



Customer Services, Operations, and Safety Committee

Board Information Item III

May 8, 2008

Operational Performance

**Washington Metropolitan Area Transportation Authority
Board Action/Information Summary**

Action
 Information

MEAD Number:

Resolution:
 Yes No

PURPOSE

To provide the Committee with monthly operational highlights and system performance trends for FY08.

DESCRIPTION

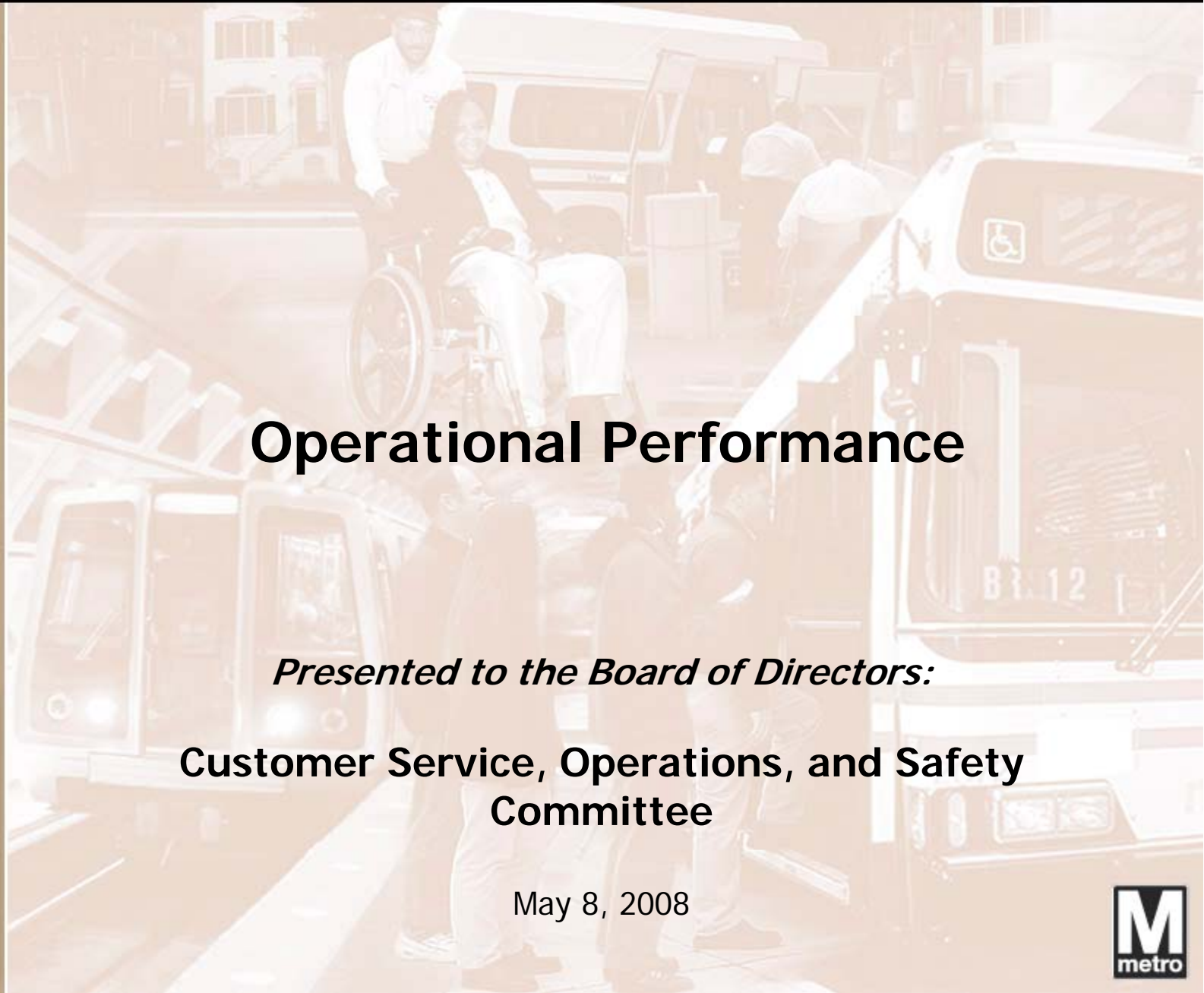
Information contains operational highlights that have occurred during the first nine months of FY08 in the areas of on-time performance and reliability for Metrorail, Metrobus, MetroAccess and Vertical Transportation. Per Board request information is provided for the 12 elevators and escalators with the most failures during the past 90 days along with failure details.

FUNDING IMPACT

None

RECOMMENDATION

None



Operational Performance

Presented to the Board of Directors:

**Customer Service, Operations, and Safety
Committee**

May 8, 2008

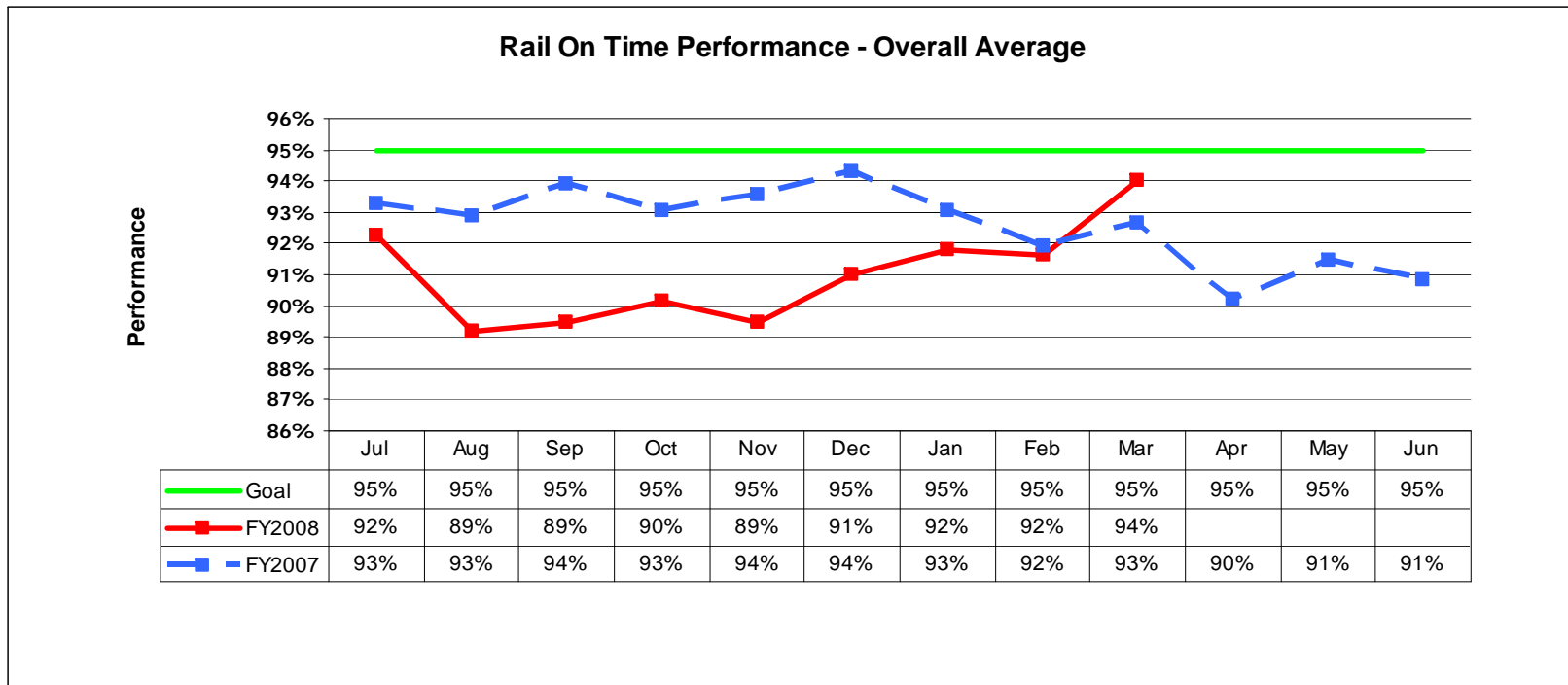




Rail On-Time Performance Summary

DEFINITION – Measured during peak service (morning, evening), identifying percentage of trains on each line **end-to-end** within a 2 minute headway deviation and measured mid day and late night within a 50% headway deviation. This measures how well we are providing service.

CALCULATION – (Number of Metrorail station arrivals – number of headways with >2 minute deviation or 50% headway deviation) / number of Metrorail station arrivals = Metrorail On Time Performance End to End.

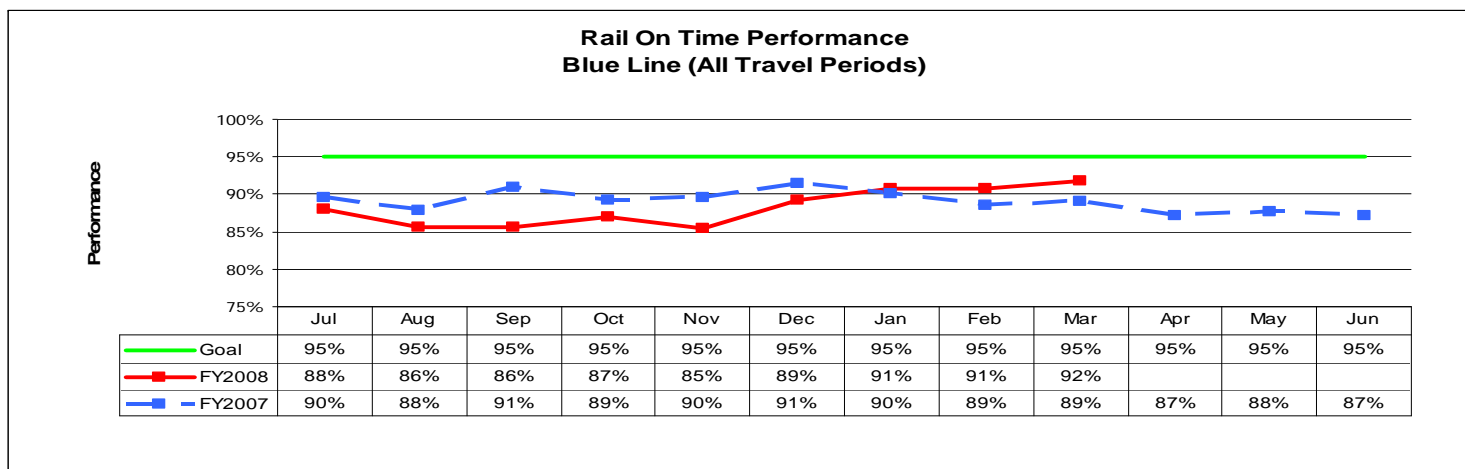
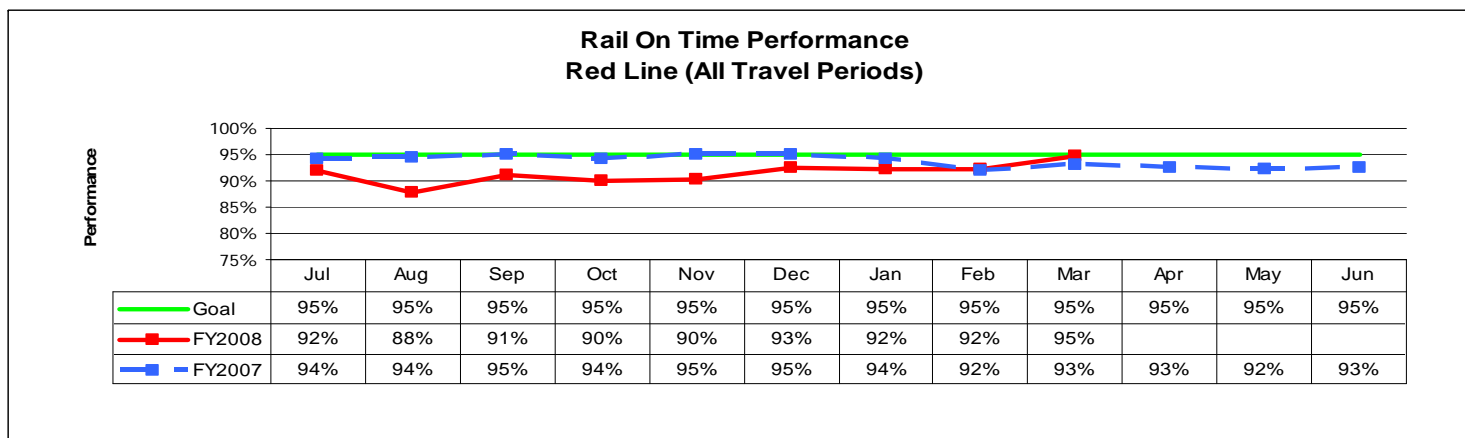




Rail On-Time Performance Summary

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CALCULATION – (Number of Metrorail station arrivals – number of headways with >2 minute deviation or 50% headway deviation) / number of Metrorail station arrivals = Metrorail On Time Performance End to End.





Rail On-Time Performance Summary



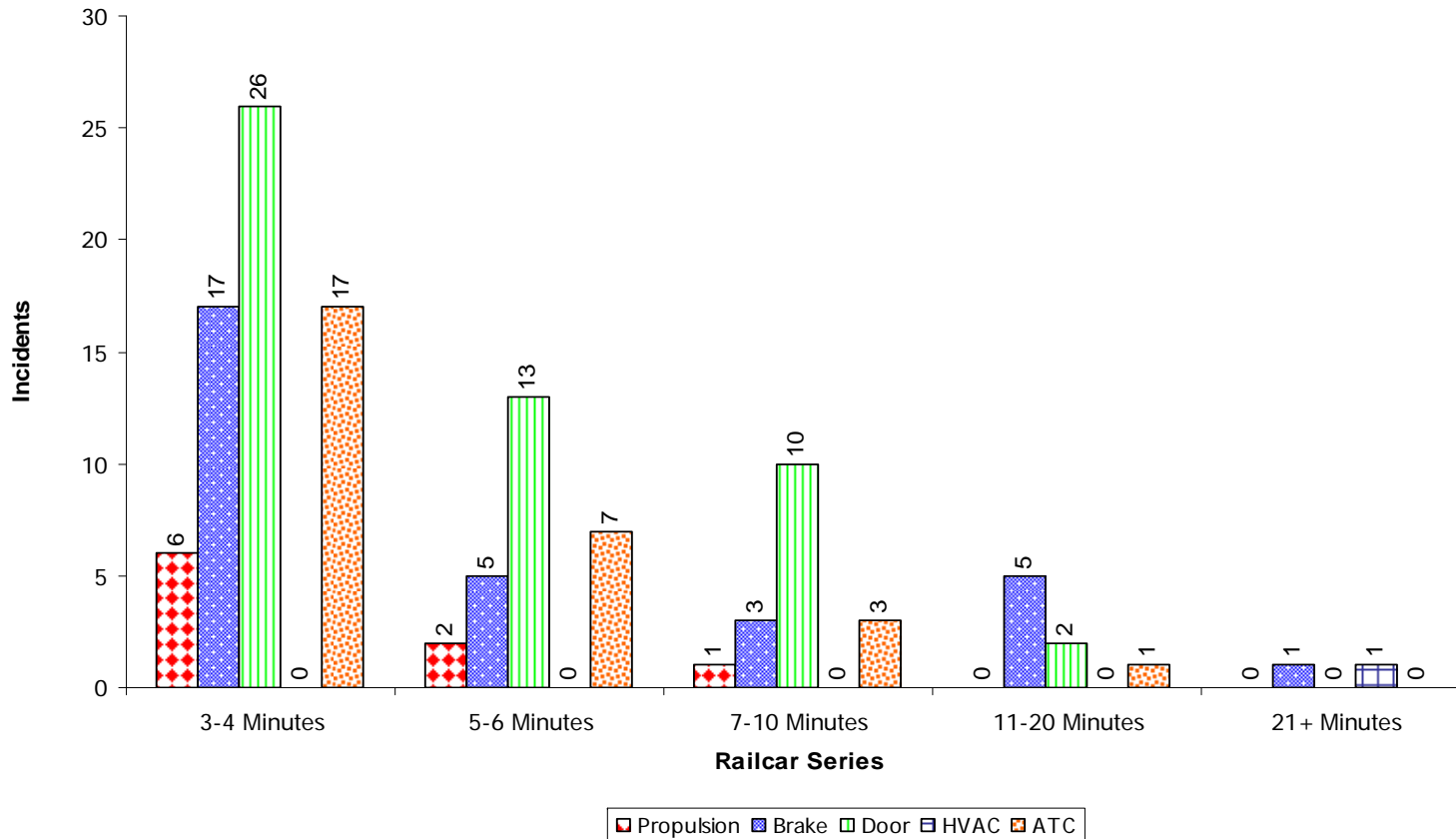


Rail Car Failures by Delay Time

DEFINITION – Delay in minutes that resulted from railcar subsystem component failures.

CALCULATION – Rail car subsystem failures grouped by number of minutes of the delay.

**Railcar Failures By Delay Time
March 2008**

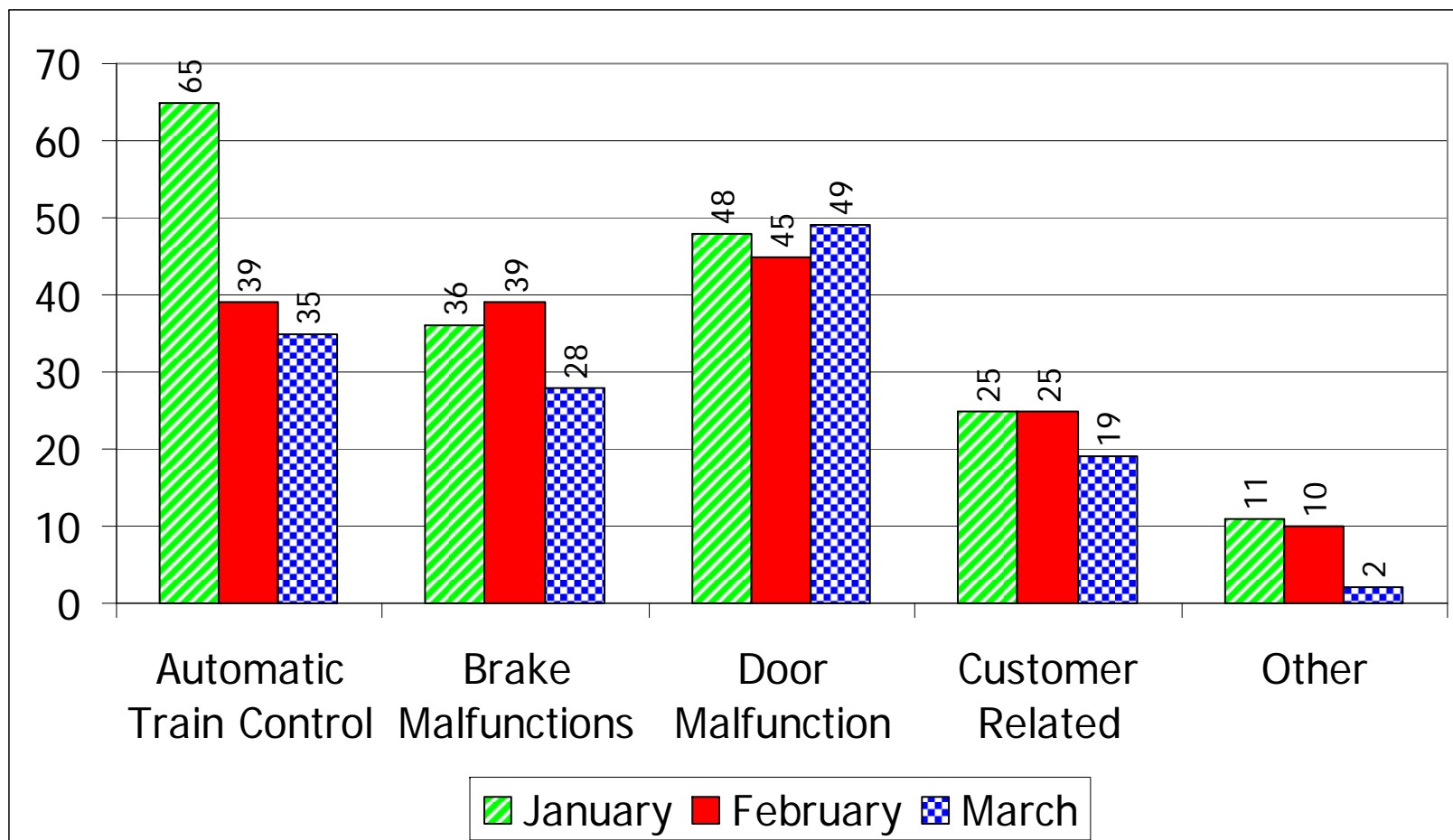




Major Incidents Affecting Rail Performance

DEFINITION – Comparison of number of delay incidents by type from January thru March 2008.

CALCULATION – Total number of delay incidents by type by month January thru March 2008.



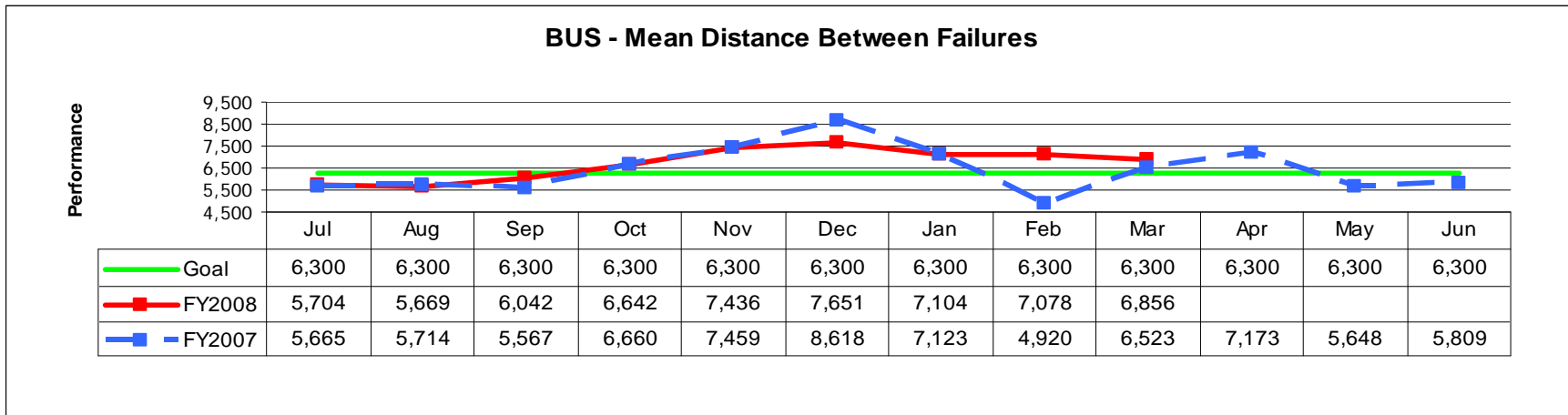
Delays resulting in four minutes or greater



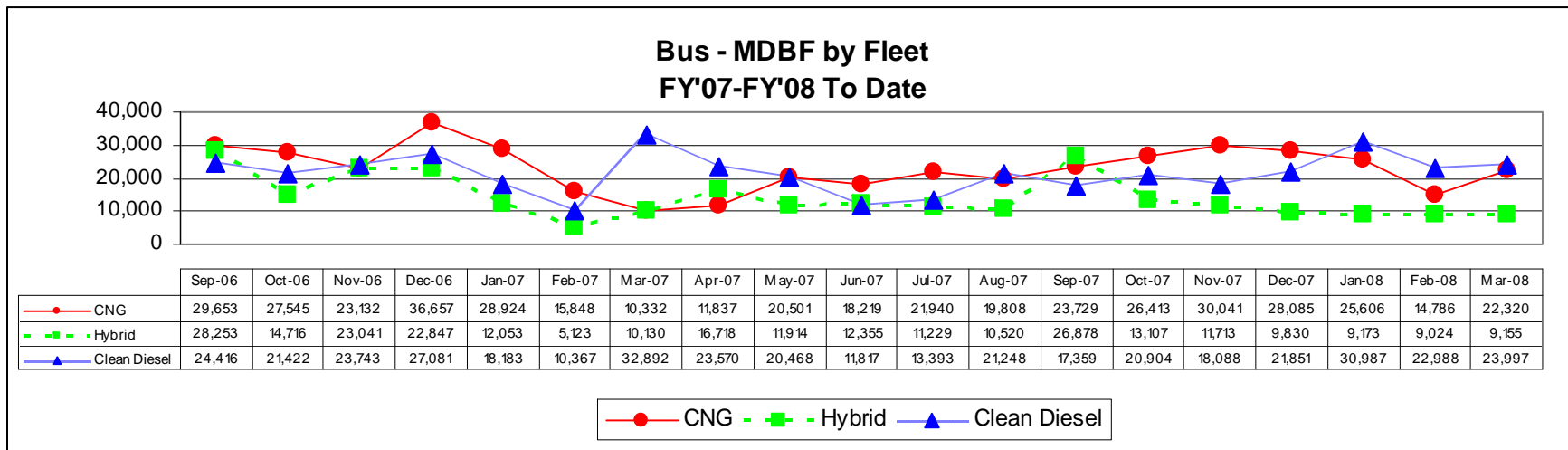
Bus Mean Distance Between Failures

DEFINITION – This measure identifies the number of miles traveled before a mechanical breakdown for the entire bus fleet

CALCULATION – Number of failures/miles = Mean Distance Between Failures.



There is no standard MTBF in the industry because of the diversity in operations – Metro MTBF established based on experience in fleet management, age of fleet and operating environment – goal is raised 3 to 5 % per year

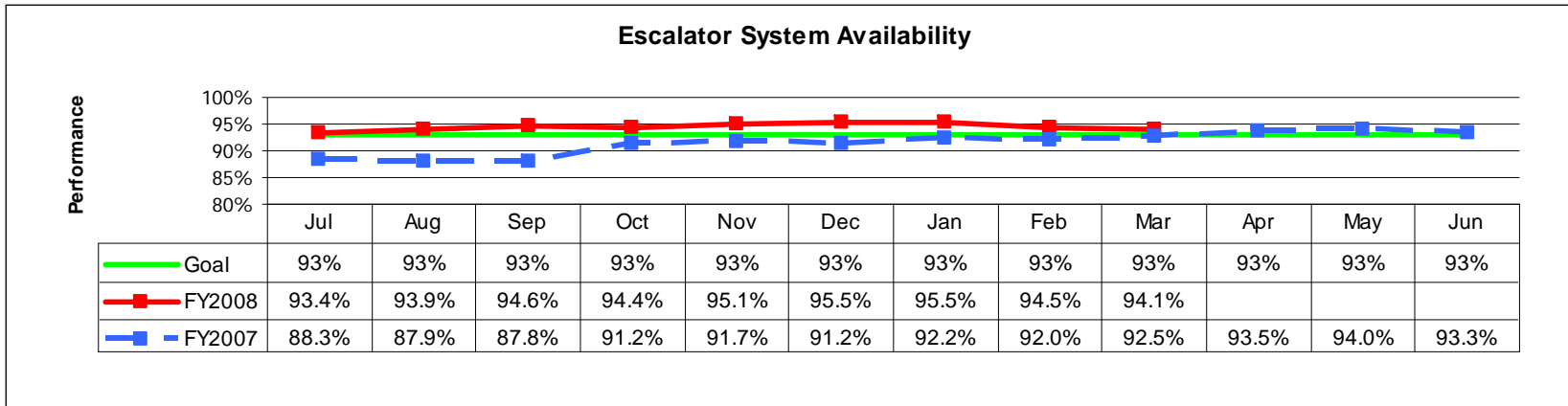




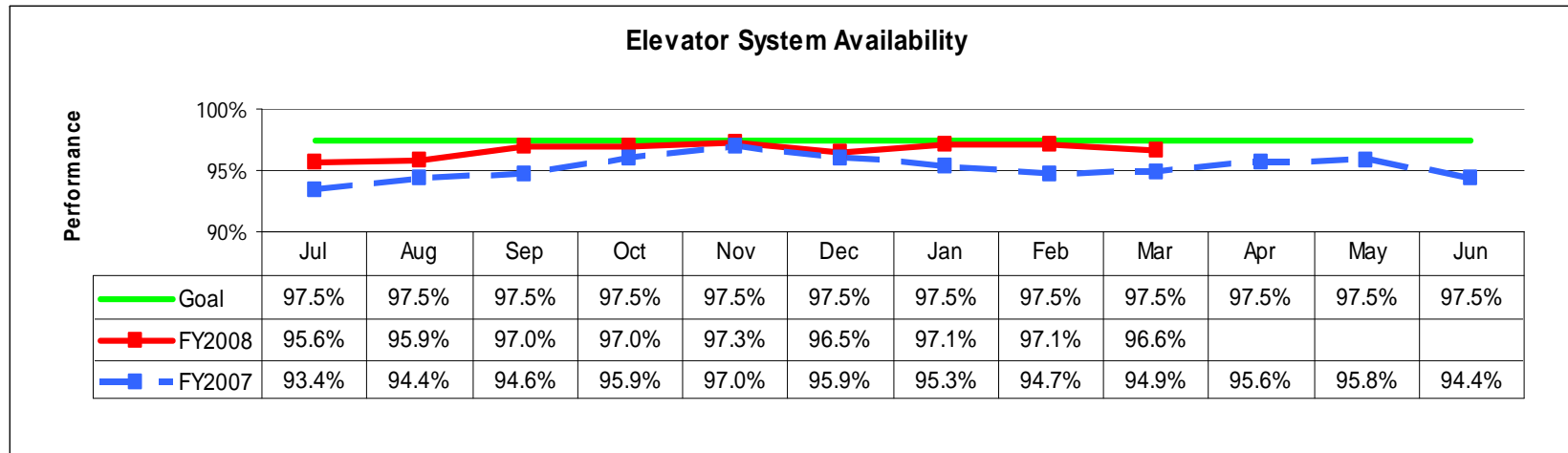
Escalators and Elevators Reliability

DEFINITION - Percentage of time that the escalator or elevator system is available for service.

CALCULATION - Hours achieved divided by operating hours. Hours achieved = operating hours - (hours out of service both scheduled and unscheduled). Operating hours = revenue hours * number of units.



Escalator Availability for March AM Peak is 94.2%; PM Peak is 94.4%



Elevator Availability for March AM Peak is 96.3%; PM Peak is 96.6%



Escalators March Top 12

DEFINITION – Top 12 Escalators with the most non-scheduled outages for the past 90 days January 2008 thru March 2008.

CALCULATION – Rank first by number of failures, second by amount of time.

ESCALATORS March 2008

MARCH 2008		Avail	OOS COUNT	Hours OOS	Comments
STATION NAME	UNIT				
SHAW	2	84.9%	23	67.76	20 reset of safety switches; 3 adjustments
ADDISION ROAD	1	82.3%	21	98.38	19 reset of safety switches; 2 safety inspections
CONGRESS HEIGHTS	5	88.4%	15	69.31	12 reset of safety switches; 1 replaced handrail; 1 replaced blown fuse; 1 replaced comb impact switch
NEW CARROLLTON	3	87.6%	15	68.62	12 reset of safety switches; 2 adjustments; 1 replaced skirt proximity switch
ARCHIVES	3	85.6%	14	79.14	13 reset of safety switches; 1 replaced DU2 motor
CLARENDON	2	93.4%	14	39.25	12 reset of safety switches; 1 replaced handrail; 1 replaced bottom comb plates;
JUDICIARY SQUARE	1	96.4%	12	21.70	7 reset of safety switches; 3 replaced axel rollers; 2 adjustments
METRO CENTER	1	97.3%	12	14.74	11 reset of safety switches; 1 removal of glass debris
WOODLEY PARK	1	95.1%	12	24.71	4 reset of safety switches; 7 adjustments; 1 replaced controller fuse
METRO CENTER	2	96.3%	12	22.04	10 reset of safety switches; 1 reinstalled handrail; 1 safety inspection
NEW YORK AVE	1	92.2%	11	46.82	9 reset of safety switches; 1 replaced broken step switch; 1 adjustment
POTOMAC AVE	1	93.8%	11	37.45	7 reset of safety switches; 2 safety inspection; 1 replaced step; 1 adjustment



Escalators February Top 12

ESCALATORS February 2008

FEBRUARY 2008		Avail	OOS COUNT	Hours OOS	Comments
STATION NAME	UNIT				
ANACOSTIA	2	88.0%	20	61.91	20 reset of safety switches
CLEVELAND PARK	5	88.4%	17	62.31	9 reset of safety switches, 4 adjustments; 1 replaced drive motor; 1 replaced handrail motion detector; 1 cleaned handrail detector; 1 safety inspection
CONGRESS HEIGHTS	1	85.3%	17	82.04	15 reset of safety switches; 1 adjustment; 1 safety work order
TENLEYTOWN	7	91.6%	16	44.05	11 reset of safety switches; 1 adjustment; 2 safety inspections; 1 installed chain; 1 replaced brake board
DUPONT CIRCLE	3	91.8%	15	45.75	12 reset safety switches; 1 replaced brake board; 1 replaced drive chain; 1 replaced chain switch
GALLERY PLACE	2	44.6%	15	309.17	5 reset of safety switches; 1 replaced counter card; 2 replaced brake boards; 1 replaced encoder; 1 replaced transformer; 1 replaced controller; 1 replaced degredation switch; 1 adjustment; 2 safety inspections
VIRGINIA SQUARE	1	89.9%	15	56.23	7 reset of safety switches; 2 replaced brake boards; 5 adjustments; 1 safety inspection
WOODLEY PARK	4	89.0%	13	61.56	10 reset of safety switches; 1 replaced handrail on guide tracks; 1 replaced handrail & rollers; 1 adjustment
ARCHIVES	2	95.6%	13	36.01	11 reset of safety switches; 2 adjustments
NAVY YARD	3	79.7%	13	109.36	9 reset of safety switches; 1 replaced drive chain; 1 replaced chipped steps; 1 safety inspection; 1 adjustment
ADDISON ROAD	1	90.6%	13	31.63	11 reset of safety switches; 1 replaced brake; 1 adjustment
COLUMBIA HEIGHTS	1	93.6%	12	36.00	7 reset of safety switches; 1 repaired boot switch; 1 shortened drive chain; 2 replaced steps; 1 safety inspection



Escalators January Top 12

ESCALATORS January 2008

JANUARY 2008		Avail	OOS COUNT	Hours OOS	Comments
STATION NAME	UNIT				
DEANWOOD	2	80.6%	26	110.50	21 reset of safety switches; 1 replaced handrail; 1 replaced handrail nylatron; 1 adjustment; 2 safety inspections
DUPONT CIRCLE	3	58.6%	19	241.88	11 reset of safety switches; 1 replaced skirt panels; 1 repaired poly chain; 1 replaced comb plates; 1 removed debris; 1 replaced brake board; 2 adjustments; 1 safety work order
ANACOSTIA	2	86.5%	17	71.54	13 reset of safety switches; 1 cleaned speed sensors; 1 customer accident; 2 adjustments
SHAW	1	91.4%	15	34.75	14 reset of safety switches; 1 replaced fuses
ROSSLYN	4	91.3%	14	51.20	9 reset of safety switches; 1 replaced steps; 1 replaced poly drive; 1 replaced brake board; 2 adjustment
SMITHSONIAN	1	85.5%	14	79.86	11 reset of safety switches; 3 safety inspections;
MT VERNON	6	95.2%	14	22.96	13 reset of safety switches; 1 safety inspection
CAPITOL SOUTH	3	68.2%	13	64.99	7 reset of safety switches; 1 repaired step roller; 1 replaced brake cables; 3 adjustments; 1 safety inspection
FRIENDSHIP HEIGHTS	3	72.5%	12	158.89	7 reset of safety switches; 1 replaced brake; 2 replaced brake speed sensors; 1 replaced brake reducer; 1 safety inspection
CAPITOL HEIGHTS	3	87.0%	12	74.64	6 reset of safety switches; 3 replaced brake boards; 2 adjustment; 1 customer accident
FRIENDSHIP HEIGHTS	5	89.8%	12	57.68	9 reset of safety switches; 1 replaced brake board; 1 replaced steps; 1 adjustment
SMITHSONIAN	3	90.5%	12	51.54	9 reset of safety switches; 1 repaired handrail drive shaft; 1 replaced step; 1 safety inspection



Elevators March Top 12

DEFINITION – Top 12 Elevators with the most non-scheduled outages for the past 90 days January 2008 thru March 2008.

CALCULATION – Rank first by number of failures, second by amount of time.

ELEVATORS March 2008

MARCH 2008		Avail	OOS COUNT	Hours OOS	Comments
STATION NAME	UNIT				
COURTHOUSE	1	76.1%	10	142.97	5 resets; 2 adjustments; 1 replaced leveling valve; 1 replaced brake coil; 1 repaired intercom
ADDISION ROAD	2	96.1%	8	23.34	2 resets, 2 adjustments; 4 re-leveling of car
VAN NESS	1	95.5%	8	26.75	4 adjustments; 1 replaced coupling; 1 replaced fuse; 1 cleaned debris; 1 replaced door locks
COLUMBIA HEIGHTS	1	96.4%	8	21.59	1 reset of safety switch; 1 replaced car door gibbs; 2 safety inspections; 2 adjustments; 1 replaced car door clutch; 1 cleaned debris
FARRAGUT NORTH	1	77.2%	7	136.60	3 reset of safety switches; 1 safety inspection; 1 replaced intercom; 1 replaced blown fuse; 1 cleaned debris
MEDICAL CENTER	2	97.1%	6	17.33	3 reset of safety switches; 1 adjustment; 1 safety inspection; 1 replaced roller
EAST FALLS CHURCH	1	83.9%	5	96.30	2 reset of safety switches; 1 safety inspection; 1 replaced roller, 1 recycle controller
BROOKLAND	2	78.7%	4	127.43	1 reset of safety switches; 1 adjustment; 1 repaired stop switch & hatch door; 1 repaired intercom
CAPITOL SOUTH	2	78.7%	4	65.26	2 restored power; 1 safety inspection; 1 replaced oil line
DEANWOOD	1	91.9%	3	44.70	1 replaced fuse; 1 replaced door astrigal; 1 flooded pit
STADIUM ARMORY	1	95.6%	2	26.34	1 adjustment; 1 repaired ground interlock
LANDOVER	1	90.9%	2	54.48	1 replaced fuse



Elevators February Top 12

ELEVATORS February 2008

FEBRUARY 2008		Avail	OOS COUNT	Hours OOS	Comments
STATION NAME	UNIT				
COLUMBIA HEIGHTS	1	96.7%	13	18.28	10 reset of safety switches; 1 replaced clutch roller assembly; 1 replaced door clutch; 1 adjustment
COLUMBIA HEIGHTS	2	98.2%	9	9.86	9 reset of safety switches
WATERFRONT	1	96.3%	9	20.63	2 reset of safety switches; 1 flooded pit; 1 entrapment; 3 safety inspections; 2 adjustments
CLEVELAND PARK	1	96.1%	8	21.69	1 replaced tach motor coupling; 2 cleaned debris; 2 lubrications; 1 entrapment - adjusted hoist motor; 1 safety inspection; 1 adjustment
BROOKLAND	2	98.4%	7	9.10	1 reset of safety switches; 1 cleaned photo eyes; 3 safety inspections; 2 adjustments
COURTHOUSE	1	96.9%	7	17.27	4 reset of safety switches; 1 replaced brake shoes; 1 cleaned sills & car door; 1 adjustment
VAN NESS	1	92.2%	6	43.60	3 reset of safety switches; 2 entrapments - replaced photo eyes & tape guide; 1 removed car from overhead
ROSSLYN	1	91.5%	6	47.66	1 replaced spirator; 1 replaced BCC box & brake shoes; 1 removed debris; 1 lubrication; 2 adjustments
CAPITOL SOUTH	1	97.7%	6	13.10	1 safety inspection; 4 adjustments; 1 returned car to floor level
SUITLAND	2	98.1%	6	10.37	3 reset of safety switches; 3 replaced fuses
EISENHOWER AVE	1	97.9%	5	11.91	1 cleaned hoistway door lock; 1 cleaned all interlocks & clutch; 1 safety inspection; 2 adjustments
MINNESOTA AVE	1	94.5%	4	31.00	1 reset safety switch; 1 replaced hatch door gibbs; 1 replaced toggle switch; 1 adjustment



Elevators January Top 12

ELEVATORS January 2008

JANUARY 2008		Avail	OOS COUNT	Hours OOS	Comments
STATION NAME	UNIT				
BALLSTON	3	93.2%	19	40.61	18 reset of safety switches; 1 removed air from
WATERFRONT	1	90.0%	10	59.73	4 reset of safety switches; 1 pumped out pit; 1 added hydraulic oil; 4 adjustments
MINNESOTA AVE	1	96.7%	8	19.62	4 reset of safety switches; 3 adjustments; 1 safety inspection
SHAW	1	97.2%	6	11.68	1 replaced photo eye; 2 cleaned unit; 1 adjustment; 2 safety inspections;
CAPITOL HEIGHTS	2	93.2%	6	17.80	2 reset of safety switches; 2 adjustments; 1 added hydraulic oil; 1 entrapment - adjusted hoistway doors
FOREST GLEN	3	89.1%	5	65.33	3 reset of safety switches; 1 replaced up slow down switches; 1 replaced limit switch
WHEATON	1	98.0%	5	12.12	1 reset of safety switches; 2 safety inspections; 1 cleaned sills & reset controller; 1 adjustment
EASTERN MARKET	2	97.8%	5	13.38	1 cleaned door & hoistway contacts; 1 safety inspection; 3 adjustments
MINNESOTA AVE	2	85.3%	5	87.84	2 reset of safety switches; 1 safety inspection; 2 adjustments
COLUMBIA HEIGHTS	1	98.8%	5	6.92	4 reset of safety switches; 1 adjustment
LARGO TOWN CENTER	6	98.4%	5	9.71	3 reset of safety switches; 1 cleaned & adjusted call button; 1 adjustment
MT VERNON	3	88.1%	4	71.08	2 reset of safety switches; 1 replaced broken glass; 1 replaced lighting fixture in cab



Escalators/Elevators Not Functioning

Escalators

Unit	Location	Start Date	CIP	Major Repair	Description of Repair / Repair Details
3	National Airport	10-Nov-07		X	Bull Gear Replacement - Replacement of custom parts that had to be fabricated. Back in service April 27, 2008
2	Federal Center	20-Mar-08			Handrail Repair. Back in service April 12, 2008
1	Minnesota Ave	3-Apr-08			Drive Assembly - Fitted with new modern parts. Back in service April 15, 2008
2	Archives	15-Mar-08			Steps - Fitted with new modern parts that support the steps and ensure the escalator moves properly. Back in service April 19, 2008
2	Wheaton	7-Jan-08		X	Rack & Axle Replacement - Longest escalator in the system 230 feet of steps, requires special repairs to support the steps. Projected completion 5/10/08
3	Potomac Ave.	22-Jan-08	X		CIP Modernization - Projected completion date 5/10/08 (Contractor - KONE)
1	Virginia Square	24-Mar-08		X	Rack & Axle Replacement - Requires being fitted with new modern parts that support the steps. Projected completion 5/10/08
4	Ballston	1-Apr-08	X		CIP Modernization - Projected completion date 6/30/08 (Contractor - KONE)

Elevators

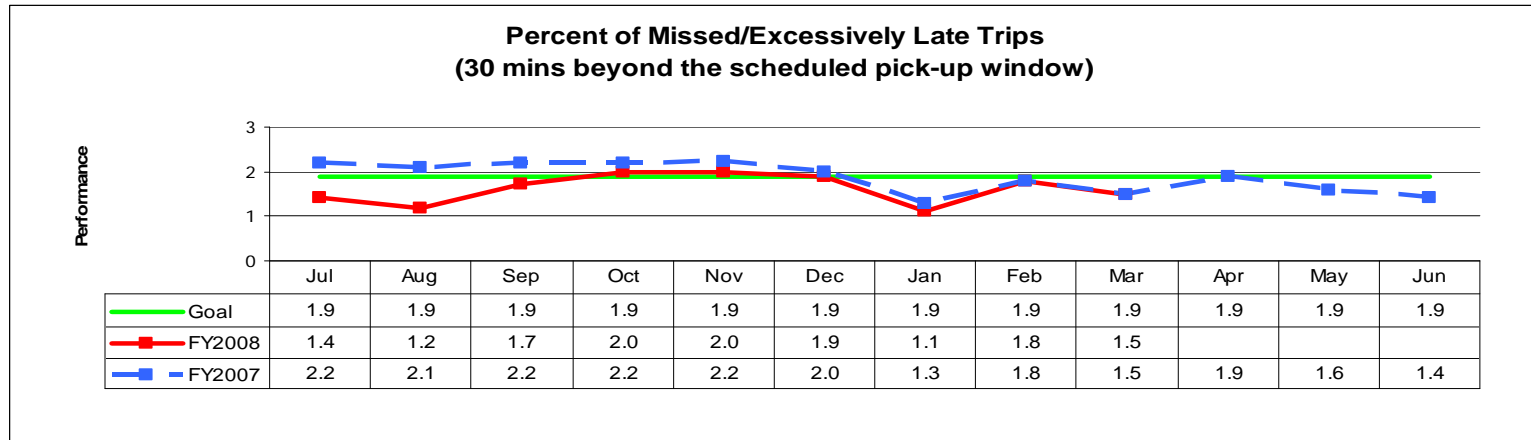
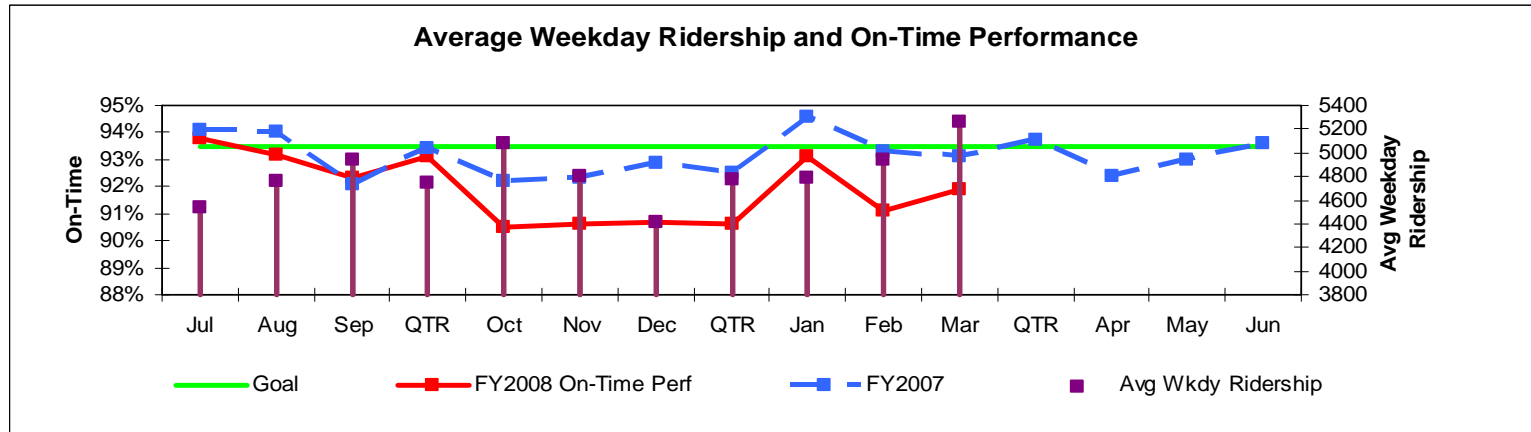
Unit	Location	Start Date	CIP	Major Repair	Description of Repair / Repair Details
2	Rosslyn	18-Feb-08	X		CIP Modernization - Projected completion date 5/26/08 (Contractor - Mid-America)
2	Court House	24-Mar-08	X		CIP Modernization - Projected completion date 6/30/08 (Contractor - Mid-America)
2	Virginia Square	2-Apr-08	X		CIP Modernization - Projected completion date 7/9/08 (Contractor - Mid-America)

Completed



MetroAccess

DEFINITION - Percentage of on-time pickup within a 30 minute window (15 minutes before or after scheduled pickup time).
CALCULATION - (Total on-time trips including "no shows" to which we were initially on-time /sum of total completed trips (including "no shows" to which we were initially late) and missed trips = MetroAccess On Time Performance.



DEFINITION - Percentage of missed/excessively late trips (beyond 30 minutes).

CALCULATION - Number of completed trips with a >30 minute deviation from the scheduled arrival time/Completed trips = MetroAccess Percentage of Missed/Excessively Late Trips.



Appendix

Installation of Revised Escalator/Elevator Signage

Designed April 10, 2008

Manufactured April 11, 2008

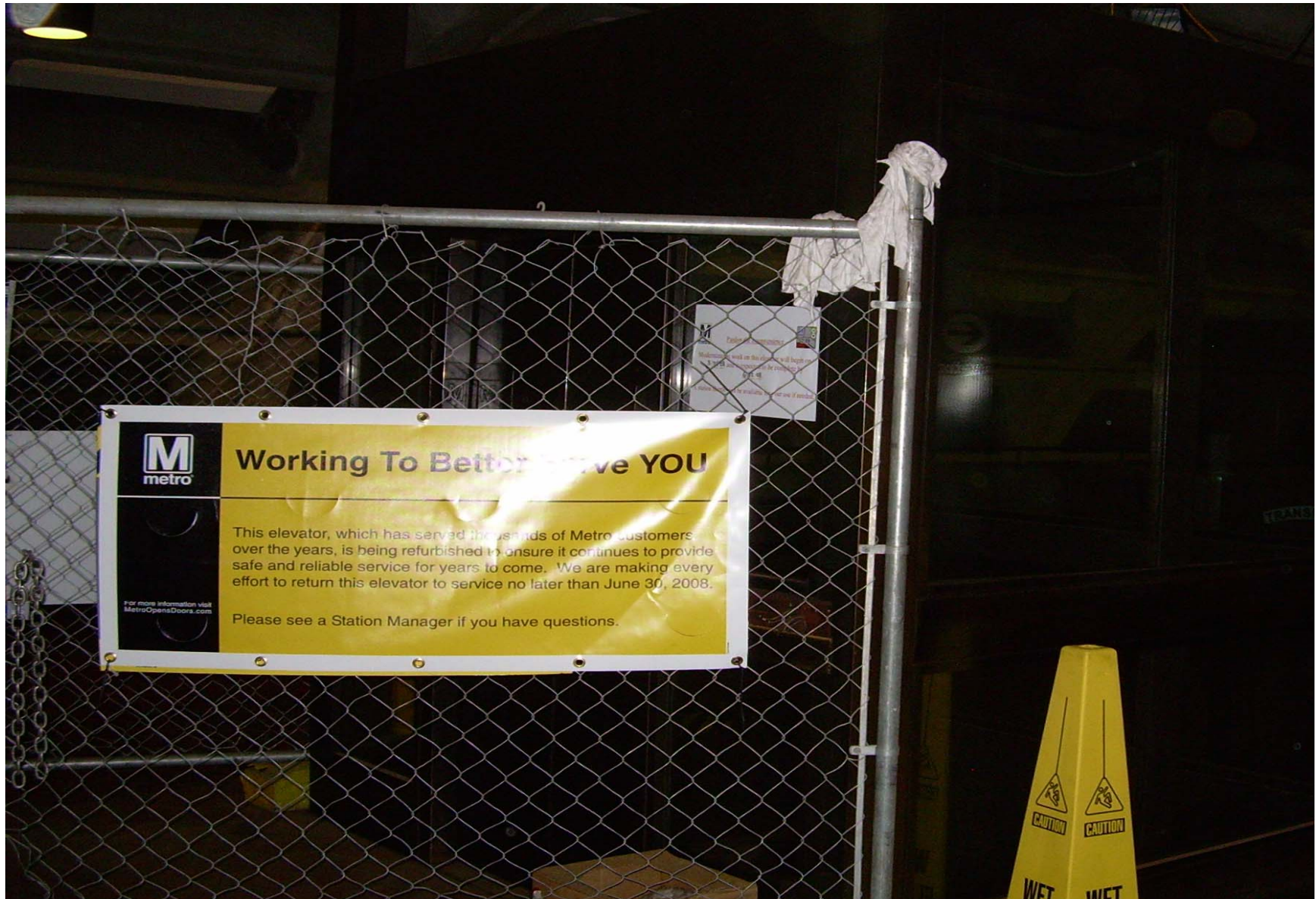
Installed April 11, 2008



Archives Escalator – Major Repair



Ballston Escalator – Rehab/modernization



Courthouse Elevator – Rehab/modernization



Federal Center SW Escalator – Major Repair

Back in Service



Minnesota Avenue Escalator – Major Repair



Back in Service

Working To Better Serve YOU

This escalator, which carries thousands of Metro riders each day, requires custom parts to ensure its reliability for years to come. The parts are being fabricated and will be installed no later than April 26, 2008.

Please see a Station Manager if you have questions.

For more information visit
MetroOpensDoors.com

National Airport Escalator – Major Repair



Potomac Avenue Escalator – Rehab/modernization



Rosslyn Elevator – Rehab/modernization



Virginia Square Elevator – Rehab/modernization



Virginia Square Escalator – Major Repair



Wheaton Escalator – Major Repair