



# **Rail Fleet Services Monthly Report August 2015**



**Metro**

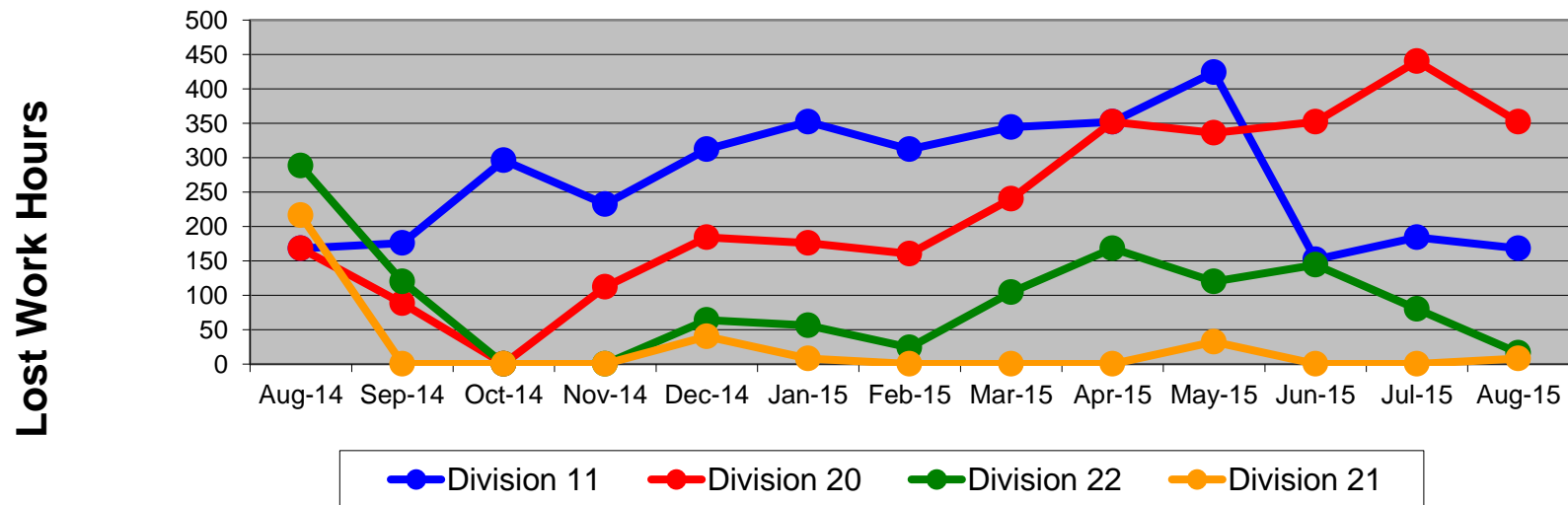
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# Industrial Injuries – Lost Work Hours August 2014-2015

	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	13-Month Period
Division 11	168	176	296	232	312	352	312	344	352	424	152	184	168	3,472
Division 20	168	88	0	112	184	176	160	240	352	336	352	440	352	2,960
Division 22	288	120	0	0	64	56	24	104	168	120	144	80	16	1,184
Division 21	216	0	0	0	40	8	0	0	0	32	0	0	8	304
Totals	840	384	296	344	600	592	496	688	872	912	648	704	544	7,920

## Industrial Injuries (lost work hours)



# Rail Vehicle Accidents & Major Incidents

## August 2014-2015

Repair Costs	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	13-Month Period
Blue/Expo Line	\$207	\$42,690	\$12,945	\$5,762	\$3,463	\$9,301	\$17,834	\$17,322	\$12,056	\$1,655	\$4,811	\$5,716	\$1,971	\$135,733
Red/Purple Line	\$0	\$0	\$4,194	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,194
Green Line	\$0	\$0	\$267	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,333	\$5,600
Gold Line	\$1,669	\$0	\$0	\$0	\$5,664	\$0	\$315	\$0	\$0	\$4,833	\$1,494	\$8,204	\$2,611	\$24,790
<b>Totals</b>	<b>\$1,876</b>	<b>\$42,690</b>	<b>\$17,406</b>	<b>\$5,762</b>	<b>\$9,127</b>	<b>\$9,301</b>	<b>\$18,149</b>	<b>\$17,322</b>	<b>\$12,056</b>	<b>\$6,488</b>	<b>\$6,305</b>	<b>\$13,920</b>	<b>\$9,915</b>	<b>\$170,317</b>

Rail Vehicle Accident Costs - August 2015				
Date	Incident #	Problem Code	Incident Description	Repair Cost
<b>Metro Blue/Expo Line</b>				
8/5/15	2624571	Train vs. Vehicle	Train 104 was sideswiped by Long Beach Transit Bus 1257.	\$ 189
8/10/15	2626324	Train vs. Vehicle	A 10-73 was reported. Train 109, at Pacific and 7th Street, Northbound.	\$ 1,782
<b>Total</b>				<b>\$ 1,971</b>
<b>Metro Green Line</b>				
8/23/15	2631278	Train vs. Object	A 10-71 was reported (Trains versus shopping cart) at Wilmington Station, Track 2, Eastbound.	\$ 5,333
<b>Total</b>				<b>\$ 5,333</b>
<b>Metro Gold Line</b>				
8/1/15	2623065	Train vs. Vehicle	A 10-73 was reported at Del Mar Grade Crossing, Track 1, Northbound.	\$ 2,611
<b>Total</b>				<b>\$ 2,611</b>
<b>Grand Total</b>				<b>\$ 9,915</b>
(10-71) = Train vs. Object, (10-72) = Train vs. Pedestrian, (10-73) = Train vs. Vehicle (10-74) = Train vs. MTA Vehicle, (10-75) = Derailment				

**Note:** Repair costs are only the expenses captured during the time period of the report. Actual costs may be significantly higher, if repairs are spread out over several months.

# Service Delivery August 2015

## August 2015 - Service Delivery

### Blue/Expo Line Fleet Size: 92

<u>Pull Out</u>	<u>Vehicles Required</u>	<u>Average Available*</u>	<u>% Up (Down)</u>
Weekday:	78	76	97%
Weekend:	60	65	108%
Late Pullouts: 1			
<b>Monthly Mileage:</b>	<b>643,117</b>		

### Red/Purple Line Fleet Size: 104

<u>Pull Out</u>	<u>Vehicles Required</u>	<u>Average Available*</u>	<u>% Up (Down)</u>
Weekday:	74	80	108%
Weekend:	54	72	133%
Late Pullouts: 0			
<b>Monthly Mileage:</b>	<b>634,446</b>		

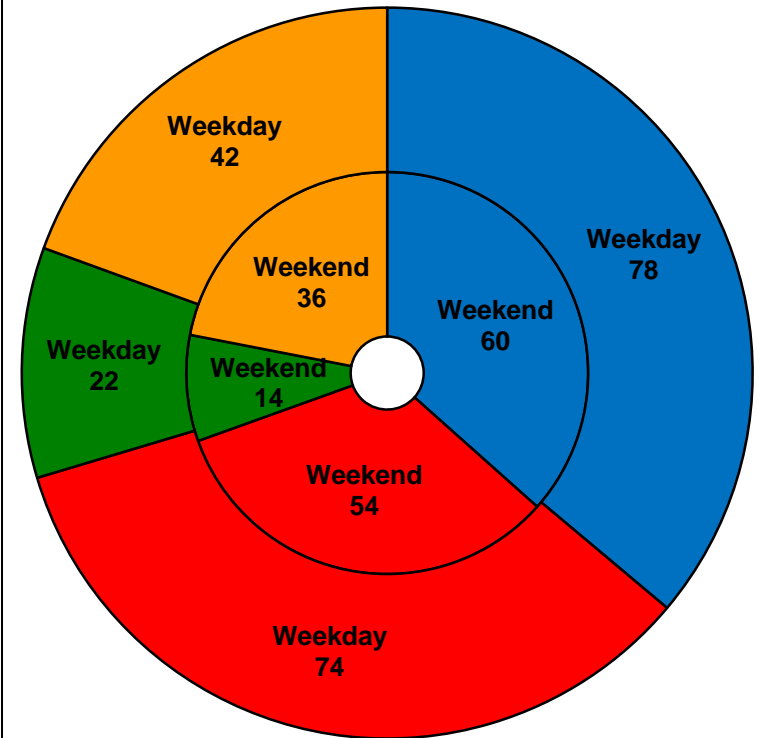
### Green Line Fleet Size: 29

<u>Pull Out</u>	<u>Vehicles Required</u>	<u>Average Available*</u>	<u>% Up (Down)</u>
Weekday:	22	22	100%
Weekend:	14	15	107%
Late Pullouts: 0			
<b>Monthly Mileage:</b>	<b>231,210</b>		

### Gold Line Fleet Size: 50

<u>Pull Out</u>	<u>Vehicles Required</u>	<u>Average Available*</u>	<u>% Up (Down)</u>
Weekday:	42	43	102%
Weekend:	36	41	114%
Late Pullouts: 0			
<b>Monthly Mileage:</b>	<b>329,218</b>		

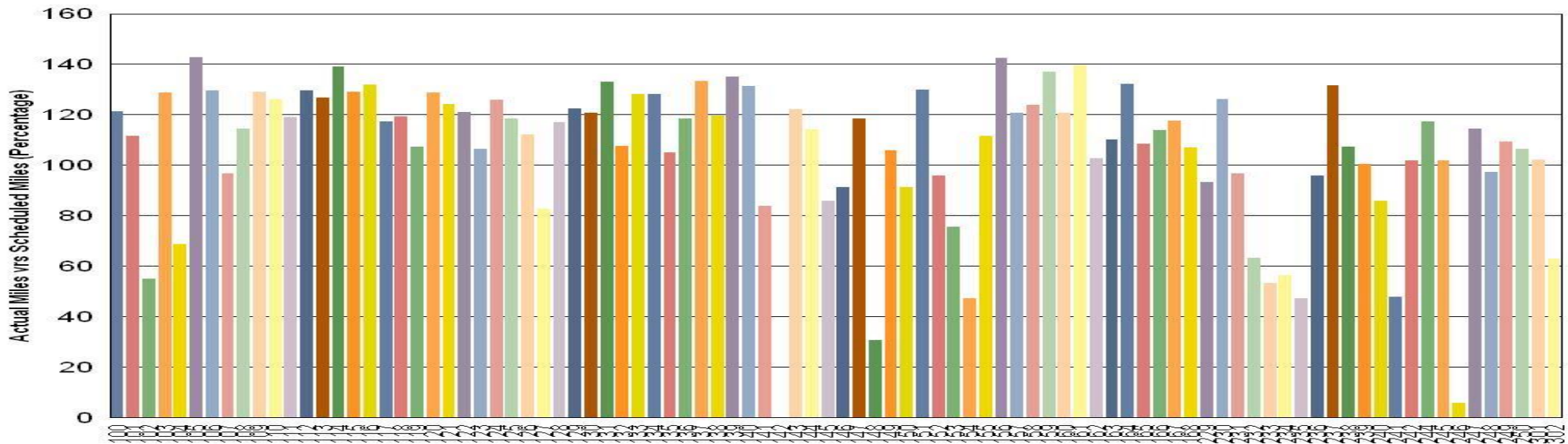
\* Average available numbers are based on 15-day-data.



■ Blue/Expo Line
 ■ Red/Purple Line
 ■ Green Line
 ■ Gold Line

# Vehicle Utilization August 2015

## Metro Blue/Expo Line (92 Cars)



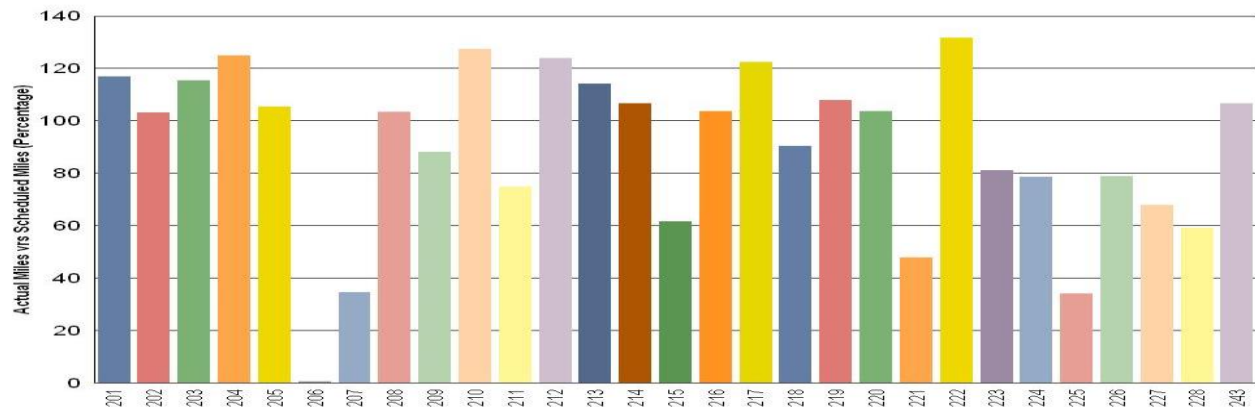
**Blue/Expo Line:** The following cars were out of service due to:

- Car # 142 Accident Repairs
- Car # 148 Repairs and Training Vehicle
- Car # 246 Paint and Body Repairs

**Green Line:** The following cars were out of service due to:

- Car # 206 EMI Faults (engineering currently testing)
- Car # 207 Prop fault issue / 22k Inspection
- Car # 225 HVAC Issues and JAC Training

## Metro Green Line (29 Cars)



*Note: Percentage includes an average 4% mileage deduction for yard mileage and vehicle testing.*

# Vehicle Utilization August 2015

## Red/Purple Line:

The following cars were out of service due to:

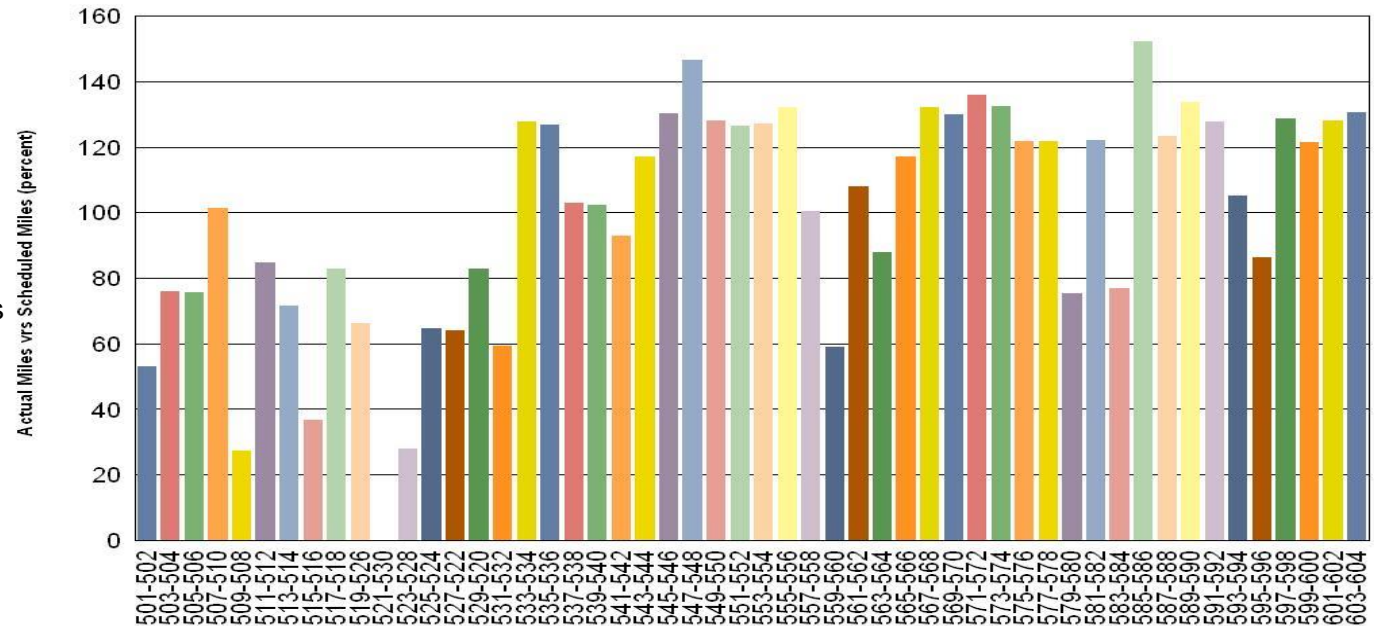
**Car # 509-508** Propulsion Fault

**Car # 515-516** Propulsion Fault

**Car # 521-530** Trucks/Waiting on Traction Motors

**Car # 523-528** Flooring Replacement

## Metro Red/Purple Line (104 Cars)



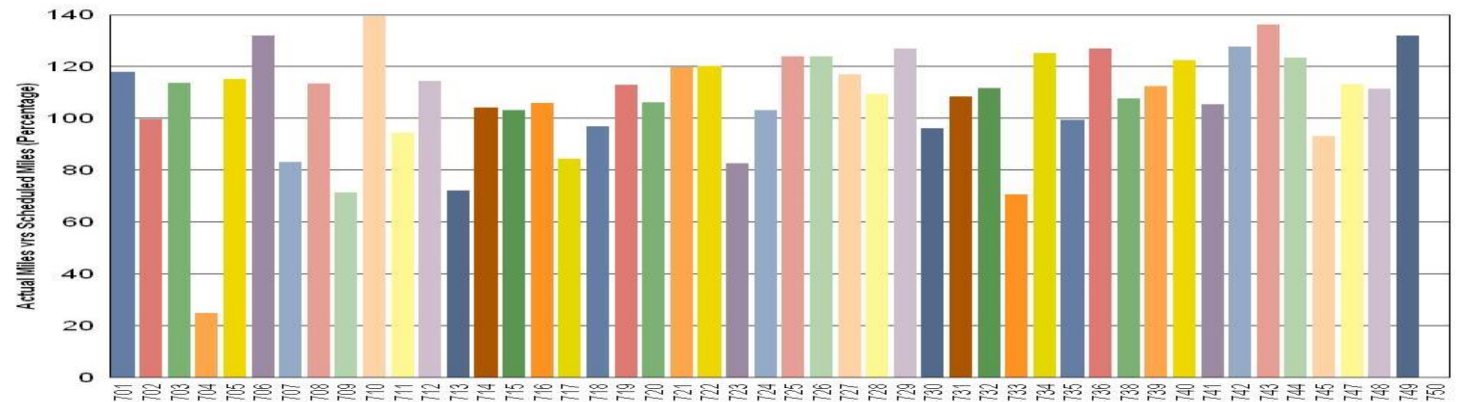
## Gold Line:

The following cars were out of service due to:

**Car # 704** Being used on the Foothill extension for testing

**Car # 750** Auxiliary Inverter flash over.

## Metro Gold Line (50 Cars)

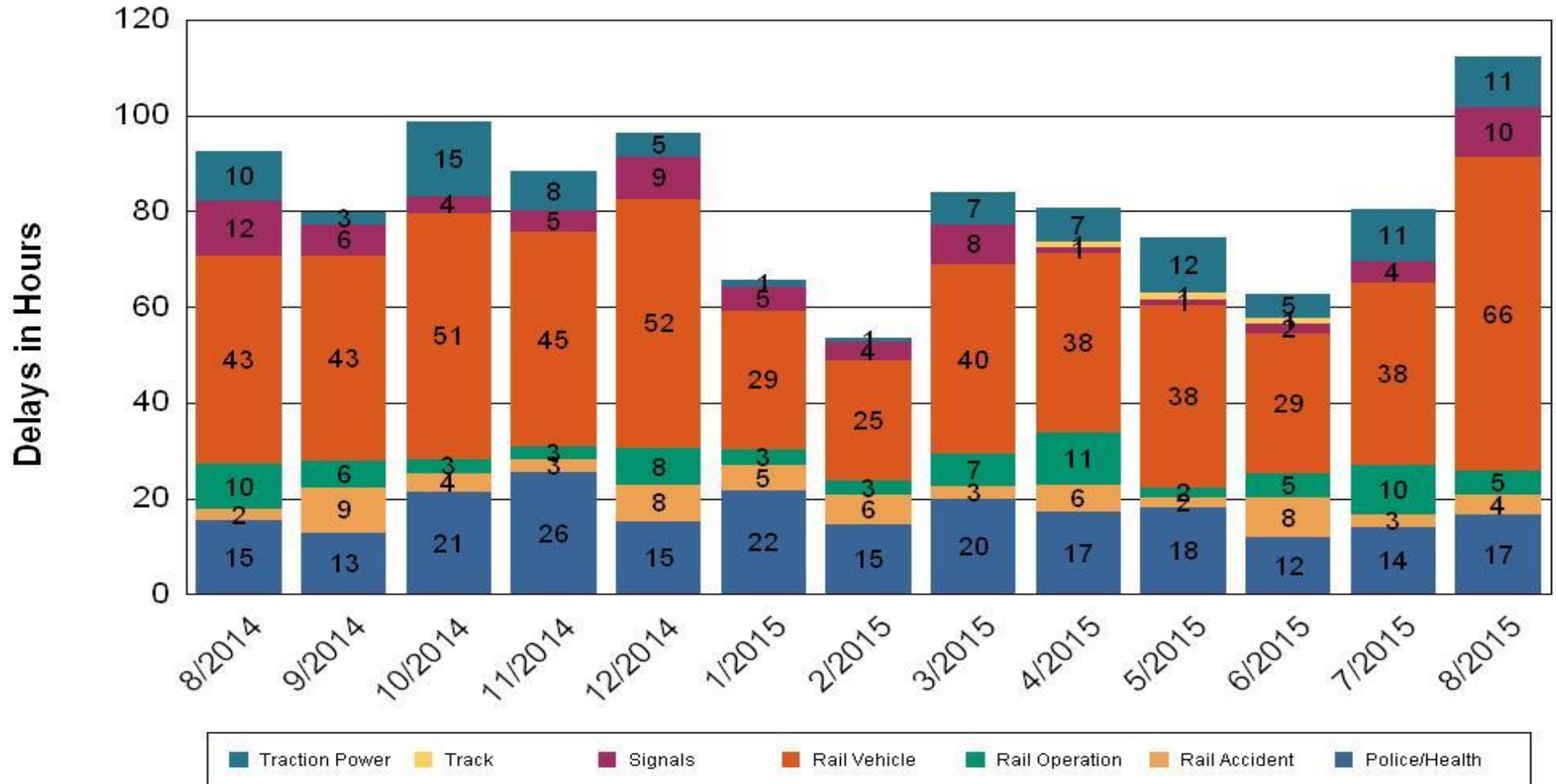




# All Train Delays (Hours) August 2014-2015

## All Train Delays

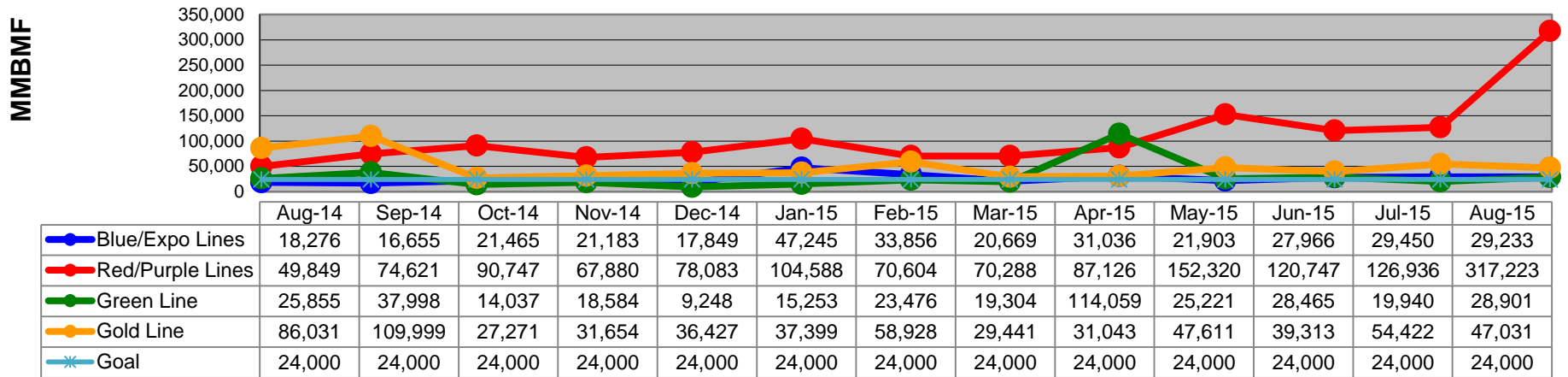
Totals Include the delay to all trains involved (not just the primary incident)



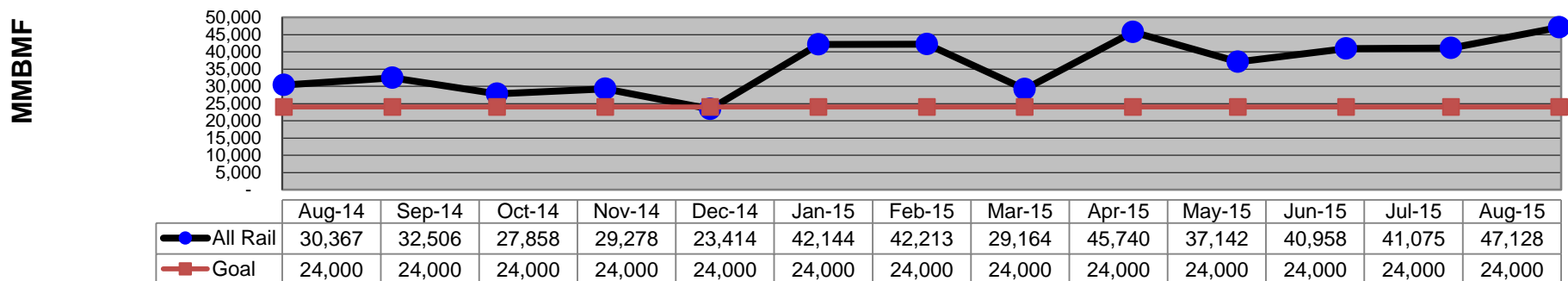


# Mean Miles Between Failures (Major) August 2014-2015

## Mean Miles Between Major Failures (by line)



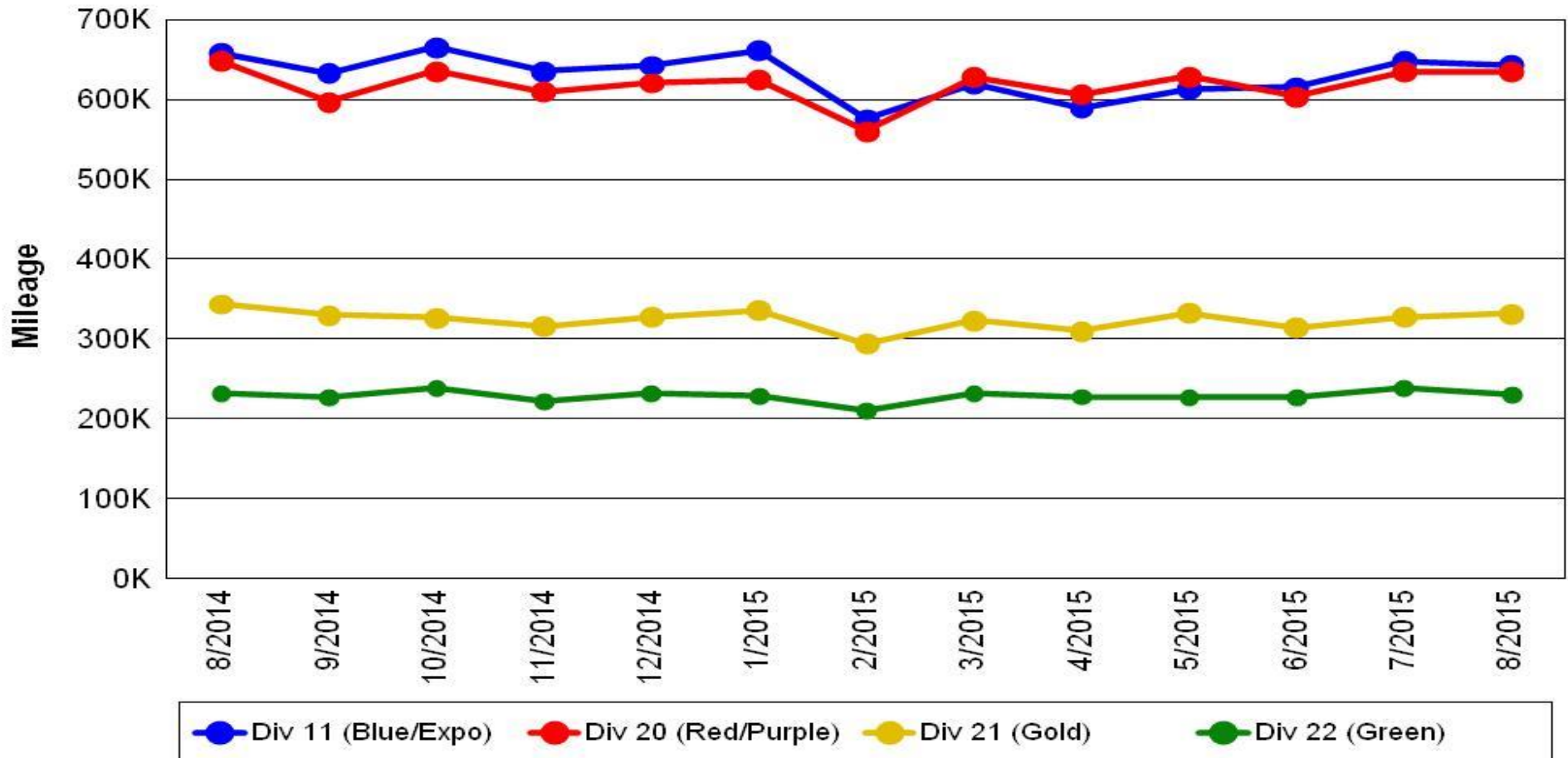
## Mean Miles Between Major Failures (all)



# Mileage Between Data Range (by month)

## August 2014-2015

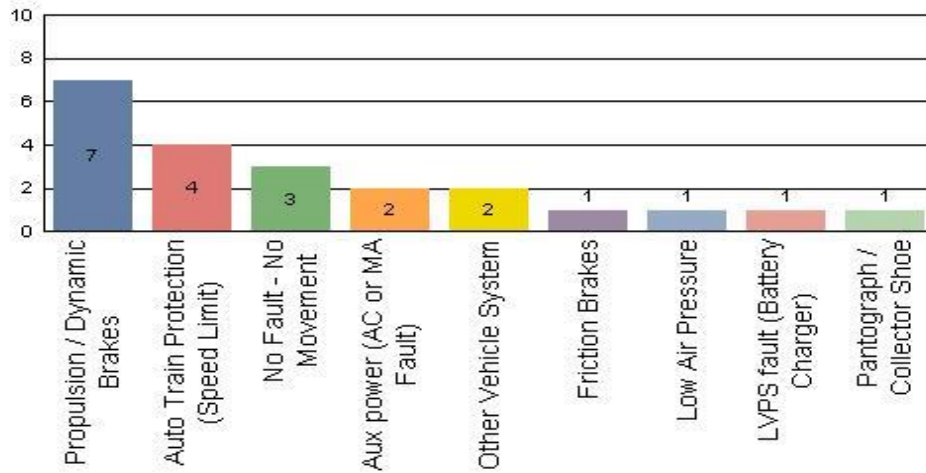
### Rail Division Monthly Mileage



# Top Incident Categories August 2015

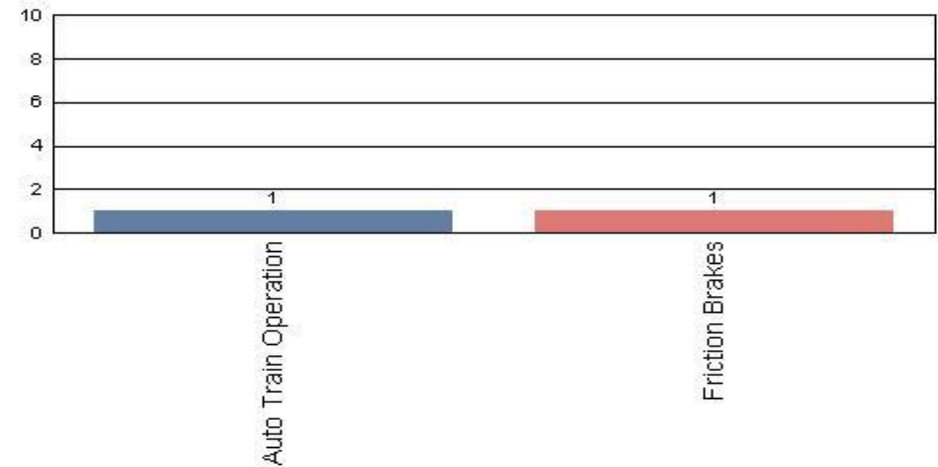
## Metro Blue/Expo Line

### Top Incident Categories



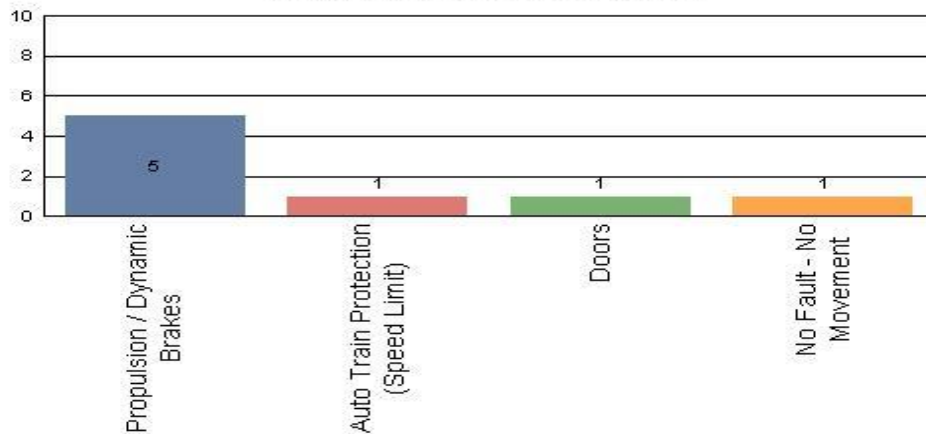
## Metro Red/Purple Line

### Top Incident Categories



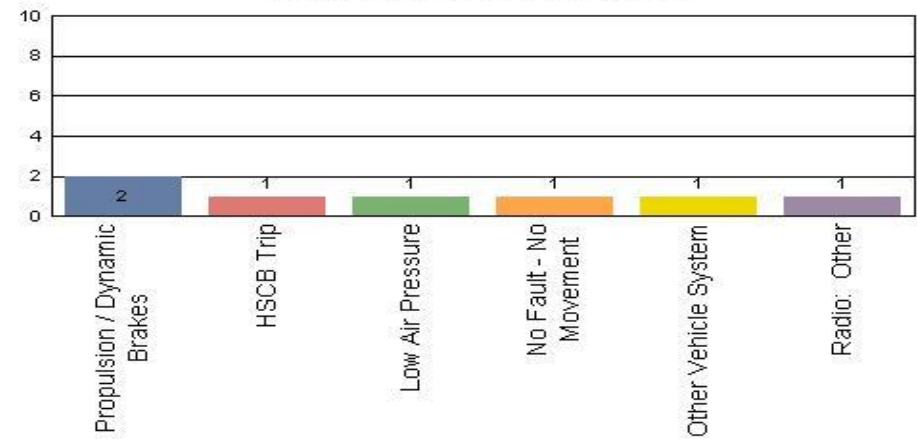
## Metro Green Line

### Top Incident Categories



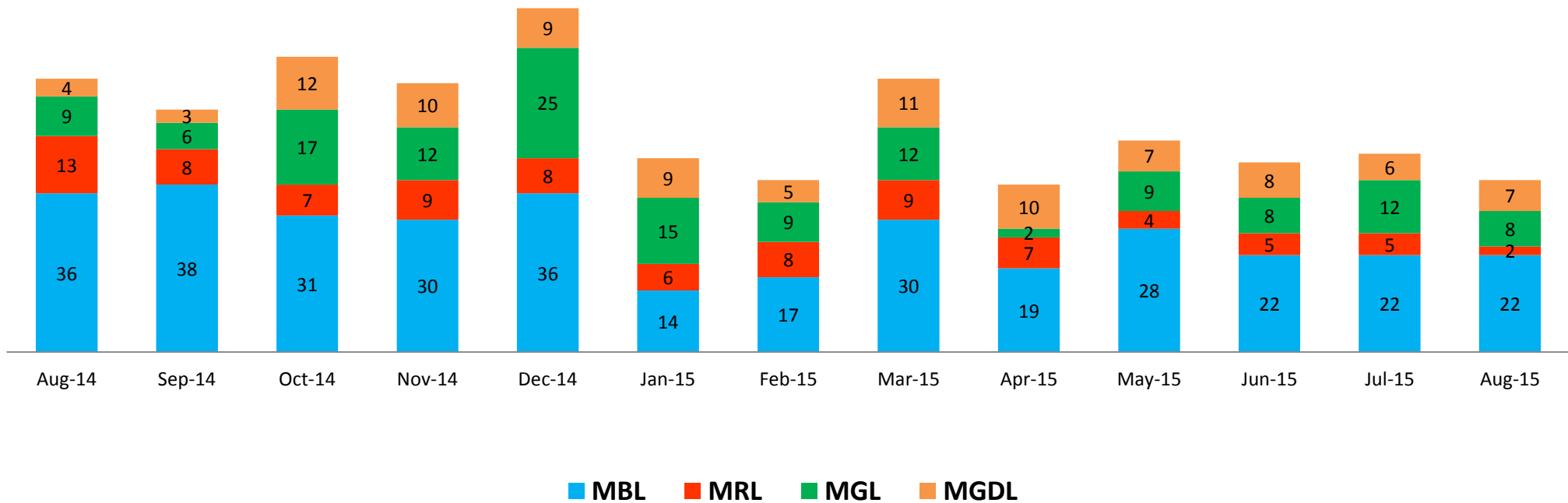
## Metro Gold Line

### Top Incident Categories



# Major Incidents August 2014-2015

## Numbers of Major System Failures (by Line)



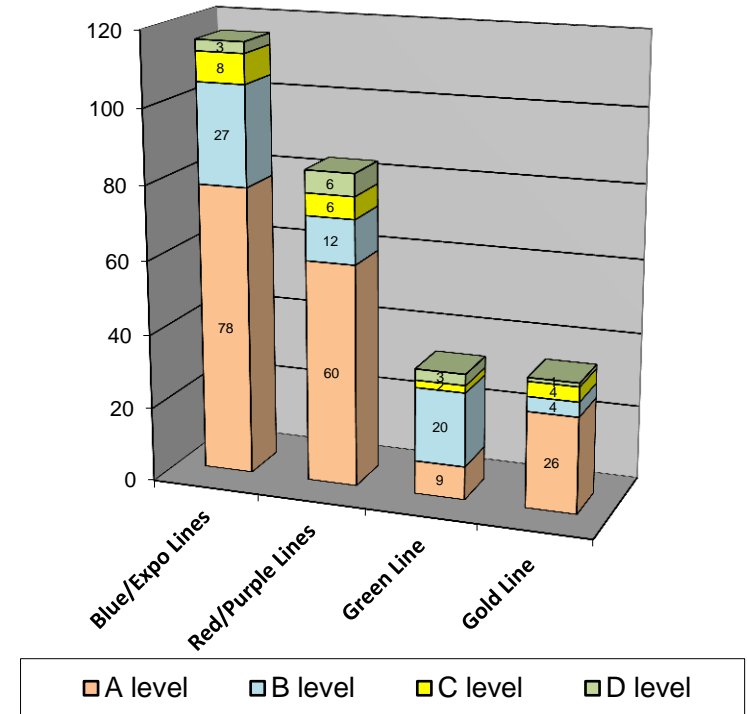
# Preventive Maintenance Compliance

## August 2014-2015

PM Compliance	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15
Blue/Expo Lines	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Red/Purple Lines	100%	100%	100%	100%	100%	100%	100%	100%	97%	100%	100%	100%	100%
Green Line	100%	100%	100%	97%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Gold Line	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	96%	100%	100%

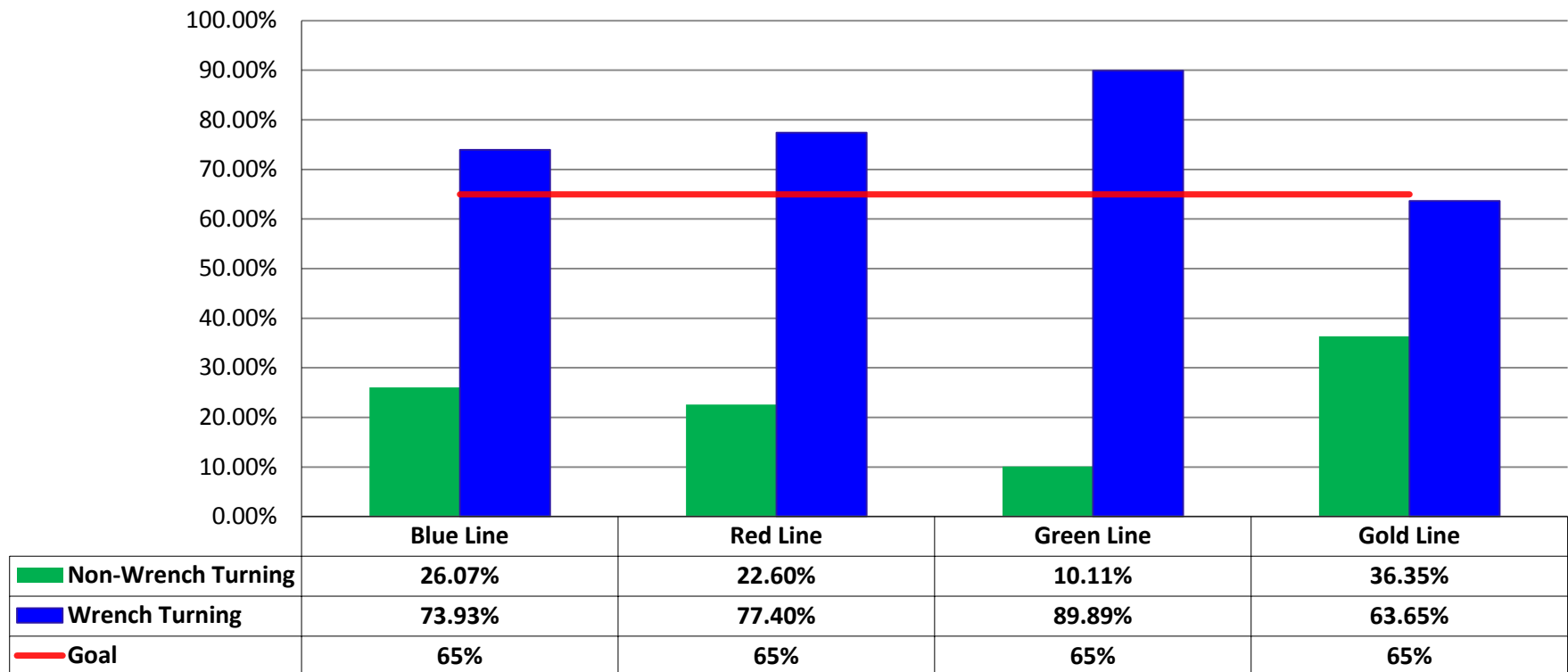
Number of Preventive Maintenance Inspections - August 2015					
Line	A level	B level	C level	D level	Totals
Blue/Expo Lines	78	27	8	3	116
Red/Purple Lines	60	12	6	6	84
Green Line	9	20	2	3	34
Gold Line	26	4	4	1	35
Totals:	173	63	20	13	269

Explanation of PM Inspection levels		Miles			
Line	Type	A level	B level	C level	D level
Blue/Expo Lines	P865/P2020	5,000	15,000	30,000	60,000
Blue/Expo Lines	P2000	7,500	22,500	45,000	90,000
Red/Purple Lines	A650	7,500	22,500	45,000	90,000
Green Line	P2000	7,500	22,500	45,000	90,000
Gold Line	P2550	10,000	30,000	60,000	120,000



# RFS Leader Wrench Turning August 2015

## RFS – Leader Wrench Turning August 2015



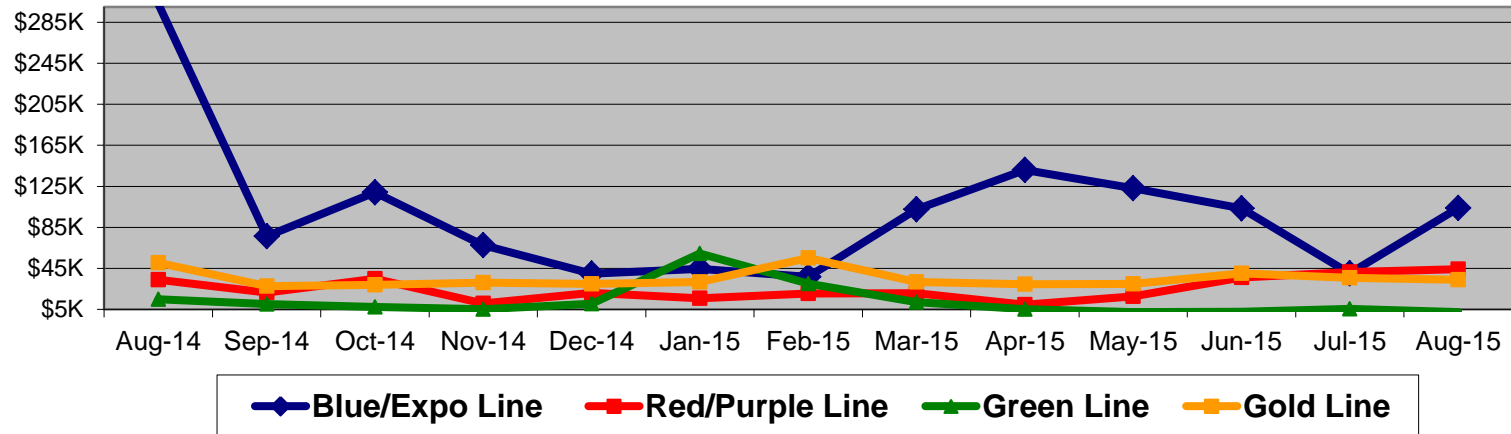
**Notes:** Labor hours contributed by Maint Specialist Leader, Rail Body/Paint Repair Leader, and Maint Specialist Temporary Leader

# Vandalism & Graffiti Report

## August 2014-2015

Graffiti Costs

	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	13-Month Period
Blue/Expo Line	\$303K	\$77K	\$119K	\$68K	\$40K	\$45K	\$37K	\$103K	\$141K	\$123K	\$104K	\$40K	\$104K	\$1302K
Red/Purple Line	\$34K	\$22K	\$35K	\$11K	\$21K	\$16K	\$21K	\$21K	\$9K	\$18K	\$36K	\$41K	\$44K	\$329K
Green Line	\$15K	\$10K	\$8K	\$5K	\$10K	\$59K	\$30K	\$12K	\$5K	\$3K	\$3K	\$6K	\$2K	\$169K
Gold Line	\$51K	\$28K	\$29K	\$31K	\$30K	\$32K	\$55K	\$32K	\$30K	\$30K	\$40K	\$36K	\$34K	\$456K
Totals:	\$402K	\$136K	\$190K	\$115K	\$102K	\$152K	\$143K	\$167K	\$185K	\$173K	\$183K	\$123K	\$185K	\$2,255K



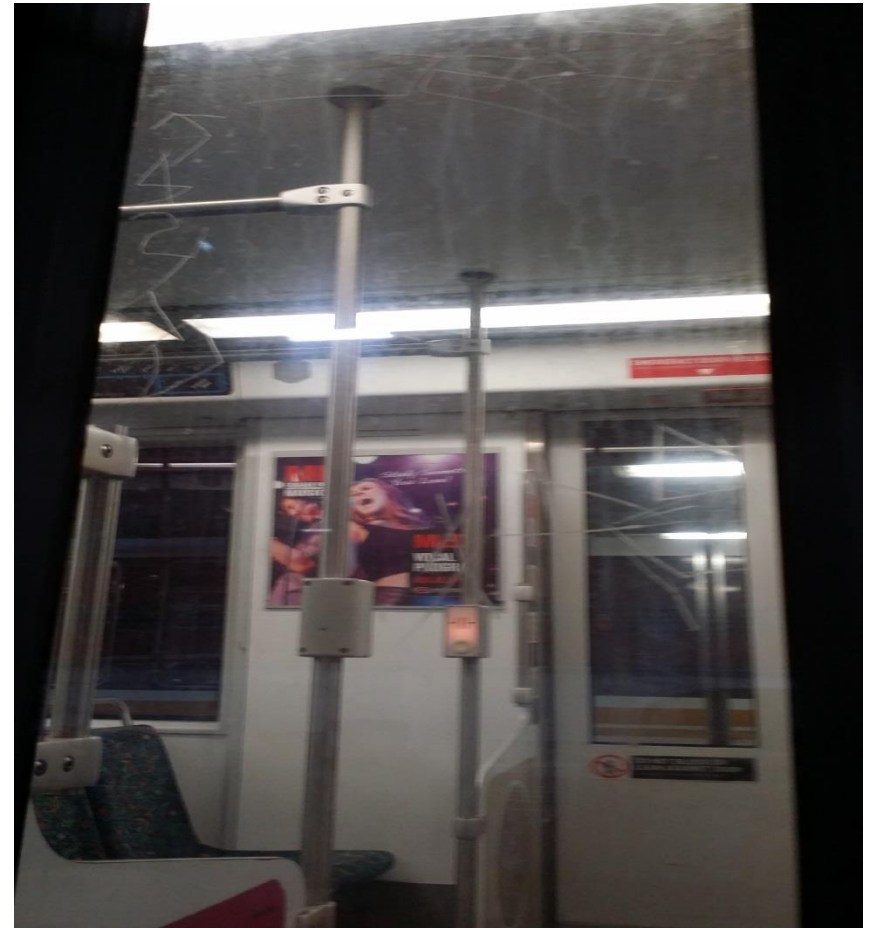
August 2015 Vandalism & Graffiti - All Rail

	Qty	Labor	Materials	Totals
Windows Replaced	182	\$ 17,772	\$ 25,336	\$ 43,108
Vandal Shields Replaced	813	\$ 18,186	\$ 16,896	\$ 35,082
Seats Cleaned	511	\$ 4,675	\$ 3,980	\$ 8,655
Seats Inserts Replaced	406	\$ 13,204	\$ 13,823	\$ 27,027
Graffiti Removal - Other	937	\$ 58,277	\$ 3,148	\$ 61,425
Repainting Panels	294	\$ 9,261	\$ -	\$ 9,261
<b>Totals</b>	<b>3,143</b>	<b>\$ 121,375</b>	<b>\$ 63,183</b>	<b>\$ 184,558</b>



# Graffiti Pictures August 2015

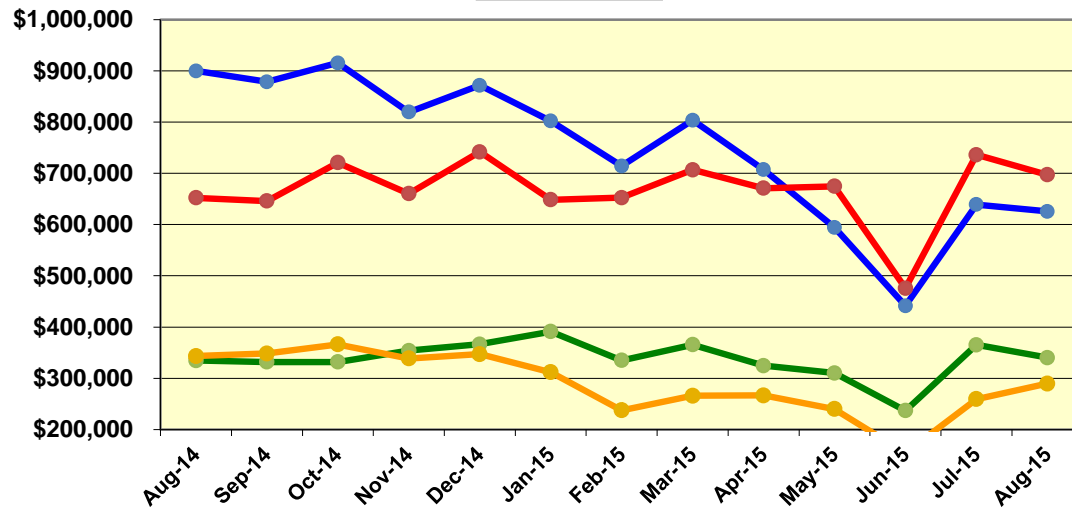
## Blue Line



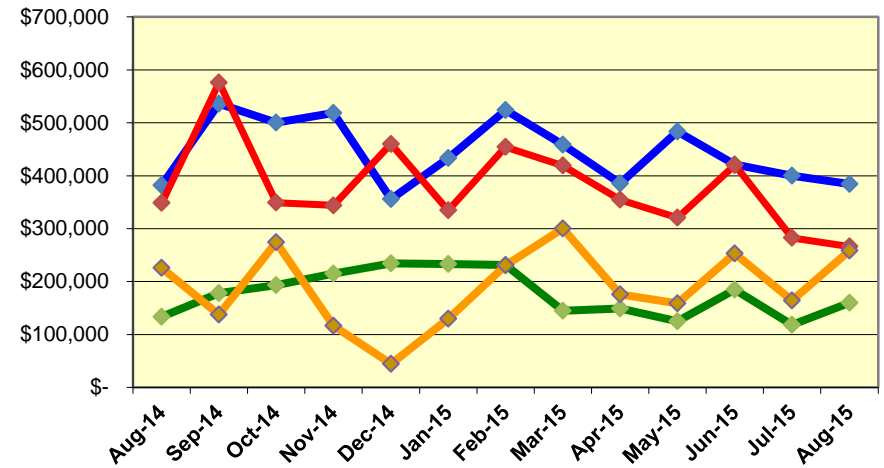
# Labor and Material Costs

## August 2014-2015

**Labor Costs**



**Material Costs**



Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15*	Jul-15	Aug-15
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**Labor Costs**

	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15*	Jul-15	Aug-15
Blue/Expo Lines	\$ 900,043	\$ 878,598	\$ 915,432	\$ 819,497	\$ 871,682	\$ 802,256	\$ 714,349	\$ 803,757	\$ 707,348	\$ 594,550	\$ 441,364	\$ 638,967	\$ 625,577
Red/Purple Lines	\$ 652,202	\$ 645,981	\$ 721,060	\$ 660,321	\$ 741,908	\$ 648,538	\$ 652,406	\$ 706,794	\$ 671,084	\$ 674,681	\$ 475,810	\$ 736,269	\$ 697,095
Green Line	\$ 334,772	\$ 331,870	\$ 331,661	\$ 354,058	\$ 366,422	\$ 391,161	\$ 334,919	\$ 365,457	\$ 324,550	\$ 310,181	\$ 236,931	\$ 365,229	\$ 340,115
Gold Line	\$ 343,246	\$ 348,288	\$ 366,248	\$ 338,610	\$ 347,182	\$ 311,868	\$ 237,438	\$ 265,835	\$ 266,529	\$ 240,056	\$ 154,498	\$ 259,228	\$ 289,571
Totals	\$ 2,230,262	\$ 2,204,736	\$ 2,334,400	\$ 2,172,486	\$ 2,327,193	\$ 2,153,823	\$ 1,939,112	\$ 2,141,842	\$ 1,969,511	\$ 1,819,467	\$ 1,308,603	\$ 1,999,693	\$ 1,952,358

**Material Costs**

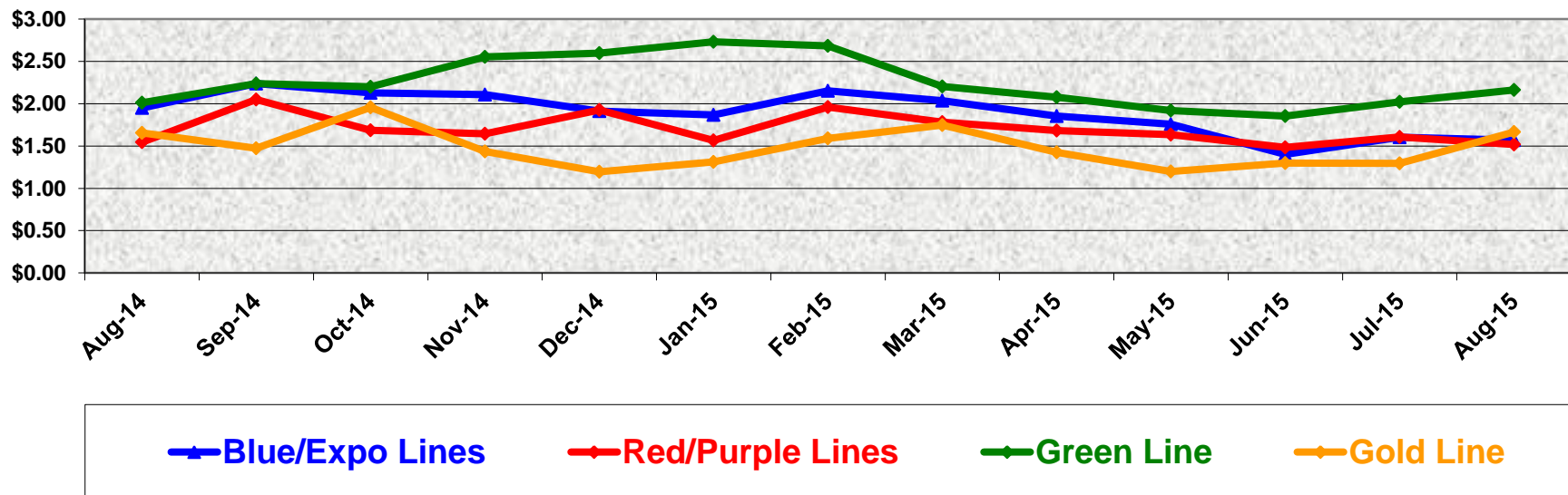
	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15*	Jul-15	Aug-15
Blue/Expo Lines	\$ 382,184	\$ 536,100	\$ 500,390	\$ 518,334	\$ 355,729	\$ 433,347	\$ 524,157	\$ 458,588	\$ 385,794	\$ 483,368	\$ 421,088	\$ 400,315	\$ 384,178
Red/Purple Lines	\$ 348,370	\$ 576,230	\$ 349,031	\$ 343,936	\$ 460,076	\$ 334,623	\$ 454,326	\$ 419,099	\$ 354,492	\$ 320,754	\$ 420,042	\$ 282,744	\$ 266,405
Green Line	\$ 133,386	\$ 178,206	\$ 193,176	\$ 214,902	\$ 234,118	\$ 233,318	\$ 231,562	\$ 144,927	\$ 148,839	\$ 125,054	\$ 185,086	\$ 118,559	\$ 159,916
Gold Line	\$ 225,818	\$ 137,883	\$ 274,059	\$ 116,179	\$ 44,498	\$ 130,036	\$ 230,896	\$ 300,170	\$ 175,922	\$ 159,016	\$ 253,284	\$ 163,954	\$ 258,793
Totals	\$ 1,089,759	\$ 1,428,418	\$ 1,316,657	\$ 1,193,351	\$ 1,094,420	\$ 1,131,324	\$ 1,440,941	\$ 1,322,783	\$ 1,065,048	\$ 1,088,194	\$ 1,279,500	\$ 965,571	\$ 1,069,291

Note: \*Preliminary labor and material costs for June 2015 due to FY15 fiscal year ending awaiting accrual process.

# Cost Per Mile August 2014-2015

Cost per mile:	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Average
Blue/Expo Lines	\$1.95	\$2.24	\$2.13	\$2.11	\$1.91	\$1.87	\$2.15	\$2.04	\$1.85	\$1.76	\$1.40	\$1.60	\$1.57	\$1.89
Red/Purple Lines	\$1.54	\$2.05	\$1.68	\$1.64	\$1.92	\$1.57	\$1.96	\$1.78	\$1.68	\$1.63	\$1.48	\$1.61	\$1.52	\$1.70
Green Line	\$2.01	\$2.24	\$2.20	\$2.55	\$2.60	\$2.73	\$2.68	\$2.20	\$2.08	\$1.92	\$1.85	\$2.02	\$2.16	\$2.25
Gold Line	\$1.65	\$1.47	\$1.96	\$1.44	\$1.19	\$1.31	\$1.59	\$1.75	\$1.43	\$1.20	\$1.30	\$1.30	\$1.67	\$1.48

## Cost per Mile



# ATU Absences vs. Overtime

## August 2015

ABSENCE TYPE and HOURS	3941 & 3947 Blue & Expo	3942 Red	3943 Green	3944 Gold	Total
AWP-ABSENT W/O PERMISSION	-	-	26	-	26
BER-BEREAVEMENT	32	48	-	72	152
CTO-COMPENSATORY TIME OFF	105	276	20	56	457
CUT-EMPLOYEE LEAVES EARLY	0	0	-	-	0
CVA - CASUAL VACATION	312	388	8	92	800
DSL-DISABILITY LEAVE/LONG	888	392	-	304	1,584
EFH-EMG. FLOAT HOL.	48	40	72	72	232
ETO-EXCUSED TIME OFF	107	27	5	28	167
FMI-FAM IND INJURY	-	88	-	-	88
FML-FAMILY CARE LEAVE	624	688	136	248	1,696
FMS-FAMILY LEAVE SICK	106	260	8	24	398
HLF-HOLIDAY FLOATING	672	432	144	216	1,464
II-INDUSTRIAL INJURY	-	-	16	8	24
JUR-JURY DUTY	-	24	40	-	64
LC1-LABOR CODE 233	76	161	80	104	421
LTI-OCCPIL/LONGTRM INJ LEAVE	168	352	-	-	520
MLN-MILITARY ABSENCE-UNPAID	8	8	-	-	16
OWP-OFF WITH PERMISSION	-	17	2	-	18
RTO-REQUESTED TIME OFF-NO PAY	24	1	-	-	25
SCK-SICK PAY	136	188	88	109	520
SCW-SICK WITHOUT PAY	48	-	207	24	279
SPN-SCHOOL PARTNER NOT PAID	-	-	-	-	-
TAR-TARDY	2	0	1	0	4
UNP-UNION BUS PAID	-	14	-	-	14
VAC-VACATION	1,495	1,456	525	760	4,236
<b>Total Absence Hours</b>	<b>4,852</b>	<b>4,859</b>	<b>1,378</b>	<b>2,117</b>	<b>13,206</b>
ATU Number of Work Force (budget)	125	104	46	48	323
Full Work Force hours/month	21,663	18,023	7,972	8,318	55,976
<b>Absence as a % of Work Force</b>	<b>22%</b>	<b>27%</b>	<b>17%</b>	<b>25%</b>	<b>24%</b>

OVERTIME TYPE and HOURS	3941 & 3947 Blue & Expo	3942 Red	3943 Green	3944 Gold	Total
CTB-COMPENSATORY TIME TO BANK	329	412	81	165	987
OTP-PREM OVERTIME	4,708	5,128	1,213	654	11,702
WLO-Worked Lunch Overtime	119	131	94	42	387
<b>Total Overtime Hours</b>	<b>5,156</b>	<b>5,671</b>	<b>1,388</b>	<b>860</b>	<b>13,076</b>
<b>Overtime as a % of Work Force</b>	<b>24%</b>	<b>31%</b>	<b>17%</b>	<b>10%</b>	<b>23%</b>

Note: Overtime also covers other required activities, including Training, Component Overhaul, and Special Events.



**Metro**

# RFS Instruction Department Activities

## August 2015

### Training classes completed during the month of August 2015

Description	Course Hours	Student Count	Training Hours
<b>Blue &amp; Expo Line Training - (P865/2020 &amp; P2000 LRV):</b>			
RFS 865/2020 CAR BODY	8	6	48
RFS 865/2020 LVPS & BATTERY	8	6	48
RFS 865/2020 HVAC SYSTEM	64	6	384
RFS 865/2020 PANTOGRAPH	8	8	64
RFS 865/2020 TRUCKS	24	8	192
RFS 2-WEEK RAIL INTRODUCTION	80	2	160
RFS SIEMENS 2000 CARBODY	8	2	16

**Total Blue Line Training (Hours): 912**

#### **Gold Line Training (P2550 LRVs):**

RFS 2-WEEK RAIL INTRODUCTION	80	5	400
RFS ANSALDOBREDA 2550 H.V.A.C.	16	6	96
RFS ANSALDOBREDA 2550 DOORS	24	6	144
RFS ANSALDOBREDA 2550 MAINLINE DUTY, DEAD TOW AND VEHICLE RECC	16	6	96

**Total Gold Line Training (Hours): 736**

#### **Green Line Training (P2000 LRVs):**

RFS SIEMENS 2000 LIGHTS & DEST SIGN	19	4	76
REFRIGERANT RECOVERY SYSTEMS (608)	16	4	64
RFS BREDA 650 HVAC REFRESHER	24	4	96
RFS SIEMENS 2000 HVAC	64	4	256
RFS 2-WEEK RAIL INTRODUCTION	80	2	160
RFS SIEMENS 2000 PANTOGRAPH	8	4	32
RFS SIEMENS 2000 DOOR CONTROLS	40	4	160

**Total Green Line Training (Hours): 844**

**Total RFS Instruction for the month of August 2015 (Hours): 2,492**

#### **Other Instruction Activities**

A650 Curriculum, Administrative, and Technical Support	80
P865/P2020 Curriculum, Administrative, and Technical Support	40
P2000 Curriculum, Administrative, and Technical Support	40
P2550 Curriculum, Administrative, and Technical Support	40
P3010 Curriculum, Administrative, and Technical Support	160
Instructor Vacation	40

**Total Other Instruction Activities 400**

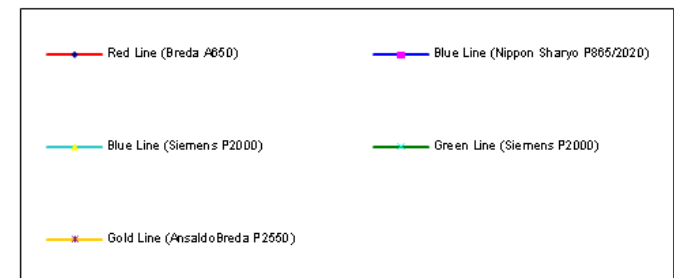
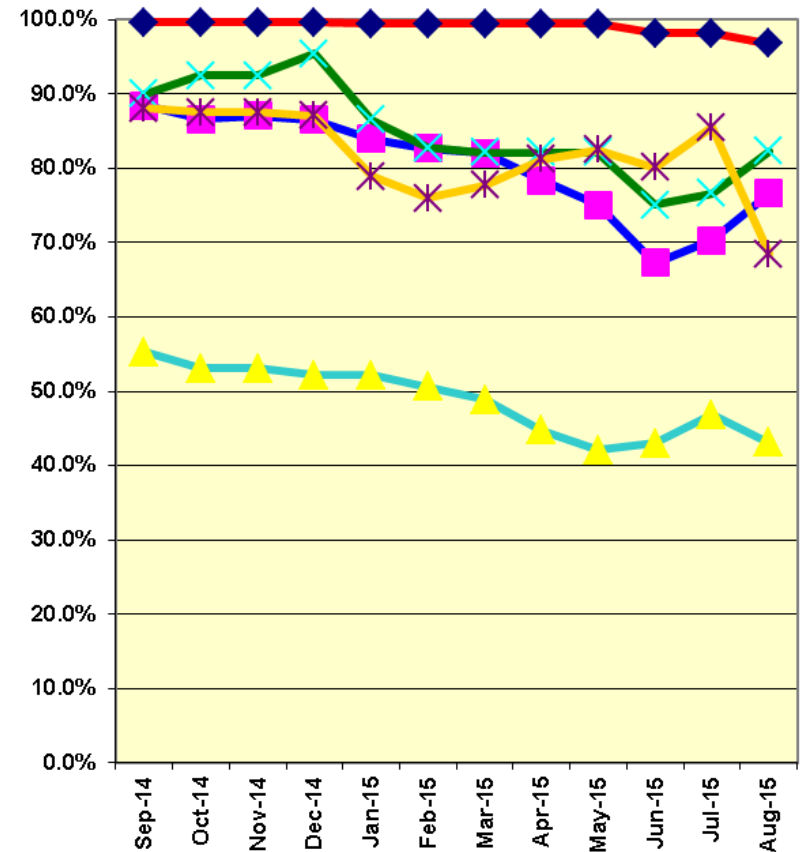
**Core Vehicle Training Completed: BLUE RED GREEN GOLD**

**Percentage of core vehicle training complete: 76.6% 96.8% 82.3% 68.5%**

**Siemens P2000 training complete: 43.1% N/A N/A N/A**

**Average Specialist Rail Experience Level in Years: 11.0 11.6 8.3 7.2**

### Core Training Completed



**Metro**

Variations caused by new hires, employee transfers, & training completed