



Rail Fleet Services Monthly Report April 2013



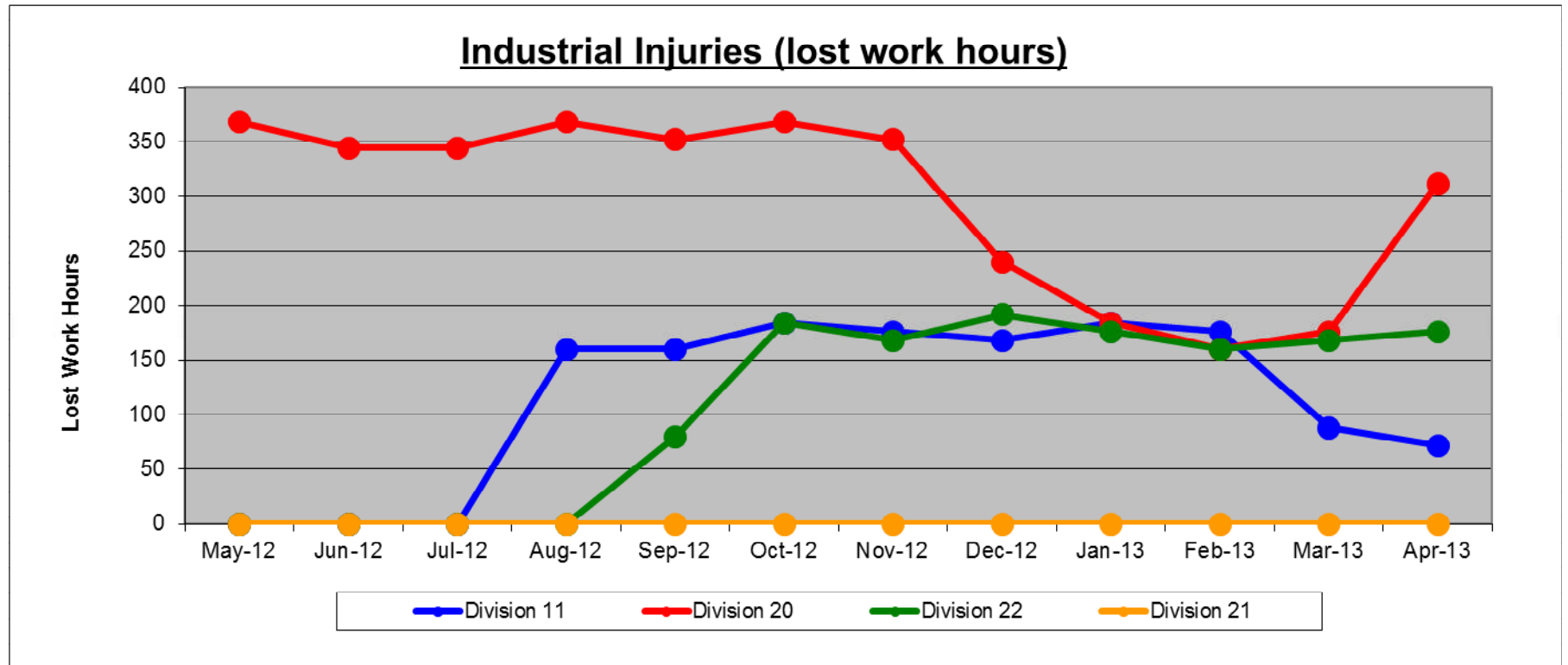
Metro

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Industrial Injuries – Lost Work Hours April 2013

	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	Year to Date
Division 11	0	0	0	160	160	184	176	168	184	176	88	72	1,368
Division 20	368	344	344	368	352	368	352	240	184	160	176	312	3,568
Division 22	0	0	0	0	80	184	168	192	176	160	168	176	1,304
Division 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	368	344	344	528	592	736	696	600	544	496	432	560	6,240



Rail Vehicle Accidents & Major Incidents

April 2013

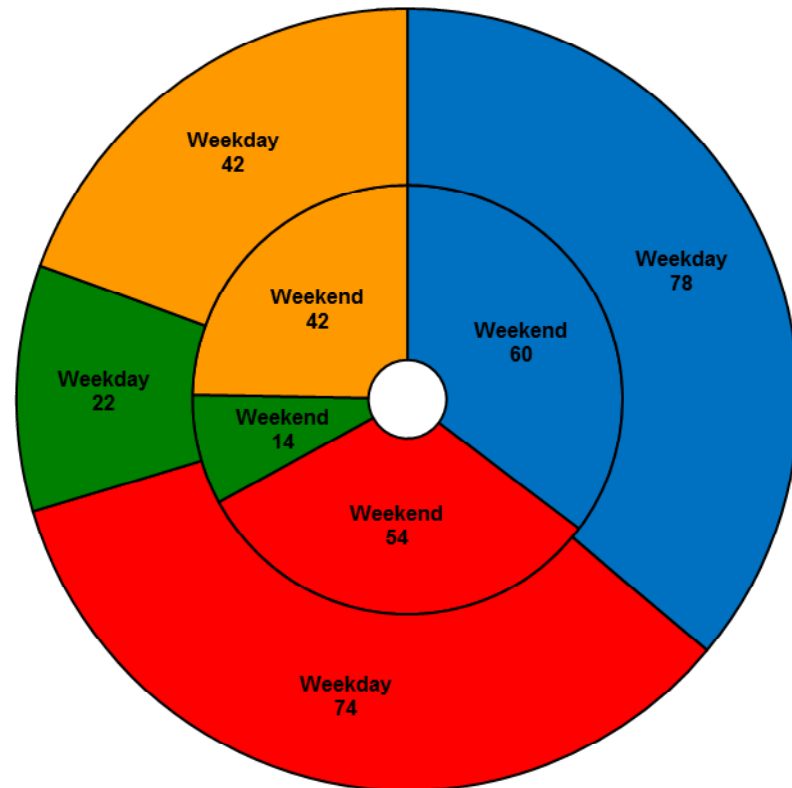
Repair Costs	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	Totals
Blue/Expo Line	\$1,718	\$1,186	\$674	\$8,226	\$4,726	\$1,668	\$494	\$5,262	\$18,740	\$3,288	\$2,959	\$237,017	\$285,958
Red/Purple Line	\$571	\$0	\$0	\$0	\$778	\$0	\$0	\$0	\$2,244	\$0	\$0	\$4,165	\$7,758
Green Line	\$0	\$0	\$120	\$0	\$0	\$0	\$0	\$503	\$202	\$126	\$0	\$0	\$951
Gold Line	\$0	\$752	\$0	\$1,583	\$0	\$0	\$0	\$0	\$176	\$0	\$0	\$0	\$2,511
Totals	\$2,289	\$1,938	\$794	\$9,809	\$5,504	\$1,668	\$494	\$5,765	\$21,362	\$3,414	\$2,959	\$241,182	\$297,178

Rail Vehicle Accident Costs - April 2013				
Metro Blue Line				
Date	Incident #	Problem code	Incident Description	Cost
4/9/13	2307203	Train vs. Object	A 10-71 was reported heading northbound on track 1 at 7th and Metro resulting in train hitting post and wall.	\$233,965.00
4/12/13	2308285	Train vs. Vehicle	A 10-73 was reported at Pacific and 4th Street making an illegal left turn into the right side of train.	\$869.00
4/16/13	2309694	Train vs. Vehicle	A 10-73 was reported at Pacific and 7th Street involving a hit and run.	\$869.00
4/19/13	2310587	Train vs. Vehicle	A 10-73 was reported at Long Beach and 6th Street. A student operator was operating train at the time.	\$1,314.00
				\$237,017.00
Metro Gold Line				
4/2/13	2304984	Train vs. Object	A 10-71 was reported heading southbound on track 2 involving train and plastic barricade.	\$0.00
4/9/13	2306898	Derailement	A 10-75 was reported involving a rail grinder that derailed on track 2 at switch 1B in the SMV interlocking.	\$0.00
				\$0.00
Metro Red Line				
4/9/13	2307240	Train vs. Pedestrian	A 10-72 was reported involving a pedestrian on the AR at Wilshire and Vermont.	\$4,165.00
				\$4,165.00
			GRAND TOTAL	\$241,182.00
(10-71) = Train vs. Object, (10-72) = Train vs. Pedestrian, (10-73) = Train vs. Vehicle (10-74) = Train vs. MTA Vehicle, (10-75) = Derailement				

Service Delivery April 2013

Blue/Expo Line Fleet Size: 92			
<u>Pull Out</u>	<u>Vehicles Required</u>	<u>Average Available</u>	<u>% Up (Down)</u>
Weekday:	78	80	102%
Weekend:	60	68	113%
Late Pullouts: 2 *			
Monthly Mileage: 637,782			
Red/Purple Line Fleet Size: 104			
<u>Pull Out</u>	<u>Vehicles Required</u>	<u>Average Available</u>	<u>% Up (Down)</u>
Weekday:	74	86	116%
Weekend:	54	72	133%
Late Pullouts: 1 *			
Monthly Mileage: 623,190			
Green Line Fleet Size: 29			
<u>Pull Out</u>	<u>Vehicles Required</u>	<u>Average Available</u>	<u>% Up (Down)</u>
Weekday:	22	23	105%
Weekend:	14	18	125%
Late Pullouts: 0 *			
Monthly Mileage: 229,810			
Gold Line Fleet Size: 50			
<u>Pull Out</u>	<u>Vehicles Required</u>	<u>Average Available</u>	<u>% Up (Down)</u>
Weekday:	42	45	107%
Weekend:	42	44	104%
Late Pullouts: 0 *			
Monthly Mileage: 298,446			

* Due to a vehicle -related problem

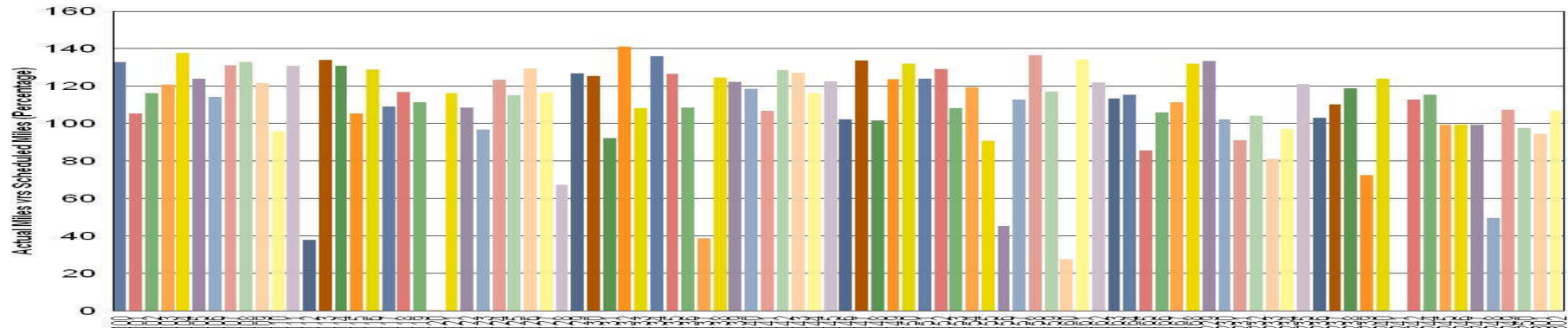


■ Blue/Expo Line ■ Red/Purple Line ■ Green Line ■ Gold Line

Vehicle Utilization

April 2013

Metro Blue/Expo Line Fleet



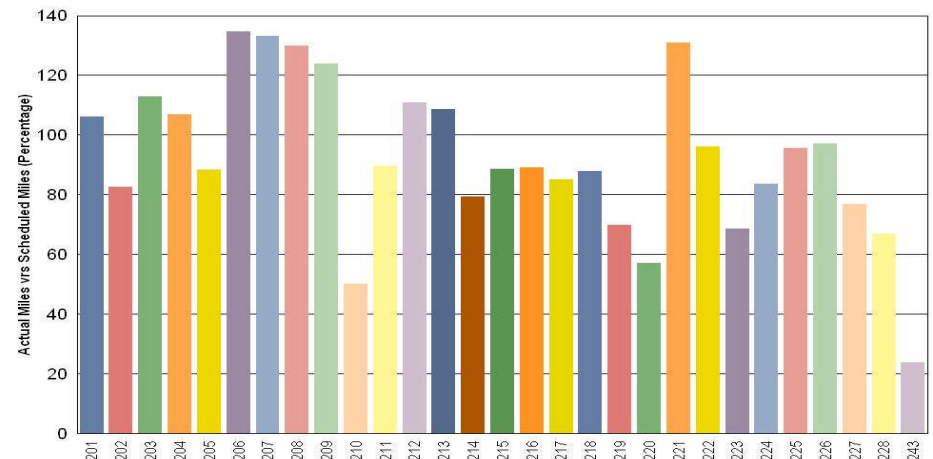
Blue/Expo Lines:

- 112 Vehicle held out of service due to extensive damage related to 10-71 (train vs. object).
- 120 Vehicle held out of service due to repeated failure with self-applying brakes. Staff is working with Engineering.
- 137 Vehicle held out of service due to major accident damage.
- 160 Vehicle held out of service due to interior and exterior paint and body repair. Vehicle has returned to service.
- 241 Vehicle held out of service due to P2000 training. Vehicle has returned to service.

Green Line:

- 243 Vehicle held out of service due to EMI investigation, leaky gearbox, and a 90k PM Inspection.

Metro Green Line



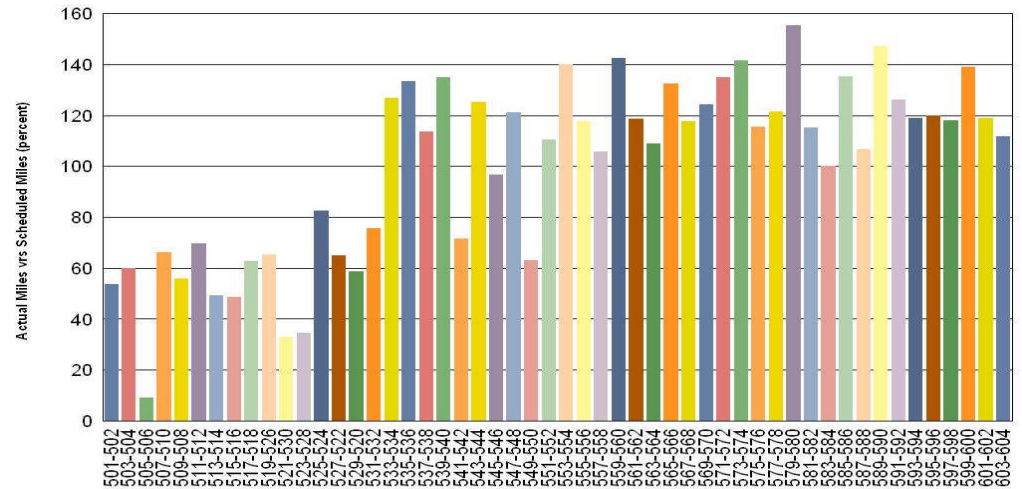
Vehicle Utilization

April 2013

Red/Purple Lines: Explanation for under-used vehicles:

- 505-506** Vehicle held out of service due to low utilization with resistor grid and door modification. Currently awaiting part delivery.
- 521-530** Vehicle held out of service due to low utilization with resistor grid. Currently awaiting part delivery.
- 523-528** Vehicle held out of service due to low utilization with troubleshooting CB1 trip.

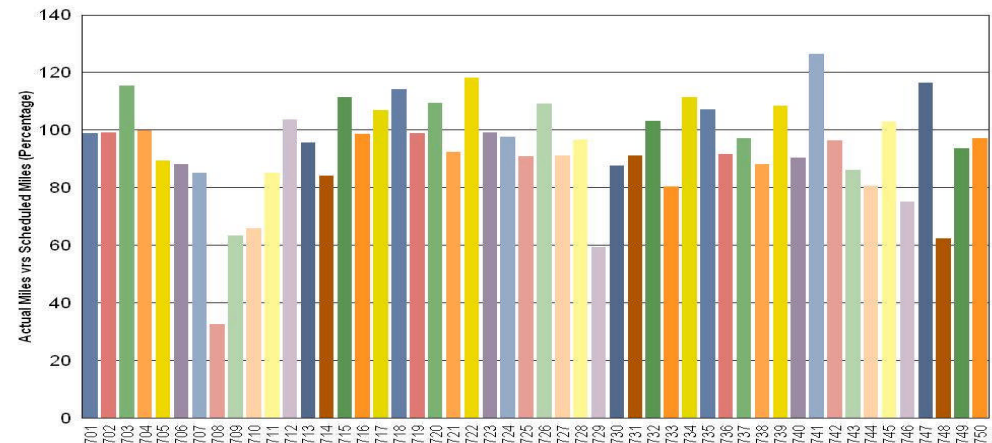
Metro Red/Purple Lines



Gold Line:

- 708** Vehicle held out of service due to a severe high speed coupling malfunction (warranty issue) on the B truck. Currently pending further investigation/resolution. Truck has been swapped and other defective equipment replaced. Target date to restore to service is 4/8/13.

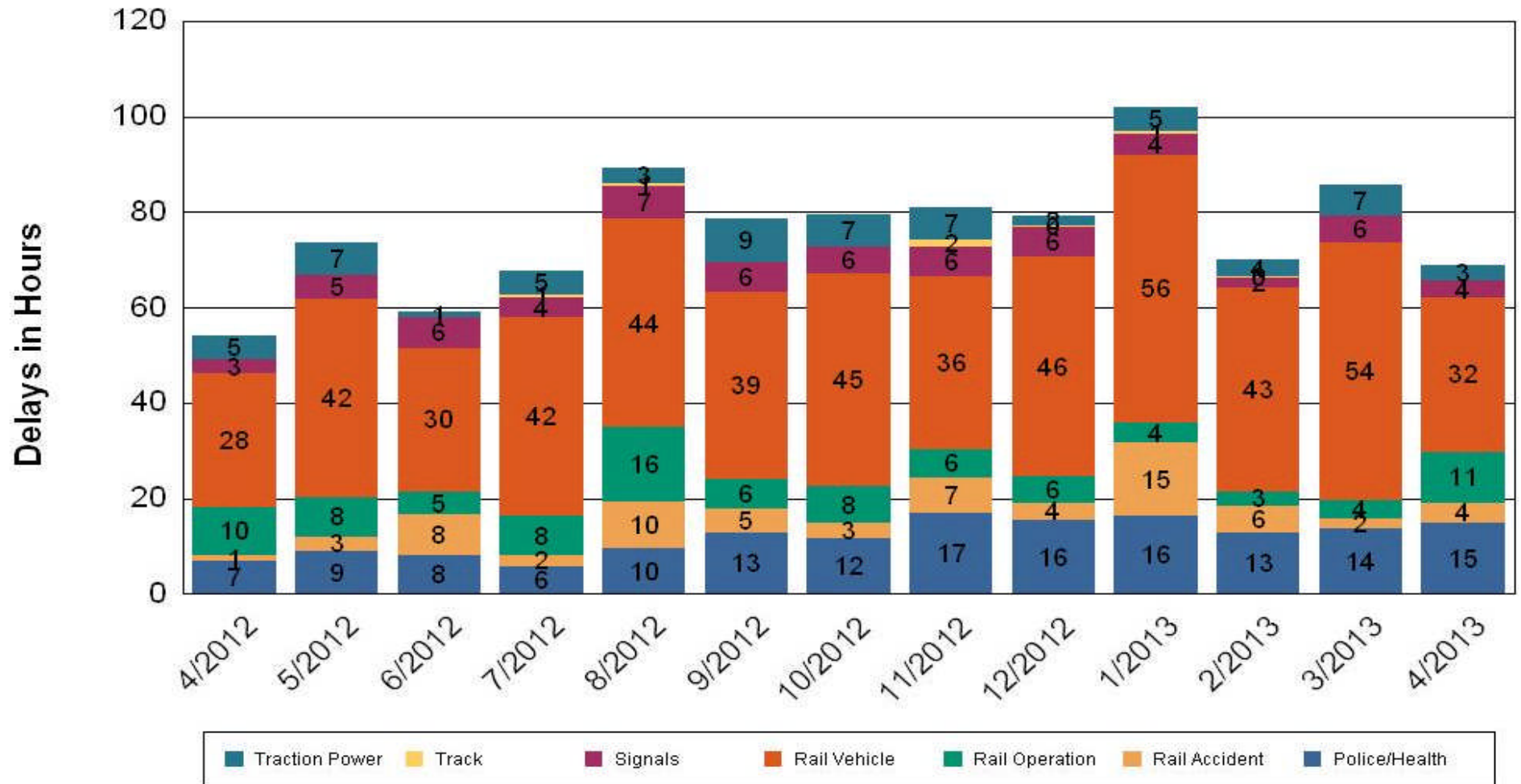
Metro Gold Line



All Train Delay Incidents April 2013

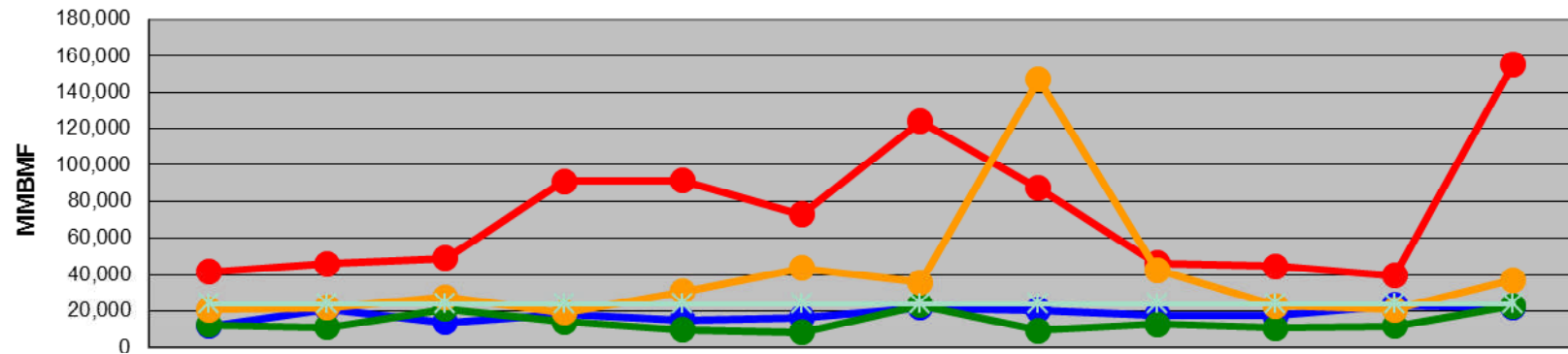
All Train Delays

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



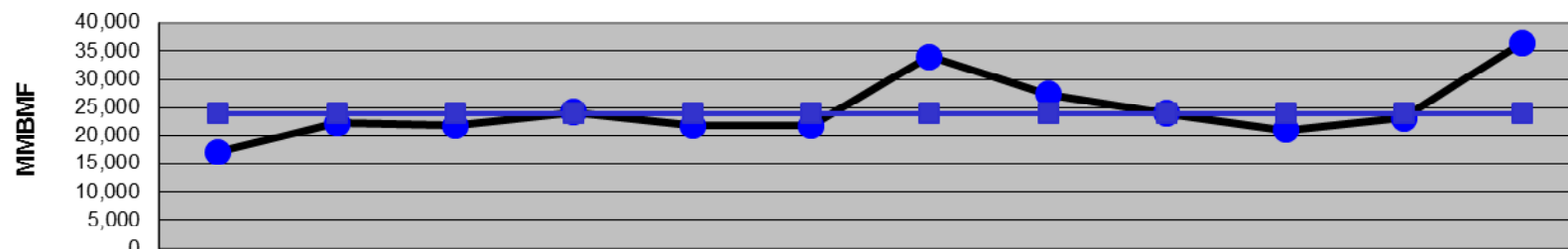
Mean Miles Between Failures (Major) Year to Date

Mean Miles Between Major Failures (12 months)



	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13
Blue/Expo Lines	11,546	21,129	13,559	18,185	14,867	16,391	21,686	20,542	17,876	17,418	23,226	21,992
Red/Purple Lines	41,539	46,006	49,022	91,119	91,340	72,959	123,933	87,167	46,203	44,509	39,694	155,798
Green Line	12,342	10,775	21,266	14,043	9,726	8,243	23,154	9,341	12,485	10,752	11,772	22,981
Gold Line	20,649	21,726	27,641	19,040	30,564	43,461	35,725	147,123	42,687	22,795	20,817	37,306
Goal	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000

Mean Miles Between Major Failures (all)

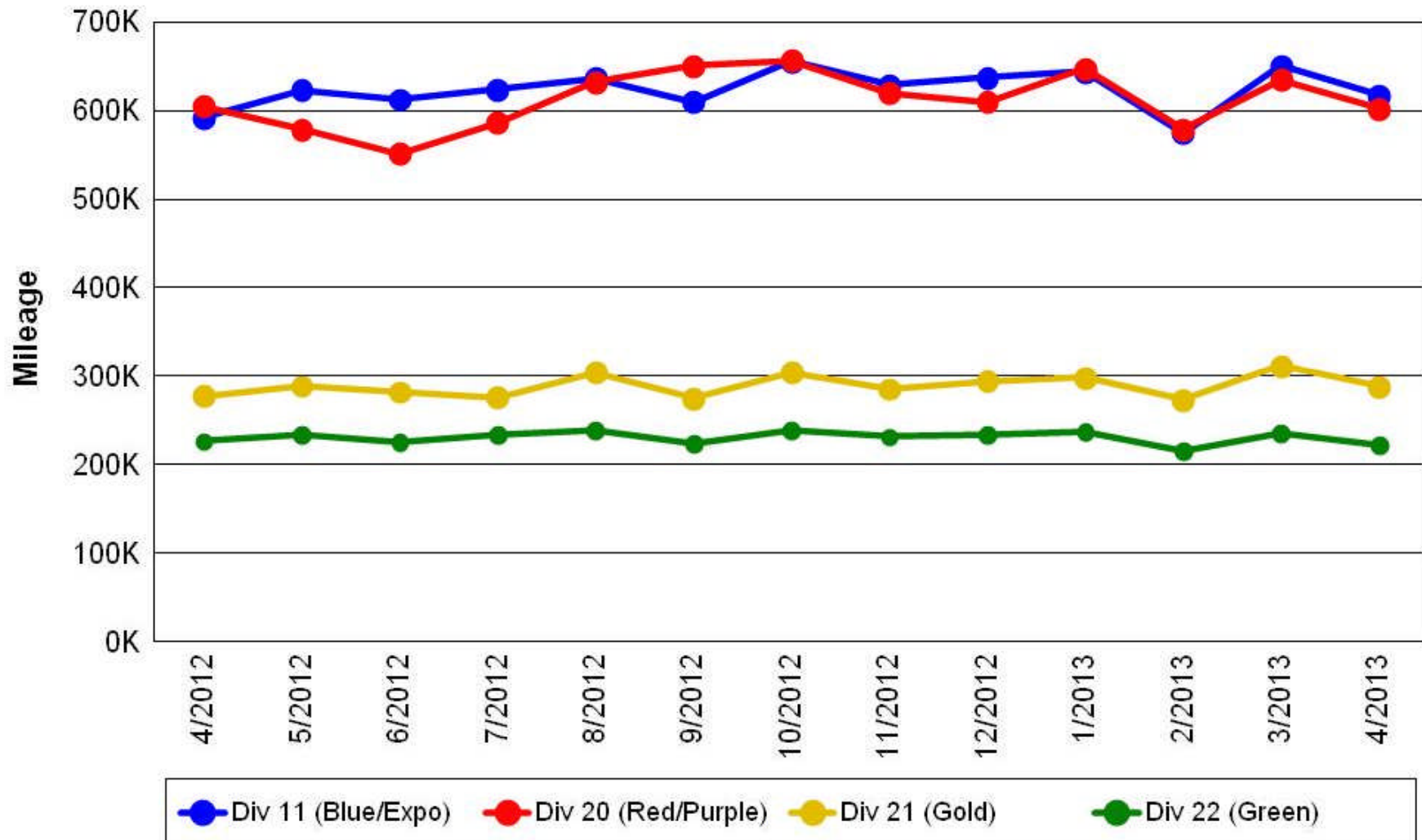


	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13
All Rail	17,115	22,314	21,802	24,236	21,846	21,830	33,960	27,304	24,032	21,051	23,203	36,455
Goal	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000

Mileage Between Data Range (by month)

April 2013

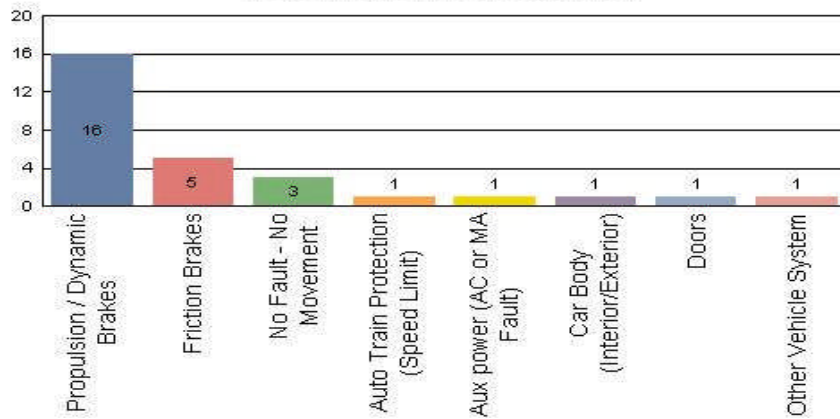
Rail Division Monthly Mileage



Major Incidents April 2013

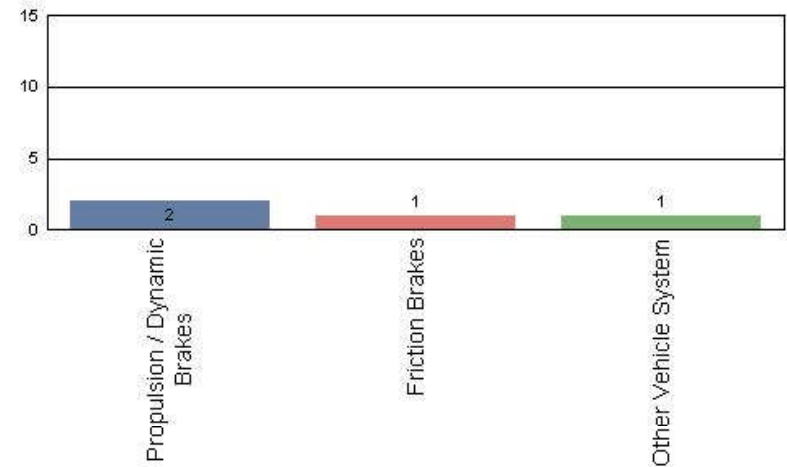
Metro Blue/Expo Line

Top Incident Categories



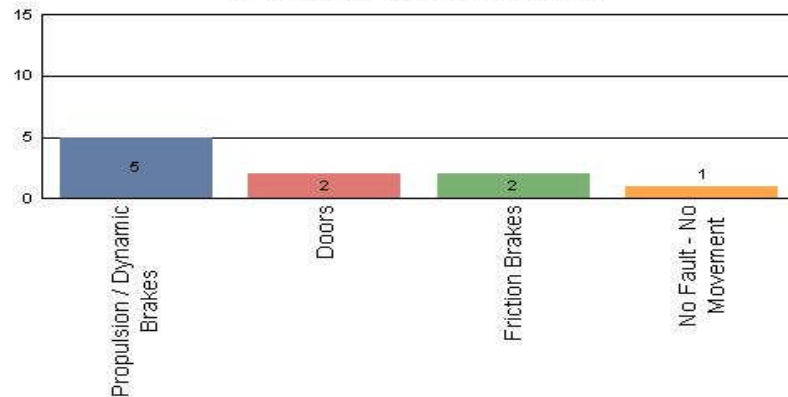
Metro Red/Purple Line

Top Incident Categories



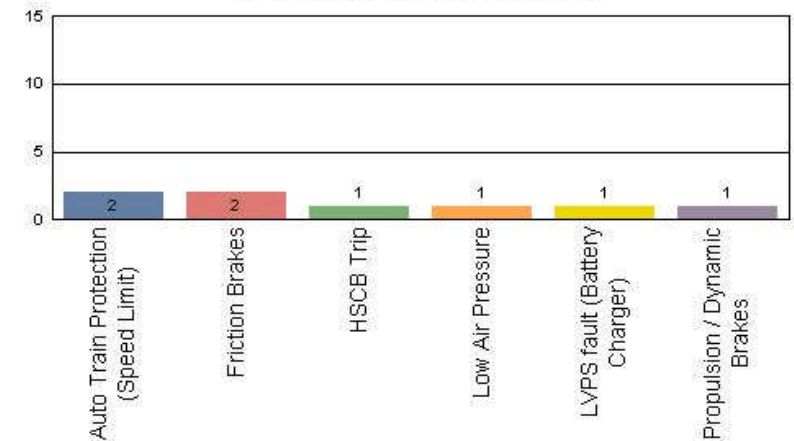
Metro Green Line

Top Incident Categories



Metro Gold Line

Top Incident Categories



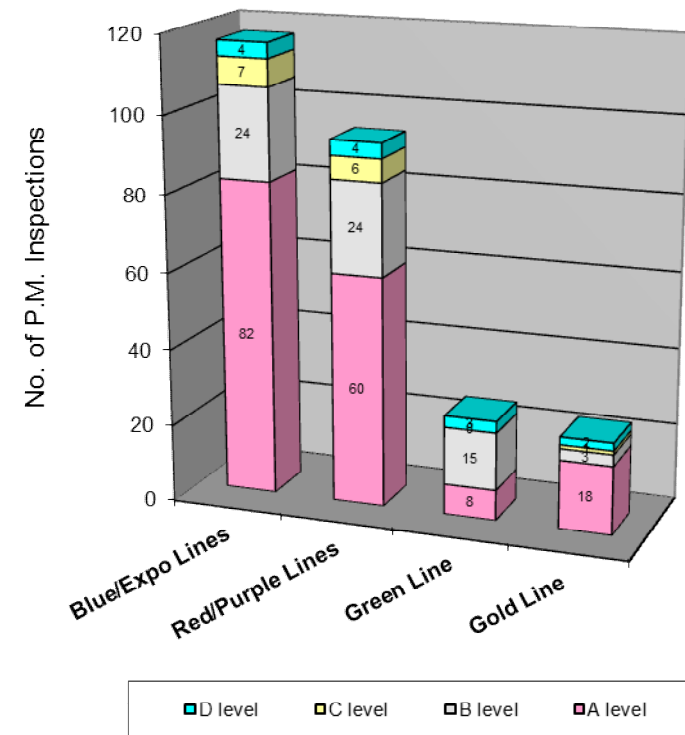
Preventive Maintenance Compliance

April 2013

PM Compliance	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13
Blue/Expo Lines	100%	100%	100%	100%	100%	100%	100%	100%	99%	100%	100%	100%
Red/Purple Lines	100%	100%	100%	98%	100%	100%	100%	100%	100%	100%	100%	100%
Green Line	100%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Gold Line	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

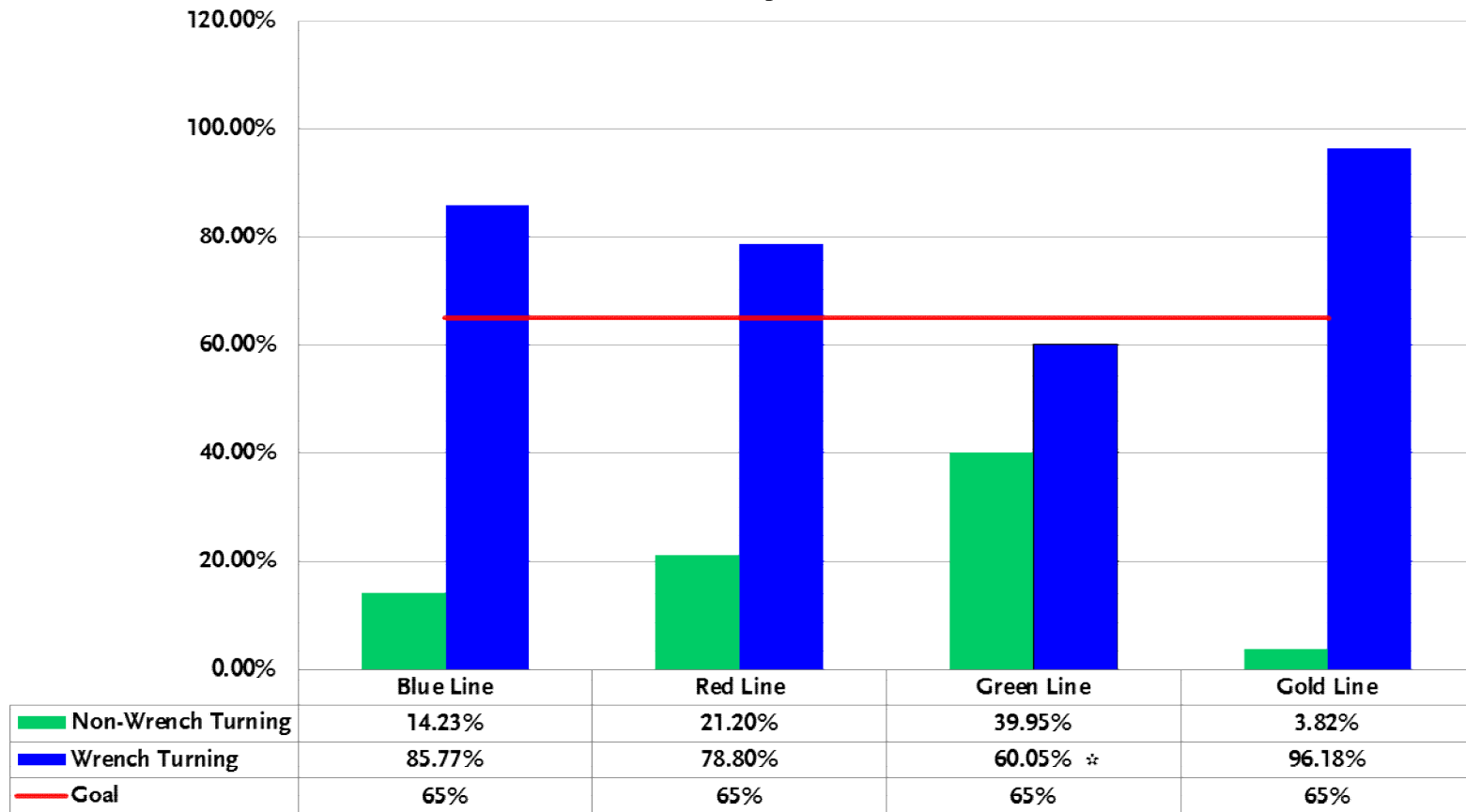
Number of Preventive Maintenance Inspections - April 2013					
Line	A level	B level	C level	D level	Totals
Blue/Expo Lines	82	24	7	4	117
Red/Purple Lines	60	24	6	4	94
Green Line	8	15	0	3	26
Gold Line	18	3	1	2	24
Totals:	168	66	14	13	261

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 Wrench Turning April 2013

RFS - Wrench Turning April 2013



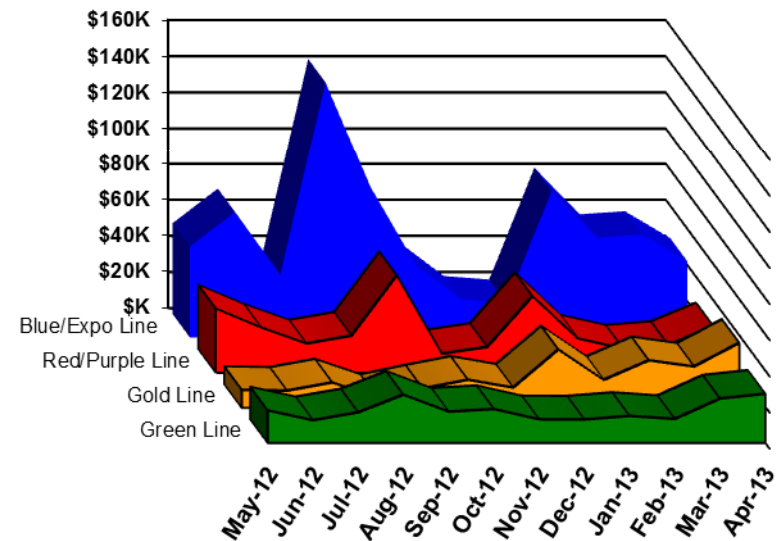
* The Green Line will soon be filling two open supervisor positions, which will no longer require a Leader to act as an "Acting Supervisor."

Vandalism & Graffiti Report

April 2013

	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	Year-to-Date
Blue/Expo Line	\$50K	\$69K	\$35K	\$142K	\$83K	\$40K	\$21K	\$19K	\$81K	\$55K	\$57K	\$42K	\$694K
Red/Purple Line	\$35K	\$25K	\$16K	\$20K	\$54K	\$10K	\$14K	\$42K	\$19K	\$13K	\$15K	\$26K	\$291K
Green Line	\$18K	\$12K	\$17K	\$27K	\$17K	\$19K	\$13K	\$13K	\$15K	\$13K	\$24K	\$27K	\$215K
Gold Line	\$10K	\$9K	\$14K	\$5K	\$11K	\$15K	\$11K	\$32K	\$15K	\$26K	\$23K	\$36K	\$208K
Totals:	\$113K	\$116K	\$82K	\$194K	\$165K	\$84K	\$59K	\$106K	\$130K	\$108K	\$119K	\$131K	\$1,408K

April 2013 Vandalism & Graffiti - All Rail				
	Qty	Labor	Materials	Totals
Windows replaced	47	\$5,922	\$11,093	\$17,015
Vandal Shields	582	\$17,241	\$6,635	\$23,876
Seats Cleaned	695	\$2,755	\$0	\$2,755
Seats Replaced	442	\$13,923	\$15,328	\$29,251
Graffiti removal - other	989	\$24,565	\$10,259	\$34,824
Repainting panels	110	\$9,765	\$13,196	\$22,961
Totals	2,865	\$74,171	\$56,511	\$130,682



Graffiti Pictures April 2013

Blue Line



Green Line



Gold Line

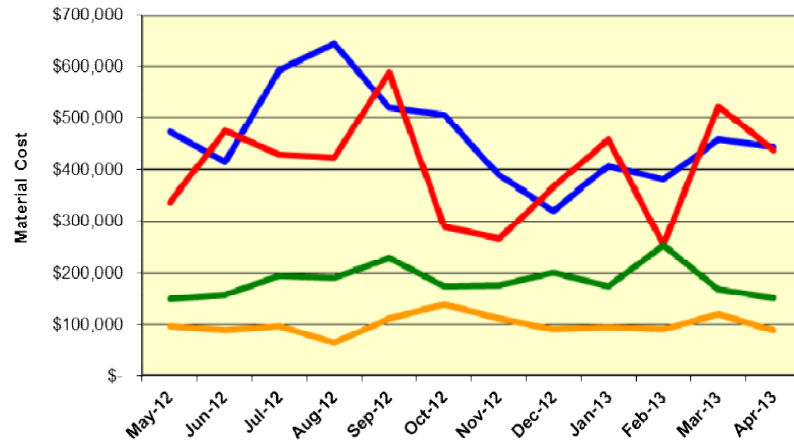


Material and Labor Costs

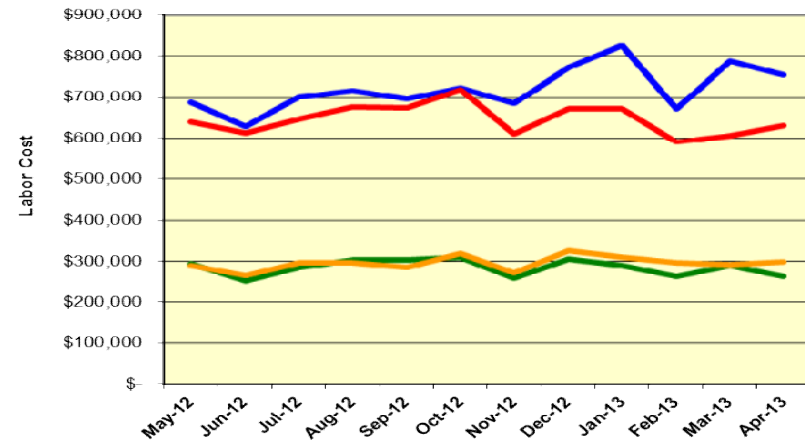
April 2013

MATERIALS	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13
Blue/Expo Lines	\$ 473,281	\$ 414,601	\$ 591,928	\$ 643,006	\$ 520,023	\$ 506,591	\$ 388,758	\$ 320,127	\$ 407,585	\$ 379,796	\$ 457,700	\$ 444,569
Red/Purple Lines	\$ 335,824	\$ 474,908	\$ 428,864	\$ 424,173	\$ 587,362	\$ 289,365	\$ 265,900	\$ 365,489	\$ 458,038	\$ 254,026	\$ 522,856	\$ 438,547
Green Line	\$ 149,660	\$ 157,920	\$ 194,003	\$ 189,811	\$ 230,008	\$ 174,361	\$ 175,923	\$ 200,257	\$ 173,693	\$ 254,286	\$ 166,766	\$ 151,982
Gold Line	\$ 98,407	\$ 88,885	\$ 98,449	\$ 64,112	\$ 112,270	\$ 138,235	\$ 111,198	\$ 90,479	\$ 95,355	\$ 91,890	\$ 120,086	\$ 88,719
Totals	\$ 1,057,172	\$ 1,136,314	\$ 1,313,244	\$ 1,321,102	\$ 1,449,663	\$ 1,108,552	\$ 941,779	\$ 976,352	\$ 1,134,671	\$ 979,998	\$ 1,267,408	\$ 1,123,817

Material Costs



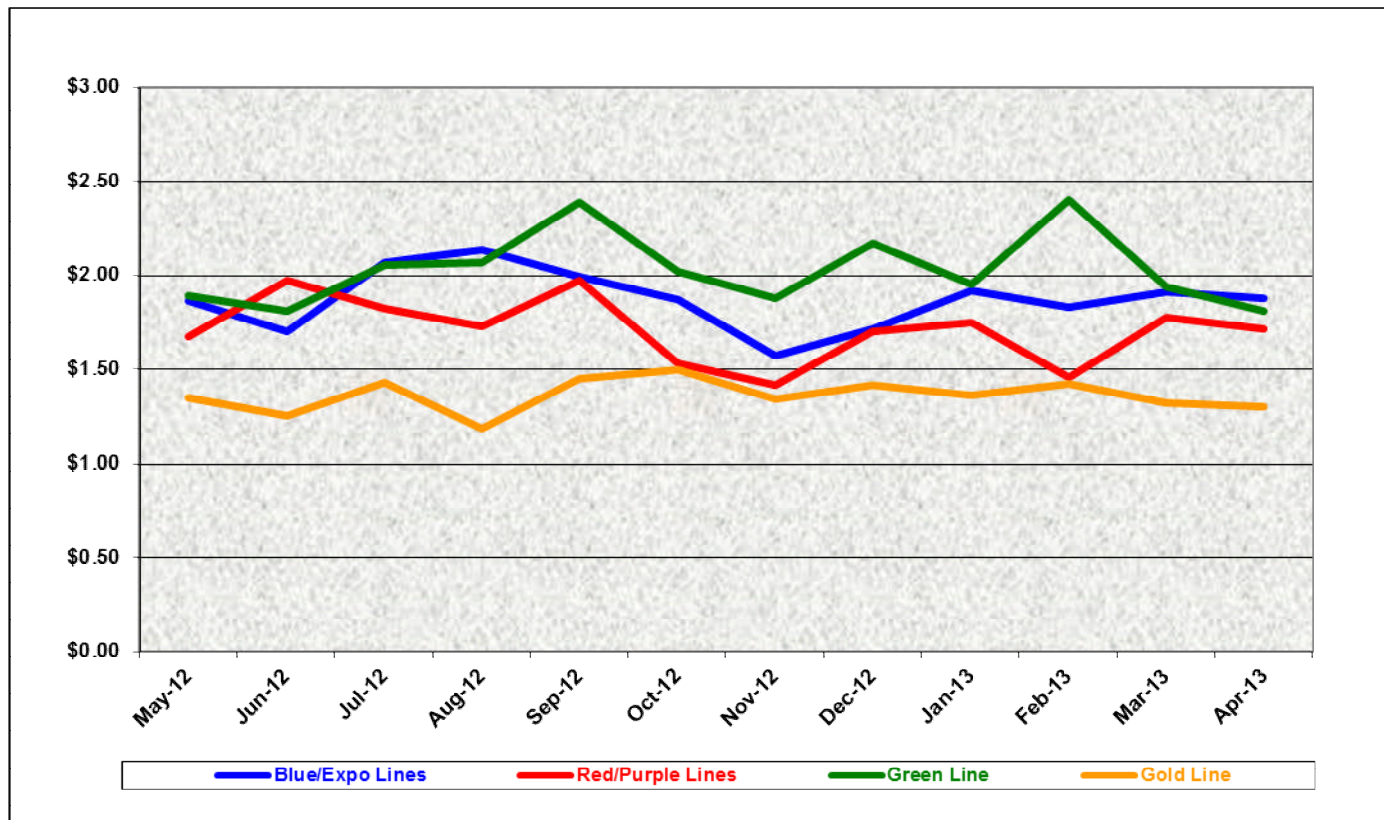
Labor Costs



LABOR	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13
Blue/Expo Lines	\$ 687,897	\$ 628,928	\$ 699,849	\$ 716,987	\$ 695,926	\$ 722,379	\$ 683,896	\$ 772,382	\$ 827,656	\$ 671,298	\$ 788,111	\$ 755,561
Red/Purple Lines	\$ 639,102	\$ 613,032	\$ 645,748	\$ 676,501	\$ 674,192	\$ 718,139	\$ 610,872	\$ 671,039	\$ 671,792	\$ 590,750	\$ 605,903	\$ 631,518
Green Line	\$ 293,492	\$ 251,094	\$ 286,110	\$ 304,066	\$ 304,487	\$ 309,399	\$ 258,637	\$ 306,761	\$ 290,453	\$ 261,863	\$ 289,639	\$ 263,955
Gold Line	\$ 290,375	\$ 264,536	\$ 296,565	\$ 296,078	\$ 286,489	\$ 318,284	\$ 272,259	\$ 326,736	\$ 311,060	\$ 297,422	\$ 292,452	\$ 298,759
Totals	\$1,910,866	\$1,757,590	\$1,928,272	\$1,993,632	\$1,961,094	\$2,068,201	\$1,825,664	\$2,076,918	\$2,100,961	\$1,821,333	\$1,976,105	\$1,949,793

Cost Per Mile April 2013

Cost per mile:	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	Average
Blue/Expo Lines	\$1.86	\$1.70	\$2.07	\$2.14	\$1.99	\$1.87	\$1.57	\$1.72	\$1.92	\$1.83	\$1.92	\$1.88	\$1.87
Red/Purple Lines	\$1.68	\$1.97	\$1.83	\$1.73	\$1.97	\$1.53	\$1.41	\$1.70	\$1.75	\$1.46	\$1.78	\$1.72	\$1.71
Green Line	\$1.89	\$1.81	\$2.05	\$2.07	\$2.39	\$2.02	\$1.88	\$2.17	\$1.96	\$2.40	\$1.94	\$1.81	\$2.03
Gold Line	\$1.34	\$1.25	\$1.43	\$1.18	\$1.45	\$1.50	\$1.34	\$1.42	\$1.36	\$1.42	\$1.32	\$1.30	\$1.36



ATU Absences vs. Overtime

April 2013

ABSENCE TYPE and HOURS	3940 Admin.	3941 Blue	3942 Red	3943 Green	3944 Gold	3947 Expo	Total
AWP-ABSENT W/O PERMISSION	0.00	0.00	0.00	0.00	16.00	0.00	16.00
BER-BEAVEMENT	0.00	56.00	32.00	0.00	0.00	0.00	88.00
CTO-COMPENSATORY TIME OFF	16.00	294.50	600.00	123.15	149.98	2.00	1,185.63
CUT-EMPLOYEE LEAVES EARLY	1.50	0.50	0.00	1.00	0.50	0.00	3.50
CVA - CASUAL VACATION	8.00	44.00	412.00	8.00	148.00	0.00	620.00
DSL-DISABILITY LEAVE/LONG	0.00	752.00	104.00	312.00	176.00	0.00	1,344.00
EFH-EMG. FLOAT HOL.	0.00	0.00	56.00	8.00	8.00	0.00	72.00
ETO-EXCUSED TIME OFF	15.92	55.50	40.67	8.50	45.41	2.00	168.00
FMI-FAM IND INJURY	0.00	144.00	24.00	176.00	0.00	0.00	344.00
FML-FAMILY CARE LEAVE	40.00	517.17	384.92	312.00	176.00	0.00	1,430.09
FMS-FAMILY LEAVE SICK	40.00	120.00	158.37	112.40	83.60	0.00	514.37
HLF-HOLIDAY FLOATING	24.00	152.00	240.00	104.00	56.00	8.00	584.00
II-INDUSTRIAL INJURY	0.00	64.00	168.00	176.00	0.00	0.00	408.00
IIR-INDUS INJURY-REOCCUR.	0.00	0.00	144.00	0.00	0.00	0.00	144.00
JUR-JURY DUTY	0.00	8.00	8.00	0.00	0.00	0.00	16.00
LC1-LABOR CODE 233	0.00	296.00	202.17	80.00	248.00	8.00	834.17
LCI-OCPIP/LONGTRM INJ LEAVE	0.00	8.00	0.00	0.00	0.00	0.00	8.00
OWP-OFF WITH PERMISSION	0.00	8.00	0.00	0.00	16.00	0.00	24.00
RTO-REQUESTED TIME OFF-NO PA	0.00	24.50	4.60	81.50	16.00	0.00	126.60
SCK-SICK PAY	0.00	144.00	231.00	104.00	88.00	0.00	567.00
SCW-SICK WITHOUT PAY	0.00	88.00	5.00	160.00	16.00	0.00	269.00
SPN-SCHOOL PARTNER NOT PAID	0.00	0.00	0.00	0.88	16.00	0.00	16.88
TAR-TARDY	0.00	0.35	2.11	1.18	0.18	0.28	4.10
UB-UNION BUSINESS	0.00	5.00	8.00	8.00	0.00	0.00	21.00
UNP-UNION BUS PAID	0.00	0.00	0.00	0.00	16.00	0.00	16.00
VAC-VACATION	0.00	548.18	476.00	188.00	120.00	0.00	1,332.18
VAS-VACATION WHILE SICK	0.00	0.00	108.00	0.00	0.00	0.00	108.00
Total Absence Hours	145	3,330	3,409	1,965	1,396	20	10,265
ATU Number of Work Force (assigned)	7	122	108	46	48	6	337
Full Work Force hours/month	1,213	21,143	18,716	7,972	8,318	1,040	58,402
Absence as a % of Work Force	12%	16%	18%	25%	17%	2%	18%
OVERTIME TYPE and HOURS	3940	3941	3942	3943	3944	3947	Total
CTB-COMPENSATORY TIME TO BANK	40	119	69	33	65	12	339
OTP-PREM OVERTIME	431	5462	4838	1752	1267	218	13969
WLO-Worked Lunch Overtime	55	136	167	119	90	8	575
Total	526	5717	5075	1904	1422	238	14882
Overtime as a % of Work Force	43%	27%	27%	24%	17%	23%	25%
UNCOVERED ABSENCES	3940	3941	3942	3943	3944	3947	Total
Absences FTE	1	19	20	11	8	0	59
OTP FTE	3	33	29	11	8	1	86
FTE Difference	-2	-14	-9	0	0	-1	-27

Note: Overtime also covers other required activities.

Rail Vehicle Engineering Project Summary

April 2013

Preparation of Engineering Technical Specifications	Tracking #	Status
Red Line AC Gear Box (Rev. 0)	A650/TS/026	FB 12-0024, Low bidder IM&E
MBL Battery Set	P865/P2020/TS/069	Draft in review
Vital Relay Calibration P865/P2020	Sole Source	In Process by Procurement
Windows glass and rubber glazing specification	P865-P2020/TS-066	Single bid - NASG
Friction Brake Kit Less Air Compressor Overhaul	P2000/TS/035 Rev 0	Released to Procurement for bid - SS was signed - Awarded to Wabtec
A650 Battery Specification	A650/TS/39	Released to Procurement for bid - Hoppeke delivered 1st article for testing and approval.
Powered Axle Overhaul SOW	P865-P2020/TS/063 and 052	In Process by Procurement
Seat Insert	P865-P2020/TS/62	Released to Procurement - Awarded to Sardo
Red Line DC Gear Box	P650/TS/040 Rev. 0	Released to Procurement for bid - Dealing with Flender as OEM. Competitive bid is In process by Procurement. Both bids are on Hold.
Red Line DC Gear Box - New gearbox design	A650/TS/044 Rev. 0	Final review
Vandal Shield for all lines	A650-P865-P2000-P2550/TS/012	Released to Procurement- Contract awarded
Aux power supply equipment (APSE) - Static Inverter	P865-P2020/TS/065 Rev. 0 [2 Parts]	In Process by Procurement - bid extended to 06/04/13
Tire kit specification	P865-P2020/TS/064	FB-13-0043 due on 06/25/13
Tire kit specification	P2000/TS/018	FB-13-0043 due on 06/25/13
Red Line (Base Buy) DC Traction Motor	P650/TS/041	Released to Procurement - First article from HMI is required for vendor qualification and approval before releasing the contract.
MBL HVAC Compressor	P865/P2020/TS/067 Rev. 0	Released to Procurement - Transcold is the low bidder
Head Sign LED	P2000/TS/xx	Draft in process
Chevron springs	P865/P2020/TS/068 Rev. 0	Released to Procurement for bid - IFB 13-0015 In Process by Procurement -GMT is the low bidder. Required 1st article for testing and approval.
Filter-Fresh Air	P2550/TS/004	In review process
Filter-Return Air	P2550/TS/005	In review process
Chopper Air Filter	P865-P2020/TS/050	Draft in review
Motor Alternator Filter	P865-P2020/TS/051	Draft in review
Inverter Air Filter	A650/TS/036	Draft in review
Pantograph	P2550/TS/006	Draft in review
General - All Lines		Status
Roadway Worker Protection		CPUC/Installing ProTran1 Device-P865/P2020/P2000 completed, A650/P2550 in installation
Fleet Failure Analysis		CH2M Hill - LTK
New Radios installed to replace old radios		Meeting 3/7/2012-Contract awarded, MBL and P2000 completed. A650 in installation process P2550 in prototype completed.
Bike Space		P2000/P2550/A650 Fleet modification completed.
St. Louis LRV		Testing flooring for fire rating - investigating computability.
Proposed Spread Spectrum Frequency Hopping technology for vehicle door control safety system all lines.		Consider Protran system (FCC15 passed) as the first prototype to try. Work in progress to consider system design, test and installation. Estimate to be developed for installation costs for Project.
P2550 & P2000 OCS & EMI measurements Gold, Green, Blue lines		Final Test Report
EMI and OCS voltage testing on all LRV		Completed at AW0 on all lines except EXPO. No level 2 or 3 EMI or overvoltage seen.
P2000 Overhaul Program		Status
Mapping mainline		Conducted mapping the entire line in 2 weeks for ATP/ATO/TWC - Correction made
Master Controller - Bombardier Refurbish		Ongoing Program
RSS and EOSS Bundle Cables/Connectors		In Progress - Glenair
TWC Calibration procedure.		TWC calibration procedures completed. Issued and Training completed at Division.
Speed Sensors		Testing new speed sensors from Smith System
Friction Brake failure investigation		Metro technical team with Wabtec (OEM) ongoing investigation.
Coupler Overhaul		In Progress - Spec in developing process for fleet overhaul.
Bombardier Engineering Team visit and provide OEM support on Speed Sensor, EMI, MC...and other issues		In Progress
Prototype "smart" automatic sanding circuit on P2000 vehicle.		In Progress
P865/P2020 Program		Status
Remove the remotely reset CB1 Breaker		Fleet modification completed.
G' force measurement on Transponder installed on P865/P2020		H&K installed "G" sensor on transponder and collected data for analysis - 03/08/12. New car body mounted bracket were tested and completed fleet modification. New antennas are in installation progress.
Under seat - No motion relays		ABB Prototype installed on 07/24/12 for one month test period. Test was successful. In process of procuring kits.
Replace air compressor DC motor with AC motor		Knorr prototype in Modifying 1 unit is received - Scheduling Knorr field visit to install and test on the car.
ATP Antenna investigation		Survey 100% of the fleet - Recommend to replace all ATP antenna. Installed 2 each, new antennas on car 129 and 160. Data on 160 loop test was too high for series old new installation. ALSTOM did not release any antenna schematic or testing procedures.
Cardan Failure Investigation		Lab testing failed components and evaluate those in service - Kar's Lab



Rail Vehicle Engineering Project Summary (cont'd)

April 2013

A650 Overhaul Program		Status
Investigate car 505/506		Static test completed, dynamic yard test completed, mainline dynamic test scheduled the week of 12/10.
HPT Upgrade		Wabtec Proposal received. NTP issued 08/08/12. One car set prototype in testing. First delivery of 16 units scheduled for 02/22/13.
ABI New Traction Motor Mount		ABI for Fleet Modification in progress. A total of seventy seven (94) trucks were completed.
Friction Brake Kit Overhaul		Overhaul program in place - Wabtec
Ribbed Rubber Flooring PRF		Dealing with OEM - PRF. Delivery schedule by end of May.
Door Operator Gearbox and Rollers Overhaul		In Progress - Buying kits from Vapor Stone to overhaul GB and motor in house.
H-4 electronic units		Unit upgrade - Fleet issues (Wabtec) to provide new unit proposal.
Base Buy DC fleet investigation		LJ-CH2M and engineering addressing PECE testing, Capacitors replacement, and modifying A17-A22-A23 boards. Field power supply calibration completed. PECE test procedure. Replacing all system capacitors.
HVAC Evaporator AC motor/Inverter		Testing 1st article from Vapor Stone on one car. Spec in development for Procurement.
Traction motor Blower- AC motor/Inverter		Testing 1st article from ATS on one car. Spec in development for Procurement.
P2550		Status
Vehicle Acceptance		Fifty cars have been Final Accepted.
3P Flip Up Seat Finger Guard		Submitted SS to Procurement - Testori - 1st prototype received and requires modification.
Find alternative Vendor for Reverse Engineer PCB Boards P2550		In Progress
Compressor Desiccant Material		Prototype Canister fitting manufactured, to be fitted on 04/02/13
Rubber Boots (High Voltage)		In Progress - Vulcanite. Bought from OEM through A&E Telecom.
Cyclope light and Destination Sign Glass		In Progress - NASG
Ground Brush Schunk (Lamellar Seal failure investigation)		Awaiting ABI/Schunk final update. ABI/Schunk recommended to remove all Lamellar seals, Metro requested an FMI.
HVAC investigation		Water drain and smoking filter issues - Dealing with Thermoking and ABI. TK performing 3 FMI across the fleet. SST filter cartridge by CMF in production.
Lateral shock absorber		Investigating the failure of the resilient bushing. ABI will change the Gimo to ZF type on the entire fleet.
EMI/EMC on AM Broadband (540KHz-1610KHz)		Research on instrumentation that can capture harmonics up to AM Broadband.
TWC Testing		Investigate TWC performance issue on B end of Vehicle. LTK to issue final report of findings to date.
Expo		Status
P2000 Couple/un-couple issues		Investigation completed - Test was successful - Fleet modification in process.
Mapping entire MBL and Expo line		Mapped entire MBL and Expo line ATP/ATO/Line voltage/ track signals.
Junction of Blue line and Expo line Testing - ATP		Testing indicated signal track problem at Culver City. Wayside are recertify track circuits. Testing completed on 10/18/12 indicated track circuit installation problem. GE investigating. Wayside replaced the transponder, fine tuning take place 02/14/13.
Loss of Cab signal, speed code 45 mph. Support GE, B&C, Wayside to resolve problems at La Cienega Station Expo line		In Progress to follow up, Update Project: GE replaced New Impedance Bond and verify that 90% of Blue line had been resolved. Repair tested on 03/06/13 - failed test. No flips at 35 MPH however flips at 45 MPH. Report written Expo test report findings 030613
35 Cab Flips @ Culver City Platform and La Cienega Interlocking		Coordinate with Wayside to resolve the problems. GE vendor get involved to resolve a system design problem on E2C. (diode vs. no diode) Latest updated from BNC: No Diode for EXPO. Awaiting GE&BNC completion to finalize this issue. Repair tested on 03/06/13 - failed test. No flips at 35 MPH however flips at 45 MPH. Report written Expo test report findings 030613.
45mph Loss of Cab @ Culver City Platform		B&C installed new software and readjust the code Track CKT but it did not resolve the problem. Engineering supported the effort by providing the 45mph chart recorder at the site. We also provided the 45mph speed code charted from the Gold line to Michael Gifford for further analysis.
Support B&C by testing car on La Cienega		B&C Engineer and Wayside will be on site to adjust cab signals.



P2550 Vehicle Acceptance Program

April 2013

Vehicle Status Update:

- Project staff working with AB to close out open items including deliverable documentation.
- AB performing HVAC modification. All 50 cars completed.

Engineering Activities Update:

- Event recorder: 46 cars are completed, warranty parts needed for remaining 4 cars. The final training was provided the week of April 15th.
- ATP/TWC Configuration: Vendor test report for issues with TWC change order. A-STS to continue with resolving issues and perform qualification of the system in June.
- Engineering issues regarding warranty items are being addressed.

Project Management:

- Contract spares continue to be delivered to Metro and most parts needed for day-to-day maintenance have been received. Critical parts needed for heavy repairs are beginning to arrive including traction motors.
- Director level project meeting on technical and commercial items held April 15th.
- Daily and bi-weekly meetings are scheduled with contractor management to address project issues.

QA-Warranty Program Projects Summary

April 2013

QA-WARRANTY ACTIVITIES

- On-Going, P2550 parts tracking: Contract Spares, Capital Spares, Metro Loaned Parts status to ABI
- On-Going, Division Warranty Parts Claims Processing
- P2550 Fleet High Speed Coupling failure investigation (Action pending ABI)
- P2550 Shock Absorber fleet failure declared, ABI will replace 336 lateral shock absorbers under warranty conditions.
- P2550 (Lamellar Seal) Truck Resilient Pin Bushing fleet failure declared (Action pending ABI)
- A650 Base Buy & Option Car Fleet Warranty Truck Frame Mod Campaign (109 of 216 Trucks modified to date). MRL Warranty Cost Avoidance savings accrued to date \$810,000.
- On-Going, Management's Special Interest Phase-2 Supplemental Inspections, MBL & MGL P2000 Fleet 7 of 52 cars completed
- QA PMI Audits, Spot Checks, Surprise/Unannounced Audits performed (6)
- RFS FAI's or equipment inspection/failure investigations (4)
- On-Going Warranty-QA interest oversight & tracking: Overhauls / Mod Programs, (A650/P2000/P2020/865/P2550) Propulsion System, Master Controllers, Capacitor Banks, Air Compressors, Aux Power, Couplers, Gearboxes, Articulation Diaphragms, Friction Brakes, HPT's, Brake Resistor Grids, T/M's, MA's, HVAC, Doors, A/C Motors – (Blowers & Evaporators)

RFS Instruction Department Activities

April 2013

Training classes completed during the month of April 2013

Description	Course Hours	Student Count	Training Hours
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Blue & Expo Line Training - (P865/2020 & P2000 LRV):

RFS SIEMENS 2000 GE HARMON ATP	32	9	288
RFS SIEMENS 2000 CARBODY	24	9	216
RFS SIEMENS 2000 VEHICLE SYSTEMS	16	9	144

Total Blue Line Training (Hours): 648

Red Line Training (Breda A650 HRV):

RFS BRED A 650 INTERGATED TROUBLESHOOTING	24	7	168
RFS BRED A 650 PREVNT MAINT INSP	40	7	280
RFS BRED A 650 APSE	8	7	56

Total Red Line Training (Hours): 504

Green Line Training (P2000 LRVs):

RFS SIEMENS MAINLINE DUTY, DEAD TOW AND VEHICLE REC	16	8	128
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Total Green Line Training (Hours): 128

Gold Line Training (P2550 LRVs):

RFS ANSALDOBREDA 2550 A.T.P. & T.W.C.	32	2	64
RFS ANSALDOBREDA 2550 EVENT RECORDER	16	4	64
RFS ANSALDOBREDA 2550 COUPLER	12	2	24
RFS ANSALDOBREDA 2550 LIGHTING	12	2	24

Total Gold Line Training (Hours): 176

Total RFS Instruction for the month of April 2013 (Hours): 1,456

Other Instruction Activities

RFS SIEMENS MAINLINE DUTY, DEAD TOW AND VEHICLE RECOVERY (HANDS ON) Preparation	40
P2000 Vehicle Course Preparation	128
P2550 Vehicle Course Preparation	40
Train-the-Trainer class at LATTC	80
Red Line Engineering Support	40

Total Other Instruction Activities 328.0

Core Vehicle Training Completed: BLUE RED GREEN GOLD

Percentage of core vehicle training complete: 74.2% 96.8% 80.6% 82.5%

Siemens P2000 training complete: 46.1% N/A N/A N/A

Average Specialist Rail Experience Level in Years: 11.3 10.3 9.4 9.5

Core Training Completed

