

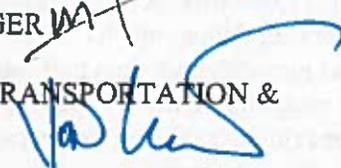
City of Alexandria, Virginia

MEMORANDUM

DATE: AUGUST 8, 2016

TO: THE HONORABLE MAYOR AND MEMBERS OF CITY COUNCIL

THROUGH: MARK B. JINKS, CITY MANAGER 

FROM: YON LAMBERT, DIRECTOR, TRANSPORTATION & ENVIRONMENTAL SERVICES 

SUBJECT: AFTER ACTION REPORT: WMATA SAFETRACK SURGES 3 AND 4

The purpose of this memorandum is to provide City Council with a summary of activities from SafeTrack Surges 3 and 4. SafeTrack is a maintenance initiative of the Washington Metropolitan Area Transit Authority (WMATA) that accelerates three years' worth of maintenance work into approximately one year. Surge 3, from 8pm on July 5 to July 11, was a shutdown of the Blue and Yellow Metrorail lines between Braddock Road and the National Airport stations. Surge 4, from July 12 to July 18, was a shutdown of the Blue and Yellow Metrorail lines between National Airport and Pentagon City stations.

Both surges operated smoothly and minor incidents were addressed in the field in real time. DASH and Metrobus supervisors worked closely to ensure smooth operation of existing and supplemental services at Braddock Road Metrorail station. The section below outlines the mitigation efforts provided:

Mitigation Measure	Provided By
Free express shuttles to National Airport and Pentagon City	WMATA
Free, all-day service on AT3 and AT4 and expanded hours and frequency	DASH
Free, all-day supplemental service on Metroway	WMATA
Additional peak hour trips on 10A and 11Y	WMATA
Free Metrobus and Fairfax Connector special weekday rush hour express shuttle bus service between Franconia-Springfield and Pentagon	Fairfax County/WMATA
Additional traffic control at key intersections near Braddock Road Metrorail Station	Alexandria Police Department
City's Traffic Management Center fully staffed to adjust traffic signal timing based on traffic needs	City
Capital Bikeshare station expansion at Braddock Road Metrorail Station	City
Flat taxi fare (\$15) between King St-Old Town / Braddock Rd / Eisenhower Ave stations and National Airport	City / Taxi Companies
Bike trains from Braddock Rd to Pentagon City	City / Volunteers

The remaining SafeTrack surges that will directly impact Alexandria are Surge 8 and 14. Surge 8 is continuous single track Blue line service between Franconia-Springfield and Van Dorn Street from August 20 through September 5, 2016. Surge 14 is continuous single track Yellow and Blue line service between Braddock Road and Huntington Avenue, and Braddock Road and Van Dorn Street occurring January 2 – January 13, 2017 and again on January 23 – February 3, 2017. Detailed plans and mitigation strategies will be released and widely distributed in advance of each surge.

Attachment 1 – SafeTrack Surges 3 & 4 Ridership Analysis
Attachment 2 – Transportation Planning Board Traffic Report
Attachment 3 – Surge #3 Progress Report
Attachment 4 – Surge #4 Progress Report

cc: Emily A. Baker, Deputy City Manager
Yon Lambert, Director, Transportation & Environmental Services
Carrie Sanders, Deputy Director, Transportation & Environmental Services
Allan Fye, Acting Division Chief for Transit Services

SafeTrack Surges 3 & 4 Ridership Analysis

July 21, 2016 -- WMATA Planning Office

	Change in Weekday Ridership due to	
	Surge 3	Surge 4
All rail stations Pentagon and south	-13%	-22%
Other downtown stations on Silver/Orange/Blue Lines (Rosslyn to Smithsonian)	-5%	-3%
Bus Shuttle boardings	17,000/day	25,000/day
Alternative bus routes (Metroway, 11Y, 10A)	+98%	+103%
Parking at stations south of Braddock Road	-60% to -70%	-63% to -73%

*Year-over-year comparisons, controlling for background ridership loss, and virtual tunnel transactions

Summary

- 70% of rail customers diverted at peak times/directions, while overall losses were moderate (15 to 20% range) because off-peak rail ridership and bus ridership were relatively strong
- Strong diversion to bus:
 - Ridership on substitute bus lines doubled
 - Metroway ridership nearly tripled
- Shuttle buses moved significant passenger volumes, temporarily creating Metro's busiest bus line, particularly during Surge 4
- 11,000 "virtual tunnel" transactions per weekday from customers riding rail-to-shuttle-to-rail through the closed segments during both surges
- Parking at stations south of King Street was down 60-73%
- Rail stations unaffected by the Surge were down approximately 11-13% on weekdays. This report treats this as background losses that would have occurred without Surges 3 & 4.

Rail Ridership Changes

Surges 3 and 4 cut Metrorail service on the Blue and Yellow lines around the National Airport station – to the south during Surge 3, and to the north during Surge 4. South of the closure, Blue and Yellow Line trains ran at reduced frequencies between the termini (Franconia and Huntington) and the work zone. North of the closure, trains ran every 6 minutes to and from DC at peak times.

During morning rush hours, we saw 60-80% reductions in customers entering stations south of Braddock Road (traditional inbound commuters), ranging from 80% losses at Franconia-Springfield to 62% losses at Eisenhower Avenue. This diversion of peak-hour, peak-direction passenger loads helped our mitigations to function properly, and ensured we did not overwhelm the capacity of the escalators at Braddock Road and Pentagon City. During Surge 3, ridership at Crystal City was down around 30% in the morning, even as the station remained open and northbound rail service was good.

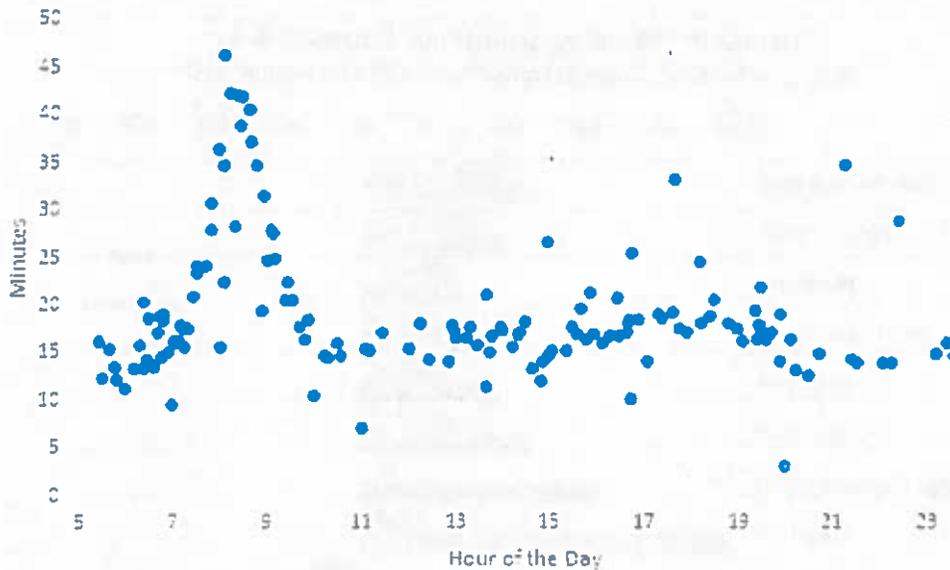
Changes in all-day ridership were more moderate, as midday and reverse-commute ridership remained steady, despite the reductions in service. All-day ridership at the more traditional commuter and park-

Bus Ridership Changes

More customers diverted to bus during Surges 3 and 4 than we saw in prior Surges. Overall, the bus shuttles moved around 17,000 trips/day during Surge 3, and around 25,000 trips/day during Surge 4. Of this, 500-600 trips/day were on the Franconia-Pentagon shuttle during both surges; the remainder on shuttles between Pentagon City, Braddock Road, Crystal City, and National Airport.

The sheer volume of ridership on the shuttle buses made the shuttle operation Metro's busiest bus line, albeit temporarily. At 25,000 trips per day, the shuttles moved more riders than we typically move on any other major bus route, including some of the busiest like 16th Street NW, or the various 30's buses. A bus was serving Pentagon City every 2.5 minutes on average, and the shuttle operation as whole was moving more than half the number of cars on Route 1. Traffic congestion on Route 1 impacted the shuttles between Pentagon City and Braddock Road, as the figure below shows.

Travel Time from Braddock Road to Pentagon City
Surge 4 Shuttles 7/13/2016



Metroway saw a huge increase in ridership – up over 165-177%, or nearly tripling its usual load, even as we only increased off-peak (not peak) service levels. Metroway was the best choice for most customers traveling to/from Crystal City, as well as through-commuters, and the service was free during both surges. We will be monitoring future ridership to see if any customers decide to remain with Metroway after the surges end.

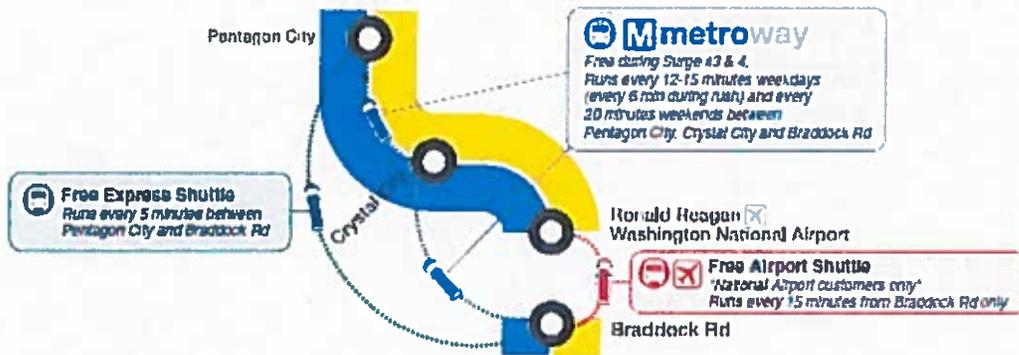
Ridership on the 10A was up 29-64%, and on the 11Y was up 128-133% or more than double. Metrobus added service on both of these alternative lines.

Overall bus ridership on other lines in the Surge area was up 1%.

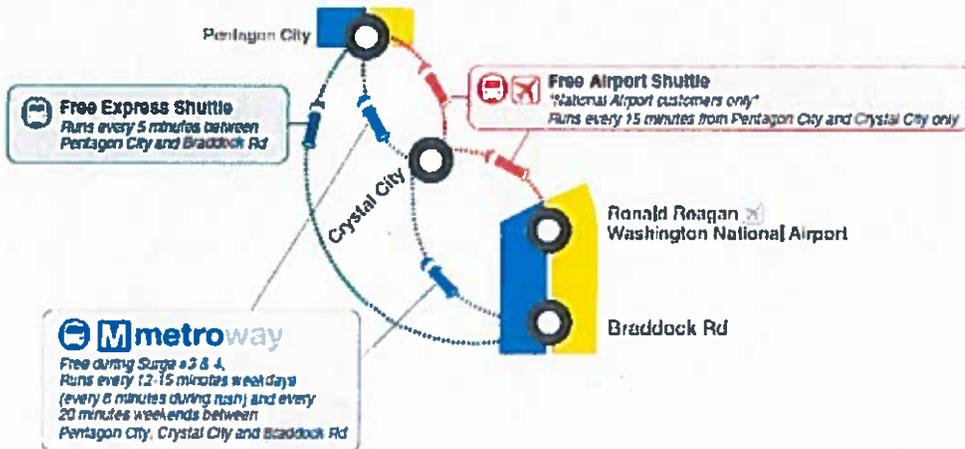
Shuttle Bus Service Plan

Shuttle Bus Information

Surge #3: 8:00 p.m. July 5 - closing, July 11



Surge #4: 5:00 a.m. July 12 - closing, July 18



How SafeTrack has impacted traffic on area roadways so far

Jul 19, 2016

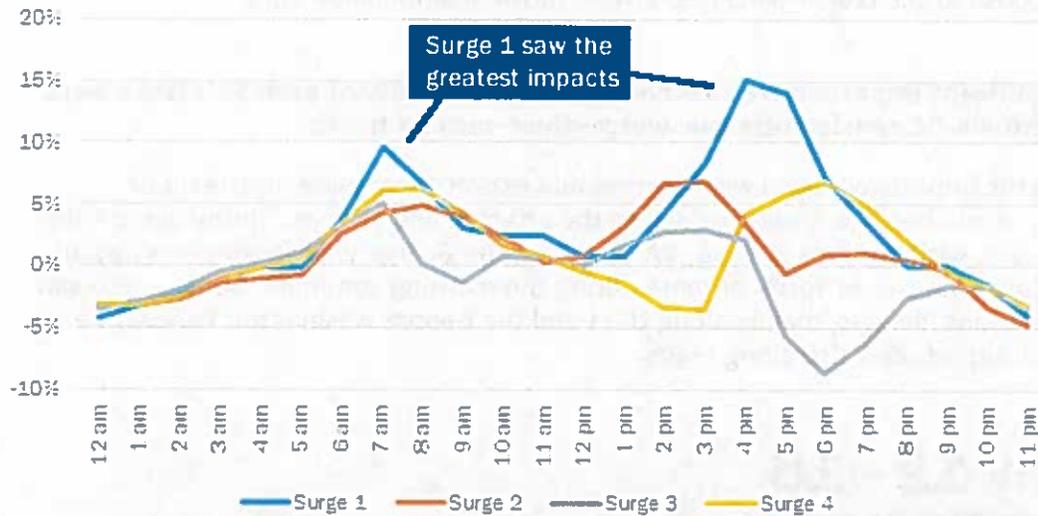


Photo by wikipedia user Jumpy.

Analysts at the TPB have examined hour-by-hour traffic patterns on area roadways during the first four “safety surges” of Metro’s aggressive, yearlong SafeTrack maintenance program. The analysis reveals some noteworthy impacts that could help traffic management agencies, transit providers, employers, and daily commuters plan for future disruptions.

The TPB’s recent analysis looked at traffic patterns during each of the first four SafeTrack safety surges (see below). Metro estimates that 30-40% of daily trips were impacted by the service disruptions during each of the surges. Bus bridges and increased local and express bus service helped carry some of the displaced trips. Commuters were also encouraged to find carpool partners, bicycle, or walk, or to telework and avoid traveling altogether.

SURGES 1-4: % Change in Congestion Compared to Typical Conditions

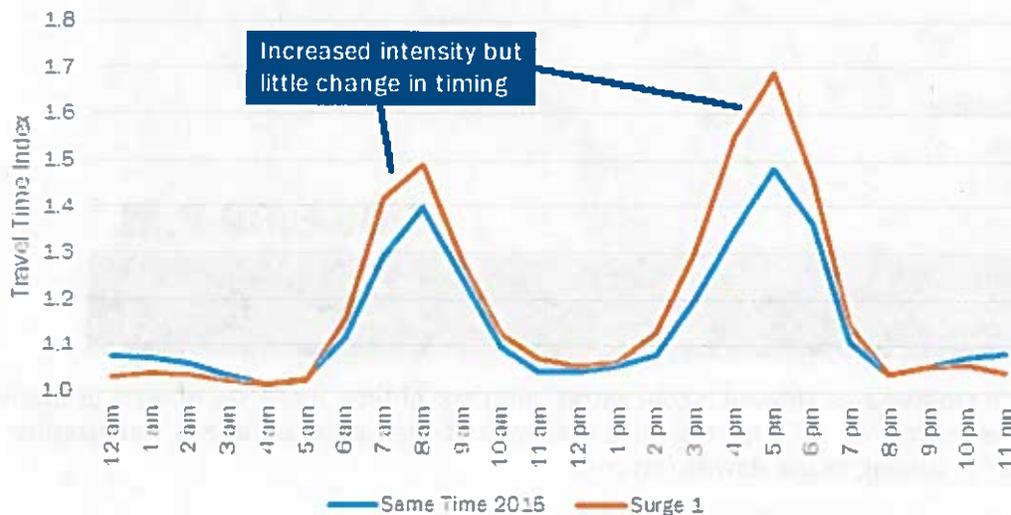


Traffic during each of the first four surges tended to be worse than the same days in 2015, but Surge 1 saw the greatest impacts. (TPB)

> The timing and intensity of traffic during peak commuting times shifted in response to all four surges

Surge 1 saw an increase in the intensity of traffic during the morning and afternoon commuting times and a slightly earlier start to traffic during both periods. Surge 2 saw little change in the intensity of traffic but saw the afternoon commute pick up 1-2 hours earlier than usual. Surge 3 saw little change in morning commute patterns but saw lower-than-normal afternoon traffic and an earlier end to the afternoon rush. Surge 4, like Surge 1, mostly saw an increase in the intensity rather than timing of peak traffic.

SURGE 1: Freeway Congestion During Surge Compared to Typical Conditions



Surge 1 saw an increase in the intensity of traffic during the morning and afternoon commuting times and a slightly earlier start to traffic during both periods. (TPB)

Surge 1 by far brought the greatest traffic impacts to area roadways, with Surges 2, 3, and 4 showing much less significant effects. Several potential factors could be responsible. One is that the details of each surge are different, with different impacts to different travelers in different parts of the region with different alternatives available to them. Another is that as more people in the region became aware of SafeTrack and its potential traffic impacts, they adjusted their travel times to avoid peak commuting times or chose alternatives other than driving.

A third potential contributing factor is routine summertime changes in travel patterns. In the past, the TPB has consistently found that travel delay drops about 15-20% during summer months when schools and Congress are out and more people have greater flexibility in their travel schedules. Traffic agencies and travelers should be aware of this heading into SafeTrack surges that will coincide with the end-of-summer jump in traffic that usually takes place in September.

* * *

The TPB's analysis can help area traffic management agencies improve their strategies for managing back-ups caused by major disruptions. Travelers, too, can use the information to better plan their trips and avoid the worst impacts. The analysis also sheds light on the region's resilience to disruptions, Metro's role in the region's transportation system, and how transit agencies and others might plan for future shutdowns or service disruptions.

* * *

MORE: [Find more charts, graphs, and key takeaways in the full technical analysis](#)

MORE: [Metro's full SafeTrack work schedule](#)

Tags: [Metro](#), [Traffic Monitoring](#)

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ATTACHMENT 3



SafeTrack: Surge 3

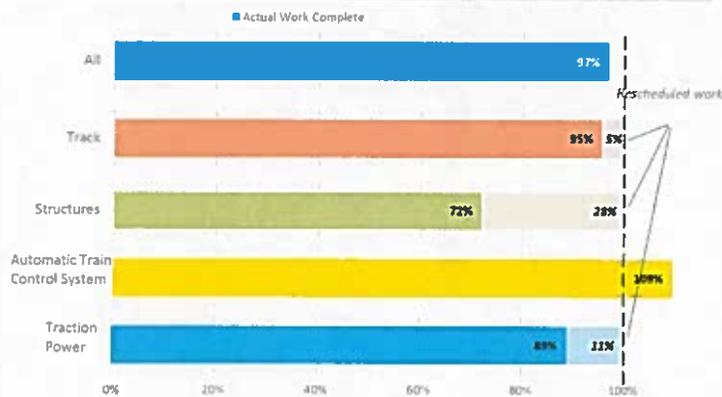
DATES:
July 5 - 11

WORK ZONE:
Reagan National Airport to Braddock Road, Line Segment Shutdown

Final Report
Data as of 07/15/16

SCOPE OF WORK: Renewal of rail and power infrastructure on this portion of the Blue and Yellow lines, including crossties, rail, fasteners, grout pads, and power cables.

Overall Progress (% Planned Work Complete)



Notes:

*Surge #3 results are preliminary and subject to quality control processes which will remain continuous throughout the duration of SafeTrack. Any remediation work that is identified will be accomplished during normal maintenance times.

Actual work complete represents the % complete across all tasks.

Surge 3 concluded on July 11, 2016. Extreme heat slowed productivity, as work crews took more frequent breaks to stay hydrated and safe. In particular, crosstie renewal, a main priority for this surge, took longer to complete than originally planned. This meant that some open joint welding (track), grout pad replacement (structures), and expansion cable replacements (traction power) had to be rescheduled.

During the surge, priority was given to addressing potential defects and repairing or replacing critical rail infrastructure that affects train speeds and ride quality. Additional regular and preventive maintenance activities were fit in as time permitted. These maintenance activities are and will continue to be conducted on a regular basis to keep the infrastructure in a state of good repair.

The critical tasks completed during the surge include:

- + Repaired third rail to improve reliability of the 7000 series trains in this area
- + Verizon adjusted cellular amplifiers to improve coverage for customers
- + Replaced a cross-bond, improving ride quality
- + Replaced over 1,300 crossties
- + Renewed over 200 insulators
- + Renewed 800 linear feet of grout pad
- + Replaced over 1,000 fasteners and 1,200 studs

Shutting down this segment of the Blue and Yellow line allowed the necessary repairs to be completed much more quickly than would otherwise be possible. Replacing over 1,300 crossties would take about 260 nights if performed only after the system closed. Replacing 800 ft of grout pads would take two full weekends, and require single-tracking around the work zone.

In addition, crews completed preventive maintenance activities, including inspecting and repairing tunnel lighting, intrusion detection warning systems, electronic trip stations, and cables at traction power substations and breakers.





SafeTrack: Surge 4

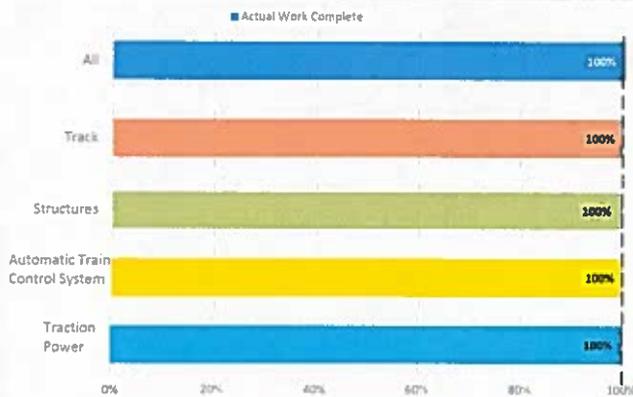
DATES:
July 12 - 18

WORK ZONE:
Pentagon City to Reagan National Airport, Line Segment Shutdown (Crystal City Station Closed)

*Final Report
Data as of 07/21/16*

SCOPE OF WORK: Renewal of rail and power infrastructure on this portion of the Blue and Yellow lines, including rail, fasteners, grout pads, and power cables.

Overall Progress (% Planned Work Complete)



Notes:

*Surge #4 results are preliminary and subject to quality control processes which will remain continuous throughout the duration of SafeTrack. Any remediation work that is identified will be accomplished during normal maintenance times.

Actual work complete represents the % complete across all tasks.

Surge 4 concluded on July 18, 2016 with all critical tasks completed. During the surge, priority was given to addressing potential defects and repairing or replacing critical rail infrastructure that affects train speeds and ride quality. Additional regular and preventive maintenance activities were fit in as time permitted. These maintenance activities are and will continue to be conducted on a regular basis to keep the infrastructure in a state of good repair.

Most of the work zone was in tunnels, where rail is affixed to grout pads with fasteners and studs. As a result, there was much less crosstie and insulator renewal scheduled, and work crews were more shielded from hot temperatures.

The critical tasks completed during the surge include:

- + Welded 26 joints on the rail, improving ride quality and safety
- + Replaced over 2700 linear feet of rail
- + Renewed over 950 linear feet of grout pad
- + Replaced over 2400 fasteners and 1500 studs, some of which were original components
- + Cleaned and repaired tunnel drainage system to help prevent water damage to new components

Shutting down this segment of the Blue and Yellow line allowed the necessary repairs to be completed much more quickly than would otherwise be possible. Replacing over 2400 fasteners would take about 80 nights if performed only after the system closed, or 7 weekends of single-tracking. Replacing 950 feet of grout pads would take two full weekends of single-tracking.

In addition, crews completed preventive maintenance activities, including inspecting and repairing lighting in tunnels and cables at traction power substations and breakers.

