

West of England Partnership

Rapid Transit – Ashton Vale to Temple Meads and Bristol City Centre Passenger Demand Forecasting and Analysis

9th March 2009

Notice

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1. Scheme Demand Impacts

1.1 Introduction

The following note sets out further information on the scale, nature and distribution of forecast Rapid Transit (RT) demand in 2016 and 2031. It is designed to further inform the appraisal and value for money assessment set out in Section 3 of the main document.

The G-BATS3 modelling system, underpinning this appraisal, is described in detail in Appendices 3B (Highway), 3C (Public Transport), 3D (Demand model) and 3E (Forecasting). For the purposes of the appraisal, model runs have been undertaken for the AM peak hour (08:00 - 09:00), average inter-peak hour (10:00 – 16:00) and PM peak hour (17:00 – 18:00) at 2016 and 2031. The appraisal is based upon a comparison of the Do-Minimum (without RT) and Do-Something (with RT) scenarios.

1.2 Bus and RT demand in 2016

1.2.1 Overall Patronage

Table 1.1 shows the patronage of the new and modified services with the introduction of RT that replaces the existing 903 P&R service from Ashton Vale to City Centre.

Table 1.1 – 2016 Peak Hour Service Patronage

Service Code	Service Description	Number of Boardings (persons)					
		AM		IP		PM	
		DM Scenario	DS Scenario	DM Scenario	DS Scenario	DM Scenario	DS Scenario
<i>P&R/RT Services</i>							
903 / RT	Ashton Vale to City Centre	700	1,550	365	749	424	1,257
<i>New / Re-routed Bus Services</i>							
X1 Nbnd	WsM to Bristol	156	199	49	77	112	200
X1 Sbnd	Bristol to WsM	98	145	112	176	171	329
X7 Nbnd	Clevedon to Bristol	45	43	4	6	10	12
X7 Sbnd	Bristol to Clevedon	19	24	18	26	41	48
354 Nbnd	Nailsea to Bristol	120	129	16	20	28	30
354 Sbnd	Bristol to Nailsea	53	65	26	41	125	153

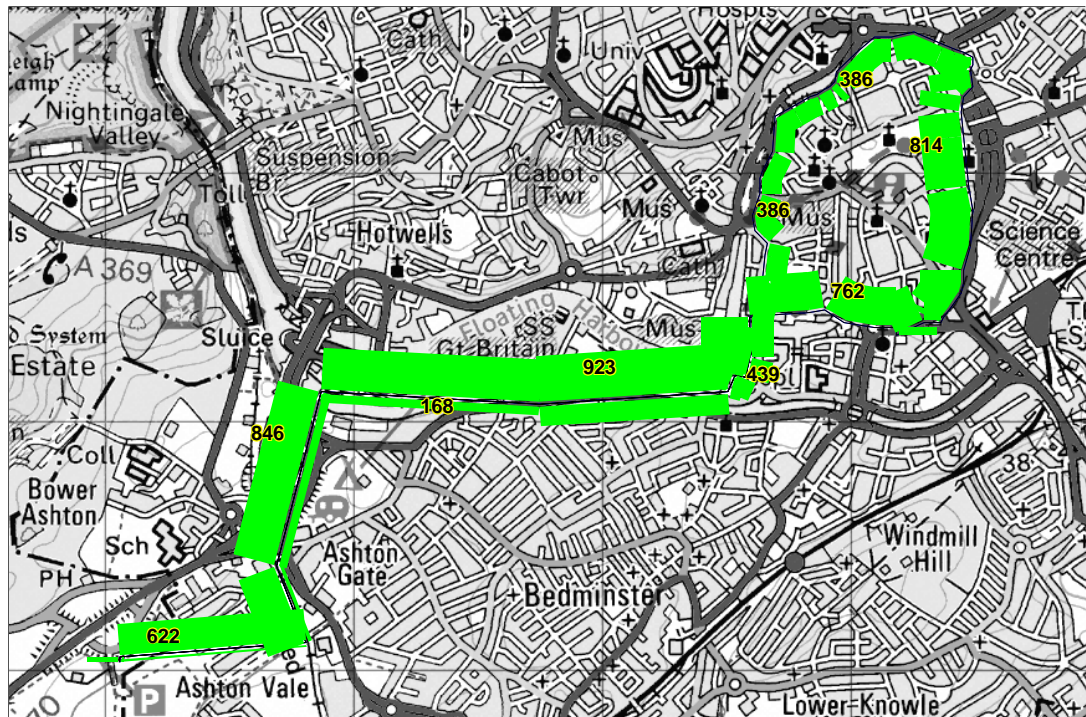
The addition of the RT service encourages more passengers to use the Ashton Vale P&R site, and more than doubles the number of passengers on the (903/RT) route compared the Do Minimum scenario.

With the introduction of the RT scheme, patronage on the existing X1 service increases (relative to the DM) in all three time periods. This is because the X1 is able to offer improved journey times as it shares the segregated alignment with RT as it travels between Ashton Vale and the City Centre. Whilst Services X7 and the 354 also benefit from improved journey times on the segregated alignment, but this re-routing results in smaller increases in patronage on these services.

1.2.2 RT Route Flows

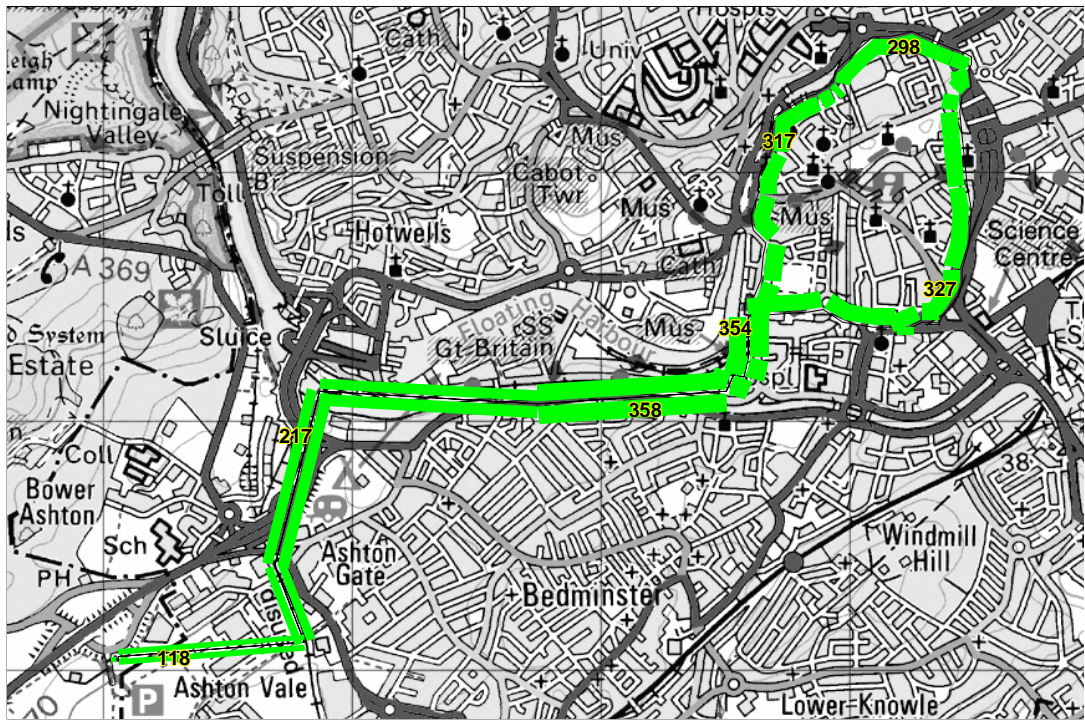
Figure 1.1 to shows the hourly volume of passengers on the RT service in each time period. The AM peak hour has the highest patronage of the three time periods, with a significant proportion of passengers travelling from the Park& Ride site to Bristol City Centre. The one-way patronage on the busiest section is 923 persons/hour and is within the proposed capacity of 1,200 provided by the 6 minute headway service.

Figure 1.1 – 2016 RT Peak Hour Passenger Volume (AM Peak Hour)



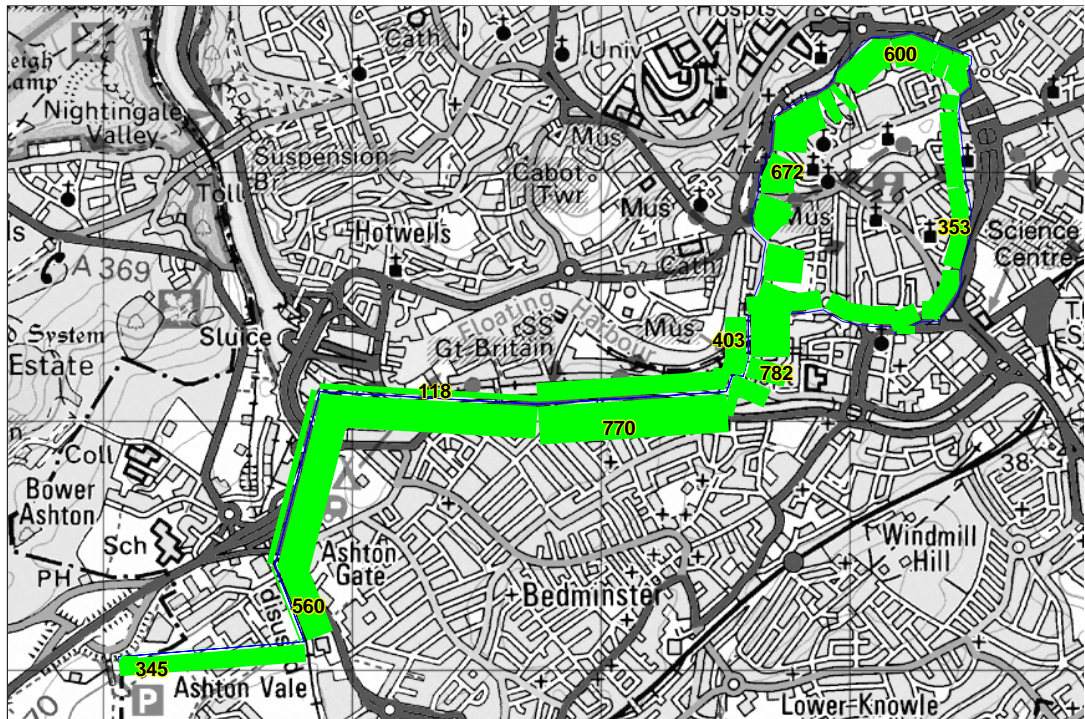
Units: persons / hour

Figure 1.2 – 2016 RT Peak Hour Passenger Volume (Average Inter-Peak Hour)



Units: persons / hour

Figure 1.3 – 2016 RT Peak Hour Passenger Volume (PM Peak Hour)



Units: persons / hour

1.2.3 Loading Profiles

Figure 1.4 to Figure 1.6 illustrate the profile of passenger movements on the RT service, showing boarding and alighting of passengers at each stop for the three time periods. In the AM Peak hour for example, over 600 passengers boarding the RT service at the Ashton Vale P&R site (Figure 1.4).

Figure 1.4 – 2016 RT Hourly Boarding and Alighting Patterns (AM Peak Hour)

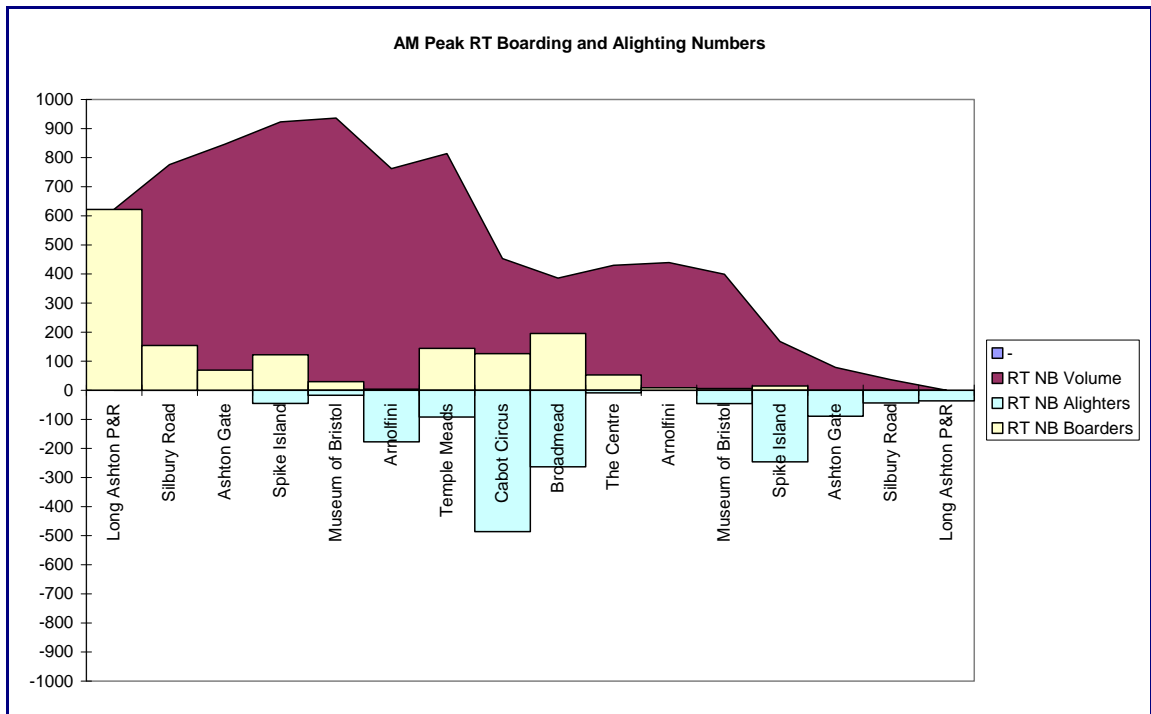
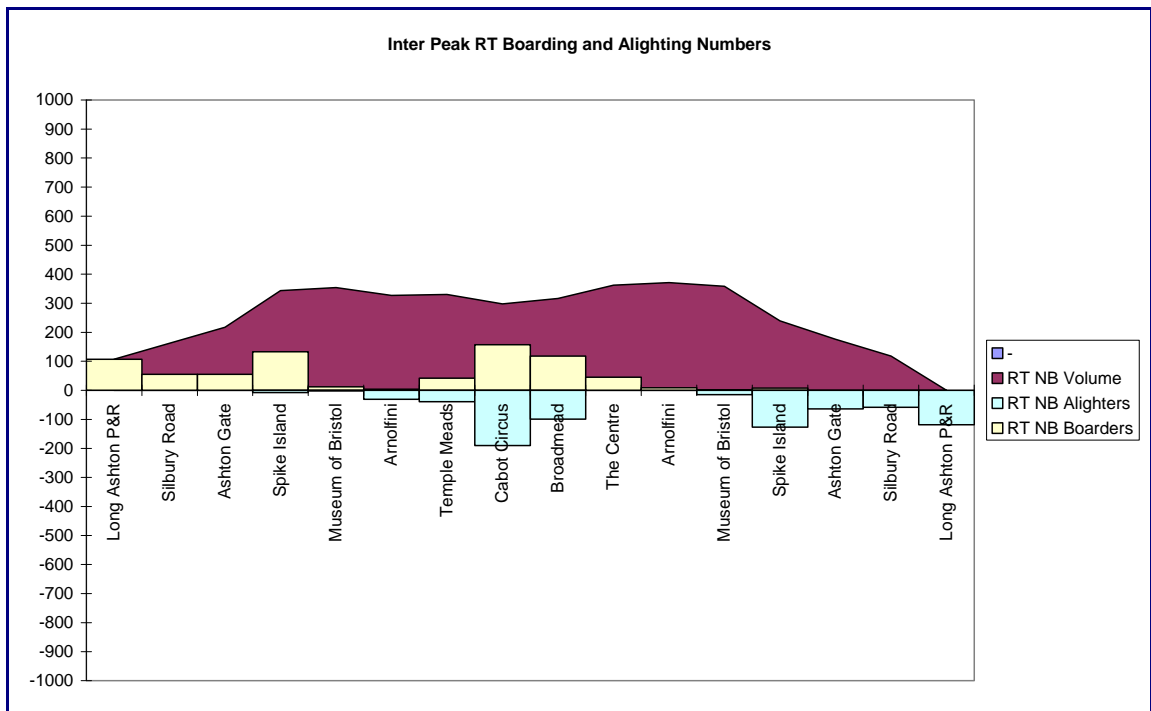
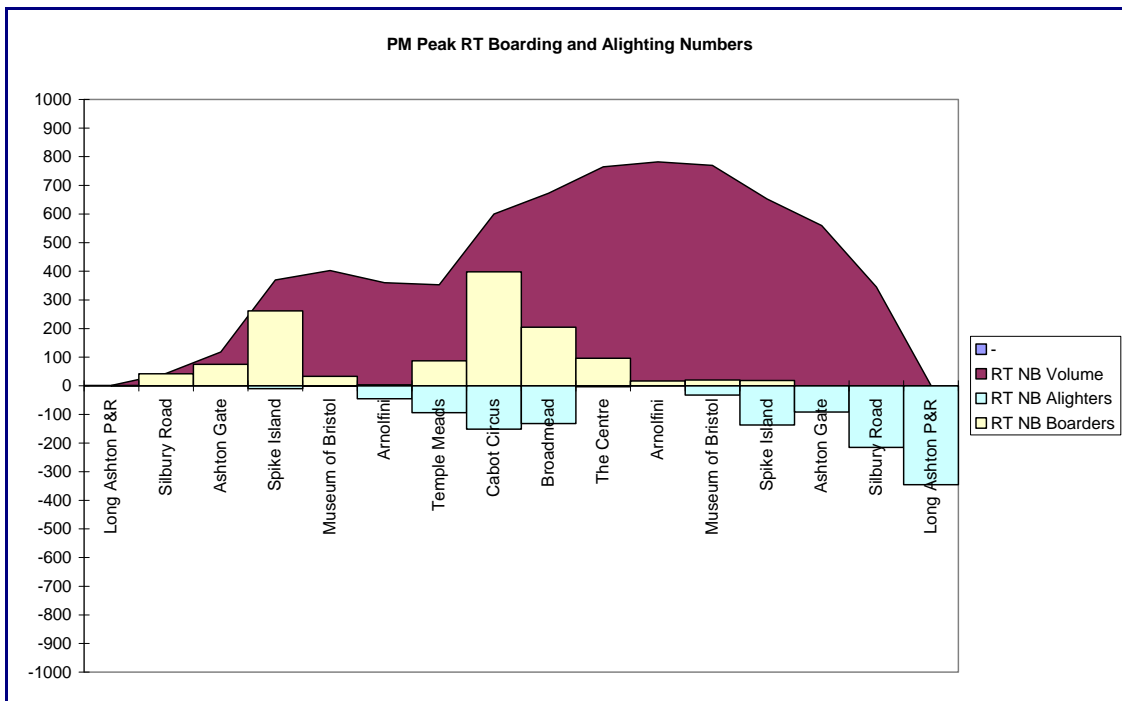


Figure 1.5 - 2016 RT Hourly Boarding and Alighting Patterns (Ave. Inter-Peak Hour)



A large proportion of the trips using the RT service in the PM peak are the passengers returning to the P&R site (Figure 1.6).

Figure 1.6 - 2016 RT Hourly Boarding and Alighting Patterns (PM Peak Hour)



1.2.4 Mode Shares

Overall Mode Shares

For 2016, there is a shift in overall mode shares (across the study area) in favour of public transport when the RT line is introduced as shown in Table 1.2.

The addition of the RT line encourages switching from bus to the RT (circa +0.3% to 0.5%). There is also a small shift in car passengers to public transport modes as well as increasing the number of people using Park & Ride (+0.1%).

Table 1.2 – 2016 Overall Mode Shares (Study Area)

	Do Minimum	Do Something
AM Peak		
Car	86.1%	85.8%
Bus	9.5%	9.2%
Rail	3.8%	3.7%
RT	0.0%	0.5%
P&R	0.6%	0.7%
Total	100%	100%
Inter peak		
Car	90.5%	90.4%
Bus	6.3%	6.1%
Rail	2.9%	2.9%
RT	0.0%	0.3%

	Do Minimum	Do Something
P&R	0.3%	0.3%
Total	100%	100%
PM Peak		
Car	87.4%	87.1%
Bus	8.6%	8.4%
Rail	3.7%	3.6%
RT	0.0%	0.5%
P&R	0.3%	0.4%
Total	100%	100%

City Centre Cordon Crossings

As a result of adding the RT line, the percentage of car passengers which cross the central cordon inbound in the AM peak and outbound in the PM peak drops by 1% (Table 1.3). Bus passenger trips also fall in all peaks and directions since passengers using the P&R bus in the DM are now using the RT service instead.

The boundary for City Centre cordon is shown in Figure 1.7 below.

Figure 1.7 – City Centre Cordon

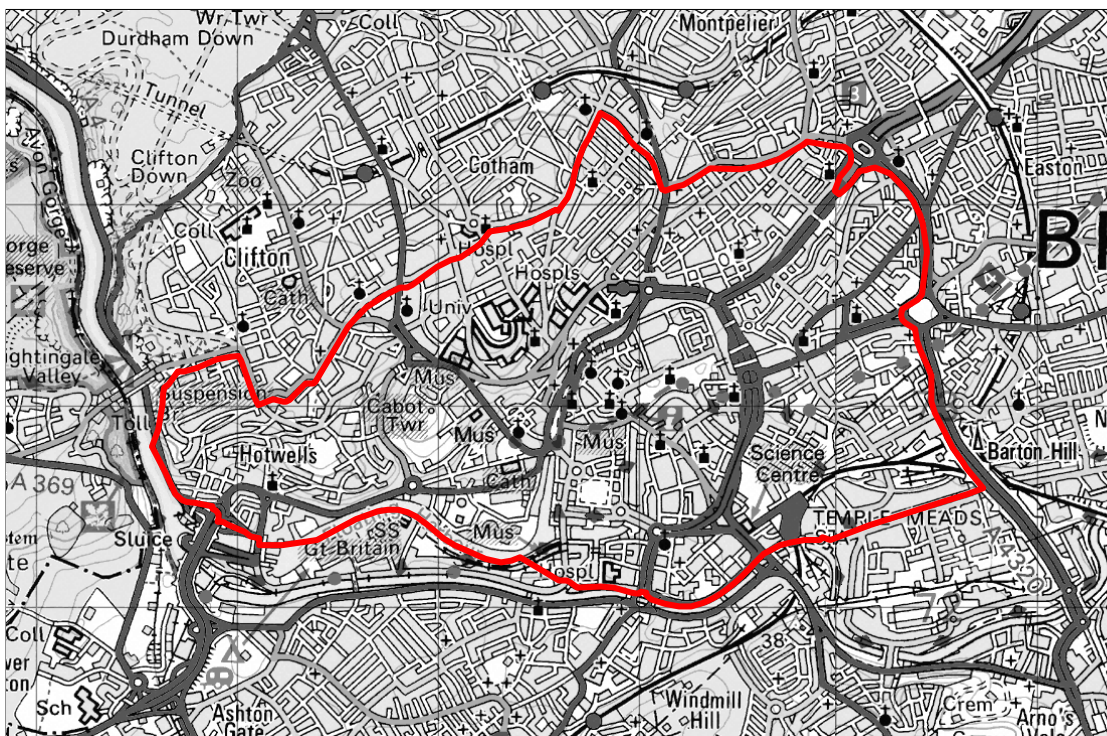


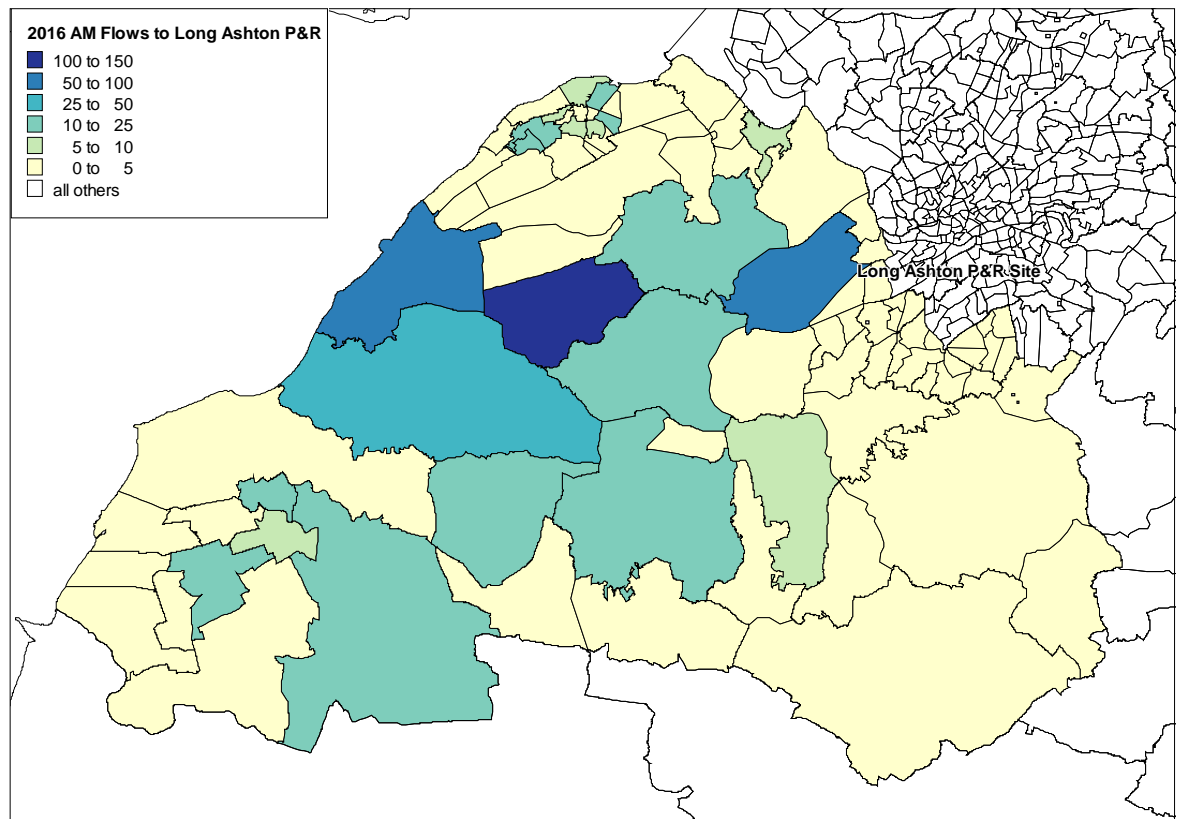
Table 1.3 – 2016 Mode Share for Trips Crossing the City Centre Cordon

	AM		IP		PM	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
Do Minimum (Without RT)						
Car	64%	73%	79%	77%	76%	67%
Bus	28%	19%	15%	17%	18%	25%
Rail	8%	8%	6%	6%	7%	7%
RT	0%	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%
Do Something (With RT)						
Car	63%	72%	78%	77%	75%	66%
Bus	27%	17%	14%	16%	17%	24%
Rail	7%	8%	6%	5%	7%	7%
RT	3%	2%	2%	2%	2%	3%
Total	100%	100%	100%	100%	100%	100%
Difference 100%						
Car	-1%	-1%	0%	0%	0%	-1%
Bus	-2%	-1%	-1%	-1%	-1%	-1%
Rail	0%	0%	0%	0%	0%	0%
RT	3%	2%	2%	2%	2%	3%
Total	0%	0%	1%	1%	1%	1%

Trip Distribution for Rapid Transit Users

A check of the distribution of demand for RT confirms that trips are attracted predominantly from those parts of south west Bristol (and areas further to the south west in North Somerset) which benefit from improved accessibility and journey times with the introduction of RT. Figure 1.8 demonstrates the distribution of the car trips arriving at Ashton Vale P&R in the 2016 AM Peak Hour.

Figure 1.8 – 2016 Distribution Car Trips Arriving at Ashton Vale P&R site (AM Peak Hour)



P&R Users at Ashton Vale Site

The introduction of the RT line is designed to encourage mode shift from car to bus for trips to Bristol City Centre. Table 1.3 shows a decrease of approximately 300 vehicles in the AM inbound direction, which represents a 1% reduction across the City centre cordon as a whole

The introduction of RT serving Ashton Vale P&R site, and the improved service, results in an increase in P&R trips to Bristol City Centre (Table 1.4). There is an increase of 12% in total vehicles entering and leaving the P&R site for the AM peak hour, and 6% in the PM peak hour reflecting the increased attractiveness of the service.

Table 1.4 - Vehicles using Ashton Vale P&R Site in 2016

	Arriving	Leaving	Total
Do Something (With RT)			
AM Peak Hour	615	34	649
Ave. IP Hour	83	107	190
PM Peak Hour	81	369	450
Do Minimum (Without RT)			
AM Peak Hour	534	30	564
Ave. IP Hour	91	104	195
PM Peak Hour	86	339	425
Difference			
AM Peak Hour	81	4	85
Ave. IP Hour	-8	3	-5
PM Peak Hour	-5	30	25

Units: vehicles / hour

1.3 Bus and RT demand in 2031

1.3.1 Overall Patronage

The RT scheme was also tested in 2031. Table 1.5 shows the patronage of the new and modified services with the addition of RT for 2031.

Table 1.5 – 2031 Peak Hour Service Patronage

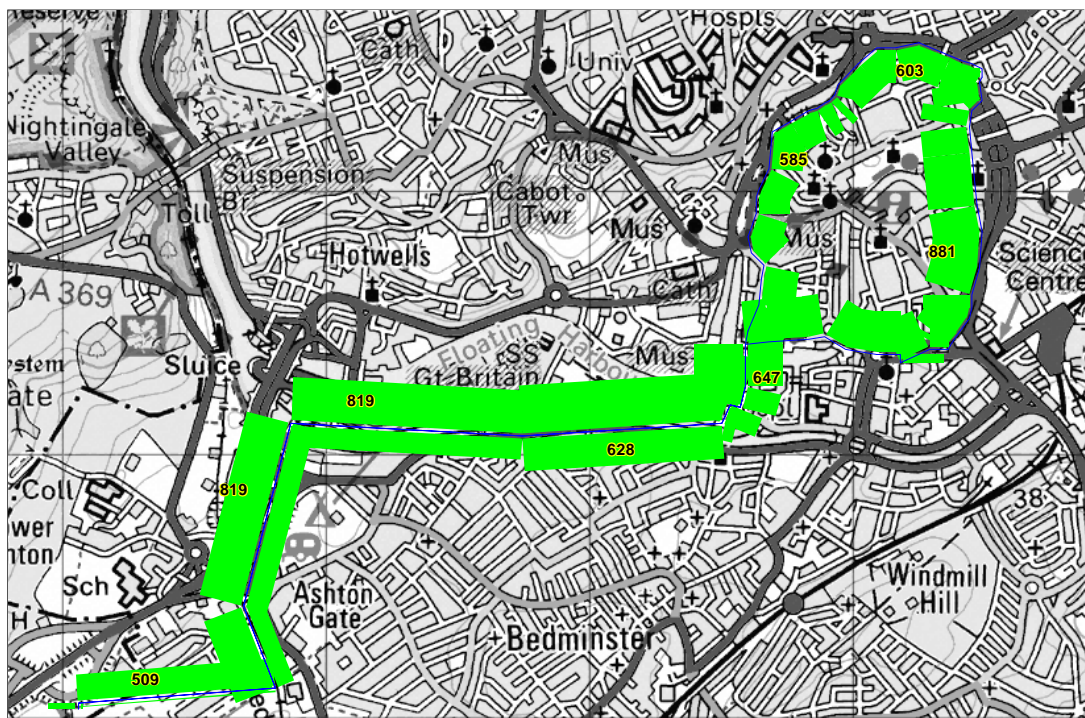
Service Code	Service Description	Number of Boardings					
		AM		IP		PM	
		DM Scenario	DS Scenario	DM Scenario	DS Scenario	DM Scenario	DS Scenario
P&R / RT Services							
903/RT	Ashton Vale to City Centre	477	1781	318	1027	327	1734
New / Rerouted Bus Services							
X1 Nbnd	WsM to Bristol	164	277	57	108	129	288
X1 Sbnd	Bristol to WsM	100	215	155	299	163	364
X7 Nbnd	Clevedon to Bristol	39	46	4	6	10	11
X7 Sbnd	Bristol to Clevedon	17	36	16	29	30	54
354 Nbnd	Nailsea to Bristol	96	120	12	18	24	27
354 Sbnd	Bristol to Nailsea	43	80	21	48	96	168

Compared to the Do Minimum, RT patronage in all three peaks increases significantly in 2031. This is as a result of a higher number of overall trips within the scheme catchment area reflecting the land use changes in the area, and a greater attraction to RT - increasing congestion leads to longer journey times by car and conventional bus services.

1.3.2 RT Route Flows

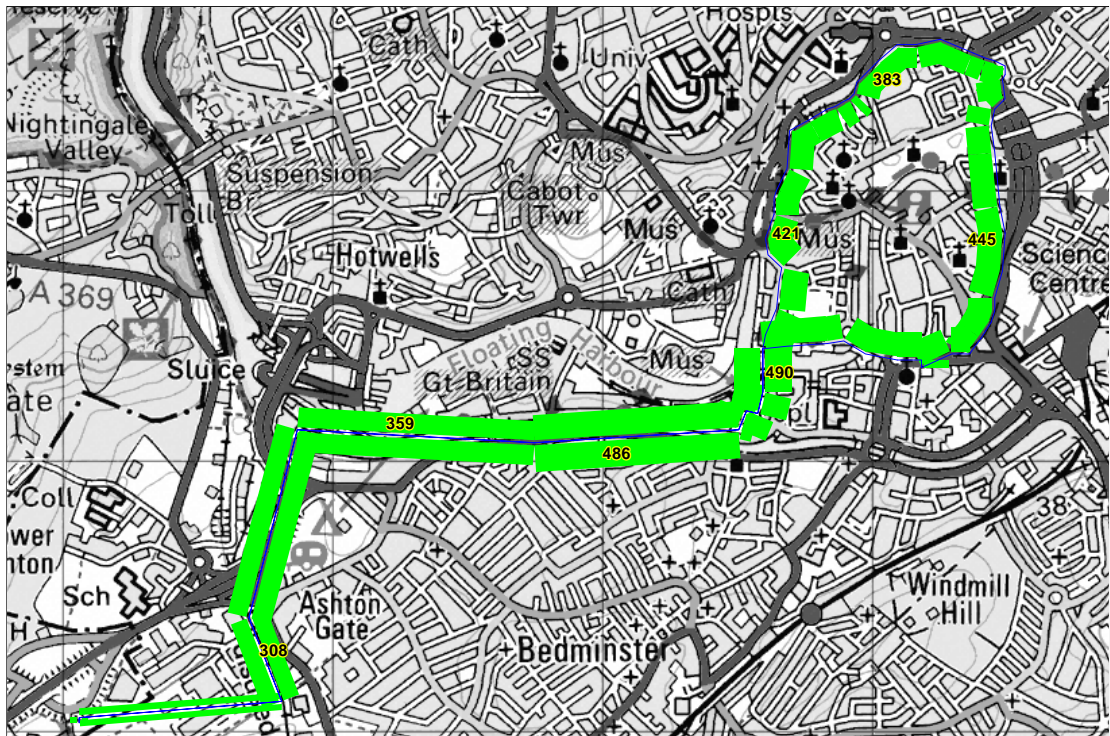
Figure 1.9 to Figure 1.11 shows the hourly volume of passengers on the RT services in each of the three time periods. As with 2016, the AM peak hour has the highest patronage of the three time periods, reflecting the movements of passengers into Bristol City Centre in the morning, with a good proportion of the trips originating from the P&R site. The distribution of trips changes from 2016 with higher levels of usage on outbound links and sections within the City Centre as well as a small reduction in the heaviest link flows inbound towards the City Centre from the P&R site. These changes reflect a small reduction in use of the P&R site itself from 2016 to 2031 resulting from increased congestion on access routes to the site. The maximum link flows of up to 900 passengers remain within available RT capacity.

Figure 1.9 – 2031 RT Peak Hour Passenger Volume (AM Peak Hour)



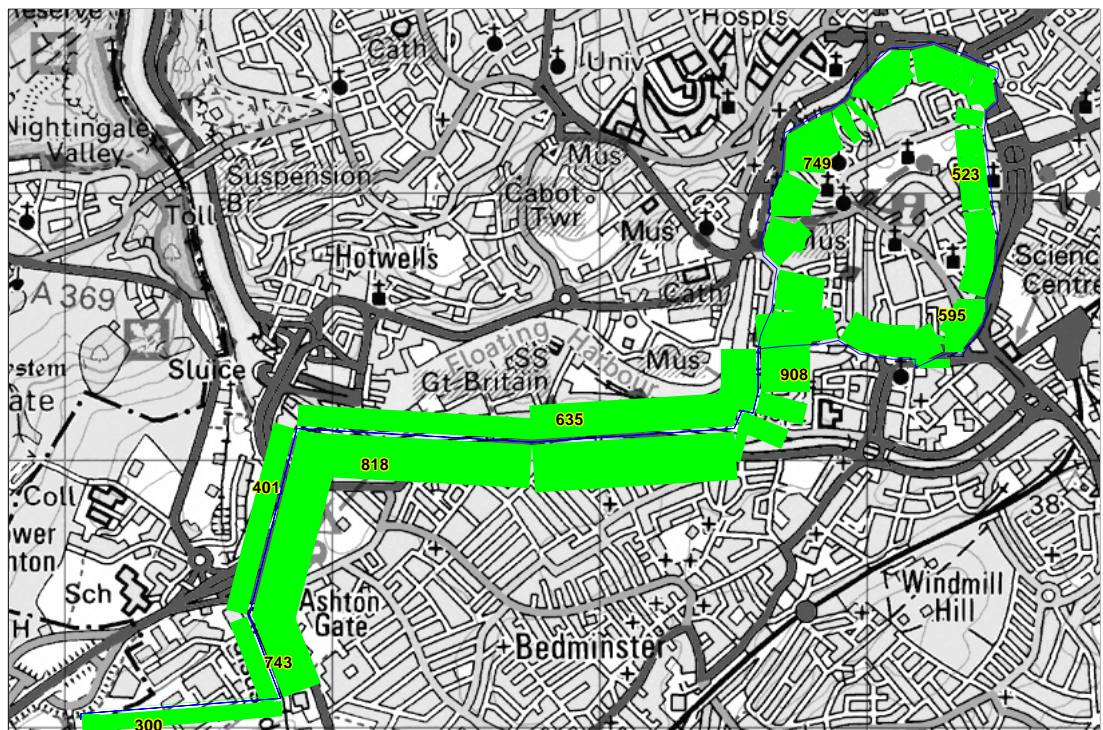
Units: persons / hour

Figure 1.10 – 2031 RT Peak Hour Passenger Volume (Ave. Inter-Peak Hour)



Units: persons / hour

Figure 1.11 – 2031 RT Peak Hour Passenger Volume (PM Peak Hour)



Units: persons / hour

1.3.3 Loading Profiles

Figure 1.12 to Figure 1.14 show the forecast profile boarding and alighting along the RT route for 2031. These indicate a slight drop in demand to/from the P&R site, which is compensated by increases at Silbury Road and within the City Centre. It is also noticeable that passenger demand in the contra-peak direction increases.

Figure 1.12 – 2031 RT Hourly Boarding and Alighting Patterns (AM Peak)

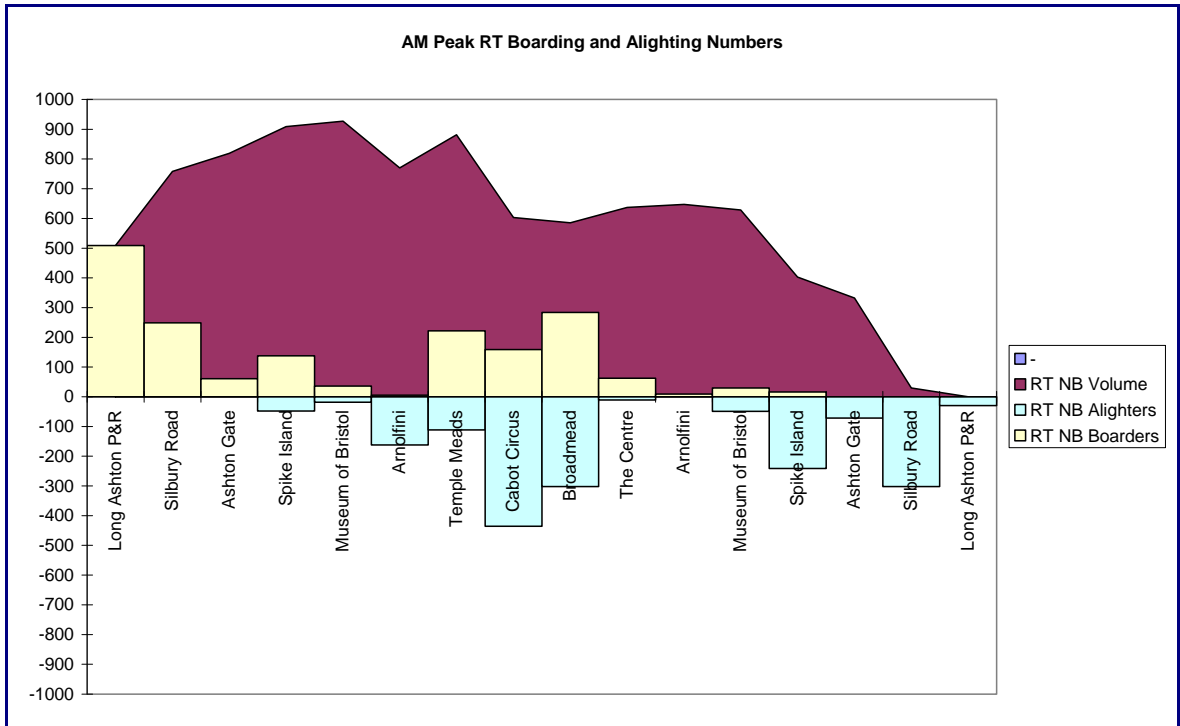
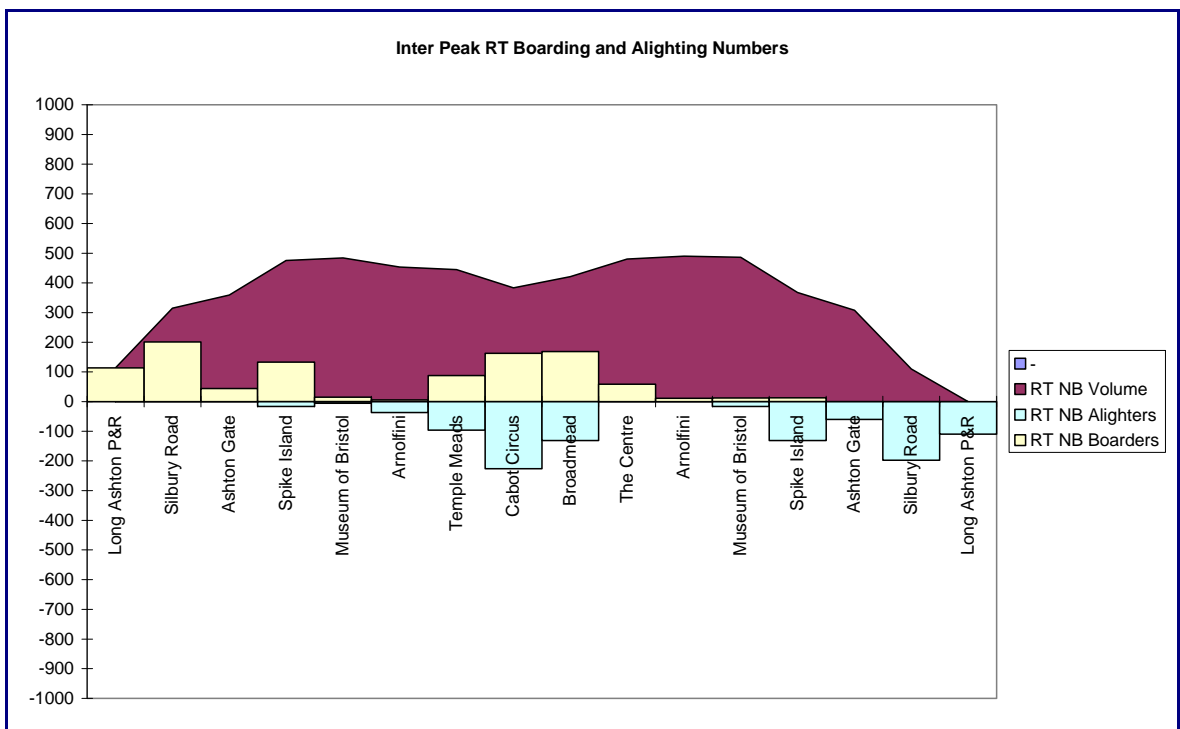
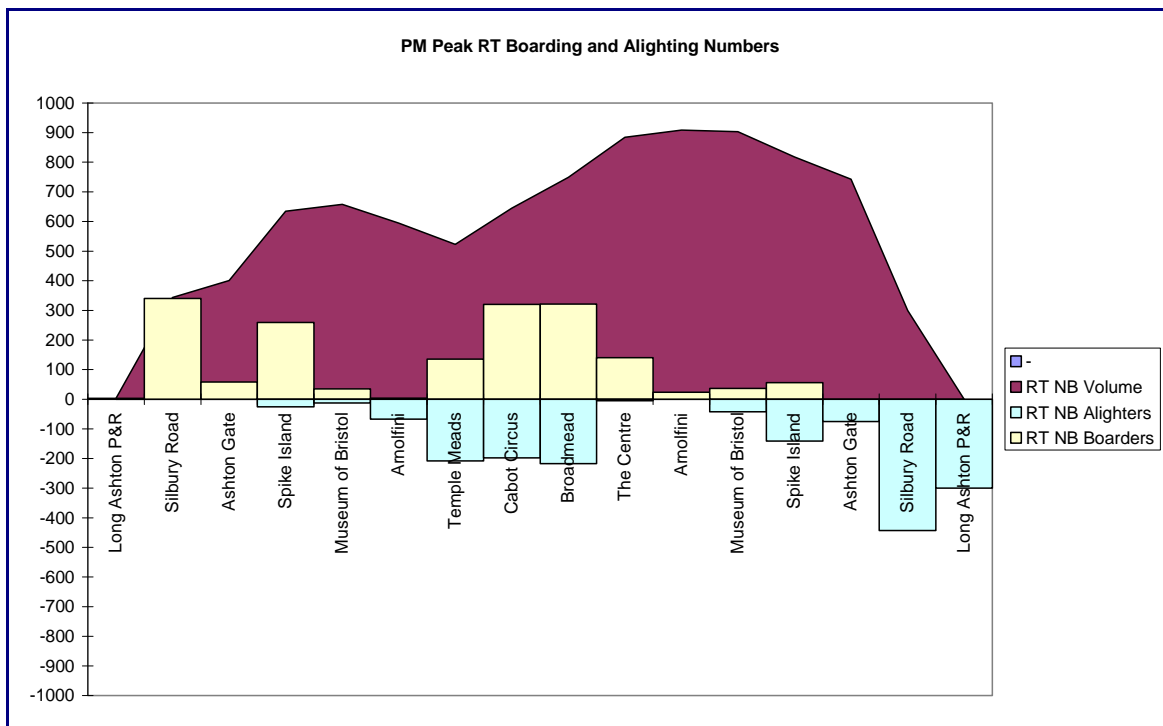


Figure 1.13 – 2031 RT Hourly Boarding and Alighting Patterns (Ave. Inter-Peak)



A significant number of passengers in the PM peak hour in Figure 1.14 are alighting from the RT service at Silbury Road, before the P&R site. These are trips which access new developments in the area and also interchange at this RT stop onto the proposed Portishead Line served at Ashton Gate rail station.

Figure 1.14 – 2031 RT Hourly Boarding and Alighting Patterns (PM Peak Hour)



1.3.4 Mode Shares

Overall Mode Shares

In 2031, there is a further mode share shift in favour of public transport relative to 2016 as demonstrated in Table 1.6 for the whole study area. This occurs in the DM situation with a shift from highway, P&R and bus towards rail, reflecting increasing congestion on the highway network and the addition of the Portishead to Bristol rail link. With the addition of the RT scheme in the Do Something, further reductions in car share occur with demand from road, bus and rail drawn towards RT and P&R.

Table 1.6 – 2031 Mode Share

	Do Minimum	Do Something
AM Peak		
Car	84.8%	84.4%
Bus	8.9%	8.8%
Rail	5.9%	5.7%
RT	0.0%	0.6%
P&R	0.3%	0.5%
Total		

	Do Minimum	Do Something
Inter peak		
Car	90.3%	90.0%
Bus	5.6%	5.5%
Rail	3.9%	3.7%
RT	0.0%	0.5%
P&R	0.2%	0.3%
Total	100%	100%
PM Peak		
Car	85.8%	85.4%
Bus	8.2%	8.0%
Rail	5.9%	5.6%
RT	0.0%	0.7%
P&R	0.2%	0.3%
Total	100%	100%

City Centre Cordon Crossings

As a result of adding the RT line, the percentage of car passengers which cross the central cordon inbound in the AM peak and outbound in the PM peak is 2% less than in the DM (Table 1.7), again due to the additional highway congestion, with these passengers switching to the RT.

Bus passenger trips also fall in all peaks and directions since passengers using the P&R bus in the DM are now using the RT service.

Table 1.7 – Mode Share for Trips Crossing the City Centre Cordon

	AM		IP		PM	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
<i>Do Minimum (Without RT)</i>						
Car	62%	71%	77%	76%	73%	64%
Bus	26%	17%	14%	15%	16%	23%
Rail	12%	11%	9%	9%	11%	13%
RT	0%	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%
<i>Do Something (With RT)</i>						
Car	60%	70%	77%	75%	72%	62%
Bus	25%	16%	13%	15%	15%	22%
Rail	12%	11%	8%	8%	11%	13%
RT	3%	2%	2%	2%	2%	3%
Total	100%	100%	100%	100%	100%	100%

<i>Difference</i>						
Car	-2%	-1%	0%	-1%	-1%	-2%
Bus	-1%	-1%	-1%	-1%	-1%	0%
Rail	-1%	0%	0%	0%	0%	0%
RT	3%	2%	2%	2%	2%	3%
Total	-1%	0%	1%	0%	0%	1%

Trip Distribution for Rapid Transit Users

Table 1.8 shows Ashton Vale P&R demand at 2031. Relative to the DM, there is an increase of 35% in total vehicles entering and leaving the P&R site for the AM peak hour, and 24% in the PM peak hour. However, AM peak demand in both the DM and DS is lower than the corresponding scenarios at 2016, arising from increased congestion on the surrounding road network in 2031

Table 1.8 – Vehicles using Ashton Vale P&R Site in 2031

	Arriving	Leaving	Total
<i>Do Something (With RT)</i>			
AM Peak Hour	576	31	607
IP Hour	96	109	205
PM Peak Hour	103	371	474
<i>Do Minimum (Without RT)</i>			
AM Peak Hour	375	20	395
IP Hour	87	86	173
PM Peak Hour	92	268	360
<i>Difference</i>			
AM Peak Hour	201	11	212
IP Hour	9	23	32
PM Peak Hour	11	103	114

1.4 Passenger Movements

1.4.1 Passenger Movements

Table 1.9 shows the matrices of passenger movement for 2016 and 2031 and all three time periods. The largest movement in the AM peak is from Ashton Vale to Cabot Circus in both years with the corresponding movements from Broadmead to Spike Island in the return direction.

In 2016 the most popular movements in the PM peak is Cabot Circus to Ashton Vale P&R, along with Broadmead to Silbury Road.

Table 1.9 - Hourly Passenger Movements on the RT Line in 2016 and 2031

2016 RT Boarding/Alighting AM Peak Hour													
Boarding/Alighting	Ashton Gate	Spike Island	Museum of Bristol	Arnolfini	Temple Meads	Cabot Circus	Broadmead	The Centre	Museum of Bristol	Spike Island	Ashton Gate	Silbury Road	Ashton Vale P&R
Ashton Vale P&R	0	26	11	103	36	309	138	-	-	-	-	-	-
Silbury Road	-	7	3	37	10	77	20	-	-	-	-	-	-
Ashton Gate	-	11	3	22	11	15	7	-	-	-	-	-	-
Spike Island	-	-	-	15	29	29	49	-	-	-	-	-	-
Museum of Bristol	-	-	-	-	7	16	7	-	-	-	-	-	-
Arnolfini	-	-	-	-	-	4	-	-	-	-	-	-	-
Temple Meads	-	-	-	-	-	37	43	-	-	52	6	4	2
Cabot Circus	-	-	-	-	-	-	-	7	14	40	19	28	18
Broadmead	-	-	-	-	-	-	-	2	32	116	34	4	9
The Centre	-	-	-	-	-	-	-	-	-	34	12	2	5
Arnolfini	-	-	-	-	-	-	-	-	-	4	2	0	1
Museum of Bristol	-	-	-	-	-	-	-	-	-	-	4	0	1
Spike Island	-	-	-	-	-	-	-	-	-	-	9	5	0
Ashton Gate	-	-	-	-	-	-	-	-	-	-	-	-	0

2031 RT Boarding/Alighting AM Peak Hour													
Boarding/Alighting	Ashton Gate	Spike Island	Museum of Bristol	Arnolfini	Temple Meads	Cabot Circus	Broadmead	The Centre	Museum of Bristol	Spike Island	Ashton Gate	Silbury Road	Ashton Vale P&R
Ashton Vale P&R	0	16	8	81	27	265	111	-	-	-	-	-	-
Silbury Road	-	20	7	47	37	59	78	-	-	-	-	-	-
Ashton Gate	-	10	3	19	9	12	8	-	-	-	-	-	-
Spike Island	-	-	-	15	33	38	52	-	-	-	-	-	-
Museum of Bristol	-	-	-	-	5	26	5	-	-	-	-	-	-
Arnolfini	-	-	-	-	-	5	-	-	-	-	-	-	-
Temple Meads	-	-	-	-	-	33	47	-	-	47	5	88	2
Cabot Circus	-	-	-	-	-	-	-	9	16	37	12	69	15
Broadmead	-	-	-	-	-	-	-	2	32	122	31	89	7
The Centre	-	-	-	-	-	-	-	-	-	31	13	15	4
Arnolfini	-	-	-	-	-	-	-	-	-	3	2	4	0
Museum of Bristol	-	-	-	-	-	-	-	-	-	-	5	24	1
Spike Island	-	-	-	-	-	-	-	-	-	-	3	11	0
Ashton Gate	-	-	-	-	-	-	-	-	-	-	-	-	0

2016 RT Boarding/Alighting Inter Peak Hour													
Boarding/Alighting	Ashton Gate	Spike Island	Museum of Bristol	Arnolfini	Temple Meads	Cabot Circus	Broadmead	The Centre	Museum of Bristol	Spike Island	Ashton Gate	Silbury Road	Ashton Vale P&R
Ashton Vale P&R	-	0	0	14	1	84	8	-	-	-	-	-	-
Silbury Road	-	6	0	9	4	30	7	-	-	-	-	-	-
Ashton Gate	-	2	1	8	12	21	12	-	-	-	-	-	-
Spike Island	-	-	-	-	23	46	64	-	-	-	-	-	-
Museum of Bristol	-	-	-	-	-	8	2	-	-	-	-	-	-
Arnolfini	-	-	-	-	-	0	-	-	-	-	-	-	-
Temple Meads	-	-	-	-	-	-	5	-	-	14	17	2	4
Cabot Circus	-	-	-	-	-	-	-	-	5	23	14	39	75
Broadmead	-	-	-	-	-	-	-	-	9	68	14	6	21
The Centre	-	-	-	-	-	-	-	-	-	20	10	2	14
Arnolfini	-	-	-	-	-	-	-	-	-	1	1	4	1
Museum of Bristol	-	-	-	-	-	-	-	-	-	-	1	-	1
Spike Island	-	-	-	-	-	-	-	-	-	-	3	4	1
Ashton Gate	-	-	-	-	-	-	-	-	-	-	-	-	-

2031 RT Boarding/Alighting Inter Peak Hour													
Boarding/Alighting	Ashton Gate	Spike Island	Museum of Bristol	Arnolfini	Temple Meads	Cabot Circus	Broadmead	The Centre	Museum of Bristol	Spike Island	Ashton Gate	Silbury Road	Ashton Vale P&R
Ashton Vale P&R	-	0	0	13	2	91	8	-	-	-	-	-	-
Silbury Road	-	15	5	17	63	57	44	-	-	-	-	-	-
Ashton Gate	-	1	0	7	9	16	10	-	-	-	-	-	-
Spike Island	-	-	-	-	23	48	62	-	-	-	-	-	-
Museum of Bristol	-	-	-	-	-	12	2	-	-	-	-	-	-
Arnolfini	-	-	-	-	-	-	-	-	-	-	-	-	-
Temple Meads	-	-	-	-	-	-	5	-	-	14	14	51	3
Cabot Circus	-	-	-	-	-	-	-	-	8	28	16	38	74
Broadmead	-	-	-	-	-	-	-	-	8	66	13	64	18
The Centre	-	-	-	-	-	-	-	-	-	21	11	15	12
Arnolfini	-	-	-	-	-	-	-	-	-	1	1	7	1
Museum of Bristol	-	-	-	-	-	-	-	-	-	-	1	9	2
Spike Island	-	-	-	-	-	-	-	-	-	-	3	9	0
Ashton Gate	-	-	-	-	-	-	-	-	-	-	-	-	-

2016 RT Boarding/Alighting PM Peak Hour												
2016 RT Boarding/Alighting PM Peak Hour	Ashton Gate	Spike Island	Museum of Bristol	Arnolfini	Temple Meads	Cabot Circus	Broadmead	The Centre	Museum of Bristol	Spike Island	Ashton Gate	Ashton Vale P&R
Ashton Vale P&R	0	0	0	0	0	0	0	-	-	-	-	-
Silbury Road	-	4	0	7	3	22	5	-	-	-	-	-
Ashton Gate	-	5	1	15	13	19	22	-	-	-	-	-
Spike Island	-	-	-	23	76	80	83	-	-	-	-	-
Museum of Bristol	-	-	-	-	1	21	11	-	-	-	-	-
Arnolfini	-	-	-	-	-	3	-	-	-	-	-	-
Temple Meads	-	-	-	-	-	5	11	-	0	20	14	17
Cabot Circus	-	-	-	-	-	-	-	2	10	20	24	189
Broadmead	-	-	-	-	-	-	-	1	22	74	18	75
The Centre	-	-	-	-	-	-	-	-	-	21	16	43
Arnolfini	-	-	-	-	-	-	-	-	-	2	7	5
Museum of Bristol	-	-	-	-	-	-	-	-	-	-	7	11
Spike Island	-	-	-	-	-	-	-	-	-	-	4	5
Ashton Gate	-	-	-	-	-	-	-	-	-	-	-	-

2031 RT Boarding/Alighting PM Peak Hour												
2031 RT Boarding/Alighting PM Peak Hour	Ashton Gate	Spike Island	Museum of Bristol	Arnolfini	Temple Meads	Cabot Circus	Broadmead	The Centre	Museum of Bristol	Spike Island	Ashton Gate	Ashton Vale P&R
Ashton Vale P&R	0	0	0	0	1	1	0	-	-	-	-	-
Silbury Road	-	21	12	36	120	66	85	-	-	-	-	-
Ashton Gate	-	3	0	12	8	16	20	-	-	-	-	-
Spike Island	-	-	-	19	75	84	80	-	-	-	-	-
Museum of Bristol	-	-	-	-	3	22	11	-	-	-	-	-
Arnolfini	-	-	-	-	-	4	-	-	-	-	-	-
Temple Meads	-	-	-	-	-	6	22	-	0	20	12	63
Cabot Circus	-	-	-	-	-	-	-	3	23	27	14	175
Broadmead	-	-	-	-	-	-	-	2	19	66	15	62
The Centre	-	-	-	-	-	-	-	-	-	26	17	37
Arnolfini	-	-	-	-	-	-	-	-	-	2	7	4
Museum of Bristol	-	-	-	-	-	-	-	-	-	-	7	7
Spike Island	-	-	-	-	-	-	-	-	-	-	3	3
Ashton Gate	-	-	-	-	-	-	-	-	-	-	-	-

A compressed version of these matrices for the 2016 AM peak hour gives an overview of the distribution of demand across the route, distinguishing between the P&R site, the main corridor and the City Centre (Table 1.10).

Table 1.10 – 2016 AM Peak Hour Passenger Boarding/Alighting

	P&R	Corridor	City centre
P&R	0	37	586
Corridor	1	44	321
City centre	35	357	169

The analysis shows that the predominant movement in the AM peak is from the Park and Ride site to the City Centre. However, there are also a number of relatively strong, secondary movements showing that the demand for the service is evenly balanced. There are 357 movements from the City Centre in an outbound direction, although many of these are destined for stops just south of the City Centre. Trips with both origin and destination within the City Centre represent a relatively small proportion (i.e. 11% of total demand equating to around 169 passengers / hour).

1.5 Implications for RT Demand & Service Capacities

Using the currently proposed frequencies (i.e. 10 per hour in the AM and PM, and 5 per hour in the IP) and vehicle capacities (approximately 120 passengers per vehicle), the number of RT vehicles is sufficient for the passenger demand, although there are likely to be some standing passengers on the busiest sections during parts of the peak.

In terms of car park capacities at Ashton Vale, the projected RT demand gives an implied total requirement for spaces which is slightly greater than the current car park capacity for both 2016 and 2031.