

**Hertfordshire Infrastructure
& Investment Strategy**




Transport Technical Report

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Appendix A – Transport Deficit Identified at 2011

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Appendix A provides details of the headline issues described in Section 4, including all elements of deficit either identified from the modelling, from other documents, or anecdotally via the local knowledge of District and County officers. This section explains how Appendix A has been set up, the definitions adopted, and how to use it.

The Figures are as follows. They have a common key but only certain modes apply to each, as denoted by the titles.

Figure A 1 Bus: This shows the main locations of bus capacity and bus congestion (where routes are affected by general congestion – see also Table A 12) problems;

Figure A 2 Rail: This shows the main locations of rail capacity problems. Clearly these are not necessarily site-specific (overcrowding is likely to affect long sections of route), so a representative location has been used;

Figure A 3 Road: This shows the main areas of traffic congestion in the AM peak, from the EERM model and other sources;

Figure A 4 Other: This includes other issues, either those not related to the above categories or bus/rail problems that cannot easily be attributed to a particular district.

All the locations in the Figures have cross-reference numbers to relate them to Table A 1 to Table A 12, which follow the Figures in Appendix A. These tables provide more information, with the following column headings:

Label: This is the cross-reference identifier between the tables and figures in the appendix;

Doc_ID: This is the cross-reference to the information source in Appendix D;

Location: This specifies as accurately as possible the location of the problem;

Description: This provides a brief explanation of the nature of the issue;

Type: The mode in question;

Corridor: Particularly for rail, road and bus if applicable, this notes the corridor to which the issue applies;

RSS Class: This column has been added to identify the scale of the issue, whether strategic, regional or local. This will help later to attribute infrastructure costs and the extent to which these may be viable for inclusion in the CIL.

Existing/Future: While the majority of problems are existing, i.e. are problems now, some (such as roads between 80 and 100% of capacity) are likely to become problems very soon. This column notes this distinction.

Table A 1 to Table A 10 refer to each district, and the items in each table are sorted by mode. Table A 11 lists 'Other Deficit', relating either to strategic corridors, effects outside Hertfordshire that influence it (London Underground overcrowding, Luton, Harlow), or less

specific issues that have been flagged. Table A 12 lists bus network congestion as noted above.

Table A 1: Broxbourne Deficit

Label	Doc_ID	Location	Description	Type	Corridor	RSS Class	Existing/ Future
D77	142	Broxbourne	Extremely busy in peak	Rail		Regional	Existing
D114	3	Cheshunt	C-College Rd	Road		Local	Existing
D115	3	Cheshunt	C-Church Ln	Road		Local	Existing
D116	3	Hoddesdon	C-Essex Rd	Road		Local	Existing
D278	1003	Turnford	Retail Centre congestion	Road	A1170	Local	Existing
D113	3	Waltham Cross	C-Cambridge Rd jct M25	Road		Regional	Existing
D117	3	Waltham Cross	C-Eleanor X/Station Rds	Road		Local	Existing

Table A 2: Dacorum Deficit

Label	Doc_ID	Location	Description	Type	Corridor	RSS Class	Existing/ Future
D11	40	Hemel Hemp Rail Station	Poor Access rail station	Rail		Regional	Existing
D126	3	A41	C-caused by M25 about	Road	A41	Strategic	Existing
D136	3	A5	C-Markyate sigs and M1 J9	Road	A5	Regional	Existing
D125	3	A5183	Link Capacity	Road	A5183	Regional	Existing
D123	3	Berkhampstead	A416 Link Capacity	Road		Local	Existing
D138	3	Boxmoor	Saturday congestion	Road		Local	Existing
D121	3	Hemel Hempstead	C-A414/ Green Lane	Road		Regional	Existing
D127	3	Hemel Hempstead	C-B4146/ B487	Road	B4146	Local	Existing
D128	3	Hemel Hempstead	C-A4146/ A4147	Road	A4146	Local	Existing
D129	3	Hemel Hempstead	C-A414/ A4147	Road	A414	Local	Existing
D130	3	Hemel Hempstead	C-A414/ A4146	Road	A414	Local	Existing
D131	3	Hemel Hempstead	C-A414/ A4215	Road	A414	Regional	Existing
D132	3	Hemel Hempstead	Jct congestion throughout	Road	A4251	Local	Existing
D133	3	Hemel Hempstead	C-A414/ Bennetts End Ln	Road	A414	Local	Existing
D134	3	Hemel Hempstead	C-Hemel & Redbourn Rd Jct	Road		Regional	Existing
D137	3	Hemel Hempstead	School congestion	Road		Local	Existing
D135	3	M1 J9	Junction capacity	Road	M1	Strategic	Existing
D118	3	M1 J9-10	Link Capacity	Road	M1	Strategic	Existing
D124	3	Markyate	Link Capacity & M1 Jct	Road	A5	Strategic	Existing

Table A 3: East Herts Deficit

Label	Doc_ID	Location	Description	Type	Corridor	RSS Class	Existing/ Future
D110	142	Bishops Stortford	Growth of 28pc	Rail		Regional	Future
D80	142	Bishops Stortford	Standing during AM Peak	Rail		Regional	Existing
D86	140	Hertford Loop Line	Limited Capacity	Rail		Strategic	Existing
D158	3	A120	C-M11 J8 approach	Road	M11	Strategic	Existing
D162	3	A120	C-Jct with B1383	Road	A120	Regional	Existing
D153	3	A414	C-Eastwick rbout	Road	A414	Regional	Existing
D156	3	A602	Link capacity	Road	A602	Regional	Existing
D142	3	Bishops Stortford	C-London Rd	Road		Local	Existing
D143	3	Bishops Stortford	C-South St/ Station Rd	Road		Local	Existing
D148	3	Bishops Stortford	C-Hadham Rd link capacity	Road		Regional	Existing
D149	3	Bishops Stortford	C-Causeway/New Adderly	Road		Local	Existing
D150	3	Bishops Stortford	C-Hockerhill/ Dane St	Road		Local	Existing
D151	3	Bishops Stortford	C-Hockerhill Jct	Road		Local	Existing
D157	3	Bishops Stortford	C-High/ North/ Bridge St	Road		Local	Existing
D139	3	Hertford	C-A10 rbout	Road	A10	Strategic	Existing
D140	3	Hertford	C-A414/ A119	Road	A414	Regional	Existing
D145	3	Hertford	C-Ware Rd/ Mill Rd	Road		Regional	Existing
D146	3	Hertford	C-A119, Bramfield-A414	Road		Local	Existing
D152	3	Hertford	C-A414/ B158	Road	A414	Regional	Existing
D147	3	Little Hadham	C-A120/ Stortford Rd	Road	A120	Regional	Existing
D154	3	Paynes Hall	C-A602 link capacity	Road	A602	Regional	Existing
D160	3	Puckeridge	C-High St, parking	Road		Local	Existing
D161	3	Puckeridge/ Standon	C-Station Rd, schools	Road		Local	Existing
D144	3	Sawbridgeworth	C-London Rd	Road		Local	Existing
D163	3	Stanstead Abbots	C-Hoddesdon Rd, jcts	Road		Local	Existing
D164	3	Stanstead Abbots	C-High St, jcts	Road		Local	Existing
D159	3	Ware	C-High St	Road		Local	Existing
D155	3	Watton at Stone	C-A602 link capacity	Road	A602	Regional	Existing

Table A 4: Hertsmere Deficit

Label	Doc_ID	Location	Description	Type	Corridor	RSS Class	Existing/ Future
D169	3	A1	Link capacity	Road	A1(M)	Regional	Existing
D76	1000	A1 south of M25	Tidal congestion part M25	Road		Strategic	Existing
D168	3	A1(M) J1-2	Link capacity	Road	A1(M)	Strategic	Existing
D174	3	Borehamwood	C-Shenley/Station Rd	Road	B5378	Local	Existing
D175	3	Borehamwood	C-Shenley Rd	Road	B5378	Local	Existing
D181	3	Borehamwood	C-Theobold St	Road		Local	Existing
D182	3	Borehamwood	C-Shenley Rd app rbout	Road	B5378	Local	Existing
D290	167	Bushey Town Centre	Congestion	Road	A411	Local	Existing
D178	3	Elstree	C-Elstree Hill North	Road		Local	Existing
D179	3	Elstree	C-Barnet Lane	Road		Local	Existing
D180	3	Elstree	C-Allum Lane	Road	B5378	Local	Existing
D165	3	M25 J21a-22	Link capacity	Road	M25	Strategic	Existing
D166	3	M25 J23-24	Link capacity	Road	M25	Strategic	Existing
D167	3	M25 J24-25	Link capacity	Road	M25	Strategic	Existing
D170	3	Potters Bar	C-High St	Road	A1000	Local	Existing
D171	3	Potters Bar	C-Hatfield Rd	Road	A1000	Local	Existing
D172	3	Potters Bar	Southgate Rd link cap	Road		Local	Existing
D176	3	Potters Bar	C-Mutton Lane	Road		Local	Existing
D177	3	Potters Bar	C-Darkes Lane	Road		Local	Existing
D173	3	Radlet	Watling St Link capacity	Road		Local	Existing
D246	3	Watford	C-Hartspring/ A41	Road	A41	Regional	Existing

Table A 5: North Herts Deficit

Label	Doc_ID	Location	Description	Type	Corridor	RSS Class	Existing/ Future
D90	140	Cambridge Jun. Hitchin	Conflict with ECML	Rail		Strategic	Existing
D89	139	East Coast Mainline	Limited inc of Freight	Rail	ECML	Strategic	Existing
D109	140	Hitchin	Growth of 18 pc	Rail		Regional	Existing
D183	3	A1(M)	C-A1M J8-9	Road	A1(M)	Strategic	Existing
D185	3	A1(M)	C-A1M J6-7	Road	A1(M)	Strategic	Existing
D189	3	A1(M) J9	C-Letchworth Gate queuing	Road	A1(M)	Regional	Existing
D186	3	Baldock	C-Royston/Whitehorse sigs	Road	A505	Regional	Existing
D192	3	Codicote	C-High St, parking	Road		Local	Existing
D198	3	Gravelly	C-Gravelly/ North Rd	Road		Local	Existing
D187	3	Hitchin	C-A505/ A602	Road	A505	Regional	Existing
D188	3	Hitchin	C-Hitchin Hill rbout	Road	A602	Regional	Existing
D191	3	Hitchin	A505/A602 block Pirton Rd	Road	A505	Local	Existing
D194	3	Hitchin	C-Bedford Rd to Fishponds	Road	A505	Regional	Existing
D195	3	Hitchin	C-Cambridge/ Walsworth Rd	Road	A505	Regional	Existing
D203	3	Hitchin	C-Stevenage Rd	Road	A602	Local	Existing
D193	3	Knebworth	C-London Rd, parking	Road		Local	Existing
D196	3	Letchworth	C-Letchworth Gate	Road		Local	Existing
D199	3	Letchworth	C-Baldock Rd	Road	A505	Regional	Existing
D200	3	Letchworth	C-Broadway, ped crossing	Road		Local	Existing
D201	3	Royston	C-south of Royston	Road	A10	Strategic	Existing
D202	3	Royston	C-Priory/ Market/ Barkway	Road	A10	Strategic	Existing
D204	3	Royston	C-Roads around station	Road		Local	Existing

Table A 6: St Albans Deficit

Label	Doc_ID	Location	Description	Type	Corridor	RSS Class	Exist/ Future
D287	166	St Albans	Citywide bus info lacking	Bus		Local	Existing
D279	166	St Albans station	Lack of cycle parking	Cycle		Local	Existing
D280	166	St Albans town centre	Lack of cycle parking	Cycle		Local	Existing
D281	166	St Albans station	Overcrowded FCC services	Rail	FCC	Regional	Existing
D83	22	Thameslink Route	Freight Pressure	Rail		Regional	Existing
D239	3	A405 North Circular	CA405, M25 J21a	Road	A405	Regional	Existing
D112	1000	A414 at M25	Impact of ramp metering	Road	M25	Strategic	Future
D111	1000	A5183 at Redbourn	Impact of ramp metering	Road	A5138	Strategic	Future
D214	3	Harpenden	C-Luton Rd	Road	A1081	Regional	Existing
D215	3	Harpenden	C-Station/ Coldharbour	Road		Local	Existing
D120	3	M1 J7-8	Link Capacity	Road	M1	Strategic	Existing
D119	3	M1 J8-9	Link Capacity	Road	M1	Strategic	Existing
D85	1000	M10/ A414 junction	Junction congestion	Road	M10	Regional	Existing
D285	166	St Albans city centre	Lacking disabled parking	Road		Local	Existing
D282	166	St Albans town centre	Strategic traf diverting	Road		Regional	Existing
D205	3	St. Albans	C-Peahen signals	Road	A1081	Local	Existing
D206	3	St. Albans	C-St Peters/ Chequer St	Road	A1081	Local	Existing
D207	3	St. Albans	C-London Colney rbout	Road	A414	Regional	Existing
D208	3	St. Albans	C-A1081/A4147	Road	A1081	Regional	Existing
D209	3	St. Albans	Holywell Hill queuing	Road	A5183	Local	Existing
D210	3	St. Albans	C-M10/A414/A405	Road	A414	Strategic	Existing
D211	3	St. Albans	C-Ancient Briton SB appr	Road	A1081	Regional	Existing
D213	3	St. Albans	C-Station area, signals	Road		Local	Existing
D216	3	St. Albans	C-Batchwood rbout	Road	A5183	Regional	Existing

Table A 7: Stevenage Deficit

Label	Doc_ID	Location	Description	Type	Corridor	RSS Class	Existing/ Future
D35	107	Stevenage	Poor service to Zone 31	Bus		Local	Existing
D36	107	Stevenage Bus Station	Poor service after 2000hr	Bus		Local	Existing
D37	107	Great Ashby-Martins Way	Gap in the cycle track	Cycle		Local	Existing
D40	107	Stevenage Weston Rd	No Facilities to link Rds	Cycle		Local	Existing
D33	88	North Herts/ Stevenage	Poor Parking rail station	Rail		Local	Existing
D108	140	Stevenage	Growth of 14pc	Rail		Strategic	Existing
D184	3	A1(M)	C-A1M J7-8	Road	A1(M)	Strategic	Existing
D34	88	North Herts/ Stevenage	Poor Parking town centre	Road		Local	Existing
D217	3	Stevenage	C-Broadhall/Hertford rbt	Road	A602	Regional	Existing
D218	3	Stevenage	C-North Rd app Old Town	Road		Local	Existing
D219	3	Stevenage	C-Gresley Way/ A602	Road	A602	Regional	Existing
D220	3	Stevenage	C-Hitchin Rd, J8	Road	A602	Regional	Existing
D221	3	Stevenage	C-A602/A1072	Road	A602	Regional	Existing
D222	3	Stevenage	C-London Rd link capacity	Road		Local	Existing
D223	3	Stevenage	C-Six Hills Way main rbts	Road		Local	Existing
D224	3	Stevenage	C-A1155/A602	Road	A602	Regional	Existing
D226	3	Stevenage	C-A1072/A602	Road	A602	Regional	Existing

Table A 8: Three Rivers Deficit

Label	Doc_ID	Location	Description	Type	Corridor	RSS Class	Existing/ Future
D238	3	Chorleywood	C-North Hill-Harewood	Road	A404	Local	Existing
D232	3	Croxley	C-Scotts Hill/ Watford	Road	A412	Local	Existing
D233	3	Croxley	C-Watford/ Baldwin about	Road	A412	Local	Existing
D227	3	M25	J16-17 link capacity	Road	M25	Strategic	Existing
D228	3	M25	J17-18 link capacity	Road	M25	Strategic	Existing
D229	3	M25	J18-19 link capacity	Road	M25	Strategic	Existing
D230	3	M25	J19-20 link capacity	Road	M25	Strategic	Existing
D231	3	M25	J20-21 link capacity	Road	M25	Strategic	Existing
D236	3	Moor Farm	C-Moor/ Sandy Lodge	Road	A4125	Local	Existing
D237	3	Northwood	C-Batchworth/ White Hill	Road	A404	Local	Existing
D234	3	Rickmansworth	C-Uxbridge/ Riverside jct	Road	A412	Local	Existing
D240	3	Rickmansworth	C-Uxbridge/ Denham	Road	A412	Local	Existing
D235	3	Watford	C-Hamperhill/ Brookdene	Road	A412	Local	Existing

Table A 9: Watford Deficit

Label	Doc_ID	Location	Description	Type	Corridor	RSS Class	Existing Future
D291	167	Watford Town	Bus network reliability	Bus		Regional	Existing
D241	3	Watford	Link capacity	Road	A41	Regional	Existing
D242	3	Watford	C-Market Street Signals	Road	A411	Local	Existing
D243	3	Watford	Link capacity	Road	A411	Local	Existing
D244	3	Watford	C-Leavesden/ St Albans	Road	A412	Local	Existing
D245	3	Watford	C-Bushey Arches Gyratory	Road	A4125	Local	Existing
D247	3	Watford	C-Lower High St	Road		Local	Existing
D248	3	Watford	C-Clarendon Rd @ jcts	Road		Local	Existing
D249	3	Watford	C-Station/ St Albans	Road		Local	Existing
D250	3	Watford	C-Vicarage Rd	Road	A4145	Local	Existing
D289	167	Watford Ring Road	Congestion	Road		Local	Existing
D260	3	WGC	C-Chequers/ Broadwater	Road	A1000	Local	Existing

Table A 10: Welwyn Hatfield Deficit

Label	Doc_ID	Location	Description	Type	Corridor	RSS Class	Existing/ Future
D25	107	Digswell to Woolmer Green	Two Track section Delays	Rail		Strategic	Existing
D87	140	KX - Letchworth	Slow Services	Rail	FCC	Regional	Existing
D273	3	Hatfield	C-Queensway/Wellfield	Road		Local	Existing
D251	3	A1(M)	A1(M) J2-3 link capacity	Road	A1(M)	Strategic	Existing
D252	3	A1(M)	A1(M) J4-5 link capacity	Road	A1(M)	Strategic	Existing
D253	3	A1(M)	A1(M) J5-6 link capacity	Road	A1(M)	Strategic	Existing
D271	3	A1(M)	C-Bessemer/A1(M) J6	Road	A1(M)	Strategic	Existing
D255	3	Digswell	Bessemer Rd link capacity	Road	A1000	Local	Existing
D270	3	Digswell	C-Bessemer/Hertford	Road	A1000	Local	Existing
D254	3	Hatfield	Great N Rd link capacity	Road	A1000	Local	Existing
D256	3	Hatfield	C-A414/A1(M) J3	Road	A1(M)	Strategic	Existing
D257	3	Hatfield	C-A414/A1(M) rbout	Road	A414	Regional	Existing
D262	3	Hatfield	C-Mill Green/A414 sigs	Road	A1000	Regional	Existing
D276	3	Hatfield	C-Cavendish/Bishops	Road		Local	Existing
D277	3	Hatfield	C-Comet Way rbout SB app	Road	A1001	Local	Existing
D259	3	Stanborough	C-Bull rbt + A6129 blocks	Road		Local	Existing
D272	3	Welwyn	C-A1000/Parkside	Road	A1000	Local	Existing
D258	3	WGC	C-Stanborough along route	Road	A6129	Regional	Existing
D261	3	WGC	C-Bridge/ Broadwater	Road		Local	Existing
D264	3	WGC	C-Parkway/Campus rbout	Road		Local	Existing
D265	3	WGC	C-Digswell/ Campus rbout	Road		Local	Existing
D266	3	WGC	C-Bessemer/Digswell	Road	A1000	Local	Existing
D274	3	WGC	C-Ascots Ln end jcts	Road		Local	Existing
D275	3	WGC	C-All Mundells approaches	Road		Local	Existing

Table A 11: Other Deficit

Label	Doc_ID	Location	Description	Type	Corridor	RSS Class	Existing/ Future
D81	152	Harlow	Housing Growth & PAER	Demand Mgt.		Strategic	Future
D92	152	Luton	Housing Growth & PAER	Demand Mgt.		Strategic	Future
D82	152	Stansted Airport	General Expansion	Other		Strategic	Future
D74	139	Gospel Oak	North London Line	Rail		Strategic	Existing
D73	22	Herts - London	High Level Commuting	Rail		Regional	Existing
D75	140	Kings Cross	Platform Capacity	Rail		Strategic	Existing
D288	1	Luton Airport	Pressure on rail network	Rail	FCC	Regional	Existing
D88	22	Luton Airport	Rail Mode Share 17pc	Rail		Strategic	Existing
D79	1	Stansted Airport	Pressure on Network	Rail	WAGN	Strategic	Existing
D78	1	M1 J10A	Junction congestion	Road	M1	Strategic	Existing

Table A 12: Bus Network Congestion

Label	DocID	District	Location	RSS Class	Existing/ Future
BC1	1008	Dacorum	Hemel Hempstead Bus Stn	Strategic	Existing
BC2	1008	Watford	Watford Town Centre	Strategic	Existing
BC3	1008	Watford	Watford Hospital	Regional	Existing
BC4	1008	St Albans	St Albans Town Centre	Strategic	Existing
BC5	1008	Dacorum	Hemel Hempstead, Adeyfield	Regional	Existing
BC6	1008	East Herts	Bishops Stortford Bus Stn	Strategic	Existing
BC7	1008	Broxbourne	Waltham Cross	Strategic	Existing
BC8	1008	Watford	Bushey Rail Stn	Regional	Existing
BC9	1008	Watford	Watford Junction	Strategic	Existing
BC10	1008	Other	Luton TC & BStn	Strategic	Existing

Figure A 1: Bus Deficit Map – References

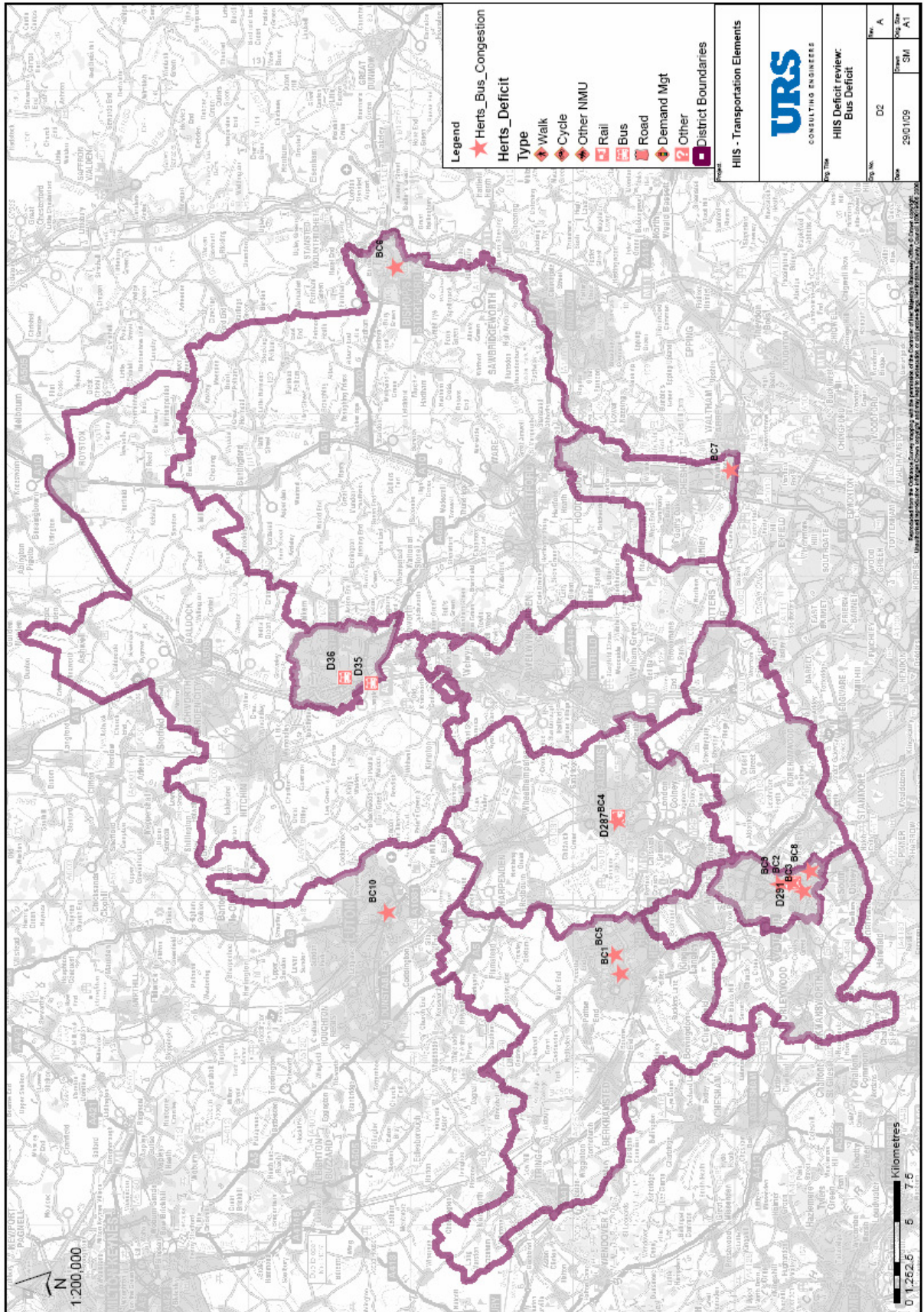


Figure A 2: Rail Deficit Map – References

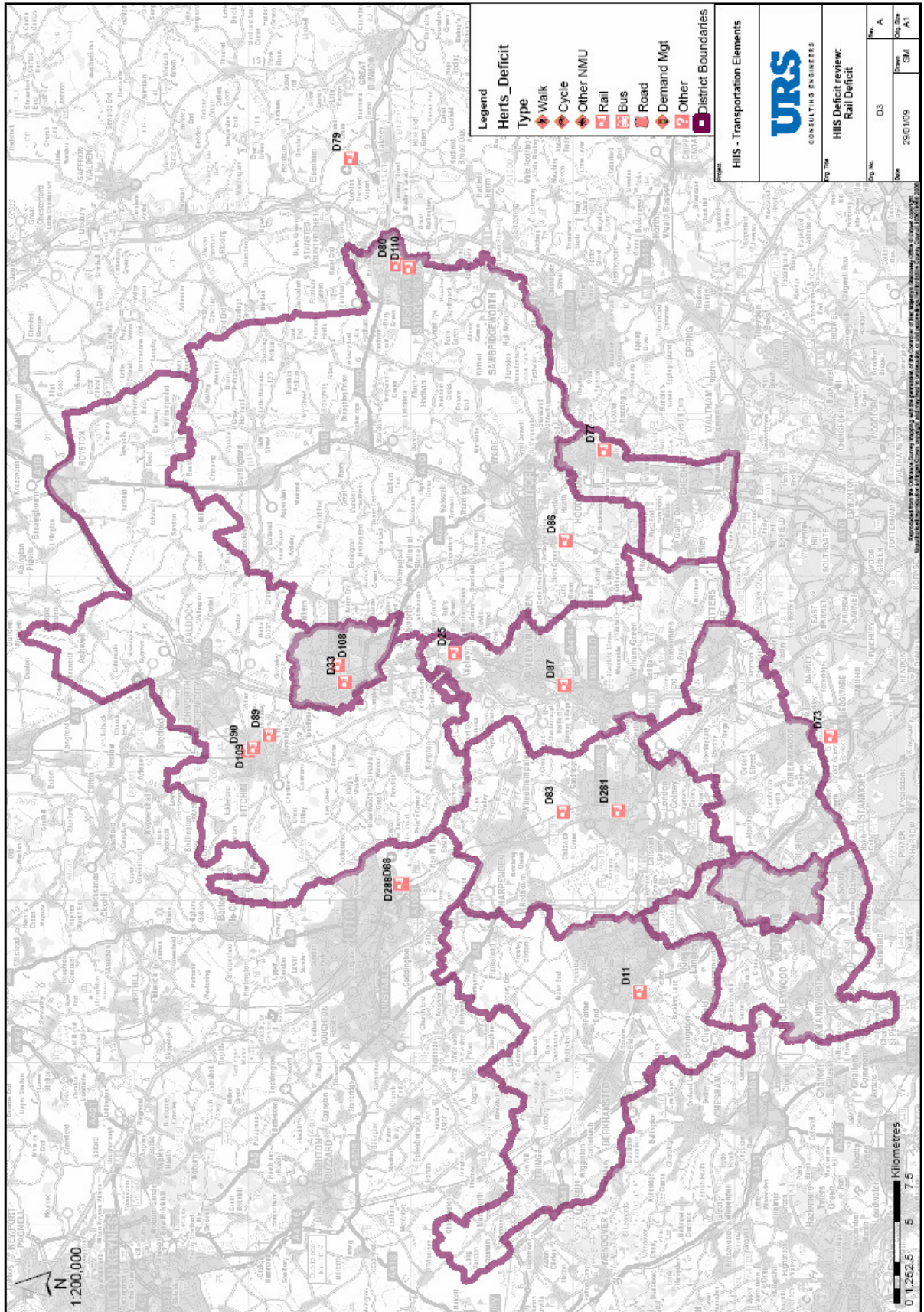


Figure A 3: Road Deficit Map – References

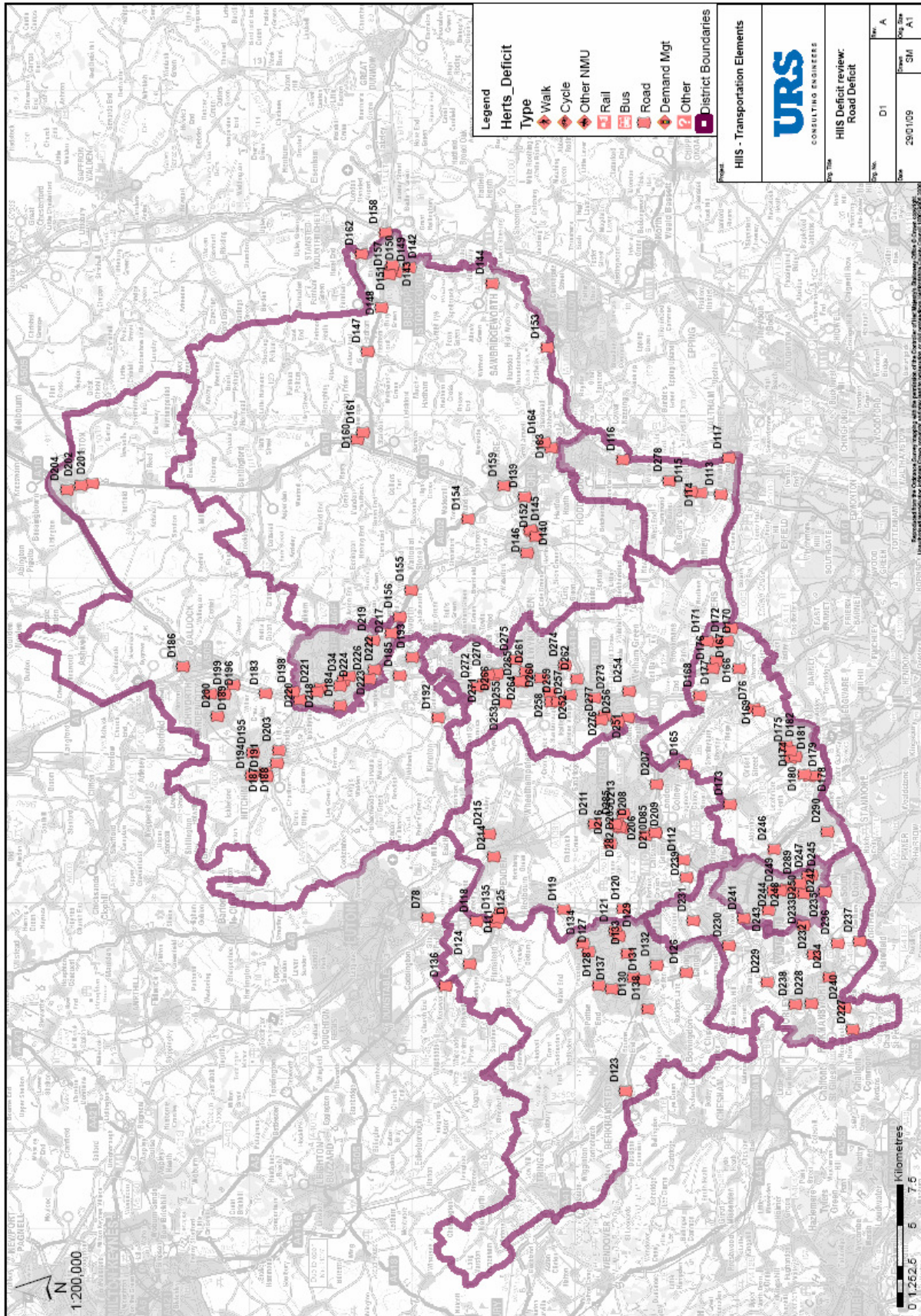
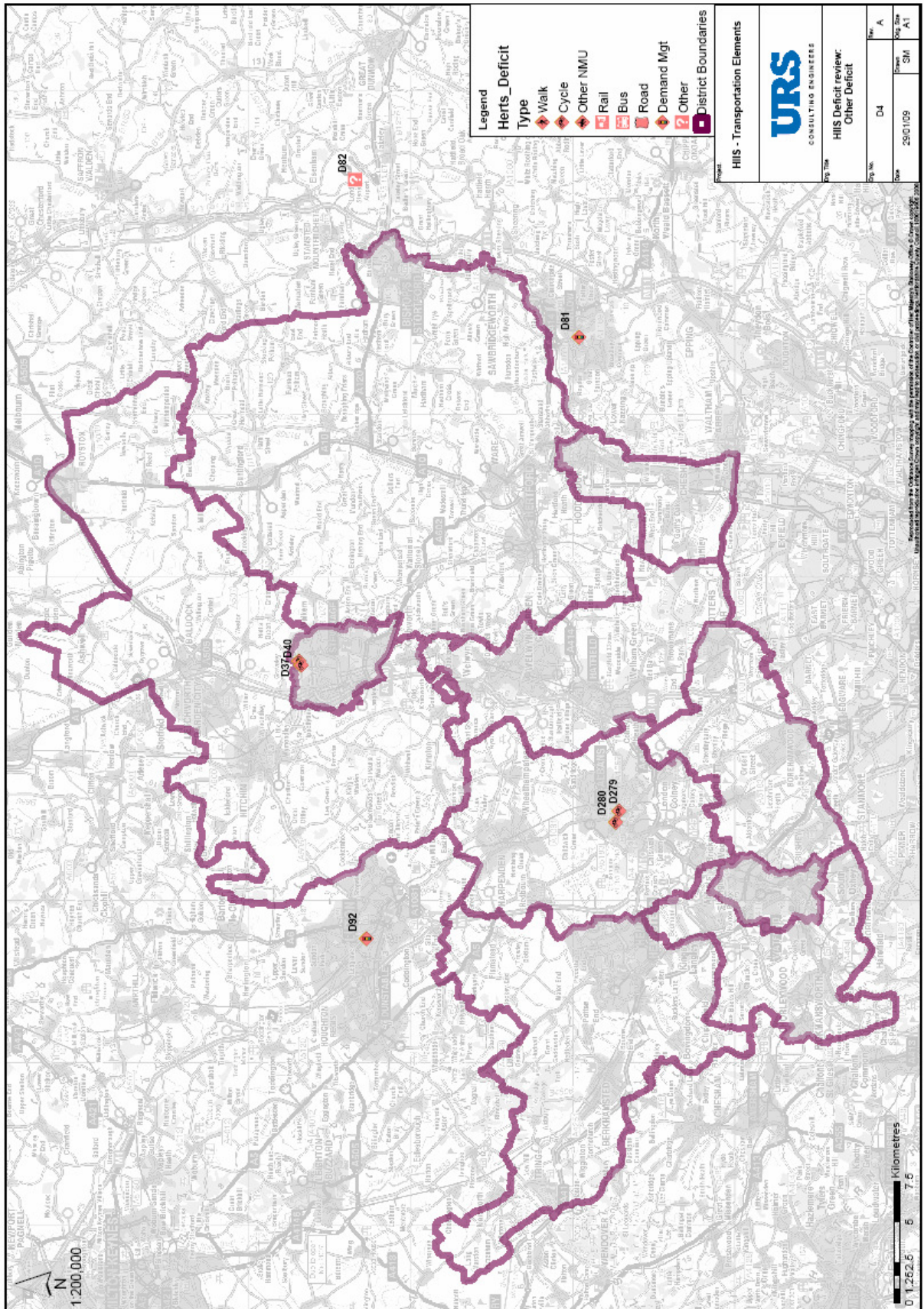


Figure A 4: Other Deficit Map – References



Appendix B – Infrastructure Identified by Infrastructure Operators

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Figure B 4: Other Scheme Map - References

Appendix B provides details of all the schemes that have been identified during the early part of the study. Similar to Appendix A, they are from various documented sources and are presented in a comparable way.

The Figures are as follows. Again they have a common key but only certain modes apply to each, as denoted by the titles.

Figure B 1 Bus: This shows the main locations of bus schemes;

Figure B 2 Rail: This shows the main locations of rail schemes. These are not necessarily site-specific so the most representative location has been used;

Figure B 3 Road: This shows the main areas of highway schemes;

Figure B 4 Other: This includes other issues, either those not related to the above categories or bus/rail problems that cannot easily be attributed to a particular district.

All the locations in the Figures have cross-reference numbers to relate them to Table B 1 to Table B 15, which follow the Figures in Appendix B. These tables provide more information, with the following column headings:

Label: This is the cross-reference from Figure B 1 to Figure B 4;

Doc_ID: This is the cross-reference to the information source in Appendix D;

Location: This specifies as accurately as possible the location of the intervention;

Description: This provides a brief explanation of the nature of the intervention;

Type: The mode in question;

Corridor: Particularly for rail, road and bus if applicable, this notes the corridor to which the scheme applies;

RSS Class: This column has been added to identify the scale of the scheme, whether strategic, regional or local. This will help later to attribute infrastructure costs and the extent to which these may be viable for inclusion in the CIL.

Existing/future: Denotes whether it has been possible to determine whether the measure is to deal with current or future problems;

Status: Where possible, denotes committed, programmed, aspirational etc;

Delivery: The likely delivery agency;

Cost: An indicative scheme cost where one has been supplied or documented.

Table B 1 to Table B 10 refer to each district, and the items in each table are sorted by mode. Table B 11 lists 'Other Infrastructure', relating either to strategic corridors, effects outside Hertfordshire that influence it. Table B 12 lists bus interchange schemes, Table B

13 lists bus corridor improvements, whilst Table B 14 and Table B 15 list rail and road corridor improvements respectively.

Table B 1: Broxbourne Infrastructure

Label	DocID	Location	Description	Type	Corridor	RSS Class	Existing/ Future	Status	Delivery	Cost (£k)
S10	27	Main Rail Line through Borough of Broxbourne	Investment in stations and track capacity on the main rail line	Rail	-	Regio	Existing	Prog	Rail Op	-
S11	27	Lea Valley Green Route	Improve Bus services linking the Lea Valley towns	Bus	-	Regio	Existing	Prog	Bus Op	-
S210	22	Broxbourne Station	Study re installation of Lifts	Walk	-	Regio	Existing	Aspi	District	-
S340	160	Broxbourne Essex Road	Improvement	Road	-	Local	Future	Aspi	Other	£4,000
S359	3	Waltham Cross	Waltham Cross Station Links	Road	-	Local	Existing	Aspi	Local HA	-
S366	27	Park Plaza	Improved access to key employment site	Other	-	Local	Existing	Prog	Local HA	-

Table B 2: Dacorum Infrastructure

Label	DocID	Location	Description	Type	Corridor	RSS Class	Exist/Future	Status	Delivery	Cost (£k)
S12	1000	Tring Rail Station	Station Improvements (new building)	Rail	LonMid	Regio	Existing	Prog	Other	-
S13	1000	Hemel Hempstead	Western/ Northern bypass	Road	-	Regio	Existing	Prog	Other	-
S14	1000	Hemel Hempstead Station	Station improvements - adjacent land purchased by developer	Rail	-	Regio	Existing	Prog	Other	-
S16	40	Durrants Hill / London Road Junction	Signalisation	Road	-	Local	Existing	Prog	Local HA	-
S17	40	Featherbed Lane/ London Road	Improvements to Junction	Road	-	Local	Existing	Aspi	Local HA	-
S19	40	Durrants Hill Road Hemel Hempstead	Carriageway widening and Junction improvements	Road	-	Local	Existing	Prog	Local HA	-
S20	40	Durrants Hill Road Hemel Hempstead	New footpaths involving bridge widening or new footbridge	Walk	-	Local	Existing	Prog	Local HA	-
S21	40	Ebbens Road Hemel Hempstead	Creating links, enhancing the environment and convenience of existing paths	Walk	-	Local	Existing	Prog	Local HA	-
S215	22	Hemel Hempstead	DDA Access	Walk	-	Local	Existing	Aspi	District	-
S22	40	Weymouth Street Hemel Hempstead	Creating links, enhancing the environment and convenience of existing paths	Walk	-	Local	Existing	Prog	Local HA	-
S23	40	London Road (opposite Apsley Station) Hemel	Creating links, enhancing the environment and convenience of existing paths	Walk	-	Local	Existing	Prog	Local HA	-
S24	40	Kings Road	Footpath	Walk	-	Local	Existing	Prog	Local HA	-

Label	DocID	Location	Description	Type	Corridor	RSS Class	Exist/ Future	Status	Delivery	Cost (£k)
		Berkhamsted	improvements							
S25	40	Berkhamsted High Street	Improve Street environment	Walk	-	Local	Existing	Prog	Local HA	-
S26	40	Berkhamsted High Street (Easteren Section)	Construction of works to improve street environment	Walk	-	Local	Existing	Prog	Local HA	-
S28	40	Berkhamsted Rail Station	Railway Station safe guarded	Rail	LonMid	Regio	Existing	Prog	District	-
S281	40	Two Waters, Apsley and Nash Mills	New Cycle route between the three locations	Cycle	-	Regio	Existing	Prog	District	-
S282	40	Station Road Tring	Cycle route to station from centre of tring	Cycle	-	Local	Existing	Prog	Local HA	-
S283	40	Miswell Lane Tring	Cycle Route	Cycle	-	Local	Existing	Prog	Local HA	-
S30	40	Apsley Rail Station	Railway Station safe guarded	Rail	LonMid	Regio	Existing	Prog	District	-
S31	40	Breakspear Way Hemel hempstead	Junction improvements to increase capacity	Road	-	Local	Existing	Prog	Local HA	-
S33	40	Tunnel Fields/ New Road	Tunnel Fields link to new road	Road	-	Local	Existing	Prog	Local HA	-
S34	40	A4251 Corridor, Apsley	Safety & Traffic Calming Schemes	Road	A4251	Local	Existing	Prog	Local HA	-
S342	160	Waterhouse Square, Hemel Hempstead	Redevelopment	Dem Mgt.	-	Local	Future	Aspi	Other	-
S343	160	Maylands, Hemel Hempstead	Business Site	Dem Mgt.	-	Local	Future	Aspi	Other	-
S35	40	Maylands Avenue Industrial Area Lorry Park	Safeguarded	Road	-	Local	Existing	Prog	District	-
S360	3	Hemel Hempstead	London Road/ Station Road rbout improvements	Road	-	Local	Existing	Aspi	Local HA	-

Table B 3: East Herts Infrastructure

Label	DocID	Location	Description	Type	Corridor	RSS Class	Exist/ Future	Status	Delivery	Cost (£k)
S219	2	Ware Road	Road Improvement	Road	-	Local	Existing	Prog	Local HA	£3,110
S220	142	East Hertford	12 Carriage Trains	Rail	FCC	Regio	Existing	Aspi	Rail Op	-
S228	160	Sacombe Pound	Junction Improvements	Road	-	Local	Existing	Aspi	Other	-
S287	11	Route from station to town centre	Improve pedestrain route	Walk	-	Local	Existing	Prog	Local HA	-
S288	11	Station Bridge Road	Improvements to Bridge	Walk	-	Local	Existing	Prog	Local HA	-
S289	11	A120	Formalising shared use	Cycle	A120	Regio	Existing	Prog	Local HA	-
S290	11	A1184	Formalising shared use	Cycle	A1184	Local	Existing	Prog	Local HA	-
S291	11	B1004	Formalising shared use	Cycle	-	Local	Existing	Prog	Local HA	-
S292	11	Dunmow Road Crridor	P & R	Bus	-	Local	Future	Prog	Local HA	-
S293	11	Junction of Station Road / West Road	Introduce Signals	Road	-	Local	Future	Prog	Local HA	-
S294	11	Streets parallel to A1184	Traffic Managment	Road	A1184	Local	Future	Prog	Local HA	-
S295	11	Dane Street	2- way	Road	-	Local	Future	Prog	Local HA	-
S296	11	A120 Junction	Junction capacity increase	Road	A120	Strat	Existing	Comm	Local HA	-
S300	2	A120 Bishops Stortfort	Bypass Dualing	Road	A120	Strat	Future	Aspi	Local HA	-
S301	2	River Stort	Pedestrian and Cycle Bridge	Walk	-	Local	Future	Aspi	Other	£2,190
S302	2	Sacombe Pound	Junction Improvements	Road	-	Local	Future	Aspi	Other	£2,900
S304	18	A120	Coach Link	Road	A120	Regio	Future	Aspi	Local HA	-
S331	160	A1184 Sawbridgeworth	Improvements	Road	A1184	Local	Future	Aspi	Local HA	-
S333	160	A120 Standon	Improvements	Road	A120	Regio	Future	Aspi	Local HA	-
S334	160	A414 Gascoyne Way	Improvements	Road	A414	Regio	Future	Aspi	Local HA	-
S337	160	Ware Road, Ware	Improvement	Road	-	Regio	Future	Aspi	Other	-

Label	DocID	Location	Description	Type	Corridor	RSS Class	Exist/ Future	Status	Delivery	Cost (£k)
S339	2	A414 through Hertford	Solution to congestion through Hertford	Other	A414	Local	Future	Aspi	Other	-
S349	158	A120 Bishop's Stortford Bypass Dualling	Bypass	Road	A120	Regio	Future	Aspi	Local HA	-
S37	43	Bishops Stortford	Enhancement of services	Rail	-	Regio	Existing	Prog	Rail Op	-
S38	43	Sawbridgeworth	Enhancement of services	Rail	-	Regio	Existing	Prog	Rail Op	-
S40	43	A120 Little Hadham	Safety and environmental conditions	Road	A120	Regio	Existing	Prog	District	-
S41	43	A120 Standon	Safety and environmental conditions	Road	A120	Regio	Existing	Prog	District	-
S42	43	A120 Bishops Stortford	Existing Bypass (Safety)	Road	A120	Regio	Existing	Prog	District	-
S43	43	A602 Bragbury End to Watton	Existing Bypass (Safety)	Road	A602	Regio	Existing	Prog	District	-
S44	43	A602 Wotton to Tonwell	Existing Bypass (Safety)	Road	A602	Regio	Existing	Prog	District	-
S45	43	A602 Tonwell to A10 Ware	Safety	Road	A602	Regio	Existing	Prog	District	-
S46	43	East Herts	Development of non - road freight through east herts	Other	-	Strat	Existing	Prog	Local HA	-

Table B 4: Hertsmere Infrastructure

Label	DocID	Location	Description	Type	Corridor	RSS Class	Exist/ Future	Status	Delivery	Cost (£k)
S286	10	Elstree and Borehamwood Rail Station	DDA access scheme	Other NMU	FCC	Regio	Future	Prog	Rail Op	-
S367	10	Elstree Way/ Shenley Rd	Safety Programme & Congestion Scheme	Road	-	Local	Existing	Comm	Local HA	-
S368	10	Stirling Corner	Safety Programme plus congestion and pollution reduction measures	Road	-	Local	Existing	Comm	Local HA	-
S4	56	A5183/A411 Elstree CrossRoads	Estree and Borehamwood Package Area, safety, congestion and pollution reduction measures	Road	A411	Local	Existing	Comm	Local HA	-
S408	167	Aldenham Rd	Aldenham Rd cycle route	Cycle	-	Local	Existing	Comm	Local HA	-
S415	167	Berry Grove roundabout	Casualty reduction	Road	-	Local	Existing	Comm	Local HA	-
S5	56	B556 Harper Lane/A5183 Watling Street	Radlett & Rural Package Area	Road	A5183	Local	Existing	Prog	Local HA	-
S6	56	Station Road/Allum Lane/ Theobald/ Shenley Road	Estree and Borehamwood Package Area, safety, congestion and pollution reduction measures	Road	-	Local	Existing	Comm	Local HA	-
S7	56	A411 Sparrows Herne/Catsey Lane/ Merry Hill Road	Bushey Package Area	Road	A411	Local	Existing	Prog	Local HA	-
S8	56	A41/B462 Hartspring Lane	Hartspring roundabout improvements	Road	A41	Regio	Existing	Comm	Local HA	-

Table B 5: North Herts Infrastructure

Label	DocID	Location	Description	Type	Corridor	RSS Class	Exist/ Future	Status	Delivery	Cost (£k)
S102	1000	Stevenage	Possible Northern Link Road	Road	-	Regio	Existing	Aspi	Other	-
S104	107	Hitchin	Partial signalling renewal over 3 years	Rail	-	Strat	Existing	Prog	Local HA	-
S105	107	Letchworth	Letchworth train to terminate at welwyn Garden City	Rail	-	Regio	Existing	Prog	Rail Op	-
S106	107	A1 (M) Stevenage	Improve East - West Routes as part of the strategic connection with Luton and Stansted corridors	Road	A1(M)	Strat	Existing	Prog	Local HA	-
S243	2	Cadwell Lane, Hitchin	Signallisation	Road	-	Local	Existing	Prog	District	£710
S246	22	Letchworth	DDA Access	Rail	FCC	Regio	Existing	Aspi	District	-
S284	104	A1(M)/B197	East/West Distributor road north of stevenage from A1 (M)/B197	Road	A1(M)	Local	Future	Prog	Developer	-
S285	104	A1(M)/A602	Link road between A1(M) and A602 Wymondsley Bypass	Road	A1(M)	Regio	Future	Prog	Local HA	-
S328	22	Hitchin	Hitchin Fly-over	Rail	-	Regio	Future	Aspi	Other	-
S353	1001	Hitchin Station	Hitchin Station Forecourt improvements	Rail	-	Regio	Existing	Comm	Rail Op	-
S355	1001	Hitchin	Cadwell Lane/ Grove Road Industrial Estate link	Road	-	Local	Existing	Prog	Local HA	-

Table B 6: St Albans Infrastructure

Label	DocID	Location	Description	Type	Corridor	RSS Class	Exist/ Future	Status	Delivery	Cost (£k)
S232	2	Watford - St Albans	Abbey Line & Bricket Wood Passing Loop	Rail	-	Regio	Existing	Prog	Local HA	-
S233	22	St Albans Station	Installation of Lifts	Walk	FCC	Regio	Existing	Prog	District	-
S234	22	Harpenden	DDA Access	Walk	FCC	Local	Existing	Aspi	District	-
S235	22	Harpenden	Interchange Improvements	Bus	FCC	Regio	Existing	Aspi	District	-
S241	160	Harperbury Hospital, London Colney	Harperbury Hospital	Dem Mgt.	-	Local	Existing	Aspi	Other	-
S361	3	St. Albans	Victoria St/ Marlborough Rd	Road	-	Local	Existing	Comm	Local HA	-
S363	3	Harpenden	Victoria Rd/ Station Rd	Road	-	Local	Existing	Prog	Local HA	-
S371	166	St Albans	Heron's Way cut through widening and lighting	Walk	-	Local	Existing	Prog	Local HA	£15
S372	166	St Albans	Lemsford Road/ Avenue Road crossing	Walk	-	Local	Existing	Prog	Local HA	£25
S373	166	St Albans	Lemsford Road/ Sandpit Lane crossing	Walk	-	Local	Existing	Prog	Local HA	£25
S374	166	St Albans	Victoria St advance stop lines	Cycle	-	Local	Existing	Prog	Local HA	£5
S375	166	St Albans	St Albans City Hospital cycle routes	Cycle	-	Local	Existing	Prog	Local HA	£30
S376	166	St Albans	Covered cycle parking	Cycle	-	Local	Existing	Comm	Local HA	£4
S377	166	St Albans	Covered cycle parking town centre locations	Cycle	-	Local	Existing	Comm	Local HA	£8
S378	166	St Albans	Covered cycle parking leisure centres	Cycle	-	Local	Existing	Comm	Local HA	£8
S379	166	St Albans	St Peters St SCOOT and signal rephasing nad potential traffic ban	Bus	-	Local	Existing	Aspi	Local HA	-
S380	166	St Albans	Holywell Hill signal co-ordination and re-	Bus	-	Local	Existing	Aspi	Local HA	-

Label	DocID	Location	Description	Type	Corridor	RSS Class	Exist/Future	Status	Delivery	Cost (£k)
			phasing and removal of appropriate parking bays							
S381	166	St Albans	London Rd signal co-ordination and rephasing, parking and loading restrictions, and yellow hatching	Bus	-	Local	Existing	Aspi	Local HA	-
S382	166	St Albans	Victoria St improvements inc. signal co-ordination & re-phasing & moving stop nearest St Peters St	Bus	-	Local	Existing	Aspi	Local HA	-
S383	166	St Albans	P&R serving St Albans and strategic bus and coach services to e.g. Hatfield, location undertermined	Bus	-	Regio	Existing	Aspi	Local HA	-
S384	166	St Albans	Hatfield Rd bus corridor improvements	Bus	-	Regio	Existing	Prog	Local HA	£100
S385	166	St Albans	City Centre-Station shuttle bus for 5 years	Bus	-	Regio	Existing	Prog	Local HA	£200
S386	166	St Albans	Citywide automatic at stop information display	Bus	-	Local	Existing	Prog	Local HA	£500
S388	166	St Albans	Abbey Station accessibility improvements	Rail	-	Regio	Existing	Aspi	Rail Op	-
S389	166	St Albans	Alban Way crossing improvements at Sutton Road and Hill End Lane	Walk	-	Local	Existing	Prog	Local HA	£40
S390	166	St Albans	Camp Rd improvements including build outs improved signage and	Walk	-	Local	Existing	Prog	Local HA	£40

Label	DocID	Location	Description	Type	Corridor	RSS Class	Exist/ Future	Status	Delivery	Cost (£k)
			ped crossing at Dellfield							
S391	166	St Albans	Hatfield/ Clarence/ Camp Roads junction improvements	Road	-	Local	Existing	Prog	Local HA	£25
S392	166	St Albans	SCOOT around the western orbital route	Road	-	Regio	Existing	Prog	Local HA	£100
S393	166	St Albans	SCOOT on the A414 at junctions with M10 and A1081	Road	-	Regio	Existing	Prog	Local HA	£100
S394	166	St Albans	Outer Cordon VMS, various locations	Dem Mgt.	-	Regio	Existing	Prog	Local HA	£500
S395	166	St Albans	School travel plans and travel plan measurees, various locations	Dem Mgt.	-	Local	Existing	Comm	Local HA	£50
S396	166	St Albans	Employment and area wide travel plans	Dem Mgt.	-	Regio	Existing	Aspi	Local HA	-
S397	166	St Albans	Personalised and residential travel planning, various locations	Dem Mgt.	-	Local	Existing	Aspi	Developer	£120
S398	166	St Albans	Interactive travel information kiosks, various locations	Dem Mgt.	-	Local	Existing	Aspi	Local HA	£20
S48	1000	Hemel Hempstead M1 junction	Maylands masterplan, proposal for P+R to serve the business park and town centre	Bus	-	Local	Existing	Prog	Other	-
S50	91	St Albans	Potential bus priority measure between Hatfield, St Albans City Station and St Albans Abby Station	Bus	-	Regio	Existing	Prog	Local HA	-

Table B 7: Stevenage Infrastructure

Label	DocID	Location	Description	Type	Corridor	RSS Class	Exist/Future	Status	Delivery	Cost (£k)
S109	107	A602 Stevenage	Pedestrian access to the J8 employment site is recommended	Walk	A602	Local	Existing	Prog	Local HA	-
S110	107	North Road Stevenage	Pedestrian access to the J8 employment site is recommended	Walk	-	Local	Existing	Prog	Local HA	-
S111	107	Fishers Green Road, Stevenage	Cyclists and pedestrian Routes across the A1(M)	Cycle	-	Local	Existing	Prog	HA	-
S114	107	Meadway, Stevenage	Cyclists and pedestrian Routes across the A1(M)	Cycle	-	Local	Existing	Prog	HA	-
S119	107	Rectory Lane, Stevenage	Cycle routes to connect the Stevenagebury development into the cycle network.	Cycle	-	Local	Existing	Prog	Developer	-
S120	107	A602 Hitchin Lane, Stevenage	Cycle access to the J8 employment site	Cycle	A602	Strat	Existing	Prog	Local HA	-
S121	107	North Road, Stevenage	Cycle access to the J8 employment site	Cycle	-	Local	Existing	Prog	Local HA	-
S122	107	Bessemer Drive, Stevenage	Widening of road, primarily to facilitate bus movement	Bus	-	Local	Existing	Prog	Local HA	-
S123	107	Superstore Access on Hitichin Road	Bus Priority - Selective vehicle detection at signalised junctions	Bus	-	Local	Existing	Prog	Local HA	-
S124	107	Monkswood way, Stevenage	Bus Priority - Selective vehicle detection at signalised junctions	Bus	-	Local	Existing	Prog	Local HA	-
S125	107	Six Hills Way/Lytton Way Roundabout	Bus Priority - Enhanced Capacity	Bus	-	Local	Existing	Prog	Local HA	-
S126	107	Six Hills Way/St George's Way	Bus Priority - Enhanced Capacity to	Bus	-	Local	Existing	Prog	Local HA	-

Label	DocID	Location	Description	Type	Corridor	RSS Class	Exist/Future	Status	Delivery	Cost (£k)
		Roundabout	reduce eastbound queues on Six Hills way							
S127	107	FairLands Way westbound, Stevenage	Bus Priority - Bus lane on the approach to Lytton way	Bus	-	Local	Existing	Prog	Local HA	-
S128	107	Gunnels Wood Road/A602 Broadhall	Bus Priority - Capacity enhancements/bus priority at junction where both road meet	Bus	A602	Regio	Existing	Prog	Local HA	-
S129	107	Gresley Way, Stevenage	Signalisation of the Juctions	Bus	-	Local	Existing	Prog	Local HA	-
S130	107	The White Way, Stevenage	Signalisation of the Juctions	Bus	-	Local	Existing	Prog	Local HA	-
S131	107	Fairlands Way, Stevenage	Signalisation of the Juctions	Bus	-	Local	Existing	Prog	Local HA	-
S132	107	Mobbsbury Way, Stevenage	Signalisation of the Juctions	Bus	-	Local	Existing	Prog	Local HA	-
S134	107	A1 (M) Stevenage	Passage under or over A1(M) to link the new development to Stevenage to reduce local traffic use o*	Road	A1(M)	Regio	Existing	Prog	Developer	-
S258	160	GlaxoSmithKline Medicines Research Centre	Office expansion	Dem Mgt.	-	Local	Existing	Aspi	Developer	-
S311	18	East Coast Mainline	Great Eastern Mainline Imps	Rail	-	Strat	Future	Aspi	Other	-
S336	160	A602 Gunnells Wood Road Rdbt	Improvement	Road	A602	Regio	Future	Aspi	Local HA	-
S364	3	Stevenage	A602/Coreys Mill Lane	Road	A602	Regio	Existing	Comm	Local HA	-
S400	107	Stevenage Weston Rd	Proposed Cycle Lane	Cycle	-	Local	Existing	Prog	Local HA	-
S401	107	Stevenage Canterbury Way	Proposed Cycle Lane	Cycle	-	Local	Existing	Prog	Local HA	-

Table B 8: Three Rivers Infrastructure

Label	DocID	Location	Description	Type	Corridor	RSS Class	Exist/ Future	Status	Delivery	Cost (£k)
S2	122	Three Rivers - Rickmansworth	Controlled Parking zones to facilitate residents parking throughout Rickmanswoth	Road	-	Local	Existing	Prog	District	-
S405	167	Oxhey	Cowarch cycle link	Cycle	-	Local	Existing	Comm	Local HA	-
S406	167	St Clements Dane School	Cycle facility	Cycle	-	Local	Existing	Comm	Local HA	-
S410	167	Tolpit Lane	Tolpits Lane bus link	Bus	-	Local	Existing	Comm	Local HA	-
S412	167	Kings Langley	Ovaltine safety and traffic management scheme	Road	-	Local	Existing	Comm	Local HA	-

Table B 9: Watford Infrastructure

Label	DocID	Location	Description	Type	Corridor	RSS Class	Exist/ Future	Status	Delivery	Cost (£k)
S107	40	St Albans Road	Watford Junction redevelopment including the Colonial Way link	Other	-	Regio	Existing	Prog	Local HA	-
S252	7	Watford Junction	Creation of Rail Interchange	Rail	-	Strat	Existing	Prog	District	£15,200
S402	167	Wiggenhall Rd/ Farraline Rd	Pedestrian Crossing	Walk	A4178	Local	Existing	Comm	Local HA	-
S403	167	A41 near M1	Cycle crossing for NCR6/ 61	Cycle	A41	Regio	Existing	Comm	Local HA	-
S404	167	Cassiobury Hall to High St	Town Hall cycle link	Cycle	-	Local	Existing	Comm	Local HA	-
S407	167	Garston	Parmiters cycle path	Cycle	-	Local	Existing	Comm	Local HA	-
S409	167	Bushey Arches	Bushey Arches cycle and pedestrian improvements	Cycle	-	Local	Existing	Comm	Local HA	-
S411	167	Bushey Arches	Bushey Arches junction improvements	Road	A411	Local	Existing	Comm	Local HA	-
S413	167	Bushey Hall Rd/ Bushey Grove Rd	Safety scheme	Road	-	Local	Existing	Comm	Local HA	-
S414	167	South West Herts	VMS on major routes	Road	-	Local	Existing	Comm	Local HA	-
S416	167	Dome Superstore Access	Casualty reduction	Road	A41	Regio	Existing	Comm	Local HA	-
S417	167	Town Hall roundabout	Casualty Reduction	Road	A412	Local	Existing	Comm	Local HA	-
S418	167	Watford town centre	Extension of VMS	Dem Mgt.	-	Local	Existing	Comm	Local HA	-
S419	167	Watford	Automatic Vehicle Location to enhance RTP1	Bus	-	Local	Existing	Comm	Local HA	-
S420	167	Fields Schools	Safer Routes to Schools	Other	-	Local	Existing	Comm	Local HA	-

Table B 10: Welwyn Hatfield Infrastructure

Label	DocID	Location	Description	Type	Corridor	RSS Class	Exist/ Future	Status	Delivery	Cost (£k)
S100	107	Digswell	Key Switch & Crossing renewals	Rail	-	Regio	Existing	Prog	Local HA	-
S101	107	Woolmer Green	Key Switch & Crossing renewals	Rail	-	Regio	Existing	Prog	Local HA	-
S278	6	Campus East, WGC	Access to Redevelopment Site	Dem Mgt.	-	Local	Future	Prog	Developer	-
S279	6	Broadwater Road, WGC	Access to Redevelopment Site	Dem Mgt.	-	Local	Future	Prog	Developer	-
S280	6	Town Centre, WGC	Access to Town Centre Redevelopment	Dem Mgt.	-	Local	Future	Prog	Developer	-
S53	6	QE2 Hospital, WGC	Pedestrian Crossings	Walk	-	Local	Existing	Prog	Local HA	£80
S54	6	Mundells, WGC	Lighting / Signing	Walk	-	Local	Existing	Prog	HA	£30
S55	6	Stonehills, WGC	Pedestrianise Stonehills	Walk	-	Local	Existing	Prog	Local HA	£5
S56	6	The Campus, WGC	Pedestrian Crossings	Walk	-	Local	Existing	Prog	Local HA	£200
S57	6	Various	Information Pillars	Dem Mgt.	-	Local	Existing	Prog	Local HA	£20
S58	6	Rail Station and Other Locs, WGC	Secure Cycle Parking	Cycle	-	Local	Existing	Prog	Local HA	£50
S59	6	Bridge Road, WGC	Pedestrian Improvements	Walk	-	Local	Existing	Prog	Local HA	£10
S60	6	St Johns School, Digswell	Safety Barriers	Walk	-	Local	Existing	Prog	Local HA	£20
S61	6	Rail Station, WGC	Replacement Footbridge	Walk	-	Local	Existing	Prog	Local HA	£5,000
S62	6	Rail Station, WGC	Quick Improvemnts to Footbridge	Walk	-	Local	Existing	Prog	Local HA	£5
S63	6	Mundells & Bridge Road, WGC	Improved Pedestrian Subways	Walk	-	Local	Existing	Prog	Local HA	£50
S64	6	Broadwater Road, WGC	Cycle Link (Hydeway - Chequers)	Cycle	-	Local	Existing	Prog	Local HA	£50
S65	6	Mundells to Morrisons, WGC	Cycle Link	Cycle	-	Local	Existing	Prog	Local HA	£50
S66	6	Stanborough Lakes,	Cycle Link (Rdbt -	Cycle	-	Local	Existing	Prog	Local HA	£5

Label	DocID	Location	Description	Type	Corridor	RSS Class	Exist/Future	Status	Delivery	Cost (£k)
		WGC	Lakes)							
S67	6	Oaklands and Welwyn North	Cycle Route	Cycle	-	Local	Existing	Prog	Local HA	£150
S68	6	Rail Station, WGC	Improve Cycle Facilities	Cycle	FCC	Local	Existing	Prog	Local HA	£10
S69	6	QE2 Hospital, WGC	Buses to Major Health Facilities	Bus	-	Local	Existing	Prog	Local HA	£10
S70	6	Bus Station, WGC	Improved Information	Bus	-	Local	Existing	Prog	District	£10
S71	6	Hunters Bridge Car Park	Car Park - To Improve	Road	-	Local	Existing	Prog	District	£3
S72	6	Howardsgate, WGC	Reduce Short-stay Parking	Road	-	Local	Existing	Prog	District	£1
S73	6	Digswell Road, WGC	Real-time signing for car-parks	Road	-	Local	Existing	Prog	District	£200
S74	6	Bessemer Road / Broadwater Road, WGC	Reconfigure Traffic Signals	Road	-	Local	Existing	Prog	District	£750
S75	6	Shire Park	Install traffic signal controls	Road	-	Local	Existing	Prog	Local HA	-
S76	6	Howardsgate, WGC	Restrict Traffic Circulation	Road	-	Local	Existing	Prog	Local HA	£25
S77	9	The Galleria/at grade crossing	Improvements to subway	Walk	-	Local	Existing	Prog	Local HA	£50
S78	9	Cavendish Way, A1(M) Junction 3 to university	New and Improved pedestrian crossings with cyclists facilities	Walk	-	Local	Existing	Prog	Local HA	£400
S79	9	Queensway, French Horn Lane	Improvement of subways where they are to be retained	Walk	-	Local	Existing	Prog	Local HA	£200
S80	9	St Albans Road West/ Ellenbrook Lane	Pedestrian access at St Albans Rd W/Ellenbrook Lane	Walk	-	Local	Existing	Prog	Local HA	£1
S81	9	Town Centre	Information Pillars	Walk	-	Local	Existing	Prog	Local HA	£20
S82	9	Railway Station	Information Pillars	Walk	-	Regio	Existing	Prog	Local HA	£20
S83	9	Railway Station	Secure cycle parking at a range of locations	Cycle	-	Local	Existing	Prog	Local HA	£50
S84	9	Retail Centre (SuperStore)	Secure cycle parking at a range of locations	Cycle	-	Local	Existing	Prog	Local HA	£50

Label	DocID	Location	Description	Type	Corridor	RSS Class	Exist/Future	Status	Delivery	Cost (£k)
S85	9	Retail Centre (The Galleria)	Secure cycle parkign at a range of locations	Cycle	-	Local	Existing	Prog	Local HA	£50
S86	9	Woods Avenue	Cycle Route	Cycle	-	Local	Existing	Prog	Local HA	£10
S87	9	College Lane onto A1001 Roehyde Way	Introduce bus priority measures (Bus gates, bus lanes, junction priorities)	Bus	-	Local	Existing	Prog	Local HA	£400
S88	9	Welwyn Garden City	Bus real time information system	Bus	-	Local	Existing	Prog	Local HA	£1,000
S91	9	Hatfield Rail Station	Hatfield Station interchange	Rail	-	Regio	Existing	Prog	Local HA	£1,200
S92	9	Hatfield Rail Station	Improve signing to rail station	Rail	-	Local	Existing	Prog	Local HA	£2
S93	9	College Lane (Near University)	Introduce Controlled Parking Zone(s)	Road	-	Local	Existing	Prog	District	£50
S94	9	Roads around Rail Station	Introduce Controlled Parking Zone(s)	Road	-	Local	Existing	Prog	District	£50
S95	9	The University of Hertfordshire	Additional park and ride capacity for university	Bus	-	Regio	Existing	Prog	Developer	£200
S96	9	A1(M) Junction 4 Tesco Roundabout	Traffic Signal timings	Road	A1(M)	Regio	Existing	Prog	Local HA	£500
S97	9	Roehyde Way	Traffic Signal timings	Road	-	Local	Existing	Prog	Local HA	£500
S98	9	A1000 Great North Road/A1001 South Way	Create all - movement junction	Road	A1000	Regio	Existing	Prog	Local HA	£500
S99	9	Hatfield Rail Station	Additional Parking	Road	-	Regio	Existing	Prog	Local HA	£500

Table B 11: Other Infrastructure

Label	DocID	Location	Description	Type	Corridor	RSS Class	Exist/ Future	Status	Delivery	Cost (£k)
S214	18	Luton	East Luton Corridor	Road	-	Strat	Existing	Aspi	Local HA	-
S216	1	Stansted	East/West Bus Links to be improved	Road	-	Regio	Existing	Aspi	Bus Op	-
S221	142	Cambridge - Stansted	12 Carriage Trains in Peak	Rail	-	Regio	Existing	Aspi	Rail Op	-
S223	152	A120 Stansted to Braintree	General Improvements	Road	A120	Strat	Existing	Prog	HA	£87,500
S247	1000	North of Dunstable	A5-M1 link (Dunstable Northern Bypass)	Road	M1	Regio	Existing	Aspi	HA	£60,000
S248	140	Hitchin - Cambridge	Booster Transformers	Rail	-	Regio	Existing	Aspi	Rail Op	-
S305	18	London Orbital	Orbital Coach Services	Road	-	Regio	Future	Aspi	Local HA	-
S313	18	Mid Essex	Rail Route Mid Essex to Stansted	Rail	-	Regio	Future	Aspi	Other	-
S316	18	Luton North	Luton North Station	Rail	FCC	Regio	Future	Aspi	Other	-
S318	1000	North of Luton	Luton Northern bypass	Road	-	Regio	Future	Aspi	Other	-
S321	18	M11 J7 & J8	Junction Improvements	Road	M11	Strat	Future	Comm	HA	-
S332	160	A414 - M11	Improvements	Road	A414	Strat	Future	Aspi	Local HA	-
S347	158	M1 Junction 10A Improvements	Upgrade	Road	M1	Strat	Existing	Aspi	Local HA	-
S352	153	Luton Airport Parkway Station	Improvements to train service and frequency	Rail	FCC	Regio	Existing	Comm	Rail Op	-
S36	107	M1 Luton	Improve East - West Routes as part of the strategic connection with Stevenage and Stansted corridor	Road	M1	Strat	Existing	Prog	Local HA	-
S47	107	M11 Stansted	Improve East - West Routes as part of the strategic connection with Luton and Stevenage corridors	Road	-	Strat	Existing	Prog	Local HA	-

Table B 12: Bus Interchange Improvements

Label	DocID	District	Location	RSS Class	Exist/ Future	Cost (£k)
BI1	1008	Dacorum	Hemel Hempstead Bus Stn	Strat	Existing	-
BI2	1008	St Albans	St Albans Town Centre	Strat	Existing	-
BI4	1008	Hertsmere	Borehamwood Town Centre	Regio	Existing	-
BI5	1008	Stevenage	Stevenage Bus Stn	Strat	Existing	-
BI6	1008	North Herts	Hitchin	Regio	Existing	-
BI7	1008	WelHat	WGC Bus Stn	Regio	Existing	-
BI8	1008	WelHat	Hatfield Rail Stn	Regio	Existing	-
BI9	1008	Hertsmere	Potters Bar Stn	Regio	Existing	-
BI11	1008	Broxbourne	Cheshunt Town Centre	Regio	Existing	-
BI12	1008	East Herts	Bishops Stortford Bus Stn	Strat	Existing	-
BI13	23	Other	Luton TC Bus Station	Strat	Existing	-
BI14	23	North Herts	Letchworth Station potential interchange improvements	Regio	Future	-

Table B 13: Bus Corridor Improvements

Label	DocID	Serving	RouteNo	Upgrades	RSS Class	Exist/ Future	Cost (£k)
BR1	1008	Watford	500	Pax pressure from Watford Campus & hospitals, Watford congestion, poor on street facilities	Strat	Existing	-
BR2	1008	Watford	550	Pax pressure from Watford Campus & hospitals, Watford congestion, poor on street facilities	Strat	Existing	-
BR3	1008	Watford	724	Long distance timetable vs local demand. Various town centre issues tho can make time up.	Strat	Existing	-
BR4	1008	Other	6	Congestion thru Watford & St A, severe @ Watford Junc, interchange scheme. Imps thru Rickmansworth	Strat	Existing	-
BR5	1008	Other	5	Congestion thru Watford, severe @ Watford Junction, interchange scheme. Imps thru Rickmansworth	Strat	Existing	-
BR6	1008	Hertsmere	W7	Elstree & B'wood Stn access & Shenley Rd operational issues. Potential contraflow in Lower High St	Strat	Existing	-
BR7	1008	Hertsmere	W9	Elstree & B'wood Stn access & Shenley Rd operational issues. Potential contraflow in Lower High St	Strat	Existing	-
BR8	1008	Other	602	Heavy school peak. A414 delays. St Albans & B'wood congestion. Developer opposition.	Strat	Existing	-
BR9	1008	Other	300	No vehicle consistency. Hemel BStn & TC imp. BStn issues @ Wel, Hat and Lister Hosp.	Strat	Existing	-
BR10	1008	Other	301	No vehicle consistency. Hemel BStn & TC imp. BStn issues @ Wel, Hat and Lister Hosp.	Strat	Existing	-
BR11	1008	St Albans	320	Late and Sunday journeys in doubt, cost. St A congestion, part of St A Bus Punct Imp Partnership.	Strat	Existing	-
BR12	1008	Other	321	Impact of M1 delays/ incidents. Congestion in Watford & St Albans. Watford TC cong mgt.	Strat	Existing	-
BR13	1008	Stevenage	100-102	Conflicting demands. New Stevenage BStn. Hermitage Rd pax environment.	Regio	Existing	-
BR16	1008	Other	84	Single deck capacity restraint. Important school route. P'Bar congestion. Poor L'Colney infra.	Strat	Existing	-
BR17	1008	North Herts	97	L'worth & Hitchin TC stops disparate. A505 congestion. Broadway-Hitchin Rd needs bus priority.	Regio	Existing	-
BR18	1008	North Herts	92	L'worth & Hitchin TC stops disparate. A505 congestion. Broadway-Hitchin Rd needs bus priority.	Regio	Existing	-
BR19	1008	North Herts	94	L'worth & Hitchin TC stops disparate. A505 congestion. Broadway-Hitchin Rd needs bus priority.	Regio	Existing	-
BR20	1008	East Herts	308	Linked to Hertford, some issues here & turning constraints @ Little B'stead. Some narrow roads.	Regio	Existing	-

Label	DocID	Serving	RouteNo	Upgrades	RSS Class	Exist/ Future	Cost (£k)
BR21	1008	East Herts	510	Infrastructure improvements required. Bish'Stort congestion. Quality Bus Stop programme required.	Strat	Existing	-
BR22	1008	Other	310	Chase Fm Hospital access being tackled. H'ford BStn & TC affect punctuality. W'Cross BStn capacity.	Regio	Existing	-
BR23	1008	Other	311	Chase Fm Hospital access being tackled. H'ford BStn & TC affect punctuality. W'Cross BStn capacity.	Regio	Existing	-
BR24	1008	Dacorum	2+3 Hemel	Low floor and peak period freq need standardised. Bus stn & TC facilities may be improved	Regio	Existing	-
BR25	1008	Dacorum	4+5 Hemel	Low floor inconsistent. Disruption from anti-social behaviour. BStn & TC facilities poss imps	Regio	Existing	-
BR26	1008	Other	51-5		Regio	Existing	-
BR27	1008	Other	51-5		Regio	Existing	-
BR28	1008	Stevenage	2+3 Stev	Review of route may be required to serve changing employment patterns.	Regio	Existing	-
BR29	1008	Stevenage	SB1	Unsatisfactory traffic calming in Chells. No turning point at Sainsburys.	Regio	Existing	-
BR30	1008	Stevenage	4+5 Stev	Review of route may be required to serve changing employment patterns.	Regio	Existing	-
BR31	1008	Watford	8	Cong & stop allocation in Wat TC. Bushey Arches delays. Poss Lower High St contraflow.	Regio	Existing	-
BR32	1008	Watford	10	Cong & stop allocation in Wat TC. Bushey Arches delays. Poss Lower High St contraflow.	Regio	Existing	-
BR33	167	Other	W5/ 6	Corridor improvements	Regio	Existing	-
BR34	167	Watford	W8/ 10	Corridor improvements	Local	Existing	-

Table B 14: Rail Corridor Improvements

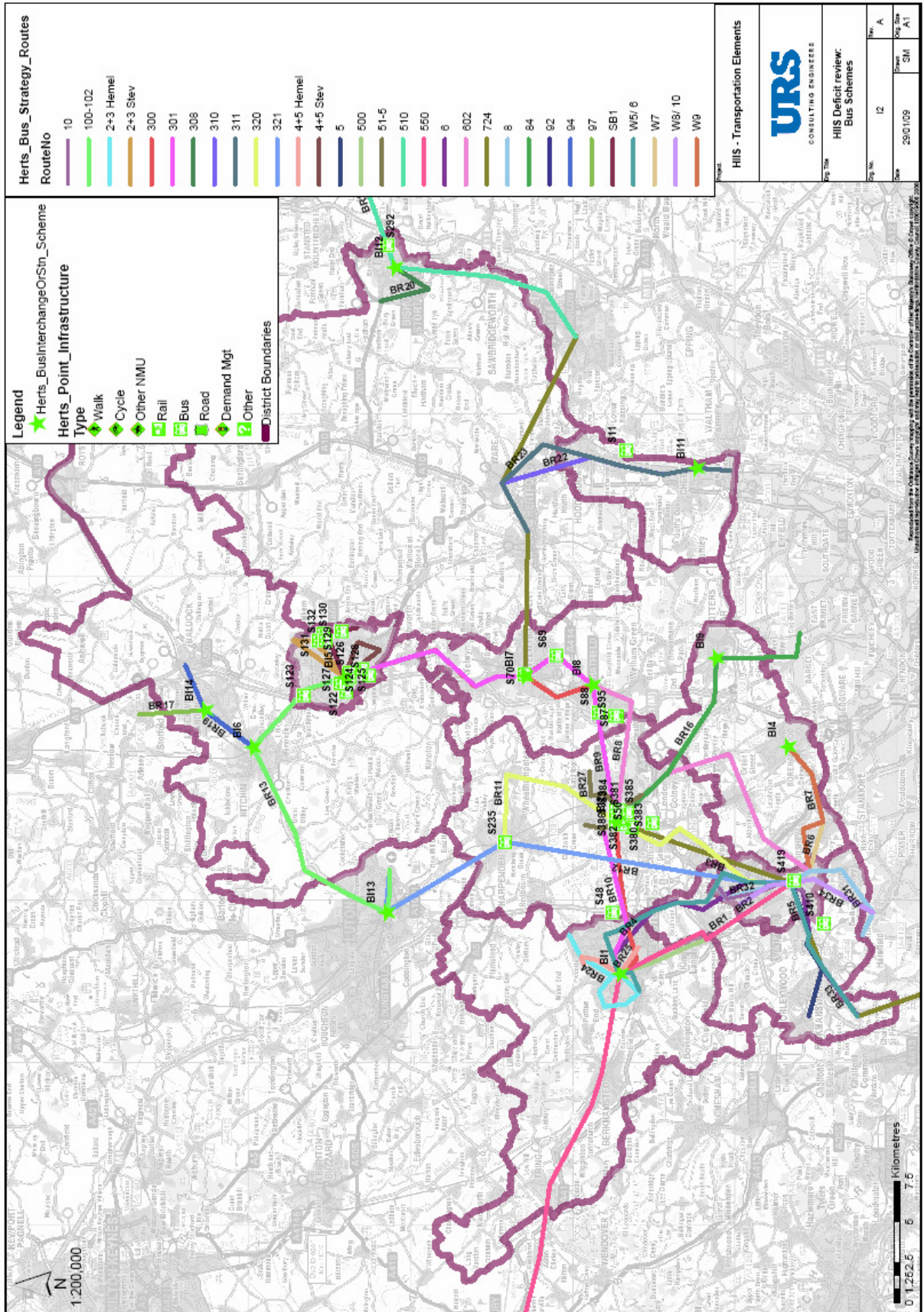
Label	DocID	Location	Description	Corridor	RSS Class	Exist/ Future	Status	Delivery	Cost (£k)
R1	160	East Coast Mainline	ECML Improvements	ECML	Strat	Existing	Prog	Rail Op	-
R2	1	Brighton-Bedford	Thameslink Programme	FCC	Strat	Existing	Comm	Rail Op	-
R4	18	WAGN Line	WAGN Improvements	WAGN	Regio	Existing	Prog	Rail Op	-
R8	18	Crossrail	Crossrail London	XRail	Regio	Existing	Comm	Rail Op	£10,292,000
R9	18	North of Herts	East-West Rail	East-West	Regio	Future	Aspi	Rail Op	-
R10	139	North London Line	Redefine to mainly passenger	NLL	Regio	Existing	Aspi	Rail Op	-
R11	167	Abbey Line	Abbey Line passing loop	AL	Regio	Existing	Aspi	Rail Op	-
R12	7	Croxley Rail	Croxley Rail Link	Crox	Regio	Existing	Prog	Local HA	£145,300

Table B 15: Road Corridor Improvements

Label	DocID	District	Location	Description	Corridor	RSS Class	Existing/ Future	Status	Delivery	Cost (£k)
H1	107	WelHat	A1(M)	A1(M) widening south of J7	A1(M)	Strat	Existing	Prog	HA	
H2	18	East Herts	A120 (A1-M11)	A120 Improvements	A120	Strat	Existing	Aspi	Local HA	
H3	160	North Herts	A505 Hitchin-Letchworth	Improvements	A505	Regio	Existing	Aspi	Local HA	
H4	158	East Herts	A602 Ware-Stevenage	Improvements	A602	Regio	Existing	Aspi	Local HA	£20,000
H7	18	Other	M11 J9-J14	Widening	M11	Strat	Future	Aspi	HA	£226,000
H8	18	Other	M11 J8-J9	Widening	M11	Strat	Future	Aspi	HA	£171,000
H9	18	Other	M25 J16-J31	Widening & demand management	M25	Strat	Existing	Prog	HA	£1,333,333
H10	167	Watford	Watford town centre	Ring road 2-way operation	Wat	Local	Existing	Prog	Local HA	
H11	167	3 Rivers	Brookdene Av	Traffic calming	Traffic Mgt	Local	Existing	Comm	Local HA	
H12	167	Watford	Sydney Road	Traffic calming	Traffic Mgt	Local	Existing	Comm	Local HA	
H13	167	Hertsmere	Stephensons Way	Casualty reduction	Traffic Mgt	Regio	Existing	Comm	Local HA	
H14	167	Watford	North Orbital	Casualty reduction	Traffic Mgt	Regio	Existing	Comm	Local HA	
H15	167	3 Rivers	Sarratt Road	Casualty reduction	Traffic Mgt	Local	Existing	Comm	Local HA	
H16	167	Watford	Wiggenhall Road	Casualty reduction	Traffic Mgt	Local	Existing	Comm	Local HA	
H17	167	Watford	St Albans Road	Casualty reduction	Traffic Mgt	Local	Existing	Comm	Local HA	
H18	167	Watford	Lower High St	Casualty reduction	Traffic Mgt	Local	Existing	Comm	Local HA	
H19	1001	Other	A505/ A601/	Corridor	JcSt	Strat	Existing	Prog	Local HA	

Label	DocID	District	Location	Description	Corridor	RSS Class	Existing/ Future	Status	Delivery	Cost (£k)
			A1(M)	junction strategy						
H20	40	Dacorum	Hemel Hempstead	Swallowdale Ln widening & jct improvements	SL	Local	Existing	Prog	Local HA	
H21	40	Dacorum	Hemel Hempstead	A4147 widening & junction improvements	A4147	Regio	Existing	Aspi	Local HA	
H22	160	North Herts	Royston	Southeast bypass A10-A505	A10	Regio	Existing	Aspi	Local HA	
H23	2	East Herts	Little hadham	Bypass	A120	Regio	Existing	Prog	Local HA	£32,000
H24	40	Dacorum	Water End	Bypass	A4146	Local	Existing]	Aspi	Local HA	

Figure B 1: Bus Scheme Map – References



Project		HIS - Transportation Elements	
Client		URS CONSULTING ENGINEERS	
Project Title		HIS Deficit review: Bus Schemes	
Fig No	12	Rev	A
Date	29/01/09	Drawn By	SM
		Checked By	AT

Figure B 2: Rail Scheme Map – References

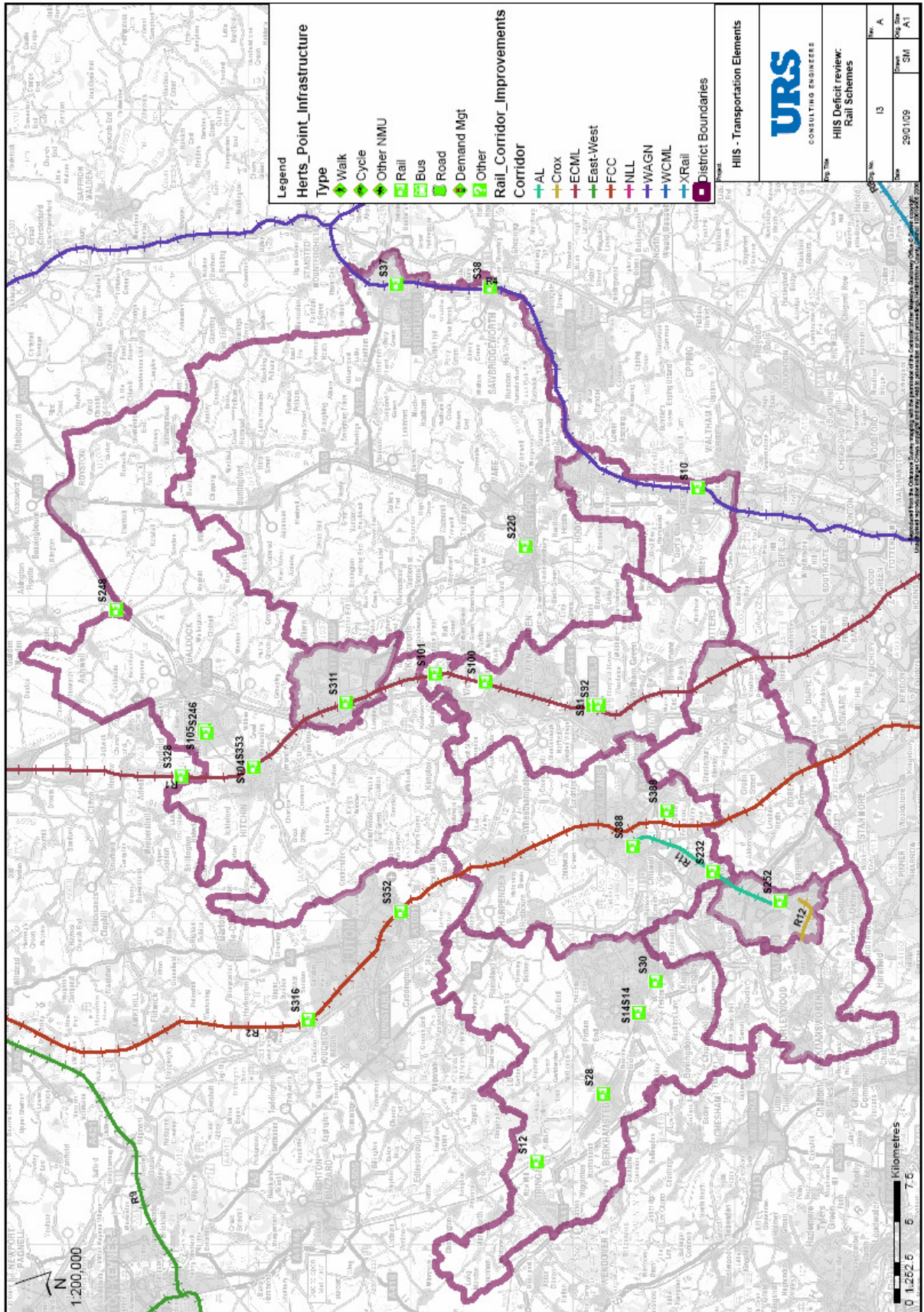


Figure B 3: Road Scheme Map – References

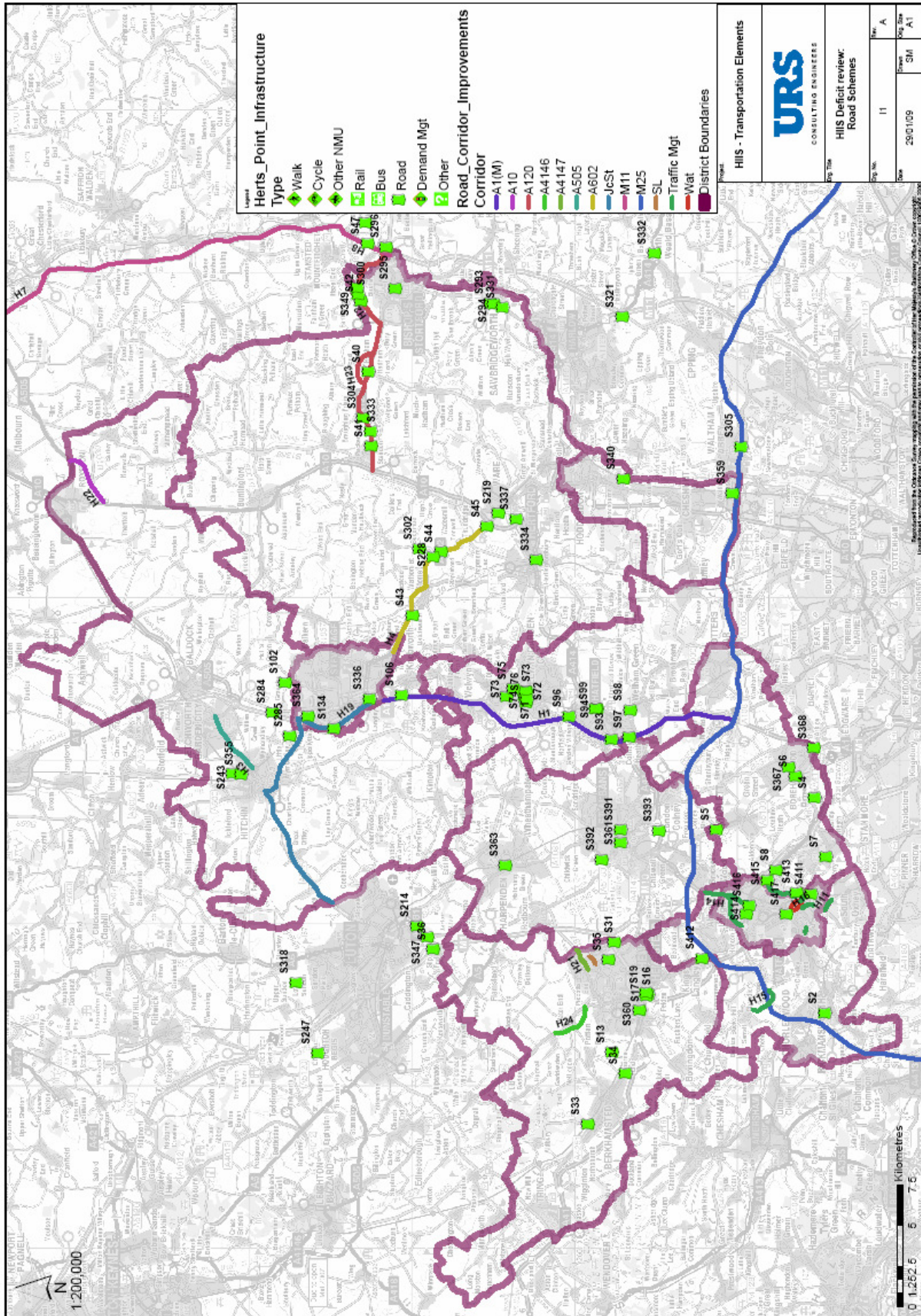
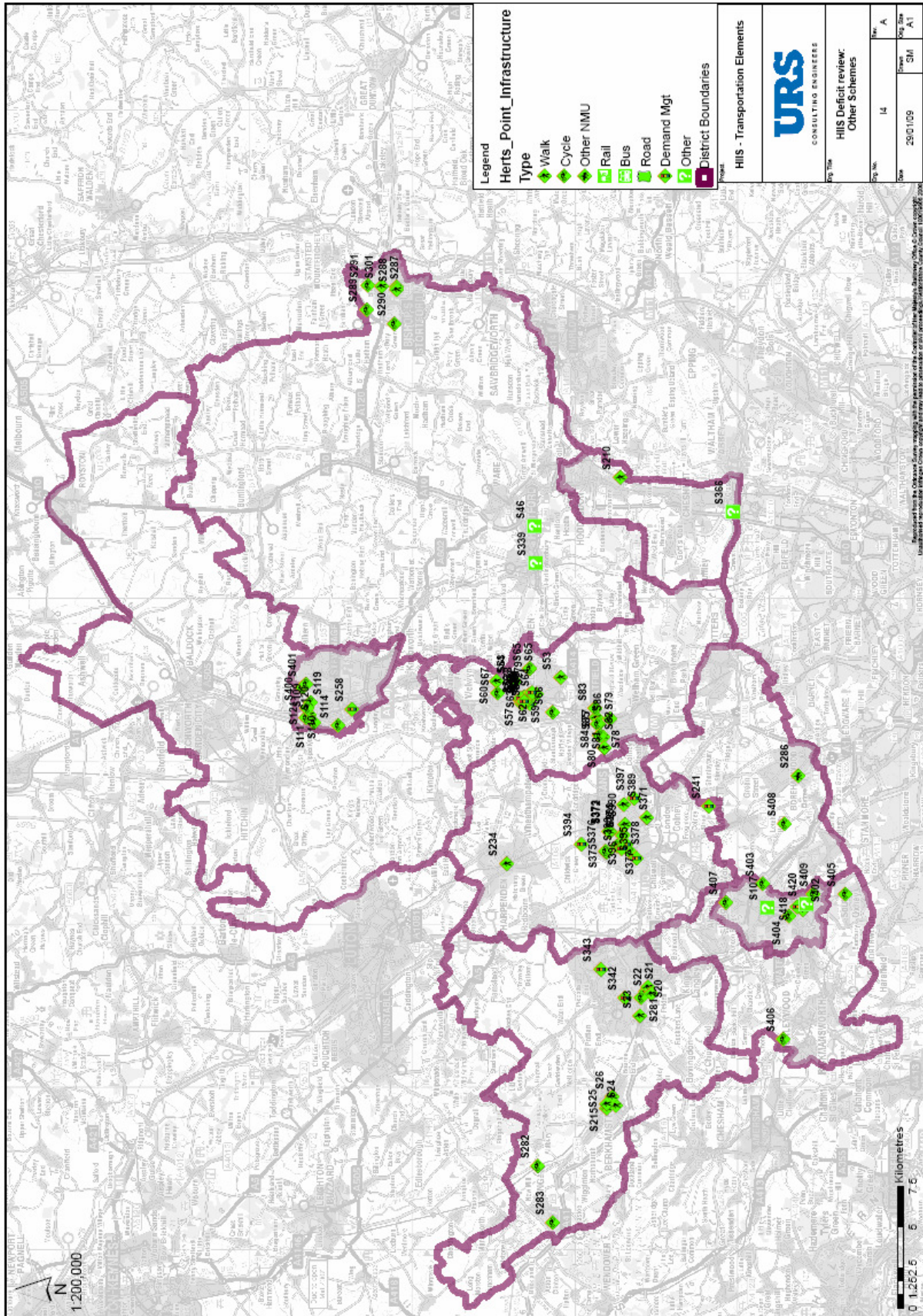


Figure B 4: Other Scheme Map - References



Appendix C – Accessibility Evidence Base

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Table C 1: Walk & Public Transport Accessibility to Important Destinations

Figure C 1: Employment (SOAs with more than 500 jobs)

Figure C 2: Retail Centres

Figure C 3: Health – GPs

Figure C 4: Secondary Education

Figure C 5: Further Education

Accessibility is being treated outside the 'Existing' and 'Future' definitions because it deals with an element of the transport network that may change little over the next 15 to 25 years and, if it does change substantially, could not be forecast here. This element of the network is routing and timetabling of buses and trains, on which accessibility indicators are largely based.

The principal issues identified in the Hertfordshire's Local Transport Plan Accessibility Strategy 2006/07 – 2010/11, on page 3, are; taking up and keeping employment, participating in learning, accessing healthcare, and accessing locally available healthy and affordable food. When combining the accessibility analysis with analysis of deprived wards it has been identified that there are six wards within the county that require further consideration but of these only Flamstead End in Broxbourne is considered to be in need of further action through the Broxbourne Local Strategic Partnership, due to the low car ownership of the ward.

It appears, therefore, that while accessibility is treated as a serious issue in Hertfordshire it is not considered that there are any areas of particular concern. Master planning and new development should however take into consideration the objectives of the Accessibility Strategy and it should be considered as to whether it is desirable to require new development to provide access that meets countywide standards that will work towards achieving core accessibility indicators within the county. These are¹⁹:

- % of a) pupils of compulsory school age; b) pupils of compulsory school age in receipt of free school meals within 15 and 30 minutes of a primary school and 20 and 40 minutes of a secondary school by public transport;
- % of 16-19 year olds within 30 and 60 minutes of a further education establishment by public transport;
- % of a) people of working age (16-74); b) people in receipt of Jobseekers' allowance within 20 and 40 minutes of work by public transport;
- % of a) households b) households without access to a car within 30 and 60 minutes of a hospital by public transport;
- % of a) households b) households without access to a car within 15 and 30 minutes of a GP by public transport; and
- % of a) households; b) households without access to a car within 15 and 30 minutes of a major centre by public transport.

HCC has provided data for access to a variety of destinations. These are assessed in Table C 1 below and the accompanying maps (Figure C 1 to Figure C 5). The grey areas on the maps indicate the presence of development, and therefore Hertfordshire residents. Where there is no accessibility and no grey area this indicates that there is no or only a very small population that has no accessibility (clusters of a few homes are unlikely to be

shown). Where grey areas can be seen this indicates that there is no accessibility for that population.

Table C 1: Walk & Public Transport Accessibility to Important Destinations

Railway Stations	Map A2
<p>Most urban areas have central rail stations with much of the town within 1.2km of the station. Hemel Hempstead and Stevenage stations are detached from the main populace due their location on the fringe of the built area.</p>	
Primary Schools	Map A3
<p>All built areas, including villages are catered for, however, the fringes of towns have walking distances up to half an hour that may be unacceptable for primary school children.</p>	
Secondary Schools	Map A4
<p>Most of the county has a reasonable journey time to a secondary school either walking or by public transport. Some rural areas have journey times approaching 1 hour, which will discourage the use of sustainable modes.</p>	
FE Colleges	Map A5
<p>Towns have good access to FE colleges and many rural areas have journey times less than half an hour. Some parts of East Hertfordshire experience complete inaccessibility by walking and public transport.</p>	
GP Surgeries	Map A6
<p>Most built areas, including villages, are within half an hour of a GP surgery. Where walking forms a significant part of the journey it may be inappropriate for trips to these destinations.</p>	
Hospitals	Map A7
<p>Hospitals are not accessible by walking and public transport for substantial rural areas. Even in urban areas journey times are approaching 30 minutes, which may be inappropriate where A&E services are required.</p>	
Retail Centres	Map A8
<p>Almost all built areas have good (sub 30 minute) access to retail centres.</p>	
SOAs with 500+ jobs (Employment)	Map A9
<p>All residents have good access to areas of employment, with only a small number of rural areas having a maximum journey time of 40 minutes.</p>	

Figure C 1: Employment (SOAs with more than 500 jobs)

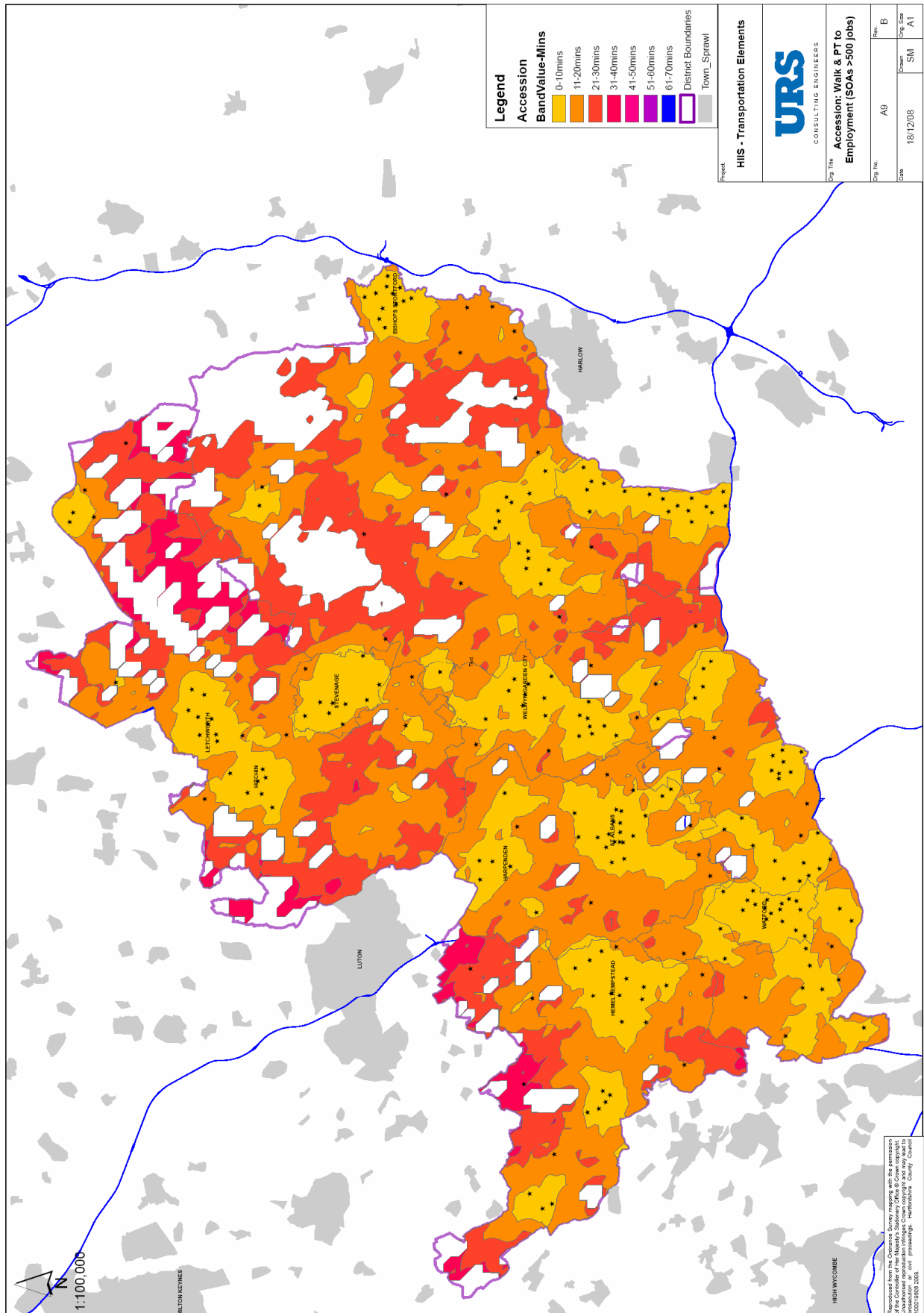


Figure C 2: Retail Centres

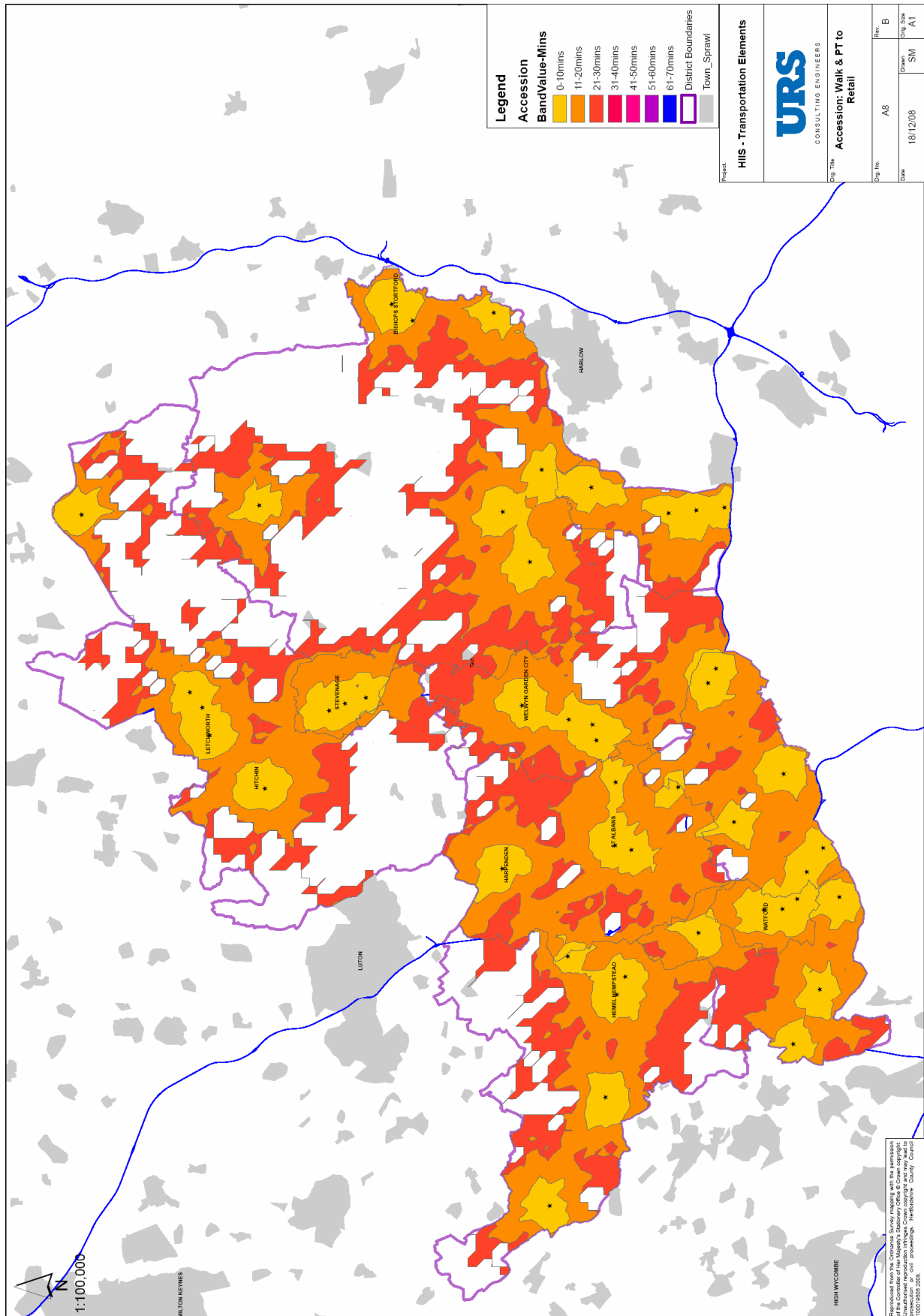


Figure C 3: Health – GPs

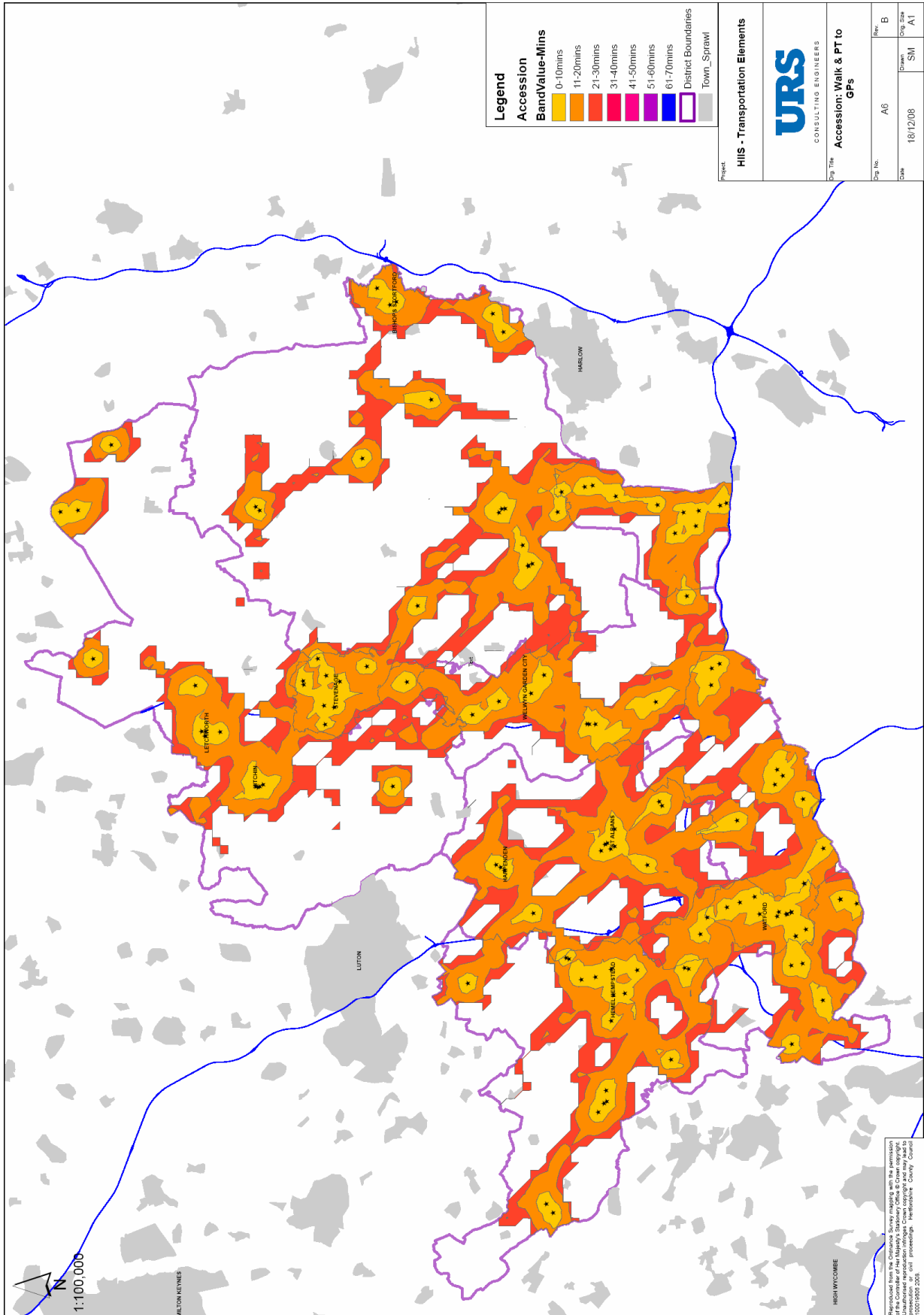


Figure C 4: Secondary Education

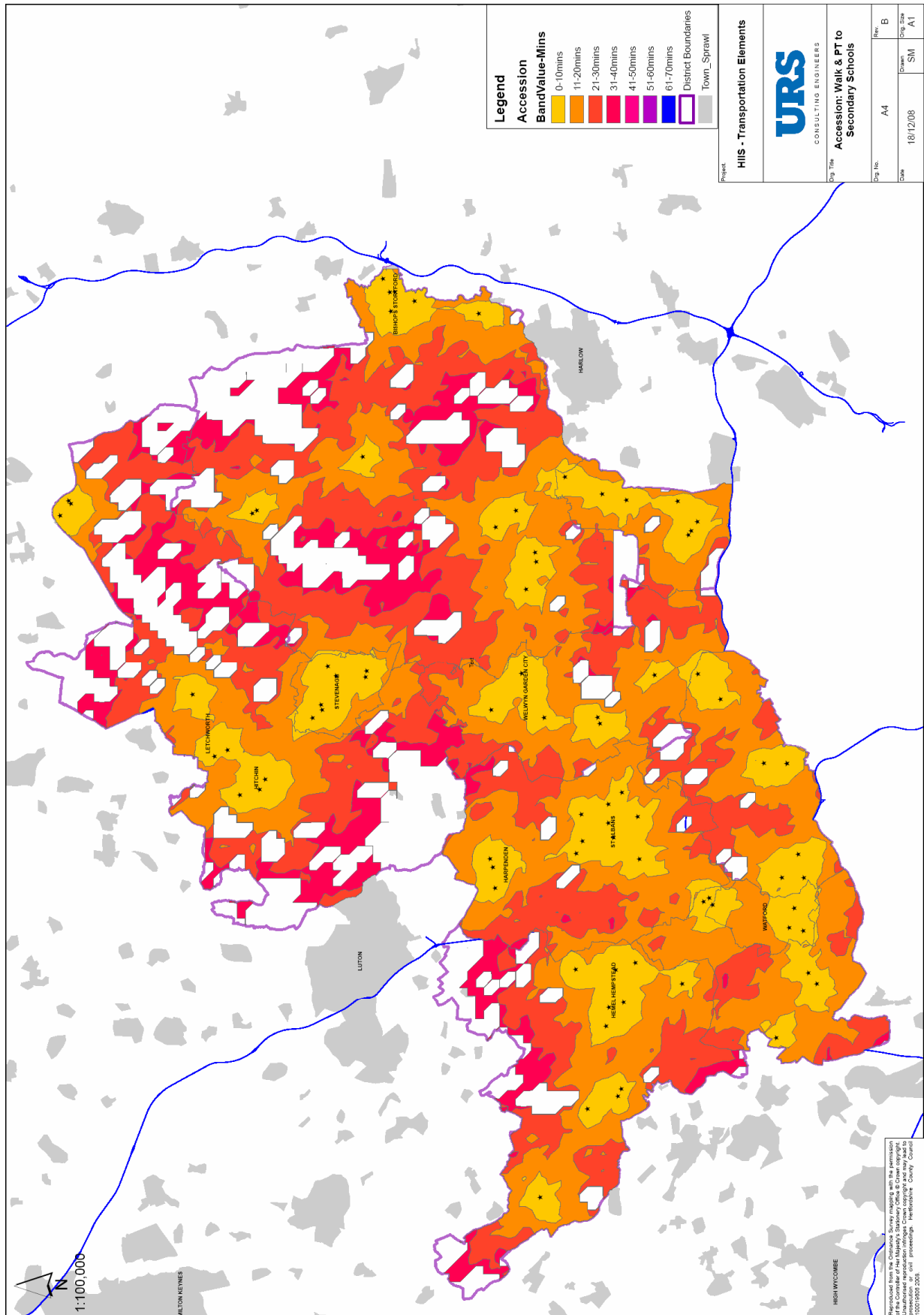
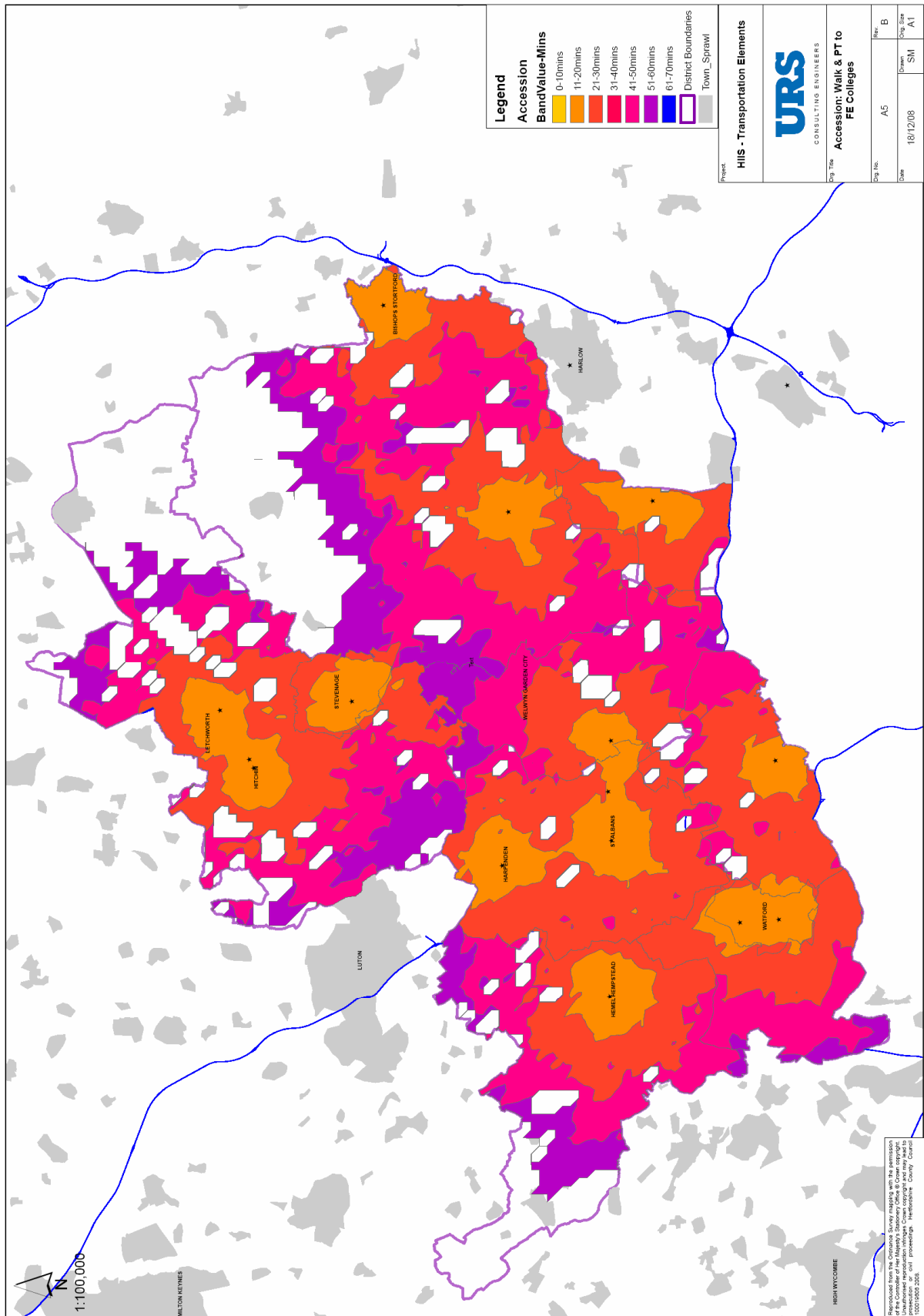


Figure C 5: Further Education



Appendix D – Bibliography

URS Ref	Title	Published By	Dated
001	Hertfordshire's Local Transport Plan 2006/7-2010/11 Long Term Strategy	Hertfordshire County Council	July 2005
002	Hertfordshire's Local Transport Plan 2006/7- 2010/11	Hertfordshire County Council	March 2006
003	Tackling Congestion in Hertfordshire	Hertfordshire County Council	March 07
004	West Watford Transport Plan	Hertfordshire, Hertsmere, Three Rivers and Watford Councils	June 1996
005	Mid Hertfordshire Area Transport Plan Objectives and Strategies	Hertfordshire County Council	March 06
006	Welwyn Garden City Urban Transport Plan	Hertfordshire County Council	January 08
007	Regional Funding Allocations	East of England Regional Assembly	January 06
008	Leavesden Transport Plan	Hertfordshire County Council	January 01
009	Hatfield Urban Transport Plan	Hertfordshire County Council	January 08
010	Borehamwood and Elstree Urban Transport Plan	Hertfordshire County Council	July 07
011	Eastern Herts. Transport Plan	Hertfordshire County Council	April 07
012	Berkhamsted and Northchurch Transport Plan Report on 'Public Exhibition'	Hertfordshire County Council	March 06
013	Oxhey Transport Plan	Hertfordshire County Council	March 01
015	Letchworth and Baldock Urban Transport Plan Volume 1 and 2	Hertfordshire County Council	July 2007
018	Regional Transport Strategy	East of England Regional Assembly	May 2008
022	Rail Strategy 2006/07 – 2010/11	Hertfordshire County Council	July 05
023	Bus Strategy 2006/07 – 2010/11	Hertfordshire County Council	July 05
027	Borough of Broxbourne local Plan second review (Chapter 9: Transport)	Borough of Broxbourne	Dec 05
040	Transport Study	Dacorum Borough council	Aug 06
041	Annual Monitoring Report 2006/07	East Herts. Council	Dec 07
043	East Herts. Local Plan Second Review Re-deposit version	East Herts. Council	June 05
056	Hertsmere Local Plan Through to 2021	Hertsmere Borough Council	May 03
088	Transport and utilities constraints Back Ground Paper Evidence Base for planning policies	North Hertfordshire District Council	Aug 07
091	St Albans City and District Strategy Development Plan Document Core Strategy Issues and Options Consultation Paper	St Albans City and District Council	July 07
104	Stevenage and North Herts action Plan Local Development Framework Key Issues and Options Consultation November 2007	Stevenage Borough Council	Nov 07
107	Stevenage Transport and Utilities Capacity Study Additional Development Areas	Stevenage Borough Council	Jan 06
122	Three Rivers Transport Background Study	Three Rivers District Council	March 07
127	Cassio College Planning Brief	Watford Borough Council	June 1999
139	Cross London RUS	Network Rail	August 06

URS Ref	Title	Published By	Dated
140	East Coast Main Line RUS	Network Rail	Feb 2008
141	Freight RUS	Network Rail	March 07
142	Greater Anglia RUS	Network Rail	Dec 2007
152	East of England Regional Transport Strategy: Existing Conditions Report	East of England Regional Assembly	June 2002
153	Midland Mainline/ East Midlands Route Utilisation Strategy	Strategic Rail Authority	March 2004
156	Bus Network Review	Hertfordshire County Council	2007
157	Gearing Up For Growth	EEDA	
158	EERM Highway Schemes	Faber Maunsell	
159	EERM Public Transport Schemes	Faber Maunsell	
160	HIIS Brief	Hertfordshire Purchasing	2008
161	Making Smarter Choices Work	DfT	30/08/05
162	Making Smarter Choices Work - Summary	DfT	24/06/05
163	Towards A Sustainable Transport System	DfT	30/10/08
164	PPG13: Transport	DCLG	March 2001
165	Hertfordshire's LTP Accessibility Strategy 2006/07-2010/11	Hertfordshire County Council	March 2006
166	St Albans Urban Transport Plan Consultation Document	Hertfordshire County Council	May 2008
167	South West Hertfordshire Transport Strategy Review Main Report – Consultation Draft	Hertfordshire County Council	May 2008
168	South West Hertfordshire Transport Strategy Review Plan Matrix	Hertfordshire County Council	May 2008
1000	Comments made during HIIS July workshop	N/A	04/07/08
1001	September HIIS Transport Workshop	N/A	03/09/09
1002	HCC comments on draft report	N/A	22/08/08
1003	Broxbourne Comments on inventories and draft report	N/A	22/08/08
1004	HISS Inventory by Workshop Comments from Hertfordshire Highways	N/A	11/09/08
1005	WHDC Comments on Inventories	N/A	15/09/08
1006	WHDC Comments on Draft Report	N/A	15/09/08
1007	St Albans DC Comments on inventories and draft report	N/A	16/09/08
1008	Hertfordshire PT Diagrams	N/A	17/09/08
1009	Hertsmere DC Comments on inventories	N/A	18/09/08
1010	HIIS – Dacorum Input	N/A	23/10/08
1011	HCC response to HIIS transport deficit lists	N/A	21/10/08

Appendix E – Ratio of Volume to Capacity Model Outputs

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Figure E 4: SATURN Values 2021MPI - Road Network with Hertfordshire RSS Growth and Interventions

Figure E 5: SATURN Values 2031MP - Road Network with Hertfordshire RSS Growth

Figure E 6: SATURN Values 2031MP - Road Network with Hertfordshire RSS Growth and Interventions

Figure E 1: AM Peak Volume Over Capacity (V/C) Ratio Bands Above 80% at 2011 (from EERM)

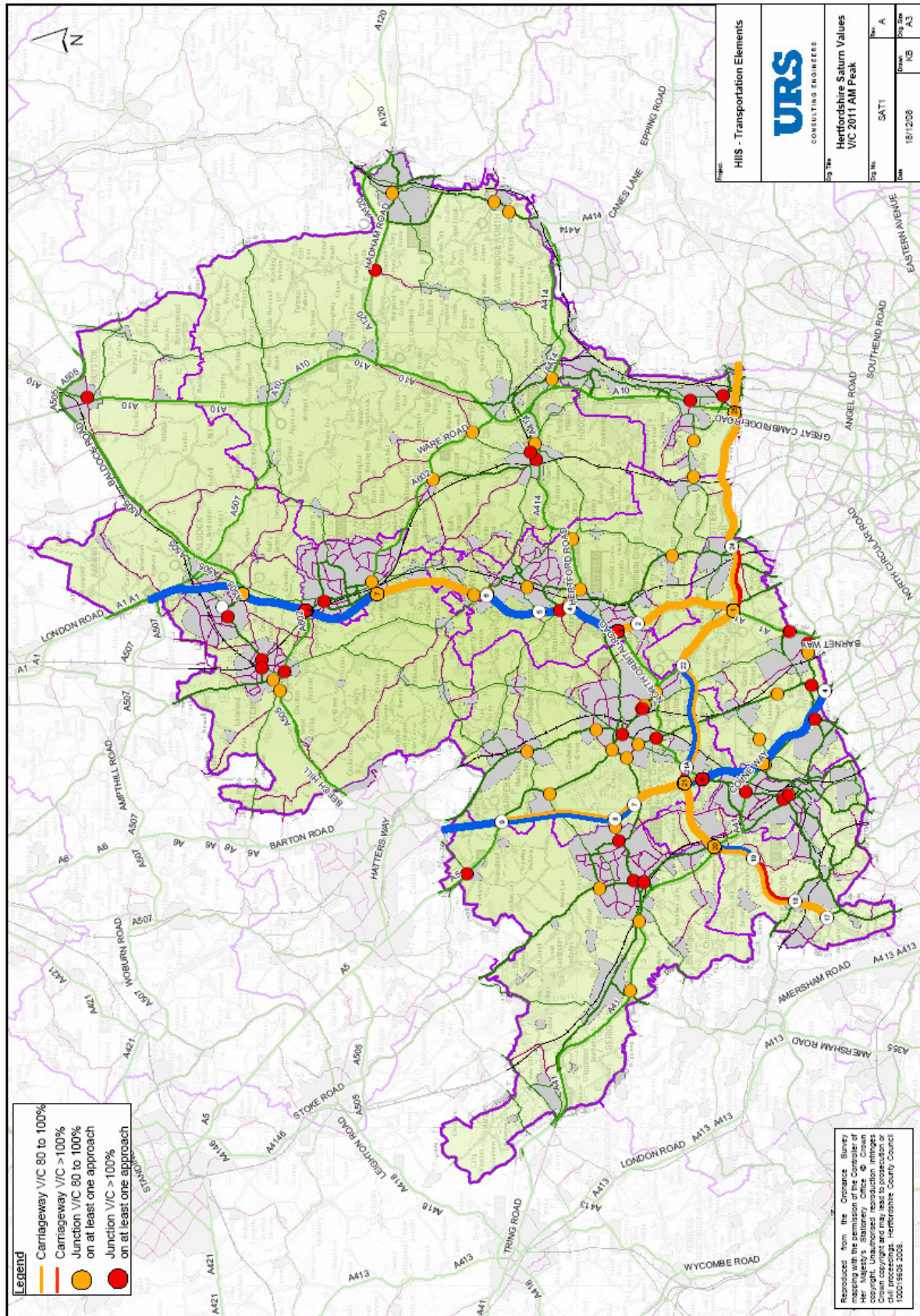


Figure E 2: SATURN Values 2021RC - Road Network without Hertfordshire RSS Growth

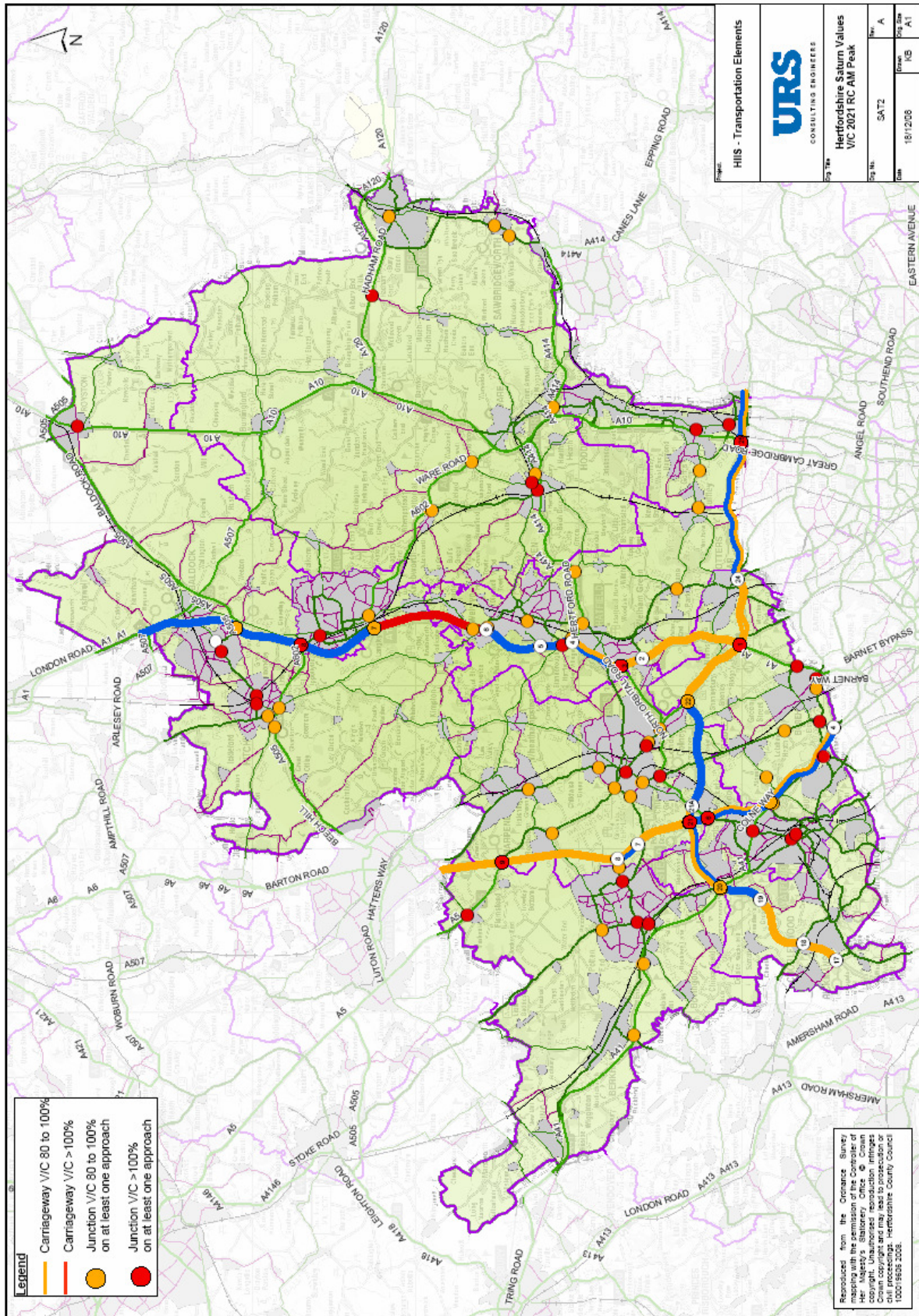


Figure E 3: SATURN Values 2021MP - Road Network with Hertfordshire RSS Growth

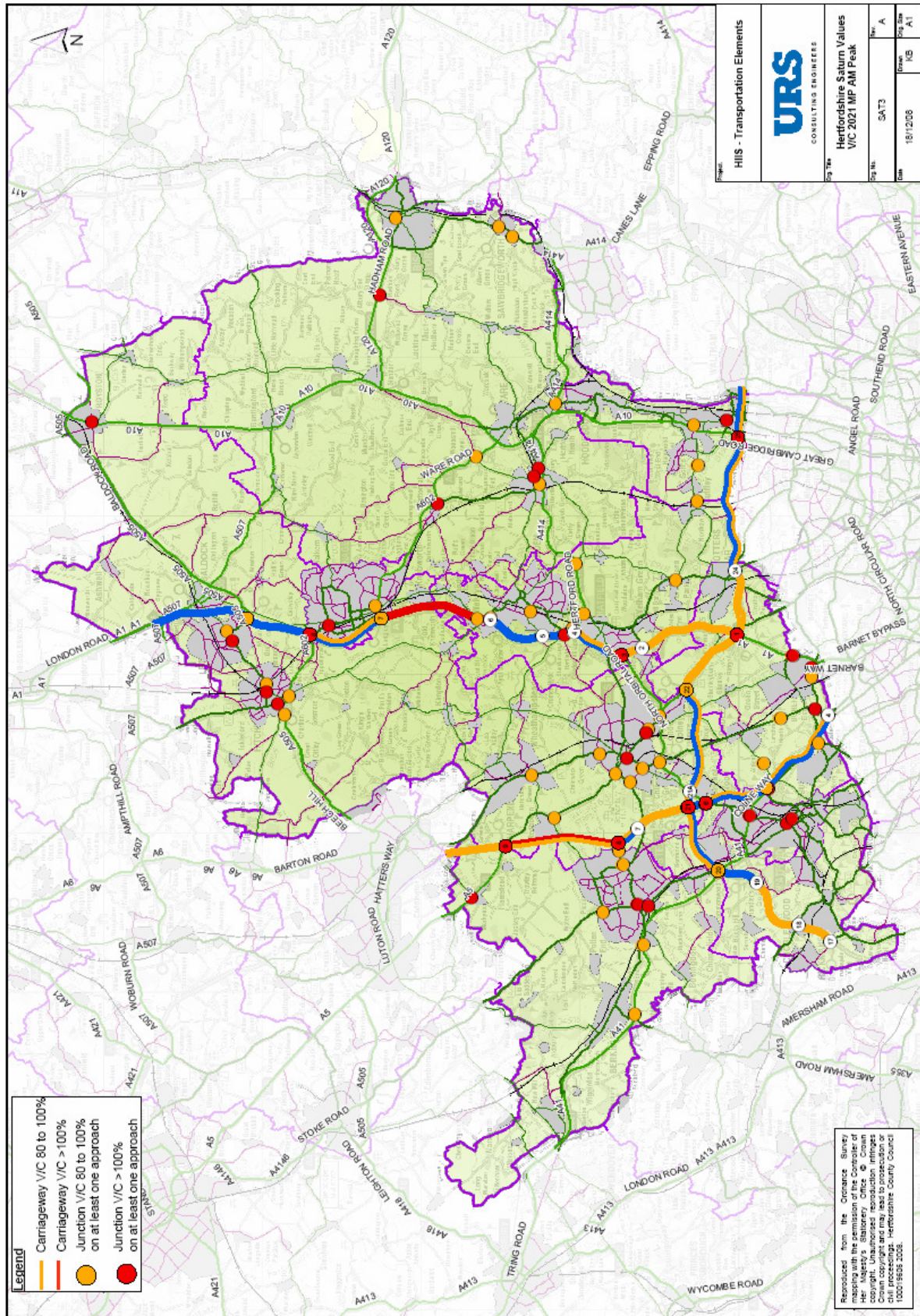


Figure E 4: SATURN Values 2021MPI - Road Network with Hertfordshire RSS Growth and Interventions

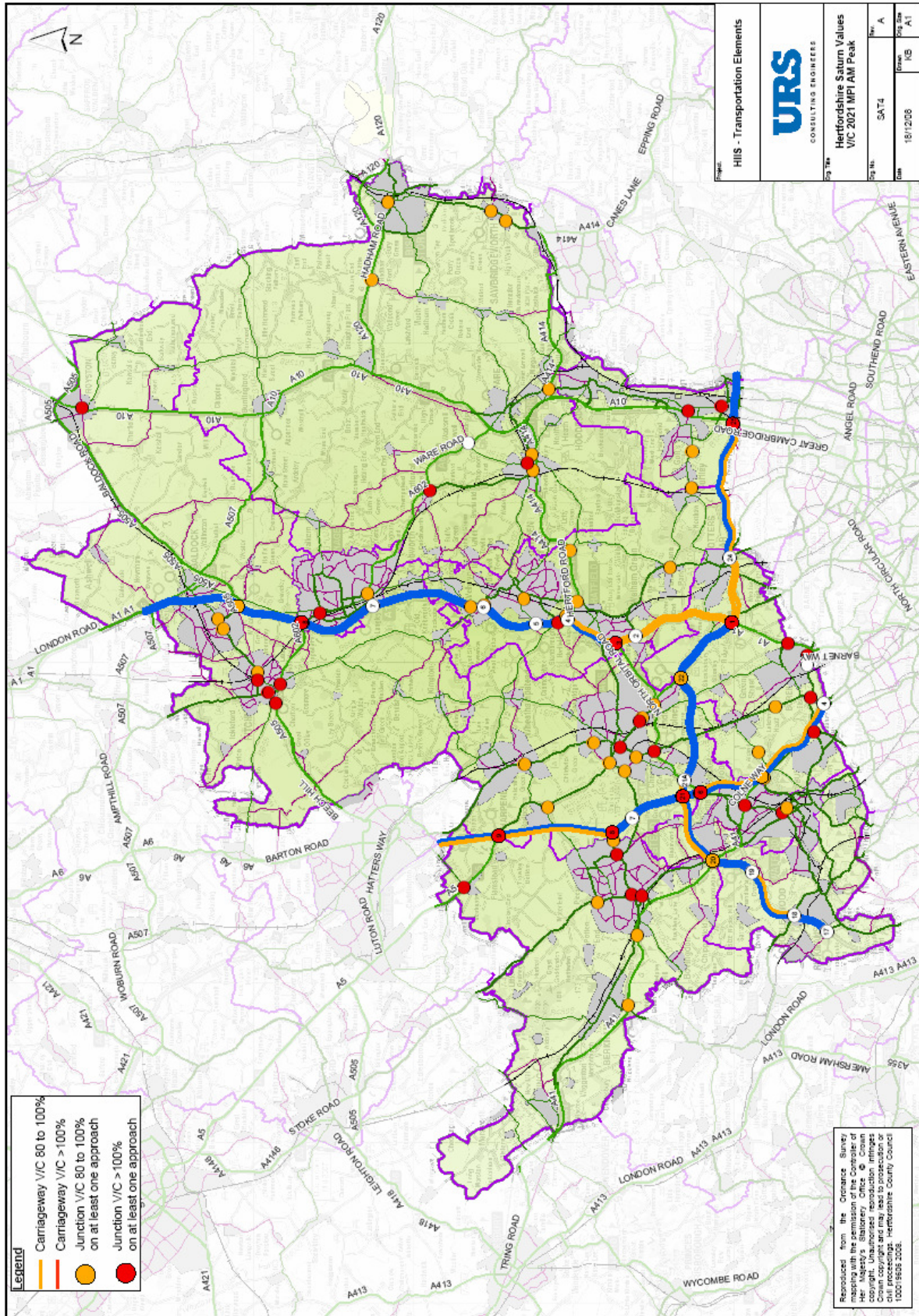


Figure E 5: SATURN Values 2031MP - Road Network with Hertfordshire RSS Growth

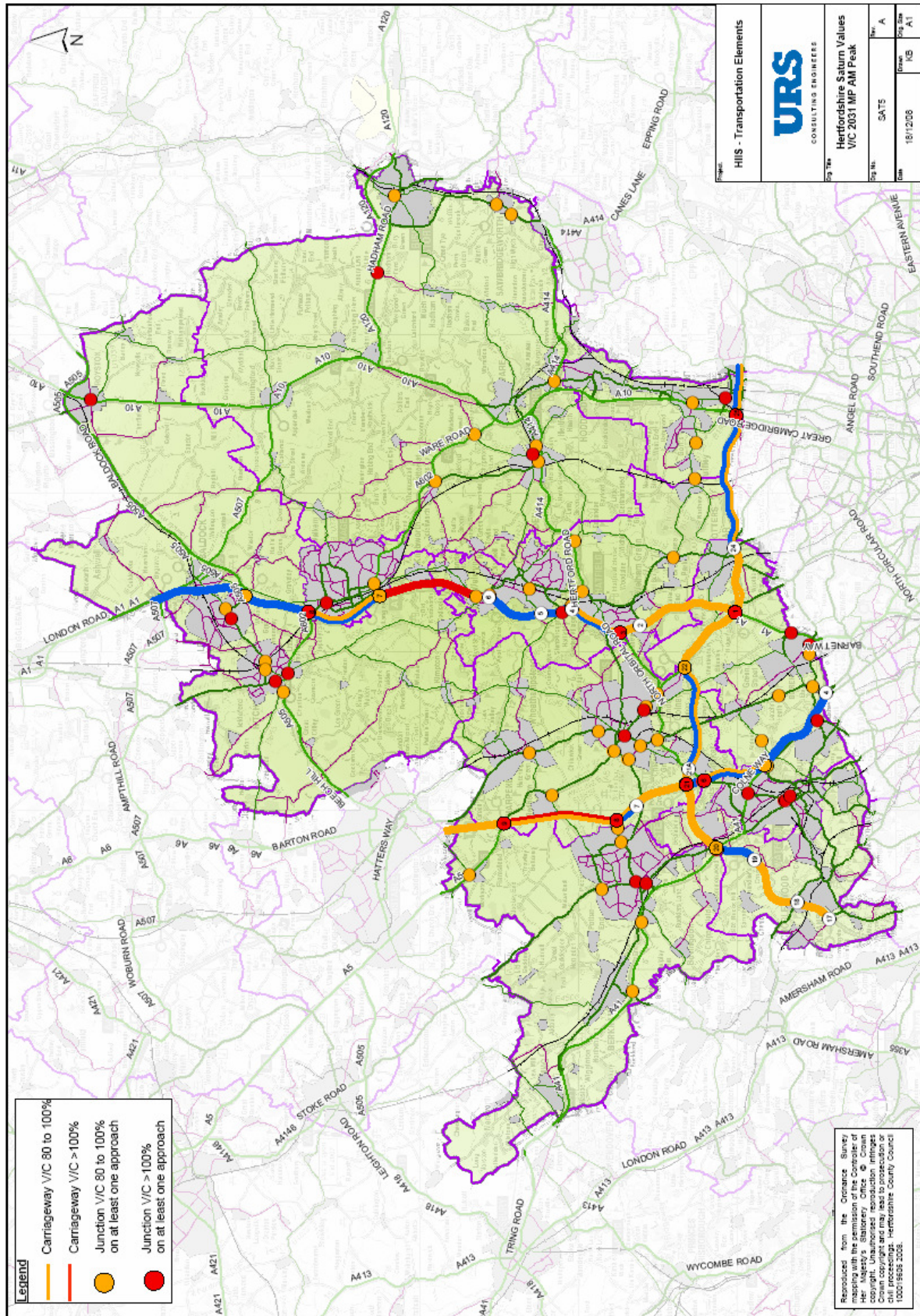
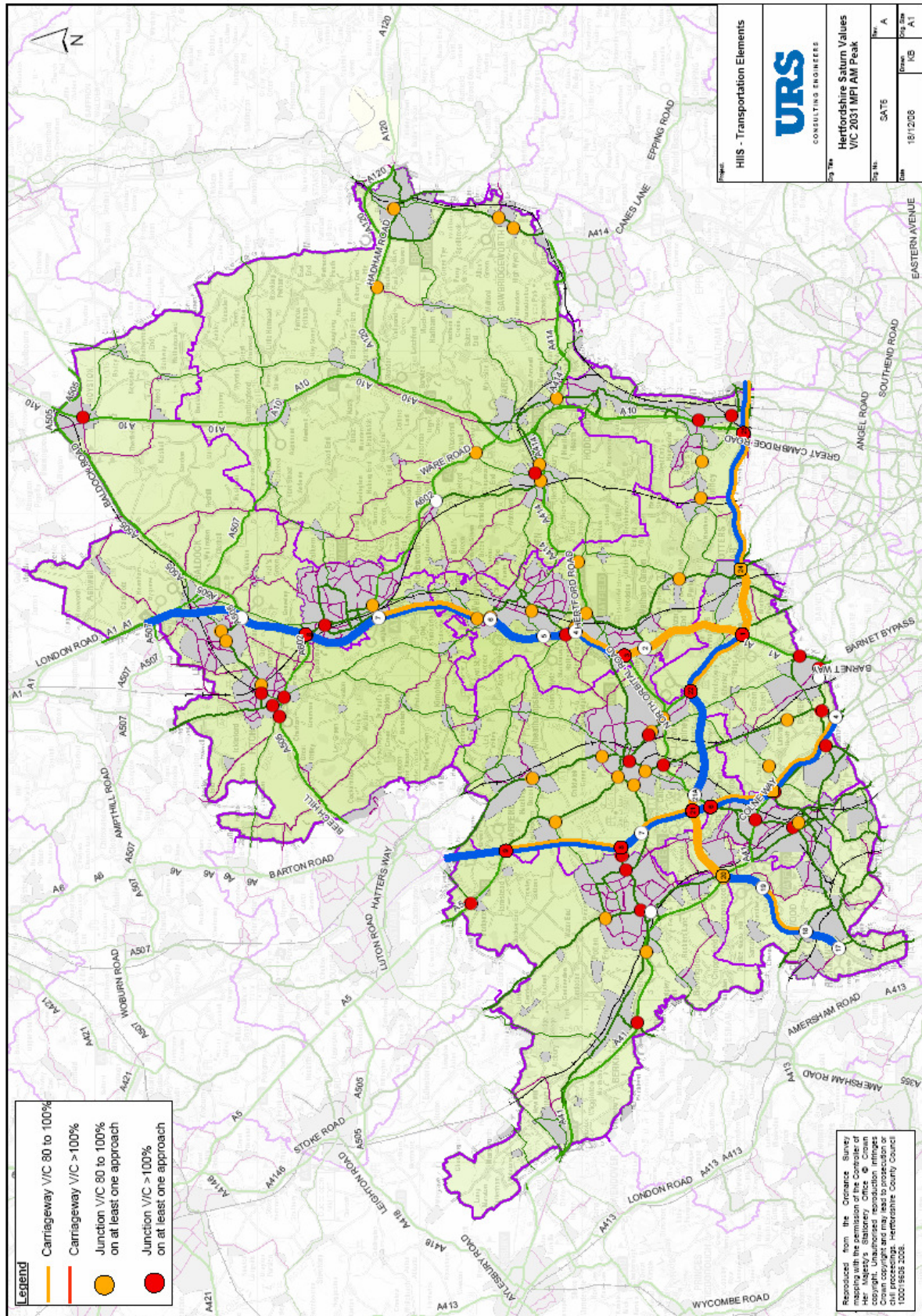


Figure E 6: SATURN Values 2031MP - Road Network with Hertfordshire RSS Growth and Interventions



Appendix F – Schemes Identified for Growth

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Table F 5: New Schemes Included in the Funding Model, Including Costs

The information in this appendix presents the schemes considered in this report and their inclusion or otherwise in the funding model. An explanation of each table is provided below.

Table F 1: Deficit Schemes Excluded from the Funding Model The schemes in this list were not considered appropriate for inclusion in the funding model because they are deficit only items. The decision to exclude schemes from the funding model was made using the evidence base from the EERM, document reviews, and stakeholder consultation.

Table F 2: All Schemes Included in the Funding Model A list of all schemes included in the funding model. This includes those that might only cater for growth, and those that cater for both historic deficit and growth. It contains both existing schemes and those identified by URS.

Table F 3: Changes Made to the EERM Model This describes the changes made to the EERM to reflect the schemes, where this was possible within the limitations of the model.

Table F 4: Deficit Schemes Included in the Funding Model, Including Costs These are the existing schemes, that to some extent cater for deficit, that have been included in the funding model because they will enable growth.

Table F 5: New Schemes Included in the Funding Model, Including Costs These are the new schemes identified by URS that have been included in the funding model.

Table F 1: Deficit Schemes Excluded from the Funding Model

ID	District	Location	Type	Description
S10	Broxbourne	Main Rail Line through Borough of Broxbourne	Rail	Investment in stations and track capacity on the main rail line
S11	Broxbourne	Lea Valley Green Route	Bus	Improve Bus services linking the Lea Valley towns
BR24	Dacorum	Route 2+3 Hemel	Bus	Low floor and peak period freq need standardised. Bus stn & TC facilities may be improved
BR25	Dacorum	Route 4+5 Hemel	Bus	Low floor inconsistent. Disruption from anti-social behaviour. BStn & TC facilities poss imps
H21	Dacorum	Hemel Hempstead	Road	A4147 widening & junction Improvements
S13	Dacorum	Hemel Hempstead	Road	Western/ Northern bypass
S19	Dacorum	Durrants Hill Road Hemel Hempstead	Road	Carriageway widening and Junction improvements
S28	Dacorum	Berkhamsted Rail Station	Rail	Railway Station safe guarded
S30	Dacorum	Apsley Rail Station	Rail	Railway Station safe guarded
S33	Dacorum	Tunnel Fields/ New Road	Road	Tunnel Fields link to new road
S34	Dacorum	A4251 Corridor, Apsley	Road	Safety & Traffic Calming Schemes
S35	Dacorum	Maylands Avenue Industrial Area Lorry Park	Road	Safeguarded
BR20	East Herts	Route 308	Bus	Linked to Hertford, some issues here & turning constraints @ Little B'stead. Some narrow roads.
BR21	East Herts	Route 510	Bus	Infrastructure improvements required. Bish'Stort congestion. Quality Bus Stop programme required.
S219	East Herts	Ware Road	Road	Road Improvement
S220	East Herts	East Hertford	Rail	12 Carriage Trains
S293	East Herts	Junction of Station Road / West Road	Road	Introduce Signals
S294	East Herts	Streets parallel to A1184	Road	Traffic Management
S295	East Herts	Dane Street	Road	2- way
S300	East Herts	A120 Bishops Stortfort	Road	Bypass Dualing
S302	East Herts	Sacombe Pound	Road	Junction Improvements
S304	East Herts	A120	Road	Coach Link
S331	East Herts	A1184 Sawbridgeworth	Road	Improvements
S333	East Herts	A120 Standon	Road	Improvements
S334	East Herts	A414 Gascoyne Way	Road	Improvements
S337	East Herts	Ware Road, Ware	Road	Improvement
S37	East Herts	Bishops Stortford	Rail	Enhancement of services

ID	District	Location	Type	Description
S38	East Herts	Sawbridgeworth	Rail	Enhancement of services
S40	East Herts	A120 Little Hadham	Road	Safety and environmental conditions
S41	East Herts	A120 Standon	Road	Safety and environmental conditions
S42	East Herts	A120 Bishops Stortford	Road	Existing Bypass (Safety)
S43	East Herts	A602 Bragbury End to Watton	Road	Existing Bypass (Safety)
S44	East Herts	A602 Wotton to Tonwell	Road	Existing Bypass (Safety)
S45	East Herts	A602 Tonwell to A10 Ware	Road	Safety
S223	Essex	A120 Stansted to Braintree	Road	General Improvements
BI9	Hertsmere	Potters Bar Stn	Bus	Bus Interchange Improvement
BR6	Hertsmere	Route W7	Bus	Elstree & B'wood Stn access & Shenley Rd operational issues. Potential contraflow in Lower High St
BR7	Hertsmere	Route W9	Bus	Elstree & B'wood Stn access & Shenley Rd operational issues. Potential contraflow in Lower High St
H13	Hertsmere	Stephensons Way	Road	Casualty reduction
S367	Hertsmere	Elstree Way/ Shenley Rd	Road	Safety Programme & Congestion Scheme
S368	Hertsmere	Stirling Corner	Road	Safety Programme plus congestion and pollution reduction measures
S4	Hertsmere	A5183/A411 Elstree CrossRoads	Road	Estree and Borehamwood Package Area, safety, congestion and pollution reduction measures
S415	Hertsmere	Berry Grove roundabout	Road	Casualty reduction
S5	Hertsmere	B556 Harper Lane/A5183 Watling Street	Road	Radlett & Rural Package Area
S6	Hertsmere	Station Road/Allum Lane/ Theobald/ Shenley Road	Road	Estree and Borehamwood Package Area, safety, congestion and pollution reduction measures
S7	Hertsmere	A411 Sparrows Herne/Catsey Lane/ Merry Hill Road	Road	Bushey Package Area
BR17	North Herts	Route 97	Bus	L'worth & Hitchin TC stops disparate. A505 congestion. Broadway-Hitchin Rd needs bus priority.
BR18	North Herts	Route 92	Bus	L'worth & Hitchin TC stops disparate. A505 congestion. Broadway-Hitchin Rd needs bus priority.
BR19	North Herts	Route 94	Bus	L'worth & Hitchin TC stops disparate. A505 congestion. Broadway-Hitchin Rd needs bus priority.
S102	North Herts	Stevenage	Road	Possible Northern Link Road
S104	North Herts	Hitchin	Rail	Partial signalling renewal over 3 years
S105	North Herts	Letchworth	Rail	Letchworth train to terminate at welwyn Garden City
S106	North Herts	A1 (M) Stevenage	Road	Improve East - West Routes as part of the strategic connection with Luton and Stansted corridors

ID	District	Location	Type	Description
S246	North Herts	Letchworth	Rail	DDA Access
S284	North Herts	A1(M)/B197	Road	East/West Distributor road north of Stevenage from A1 (M)/B197
S285	North Herts	A1(M)/A602	Road	Link road between A1(M) and A602 Wymondsley Bypass
S328	North Herts	Hitchin	Rail	Hitchin Fly-over
S355	North Herts	Hitchin	Road	Cadwell Lane/ Grove Road Industrial Estate link
BR11	St Albans	Route 320	Bus	Late and Sunday journeys in doubt, cost. St A congestion, part of St A Bus Punct Imp Partnership.
S232	St Albans	Watford - St Albans	Rail	Abbey Line & Bricket Wood Passing Loop
S361	St Albans	St. Albans	Road	Victoria St/ Marlborough Rd
S363	St Albans	Harpenden	Road	Victoria Rd/ Station Rd
S379	St Albans	St Albans	Bus	St Peters St SCOOT and signal rephasing nad potential traffic ban
S380	St Albans	St Albans	Bus	Holywell Hill signal co-ordination and re-phasing and removal of appropriate parking bays
S381	St Albans	St Albans	Bus	London Rd signal co-ordination and rephasing, parking and loading restrictions, and yellow hatching
S382	St Albans	St Albans	Bus	Victoria St improvements inc. signal co-ordination & re-phasing & moving stop nearest St Peters St
S385	St Albans	St Albans	Bus	City Centre-Station shuttle bus for 5 years
S386	St Albans	St Albans	Bus	Citywide automatic at stop information display
S388	St Albans	St Albans	Rail	Abbey Station accessibility improvements
S50	St Albans	St Albans	Bus	Potential bus priority measure between Hatfield, St Albans City Station and St Albans Abby Station
BR13	Stevenage	Route 100-102	Bus	Conflicting demands. New Stevenage BStn. Hermitage Rd pax environment.
BR28	Stevenage	Route 2+3 Stev	Bus	Review of route may be required to serve changing employment patterns.
BR29	Stevenage	Route SB1	Bus	Unsatisfactory traffic calming in Chells. No turning point at Sainsburys.
BR30	Stevenage	Route 4+5 Stev	Bus	Review of route may be required to serve changing employment patterns.
S311	Stevenage	East Coast Mainline	Rail	Great Eastern Mainline Imps
H11	3 Rivers	Brookdene Av	Road	Traffic calming
H15	3 Rivers	Sarratt Road	Road	Casualty reduction
S2	3 Rivers	Three Rivers - Rickmansworth	Road	Controlled Parking zones to facilitate residents parking throughout Rickmanswoth
S410	3 Rivers	Tolpits Lane	Bus	Tolpits Lane bus link

ID	District	Location	Type	Description
S412	3 Rivers	Kings Langley	Road	Ovaltine safety and traffic management scheme
BR1	Watford	Route 500	Bus	Pax pressure from Watford Campus & hospitals, Watford congestion, poor on street facilities
BR2	Watford	Route 550	Bus	Pax pressure from Watford Campus & hospitals, Watford congestion, poor on street facilities
BR3	Watford	Route 724	Bus	Long distance timetable vs local demand. Various town centre issues tho can make time up.
BR31	Watford	Route 8	Bus	Cong & stop allocation in Wat TC. Bushey Arches delays. Poss Lower High St contraflow.
BR32	Watford	Route 10	Bus	Cong & stop allocation in Wat TC. Bushey Arches delays. Poss Lower High St contraflow.
BR34	Watford	Route W8/ 10	Bus	Corridor improvements
H12	Watford	Sydney Road	Road	Traffic calming
H14	Watford	North Orbital	Road	Casualty reduction
H16	Watford	Wiggenhall Road	Road	Casualty reduction
H17	Watford	St Albans Road	Road	Casualty reduction
H18	Watford	Lower High St	Road	Casualty reduction
S413	Watford	Bushey Hall Rd/ Bushey Grove Rd	Road	Safety scheme
S414	Watford	South West Herts	Road	VMS on major routes
S416	Watford	Dome Superstore Access	Road	Casualty reduction
S417	Watford	Town Hall roundabout	Road	Casualty Reduction
S419	Watford	Watford	Bus	Automatic Vehicle Location to enhance RTP1
H1	WelHat	A1(M)	Road	A1(M) widening south of J7
S100	WelHat	Digswell	Rail	Key Switch & Crossing renewals
S101	WelHat	Woolmer Green	Rail	Key Switch & Crossing renewals
S69	WelHat	QE2 Hospital, WGC	Bus	Buses to Major Health Facilities
S70	WelHat	Bus Station, WGC	Bus	Improved Information
S71	WelHat	Hunters Bridge Car Park	Road	Car Park - To Improve
S72	WelHat	Howardsgate, WGC	Road	Reduce Short-stay Parking
S73	WelHat	Digswell Road, WGC	Road	Real-time signing for car-parks
S74	WelHat	Bessemer Road / Broadwater Road, WGC	Road	Reconfigure Traffic Signals
S75	WelHat	Shire Park	Road	Install traffic signal controls
S76	WelHat	Howardsgate, WGC	Road	Restrict Traffic Circulation
S88	WelHat	Welwyn Garden City	Bus	Bus real time information system

ID	District	Location	Type	Description
S92	WelHat	Hatfield Rail Station	Rail	Improve signing to rail station
S93	WelHat	College Lane (Near University)	Road	Introduce Controlled Parking Zone(s)
S94	WelHat	Roads around Rail Station	Road	Introduce Controlled Parking Zone(s)
S95	WelHat	The University of Hertfordshire	Bus	Additional park and ride capacity for university
S96	WelHat	A1(M) Junction 4 Tesco Roundabout	Road	Traffic Signal timings
S97	WelHat	Roehyde Way	Road	Traffic Signal timings
S98	WelHat	A1000 Great North Road/A1001 South Way	Road	Create all - movement junction
BR10	Other	Route 301	Bus	No vehicle consistency. Hemel BStn & TC imps. BStn issues @ Wel, Hat and Lister Hosp.
BR12	Other	Route 321	Bus	Impact of M1 delays/ incidents. Congestion in Watford & St Albans. Watford TC cong mgt.
BR16	Other	Route 84	Bus	Single deck capacity restraint. Important school route. P'Bar congestion. Poor L'Colney infra.
BR22	Other	Route 310	Bus	Chase Fm Hospital access being tackled. H'ford BStn & TC affect punctuality. W'Cross BStn capacity.
BR23	Other	Route 311	Bus	Chase Fm Hospital access being tackled. H'ford BStn & TC affect punctuality. W'Cross BStn capacity.
BR26	Other	Route 51-5	Bus	No information available
BR27	Other	Route 51-5	Bus	No information available
BR33	Other	Route W5/ 6	Bus	Corridor improvements
BR4	Other	Route 6	Bus	Congestion thru Watford & St A, severe @ Watford Junc, interchange scheme. Imps thru Rickmansworth
BR5	Other	Route 5	Bus	Congestion thru Watford, severe @ Watford Junction, interchange scheme. Imps thru Rickmansworth
BR8	Other	Route 602	Bus	Heavy school peak. A414 delays. St Albans & B'wood congestion. Developer opposition.
BR9	Other	Route 300	Bus	No vehicle consistency. Hemel BStn & TC imps. BStn issues @ Wel, Hat and Lister Hosp.
H19	Other	A505/ A601/ A1(M)	Road	Corridor junction strategy
H7	Other	M11 J9-J14	Road	Widening
H8	Other	M11 J8-J9	Road	Widening
R10	Other	North London Line	Rail	Redefine to mainly passenger
R8	Other	Crossrail	Rail	Crossrail London
R9	Other	North of Herts	Rail	East-West Rail
S214	Other	Luton	Road	East Luton Corridor

ID	District	Location	Type	Description
S216	Other	Stansted	Road	East/West Bus Links to be improved
S221	Other	Cambridge - Stansted	Rail	12 Carriage Trains in Peak
S247	Other	North of Dunstable	Road	A5-M1 link (Dunstable Northern Bypass)
S248	Other	Hitchin - Cambridge	Rail	Booster Transformers
S305	Other	London Orbital	Road	Orbital Coach Services
S313	Other	Mid Essex	Rail	Rail Route Mid Essex to Stansted
S316	Other	Luton North	Rail	Luton North Station
S318	Other	North of Luton	Road	Luton Northern bypass
S332	Other	A414 - M11	Road	Improvements
S347	Other	M1 Junction 10A Improvements	Road	Upgrade
S352	Other	Luton Airport Parkway Station	Rail	Improvements to train service and frequency

Table F 2: All Schemes Included in the Funding Model

ID	District	Location	Type	Description	Reason Required	Implement
M1						
R2	Other	Brighton-Bedford	Rail	Thameslink Programme	Identified in document review	2021
N15	Other	M1	Road	J6-10 ATM	Relieves significant congestion	2021
M25						
H9	Other	M25 J16-J31	Road	Widening & demand management	Identified in document review	2021
N16	Other	M25 J20	Road	M25/ A41 junction improvements	Reduce delays to traffic accessing the M25 from western Herts	2021
N21	Other	M25 J17-19	Road	J17-19 ATM	Relieves significant congestion	2031
A1(M)/ A1						
R1	Other	East Coast Mainline	Rail	ECML Improvements	Identified in document review	2021
N13	Other	A1(M) J6-8	Road	ATM J6-8	Relieves significant congestion	2021
N25	Other	A1(M) J8	Road	Capacity enhancement	To improve the efficiency of a severe bottleneck	2021
A5						
A10						
R4	Other	WAGN Line	Rail	WAGN Improvements	Identified in document review	2021
H22	North Herts	Royston	Road	Southeast bypass A10-A505	Identified in document review	2021
N22	Other	A10/ A1170	Road	Capacity enhancements	Improvement of local access to the regional road network	2021
A41						
S8	Hertsmere	A41/B462 Hartspring Lane	Road	Hartspring roundabout improvements	Identified in document review	2021
A120						
H2	East Herts	A120 (A1-M11)	Road	A120 Improvements	Identified in document review	2021
H23	East Herts	Little hadham	Road	Bypass	Identified in document review	2021
S296	East herts	A120 Junction	Road	Junction capacity increase	Identified in document review	2021

ID	District	Location	Type	Description	Reason Required	Implement
S349	East herts	A120 Bishop's Stortford Bypass Dualling	Road	Bypass	Identified in document review	2021
A405						
A411						
N8	Watford	Watford	Bus	East Watford bus corridor	To improve bus movement in southeast Watford and beyond	2021
H10	Watford	Watford town centre	Road	Ring road 2-way operation	Identified in document review	2021
S411	Watford	Bushey Arches	Road	Bushey Arches junction improvements	Identified in document review	2021
A414						
N28	Other	Central Herts	Bus	East-West PT corridor	To fulfil demand not currently provided for effectively	2021
N14	East Herts	Hertford	Road	A414 mitigation	Improve network conditions around southern Hertford	2021
N17	Dacorum	Hemel Hempstead	Road	A4146/ A414 jct (+ N2)	Severe bottleneck	2021
S360	Dacorum	Hemel Hempstead	Road	London Road/ Station Road about improvements	Identified in document review	2021
S393	St Albans	St Albans	Road	SCOOT on the A414 at junctions with M10 and A1081	Identified in document review	2021
A505						
N3	North Herts	Hitchin-Letchworth	Bus	A505 corridor bus priority	To aid bus movement along the congested corridor	2021
N4	North Herts	Hitchin	Bus	A505/ A602 bus priority	To aid bus movement into and out of Hitchin	2021
H3	North Herts	A505 Hitchin-Letchworth	Road	Improvements	Identified in document review	2021
A507						
A602						
S123	Stevenage	Superstore Access on Hitichin Road	Bus	Bus Priority - Selective vehicle detection at signalised junctions	Identified in document review	2021
S124	Stevenage	Monkswood way, Stevenage	Bus	Bus Priority - Selective vehicle detection at signalised junctions	Identified in document review	2021

ID	District	Location	Type	Description	Reason Required	Implement
S125	Stevenage	Six Hills Way/Lytton Way Roundabout	Bus	Bus Priority - Enhanced Capacity	Identified in document review	2021
S126	Stevenage	Six Hills Way/St George's Way Roundabout	Bus	Bus Priority - Enhanced Capacity to reduce eastbound queues on Six Hills way	Identified in document review	2021
S127	Stevenage	FairLands Way westbound, Stevenage	Bus	Bus Priority - Bus lane on the approach to Lytton way	Identified in document review	2021
S128	Stevenage	Gunnels Wood Road/A602 Broadhall	Bus	Bus Priority - Capacity enhancements/bus priority at junction where both road meet	Identified in document review	2021
H4	East Herts	A602 Ware-Stevenage	Road	Improvements	Identified in document review	2021
N29	Stevenage	A602/ A1072	Road	SB flare for left turners & signalisation of southern approach	To relieve access to/ from A1(M) J8	2021
S336	Stevenage	A602 Gunnells Wood Road Rdbt	Road	Improvement	Identified in document review	2021
S364	Stevenage	Stevenage	Road	A602/Coreys Mill Lane	Identified in document review	2021
A1184						
N10	East Herts	Sawbridgeworth	Bus	Town centre bus priority	Improved inter-urban bus connections	2021
N23	East Herts	Sawbridgeworth	Road	A1184 junctions capacity improvements (+ N11)	Reduce congestion for improved inter-urban travel	2021
A1189						
Broxbourne						
BI11	Broxbourne	Cheshunt Town Centre	Bus	Interchange improvement	Identified in document review	2021
S340	Broxbourne	Broxbourne Essex Road	Road	Improvement	Identified in document review	2021
S359	Broxbourne	Waltham Cross	Road	Waltham Cross Station Links	Identified in document review	2021
Dacorum						
BI1	Dacorum	Hemel Hempstead Bus Stn	Bus	Interchange improvement	Identified in document review	2021
N2	Dacorum	Hemel Hempstead	Bus	Central corridor bus priority	Congestion along existing and growing bus corridor	2021
S12	Dacorum	Tring Rail Station	Rail	Station Improvements (new building)	Identified in document review	2021

ID	District	Location	Type	Description	Reason Required	Implement
S14	Dacorum	Hemel Hempstead Station	Rail	Station improvements - adjacent land purchased by developer	Identified in document review	2021
H20	Dacorum	Hemel Hempstead	Road	Swallowdale Ln widening & jct improvements	Identified in document review	2021
H24	Dacorum	Water End	Road	Bypass	Identified in document review	2021
N12	Dacorum	Hemel Hempstead	Road	Hemel Hempstead Northern Bypass	Potentially required depending on the location of development around Hemel	2031
S16	Dacorum	Durrents Hill / London Road Junction	Road	Signalisation	Identified in document review	2021
S17	Dacorum	Featherbed Lane/ London Road	Road	Improvements to Junction	Identified in document review	2021
S31	Dacorum	Breakspear Way Hemel hempstead	Road	Junction improvements to increase capacity	Identified in document review	2021
East Herts						
BI12	East Herts	Bishops Stortford Bus Stn	Bus	Interchange improvement	Identified in document review	2021
N9	East Herts	Hertford-Ware	Bus	Corridor bus priority	Facilitates improved inter-urban bus connectivity	2021
S292	East herts	Dunmow Road Crridor	Bus	P & R	Identified in document review	2021
N24	East Herts	Bishops Stortford	Road	Town centre junctions (+ N12)	To relieve the town centre road network from severe congestion	2021
S228	East herts	Sacombe Pound	Road	Junction Improvements	Identified in document review	2021
Hertsmere						
BI4	Hertsmere	Borehamwood Town Centre	Bus	Interchange improvement	Identified in document review	2021
N11	East Herts	Bishops Stortford	Bus	Town centre bus priority	To improve bus network efficiency in the town centre	2021
North Herts						
BI14	North Herts	Letchworth Station potential interchange improvements	Bus	Interchange improvement	Identified in document review	2021
BI6	North Herts	Hitchin	Bus	Interchange improvement	Identified in document review	2021
S353	North Herts	Hlitchin Station	Rail	Hitchin Station Forecourt improvements	Identified in document review	2021

ID	District	Location	Type	Description	Reason Required	Implement
S243	North Herts	Cadwell Lane, Hitchin	Road	Signallisation	Identified in document review	2021
St Albans						
BI2	St Albans	St Albans Town Centre	Bus	Interchange improvement	Identified in document review	2021
S235	St Albans	Harpenden	Bus	Interchange Improvements	Identified in document review	2021
S383	St Albans	St Albans	Bus	P&R serving St Albans and strategic bus and coach services to e.g. Hatfield, location undertermined	Identified in document review	2021
S384	St Albans	St Albans	Bus	Hatfield Rd bus corridor improvements	Identified in document review	2021
S48	St Albans	Hemel Hempstead M1 junction	Bus	Maylands masterplan, proposal for P+R to serve the business park and town centre	Identified in document review	2021
N18	St Albans	Hemel-St Albans	Road	A4147 corridor junction improvements	To improve east-west connections across the county	2021
N19	St Albans	St Albans	Road	Relief road improvements	To relieve local and sub-regional travel from local congestion	2021
N20	St Albans	Harpenden	Road	Harpenden south junction enhancement	Relief of local congestion for inter-urban travel	2021
S391	St Albans	St Albans	Road	Hatfield/ Clarence/ Camp Roads junction improvements	Identified in document review	2021
S392	St Albans	St Albans	Road	SCOOT around the western orbital route	Identified in document review	2021
Stevenage						
BI5	Stevenage	Stevenage Bus Stn	Bus	Interchange improvement	Identified in document review	2021
S122	Stevenage	Bessemer Drive, Stevenage	Bus	Widening of road, primarily to facilitate bus movement	Identified in document review	2021
S129	Stevenage	Gresley Way, Stevenage	Bus	Signalisation of the Junctions	Identified in document review	2021
S130	Stevenage	The White Way, Stevenage	Bus	Signalisation of the Junctions	Identified in document review	2021
S131	Stevenage	Fairlands Way, Stevenage	Bus	Signalisation of the Junctions	Identified in document review	2021
S132	Stevenage	Mobbsbury Way, Stevenage	Bus	Signalisation of the Junctions	Identified in document review	2021
S134	Stevenage	A1 (M) Stevenage	Road	Passage under or over A1(M) to link the new development to Stevenage to reduce local traffic use o*	Identified in document review	2021

ID	District	Location	Type	Description	Reason Required	Implement
Three Rivers						
Watford						
N7	Watford	Watford	Bus	North Watford bus corridor	To improve network conditions on the busy bus corridor	2021
S107	Watford	St Albans Road	Other	Watford Junction redevelopment including the Colonial Way link	Identified in document review	2021
S252	Watford	Watford Junction	Rail	Creation of Rail Interchange	Identified in document review	2021
Welwyn Hatfield						
BI7	WelHat	WGC Bus Stn	Bus	Interchange improvement	Identified in document review	2021
BI8	WelHat	Hatfield Rail Stn	Bus	Interchange improvement	Identified in document review	2021
N5	WelHat	WGC spine	Bus	A1000 bus priority (inc. adjacent roads)	To aid bus movement through the congested road network	2021
N6	WelHat	Hatfield	Bus	A1000/ B6426 bus priority	To improve bus network efficiency around the station	2021
S87	WelHat	College Lane onto A1001 Roehyde Way	Bus	Introduce bus priority measures (Bus gates, bus lanes, junction priorities)	Identified in document review	2021
S91	WelHat	Hatfield Rail Station	Rail	Hatfield Station interchange	Identified in document review	2021
S99	WelHat	Hatfield Rail Station	Road	Additional Parking	Identified in document review	2021
Other						
N1	Other	Countywide	Cycle	Implementation of HCC cycling strategy	Requirement to promote sustainable transport	2021
N27	Other	Countywide	Demand Mgt.	Smarter Choices	Essential to reduce pressure on the road network	All
N26	Other	Countywide	Rail	General improvements to rail stations	To improve operational effectiveness and attractiveness to users and potential users	2021
R11	Other	Abbey Line	Rail	Abbey Line passing loop	Identified in document review	2021
R12	Other	Croxley Rail	Rail	Croxley Rail Link	Identified in document review	2021
S321	Other	M11 J7 & J8	Road	Junction Improvements	Identified in document review	2021
S36	Other	M1 Luton	Road	Improve East - West Routes as part of the strategic connection with Stevenage and Stansted corridor	Identified in document review	2021

ID	District	Location	Type	Description	Reason Required	Implement
S47	Other	M11 Stansted	Road	Improve East - West Routes as part of the strategic connection with Luton and Stevenage corridors	Identified in document review	2021

Table F 3: Changes Made to the EERM Model

ID	Description	Improvement	2021	2031
H10	Ring road 2-way operation	2-way operation 1 lane in each direction assume existing junction types. Not modellable	Yes	Yes
H2	A120 Improvements	Too small to model	Yes	Yes
H3	Improvements	Realignment of approaches at A505/ A602, extension of A505 approach flare to 30m. Baldock Rd/ Norton Way South ban right turn from Baldock Rd WB and make 2 lane ahead for existing flare and 2 lanes WB for 15m on eastern side of jct.	Yes	Yes
H4	Improvements	50m flare on eastern approach to A602/ A119 and 2 lanes away from jct to north for 50m, 2 lane circulatory.	Yes	Yes
N12	Hemel Hempstead Northern Bypass	Single carriageway 50mph road from A4146 to Green Lane, r'bouts at A4146/Picotts End Ln B487/ Little Revel End and Cherry Tree Ln/ Green Ln with all approaches having a 20m flare & 2 lane circulatory.	No	Yes
N13	ATM J6-8	Assume 1 additional lane and 50mph	Yes	Yes
N14	A414 mitigation	Signalisation of A414/ A119 r'bout and A119 North Road/ Cross Ln. Signalisation of A414/ B158 r'bout. Both would include bus priority.	Yes	Yes
N15	J6-10 ATM	Assume 1 additional lane and 50mph	Yes	Yes
N16	M25/ A41 junction improvements	Introduction of bus lane to enable interurban bus route. Not modellable.	Yes	Yes
N17	A4146/ A414 jct (+ N2)	Replacement of series of 6 roundabouts with 1 traditional r'bout. 3 lane circulatory. 2 lane approach on all junctions assuming a third lane will be provided as bus priority.	Yes	Yes
N18	A4147 corridor junction improvements	Extend Leverstock Green Way approach to A414 back by 20m. 2 lane approach (WB) to A4147. King Harry Ln r'bout & 2 lane exit WB along A4147.	Yes	Yes
N19	Relief road improvements	Increase A5183/ A4147 r'bout diameter by approx 10m, 20m flare length on all approaches. A1081/ Beech Rd 20m r'bout 2 lane on all approaches 2 lane exit on A1081 SB.	Yes	Yes
N20	Harpenden south junction enhancement	Signalise A1081/ B652 in Harpenden, bus actuated. A1081/ Redbourn Ln 2 lane exit SB, 20m flare on northern approach.	Yes	Yes
N22	J17-19 ATM	Assume 1 additional lane and 50mph	Yes	Yes
N23	Capacity enhancements	20m flare on Stanstead Rd at jct of A414/ A1170. A414 WB approach 50m flare and 3 lane circulatory on southern side of r'bout (A414 to A414)	Yes	Yes
N24	A1184 junctions capacity improvements (+ N11)	Provision of right turn lane from A1184 southbound onto High Wych Rd. Signalisation of A1184. West Rd/ Station Rd to include bus priority and localised bus improvements.	No	Yes
N25	Town centre junctions (+ N12)	Signalisation of A1250/ B1529 and linking of all town centre signalised junctions including bus actuation.	Yes	Yes
N26	Capacity enhancement	SLT from A602 from Stevenage into lane 1 of SB on slip. 1 lane off r'bout to A1(M) SB. 2 lanes onto r'bout from A602 from Stevenage, 2 lane circulatory across face.	Yes	Yes

ID	Description	Improvement	2021	2031
N29	SB flare for left turners & signalisation of southern approach	SB flare for left turners & signalisation of southern approach	Yes	Yes
S134	Passage under or over A1(M) to link the new development to Stevenage to reduce local traffic use o*	Dualling of existing underpass at Meadway and NMU underpass alongside Bessemer Rd. Not in model but both Meadway and Bessemer will become major conduits for development to the east of Stevenage, should they be incorporated.	Yes	Yes
S16	Signalisation	Signalisation linked to S17. Not modellable	Yes	Yes
S17	Improvements to Junction	Signalisation linked to S16. Not modellable	Yes	Yes
S18	New single carriageway Bypass	Single carriageway bypass from A4146/ Picotts End Ln jct of N12 to just north of Water End, bypassing to the west, 60mph. Additional junctions at Potten End Hill (with Nettleden Ln realigning to the junction & rejoining A4146, bypass approaches 20m flare	Yes	Yes
S217	Bypass	As specification tested for HCC	Yes	Yes
S228	Junction Improvements	Too small to model	Yes	Yes
S243	Signalisation	Signalisation, not in model network	Yes	Yes
S296	Junction capacity increase	Not included as not specific enough	Yes	Yes
S31	Junction improvements to increase capacity	2 lane approach on Green Lane.	Yes	Yes
S321	Junction Improvements	Not required in modelling	Yes	Yes
S330	Improvements	South-east bypass from A10 at Flint Hall to A505 between Hydell Hill Farm and Heath Farm	Yes	Yes
S336	Improvement	Signalisation of A1(M) J7 and new access into Glaxo SmithKline site. Signalisation of Gunnalswood Rd/ Broadhall Way r'bout.	Yes	Yes
S340	Improvement	Link road between new bridge over railway and Dinant Link Road, straightening. May not be modellable.	Yes	Yes
S349	Bypass	Dual carriageway A120 70mph from A1250 Dunmow Rd to A1184. All A120 approaches to r'bouts 3 lane.	Yes	Yes
S359	Waltham Cross Station Links	Cycle & Ped links. Not modellable	Yes	Yes
S36	Improve E - W Routes as part of the strategic connection with Stevenage and Stansted corridor	Not modellable	Yes	Yes
S360	London Road/ Station Road rbout improvements	No increase in general capacity, PT improvements (inc bus lanes and potential tidal flow bus lane along London Rd) and Smarter Choices.	Yes	Yes
S364	A602/ Coreys Mill Lane	Junction not in model	Yes	Yes
S391	Hatfield/ Clarence/ Camp Roads junction improvements	Not modellable.	Yes	Yes
S392	SCOOT around the western orbital route	Not modellable.	Yes	Yes
S393	SCOOT on the A414 at junctions	Not modellable.	Yes	Yes

ID	Description	Improvement	2021	2031
	with M10 and A1081			
S411	Bushey Arches junction improvements	Signalisation with bus actuation. Not modellable	Yes	Yes
S47	Improve E - W Routes as part of the strategic connection with Luton and Stevenage corridors	Not modellable	Yes	Yes
S8	Hartspring roundabout improvements	No issue in model so not modellable	Yes	Yes

Table F 4: Deficit Schemes Included in the Funding Model, Including Costs

ID	District	Location	Type	Description	Cost £m	Existing Funding £m	Implement	Lead	Priority
BI1	Dacorum	Hemel Hempstead Bus Stn	Bus	Interchange improvement	£4.0	£0.88	2021	Local HA	2
BI2	St Albans	St Albans Town Centre	Bus	Interchange improvement	£1.5	£0.33	2021	Local HA	2
BI4	Hertsmere	Borehamwood Town Centre	Bus	Interchange improvement	£1.5	£0.33	2021	Local HA	2
BI5	Stevenage	Stevenage Bus Stn	Bus	Interchange improvement	£4.0	£0.88	2021	Local HA	2
BI6	North Herts	Hitchin	Bus	Interchange improvement	£1.5	£0.33	2021	Local HA	2
BI7	WelHat	WGC Bus Stn	Bus	Interchange improvement	£4.0	£0.88	2021	Local HA	2
BI8	WelHat	Hatfield Rail Stn	Bus	Interchange improvement	£1.5	£0.33	2021	Local HA	2
BI11	Broxbourne	Cheshunt Town Centre	Bus	Interchange improvement	£1.5	£0.33	2021	Local HA	2
BI12	East Herts	Bishops Stortford Bus Stn	Bus	Interchange improvement	£4.0	£0.88	2021	Local HA	2
BI14	North Herts	Letchworth Station potential interchange improvements	Bus	Interchange improvement	£1.5	£0.33	2021	Local HA	1
R11	Other	Abbey Line	Rail	Abbey Line passing loop	£6.0	£1.32	2021	Local HA	2
R12	Other	Croxley Rail	Rail	Croxley Rail Link	£144.5	£144.50	2021	Local HA	2
H2	East Herts	A120 (A1-M11)	Road	A120 Improvements	£2.0	£0.44	2021	Local HA	3
H3	North Herts	A505 Hitchin-Letchworth	Road	Improvements	£5.0	£2.79	2021	Local HA	2
H4	East Herts	A602 Ware-Stevenage	Road	Improvements	£20.0	£4.38	2021	Local HA	3
H10	Watford	Watford town centre	Road	Ring road 2-way operation	£2.0	£0.44	2021	Local HA	3

ID	District	Location	Type	Description	Cost £m	Existing Funding £m	Implement	Lead	Priority
H20	Dacorum	Hemel Hempstead	Road	Swallowdale Ln widening & jct improvements	£1.0	£0.22	2021	Local HA	3
H22	North Herts	Royston	Road	Southeast bypass A10-A505	£19.3	£10.77	2021	Local HA	3
H23	East Herts	Little Hadham	Road	Bypass	£32.0	£32.00	2021	Local HA	4
H24	Dacorum	Water End	Road	Bypass	£17.4	£6.36	2021	Local HA	2
S340	Broxbourne	Broxbourne Essex Road	Road	Improvement	£5.3	£0.00	2021	Other	3
S359	Broxbourne	Waltham Cross	Road	Waltham Cross Station Links	£0.2	£0.04	2021	Local HA	3
S12	Dacorum	Tring Rail Station	Rail	Station Improvements (new building)	£2.0	£0.00	2021	Other	3
S14	Dacorum	Hemel Hempstead Station	Rail	Station improvements - adjacent land purchased by developer	£2.0	£0.00	2021	Other	3
S16	Dacorum	Durrents Hill / London Road Junction	Road	Signalisation	£0.1	£0.02	2021	Local HA	3
S17	Dacorum	Featherbed Lane/ London Road	Road	Improvements to Junction	£0.1	£0.02	2021	Local HA	3
S31	Dacorum	Breakspear Way Hemel hempstead	Road	Junction improvements to increase capacity	£0.1	£0.02	2021	Local HA	3
S360	Dacorum	Hemel Hempstead	Road	London Road/ Station Road about improvements	£0.2	£0.04	2021	Local HA	3
S292	East herts	Dunmow Road Crridor	Bus	P & R	£3.1	£0.68	2021	Local HA	3
S228	East herts	Sacombe Pound	Road	Junction Improvements	£0.1	£0.00	2021	Other	3
S296	East herts	A120 Junction	Road	Junction capacity increase	£0.2	£0.04	2021	Local HA	3
S349	East herts	A120 Bishop's Stortford Bypass Dualling	Road	Bypass	£22.6	£4.96	2021	Local HA	3
S8	Hertsmere	A41/B462 Hartspring Lane	Road	Hartspring roundabout improvements	£0.1	£0.02	2021	Local HA	3
S353	North Herts	Hitchin Station	Rail	Hitchin Station Forecourt improvements	£1.0	£0.00	2021	Rail Op	3
S243	North Herts	Cadwell Lane, Hitchin	Road	Signallisation	£0.7	£0.16	2021	Local	3

ID	District	Location	Type	Description	Cost £m	Existing Funding £m	Implement	Lead	Priority
								PA	
S235	St Albans	Harpenden	Bus	Interchange Improvements	£0.1	£0.02	2021	Local PA	3
S383	St Albans	St Albans	Bus	P&R serving St Albans and strategic bus and coach services to e.g. Hatfield, location undertermined	£3.1	£0.68	2021	Local HA	3
S384	St Albans	St Albans	Bus	Hatfield Rd bus corridor improvements	£0.1	£0.02	2021	Local HA	3
S48	St Albans	Hemel Hempstead M1 junction	Bus	Maylands masterplan, proposal for P+R to serve the business park and town centre	£3.1	£0.00	2021	Other	3
S391	St Albans	St Albans	Road	Hatfield/ Clarence/ Camp Roads junction improvements	£0.0	£0.01	2021	Local HA	3
S392	St Albans	St Albans	Road	SCOOT around the western orbital route	£0.1	£0.02	2021	Local HA	3
S393	St Albans	St Albans	Road	SCOOT on the A414 at junctions with M10 and A1081	£0.1	£0.02	2021	Local HA	3
S122	Stevenage	Bessemer Drive, Stevenage	Bus	Widening of road, primarily to facilitate bus movement	£0.3	£0.05	2021	Local HA	3
S123	Stevenage	Superstore Access on Hitichin Road	Bus	Bus Priority - Selective vehicle detection at signalised junctions	£0.3	£0.05	2021	Local HA	3
S124	Stevenage	Monkswood way, Stevenage	Bus	Bus Priority - Selective vehicle detection at signalised junctions	£0.3	£0.05	2021	Local HA	3
S125	Stevenage	Six Hills Way/Lytton Way Roundabout	Bus	Bus Priority - Enhanced Capacity	£0.1	£0.02	2021	Local HA	3
S126	Stevenage	Six Hills Way/St George's Way Roundabout	Bus	Bus Priority - Enhanced Capacity to reduce eastbound queues on Six Hills way	£0.1	£0.02	2021	Local HA	3
S127	Stevenage	FairLands Way westbound, Stevenage	Bus	Bus Priority - Bus lane on the approach to Lytton way	£0.1	£0.02	2021	Local HA	3
S128	Stevenage	Gunnels Wood Road/A602 Broadhall	Bus	Bus Priority - Capacity enhancements/bus priority at junction where both road meet	£0.1	£0.02	2021	Local HA	3
S129	Stevenage	Gresley Way, Stevenage	Bus	Signalisation of the Junctions	£0.1	£0.02	2021	Local HA	3

ID	District	Location	Type	Description	Cost £m	Existing Funding £m	Implement	Lead	Priority
S130	Stevenage	The White Way, Stevenage	Bus	Signalisation of the Junctions	£0.1	£0.02	2021	Local HA	3
S131	Stevenage	Fairlands Way, Stevenage	Bus	Signalisation of the Junctions	£0.1	£0.02	2021	Local HA	3
S132	Stevenage	Mobbsbury Way, Stevenage	Bus	Signalisation of the Junctions	£0.1	£0.02	2021	Local HA	3
S134	Stevenage	A1 (M) Stevenage	Road	Passage under or over A1(M) to link the new development to Stevenage to reduce local traffic use o*	£18.7	£18.67	2021	Devel oper	3
S336	Stevenage	A602 Gunnells Wood Road Rdbt	Road	Improvement	£5.0	£5.00	2021	Devel oper	2
S364	Stevenage	Stevenage	Road	A602/Coreys Mill Lane	£4.0	£0.88	2021	Local HA	3
S252	Watford	Watford Junction	Rail	Creation of Rail Interchange	£32.5	£32.45	2021	Local PA	3
S107	Watford	St Albans Road	Other	Watford Junction redevelopment including the Colonial Way link	£1.0	£0.22	2021	Local HA	3
S411	Watford	Bushey Arches	Road	Bushey Arches junction improvements	£0.5	£0.11	2021	Local HA	3
S87	WelHat	College Lane onto A1001 Roehyde Way	Bus	Introduce bus priority measures (Bus gates, bus lanes, junction priorities)	£0.4	£0.09	2021	Local HA	3
S91	WelHat	Hatfield Rail Station	Rail	Hatfield Station interchange	£1.2	£0.26	2021	Local HA	3
S99	WelHat	Hatfield Rail Station	Road	Additional Parking	£0.5	£0.11	2021	Local HA	3
S321	Other	M11 J7 & J8	Road	Junction Improvements	£0.0	£0.00	2021	HA	4
S36	Other	M1 Luton	Road	Improve East - West Routes as part of the strategic connection with Stevenage and Stansted corridor	£0.0	£0.00	2021	Local HA	3
S47	Other	M11 Stansted	Road	Improve East - West Routes as part of the strategic connection with Luton and Stevenage corridors	£0.0	£0.00	2021	Local HA	3

Table F 5: New Schemes Included in the Funding Model, Including Costs

ID	District	Location	Type	Description	Cost £m	Existing Funding £m	Implement	Lead	Priority
N1	Other	Countywide	Cycle	Implementation of HCC cycling strategy	£36.0	£12.10	2021	Local HA	4
N2	Dacorum	Hemel Hempstead	Bus	Central corridor bus priority	£1.0	£0.22	2021	Local HA	3
N3	North Herts	Hitchin-Letchworth	Bus	A505 corridor bus priority	£2.0	£0.44	2021	Local HA	3
N4	North Herts	Hitchin	Bus	A505/ A602 bus priority	£1.5	£0.33	2021	Local HA	3
N5	WelHat	WGC spine	Bus	A1000 bus priority (inc. adjacent roads)	£0.5	£0.11	2021	Local HA	3
N6	WelHat	Hatfield	Bus	A1000/ B6426 bus priority	£0.5	£0.11	2021	Local HA	3
N7	Watford	Watford	Bus	North Watford bus corridor	£1.0	£0.22	2021	Local HA	3
N8	Watford	Watford	Bus	East Watford bus corridor	£1.0	£0.22	2021	Local HA	3
N9	East Herts	Hertford-Ware	Bus	Corridor bus priority	£1.0	£0.22	2021	Local HA	3
N10	East Herts	Sawbridgeworth	Bus	Town centre bus priority	£0.5	£0.11	2021	Local HA	3
N11	East Herts	Bishops Stortford	Bus	Town centre bus priority	£1.0	£0.22	2021	Local HA	3
N12	Dacorum	Hemel Hempstead	Road	Hemel Hempstead Northern Bypass	£75.0	£75.00	2031	Local HA	2
N13	Other	A1(M) J6-8	Road	ATM J6-8	£164.0	£0.00	2021	HA	3
N14	East Herts	Hertford	Road	A414 mitigation	£10.0	£2.19	2021	Local HA	2
N15	Other	M1	Road	J6-10 ATM	£89.6	£0.00	2021	HA	3
N16	Other	M25 J20	Road	M25/ A41 junction improvements	£5.0	£0.00	2021	HA	1
N17	Dacorum	Hemel Hempstead	Road	A4146/ A414 jct (+ N2)	£5.0	£1.83	2021	Local HA	2
N18	St Albans	Hemel-St Albans	Road	A4147 corridor junction	£3.0	£0.66	2021	Local	2

ID	District	Location	Type	Description	Cost £m	Existing Funding £m	Implement	Lead	Priority
				improvements				HA	
N19	St Albans	St Albans	Road	Relief road improvements	£1.0	£0.22	2021	Local HA	2
N20	St Albans	Harpenden	Road	Harpenden south junction enhancement	£1.5	£0.33	2021	Local HA	2
N21	Other	M25 J17-19	Road	J17-19 ATM	£39.2	£0.00	2031	HA	2
N22	Other	A10/ A1170	Road	Capacity enhancements	£2.0	£0.44	2021	Local HA	2
N23	East Herts	Sawbridgeworth	Road	A1184 junctions capacity improvements (+ N11)	£1.0	£0.22	2021	Local HA	3
N24	East Herts	Bishops Stortford	Road	Town centre junctions (+ N12)	£2.0	£0.44	2021	Local HA	2
N25	Other	A1(M) J8	Road	Capacity enhancement	£7.0	£0.00	2021	HA	4
N26	Other	Countywide	Rail	General improvements to rail stations	£5.1	£1.12	2021	Local HA	1
N27	Other	Countywide	Demand Mgt.	Smarter Choices	£114.7	£24.53	2021	Local HA	4
N28	Other	Central Herts	Bus	East-West PT corridor	£150.0	£32.89	2021	Local HA	3
N29	Stevenage	A602/ A1072	Road	SB flare for left turners & signalisation of southern approach	£1.0	£0.22	2021	Local HA	2

Appendix G - Prioritisation Framework

Project: HIIS Transport Elements		Contract: 49323910
Title: Proposed Prioritisation Framework		
Briefing Note Number: PN 015		
Path and Filename: J:\Bedford-Jobs\Hertfordshire County Council\49323910 HIIS - Transportation Elements\General\Project Notes\PN015 Proposed Prioritisation Framework.doc		
Original Date: 07/08/09	Version: 1.0	Author: Stephen Morris
Last Updated: 17/08/09	Version: 1.1	Author: SM
Last Updated: 09/10/09	Version: 1.2	Author: SM

1. INTRODUCTION

This Briefing Note proposes a framework for use by the HIIS Partners to prioritise interventions. It could be used to prioritise both those listed in the HIIS Transport Technical Report and other schemes that may come forward for consideration in the future. The proposed framework has been devised for use on all types and sizes of interventions.

Not all information will currently be available. Examples include Value for Money assessments for smaller schemes and assessment of contributions to smaller issues. This will require additional work by the Partners (led by the Highway Authority) to allow the framework to be populated effectively.

2. DESCRIPTION OF THE FRAMEWORK ELEMENTS

2.1. Principles of Prioritisation

There are a number of key principles that should be considered cornerstones to the prioritisation process. These are:

- e) All schemes should be assessed using the same criteria, this includes similar types of schemes being assessed in the same way for individual criteria (such as value for money);
- f) Less than rigorous or variable application of the criteria will create inconsistency in the assessment process;
- g) As far as practicable the assessment criteria should remain fixed. Changing them could significantly change the prioritisation of schemes, which could introduce contradiction and devalue judgements and decisions both past and present (particularly when delivered in the public domain); and

- h) A list of key assumptions should be established and included in the same file as the framework before it is populated to ensure a common ground for completion even when different people are involved. Assumptions could include the documented sources that a scheme must feature in for it to be entered into the Prioritisation Framework and guidance on how to assess the score for each criterion.

2.2. Assessment Criteria

Table 2-1: Framework Assessment Criteria

Criteria	Description
Scheme title	For information
Scheme source	For information. What document does the scheme feature in (e.g. LTP/ RFA). Schemes that do not feature in any documents or lists (both published and unpublished) should not be considered appropriate for entry into the Prioritisation Framework as it indicates that they do not have a sufficiently significant status within the county.
Scheme cost	For information
Scheme funding	For information
Funding shortfall	For information
Funding shortfall as a percentage of cost	Used instead of actual funding shortfall so that large schemes do not get a lower prioritisation simply because of their larger cost.
Alignment with national policy	To what extent does the scheme accord with national guidance and objectives in transport policy.
Alignment with regional policy	The extent to which the scheme accords with regional guidance and objectives in transport policy.
Alignment with HCC policy	To what extent does the scheme accord with county guidance and objectives in transport policy.
Alignment with district policy	The extent to which the scheme accords with district guidance and objectives in transport policy.
Value for money	Major schemes require a Major Scheme Business Case, which assesses this criterion, although a simplified version may be required for this prioritisation process. For smaller schemes, such as road safety treatments, a basic assessment can be used (perhaps applying average accident savings to existing accident rates and using broad cost estimates for implementation) without extensive scheme development being required.

Criteria	Description
Deliverability	This requires a judgement about how likely it is that the scheme can be taken forward, for example whether there are any high technical risks or strong local objections that could delay or ultimately stop the implementation of a scheme.
Need	An assessment against existing conditions. Where possible this should be based on evidence such as from the East of England Regional Model outputs from HIIS, local network modelling (including using software such as ARCADY). For non-highway schemes passenger load data and other data may be applicable For example a Ratio of Volume to Capacity (or RFC/ VC) over 100 would mean a very high need, 85 to 99 a high need, 70 to 84 a medium need, 50 to 69 a low need and less than 50 a very low need.
Contribution to broader issues including Wider Economic Benefits	For example will a scheme deliver economic, environmental, or quality of life (including health) benefits. The assessment of these should be informed by WebTAG guidance and will need to be more firmly developed before the framework is formally applied. This guidance would need to be incorporated into the key assumptions.
Ruled Out	
Growth item	Whether an intervention is required to cater for growth or not is not considered appropriate as a material consideration for prioritisation. Need should be judged on that required to serve the total population of the county, without preference for those living in the growth communities.
Project Status	It is considered that this would unfairly and inappropriately weigh against schemes where there is otherwise a good case for them. For example using this framework a scheme not yet approved by DfT may have a higher score than one that has approval but could have an unduly reduced score if project status were included in the scoring system

2.3. Criteria Weighting

Some criteria have been given a higher weighting than others. This is in recognition that they are likely to be more of an issue than others.

For example, if there is the local will for a scheme then it may be possible to change/obtain a departure from a local policy but it would be much harder to change national policy if this is causing an obstacle.

Similarly the need for a scheme may be a greater consideration than the value for money or deliverability of a scheme as the solutions to an issue may be varied, but the issue will remain whether the identified solution is deliverable or not. Giving 'Need' a higher weighting recognises this and if a scheme is found to have poor deliverability or value for money then an alternative can be found.

3. THE FRAMEWORK

The assessment values have been kept to 5 to simplify the choice for each criteria but to provide the opportunity for a reasonable level of differentiation between the schemes for clear prioritisation. It is still likely that there will be clusters of schemes with a similar or identical priority value but this is likely to be a fair reflection of reality.

Table 3-1: Framework Scoring & Weighting

Item	Criteria	Values		Weighting
A	Scheme title			0
B	Scheme source			0
C	Scheme cost			0
D	Scheme funding			0
E	Funding shortfall			0
F	Funding shortfall as a percentage of cost	-2 -1 0 +1 +2	No funding/ don't know At least 25% funded At least 50% funded At least 75% funded 100% funded	1
G	Alignment with national policy	-2 -1 0 +1 +2	Badly aligned Not aligned Neutral Some alignment Well aligned	3
H	Alignment with regional policy	-2 -1 0 +1 +2	Badly aligned Not aligned Neutral Some alignment Well aligned	2
I	Alignment with HCC policy	-2 -1 0 +1 +2	Badly aligned Not aligned Neutral Some alignment Well aligned	2
J	Alignment with district policy	-2 -1	Badly aligned Not aligned	1

Item	Criteria	Values		Weighting
		0	Neutral	
		+1	Some alignment	
		+2	Well aligned	
Items G to J are divided by four and multiplied by two to give policy an overall weighting of 2				
K	Value for money	-2	Very low	1
		-1	Low	
		0	Neutral	
		+1	Good	
		+2	Very good	
L	Deliverability	-2	Very low	1
		-1	Low	
		0	Medium	
		+1	High	
		+2	Very high	
M	Need	-2	Very low	2
		-1	Low	
		0	Medium	
		+1	High	
		+2	Very high	
N	Contribution to broader issues	-2	Very low	1
		-1	Low	
		0	Neutral	
		+1	Good	
		+2	Very good	

The priority could be calculated in a simple spreadsheet that would allow the schemes to be presented in a variety of ways (for example by cost or priority) and other information could be added to aid sorting such as the district in which the intervention is located and the mode that the intervention pertains to (e.g. walk, bus, road). The formula that would be used to calculate the priority is shown below (p=prioritisation value).

$$(F*1)+(((G*3)+(H*2)+(I*2)+(J*1))/4)*2)+(K*1)+(L*1)+(M*2)+(N*1) = p$$

Five schemes from the HIIS Transport Technical Report (TTR) have been used as examples to show how the Prioritisation Framework would work. It is not intended that these examples should be considered the most important schemes identified in the TTR nor that the priority scores of each scheme are correct. Hertfordshire County Council and the Partners will ultimately need to populate the framework with consistent judgements and assumptions.

They have been tested in [PN015 Proposed Prioritisation Framework.xls](#), which is reproduced as Figure 3-1. It shows that the schemes with the highest scores are those that best reflect policies promoting sustainable travel for private trips and those schemes considered to have good value for money and a demonstrable need.

