

## **Actual competition/overlapping flows**

### **Introduction**

1. The aim of this appendix is to consider the overlapping flows between the bus services of Arriva and Sovereign in Hertfordshire. In the context of this inquiry, the potential choice of passengers to travel by either of these two bus operators from a similar starting point to a similar destination is of interest in determining whether the merger will result in a substantial lessening of head-to-head competition.

### **Bus overlaps identified by Arriva**

2. Arriva identified a number of routes it believed contained overlap flows. Arriva defines overlaps as those 'services that use the same stops, or services that run between the same end-to-end points, not just between towns but also between stops'.
3. According to information supplied by Arriva, there are approximately 4,500 bus stops in Hertfordshire and the commercial services of Arriva and Sovereign together serve approximately 70 of these, 12 of which are served by both operators only during peak times.
4. Based on its proposed criteria, Arriva identified 31 overlap flows between its bus services and those of Sovereign. These are shown in Table 1.

TABLE 1 **Bus overlap flows identified by Arriva**

<i>Overlap start point</i>	<i>Overlap end point</i>	<i>Arriva service (buses per hour in parentheses)</i>	<i>Sovereign service (buses per hour in parentheses)</i>
Stevenage Bus Station	Old Town White Lion	8 (1), 9 (3), 54/55 (3), 100/101 (2)	301 (1)
Old Town White Lion	Lister Hospital	8 (1), 54/55 (3), 100/101 (2)	301 (1)
Lister Hospital	Little Wymondley	8 (1), 100/101 (1 per day)	301 (1)
Little Wymondley	Hitchin Rail Station	8 (1)	301 (1)
Lister Hospital	Hitchin, Stevenage Road	101 (1)	301 (1)
Hitchin, Stevenage Road	Hitchin Town Centre	101 (1)	301 (1)
Stevenage Bus Station	Hitchin Town Centre	8 (1), 54 (1), 100/101 (2)	301 (1)
Hitchin Rail Station	Hitchin Town Centre	8 (2), 54/54A (2), 97/97A (2)	301 (1)
Roaring Meg Retail Park	Stevenage Bus Station	4/5 (5), 8 (2)	300 (2), 301 (2)
Stevenage Bus Station	Gunnells Wood Road	4A/5A (4—peak only)	SB1 (2—peak only)
Stevenage Bus Station	Homestead Moat	4/5 (6), 14 (3) (uni-directional)	SB1 (6)
Homestead Moat	Shephall Way	14 (3) (uni-directional)	SB1 (6)
Stevenage Bus Station	Shephall Way	14 (3)	SB1 (6)
Panshanger	WGC Bus Station	724 (1)	401 (2), 406 (1),
WGC Bus Station	QE11 Hospital	724 (1)	301 (2), 403 (2), 406 (1),
Panshanger	QE11 Hospital	724 (1)	406 (1)
QE11 Hospital	Hatfield Station/Market Place	724 (1)	406 (1), 301 (2)
WGC	Hatfield Station/Market Place	724 (1)	406 (1), 300/301 (4)
Hatfield Station/Market Place	Galleria	724 (1)	300/301 (4)
Galleria	Oaklands/Smallford	724 (1)	300/301 (4)
Oaklands/Smallford	Fleetville	724 (1)	300/301 (4)
Fleetville	St Albans Station/St Peters Street	724 (1)	300/301 (4)
WGC	St Albans	724 (1)	300/301 (4)
St Albans/Church Crescent (Folly Lane)	St Albans, St Peters Street/ City Street	343 (2)	300 (2)
Leys Road	Durrants Hill Road	4/5 (2), 322 (1)	300 (2)
Durrants Hill Road	Hemel Bus Station	4/5 (4), 322 (1)	300 (2)
Leverstock Green/Leather Bottle	Hemel Bus Station	6A/B/D (2)	300 (2), 301 (2)
Leverstock Green	Maylands Avenue	6 (2)	301 (2—peak only)
Maylands Avenue	Adeyfield (Longlands)	6 (2)	301 (2—peak only)
Adeyfield (Longlands)	Midland Hotel	1 (2), 6 (2), 12 (1)	301 (2)
Midland Hotel	Hemel Bus Station	1 (2), 6 (2), 12 (1)	301 (2)

Source: Arriva.

**Notes:**

1. Maps can be found in the annex.
2. Start and end points are based on fare stages.

**Other potential overlaps identified by the CC**

5. We noted that the express bus (797) service operated by Sovereign travels along the same route as a number of Arriva bus services (both tendered and commercial). However, while Arriva takes into consideration overlaps involving its express bus (724) operation, it does not consider the overlap flows involving its services and Sovereign’s express bus (797) in Hitchin, Stevenage, and Hatfield area. Arriva does not explicitly state why it does not consider flows involving the 797 but does state that:

While a few local journeys within Hertfordshire may be possible on these services (eg the Green Line 797 runs two journeys from Hitchin via Stevenage on the way into London in the morning and three in the opposite direction via Stevenage to Hitchin in the evening) the services are not designed to cater for these journeys, nor in practice do many people make such journeys using express bus services.

In order to decide whether overlap flows involving the 797 may give rise to competition problems, further analysis of these overlaps is necessary.

6. Based on the assumption that passengers may have a choice between bus stops that are within reasonable walking distance, it is useful to look at catchment areas.

The methodology employed here is that of ‘bus stops within half a mile radiuses’. However, Arriva does not consider bus stops within half a mile to be within reasonable walking distance.

7. Table 2 shows the additional routes we have identified as a result of the above considerations.

TABLE 2 Additional routes (identified by the CC) where overlaps may be of concern

Area	Route	Arriva service	Sovereign service
Hitchin	Cambridge Road/Stotfold Road	54	797
Stevenage	Fairlands Way/Grace Way	2, 3	797
	Broadwater Crescent/Oaks Cross	4, 5	797
	Hertford Road	8	797
	Gresley Road	390*	797
	Mobbsbury Way/Chells Way	SB15*, SB16†	797, SB1
	Great Ashby Way	17	797

Source: CC.

\*Tendered services.

†Part tendered part commercial service.

## Identifying key overlaps

8. To help refine our analysis we discussed with Arriva to discuss the additional overlaps identified in Table 2. Based on that meeting, we determined that the overlaps corresponding to the routes described in Table 2 should be excluded for the following reasons:

- *Possible overlap between Arriva’s route 54 and Sovereign’s route 797:* The 54 begins operating half an hour after the last 797 service in the morning. Specifically, the first 54 (54A) from Letchworth to Hitchin leaves Wilbury Hills (Stotfold Road) at 0725. The two 797 morning services are at 0620 and 0650.
- *Possible overlap between Arriva’s routes 2 and 3 and Sovereign’s route 797:* The 797 takes much longer to reach the Stevenage Bus Station than the 2 and 3 services. The fare on the 797 is £2.80 and on services 2 and 3 there is a flat fare of £1.10. In addition, there is no return facility for journeys within the local area on the 797.
- *Possible overlaps between Arriva’s 4, 5, 8 and Sovereign’s 797:* The 4, 5, and 8 operate in the opposite direction to the 797. The 4, 5 and 8 at Marymead (Roebuck Centre) travel northbound towards the town centre with a journey time of 7 minutes while the 797 travels southbound with a journey time of 31 minutes. In addition, there is no local access to the return journey on the 797.
- *Possible overlaps between Arriva’s 390 and Sovereign’s 797:* The 390 is an all-day HCC contract service. The first 390 operates at 0715 while the last 797 operates at 0707. In addition, the 390 is a direct route into the town centre with a journey time between 9 and 14 minutes, whereas the 797 takes 28 minutes and has no return facilities for journeys within the local area.
- *Possible overlaps between Arriva’s SB15 and Sovereign’s 797:* The SB15 is an HCC tendered service, which operates hourly from 0900 to 1500 in a southbound direction along Mobbsbury Way. The 797 operates along Mobbsbury Way in a northbound direction and the last trip is at 0713.

- *Possible overlaps between Arriva's SB15 and Sovereign's SB1:* The SB1 operates along the Mobbsbury Way in both directions. However, there is only one stop for buses along Mobbsbury Way in the southbound direction. In addition, the SB1 goes to the bus station while the SB15 travels to the Lister Hospital and Symmonds Green.
  - *Possible overlaps between Arriva's SB16 and Sovereign's SB1:* The SB16 operates during peak periods only. Along Mobbsbury Way, it has only one stop in common with the SB1 (Mobbsbury Centre). However, the relevant journey to the bus station runs via Lister Hospital and Symonds Green, taking 38 minutes, while the SB1 is a more direct route and takes only 13 minutes. The fare from Mobbsbury Way to the bus station is £1.30 on the SB1. The fare on the SB16 from the Chells area to the Lister Hospital is £1.25.
  - *Possible overlaps between Arriva's SB16 and Sovereign's 797:* The SB16 and the 797 travel in opposite directions on Mobbsbury Way. The SB16 travels southbound while the 797 travels northbound.
  - *Possible overlaps between Arriva's 17 and Sovereign's 797:* The 17 operates at 0608, 0655 and 0725 (and half-hourly thereafter) and the 797 operates at 0542, 0617 and 0717. The single fare on the 17 ranges from £1.10 to £1.25, while the 797 has a minimum fare of £2.80 and no return facility for journeys within the local area.
9. Considering the overlaps reported in Table 1, we employ several criteria to determine whether some of these can be excluded from the analysis in so far as they are unlikely to raise any competition concerns. These criteria are:
- revenue threshold;
  - frequency;
  - counterfactual; and
  - effective competition including rail.<sup>1</sup>

### **Revenue threshold**

10. In using the revenue criterion, we took into account the relative importance of the overlaps with respect to the routes of which they are a part. This allows us to gauge whether Arriva may have a revenue incentive to alter route-specific variables such as fares and frequencies that would affect the entire route.
11. We applied a threshold of 10 per cent. Specifically, it was held that if the revenue from total overlaps on a route was more than 10 per cent of total revenue for the entire route, then there would be the potential for incentives to alter frequency, fares and other strategies affecting the whole route.
12. It is important to note that even where the 10 per cent threshold is not met, concerns may remain since there may still be incentives to embark on overlap-specific changes (ie changes that do not have an appreciable impact on the non-overlap sections of the route). For instance, routes could be reconfigured by reducing the

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<sup>1</sup>The analysis of possible rail competition was not required as there were no remaining overlap concerns at this stage.

number of service stops on the overlaps hence making them less attractive to passengers. However, we did not identify any such changes.

13. Arriva informed us that since data on the destination of non-cash-paying passengers are not available, it is unable to quantify how many passengers travel in total within the overlap sections.<sup>2</sup> Therefore, as a proxy, Arriva suggested using the revenue from cash-paying passengers travelling within the overlap sections as a percentage of the revenue from cash-paying passengers on the route as a whole. The same measure was used to proxy the number of passengers travelling within the overlap sections.
14. Based on the above measure, Table 3 presents information on the percentage of revenue and passengers attributable to the overlaps.

TABLE 3 **Overlaps as a proportion of entire route\***

Route	Start point	End point	Revenue	Passengers
<i>Arriva services</i>				
1	Adeyfield (Longlands)	Hemel Bus Station		
4/4A (Hitchin)	Roaring Meg Retail Park	Homestead Moat		
5/5A (Hitchin)	Roaring Meg Retail Park	Homestead Moat		
4(Hemel Hempstead)	Leys Road	Hemel Bus Station		
5(Hemel Hempstead)	Leys Road	Hemel Bus Station		
6/6A/6B/6D	Leverstock Green/Leather Bottle	Hemel Bus Station		
8	Stevenage Bus Station	Stevenage Bus Station		
9	Stevenage Bus Station	Old Town White Lion		
12	Adeyfield (Longlands)	Hemel Bus Station		
14	Stevenage Bus Station	Shephall Way		
54/54A	Stevenage Bus Station	Hitchin Town Centre		
54/55	Stevenage Bus Station	Lister Hospital		
97/97A	Hitchin Rail Station	Hitchin Town Centre		
100/101	Stevenage Bus Station	Hitchin Town Centre		
322	Durrants Hill	Hemel Bus Station		
343	St Albans, Church Crescent (Folly Lane)	St Albans, St Peter Street		
724	Welwyn Garden City	St Albans		
<i>Sovereign services</i>				
300	Leverstock Green	Hemel Bus Station		
301	Leverstock Green	Hemel Bus Station		
401	Welwyn Garden City Bus Station	Panshanger		
403	Welwyn Garden City Bus Station	QE11 Hospital		
406	Welwyn Garden City Bus Station	Panshanger		
SB1	Stevenage Bus Station	Shephall Way		

Source: Arriva (the data is for the six-month period from 1 October 2003 to 31 March 2004) and Sovereign.

\*The respective figures were provided by Arriva and Sovereign.

15. In using this criterion we only exclude routes where the 10 per cent revenue threshold is not met by *all* the routes concerned. This is because Arriva might still have an incentive to raise fares on the routes which met the 10 per cent threshold. Using the data provided by Arriva and Sovereign, it is clear that for 11 out of 17 Arriva routes—4/4A (Hitchin), 5/5A (Hitchin), 4 (Hemel Hempstead), 5 (Hemel Hempstead), 6/6A/6B/6D, 8, 9, 54/54A, 97/97A, 322 and 343—and all but one of the Sovereign routes concerned—300, 301, 403, 406 and SB1—revenue from overlaps do not exceed 10 per cent of total route revenue.<sup>3</sup>

<sup>2</sup>Arriva further noted that, in most cases, the majority of passengers boarding within the overlap section will be travelling beyond the overlap section.

<sup>3</sup>This is based on Arriva and Sovereign routes individually meeting the criterion.

16. Based on the above criterion whereby the 10 per cent revenue threshold has to be met by all routes on the overlap, we can therefore exclude the ten overlaps shown in Table 4.<sup>4</sup>

TABLE 4 **Overlaps that do not meet the revenue threshold criterion**

<i>Overlap start point</i>	<i>Overlap end point</i>	<i>Arriva service (buses per hour in parentheses)</i>	<i>Sovereign service (buses per hour in parentheses)</i>
Little Wymondley	Hitchin Rail Station	8	301
Hitchin Rail Station	Hitchin Town Centre	8, 54/54A, 97/97A	301
Roaring Meg Retail Park	Stevenage Bus Station	4/5, 8	300, 301
Stevenage Bus Station	Gunnells Wood Road	4A/5A	SB1
St Albans/Church Crescent (Folly Lane)	St Albans, St Peters Street/ City Street	343	300
Leys Road	Durrants Hill Road	4/5	300
Durrants Hill Road	Hemel Bus Station	4/5, 322	300
Leverstock Green/Leather Bottle	Hemel Bus Station	6A/B/D	300, 301
Leverstock Green	Maylands Avenue	6	301
Maylands Avenue	Adeyfield (Longlands)	6	301

Source: CC.

## **Frequency**

17. Another criterion is to include only those overlap flows for which the scheduled frequencies for the two services are similar enough to be considered alternatives by passengers.
18. In the FirstGroup inquiry, the CC used a frequency criterion to identify whether competitors on certain routes provided effective competition. The CC considered that on 'frequent' services (ie running every 10 minutes or less) for a competitor to be effective it would have to run with a frequency of no more than 10 minutes greater. On 'less frequent' services, the CC considered that a longer gap between competing services would not be inconsistent with effective competition as passengers were more likely to plan their journey according to a timetable. On 'less frequent' services, competitors running with frequencies no lower than half those of FirstGroup were considered effective.
19. This criterion requires that for each overlap, we compare the combined frequencies per hour of all of the Arriva services with the combined frequencies per hour of all the Sovereign services.
20. On applying the frequency criterion, the following 13 overlaps in Table 5 may be excluded.

<sup>4</sup>So, for example, the Stevenage Bus Station—Homestead Moat overlap cannot be excluded based on this criterion since the Arriva 14 service meets the threshold (even though the 4/5 services and the Sovereign SB1 service do not).

TABLE 5 Routes not meeting the frequency criterion

<i>Overlap start point</i>	<i>Overlap end point</i>	<i>Arriva service (buses per hour in parentheses)</i>	<i>Sovereign service (buses per hour in parentheses)</i>
Stevenage Bus Station	Old Town White Lion	8 (1), 9 (3), 54/55 (3), 100/101 (2)	301 (1)
Old Town White Lion	Lister Hospital	8 (1), 54/55 (3), 100/101 (2)	301 (1)
Stevenage Bus Station	Hitchin Town Centre	8 (1), 54 (1), 100/101 (2)	301 (1)
Panshanger	WGC Bus Station	724 (1)	401 (2), 406 (1)
WGC Bus Station	QE11 Hospital	724 (1)	301 (2), 403 (2), 406 (1),
WGC	Hatfield Station/Market Place	724 (1)	406 (1), 300/301 (4)
Hatfield Station/Market Place	Galleria	724 (1)	300/301 (4)
Galleria	Oaklands/Smallford	724 (1)	300/301 (4)
Oaklands/Smallford	Fleetville	724 (1)	300/301 (4)
Fleetville	St Albans Station/St Peters Street	724 (1)	300/301 (4)
WGC	St Albans	724 (1)	300/301 (4)
Adeyfield (Longlands)	Midland Hotel	1 (2), 6 (2), 12 (1)	301 (2)
Midland Hotel	Hemel Bus Station	1 (2), 6 (2), 12 (1)	301 (2)

Source: CC.

## Counterfactual

21. Sovereign has expressed its intention to withdraw part of the 301 service and the whole of the 406 service. Table 6 shows which overlaps are excluded on this basis.

TABLE 6 Overlaps which are excluded as Sovereign will no longer provide this service

<i>Overlap start point</i>	<i>Overlap end point</i>	<i>Arriva service (buses per hour in parentheses)</i>	<i>Sovereign service (buses per hour in parentheses)</i>
Lister Hospital	Little Wymondley	8 (1), 100/101 (1 per day)	301 (1)
Lister Hospital	Hitchin, Stevenage Road	101 (1)	301 (1)
Hitchin, Stevenage Road	Hitchin Town Centre	101 (1)	301 (1)
Panshanger	QE11 Hospital	724 (1)	406 (1)

Source: CC.

## Effective competitors

22. Table 7 shows which of the remaining routes have other bus companies operating on them and which do not.

## Conclusion

23. The remaining four overlaps all have effective competitors to Arriva and Sovereign (based on the frequency criterion). Hence, there are no overlap routes that give rise to competition concerns.

TABLE 7 Third party services operating on the key overlaps

<i>Overlap start point</i>	<i>Overlap end point</i>	<i>Arriva service (buses per hour in parentheses)</i>	<i>Sovereign service (buses per hour in parentheses)</i>	<i>Third party services competing with Arriva service (buses per hour in parentheses)</i>	<i>Third party services competing with Sovereign service (buses per hour in parentheses)</i>	<i>Comments</i>
<b>Hitchin–Stevenage:</b>						
<b><i>Intra-urban</i></b>						
<b><i>Stevenage</i></b>						
Stevenage Bus Station	Homestead Moat	4/5 (6), 14 (3) (uni-directional)	SB1 (6)	Transit Group 1 (5), 178 (3), 179 (3)	Transit Group 1 (5), 178 (3), 179 (3)	Transit Group services overlap with most of Arriva services in Stevenage—except for service 1, which overlaps SB1
Homestead moat	Shephall Way	14 (3) (uni-directional)	SB1 (6)	Transit Group 1 (5), 178 (3)	Transit Group 1 (5), 178 (3)	
Stevenage Bus Station	Shephall Way	14 (3)	SB1 (6)	Transit Group 1 (5), 178 (3)	Transit Group 1 (5), 178 (3)	
<i>Welwyn Garden City/ Hatfield</i>						
QEII Hospital	Hatfield Station/ Market Place	724 (1)	406 (1), 301 (2)	Universitybus 603 (2), LQT 366 (1)	Universitybus 603 (2), LQT 366 (1)	

Source: Arriva.