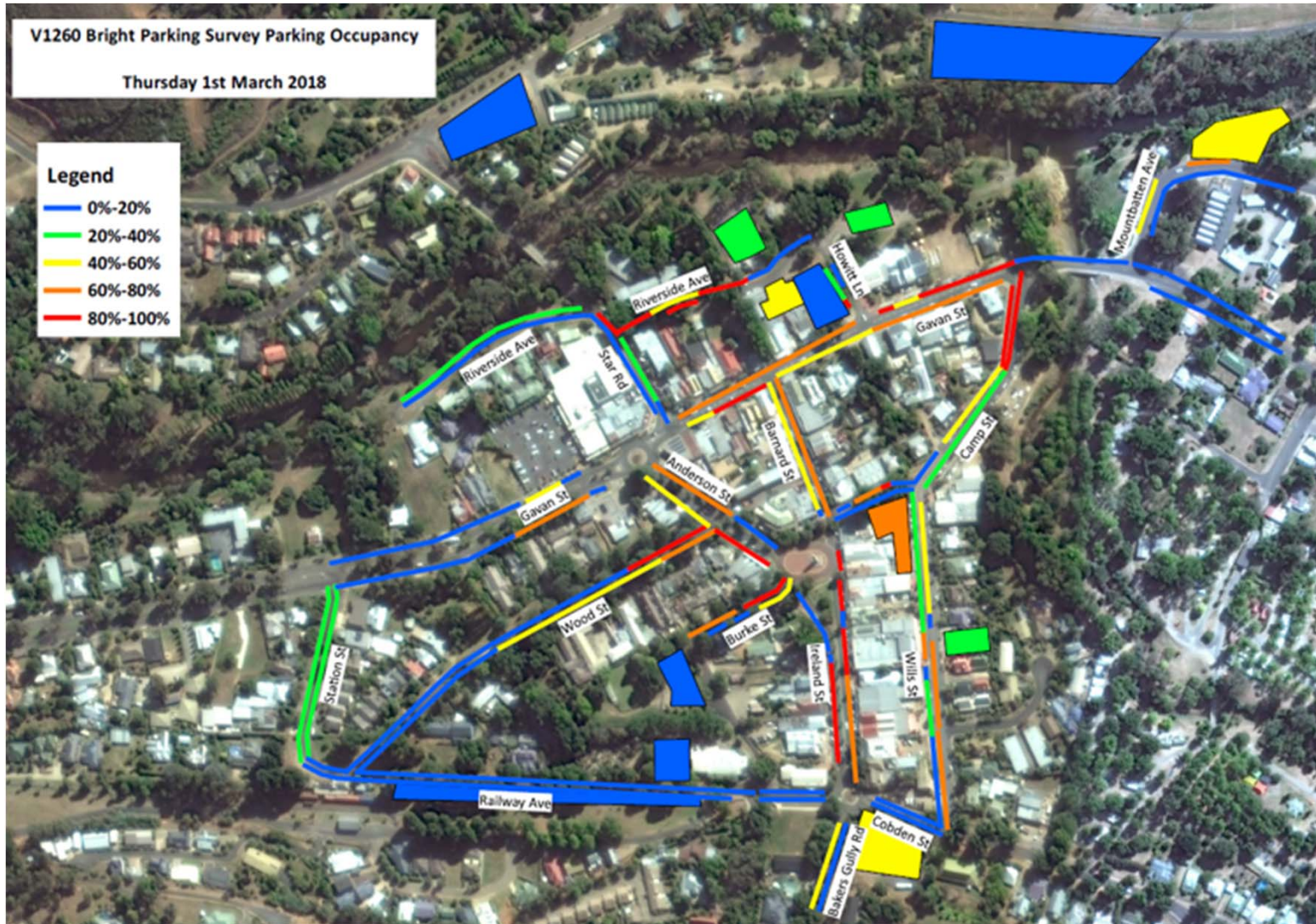
Occupancy, duration and turnover can be shown over time.

PARKING SURVEY INVENTORY



PARKING SURVEYS

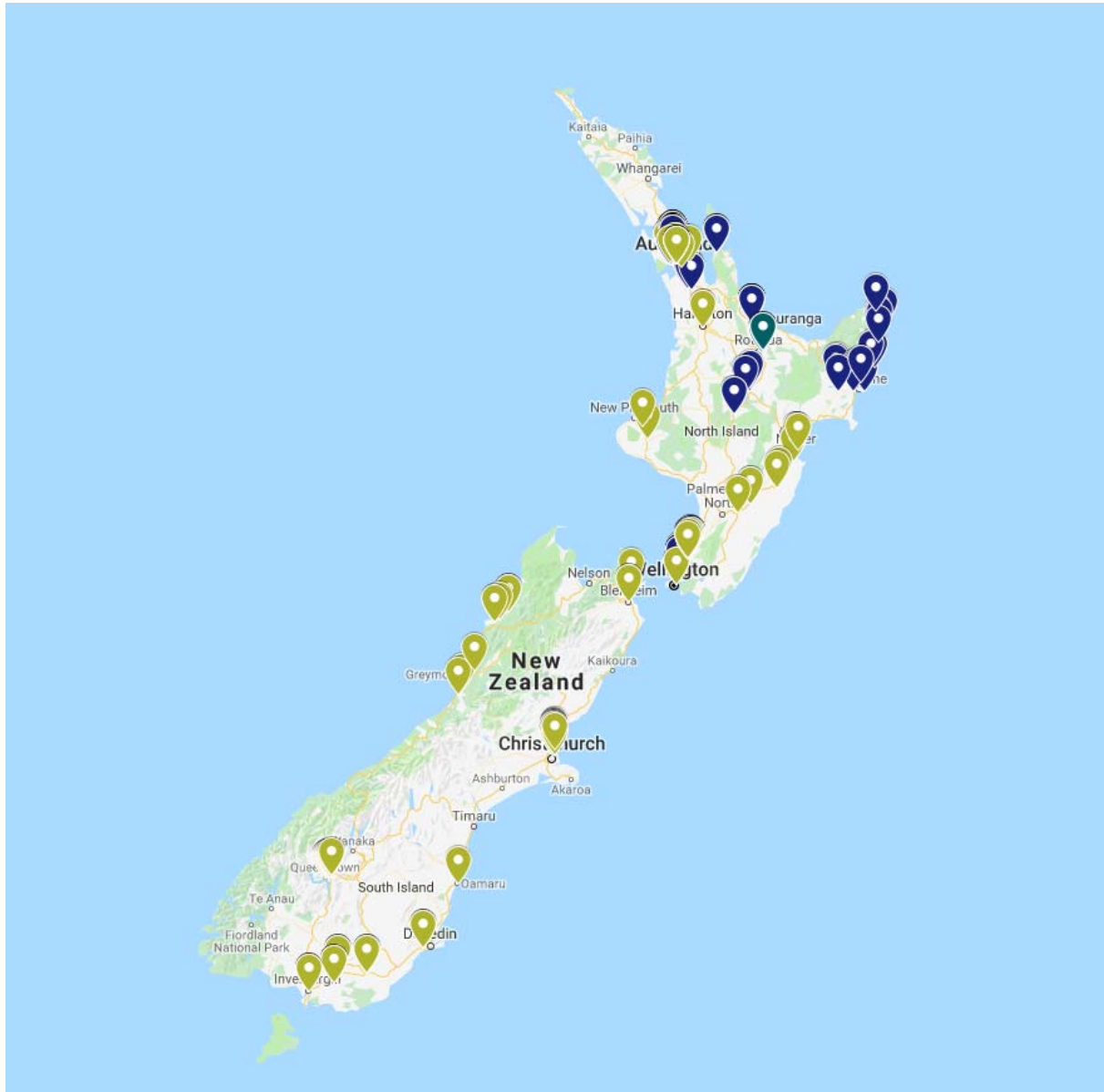
GIS METHODOLOGY



MATRIX SURVEYS 2018



NZ SURVEYS 2018



Safe Work Method Statement (SWMS)

Administration

Project: <insert> Address (if applicable): <insert>

Work activity: Fastening traffic survey equipment (tube) onto road (single or dual lane only)

Is this high-risk construction work? Yes No If yes, which high-risk activity does it relate to? Work carried out adjacent to and on a road

SWMS prepared by: <insert> SWMS approved by: <insert> Date: <insert>

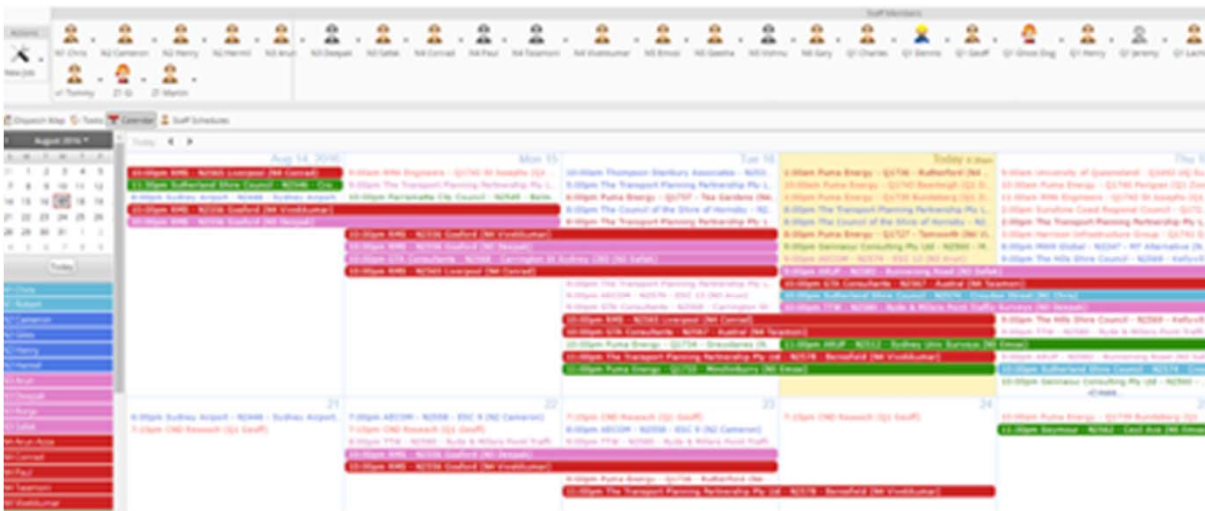
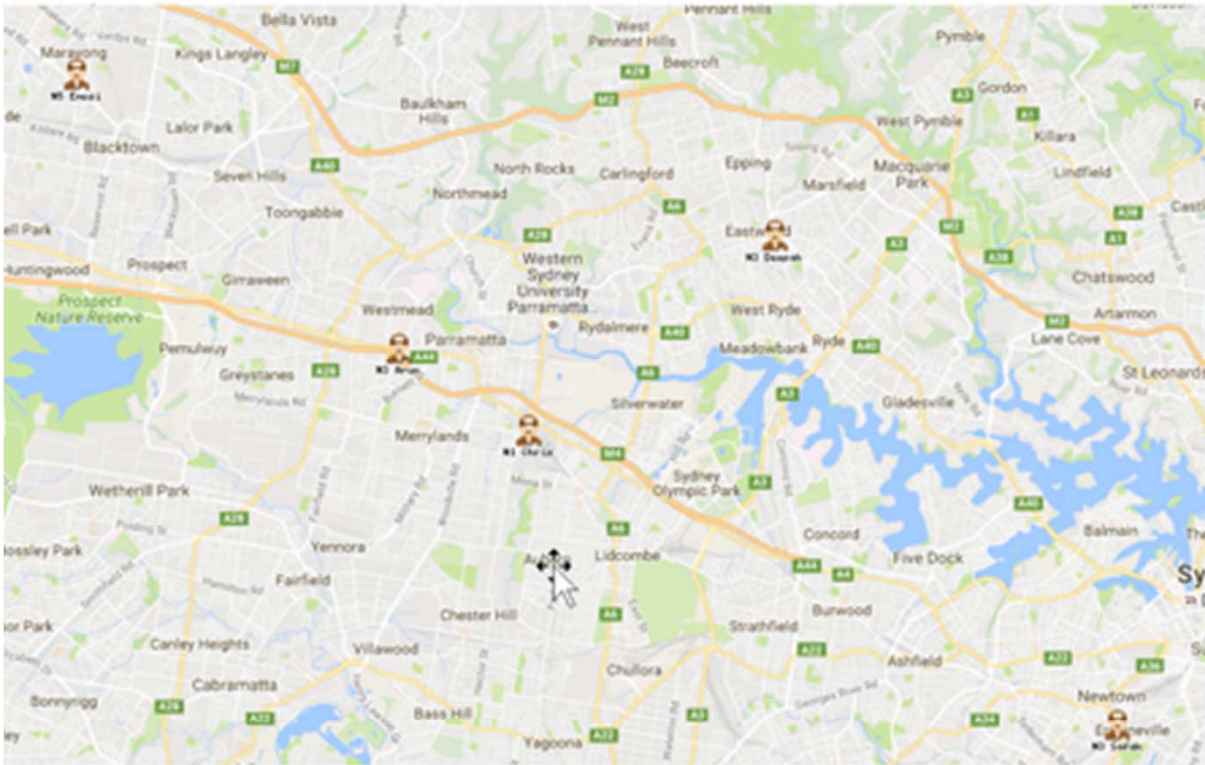
Work activity supervisor & contact details: <insert> Date/s work activity to be completed: <date>

Safe work method

Task	Hazard/s	Consequence	Risk Score <i>(before controls)</i>	Controls	Risk Score <i>(after controls)</i>																					
Prepare for activity	Unfamiliar with site	Struck by oncoming traffic, cyclists	19	<ul style="list-style-type: none"> Matrix to research site location and ensure tube placement occurs at the safest location and time practicable (i.e. where sight distance is greatest; where parking of vehicle can be done safely; and where interaction with traffic is reduced as much as practicable) Matrix to implement client traffic management / access permit / road occupancy license / similar requirements as a minimum (as part of activity preparation), as well as the following: <ul style="list-style-type: none"> if tube location does <u>not</u> meet minimum sight distances without spotter (refer table below), a spotter is required to attend job if tube location does <u>not</u> meet minimum sight distances with spotter (refer table below); OR location is in a high traffic area; OR on a road where the posted speed limit is 100km/h or more, a traffic control contractor is required to attend job and implement traffic controls <table border="1" style="margin-left: 20px;"> <thead> <tr> <th colspan="3">Minimum Sight Distances</th> </tr> <tr> <th>Speed Limit</th> <th>With Spotter</th> <th>Without Spotter</th> </tr> </thead> <tbody> <tr> <td>50km/h or less</td> <td>150 m</td> <td>300 m</td> </tr> <tr> <td>51 - 60 km/h</td> <td>200 m</td> <td>400 m</td> </tr> <tr> <td>61 - 80 km/h</td> <td>250 m</td> <td>500 m</td> </tr> <tr> <td>81 - 100 km/h</td> <td>300 m</td> <td>600 m</td> </tr> <tr> <td>Over 100km/h</td> <td colspan="2" style="text-align: center;">Traffic control required</td> </tr> </tbody> </table>	Minimum Sight Distances			Speed Limit	With Spotter	Without Spotter	50km/h or less	150 m	300 m	51 - 60 km/h	200 m	400 m	61 - 80 km/h	250 m	500 m	81 - 100 km/h	300 m	600 m	Over 100km/h	Traffic control required		15
Minimum Sight Distances																										
Speed Limit	With Spotter	Without Spotter																								
50km/h or less	150 m	300 m																								
51 - 60 km/h	200 m	400 m																								
61 - 80 km/h	250 m	500 m																								
81 - 100 km/h	300 m	600 m																								
Over 100km/h	Traffic control required																									

SERVICE M8

Access client and job details, view staff locations and schedules, dispatch jobs and generate quotes or invoices - wherever you are.



THANK YOU
