

Lyle Marshall & Associates Pty Ltd

CONSULTING ENGINEERS, TRANSPORTATION AND ENVIRONMENTAL PLANNERS
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MEMORANDUM

To: Neil Kennan / Brent Lawson
From: Lyle Marshall
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Date: 15th March 2013
Job No. 9167/12
Subject: Response to Issues Raised by the Department of Planning and Infrastructure at your meeting on Wednesday 13/3/13.

Water Quality Issue *Confirm volumes and source.*

Response:

1. The water usage varies according to the seasons of the year. The average daily usage is as follows:-

Summer	December, January, February	40,000 l/day
Autumn	March, April, May	25,000 l/day
Winter	June, July, August	10,000 l/day
Spring	September, October, November	25,000 l/day
2. Analysis of the Bureau of Meteorology records at Sydney Airport Station 066037 shows that the rainfall in 2012 was ranked below the median rainfall in the 41 year period 1972 to 2012.
3. *A detailed analysis of daily water usage and daily rainfall* has been made for each month in 2012. Stormwater is to be pumped from a pump well in Stages 1 to 5 (Years 1 to 5) and from the HED pit in the on-going operational stage (Years 6 onwards).
4. It has been assumed on working days Monday to Saturday that the Materials Recycling Facility would not operate on days when rainfall was 5mm or more.
5. The facility will only operate Monday to Saturday subject to demand. These occasions cannot be predicted and are not allowed for in the water usage calculations.
6. The monthly water usage from rainwater storage tanks and from the Sydney Water Supply is summarised in Table 1. Rainwater storage would have provided 61.8% of total water usage in 2012.

Stormwater Issue *Provide calculations to support conclusion that stormwater system is designed to cope with 1 in 100 year storm event.*

Response:

EXISTING STORMWATER DRAINAGE SYSTEM

Although the site is partly within the Marrickville LGA and partly within the City of Sydney LGA, the site falls from west to east and drains into the City of Sydney underground piped drainage system. Campbell Lane, Woodley Street and Holland Street drain to a double grated gully pit some **95** metres from the eastern site boundary in the City of Sydney LGA.

The level survey prepared by Aster Consulting Pty Ltd shows that the natural fall of the land across the site is from west to east. The existing stormwater management system is assumed to be adequate for the site area of 1.72 ha in its natural condition. The estimated peak discharge from a **1 in 5** year storm on the pre-developed site is **424 l/sec**. See Annexure 1 for calculations.

ILSAX MODELLING OF STORMWATER INFLOW TO STORAGE BASIN

The Ilsax programme has been used to calculate the inflow hydrographs on the basin catchment area for 1 in 5, 10, 20, 50 and 100 year ARI storms and durations from 5 minutes to 3 hours.

ONGOING OPERATIONAL STAGE

This stage commences after year 5 when the site has been excavated to base level. The Ilsax modelling shows that in the 1 in 100 year storm of 3 hours duration, the total inflow to the storage basin is 1342 cu.metres based upon a catchment area of 1.34ha.

A High Early Discharge Pit $\frac{1}{1}$ (HED) is to be located at the basin low point with a 100mm uPVC outlet pipe to Pit $\frac{1}{2}$ in Drainage Line 1. The peak discharge in the outlet pipe is equal to **24 litres/sec**.

The inflow and outflow volumes for 1 in 100 year storms of durations from 5 minutes to 6 hours are provided in Table 2. The critical storm is the 270 minute storm where the maximum volume in the basin is 1096.2 cu.metres. The basin capacity is 1162 cu. metres. At the onset of any storm, water will be pumped from the HED pit into the 5 holding tanks. When the tanks are full the overflow will be directed back to the HED pit. The basin will empty after each storm. There will **not** be any overflow through the emergency spillway in a 1 in 100 year storm of any duration.

Response:**EXISTING STORMWATER DRAINAGE SYSTEM (continued)**

The emergency spillway could only be overtopped if there is a prolonged power failure or if a 1 in 200 or rarer storm event occurs. In such an event the water would be extremely diluted and filter through dense vegetation to the existing concrete lined channel.

The total discharge from the site will be the runoff from the area of the vegetated banks of the site (3817 m²) outside the catchment of the works area plus discharge of 24 l/sec from the HED pit). The runoff from this vegetated area in a 1 in 5 year storm of 5 minutes duration is 0.094 m³ /sec. (94 l/sec) and the *total runoff* is **118 l/sec**. This flow is significantly **lower** than **424 l/sec discharge** from the total site area of **17217 m²** in its **natural** condition.

SITE PREPARATION AND EXCAVATION/OPERATIONAL STAGE 1.

The site is to be regraded and *retention basins 1 and 2* will be formed during site preparation. Stormwater runoff from the basin catchment area of **5170m²** will flow into *basin 1* or 2. A pumpwell will be provided in each basin. *Float switches* will be installed in the pumpwell and after rain the electric pumps will *fill the above ground storage tanks*. An *overflow* pipe will direct overflow water to **Pit (½)** in Drainage Line 1

Line 1 is to be constructed from the kerb in Holland Street to junction pit (½) in the site preparation stage and is to include a Humeceptor model **STC 14** Hydrodynamic device or equivalent that will capture 80% of total Suspended Solids (**TSS**) and reduce the suspended solids in the discharge to 50mg / litre and thus comply with the **ANZECC water quality guidelines**. The Humeceptor has been modelled by Humes Water Solutions for this Site.

Primary sediment treatment will be provided by a *sediment fence* with **Bidim A12 Geotextile** erected around each pumpwell to capture coarse sediment and other material.

The inflow hydrographs have been calculated using ILSAX modelling for all storm events from 1 in 5 years to 1 in 100 years and for durations of 5, 10, 20, 30, 60, 90, 120, 180, 270 and 360 minutes. During each rainfall event, water will be pumped into the **storage tanks or into drainage Line 1** at the rate of **24 l/sec**. The inflow hydrograph and outflow volume from the pumps for *all storm durations* to 360 minutes are shown in **Table 3**. The peak storage is **294.2 cu. metres** after the 90 minute storm. The critical storm is the *90 minute event*. The capacity of **basin 1** is **382 cu. metres** and **basin 2** is **361 cu. metres**. Hence, there will be *no overflow* through the *emergency spillway* during any *1 in 100 year ARI storm event* in **Stage 1**.

STORMWATER ISSUE *Location of Emergency spillway, capacity of system to safely convey flows.***Response:**

The emergency spillways will not be required as overflow devices because the retention basins will not fill to the spillway height in any storm event from 1 in 5 years to 1 in 100 years as discussed in this report under the capacity of the stormwater system.

Property designed spillways are constructed to act also as energy dissipators and prevent bank erosion. In my opinion overflow could only occur if there is a prolonged power failure in Stages **1** to **6**. In **Table 3**, the *inflow hydrograph* during a *60 minute storm* shows that overflow could occur *if a power failure occurs at the onset of a storm where the storm duration exceeds 60 minutes*. In the on-going operational stage, the pumps are used to fill the storage tanks and return the overflow to the HED pit to maintain the maximum head. *Stormwater will flow by gravity from the HED pit into Line 1.*

In **Table 3**, the inflow hydrograph for a *60 minute 1 in 100 year ARI* reaches **372.1m³**. Hence, overflow could occur *if a power failure occurs at the onset of a storm where the storm duration equals or exceeds 60 minutes*.

PROBABILITY OF A 1 IN 100 YEAR STORM:

An analysis has been made of daily rainfall records at *Sydney Airport Station 066037* over a period of 83 years from **1929** to **2012**.

During this period there have **not** been any **1 in 50** or **1 in 100 year storm events**. The heaviest storms were:-

ARI	YEAR	MONTH	DAY
1 in 20 years	1956	February	10
1 in 20 years	1990	February	3
1 in 20 years	1986	August	6
1 in 10 years	1963	December	13
1 in 10 years	1990	February	4
1 in 10 years	1988	April	30
1 in 5 years	1991	June	11
1 in 2 years	1984	November	9
1 in 2 years	1984	November	6
1 in 2 years	1992	February	9
1 in 2 years	1976	February	21
1 in 2 years	2002	February	5

The inflow hydrographs have been calculated for a *1 in 20 year storm* from **5 minutes to 360 minutes duration** on the *basin catchment in Stages 1 to 6*.

The capacity of the smaller **Basin 2** is shown at the bottom of **Table 4** for **Stages 1, 2, 3, 4, and 5**. With an outflow of **24 litres / sec.** there could be a small overflow from the spillway of 4.8m^3 in a *120 minute storm in Stage 5*. This overflow could be *eliminated by increasing the outflow to 24.5 litres / sec.* There would be **no overflow** from the **1 in 20 year storm** for **all durations** from **5 minutes to 6 hours** in **Stages 1, 2, 3, 4 and Stage 6**.

TRAFFIC

Issue: ***Intersection Safety – Accident Analysis Required, Demonstrate That Turning Movements Can / Will Be Safe.***

- The RMS Crash Analysis Unit has provided crash data for the *5 year period 1/7/07 to 30/06/12* for the intersections and **20 metres** on the *approaches* as listed in **Annexure 3**.
- There were **4** crashes none of which involved heavy rigid trucks.
- There were no accidents involving vehicles turning into and out of Albert Street and Campbell Street and Albert Street and Campbell Road.
- One crash occurred at night at 11:10pm and involved a car travelling east in Campbell Street hitting a parked light truck and parked car (no injuries) west of Barwon Park Road.
- One crash involved a car on the northern side of Campbell Street west of Barwon Park Road leaving parking and a motorcycle travelling east in Campbell Street at speed (2 injuries).
- One crash involved a light truck travelling west in Campbell Street and running off the road to the right into a building in Barwon Park Road. Wet. (1 injury).
- One crash involved a 4WD travelling south in Barwon Park Road and turning right into Campbell Street and a car travelling east in Campbell Street (3 injuries).

Regards,



Lyle Marshall

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TABLE 1 MONTHLY WATER USAGE AND SOURCE OF SUPPLY 2012

Month	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Total Water Usage cu.m	880	800	450	475	600	190	230	260	600	625	575	960	6645
Rainwater Tanks cu.m	617	732	450	352	229	190	230	239	81	339	365	281	4105
Sydney Water cu.m	263	68	0	123	371	0	0	21	519	286	210	679	2540
Sunday & Public Holidays	7	4	4	8	4	5	5	4	5	5	4	7	62
Wet Days 5mm or more Mon to Sat.	2	5	9	3	3	6	3	1	1	1	3	0	37

TABLE 2**ILSAX INFLOW HYDROGRAPHS FOR 1 IN 100 YEAR ARI STORMS OF 5 MINS. TO 360 MINS. DURATION
FOR ONGOING OPERATIONAL STAGE YEAR 6 ONWARDS**

Storm Duration Mins.	Peak Discharge l/sec.	Inflow Hydrograph m ³	Outflow from HED Pit	Volume of Storage Tanks m ³	Total Rainfall mm.	Catchment Area m ²	Basin Full Storage Capacity m ³	Maximum Volume ¹ in Basin m ³
5	744	181	7.2	200	22.2	13400	1162	173.8
10	684	326	14.4	"	35.3	13400	1162	311.6
15	837	433	21.6	"	45.1	"	"	411.4
20	817	521	28.8	"	53.4	"	"	492.2
30	778	661	43.2	"	66.8	"	"	617.8
60	739	964	86.4	"	95.5	"	"	877.6
90	740	1098	129.6	"	109.7	"	"	968.4
120	744	1199	172.8	"	120.6	"	"	1026.2
180	427	1342	259.2	200	137.4	13400	1162	1082.8
270	376	1485	388.8	"	156.1	"	"	1096.2
360	270	1571	518.4	"	171.0	"	"	1052.6

Note 1 : Excludes water storage in tanks.

TABLE 3
ILSAX INFLOW HYDROGRAPHS FOR 1 IN 100 YEAR ARI STORMS OF 5 MINS TO 360 MINS DURATION
FOR SITE PREPARATION AND EXCAVATION / OPERATIONAL STAGE 1

Storm Duration Mins.	Peak Discharge l/sec.	Inflow Hydrograph m ³	Outflow from Pumps	Volume of Storage Tanks m ³	Total Rainfall mm.	Catchment Area m ²	Basin Full Storage Capacity m ³		Maximum Volume ^{1,2} in Basin m ³	
							Basin1	Basin2	Basin1	Basin2
5		69.9	7.2	200	22.2	5170	382	361	62.7	
10		125.8	14.4	"	35.2	"	"	"	111.4	
15		167.1	21.6	"	45.1	"	"	"	145.5	
20		201.1	28.8	"	53.4	"	"	"	172.3	
30		255.1	43.2	"	66.8	"	"	"	211.9	
60		372.1	86.4	"	95.5	"	"	"	285.7	
90		423.8	129.6	"	109.7	"	"	"	294.2	
120		462.8	172.8	"	120.6	"	"	"	290.0	
180		518.0	259.2	"	137.4	"	"	"	258.8	
270		573.2	388.8	"	156.1	"	"	"	184.4	
360		606.4	518.4	"	171.0	"	"	"	88.0	

Note 1 : Excludes water storage in tanks

2 : During the excavation / operational Stages 1 to 5 Basins 1 and 2 will alternate for storage of stormwater hence only 1 basin will store stormwater at any time during Stages 1 to 5.

TABLE 4

INFLOW AND OUTFLOW HYDROGRAPHS FOR 1 IN 20 YEAR ARI STORM OF 5 MINUTES TO 360 MINUTES DURATION.**SITE PREPARATION AND EXCAVATION / OPERATIONAL STAGES 1 TO 5.**

Storm Duration Mins.	Outflow from Pumps m ³	STAGE 1		STAGE 2		STAGE 3		STAGE 4		STAGE 5		STAGE 6	
		Inflow m ³	Maximum Volume in Basin m ³	Inflow m ³	Maximum Volume in Basin m ³	Inflow m ³	Maximum Volume in Basin m ³	Inflow m ³	Maximum Volume in Basin m ³	Inflow m ³	Maximum Volume in Basin m ³	Inflow m ³	Maximum Volume in Basin m ³
5	7.2	44.4	37.2	58.4	51.2	72.5	65.3	86.7	79.5	100.9	93.7	115	107.8
10	14.4	83.8	69.4	110.2	95.8	136.7	122.3	163.6	149.2	190.3	175.9	217	202.6
15	21.6	112.7	91.1	148.3	126.7	184	162.4	220.1	198.5	256.1	234.5	292	270.4
20	28.8	136.3	107.5	179.3	150.5	222.4	193.6	266.2	237.4	309.6	280.8	353	324.2
30	43.2	171.8	128.6	226.1	182.9	280.4	237.2	335.5	292.3	390.3	347.1	445	401.8
60	86.4	248.6	162.2	327.2	240.8	405.7	319.3	485.6	399.2	564.8	478.4	644	557.6
90	129.6	283.7	154.1	373.4	243.8	463.1	333.5	554.2	424.6	644.6	515.0	735	605.4
120	172.8	308.8	136	406.4	233.6	504	331.2	603.2	430.4	701.6	528.8	800	627.2
180	259.2	345.5	86.3	454.7	195.5	563.9	304.7	674.8	415.6	784.9	525.7	895	635.8
270	388.8	382.1	0	502.9	114.1	623.7	234.9	746.5	357.7	868.2	479.4	990	601.2
360	518.4	404.5	0	532.4	14.0	660.2	141.8	790.2	271.8	919	400.6	1048	529.6

 Maximum Volume

MINIMUM BASIN STORAGE CAPACITY

YEAR	VOLUME m ³
1	361
2	401
3	442
4	483
5	524
6	1162

PRE-DEVELOPMENT

**PRE-DEVELOPMENT
FOR MARRICKVILLE COUNCIL LGA**

$$\begin{aligned} C_{10}^{10} &= 61 \text{ mm/hr} \\ C_{10}^1 &= 0.1 + 0.0133 (C_{10}^1 - 25) \\ &= 0.1 + .0133 \times 36.1 = 0.580 \\ C_5 &= 0.95 \times C_{10} = 0.551 \end{aligned}$$

Kinimatic Wave Equation ARI

$$\begin{aligned} K &= t_l^{0.4} \\ K &= \frac{6.94 (L.n)^{0.6}}{S^{0.3}} \end{aligned}$$

Catchment area 17217m
N Surface roughness .035 (long grass)
L overland flow (m) 97m
S slope in m/m .0328

For $t_c = 5 \text{ min.}$

$$K = t_l^{0.4} = 160.8^{0.4} \times 5 = 38.15$$

$$K = \frac{6.94 (97 \times 0.035)^{0.6}}{.0328^{0.3}} = 40.25$$

Adopt $t_c = 5 \text{ mins.}$

$$C_5 = 0.551, I_5^5 = 160.8 \text{ mm/hr.}$$

$$Q_5 = \frac{1.7217 \times 160.8 \times .551}{360}$$

$$= .424 \text{ m}^3/\text{sec.}$$

RUNOFF COEFFICIENT C 5

For Marrickville LGA $C_{10}^{10} = 61.1\text{mm/hour}$
 From Aust. Rainfall and Runoff AR & R 1987.

$$C_{10}^1 = 0.1 + 0.0133 (C_{10}^1 - 25) \\ = 0.1 + .0133 \times 36.1 = .580$$

$$C_5 = 0.95 \times C_{10}^1 = .58 \times .95 = .551 \dots \dots \dots *$$

1 in 5 Year Peak Discharge On Going Operational Stage

$$K = t I^{0.4}$$

$$K = \frac{6.94 (L.n)^{0.6}}{S^{0.3}} \quad \text{AR of R}$$

Kinematic Wave Equation 14.2 AR & R

Where $L = \text{Overland flow (m)} = 90\text{m}$
 $t = \text{Overland flow time (minutes)}$
 $n = \text{Surface roughness gravel surface } n = 0.021$
 $s = \text{slope in (m/m)} = .0182$

$$K = 33.9 = t I^{0.4}$$

For $t = 5 \text{ mins}$ $I^5 = 160.8\text{mm/hr}$

$$t I^{0.4} = 5 \times 160.8^{.4} = 38.1$$

Therefore adopt $t = 5 \text{ mins.}$

$$I = 160.8\text{mm/hr} \\ C = 0.551$$

Site area 17217m^2

Basin Catchment 13400m^2 .

Area bypassing basin 3817m

$$Q_5 = \frac{C I A}{360 \times 10^4} \quad \text{where } A = \text{Bypass Area in } \text{m}^2$$

$$Q_5 = \frac{.3817 \times .551 \times 160.8}{360} = .094\text{m}^3/\text{sec.}$$

Discharge from HED Pit = $.024\text{m}^3/\text{sec.}$

$\therefore$ Total Discharge = $0.118\text{m}^3/\text{sec.}$

Summary Crash Report

# Crash Type	Contributing Factors	Crash Movement	CRASHES	CASUALTIES
Car Crash 3 75.0%	Speeding 2 50.0%	Intersection, adjacent approaches 1 25.0%	Fatal crash 0 0.0%	Killed 0 0.0%
Light Truck Crash 2 50.0%	Fatigue 1 25.0%	Head-on (not overtaking) 0 0.0%	Injury crash 3 75.0%	Injured 6 100.0%
Rigid Truck Crash 0 0.0%		Opposing vehicles; turning 0 0.0%	Non-casualty crash 1 25.0%	* Unrestrained 0 0.0%
Articulated Truck Crash 0 0.0%		U-turn 0 0.0%	* Belt fitted but not worn. No restraint fitted to position OR No helmet worn	
* Heavy Truck Crash (0) (0.0%)	Weather	Rear-end 0 0.0%	Time Group	% of Day
Bus Crash 0 0.0%	Fine 3 75.0%	Lane change 0 0.0%	00:01 - 02:59 0 0.0%	12.5%
* Heavy Vehicle Crash (0) (0.0%)	Rain 1 25.0%	Parallel lanes; turning 0 0.0%	03:00 - 04:59 0 0.0%	8.3%
Emergency Vehicle Crash 0 0.0%	Overcast 0 0.0%	Vehicle leaving driveway 0 0.0%	05:00 - 05:59 1 25.0%	4.2%
Motorcycle Crash 1 25.0%	Fog or mist 0 0.0%	Overtaking; same direction 0 0.0%	06:00 - 06:59 0 0.0%	4.2%
Pedal Cycle Crash 0 0.0%	Other 0 0.0%	Hit parked vehicle 0 0.0%	07:00 - 07:59 0 0.0%	4.2%
Pedestrian Crash 0 0.0%	Road Surface Condition	Hit railway train 0 0.0%	08:00 - 08:59 0 0.0%	4.2%
* Rigid or Artic. Truck * Heavy Truck or Heavy Bus	Wet 1 25.0%	Hit pedestrian 0 0.0%	09:00 - 09:59 0 0.0%	4.2%
# These categories are NOT mutually exclusive	Dry 3 75.0%	Permanent obstruction on road 0 0.0%	10:00 - 10:59 0 0.0%	4.2%
Location Type	Snow or ice 0 0.0%	Hit animal 0 0.0%	11:00 - 11:59 1 25.0%	4.2%
* Intersection 2 50.0%	Natural Lighting	Off road, on straight 0 0.0%	12:00 - 12:59 0 0.0%	4.2%
Non intersection 2 50.0%	Dawn 0 0.0%	Off road on straight, hit object 1 25.0%	13:00 - 13:59 0 0.0%	4.2%
* Up to 10 metres from an intersection	Daylight 1 25.0%	Out of control on straight 0 0.0%	14:00 - 14:59 0 0.0%	4.2%
- 07:30-09:30 or 14:30-17:00 on school days	Dusk 0 0.0%	Off road, on curve 0 0.0%	15:00 - 15:59 0 0.0%	4.2%
Collision Type	Darkness 3 75.0%	Off road on curve, hit object 1 25.0%	16:00 - 16:59 0 0.0%	4.2%
Single Vehicle 1 25.0%		Out of control on curve 0 0.0%	17:00 - 17:59 1 25.0%	4.2%
Multi Vehicle 3 75.0%		Other crash type 1 25.0%	18:00 - 18:59 0 0.0%	4.2%
Road Classification	Speed Limit	- 40km/h or less 0 0.0%	19:00 - 19:59 0 0.0%	4.2%
Freeway/Motorway 0 0.0%	40 km/h or less 0 0.0%	80 km/h zone 0 0.0%	20:00 - 21:59 0 0.0%	8.3%
State Highway 0 0.0%	50 km/h zone 3 75.0%	90 km/h zone 0 0.0%	22:00 - 24:00 1 25.0%	8.3%
Other Classified Road 0 0.0%	60 km/h zone 1 25.0%	100 km/h zone 0 0.0%	Street Lighting Off/Nil	% of Dark
Unclassified Road 4 100.0%	70 km/h zone 0 0.0%	110 km/h zone 0 0.0%	1 of 3 in Dark 33.3%	
Day of the Week	# Holiday Periods	New Year 0 0.0%	Queen's BD 0 0.0%	Easter SH 0 0.0%
Monday 2 50.0%	Thursday 0 0.0%	Sunday 0 0.0%	Aust. Day 0 0.0%	Labour Day 0 0.0%
Tuesday 0 0.0%	Friday 1 25.0%	WEEKDAY 4 100.0%	Easter 0 0.0%	Christmas 1 25.0%
Wednesday 1 25.0%	Saturday 0 0.0%	WEEKEND 0 0.0%	Anzac Day 0 0.0%	January SH 0 0.0%
				December SH 1 25.0%

Crashid dataset 5320

Note: Reported crashes at the intersection of Campbell Rd and Barwon Park Rd to 20m around intersection for five year period 1 July 2007 to 30 June 2012.

Percentages are percentages of all crashes. Unknown values for each category are not shown on this report.

Detailed Crash Report

NOTES: Reported crashes at the intersection of Campbell Rd and Barwon Park Rd to 20m around intersection for five year period 1 July 2007 to 30 June 2012.

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors	
S F																					
Sydney Region																					
Marrickville LGA																					
St Peters																					
Campbell St																					
687659	30/12/2009	Wed	23:10	180 m	E PRINCES HWY	2WY	STR	Fine	Dry	50	3	CAR	M63 E in CAMPBELL ST		50	Proceeding in lane		N	0	0	F
E135894596						RUM:	71	Off rd left => obj				TRK	M46 E in CAMPBELL ST		0	Parked					
												CAR	M58 E in CAMPBELL ST		0	Parked					
South Sydney City LGA																					
St Peters																					
Campbell Rd																					
747552	04/03/2011	Fri	11:45		at BARWON PARK RD	TJN	STR	Fine	Dry	50	2	4WD	M59 S in BARWON PARK RD		5	Turning right		I	0	3	
E43199330						RUM:	13	Right near				CAR	M36 E in CAMPBELL RD		40	Proceeding in lane					
Campbell St																					
626662	02/06/2008	Mon	05:30	10 m	E BARWON PARK RD	TJN	CRV	Raining	Wet	60	1	TRK	M53 W in CAMPBELL ST		Unk	Proceeding in lane		I	0	1	S
E34179973						RUM:	83	Off rd/t bnd=>obj				Building									
645159	21/07/2008	Mon	17:05	170 m	E CROWN ST	2WY	STR	Fine	Dry	50	2	CAR	F24 E in CAMPBELL ST		5	Perform U-turn		I	0	2	S
E34434513						RUM:	42	Leaving parking				M/C	M25 E in CAMPBELL ST		80	Proceeding in lane					
Report Totals:																					
		Total Crashes: 4		Fatal Crashes: 0		Injury Crashes: 3		Killed: 0		Injured: 6											

Crashid dataset 5320