Bromsgrove and Redditch Cross-Boundary Sites Assessment

1. Introduction

1.1 The document provides a summary of the transport impact assessment undertaken of the cross-boundary scenarios provided by Redditch and Bromsgrove Planning Authorities. These sites have been tested in addition to the 'core scenario' tested and reported upon in the DRAFT Bromsgrove IDP and Redditch IDP Reports.

1.2 This document outlines the approach to assessing the impact of the Local/District Plans on the transport network, including the assessment of the cross-boundary scenarios and the two selected cross-boundary scenarios. These scenarios were provided by the Local Planning Authorities. A summary of the analysis of the two selected scenarios is provided in section 3. This summary includes accessibility analysis of the two selected cross-boundary scenarios by walk, cycle and local passenger transport and the impact on the highway network in terms of generated vehicular trips, distribution and flows on particular parts of the network.

2. Assessing the Transport Impact of the Bromsgrove District Plan and the Redditch Local Plan

2.1 Core Scenario

2.1.1 The assessment of Local/District Plan commenced in June 2012, this formed the evidence base which underpins the transport Infrastructure Delivery Plans for Bromsgrove and Redditch. This stage of the assessment is known as the Core Scenario (Stage One). Please see Appendix A for the development assumptions included within the Core Scenario. The methodology adopted allowed scope for assessing cross-boundary scenarios in conjunction with the Core Scenario.

2.2 Cross-Boundary Sites

2.2.1 The next iteration of the assessment was to analyse several cross-boundary scenarios (Stage 2). These cross-boundary scenarios were provided in October 2012. The outputs of the Stage 2 assessment were provided to the Planning Authorities. This information informed the Local Planning Authorities process of site selection. In December 2012 WCC were provided with two scenarios to be further assessed. This assessment formed Stage 3 process of analysing the Local / District Plan scenarios.

2.2.2 The scenarios and stages of assessment are provided in Figure 2.1 below.

Figure 2.1 – Local / District Plan Scenarios

Stage	Scenarios	Scenarios	Residential Dwelling	Employment (ha)
One	**6**	**Core Scenario**		
Two	**1**	**Sites 4 & 5**	3843	1.85
	2	**Sites 5, 6, 11 & 4**	3229	1.85
	3	**Site 8**	4053	3.7
	4	**Site 4 & 5**	3200	
	5	**Site 8**	3200	
Three	**7**	**Site 4 & 6**	3400	
	8	**Site 6 & 8**	3400	

2.2.3 The outputs from the detailed Stage 3 assessment are summarised below.

3. Access from Cross-Boundary Sites by Sustainable Modes to Key Centres

3.1 The Worcestershire Accession Model has been used to analyse the accessibility of site 4, 6 and 8 to Bromsgrove and Redditch town centres by sustainable modes. Access to these centres is key because these are the two key centres in each Local Planning Authority area for access to social, employment, training, retail and leisure opportunities.

3.2 A meaningful approach to assessing accessibility is to analyse the percentage of a development site within a specified journey time of a destination. The results from this assessment of cross-boundary sites 4,6 and 8 are provided in Table 2.1 This assessment provides an indication as to the (transport) sustainability of a site, and the potential to maximise the use of sustainable modes of transport. Critically, it also provides an indication of the sites which will generate greater volumes of traffic without investment in walk, cycle and passenger transport (rail and bus) infrastructure, services supported by Smarter Choices measures in line with the Choose How You Move in Redditch programme.

Table 2.1 – Cross-Boundary Sites Accessibility Analysis (% of Site within 30 Minutes Journey Time of Destination by Mode)

Destination	Mode	Scenario Seven		Scenario Eight	
		Site 4	Site 6	Site 8	Site 6
Bromsgrove Town Centre	PT/Bus (AM peak)	21%	0%	0%	0%
	Walk	0%	0%	0%	0%
	Cycle	61%	0%	0%	0%
Redditch Town Centre	PT/Bus (AM peak)	18%	0%	0%	0%
	Walk	0%	36%	0%	36%
	Cycle	100%	100%	61%	100%

3.3 The results in Table 2.1 indicate the following:

- *Site 4 is likely to be the most accessible in terms of local passenger transport services, however funding of an additional service routing or re-routing of an existing service through the site will be required in order to maximise the use of passenger transport from the site*
- *Sites 4 and 6 have the greatest potential for cycling to Redditch town centre, whilst site 8 has the least potential. Each site will require investment in cycling infrastructure in order to maximise cycling from the site, and to align with the Choose how you move in Redditch programme*
- *Site 6 has potential to facilitate pedestrian trips to Redditch town centre, however investment in infrastructure will be required to maximise walking movements from the site*
- *Site 6 and 8 have very poor accessibility by local passenger transport services and funding will be required for an additional bespoke service or re-routing of existing services to ensure they are accessible and the use of sustainable modes is maximised*
- *Site 8 will require significant investment in walk and cycle infrastructure and local passenger transport services and infrastructure in order to provide the necessary level of accessibility to/from the site to maximise the use of sustainable modes of transport from the site*

3.4 In summary, site 8 is the least accessible for walk, cycle and local passenger transport. All sites will require investment in walk, cycle and passenger transport infrastructure and services to provide access to key social, employment and training opportunities by all modes, maximise the use of sustainable transport modes and reduce traffic generation (and need for expensive highways infrastructure works).

4. Vehicular Trip Distribution (AM Peak)

4.1 The Bromsgrove and Redditch Vehicle/Trip Generation Model has been used to analyse the impact of the cross-boundary sites on the transport network. The model calculates trip generation for each site by each mode of transport.

4.2 The spreadsheet gravity model assigns vehicle trips to and from each of the development sites to a number of destinations located in Bromsgrove and Redditch, Worcestershire, Warwickshire and the Birmingham conurbation. The assignment of the trips is based upon the population size and employment numbers of each of these origins and destinations. The trip distribution of all development trips in the gravity model has been calculated in line with current WebTAG (DfT) guidance. All trips are assigned a route between each of the origin and destination zones. The routeing is on a single, fixed, assignment. The distribution of vehicular trips generated for each cross-boundary scenario are illustrated in Figure 3.1 and 3.2 below, these are based on data extracted from the model.

4.3 Figure 3.1 illustrates the number of vehicular trips generated from each scenario to destinations within the model for the AM peak hour. Figure 3.2 illustrates the vehicular flows to each destination as a percentage of total vehicular trips generated by each scenario. This information represents the first stage of analysis; further analysis is being undertaken of the outputs from the model.

Figure 3.1 – Vehicular Trip Distribution (AM Peak)

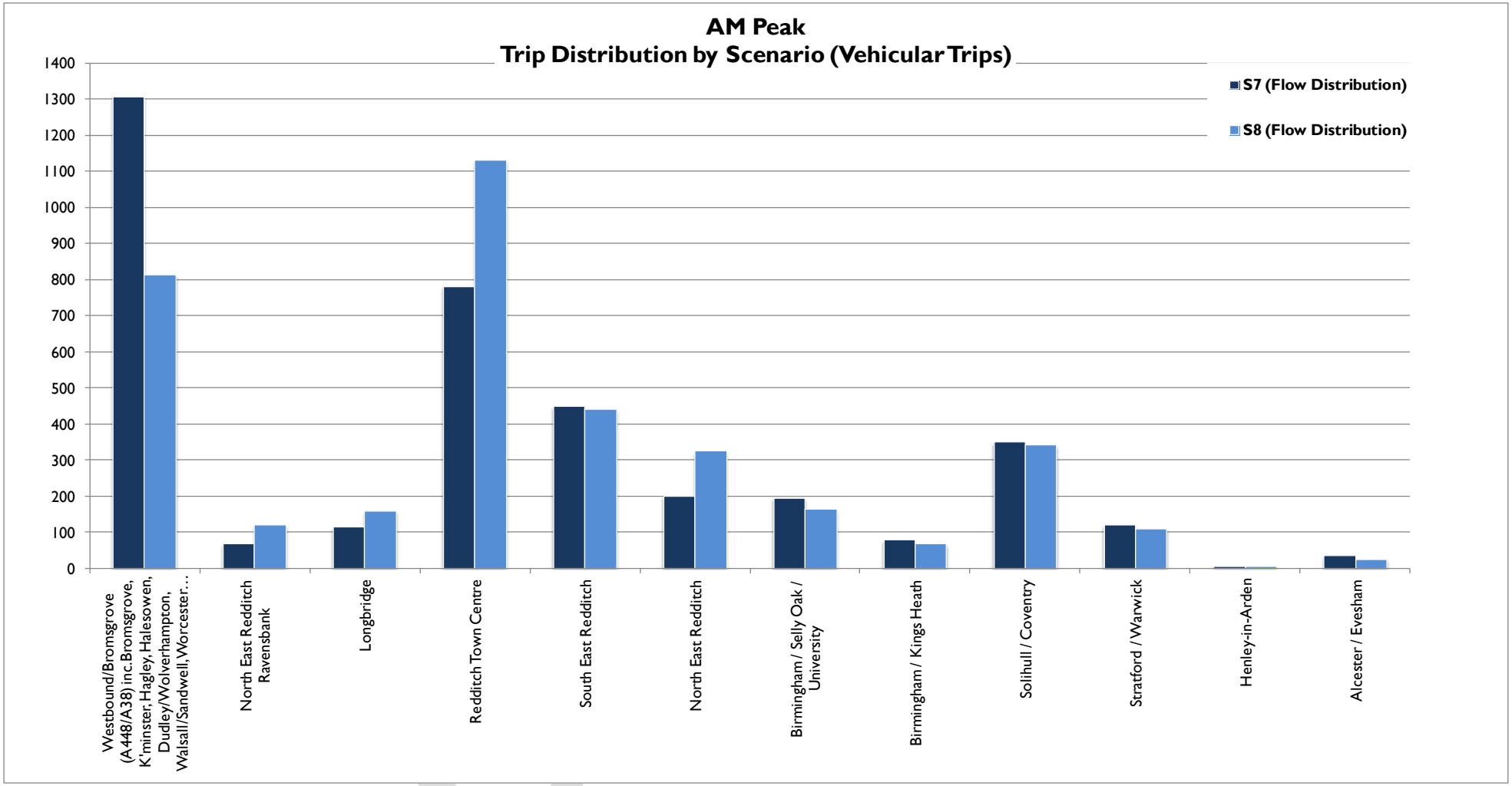
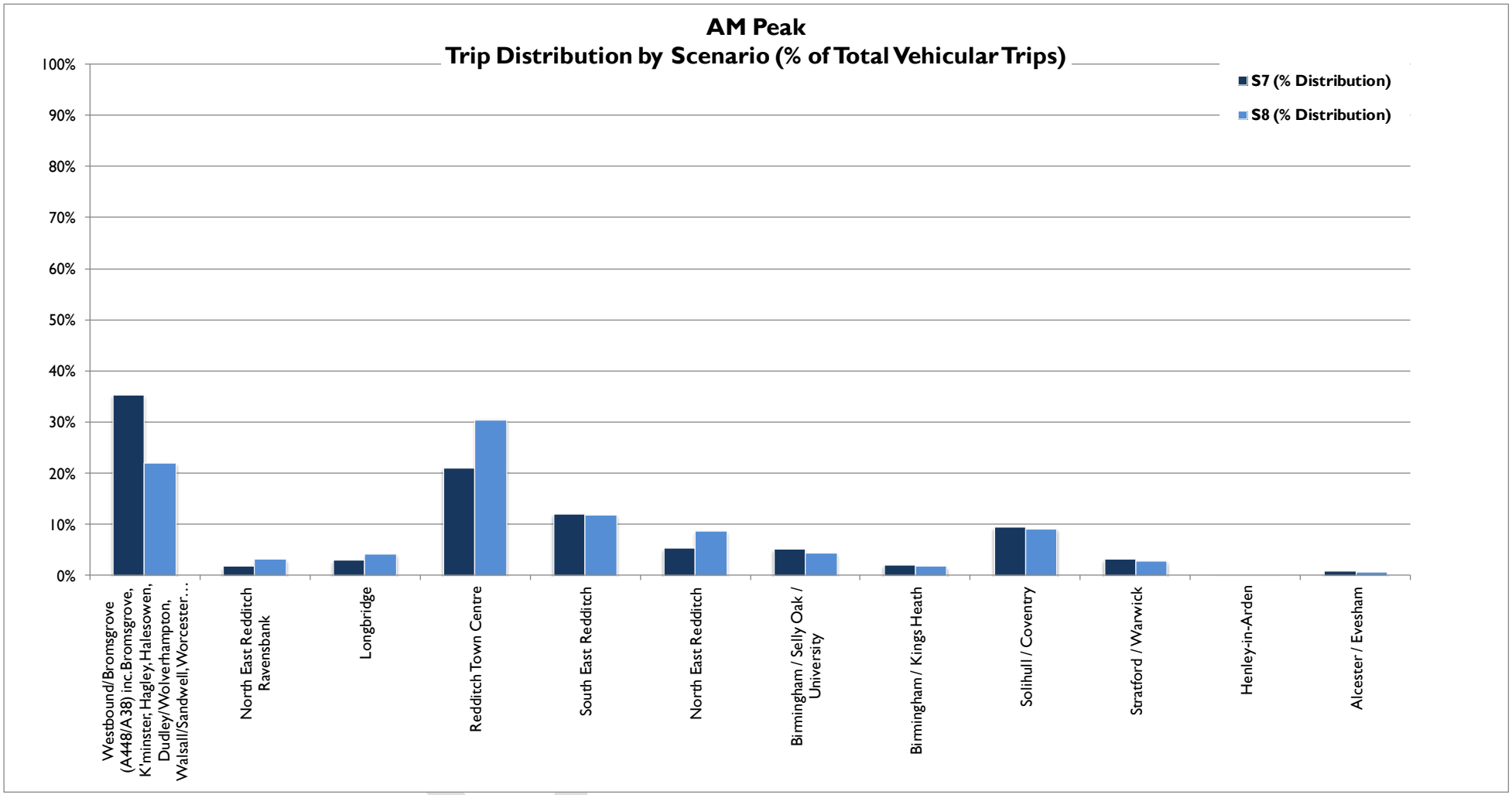


Figure 3.2 – Vehicular Trip Distribution (AM Peak)



4.4 The data provided in Figure 3.1 and 3.2 indicates the following:

- *Scenario 7 generates the greater volume of westbound movements, with associated flows on the A448 and the A38, in particular at the Slideslow roundabout*
- *Scenario 8 generates the greater volume of vehicular movements within Redditch and traffic flow increases on the A441, A4189, A435, A448 and the A4023*
- *The greater number of vehicular trips to Longbridge are generated by Scenario 8, whilst Scenario 7 generates the greater volume of trips to other destinations in the Birmingham conurbation including Halesowen, Dudley/Wolverhampton, Walsall/Sandwell, Selly Oak/University, Kings Heath and Solihull*

4.5 A summary of the vehicular flows generated on the transport network, and comparison against the Core Scenario, is provided in Table A1.1, Appendix A.

5. Bromsgrove and Redditch IDP Schemes District/Local Plan and Cross-Boundary Transport Requirements

5.1.1 Confirmation has been provided by the Local Planning Authorities that Scenario 7 is to be taken forward for consultation and inclusion in the Final IDP report.

5.1.2 The detailed Stage 3 analysis of cross-boundary sites 4 and 6 (Scenario 7) identified that the following transport schemes/mitigation measures are required to support the delivery of the Bromsgrove District Plan and Redditch Local Plan, including the cross-boundary growth.

Bromsgrove Town IDP Schemes

- *A38 Corridor, including A38/A448 Slideslow*
- *M42 Junction 1*
- *Town Centre junctions*
- *Walk and cycle network connectivity*
- *Local passenger transport services and infrastructure*

Redditch IDP Schemes

- *Brockhill Drive Corridor*
- *Junction enhancements including:*
    - *A441*
    - *B4184*
    - *Woodrow Drive*
    - *Washford Drive*
    - *Claybrook Drive*
    - *B4184*
- *Walk and cycle network connectivity*
- *Local passenger transport services and infrastructure*

Appendix A

Table A.1 – AM Peak Highway Impacts Summary for Core Scenario and Scenario Seven

AM Peak		
	DATA	**Seven**
	A38 Slideslow-B'ham Road (1911/1912)	Change (+450 north, +147 south)
	A38 B'ham Road-M42 J1 (1311/1312)	Change (+450 north, +147 south)
	A38 M42 J1-B'ham Road Catshill (1261/1262)	Change (+450 north, +146 south)
Impacts on / Flows on WCC Network	A38 Slideslow-New Rd Junction (2071/2072)	Change (+82 north, +207 south)
	A448 (Bromsgrove Highway) Slideslow-Tardebrigge (1441/1442)	Change (+255 east, +747 west)
	A448 (Bromsgrove Highway) Tardebrigge-Foxlydiate Junction (2411/2412)	Change (+255 east, +747 west)
	A448 (Bromsgrove Highway) Foxlydiate Junction-Bromsgrove Road (2401/2402)	Change (+213 east, +57 west)
	A448 (Bromsgrove Highway) Bromsgrove Road-Windmill Drive Junction (2391/2392)	Change (+1016 east, +437 west)
	A448 (Bromsgrove Highway) Windmill Drive Junction-Clover Leaf Junction (2381/2382)	Change (+213 east, +56 west)
	A448 Stratford Road (1921/1922)	Change (+27 east, +88 west)
	A441 Alvechurch Highway South of A4023 Junction (2931/2932)	N/C
	A441 Alvechurch Highway A4023-Easemore Rd (2781/2782)	Change (+1017 east, +608 west)
	A441 Alvechurch Highway Easemore Rd-Riverside R'about (2731/2732)	Change (+110 north, +463 south)
	A441 Alvechurch Highway Riverside R'about-Weights Lane (2721/2722)	Change (+509 north, +151 south)
	A441 Alvechurch Highway Weights Lane-Dagnell End Junction (1531/1532)	Change (+509 north, +151 south)
	A441 Birmingham Rd Dagnell End Junction-M42 J2 (1541/1542)	Change (+509 north, +152 south)
	A441 North of M42 J2 (1501/1502)	Change (+118 north, +22 south)
	A435 A4023 Junction-Beoley Lane Junction (1721/1722)	N/C
	A435 Alcester Road Beoley Lane Junction-M42 J2 (1681/1682)	N/C
	A435 North of Junction 3 (1671/1672)	Change (+40 north, +17 south)
	A4023 West of A4023/A441 Junction (2951/2952)	Change (+126 east, +33 west)
	B4101 Dagnell End Rd-Icknield St Junction (1551/1552)	N/C
	B4101 Church Hill/Beoley Lane Icknield St Junction-A435 (1651/1652)	N/C
	B4096 M42 J1-Old B'ham Road (1291/1292)	N/C
	Brockhill Drive to A448 Foxlydiate Junction (2611/2612)	Change (+1103 east, +1173 west)
	Brockhill Drive to Hewell Rd (2641/2642)	Change (+1061 east, +397 west)
Impacts on / Flows on Highway Agency Network Network	M42 West J4a to J1 (1281/1282)	N/C
	M42 J1 to J2 (1511/1512)	N/C
	M42 J2 to J3 (1661/1662)	Change (+309 east, +129 west)
	M42 J3 to J3a (1691/1692)	Change (+351 eastound, +112 west)
	J4a South (1371/1372)	N/C
	J4a North (1351/1352)	N/C
	M5 J4a (1361/1362)	N/C
	M5 South J4a to J5 (1341/1342)	N/C
	M5 North J4a to J4 (1221/1222)	N/C