

Adebisi Akinyanju
Franchise and Access Manager
Network Rail
1 Puddle Dock, Blackfriars. London
EC4V 3DS

Dean Cowie
Track Access Manager
First MTR South Western Trains Limited
4th Floor, South Bank Central
30 Stamford Street, London. SE1 9LQ

Jonathan Rodgers
Senior Case Officer
The Office of Rail and Road
25 Cabot Square
London, E14 4QZ

22 August 2024

Dear Jonathan Rodgers,

1 Proposal to supplement the CP7 Track Usage Price List

- 1.1 The purpose of this letter is to propose, and seek approval of, a supplement to the Control Period 7 (CP7) Track Usage Price List, consistent with Schedule 7 of the First MTR South Western Trains Limited Track Access Contract. The proposed supplement comprises a new Variable Usage Charge (VUC) rate for the vehicle type(s) that are listed in Table 1, and which are operated by First MTR South Western Trains Limited.
- 1.2 This proposed supplement to the CP7 Track Usage Price List has been agreed between Network Rail and First MTR South Western Trains Limited. It is required because of a modification of an existing vehicle type creating a new sub-class.
- 1.3 It is required because of a modification of an existing vehicle type from a 5 car (458-5) to a 4 car (458-4). See the full details in Appendix 1 - SWR Vehicle Change Notification attached.
- 1.4 The exact date the new VUC rate(s) will apply from is 05 June 2024.
- 1.5 The following documents have been enclosed either in the Appendix to this letter or separately via the accompanying email:
 - a) The output sheet from the Official CP7 VUC Calculator;
 - b) A fully completed passenger pro forma; and
 - c) SWR Vehicle Change Notification
 - d) 458-5 Detailed data Revised.
 - e) Summary of SWR vehicle data workings
- 1.6 The new VUC rate(s) proposed in this letter are shown in Table 1 and were calculated using the agreed Official CP7 VUC Calculator developed by Network Rail, in 2023/24 prices. The output sheet from the calculator sets out the proposed new rate and corresponding input information.
- 1.7 See Appendix A for the averaging methodology used.

Table 1: List of VUC rates included under this application.

Vehicle name	VUC rate (pence per vehicle mile, 2023/24 prices)
458/4/M	20.13
458/4/T	13.26

1.8 If you have any queries in relation to the calculation of the proposed new VUC rate(s), or in relation to the content of this letter, we would be happy to discuss this with you in more detail.

Yours sincerely,

Adebisi Akinyanju

Network Rail

Dean Cowie

First MTR South Western Trains

2 Appendix A: Averaging methodology.

- 2.1 This section provides evidence and further detail of the agreed methodology applied to average vehicle characteristics used in the Official CP7 VUC Calculator to calculate the VUC rates being applied for and contained in Table 1.
- 2.2 See below the summary of the average methodology used as prescribed in the Official CP7 VUC Calculator to calculate the VUC rates. Also included for detailed data are; a) the 458-5 detailed data revised, and b) the summary of SWR vehicle data workings.

Characteristic	Unit	Vehicle 1 - 458/4/M	Vehicle 2 - 458/4/T
Vehicle code	n/a	Average of 2xDMCO and 1xMOS	TOS(W)
Tare weight (new vehicles)	Tonnes (t)	Average of 3 vehicles	
Total number of seats (new or modified)	n/a	Average of 3 vehicles	
Unsprung mass	Kg/axle	Average of 3 vehicles	

Characteristic	Document						
	A	B	C	D	E	F	G
	Letter from SWR to NR customer team	Dynamics & gauging data sheet	Email from operator (SWR) 08/03/24	VUC calculator (operator completed)	VUC calculator (operator completed)	Collated & averaged data (customer team)	Email from operator (SWR) 10/06/24
1 Vehicle class / name	458/4						
2 Vehicle code						Trailer = TOS(W), Motor is TBC as is average of 3 vehicles	
3 Vehicle type	EMU						
4 Vehicle weight							Averaged - see section 2 below
5 Total number of seats (new or modified)		<ul style="list-style-type: none"> Motor: 64 (averaged over 3 vehicles) Trailer: 42 Averaged - see section 2 below					
6 Max speed of vehicle*	100 mph						
7 Route-based OR average operating speed (if applicable)*:	n/a	n/a	n/a	n/a	n/a	n/a	n/a
8 Number of axles			4				
9 Unsprung mass			Average unsprung mass - 1/2 worn wheels (kg)				Averaged - see section 2 below
10 Curving class			<ul style="list-style-type: none"> Motor: Coach_50_50 Trailer: Coach_50_40 				

Section 2 - averaging of data

Info from documents: F, G, B, C.

Manufacturer vehicle code (Doc F and G)	Operator defined vehicle code (Doc F and G)	Motor / trailer?	Mass (kg) (Doc G)	Number of seats (Doc B)	Unsprung mass (Average unsprung mass - 1/2 worn wheels (kg)) (Doc C)
BJ/BM	DMCO	Motor	46,516	64	1,514
BK	TOS(W)	Trailer	33,743	42	1,289
BL	MOS	Motor	41,200	64	1,505

Trailer comprises 1x BK (1x TOS(W))

Trailer vehicle mass (tonnes) = 33.743
 Trailer number of seats = 42
 Trailer unsprung mass (kg/axle) = 1,289

Motor is an averaged of: 1x BJ, 1x BL and 1x BM (equivalent to 2x DMCO and 1x MOS)

Motor vehicle mass (tonnes) = $(46,516 + 46,516 + 41,200) / 3$
 = 44,744

Motor number of seats = $(64 + 64 + 64) / 3$
 = 64

Motor unsprung mass (kg/axle) = $(1514 + 1514 + 1505) / 3$
 = 1511

3 Appendix B: VUC calculator output

3.1 This section provides evidence of the output(s) from the CP7 VUC calculator to confirm and support the proposed new rate(s) and vehicle characteristics for each vehicle under this application. Each separate VUC calculator output sheet, corresponding to each vehicle under this application, is provided on a separate page.

Vehicle type 1 - 458/4/M

Official CP7 VUC Calculator Passenger **Passenger vehicles**
V8c: March 2024



Vehicle data	
Vehicle name/class	458/4/M (Motor)
Vehicle type	Coach or Multiple Unit
Number of axles	4
Speed (max, mph)	100
Route speed (max, mph)	
Speed (operating, mph)	55.24 (Calculated)
Tare weight (t)	44.744
Operating weight (t)	47.144
Unsprung mass (kg)	1511
Curving class	Coach_50_50
Ct factor	0.89

Calculate another vehicle VUC rate

Calculated VUC		
2023/24 prices		
VUC	20.13	4.2704
	p/vm	£/kGTM
VUC Breakdown		
Track	8.51	1.8052
Structures	1.31	0.2781
Signals (variable)	0.24	0.0518
Signals (fixed)	0.28	0.0592
Surface damage	9.79	2.0761

Vehicle type 2 - 458/4/T

Official CP7 VUC Calculator: Passenger **Passenger vehicles**
V8c: March 2024



Vehicle data	
Vehicle name/class	458/4/T
Vehicle type	Coach or Multiple Unit
Number of axles	4
Speed (max, mph)	100
Route speed (max, mph)	
Speed (operating, mph)	55.24 (Calculated)
Tare weight (t)	33.743 Seats 42
Operating weight (t)	35.318
Unsprung mass (kg)	1289
Curving class	Coach_50_40
Ct factor	0.89

Calculate another
vehicle VUC rate

Calculated VUC		
2023/24 prices		
VUC	13.26	3.7550
	p/vm	£/kGTM
VUC Breakdown		
Track	5.12	1.4485
Structures	0.41	0.1169
Signals (variable)	0.15	0.0415
Signals (fixed)	0.28	0.0791
Surface damage	7.31	2.0690