

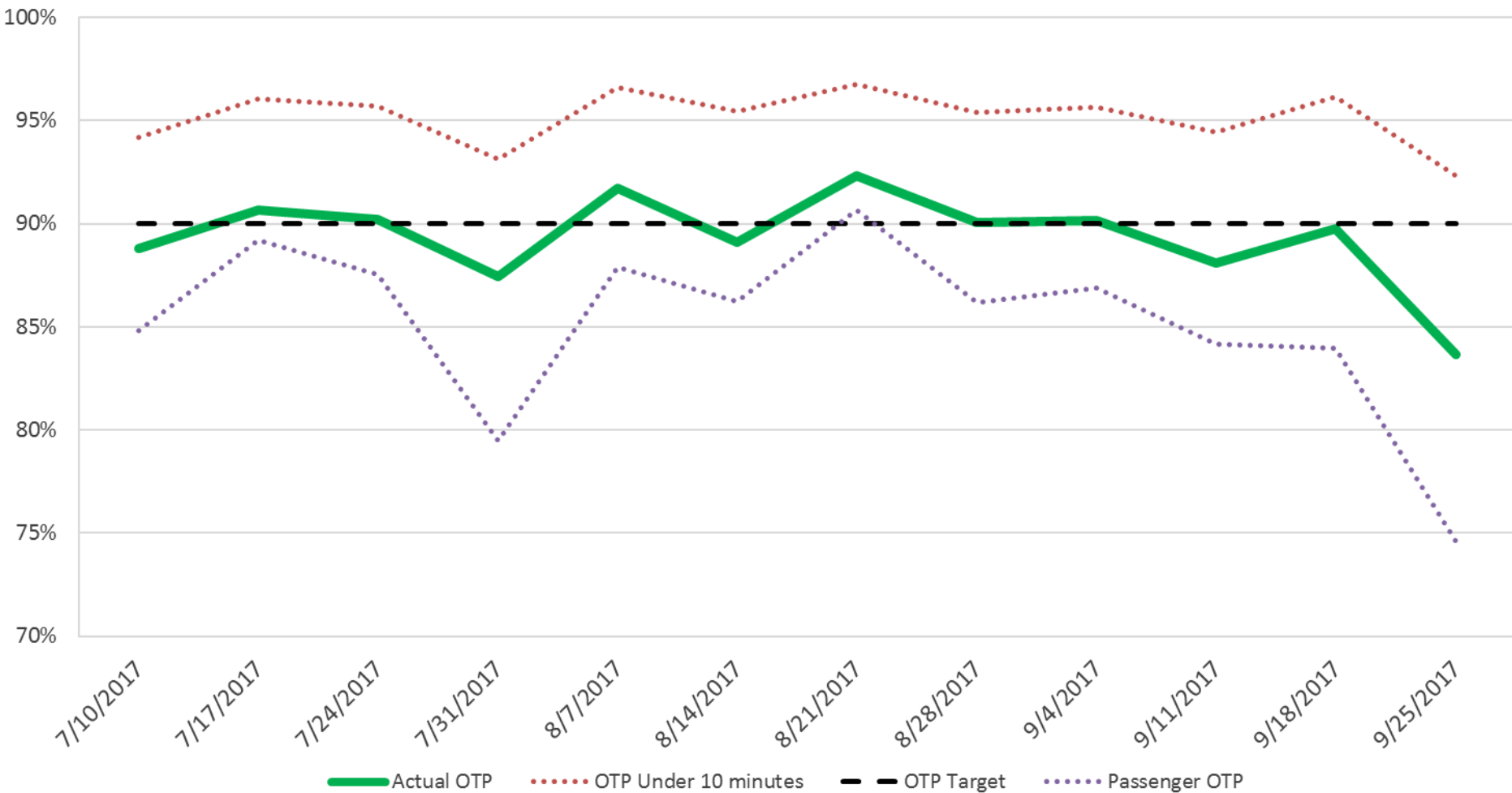


FMCB Commuter Rail Update

October 2
2017

On Time Performance

On Time Performance
(Weekly Average - Last 12 Weeks)



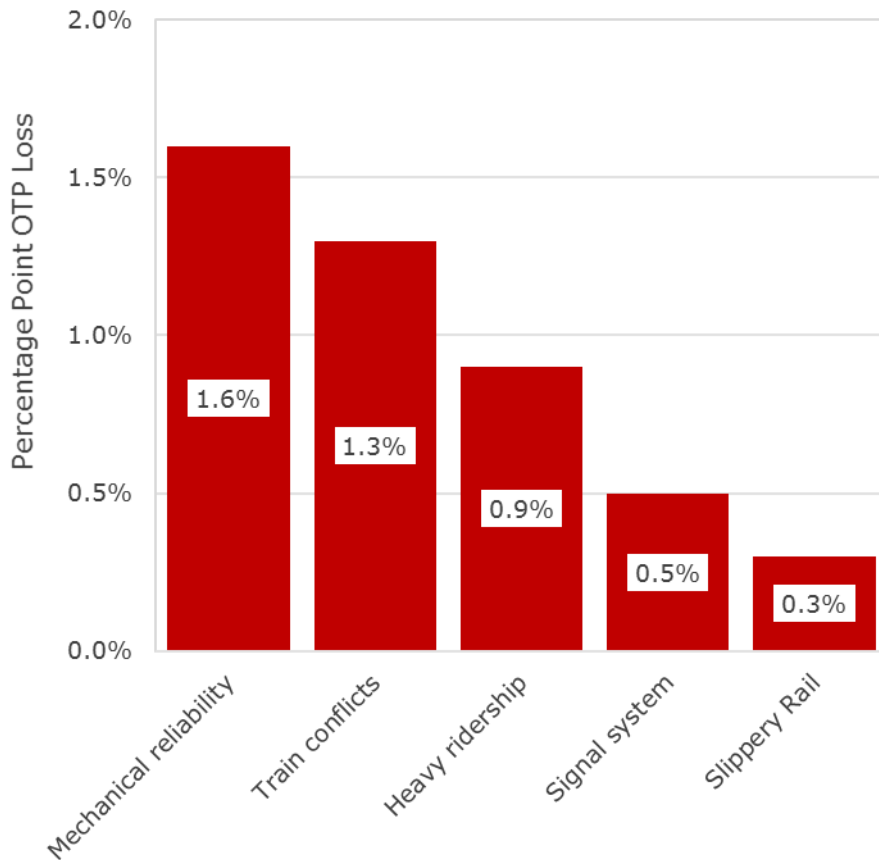
On Time Performance by Line

One Year OTP Patterns
(Actual OTP)

	2016-09	2016-10	2016-11	2016-12	2017-01	2017-02	2017-03	2017-04	2017-05	2017-06	2017-07	2017-08	2017-09	Average
Worcester	80.9%	70.0%	67.6%	85.8%	84.6%	82.8%	81.3%	74.5%	79.3%	69.1%	80.2%	82.5%	74.1%	78.0%
Lowell	94.4%	91.0%	88.1%	94.7%	92.7%	86.5%	90.2%	94.6%	96.8%	94.8%	95.2%	94.5%	90.1%	92.7%
Providence	86.7%	87.9%	86.8%	91.5%	88.7%	80.0%	87.8%	92.2%	89.6%	86.4%	89.0%	89.3%	89.0%	88.1%
Haverhill	79.0%	79.8%	83.8%	86.3%	89.2%	80.4%	85.1%	91.9%	90.4%	80.6%	79.0%	88.8%	81.4%	84.4%
Franklin	90.0%	84.1%	76.8%	92.7%	91.2%	84.9%	89.0%	88.7%	91.0%	88.7%	88.2%	86.6%	88.2%	87.7%
Fitchburg	81.2%	74.0%	69.7%	78.7%	88.3%	75.0%	80.9%	88.1%	91.1%	85.7%	88.9%	89.7%	91.2%	83.3%
Newburyport	92.3%	84.6%	86.4%	90.4%	89.5%	81.0%	85.0%	90.5%	94.1%	87.1%	92.5%	87.5%	88.5%	88.4%
Fairmount	98.0%	96.6%	96.7%	97.5%	97.8%	97.2%	96.4%	97.6%	95.8%	97.3%	98.3%	97.3%	97.6%	97.2%
Needham	91.9%	90.9%	80.6%	94.0%	90.6%	83.4%	92.6%	92.7%	94.7%	91.6%	94.1%	92.3%	92.1%	91.0%
Rockport	94.3%	87.8%	85.8%	92.0%	90.0%	83.4%	87.7%	91.4%	94.1%	89.1%	92.6%	89.1%	84.7%	89.4%
Stoughton	85.0%	86.7%	85.7%	91.6%	84.6%	78.4%	87.1%	87.6%	87.8%	87.1%	91.0%	89.1%	89.5%	87.1%
Middleboro	93.8%	91.6%	95.2%	94.1%	93.4%	94.7%	92.6%	90.2%	93.0%	88.7%	92.4%	91.2%	92.2%	92.5%
Kingston/Plymouth	96.9%	97.7%	96.0%	94.7%	95.6%	95.5%	91.7%	95.0%	94.0%	92.4%	94.7%	95.1%	96.7%	95.1%
Greenbush	97.4%	96.4%	98.0%	97.7%	97.1%	97.7%	94.8%	93.9%	94.6%	95.0%	97.4%	95.3%	96.9%	96.3%
Network OTP	89.6%	86.2%	84.5%	91.2%	90.8%	85.4%	88.3%	90.3%	91.5%	87.4%	90.3%	90.2%	88.6%	88.8%

On Time Performance Improvement

Five Largest Causes of Delays on Network
(Summer 2016 - Summer 2017, excluding planned works)



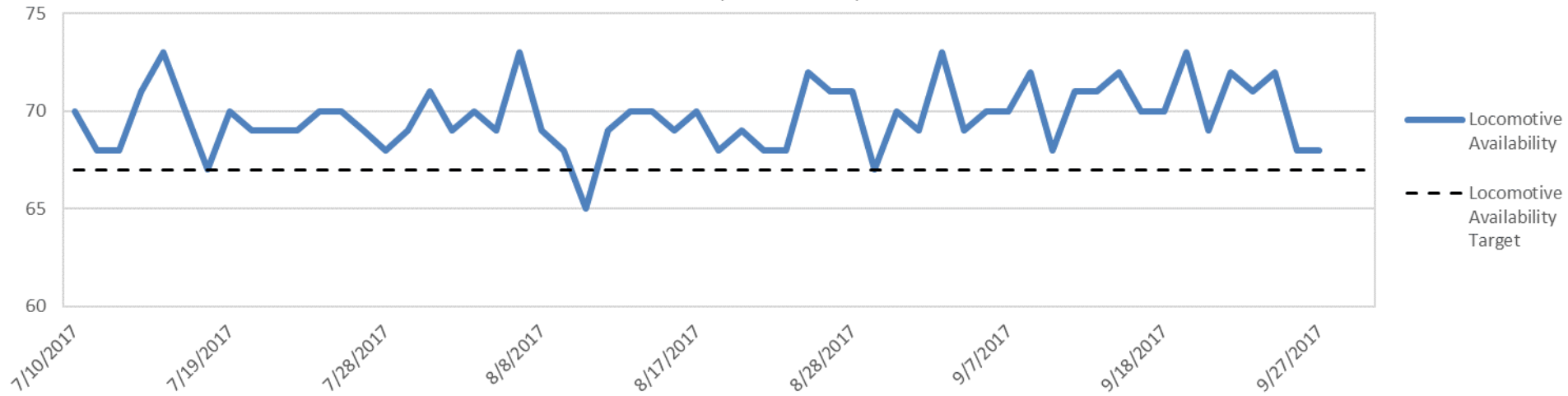
Issue	Current Actions
Mechanical Reliability	<ul style="list-style-type: none"> See Mechanical Reliability Improvement (below)
Train Conflicts	<p>November schedule improvements:</p> <ul style="list-style-type: none"> Tweaks on Lowell and Haverhill lines to reduce Amtrak conflicts and improve turn times Utilize new double track infrastructure on Haverhill line to reduce conflicts Worcester line tweaks for better separation of trains departing Framingham
Heavy Ridership	<ul style="list-style-type: none"> New plan for daily consist makeup to ensure each train has right number and type of coaches Improving staffing on trains by reallocating crews Hiring 14 new assistant conductors Speed limit increases on Worcester Line
Signal System	<ul style="list-style-type: none"> Partnering with GE to do root cause analysis on Grafton interlocking failures on Worcester line (highest volume line)
Slippery Rail	<ul style="list-style-type: none"> See Slippery Rail Plan (below)

Slippery Rail Planning

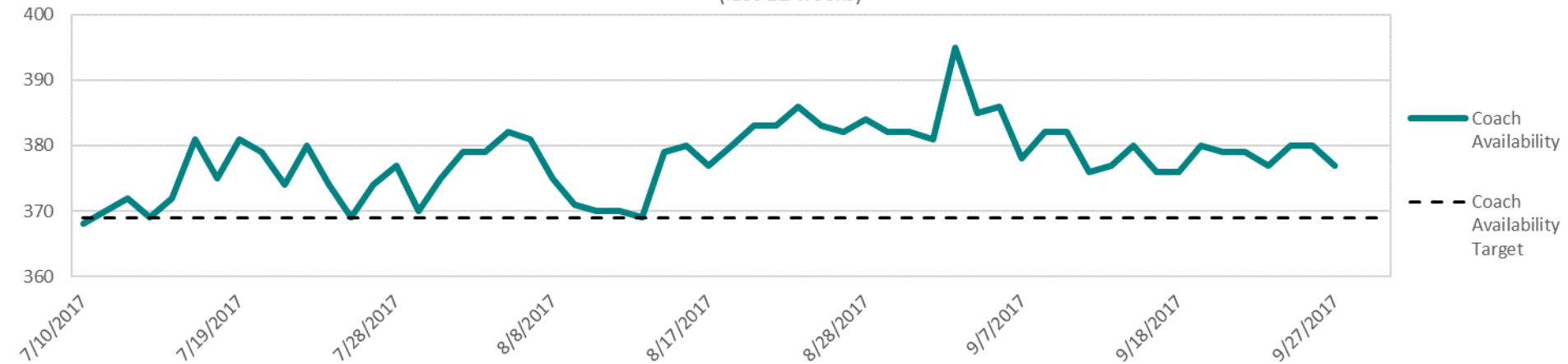
- ⦿ Slippery rail is the biggest On Time Performance issue during October and November
- ⦿ Preparations have been underway for months, including:
 - Completed testing of all rail power washing equipment
 - Leased four locomotives dedicated to power washing during season
 - Brush clearing work has been undertaken on numerous routes with further work planned for the Fitchburg lines over the next few weeks
 - Detailed pre-season testing of all locomotive sanding systems
 - Appointed slippery rail coordinator to own the planning and execution of preparation
 - Using new conductive gel application to avoid shunting issues

Locomotive and Coach Availability

Locomotive Availability
(last 12 weeks)



Coach Availability
(last 12 weeks)



Mechanical Reliability Improvement

⦿ Legacy fleet improvement

- UTEX program – five locomotives will be complete by end of 2017
- MBTA overhaul – plan being developed
- Significant amount of major component replacements on legacy locomotives
- Identifying locomotives with worst performance for root cause analysis
- Introducing diagnostic equipment to identify root cause of failures

⦿ MPI fleet improvement

- Turbocharger replacement program is progressing to plan with 19 locomotives completed
- Replacement of Guru valves on locomotive fleet to improve winter freeze protection – 20 complete to date

⦿ Maintenance procedure improvement

- Additional training on MPI fleet for mechanical team
- Creating fault finding guides

Revenue & Ridership Initiative

- ⦿ Fare is Fair checks started September 5 at off peak times
- ⦿ Checks moved to peak trains September 7
- ⦿ Total number of trains checked approximately 698
 - 224 at peak times
 - 474 at off peak times
- ⦿ Checks have taken place at North Station, South Station, Back Bay and a small number at other locations:
 - North Station 200 peak / 203 off peak
 - South Station 166 off peak
 - Back Bay 105 off peak
- ⦿ Based on train count data around 117,000 individual passengers have been checked
- ⦿ Key feedback has been that customers are activating M-Tickets and expired monthly passes are being renewed more promptly

M-Ticket Activations

- Commuter Rail tariff requires that customers are expected to activate their M-Tickets before boarding
- Since the Fair is Fare checks started the number of activations per day is significantly higher than the average for corresponding days of the week between Oct 2016 – June 2017 (i.e. – excluding summer months with lower ridership)
- TVAs have received anecdotal feedback from passengers that many do not activate unless a conductor checks their phone on board

M-Ticket Activations % Variance from Daily Average (October 16 - June 17)													
Day of Week	09/05/2017	09/06/2017	09/07/2017	09/08/2017	09/09/2017	09/10/2017	09/11/2017	09/12/2017	09/13/2017	09/14/2017	09/15/2017	09/16/2017	09/17/2017
MON							32.3%						
TUE	16.6%							18.2%					
WED		13.6%							14.9%				
THU			22.1%							22.3%			
FRI				21.0%							14.6%		

	09/18/2017	09/19/2017	09/20/2017	09/21/2017	09/22/2017	09/23/2017	09/24/2017	09/25/2017	09/26/2017
MON	32.2%							36.2%	
TUE		18.4%							19.9%
WED			12.1%						
THU				20.2%					
FRI					14.9%				

Customer Feedback

- ⦿ Media has shown interest in Fare is Fair and has helped raise awareness for passengers
- ⦿ The main themes emerging are:
 - Customers want effective ticket collection and don't agree with people avoiding paying
 - Some customers don't understand why they might have to show their ticket twice both to board and potentially to the conductor
 - Customers are used to an "open" system and aren't familiar with an approach where tickets may be checked or have to be displayed more than once
 - Feedback is being reviewed regularly to identify any changes that should be made e.g. the TVA configurations were adjusted based on customer feedback

Forward View

- ⦿ The October check plan is based on off peak checks at South Station, North Station, Back Bay and potentially some other locations
- ⦿ Peak checks will continue to focus on the PM peak at North Station to ensure non-paying customers expect checks and thus change behavior
- ⦿ We expect to carry out pm peak checks at North Station most days through October.
- ⦿ Later in the fall we are planning to start peak checks at South Station and Back Bay on a limited basis.
- ⦿ Parallel planning and development is continuing for:
 - Automatic ticket gate installation at North Station, South Station and Back Bay; and
 - Roll out of hand held ticketing device to accept credit card early in 2018.