



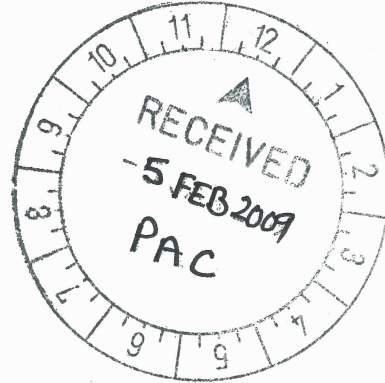
# RailCorp

Chief Executive Officer: PO Box K349, Haymarket NSW 1238  
Level 6, 18 Lee Street, Chippendale NSW 2008  
Tel: (02) 8202 3175 Fax: (02) 8202 2291  
www.railcorp.info

Our Ref: D2008/85667

4 February 2009

Mr Paul McLeay  
Chair, Public Accounts Committee  
Legislative Assembly  
Parliament of New South Wales  
Macquarie Street  
SYDNEY NSW 2000



Dear Mr McLeay

### **Inquiry into Signal Failures on the Metropolitan Network**

I write in response to your letter of 12 November 2008 concerning the Auditor General's Inquiry into Signal Failures on the Metropolitan Network.

The Committed requested clarification on various issues and updates on responses which were due at the end of 2008.

As you may be aware, the Asset Management Group is currently undergoing significant change to its management structure in response to the ICAC inquiry report released in December 2008. This has resulted in some short term delay in the preparation of RailCorp's response. I apologise to you and the Members of the Public Accounts Committee for this delay.

I wish to advise that a substantial body of work has commenced and will be completed in approximately six weeks time. In the meantime, I have enclosed relevant material immediately available and commit to providing the remainder in the timeframe outlined. RailCorp is committed to implementing the recommendations contained in the Auditor General's report and is keen to demonstrate that commitment.

RailCorp is developing a number of initiatives to enable the government's 2016 patronage targets to be met. As well as specific strategies for the signalling system, such as Automatic Train Protection and Control System Consolidation, we are also working with the Ministry of Transport on a strategy to increase capacity on the Western Line.

The questions you raise in the first two bullet points of your letter of 12 November 2008, on our signalling development strategy and our ability to resource its implementation, are intimately connected with our capacity enhancement plans. These plans are maturing to the extent that we will be able to provide a full response to both these points by 20 March 2009.

In relation to points three and four regarding our incident response framework and strategy, a full analysis of our response to every signal defect over the past year is now being finalised to determine how best we might improve that response. Such a detailed analysis did not form part of our original approach to the review. This work, and the conclusions we draw, will also be completed in time to respond to you by the 20 March date mentioned above.

On the final bullet point relating to asset performance reporting, we do regularly report on asset performance. RailCorp currently provides ITSRR with a monthly performance report which categorises incidents impacting reliability according to their cause. This report is reviewed monthly by RailCorp and actions taken. I have attached for your information a copy of the November 2008 report.

If you require further information prior to 20 March, please contact my new head of the Asset Management Group, Ian Keys on (02) 8202 2841.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Rob Mason', written over a horizontal line.

**Rob Mason**  
Chief Executive Officer



**RailCorp**

## MONTHLY PERFORMANCE REPORT

November 2008

### ASSET MANAGEMENT GROUP



Cover Photo: Spherolock Trial at Campbelltown nearing completion. Planned to replace claw locks in the long term.

Prepared by

  
\_\_\_\_\_  
Graeme Sticka, Senior Strategic Asset Manager

Endorsed by

  
\_\_\_\_\_  
Paul Cassar, A/Manager Asset Management & Planning

Approved by

 .17/12/08  
\_\_\_\_\_  
F/ David Spiteri, A/GM Strategic Asset Management Division

16 December 2008

## TABLE OF CONTENTS

	Page
Asset Maintenance - RM Compliance Report (Safety Category Tasks)	4
Asset Maintenance - RM Compliance Report - By Discipline	5
Ultrasonic Testing of Rail for Vertical Split Head Defects and WTSA	7
System Safety	8
Broken Rails	8
Track Misalignments	8
Peak Hour Metropolitan: Performance Summary	9
Peak Hour Metropolitan: By Discipline	10
Peak Hour Metropolitan: Civil & Signalling Incidents	11
24 Hrs Metropolitan Signalling: Network Failures & Downtime	12
24 Hrs Metropolitan Signalling: Top Failures over the last 3 Mths	13
24 Hrs Metropolitan Signalling: Asset Failures	14
Temporary Speed Restrictions as of the last Tuesday of every month	15
Progress Report - Major Periodic Maintenance (MPM) Delivery	17
Progress Report - Top 8 MPM Programs	18-21
Scope Report - Top 65 Programs	22
Progress Report - Capital Projects (quarterly only)	23-37

This monthly performance report by the Asset Management Group of RailCorp for the ITSRR has been restructured following discussions at officer level. It is presented in Excel format as a series of graphs and performance data with a minimum of commentary as requested during these discussions.

## Compliance with TMPs & Engineering Standards

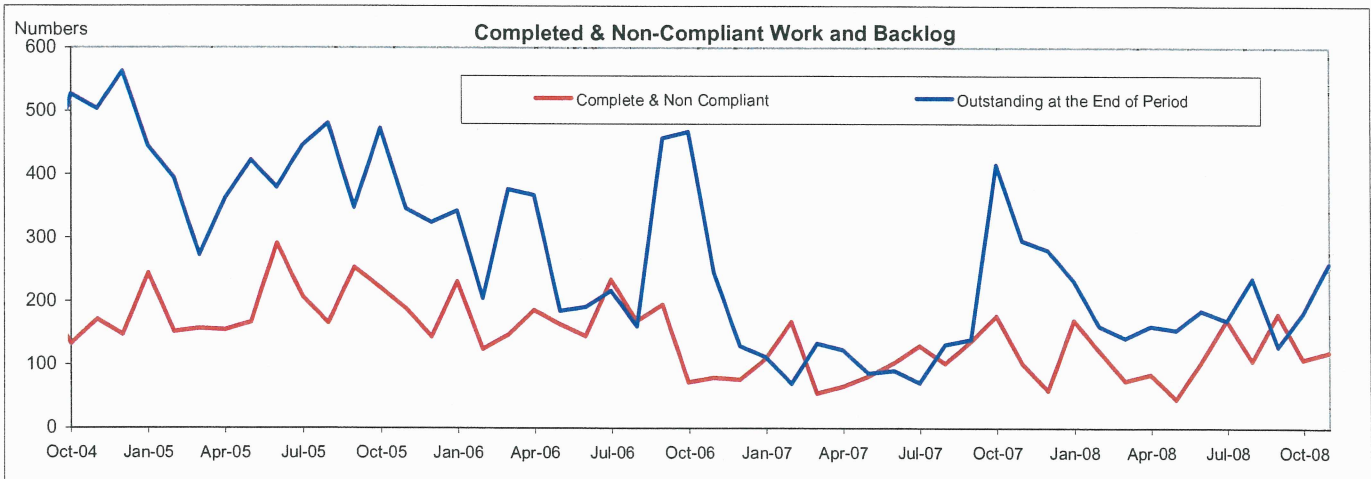
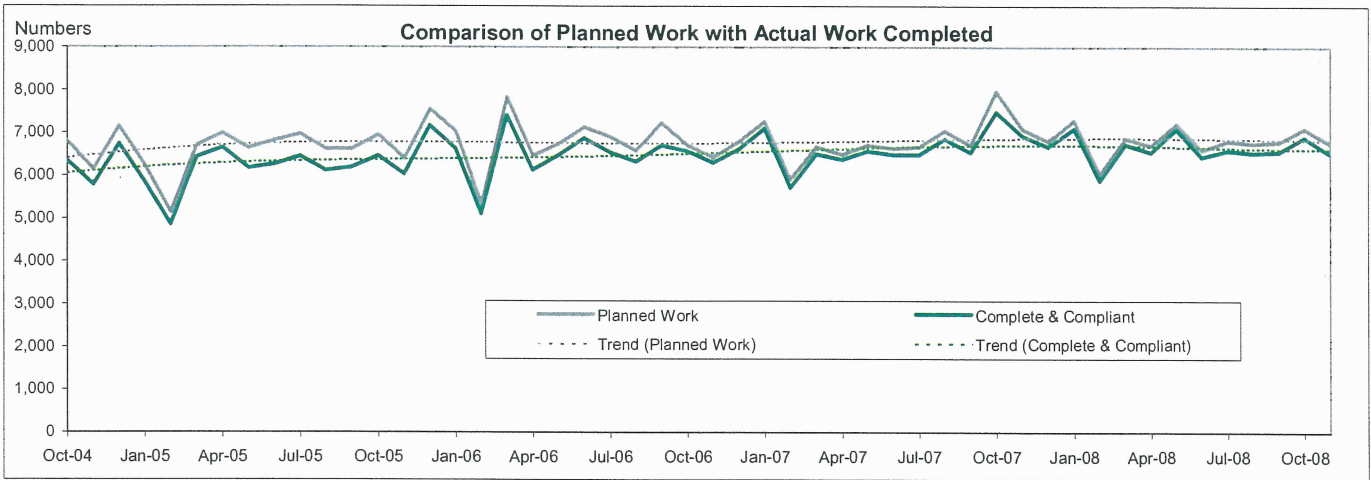
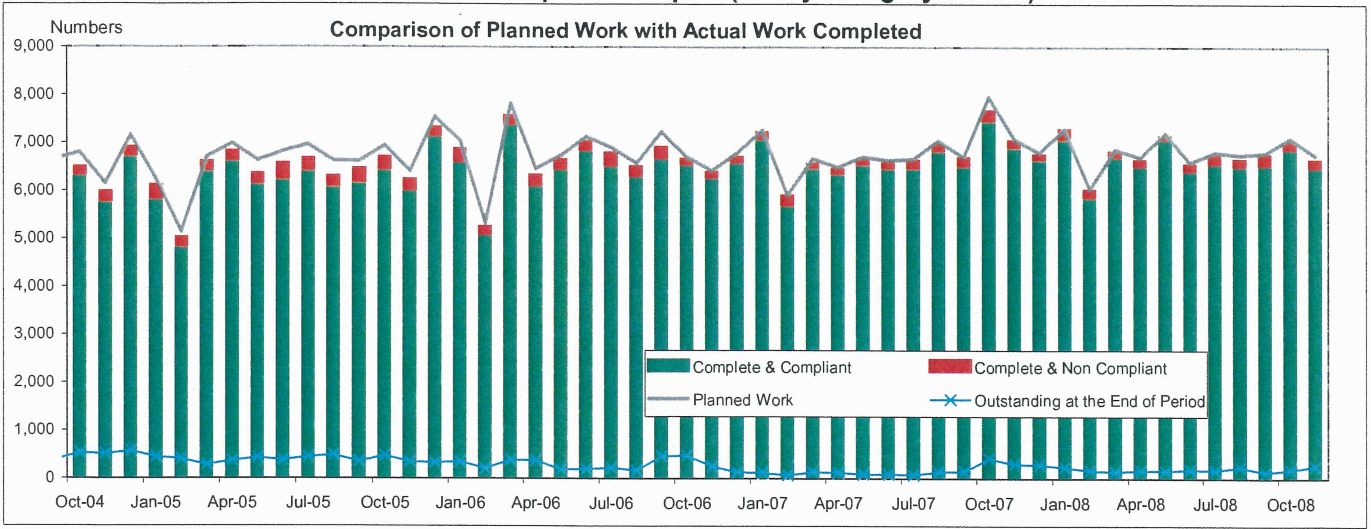
This section of the report addresses

- \* "Safety critical" and "safety significant" inspections, examinations and testing

- \* Ultrasonic testing of rail; track geometry reporting; WTSA activities

- \* Rectification/removal of defects & exceedences. Removal of WTSA priorities

# ASSET MAINTENANCE - RM Compliance Report (Safety Category Tasks\*) - November 2008

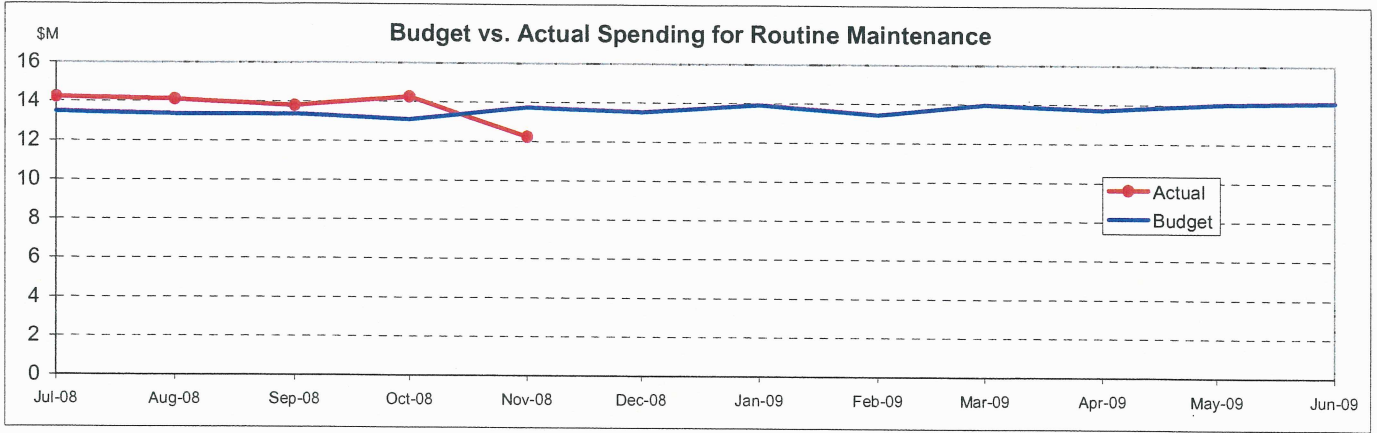


2008	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
Planned Work	7,286	6,036	6,867	6,703	7,202	6,595	6,808	6,755	6,789	7,103	6,753		74,897
Complete and Compliant	7,090	5,880	6,722	6,538	7,085	6,433	6,581	6,531	6,557	6,894	6,509		72,820
Complete & Non Compliant	169	121	74	84	45	103	170	105	179	108	119		1,277
Outstanding at the End of Period	231	160	141	160	154	184	169	235	128	181	258		258

**Notes:**

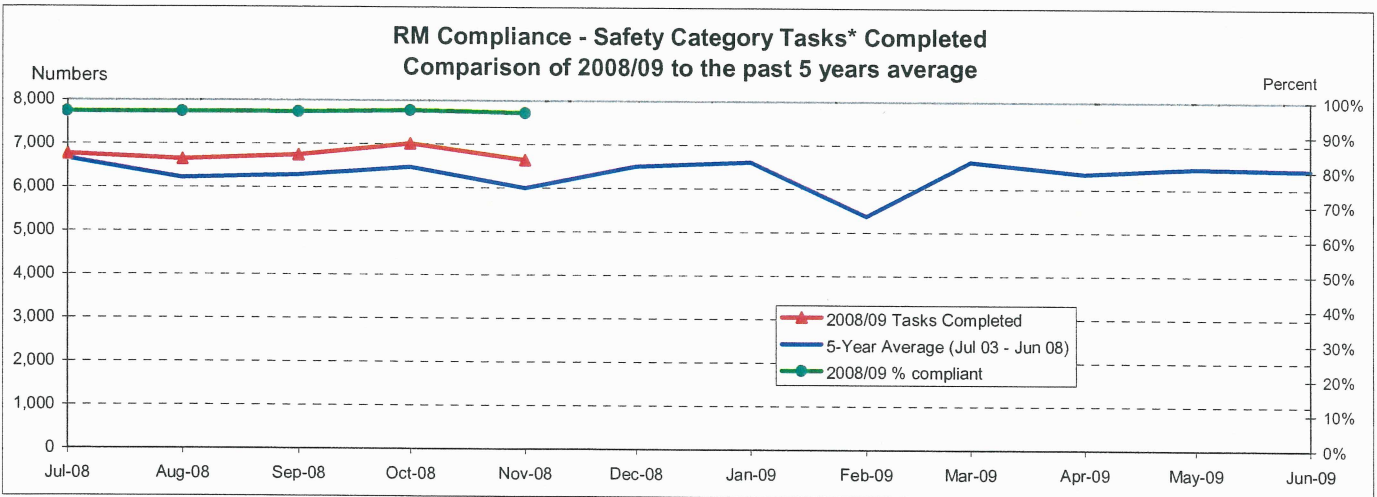
Of the 258 outstanding jobs, 177 were contributed by Systems (D07 Network Protection). However, none of the outstanding jobs this month were safety critical.

## ASSET MAINTENANCE - RM Compliance Report - November 2008 Metropolitan Infrastructure Division



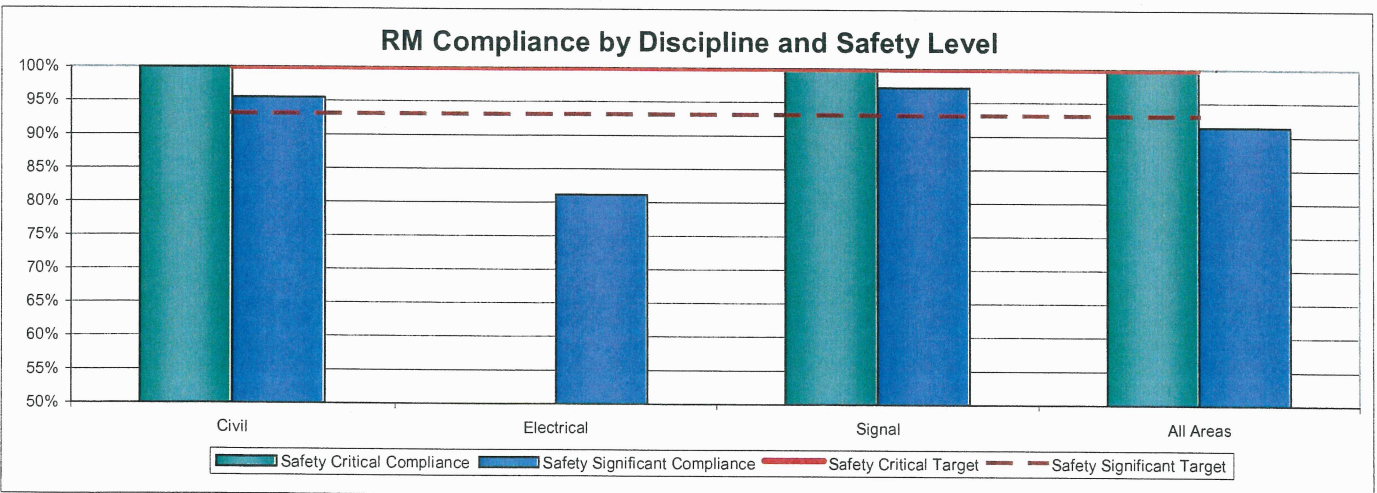
RM (\$'M)	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09
<b>Budget</b>	13.5	13.4	13.4	13.1	13.7	13.5	13.9	13.4	14.0	13.7	14.0	14.1
<b>Actual</b>	14.2	14.1	13.8	14.3	12.2							

**Notes:** This graph provides a monthly financial measure on the delivery of the RM program against budget.



\* Critical Tasks as defined by Engineering Standards in Cognos RM Compliance

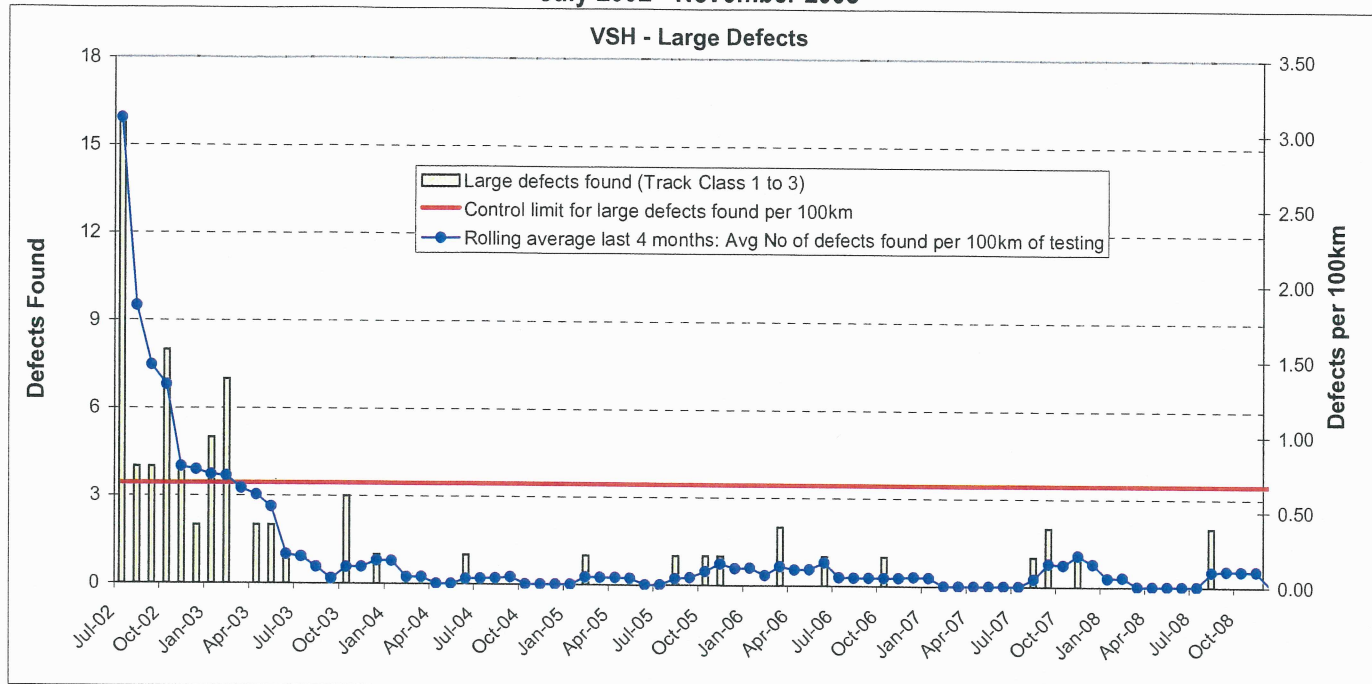
Critical RM Tasks Completed	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09
<b>2008/09 Tasks Completed</b>	6,751	6,636	6,736	7,002	6,628							
<b>2008/09 % compliant</b>	96.7%	96.7%	96.6%	97.1%	96.4%							
<b>5-Year Average (Jul 03 - Jun 08)</b>	6,650	6,209	6,276	6,463	5,988	6,500	6,602	5,368	6,618	6,354	6,473	6,433



Asset Maintenance - List of Safety Critical jobs Outstanding > 1/2 cycle

Standard Job	Outstanding by > 1/2 Cycle	Safety level
	Nil	
<b>Total</b>	0	

## VSH Rail Defects July 2002 - November 2008



There were no VSH defects in November 08.

2007	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
KM tested by rail car	529	570	772	277	569	418	682	353	519	529	528	428	6174
Large VSH defects found	0	0	0	0	0	0	0	1	2	0	1	0	
Cumulative 2007	0	0	0	0	0	0	0	1	3	3	4	4	

2008	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
KM tested by rail car	310	406	545	533	345	421	537	725	224	449	548		5043
Large VSH defects found	0	0	0	0	0	0	0	2	0	0	0		
Cumulative 2008	0	0	0	0	0	0	0	2	2	2	2		

### Welded Track Stability Analysis (WTSa)

Week Ending 8/11/2008

TRACK SECTION	TOTAL TRACK (km)	MEASUREMENT			ANALYSIS		CORRECTION OF No.1 PRIORITY			
		Out-Standing (km)	Planned Compl'n. Date	Comp. (%)	Comp. (Yes/No) (%)	Planned Compl'n. Date	Total Priority 1 Loc.	Cumul. Actual Done	No. Out-Standing	Planned Compl'n. Date
West Region	398	0	Complete	100%	100%	Complete	24	23	1	14/11/2008
North Region	372	0	Complete	100%	100%	Complete	21	19	2	23/11/08
South Region	301	0	Complete	100%	100%	Complete	23	23	0	Complete
City Region	156	0	Complete	100%	100%	Complete	7	7	0	Complete
Illawarra Region	260	0	Complete	100%	100%	Complete	1	1	0	Complete
<b>Total</b>	<b>1487</b>	<b>0</b>		<b>100%</b>	<b>100%</b>		<b>76</b>	<b>73</b>	<b>3</b>	

Measurement and Analysis is now 100% complete in all Regions.

Correction of Priority One Locations is a predicted value based on the analysis so far and the defects found.

	2008/2009	2007/2008	2006/2007	2005/2006	2004/2005	2003/2004
Priority 1 Locations	3	9	24	24	43	51
Measurement Completed	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Analysis Completed	100.0%	99.6%	100.0%	98.3%	99.4%	100.0%

City, Illawarra and South have corrected all their identified Priority Ones. There are only 3 Priority Ones remaining in total, which is much less than at an equivalent time in previous years.



## Current Condition & Performance

This section of the report addresses

\* System Safety Score

\* Broken Rails & Misalignments

\*Infrastructure caused mainline derailments

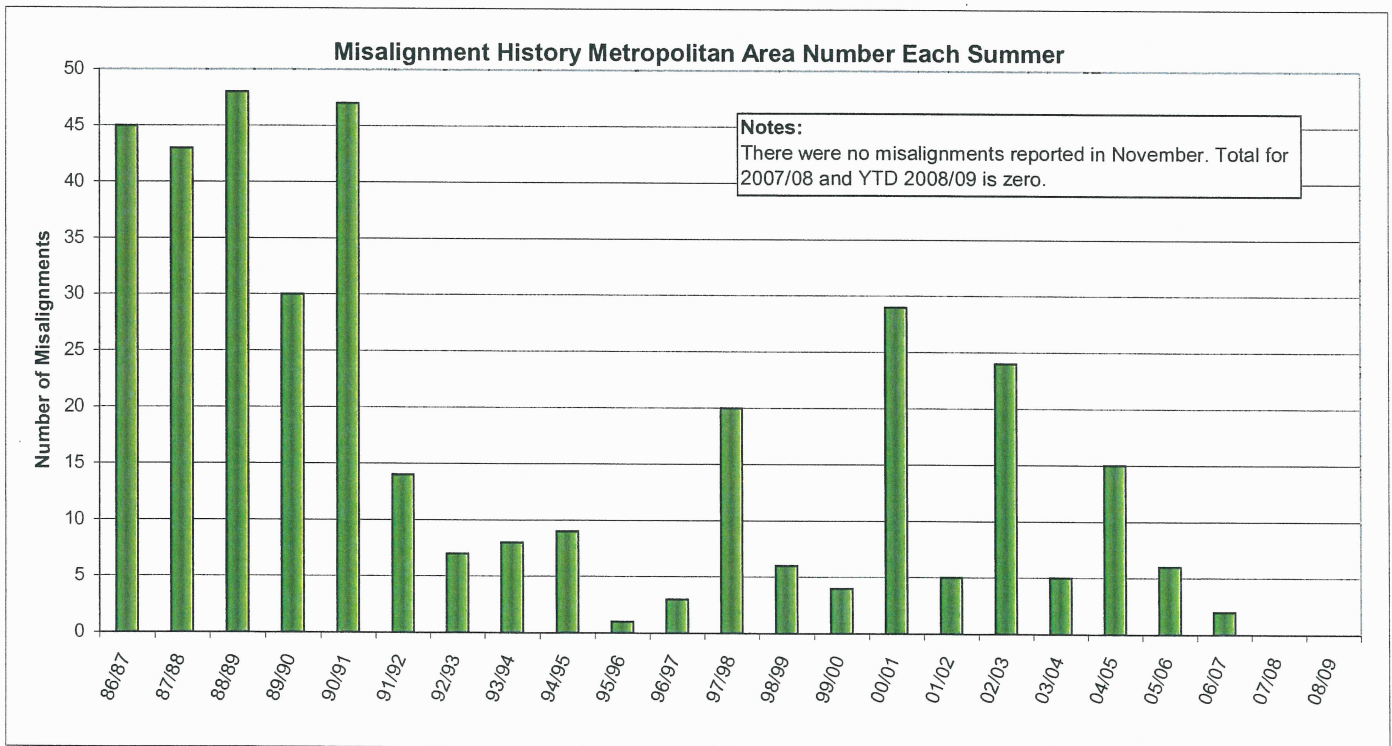
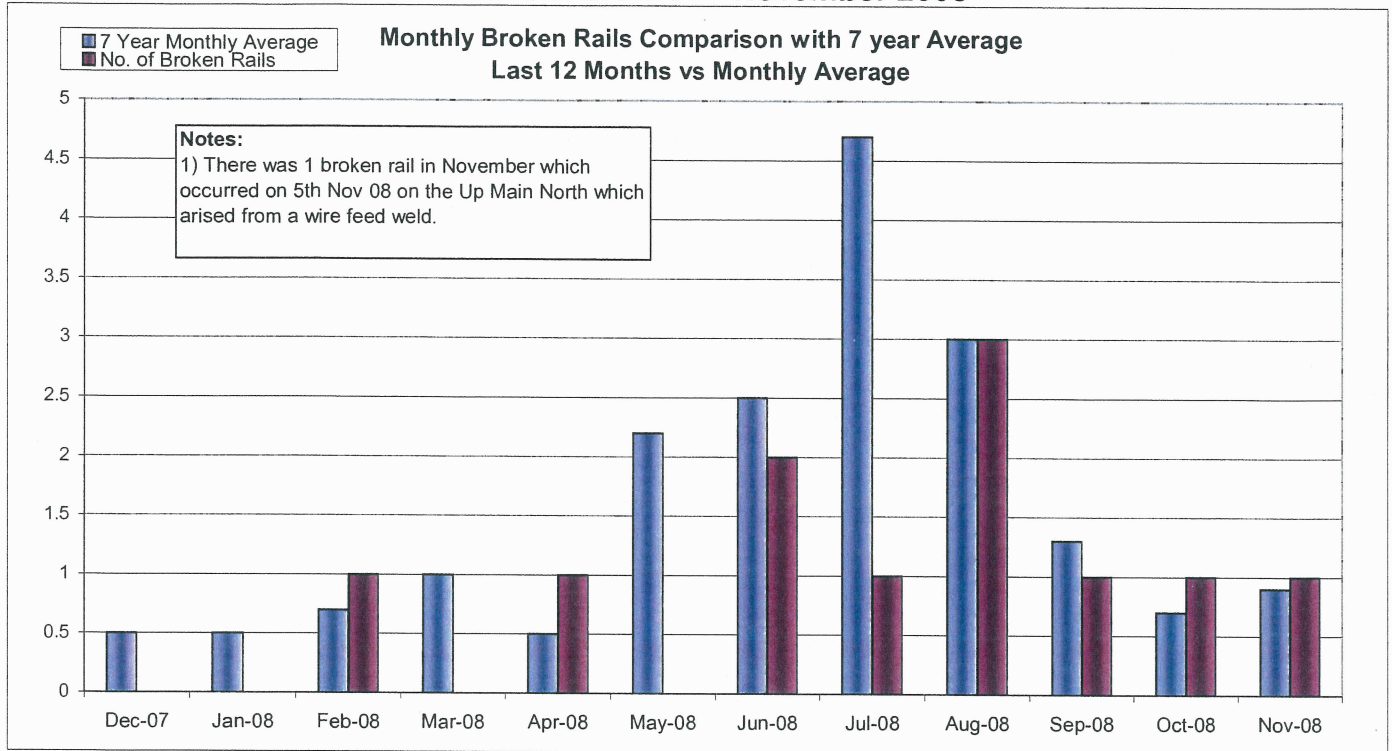
\* Infrastructure Failure Statistics

\*Infrastructure caused train delays

\*Temporary speed restrictions and their impact on train delays

# INFRASTRUCTURE PERFORMANCE

## SYSTEM SAFETY - November 2008

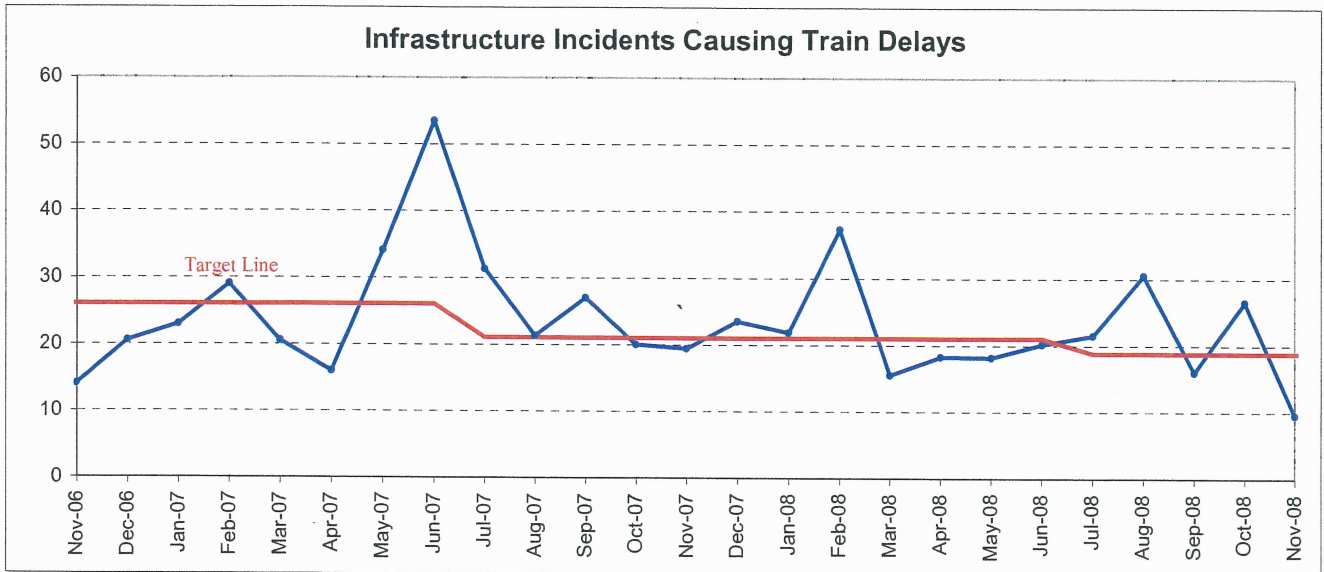


**Mainline Derailments:**

There were no mainline derailments in November 2008 and zero YTD for 2008/09

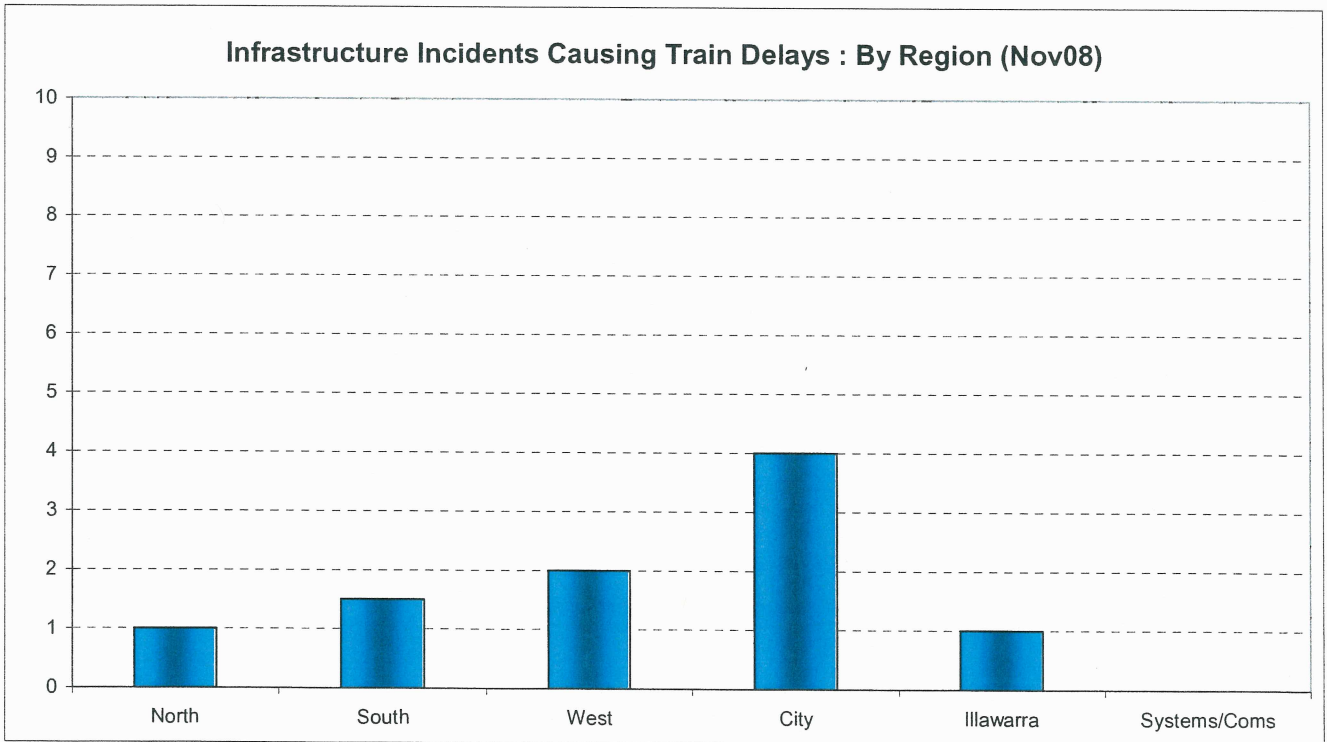
# INFRASTRUCTURE PERFORMANCE

## Peak Hour Metropolitan: Performance Summary - November 2008



PEAK HOURS	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Monthly Ave
2006/07	19.5	24.5	23.5	16.8	14.0	20.5	23.0	29.0	20.5	16.0	34.1	53.5	24.6
2007/08	31.3	21.3	27.0	20.0	19.4	23.5	21.8	37.3	15.5	18.3	18.1	20.1	22.8
2008/09	21.5	30.5	16.0	26.5	9.5								20.8

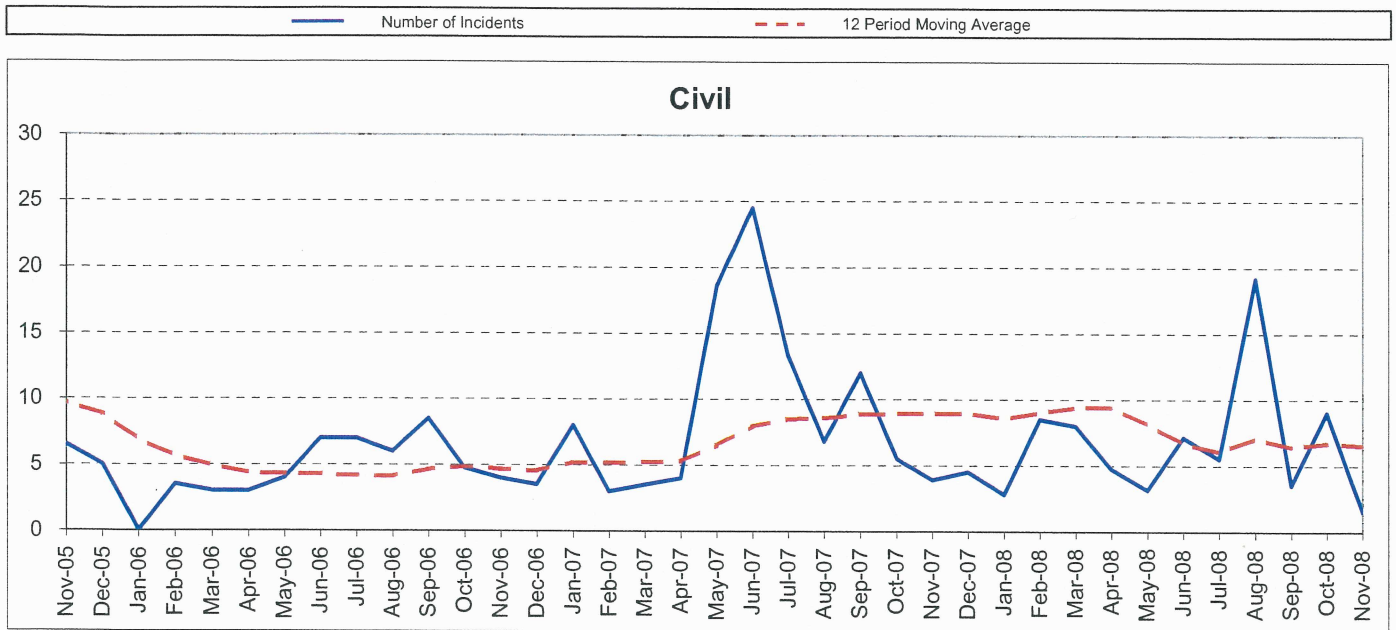
The November increase was mainly due to peak signal, points and track circuit failures



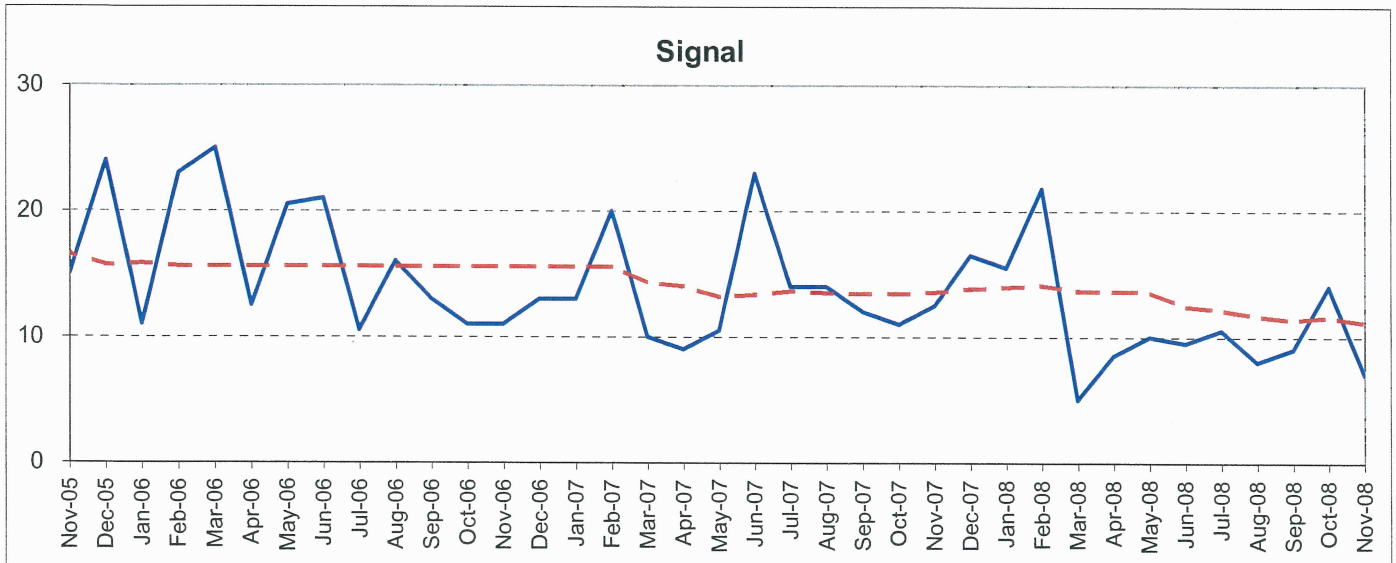
PEAK HOURS	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	12 Month Ave.
North	1.0	4.5	1.0	7.0	7.5	4.0	1.0	6.8	3.0	8.0	4.5	9.0	1.0	4.5
South	4.6	7.5	4.8	10.0	3.2	3.8	4.3	4.3	2.0	5.7	2.0	2.0	1.5	4.3
West	3.8	3.5	7.0	6.0	1.0	2.0	5.3	1.5	3.5	7.5	2.0	3.0	2.0	3.7
City	3.0	4.0	6.5	6.5	1.0	2.5	6.0	2.5	6.5	3.0	1.0	3.0	4.0	3.8
Illawarra	5.0	2.0	1.0	4.8	2.3	2.5	1.0	3.0	3.0	6.0	4.0	8.0	1.0	3.4
Systems/Coms	2.0	2.0	1.5	3.0	0.5	3.5	0.5	2.0	3.5	1.0	2.0	1.5	0.0	1.8

# INFRASTRUCTURE PERFORMANCE

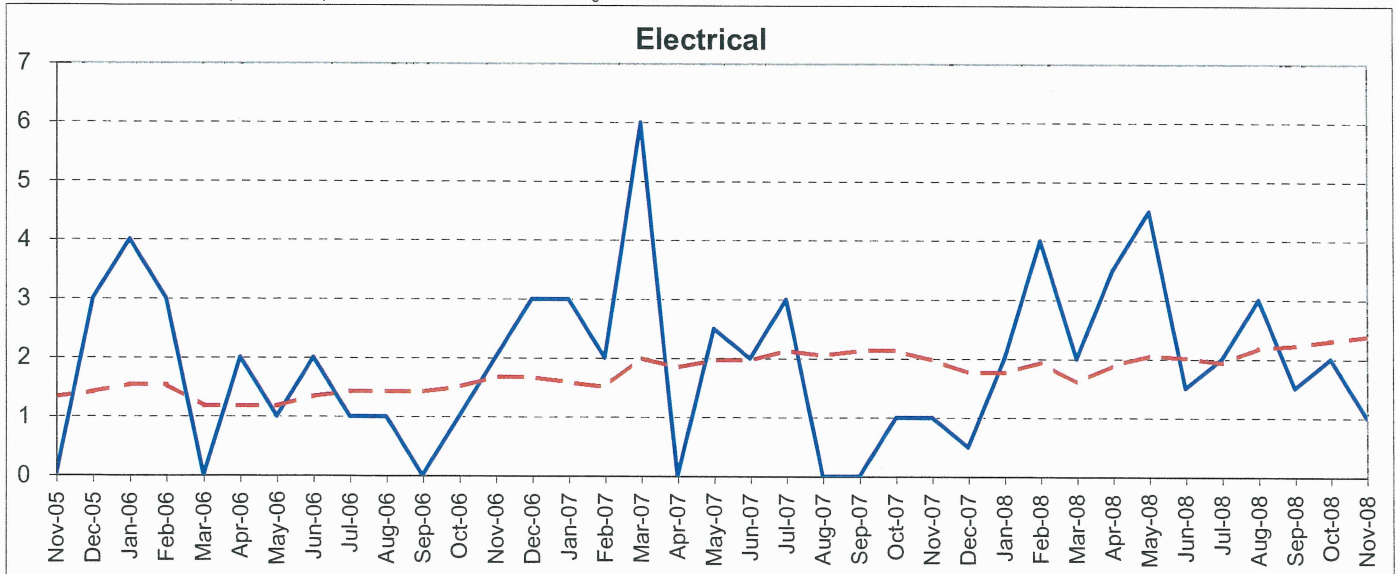
## Peak Hour Metropolitan: By Discipline - November 2008



Civil related incidents are mainly due to wind obstruction/ debris on corridor



Signal related incidents are mainly the result of points failures, track circuit failures and signal failures



Electrical related incidents are predominately the result of radio equipment failures and design failures

**INFRASTRUCTURE PERFORMANCE**  
**Peak Hour Metropolitan: Civil & Signalling Incidents**

Date	Incident Type (CIVIL)	Location	No. of Incidents	No. of Delays	Incident Time	Down Time (minutes)
20/11/08	Track vehicle / Loco defective	Lawson	1	1	3:45 AM	-
27/11/08	Speed restriction	Guildford	0.5	0.5	8:18 AM	-

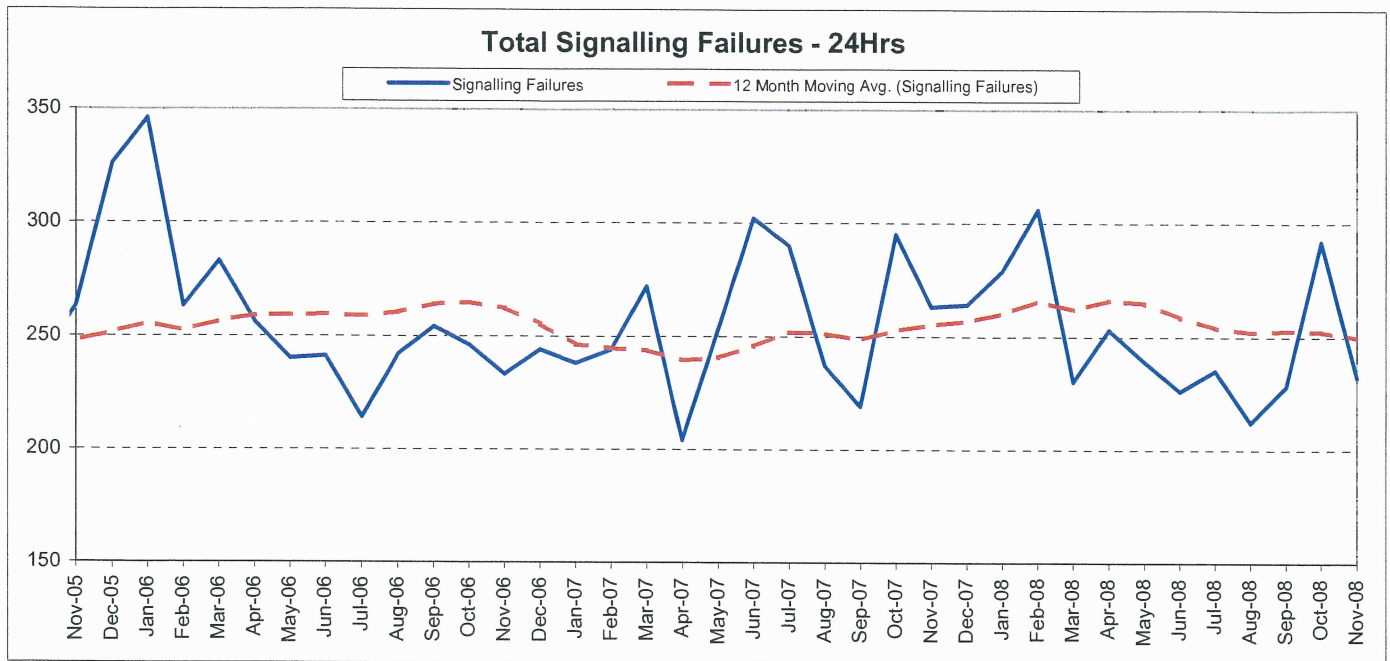
Date	Incident Type (SIGNALLING)	Location	No. of Incidents	No. of Delays	Incident Time	Down Time (minutes)
5/11/08	Faulty alarm	Sydenham signal com	1	8.0	5:14 AM	-
27/11/08	Points failure	Mortdale	1	0.5	6:39 AM	24
24/11/08	Track circuit failure	Sydenham	1	5.0	7:48 AM	20
10/11/08	Points failure	Ashfield	1	1.0	4:44 PM	32
10/11/08	Signal failure	Central	1	8.0	4:30 PM	16
20/11/08	Signal failure	Boronia	1	6.5	5:46 PM	109
14/11/08	Track circuit failure	Dapto	1	2.0	7:17 PM	540

Date	Incident Type (Other - C&CS)	Location	No. of Incidents	No. of Delays	Incident Time	Down Time (minutes)

Date	Incident Type (Other - Electrical)	Location	No. of Incidents	No. of Delays	Incident Time	Down Time (minutes)
28/11/08	Lightning Strike - power surge failure	Quakers Hill	1	3	4:58 PM	-

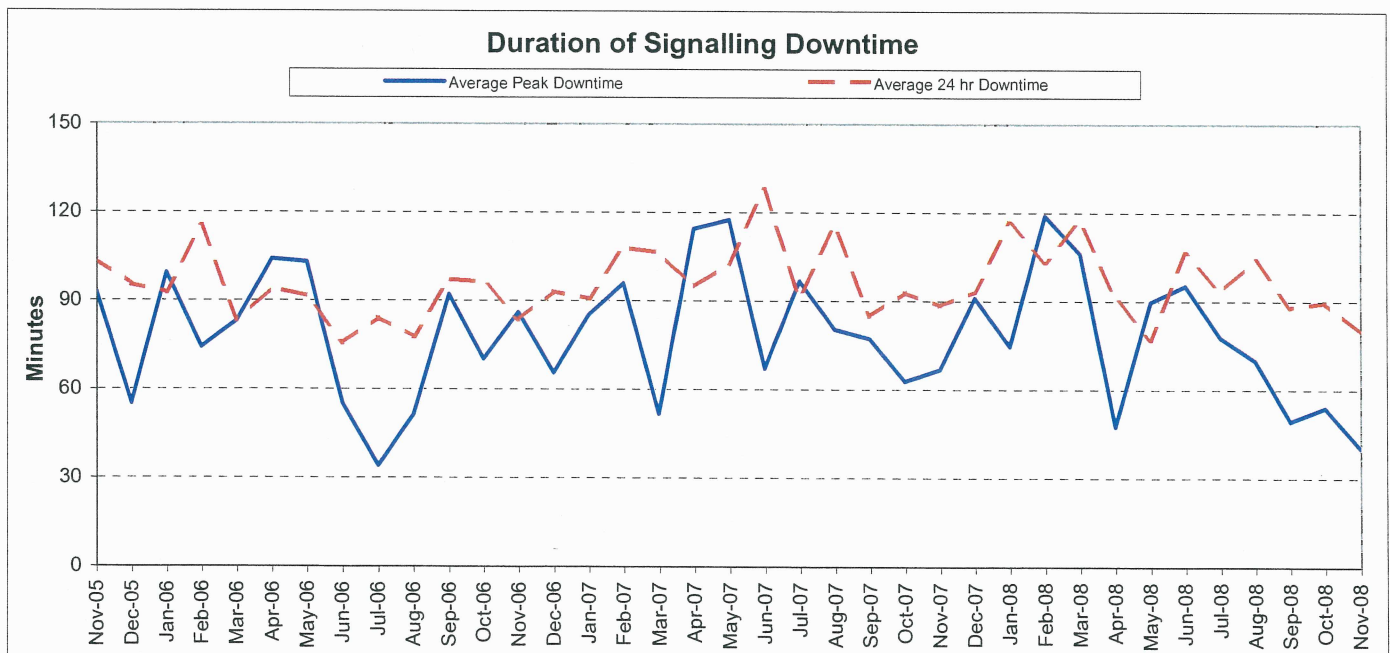
# INFRASTRUCTURE PERFORMANCE

## 24 Hrs Metropolitan Signalling: Network Failures and Downtime - November 2008



24 HOURS	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Monthly Ave
2006/07	214	242	254	246	233	244	238	244	272	204	253	302	245.5
2007/08	290	237	219	295	263	264	279	306	230	253	239	226	258.4
2008/09	235	212	228	292	232								239.8

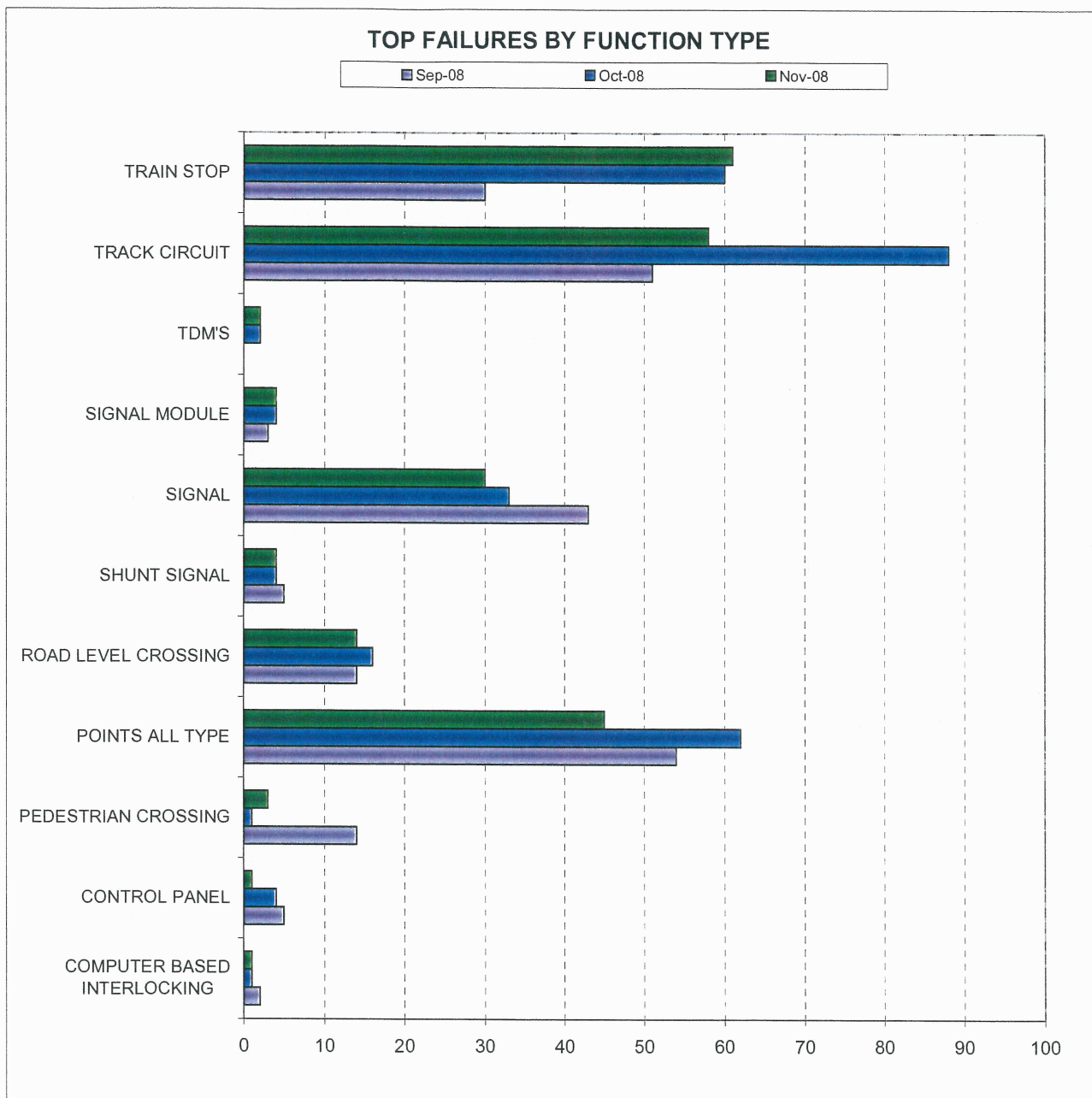
The October increase was mainly due to peak signal, points and track circuit failures



PEAK HOURS*	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Monthly Ave
2006/07	34.0	51.2	92.0	70.1	85.9	65.5	85.0	95.8	51.6	114.4	117.4	67.0	77.5
2007/08	96.7	80.3	77.1	62.6	66.7	91.0	74.7	119.0	106.0	47.5	89.6	95.1	83.8
2008/09	77.6	69.8	49.2	53.8	40.2								58.1

24 HOURS**	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Monthly Ave
2006/07	83.8	77.4	96.9	96.2	83.3	92.9	90.5	107.9	106.4	94.6	102.6	127.7	96.7
2007/08	91.0	115.4	84.8	92.8	88.3	93.1	116.4	103.2	117.0	91.1	76.8	106.1	98.0
2008/09	93.3	103.8	87.7	89.5	79.6								90.8

**INFRASTRUCTURE PERFORMANCE**  
**24 Hrs Metropolitan Signalling: Top Failures over the last 3 Mths - November 2008**



FUNCTION	Sep-08	Oct-08	Nov-08	3 Month Total	3 Month Ave.
COMPUTER BASED INTERLOCKING	2	1	1	4	1.3
CONTROL PANEL	5	4	1	10	3.3
PEDESTRIAN CROSSING	14	1	3	18	6.0
POINTS ALL TYPE	54	62	45	161	53.7
ROAD LEVEL CROSSING	14	16	14	44	14.7
SHUNT SIGNAL	5	4	4	13	4.3
SIGNAL	43	33	30	106	35.3
SIGNAL MODULE	3	4	4	11	3.7
TDM'S	0	2	2	4	1.3
TRACK CIRCUIT	51	88	58	197	65.7
TRAIN STOP	30	60	61	151	50.3

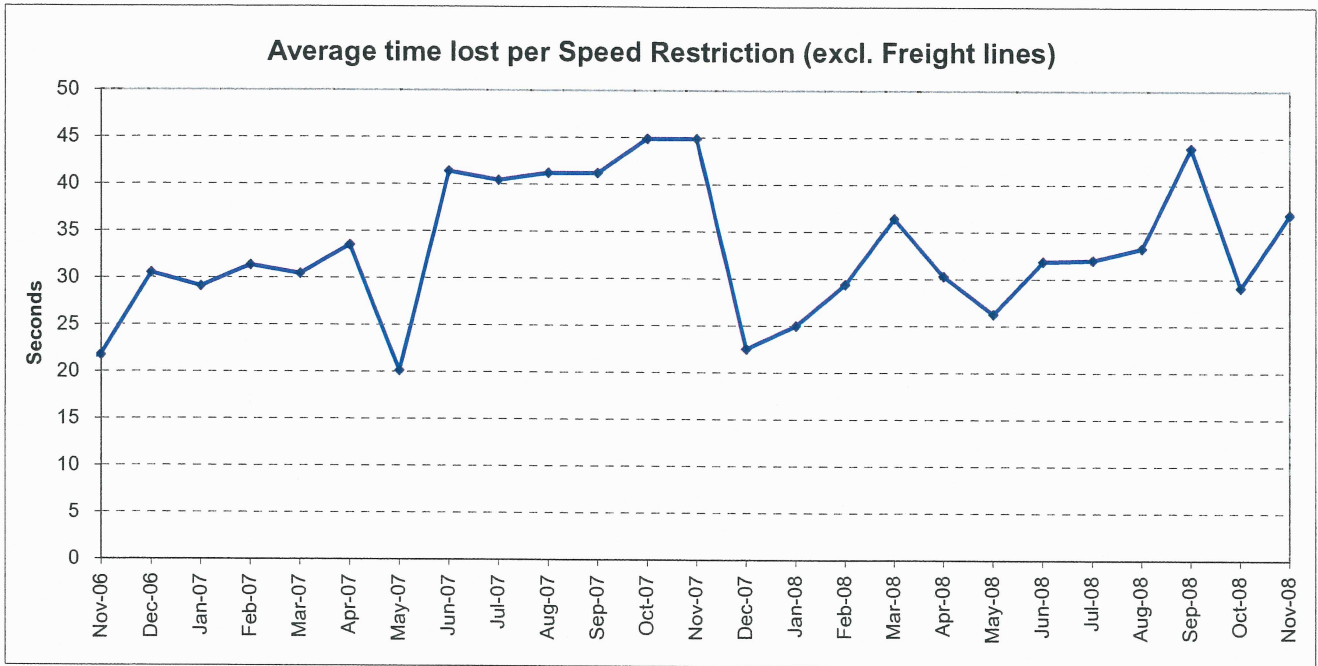
**INFRASTRUCTURE PERFORMANCE**  
**24 Hrs Metropolitan Signalling: Asset Failures**

<b>Top Failures between January 2008 and November 2008 (Data from IFMS)</b>				
<b>DISTRICT</b>	<b>LOCATION</b>	<b>EQUIPMENT TYPE</b>	<b>FAIL FREQ</b>	<b>LAST DATE OF FAILURE</b>
Wollongong	Albion Park	ALP CRMRY RD RDXING ROAD XING	17	30-Nov-08
Sydenham	St Peters	STP SM571 TSTOP SM571	15	22-Nov-08
Wollongong	Bellambi	BMI WG531 RDXING BLLXGDN	14	4-Nov-08
Granville	Quakers Hill	QKH BN 190 TSTOP BN 190	13	24-Oct-08
Wollongong	Dapto	DAP RELAY RM RDXING ROAD XING	12	18-Oct-08
Granville	Doonside	DOO 24.4 TSTOP M24.4	12	2-Nov-08
Sydenham	Padstow	PAD 11.92B TSTOP 11.75	11	4-Nov-08
Granville	Quakers Hill	QKH BN 173 TSTOP BN 178	11	30-Oct-08
Newcastle	Civic	CVC RD XING PDXING MWR ST 1	9	17-Sep-08
Hornsby	Hawkesbury River	HRV HR164 TRKCCT 155CT	8	18-Aug-08
Granville	Mt Druitt	MDT 28.6 TSTOP M28.6	8	12-Nov-08
Blue Mnts	Springwood	SPW SD38 CONTRL FRAME A	8	10-Oct-08
Wollongong	Unanderra	UND PRNCE HWY RDXING ROAD XING	8	7-Nov-08
Granville	Doonside	DOO 23.6 TSTOP M23.6	7	17-Sep-08
Granville	East Richmond	ERC BOURKE ST RDXING B.ST XING	7	22-Jul-08
Sydenham	Erskineville	ERS RELAY RM POINTS 677A	7	28-Feb-08
Strathfield	Homebush	HOM MSB CONTRL FRAME A	7	11-Sep-08
Sydenham	Panania	PAN 13.52 TSTOP 13.52	7	27-May-08
Sydenham	St Peters	STP SM571 TSTOP SY576	7	25-Nov-08
Granville	Telopea	TEL PED XING PDXING TELOPEA	7	17-Oct-08
Newcastle	Broadmeadow	BMD RLY RM CONTRL BROAD	6	31-Aug-08
Liverpool	Canterbury	CBY SM200 TSTOP SM201	6	23-Nov-08
Newcastle	Civic	CVC RD XING RDXING MWR ST 2	6	21-Jul-08
Liverpool	Liverpool	LIV LL203 RDXING HOSP XING	6	5-Nov-08
Newcastle	Vales Point Junction	VPJ RLY RM TRKCCT V6BT	6	18-Jul-08

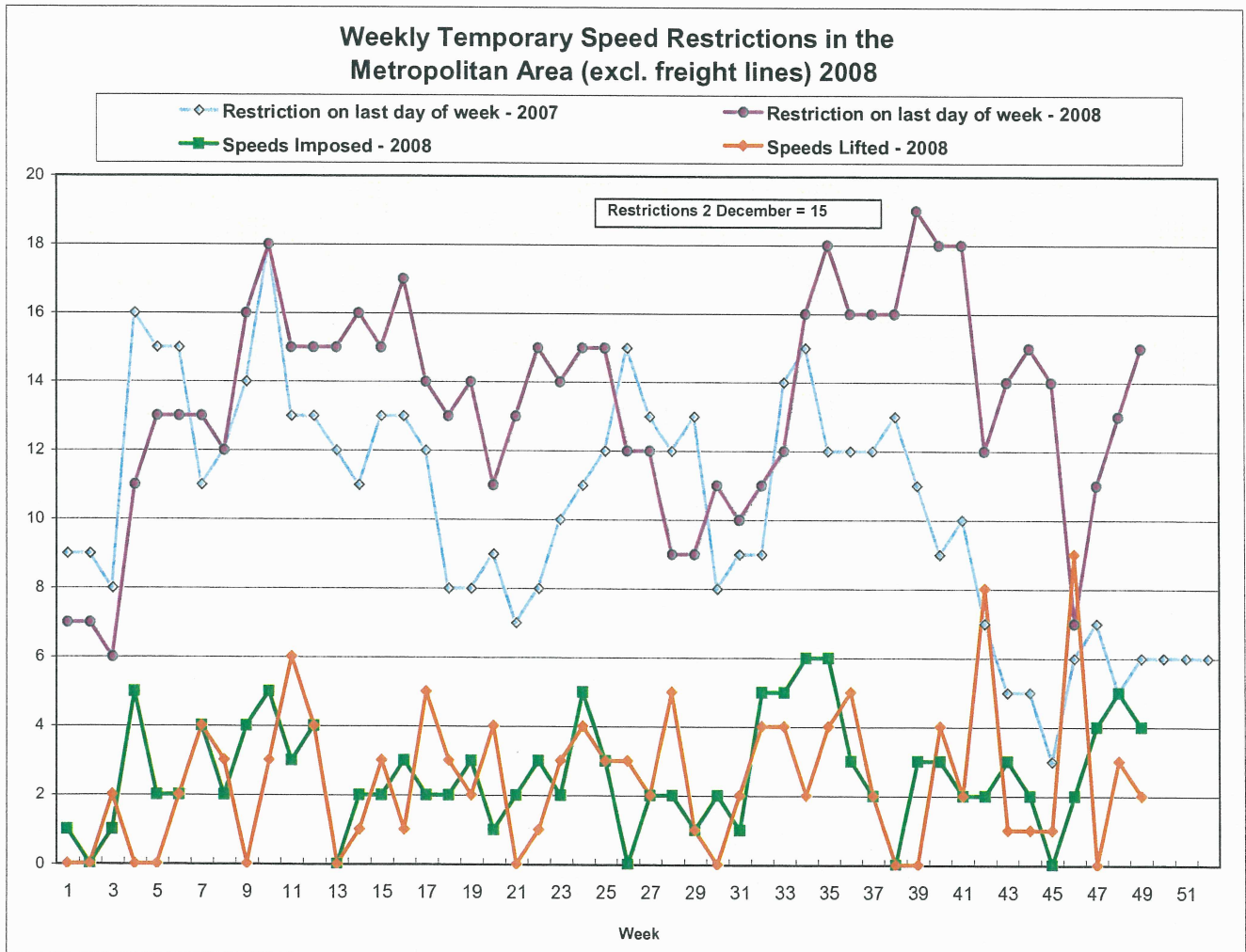


# INFRASTRUCTURE PERFORMANCE

## Temporary Speed Restrictions as of the last Tuesday of every month - November 2008



Avg Secs Lost	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Monthly Ave
2006/07	29.8	25.7	29.8	20.3	21.8	30.5	29.1	31.3	30.4	33.5	20.1	41.4	28.63
2007/08	40.4	41.2	41.2	44.9	44.9	22.5	25.0	29.4	36.4	30.3	26.2	31.9	34.51
2008/09	32.0	33.3	43.9	29.1	36.8								35.01

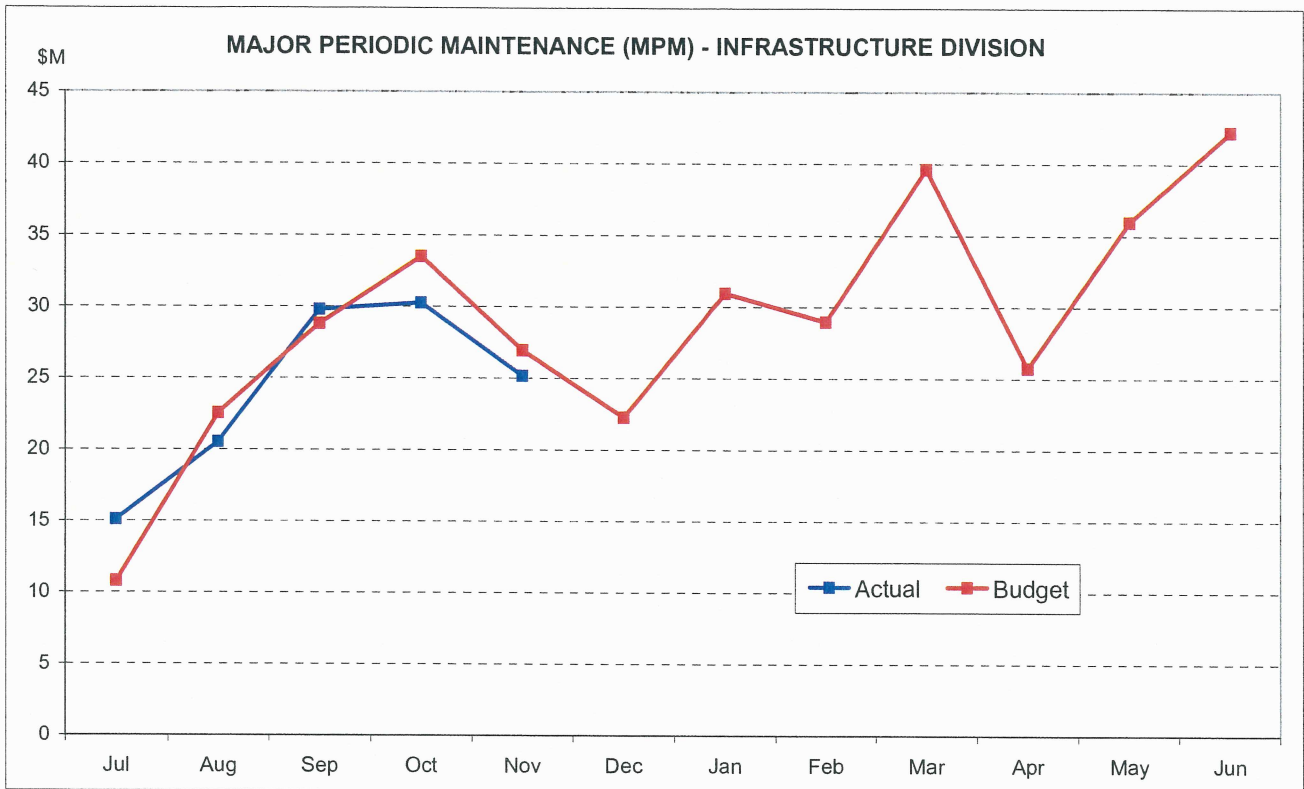


## Asset Sustainability

This section of the report addresses

- \* Progress report on MPM expenditure (monthly)
- \* Progress report on major MPM activities (monthly)
- \* Progress report on Capital Projects (quarterly only)

**ASSET MAINTENANCE / DEVELOPMENT**  
**Periodic Maintenance - November 2008**



2008/09	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
<b>Budget</b>	10.8	22.5	28.8	33.5	26.9	22.2	30.9	29.0	39.6	25.7	36.0	42.2	348.2
<b>Actual</b>	15.1	20.5	29.8	30.2	25.2								120.8

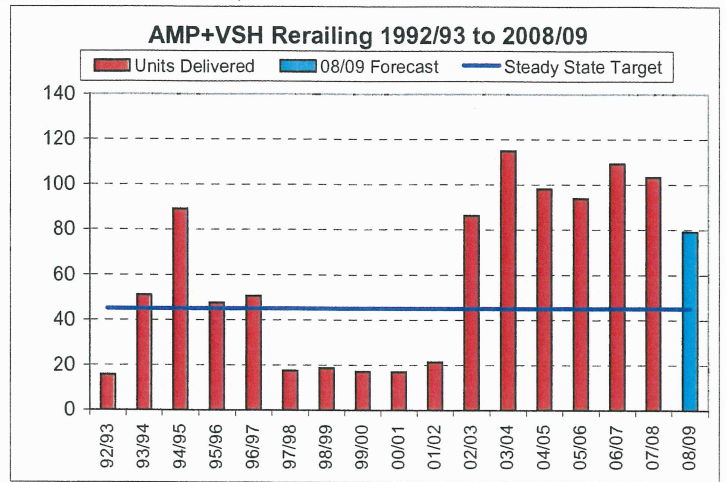
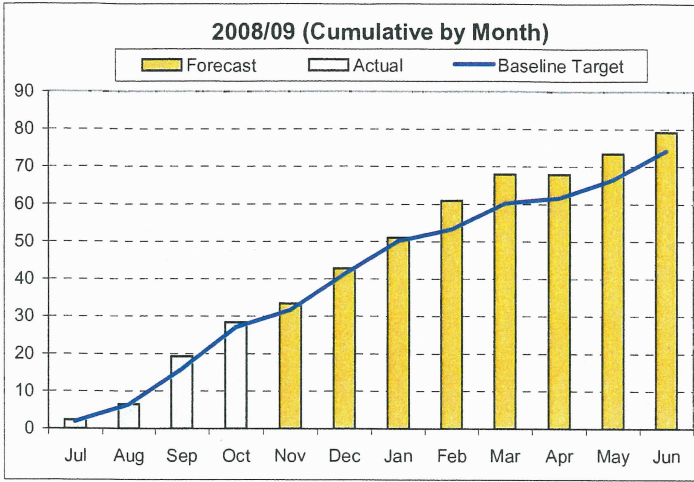
Note: This does not include MPM costs for C&CS and Rollingstock Division.

This does not include MPM costs for C&CS and Rollingstock Division

# ASSET MAINTENANCE / DEVELOPMENT

## Periodic Maintenance - October 2008

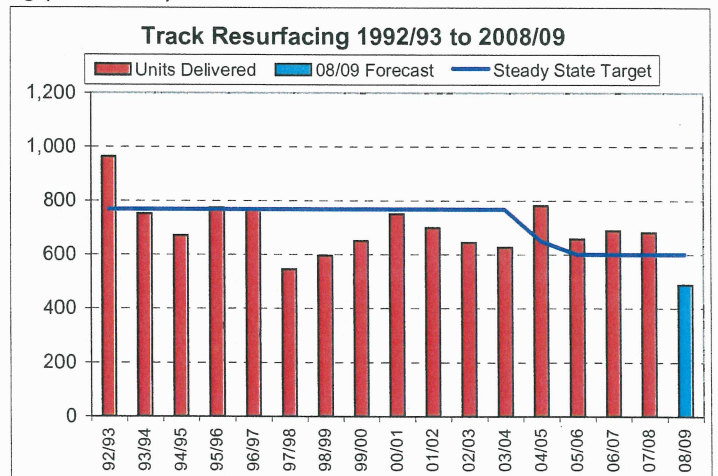
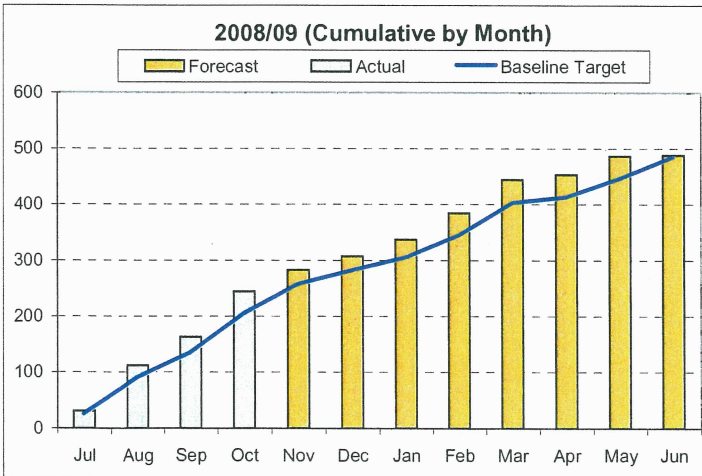
### AMP + VSH Rerailing Program (Track KMs)



2008/09	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Target (Cumulative)	1.78	6.35	15.81	27.03	31.65	41.14	50.07	53.26	60.18	61.64	66.44	74.23
Actual/Fcast (Cumulative)	<b>2.29</b>	<b>6.56</b>	<b>19.33</b>	<b>28.38</b>	33.50	42.85	51.02	60.93	67.94	67.94	73.47	79.18

Yearly	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09
Steady State (Cumulative)	270.00	315.00	360.00	405.00	450.00	495.00	540.00	585.00	630.00	675.00	720.00	765.00
Actual/Fcast (Cumulative)	271.64	290.34	307.44	324.44	345.74	432.04	546.94	645.10	738.99	848.19	951.49	1,030.67

### Track Resurfacing (Track KMs)



2008/09	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Target (Cumulative)	25.11	89.98	134.51	204.35	256.86	281.62	305.00	344.84	402.46	413.02	446.20	485.06
Actual/Fcast (Cumulative)	<b>30.83</b>	<b>112.05</b>	<b>162.89</b>	<b>244.70</b>	282.99	307.69	337.16	384.58	444.53	453.58	486.90	488.26

Yearly	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09
Steady State (Cumulative)	4,602	5,369	6,136	6,903	7,670	8,437	9,204	9,854	10,454	11,054	11,654	12,254
Actual/Fcast (Cumulative)	4,467	5,064	5,715	6,466	7,166	7,811	8,438	9,220	9,878	10,568	11,249	11,738

The November 08 production report was not available at the time of reporting.

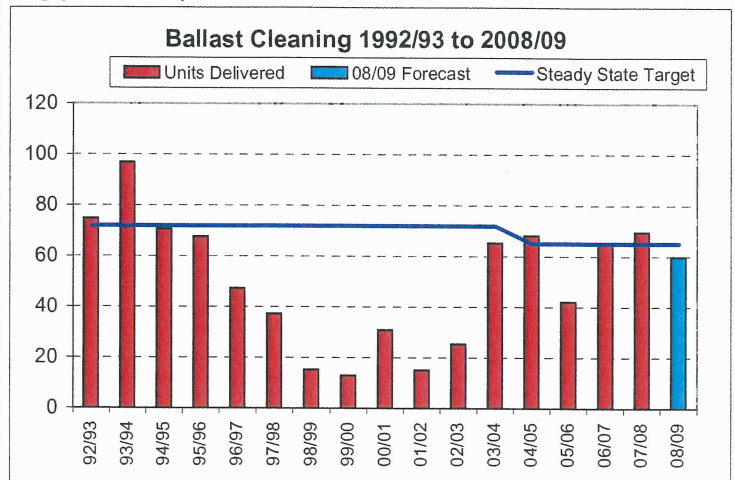
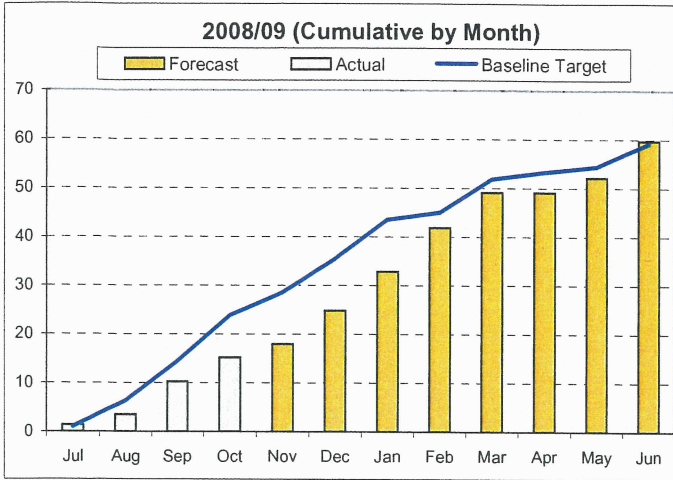
The graphs on the following 4 pages provide a monthly report of MPM scope delivered against the planned or budget target. After each month's program delivery the remaining program for the rest of the year is recast with the aim of maximising scope delivery within budget.

The steady state target for each program is reviewed annually and has been reduced for track resurfacing, contact wire renewals, ballast cleaning & resleeper following the impact of recent upgrading programs which have replaced a significant number of these assets thus reducing the number to be renewed in future years.

# ASSET MAINTENANCE / DEVELOPMENT

## Periodic Maintenance - October 2008

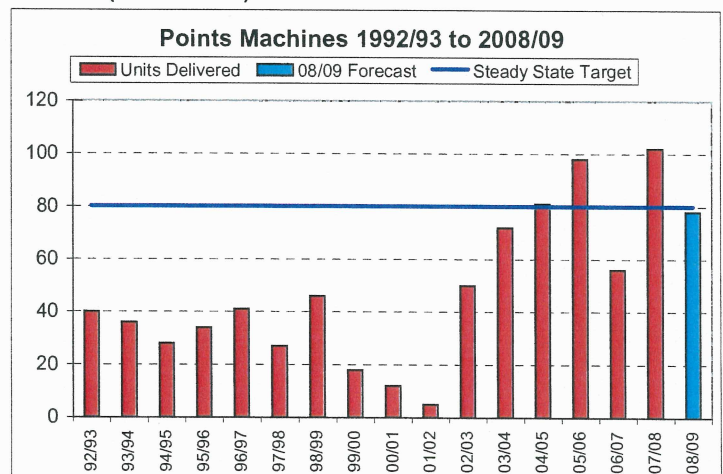
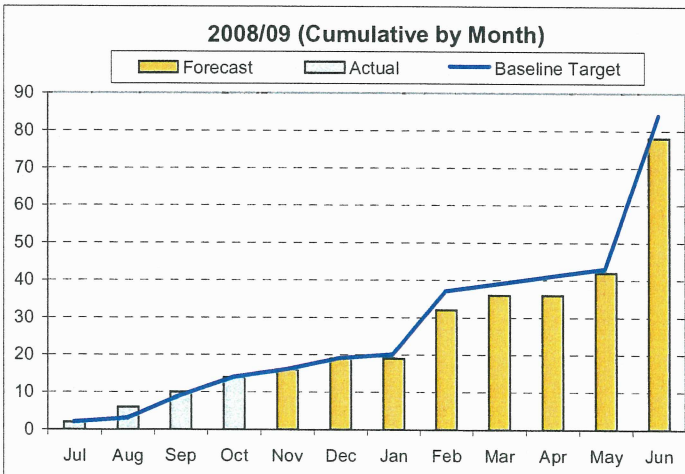
### Ballast Cleaning (Track KMs)



2008/09	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Target (Cumulative)	0.99	6.31	14.40	23.82	28.54	35.39	43.46	44.98	51.80	53.26	54.36	59.12
Actual/Fcast (Cumulative)	<b>1.39</b>	<b>3.47</b>	<b>10.30</b>	<b>15.24</b>	17.96	24.81	32.88	41.90	49.12	49.12	52.12	59.75

Yearly	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09
Steady State (Cumulative)	430.80	502.60	574.40	646.20	718.00	789.80	861.60	926.60	991.60	1,056.60	1,121.60	1,186.60
Actual/Fcast (Cumulative)	394.60	409.80	422.70	453.60	468.70	494.10	559.30	627.47	669.51	734.32	803.93	863.68

### Points Machine Replacement (No. of Units)



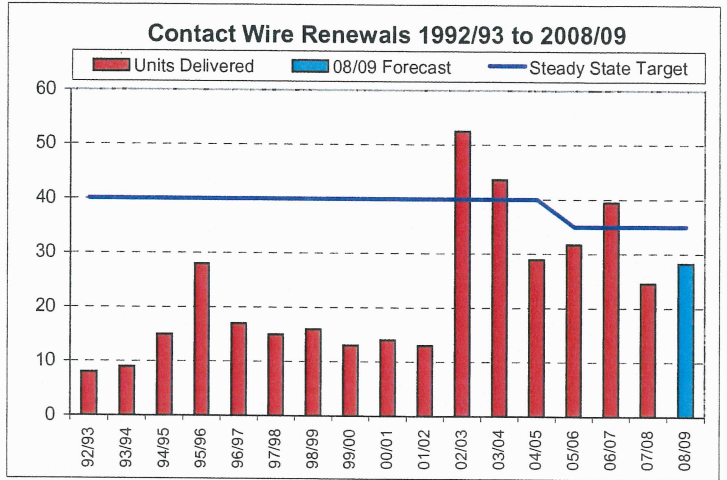
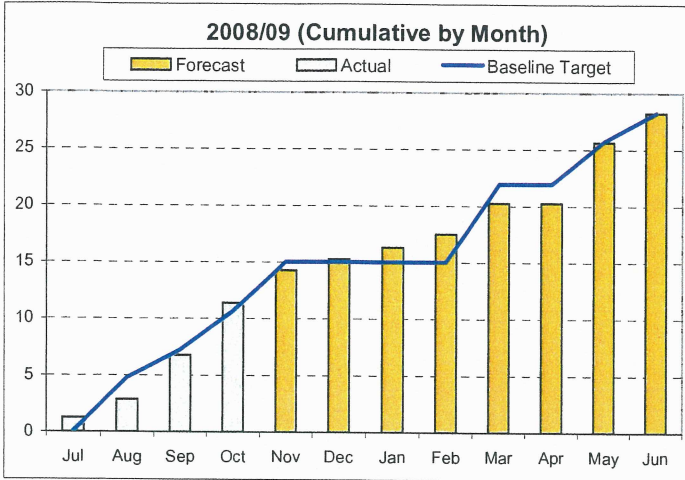
2008/09	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Target (Cumulative)	2	3	9	14	16	19	20	37	39	41	43	84
Actual/Fcast (Cumulative)	<b>2</b>	<b>6</b>	<b>10</b>	<b>14</b>	16	19	19	32	36	36	42	78

Yearly	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09
Steady State (Cumulative)	480	560	640	720	800	880	960	1,040	1,120	1,200	1,280	1,360
Actual/Fcast (Cumulative)	206	252	270	282	287	337	409	490	588	644	746	824

# ASSET MAINTENANCE / DEVELOPMENT

## Periodic Maintenance - October 2008

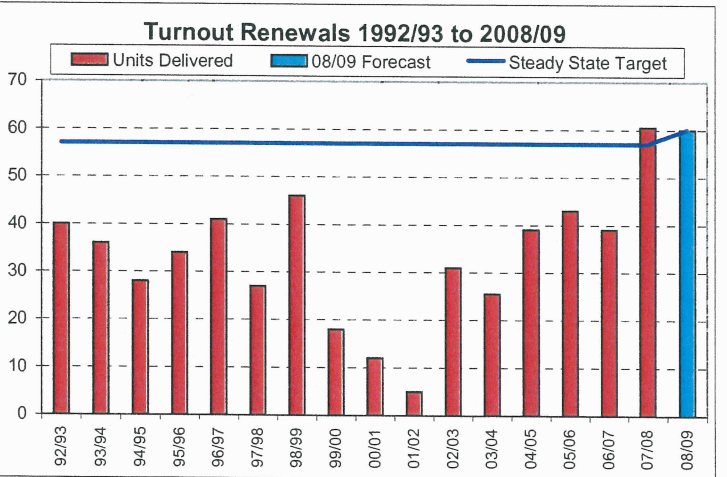
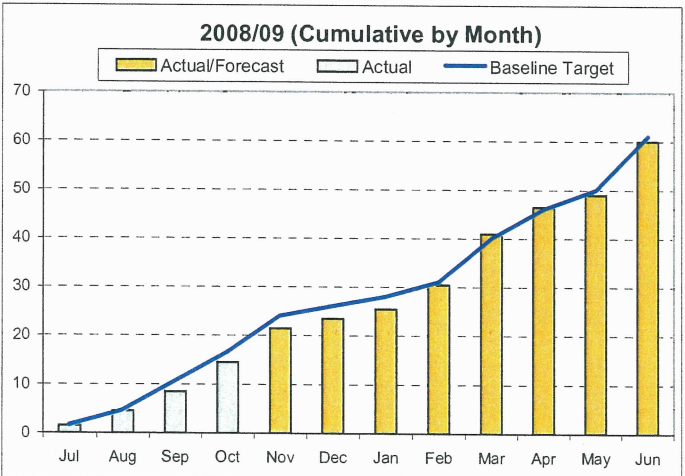
### Contact Wire Renewals (KMs)



2008/09	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Target (Cumulative)	0.00	4.74	7.21	10.62	15.03	15.03	15.03	15.03	21.94	21.94	25.75	28.25
Actual/Fcast (Cumulative)	<b>1.25</b>	<b>2.87</b>	<b>6.76</b>	<b>11.41</b>	14.28	15.28	16.32	17.53	20.28	20.28	25.66	28.25

Yearly	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09
Steady State (Cumulative)	240.00	280.00	320.00	360.00	400.00	440.00	480.00	520.00	555.00	590.00	625.00	660.00
Actual/Fcast (Cumulative)	92.00	108.00	121.00	135.00	148.00	200.50	244.10	273.01	304.75	344.20	368.78	397.03

### Turnout Renewals (No. of Units)

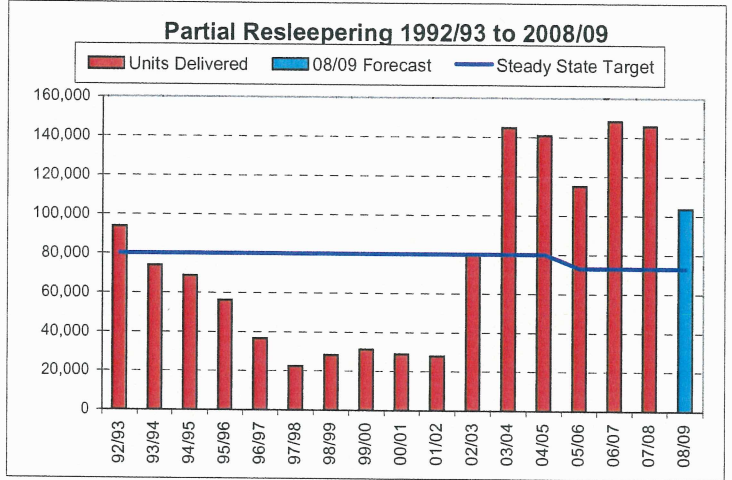
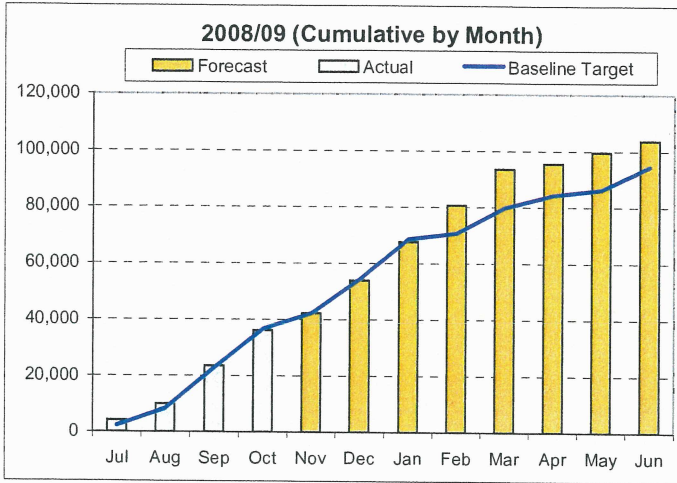


2008/09	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Target (Cumulative)	1.5	4.5	10.5	16.5	24.0	26.0	28.0	31.0	40.0	46.0	50.0	61.0
Actual/Fcast (Cumulative)	<b>1.5</b>	<b>4.5</b>	<b>8.5</b>	<b>14.5</b>	21.5	23.5	25.5	30.5	41.0	46.5	49.0	60.0

Yearly	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09
Steady State (Cumulative)	342.0	399.0	456.0	513.0	570.0	627.0	684.0	741.0	798.0	855.0	912.0	972.0
Actual/Fcast (Cumulative)	206.0	252.0	270.0	282.0	287.0	318.0	343.5	382.5	425.5	464.5	525.0	585.0

**ASSET MAINTENANCE / DEVELOPMENT**  
**Periodic Maintenance - October 2008**

**Partial Resleeping (No. of Units)**



<b>2008/09</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>
Target (Cumulative)	2,162	8,213	22,713	36,630	42,155	54,292	68,553	70,677	79,769	84,170	86,274	94,495
Actual/Fcast (Cumulative)	<b>4,145</b>	<b>9,905</b>	<b>23,426</b>	<b>36,165</b>	42,230	53,941	67,700	80,684	93,556	95,527	99,619	103,674

<b>Yearly</b>	<b>97/98</b>	<b>98/99</b>	<b>99/00</b>	<b>00/01</b>	<b>01/02</b>	<b>02/03</b>	<b>03/04</b>	<b>04/05</b>	<b>05/06</b>	<b>06/07</b>	<b>07/08</b>	<b>08/09</b>
Steady State (Cumulative)	480,000	560,000	640,000	720,000	800,000	880,000	960,000	1,040,000	1,113,000	1,186,000	1,259,000	1,332,000
Actual/Fcast (Cumulative)	351,609	379,901	411,142	440,009	468,009	548,498	693,449	834,315	949,410	1,097,757	1,243,615	1,347,289

**ASSET MAINTENANCE / DEVELOPMENT**  
**Major Scope Report - November 2008**

TOP 65 PROGRAM DELIVERY & FULL YEAR FORECASTS					
REF	PROGRAM	Unit	Planned (FY)	Actual (YTD)	Forecast (FY)
1	Rerailing (AMP)	km	46	24	57
2	Rerailing (VSH)	km	28	8	32
3	Resurfacing Plain Track	km	485	302	507
4	Ballast Cleaning	km	59	16	69
5	Points Machines	Each	84	16	74
6	Contact Wire Renewal	km	28	12	27
7	Resleepering	Each	94,495	39,615	124,342
8	Turnout Renewals	Each	61	20	53
9	Turnout Resurfacing	Each	607	333	607
10	Turnout Refurbishment	Each	60	30	60
11	Turnout Grinding	Each	293	55	280
12	Rail Grinding	km	538	301	552
13	Track Reconditioning	m	6,508	3,315	6,549
14	Train Stop Renewal	Each	90	8	40
15	Transmission Line Poles	Each	78	23	63
16	Signal Renewals (LED Conversions)	Each	83	8	107
17	Track Circuits Refurbishment	Each	147	74	147
18	Track Circuits Renewal	Each	8	3	11
19	Transoms	Each	457	0	230
20	Maintenance Ballast	Tonnes	20,750	4,000	13,500
21	Bridge Refurbishment	Each	19	2	18
22	Bridge Painting	Each	7	0	4
23	CWR Adjustment	km	111	53	119
24	Insulated Joints+B29	Each	85	16	85
25	Roof Replacement	Each	14	9	14
26	Fire Equipment Refurbishment	Each	4	1	4
27	Platform Resurfacing	Each	17	5	13
28	Building (Station) Refurbishment	Each	19	6	19
29	Escalator Step Chains Refurbishment	Each	0	1	1
30	Station Track Cleaning	Each	9,970	4,058	9,970
31	Station Painting	Each	43	5	43
32	PABX Software Revision Upgrade	Each	2	1	2
33	33kv Circuit Breaker Renewal	Each	13	0	1
34	11kv Bulk Oil Circuit Breaker Retrofit	Each	11	0	0
35	11kv Ring Main Unit Renewal	Each	22	2	22
36	Battery Banks	Each	1	0	5
37	Vegetation Control	km	335	173	335
38	Embankments/Cuttings	Each	22	4	21
39	Asbestos Removal (Corridor)	Each	1	0	3
40	Asbestos Removal (Substation & Huts)	Each	24	3	24
41	Asbestos Removal (Stations)	Station	3	0	3
42	Asbestos Removal (Comms)	Each	0	0	0
43	Fencing	km	16	0	16
44	Substation Fencing	Each	7	3	7
45	Bridge Walkways New	Each	5	0	5
46	Balustrades/Parapets	Each	4	0	2
47	Anti throw Screens	Each	4	4	6
48	DCCB Frame Leakage at Sub Stations	Each	2	1	2
49	Communications DC Power Supplies	Each	22	0	22
50	OHW Modernisation	km	13	6	12
51	Power Supplies Signalling New	Each	24	0	24
52	Drainage (Pipe)	m	3,470	682	3,670
53	Culverts Upgrade	Each	7	0	5
54	Resignalling	Each	7	0	5
55	Bridge Renewal	Each	13	3	14
56	Track Reconstruction	km	42	17	57
57	Substation Capacity Upgrade	Each	2	0	2
58	Level Crossing Upgrade	Each	8	0	8
59	Signal Location Upgrades	Each	37	1	30
60	ATRICS	Each	5	0	5
61	Turnout Removal	Each	2	0	3
62	Link Switches	Each	114	34	114
63	Platform Reconstruction	Each	1	0	1
64	Wayside Detection Systems Upgrade	Each	2	0	2
65	SPAD Mitigation Works	Each	0	6	6