



## **APPENDIX D: RELIEF ROAD MODELLING SUMMARY**

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### **RELIEF ROAD CORRIDOR OPTIONS – APPRAISAL SUMMARY**

Initial VISUM modelling of five possible relief road corridors has produced results, as follows, assessed against a Do Minimum scenario. Green indicates a reduction, Red indicates an increase and Amber indicates minimal change. 'Map Ref' refers to the locations shown on the plan on the following page.

The section following these tables illustrates the locations where the traffic flows have changes as a result of the implementation of a relief road alignment.

AM Flows

Map Ref	Sector	Name	Direction of Tra	AM DM	AM Killinghall	Difference	%age Difference	AM Northern	Difference	%age Difference	AM Inner North	Difference	%age Difference	AM Inner South	Difference	%age Difference	AM Western	Difference	%age Difference
13	East	A59 Knaresborough Road	EB	900	879	-21	-2.3%	850	-50	-5.6%	931	31	3.4%	856	-44	-4.9%	879	-21	-2.3%
13	East	A59 Knaresborough Road	WB	904	887	-17	-1.9%	815	-89	-9.8%	871	-33	-3.7%	793	-111	-12.3%	865	-39	-4.3%
21	East	A59 Skipton Road	SEB	924	917	-7	-0.8%	855	-69	-7.5%	751	-173	-18.7%	566	-358	-38.7%	875	-49	-5.3%
21	East	A59 Skipton Road	NWB	925	908	-17	-1.8%	791	-134	-14.5%	669	-256	-27.7%	380	-545	-58.9%	860	-65	-7.0%
18	East	A658	NEB	937	897	-40	-4.3%	782	-155	-16.5%	1090	153	16.3%	1088	151	16.1%	908	-29	-3.1%
18	East	A658	SWB	910	886	-24	-2.6%	809	-101	-11.1%	1123	213	23.4%	1174	264	29.0%	887	-23	-2.5%
1	East	A661 Wetherby Road	SEB	721	702	-19	-2.6%	614	-107	-14.8%	513	-208	-28.8%	435	-286	-39.7%	644	-77	-10.7%
1	East	A661 Wetherby Road	NWB	666	659	-7	-1.1%	642	-24	-3.6%	537	-129	-19.4%	439	-227	-34.1%	662	-4	-0.6%
20	East	A661 Wetherby Road	EB	1051	1038	-13	-1.2%	935	-116	-11.0%	707	-344	-32.7%	547	-504	-48.0%	992	-59	-5.6%
20	East	A661 Wetherby Road	WB	801	807	6	0.7%	862	61	7.6%	628	-173	-21.6%	458	-343	-42.8%	821	20	2.5%
10	Harrogate Town Centre	A61 Ripon Road	SB	764	762	-2	-0.3%	797	33	4.3%	780	16	2.1%	759	-5	-0.7%	773	9	1.2%
10	Harrogate Town Centre	A61 Ripon Road	NB	768	728	-40	-5.2%	757	-11	-1.4%	675	-93	-12.1%	742	-26	-3.4%	786	18	2.3%
15	Harrogate Town Centre	A61 Station Parade	SB	936	975	39	4.2%	966	30	3.2%	948	12	1.3%	906	-30	-3.2%	953	17	1.8%
14	Harrogate Town Centre	A61 West Park	NB	1308	1340	32	2.4%	1300	-8	-0.6%	1303	-5	-0.4%	1242	-66	-5.0%	1369	61	4.7%
9	Harrogate Town Centre	A61 York Place	NEB	167	170	3	1.8%	180	13	7.8%	198	31	18.6%	197	30	18.0%	173	6	3.6%
9	Harrogate Town Centre	A61 York Place	SWB	514	512	-2	-0.4%	498	-16	-3.1%	496	-18	-3.5%	515	1	0.2%	499	-15	-2.9%
3	Knaresborough	A59 York Road	WB	562	561	-1	-0.2%	293	-269	-47.9%	456	-106	-18.9%	501	-61	-10.9%	552	-10	-1.8%
4	Knaresborough	High Bond End	SB	308	331	23	7.5%	146	-162	-52.6%	169	-139	-45.1%	178	-130	-42.2%	289	-19	-6.2%
4	Knaresborough	High Bond End	NB	407	409	2	0.5%	292	-115	-28.3%	283	-124	-30.5%	273	-134	-32.9%	398	-9	-2.2%
3	Knaresborough	A59 York Road	EB	492	504	12	2.4%	400	-92	-18.7%	477	-15	-3.0%	490	-2	-0.4%	496	4	0.8%
6	North	A59 Skipton Road	EB	561	582	21	3.7%	571	10	1.8%	534	-27	-4.8%	467	-94	-16.8%	572	11	2.0%
6	North	A59 Skipton Road	WB	396	379	-17	-4.3%	383	-13	-3.3%	328	-68	-17.2%	300	-96	-24.2%	412	16	4.0%
11	North	A59 Skipton Road	EB	703	719	16	2.3%	691	-12	-1.7%	606	-97	-13.8%	487	-216	-30.7%	686	-17	-2.4%
11	North	A59 Skipton Road	WB	733	735	2	0.3%	792	59	8.0%	683	-50	-6.8%	540	-193	-26.3%	716	-17	-2.3%
2	North	A61 Ripon Road	SB	854	881	27	3.2%	980	126	14.8%	946	92	10.8%	778	-76	-8.9%	867	13	1.5%
2	North	A61 Ripon Road	NB	621	648	27	4.3%	794	173	27.9%	752	131	21.1%	531	-90	-14.5%	649	28	4.5%
22	North	Bilton Lane	NEB	62	62	0	0.0%	63	1	1.6%	62	0	0.0%	479	417	672.6%	62	0	0.0%
22	North	Bilton Lane	SWB	72	72	0	0.0%	78	6	8.3%	73	1	1.4%	553	481	668.1%	77	5	6.9%
7	South	A61 Leeds Road	SB	612	597	-15	-2.5%	607	-5	-0.8%	581	-31	-5.1%	596	-16	-2.6%	566	-46	-7.5%
7	South	A61 Leeds Road	NB	508	513	5	1.0%	486	-22	-4.3%	473	-35	-6.9%	487	-21	-4.1%	483	-25	-4.9%
8	South	A61 Leeds Road	SB	395	397	2	0.5%	391	-4	-1.0%	367	-28	-7.1%	357	-38	-9.9%	379	-16	-4.1%
8	South	A61 Leeds Road	NB	553	555	2	0.4%	530	-23	-4.2%	504	-49	-8.9%	475	-78	-14.1%	533	-20	-3.6%
19	South	Burn Bridge Lane	SB	460	439	-21	-4.6%	366	-94	-20.4%	354	-106	-23.0%	322	-138	-30.0%	149	-311	-67.6%
19	South	Burn Bridge Lane	NB	466	467	1	0.2%	438	-28	-6.0%	391	-75	-16.1%	321	-145	-31.1%	299	-167	-35.8%
17	West	B6161 Leathley Lane	NB	502	539	37	7.4%	512	10	2.0%	491	-11	-2.2%	501	-1	-0.2%	264	-238	-47.4%
17	West	B6161 Leathley Lane	SB	355	416	61	17.2%	344	-11	-3.1%	357	2	0.6%	347	-8	-2.3%	195	-160	-45.1%
12	West	B6162 Otley Road	NEB	376	361	-15	-4.0%	388	12	3.2%	330	-46	-12.2%	384	8	2.1%	347	-29	-7.7%
12	West	B6162 Otley Road	SWB	475	430	-45	-9.5%	417	-58	-12.2%	366	-109	-22.9%	397	-78	-16.4%	358	-117	-24.6%
16	West	C241 Penny Pot Lane	SEB	431	434	3	0.7%	430	-1	-0.2%	418	-13	-3.0%	394	-37	-8.6%	338	-93	-21.6%
16	West	C241 Penny Pot Lane	NWB	152	156	4	2.6%	166	14	9.2%	160	8	5.3%	146	-6	-3.9%	229	77	50.7%

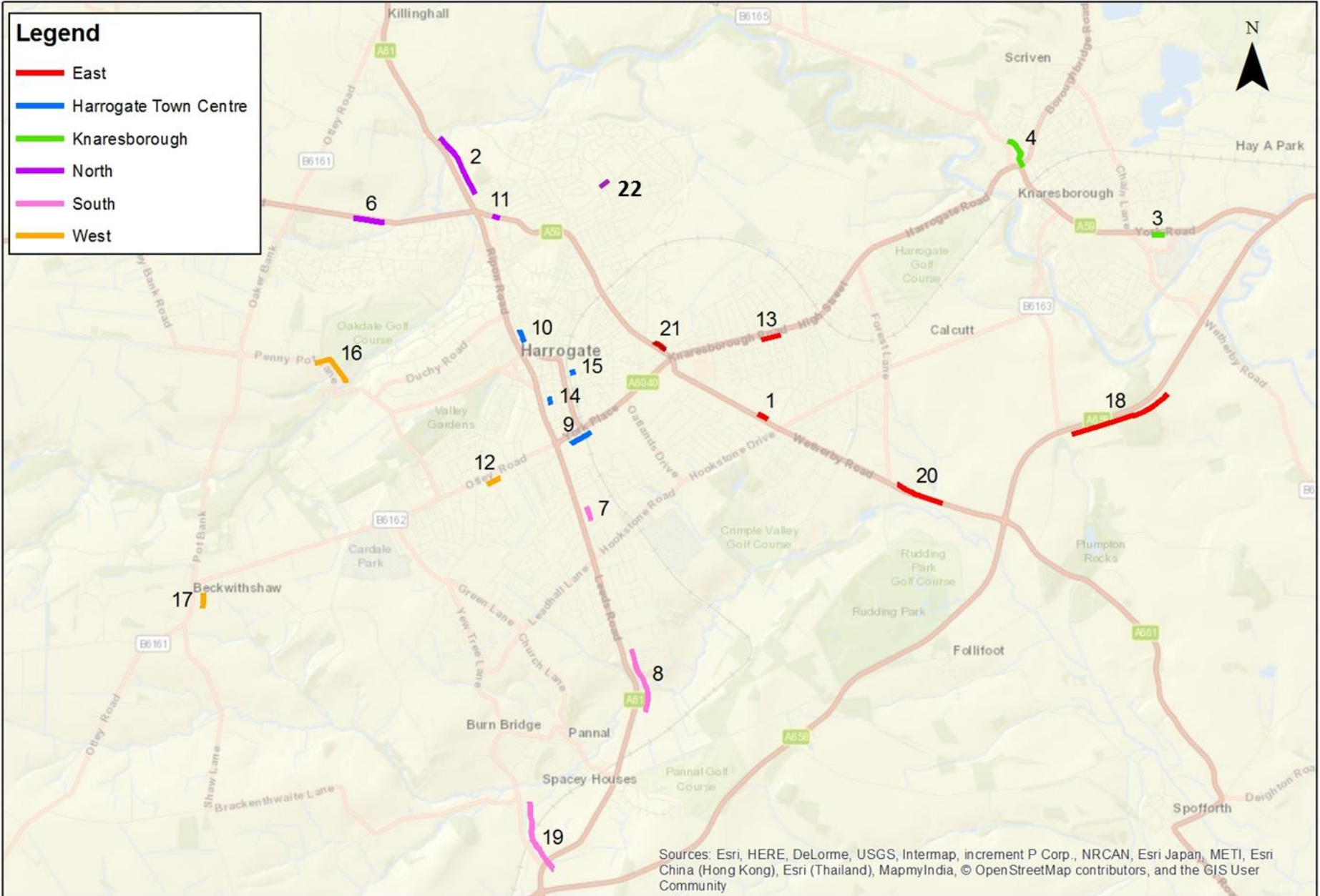
# Relief Road Corridor Options – Appraisal Summary

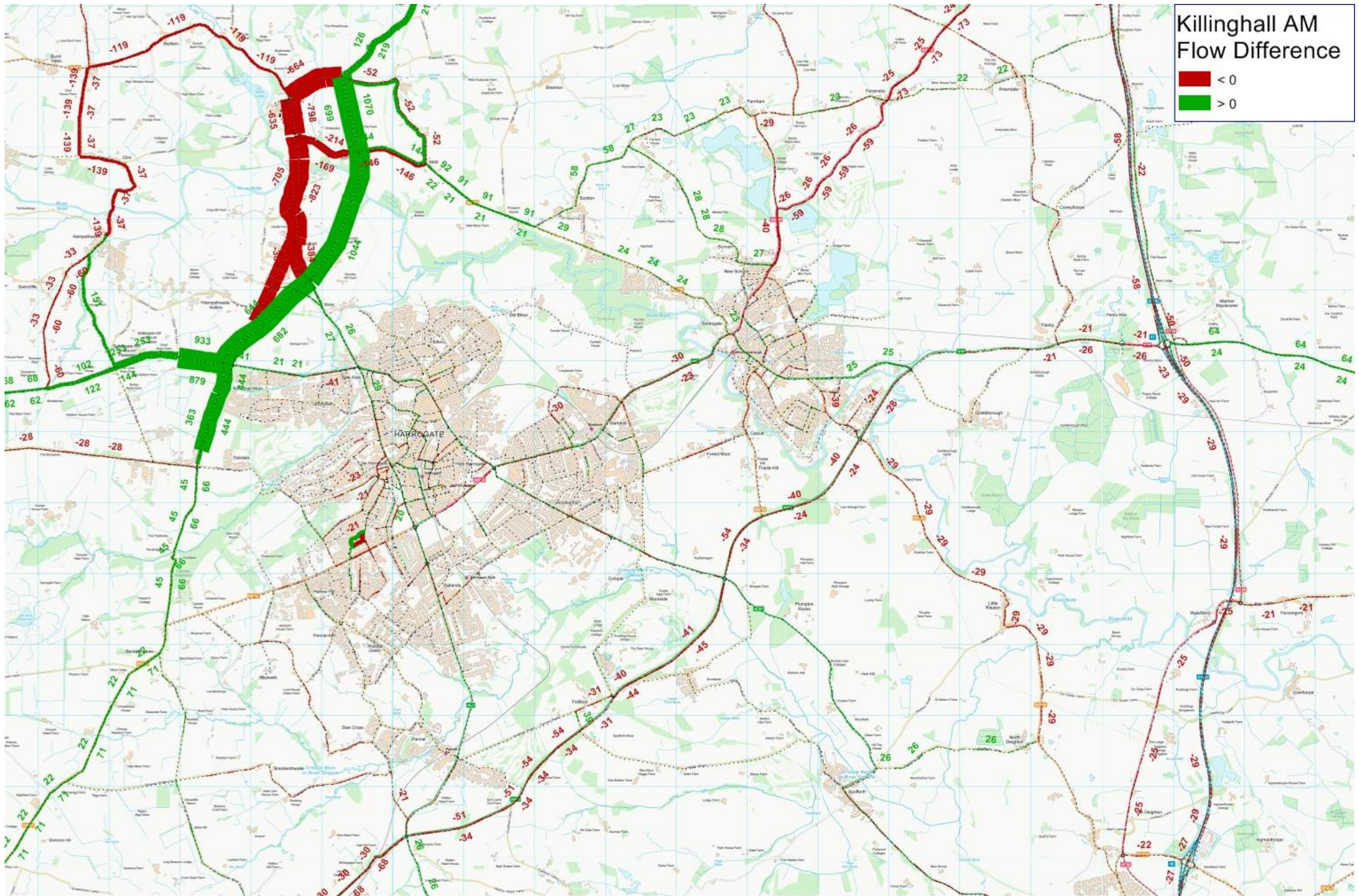


## PM Flows

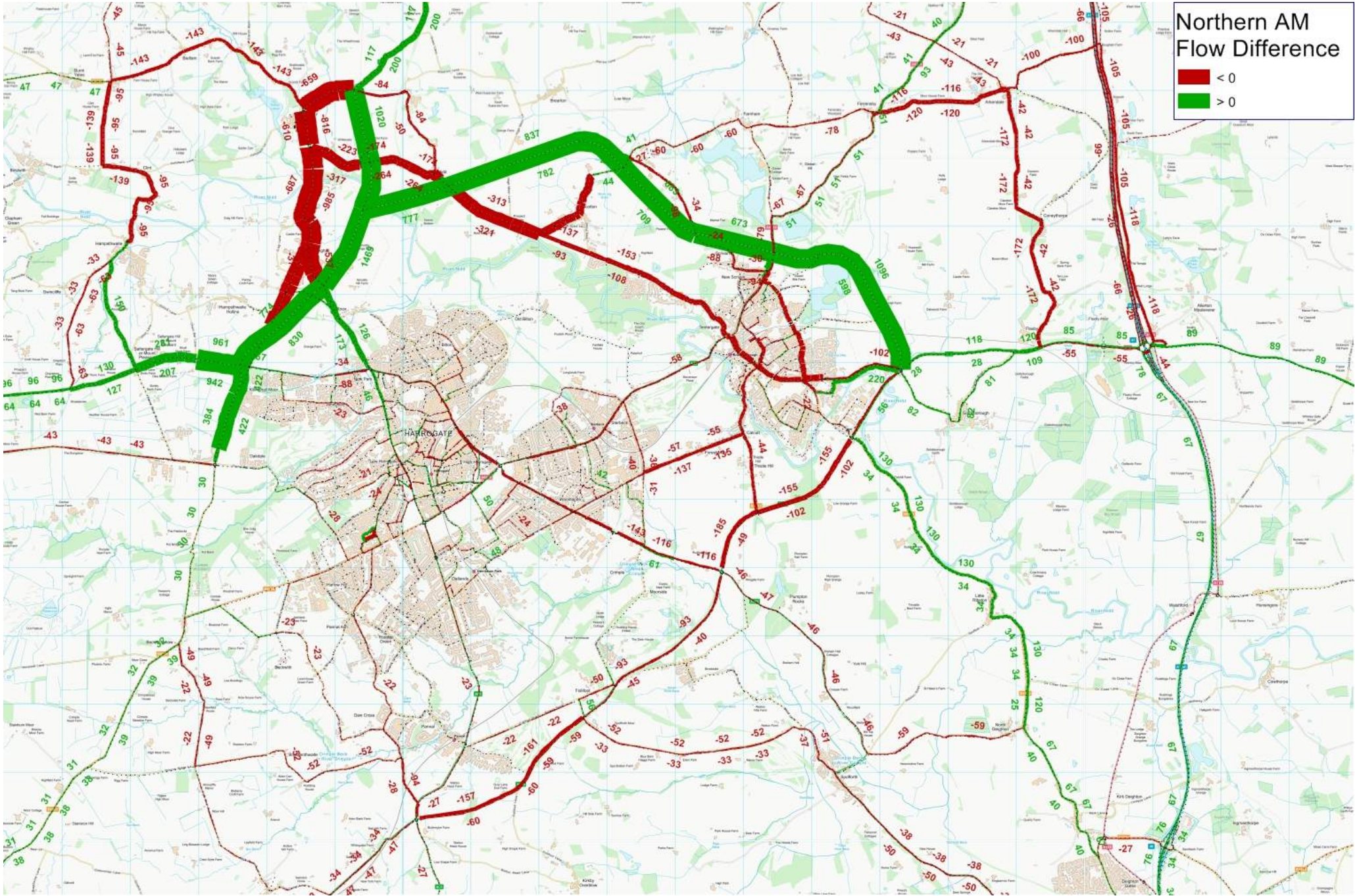
Map Ref	Sector	Name	Direction of Travel	PM DM	PM Killinghall	Difference	%age Difference	PM Northern	Difference	%age Difference	PM Inner North	Difference	%age Difference	PM Inner South	Difference	%age Difference	PM Western	Difference	%age Difference
13	East	A59 Knaresborough Road	EB	955	928	-27	-2.8%	870	-85	-8.9%	900	-55	-5.8%	794	-161	-16.9%	909	-46	-4.8%
13	East	A59 Knaresborough Road	WB	751	720	-31	-4.1%	678	-73	-9.7%	748	-3	-0.4%	614	-137	-18.2%	728	-23	-3.1%
21	East	A59 Skipton Road	SEB	940	931	-9	-1.0%	873	-67	-7.1%	798	-142	-15.1%	673	-267	-28.4%	883	-57	-6.1%
21	East	A59 Skipton Road	NWB	891	882	-9	-1.0%	779	-112	-12.6%	749	-142	-15.9%	484	-407	-45.7%	843	-48	-5.4%
18	East	A658	NEB	867	828	-39	-4.5%	712	-155	-17.9%	1074	207	23.9%	1086	219	25.3%	855	-12	-1.4%
18	East	A658	SWB	1050	1030	-20	-1.9%	948	-102	-9.7%	1202	152	14.5%	1241	191	18.2%	1031	-19	-1.8%
1	East	A661 Wetherby Road	SEB	706	698	-8	-1.1%	667	-39	-5.5%	586	-120	-17.0%	522	-184	-26.1%	669	-37	-5.2%
1	East	A661 Wetherby Road	NWB	594	596	2	0.3%	578	-16	-2.7%	527	-67	-11.3%	409	-185	-31.1%	587	-7	-1.2%
20	East	A661 Wetherby Road	EB	1096	1063	-33	-3.0%	960	-136	-12.4%	765	-331	-30.2%	671	-425	-38.8%	1019	-77	-7.0%
20	East	A661 Wetherby Road	WB	743	739	-4	-0.5%	760	17	2.3%	657	-86	-11.6%	517	-226	-30.4%	752	9	1.2%
10	Harrogate Town Centre	A61 Ripon Road	SB	897	1006	109	12.2%	1008	111	12.4%	975	78	8.7%	959	62	6.9%	957	60	6.7%
10	Harrogate Town Centre	A61 Ripon Road	NB	1265	1300	35	2.8%	1278	13	1.0%	1301	36	2.8%	1263	-2	-0.2%	1269	4	0.3%
15	Harrogate Town Centre	A61 Station Parade	SB	704	747	43	6.1%	708	4	0.6%	676	-28	-4.0%	625	-79	-11.2%	706	2	0.3%
14	Harrogate Town Centre	A61 West Park	NB	1452	1524	72	5.0%	1523	71	4.9%	1516	64	4.4%	1461	9	0.6%	1506	54	3.7%
9	Harrogate Town Centre	A61 York Place	NEB	340	304	-36	-10.6%	319	-21	-6.2%	295	-45	-13.2%	332	-8	-2.4%	301	-39	-11.5%
9	Harrogate Town Centre	A61 York Place	SWB	704	710	6	0.9%	698	-6	-0.9%	683	-21	-3.0%	665	-39	-5.5%	710	6	0.9%
3	Knaresborough	A59 York Road	WB	684	719	35	5.1%	482	-202	-29.5%	604	-80	-11.7%	636	-48	-7.0%	695	11	1.6%
4	Knaresborough	High Bond End	SB	322	285	-37	-11.5%	241	-81	-25.2%	278	-44	-13.7%	287	-35	-10.9%	296	-26	-8.1%
4	Knaresborough	High Bond End	NB	377	381	4	1.1%	220	-157	-41.6%	209	-168	-44.6%	207	-170	-45.1%	344	-33	-8.8%
3	Knaresborough	A59 York Road	EB	547	553	6	1.1%	391	-156	-28.5%	514	-33	-6.0%	530	-17	-3.1%	544	-3	-0.5%
6	North	A59 Skipton Road	EB	663	703	40	6.0%	670	7	1.1%	621	-42	-6.3%	546	-117	-17.6%	665	2	0.3%
6	North	A59 Skipton Road	WB	440	524	84	19.1%	524	84	19.1%	371	-69	-15.7%	420	-20	-4.5%	553	113	25.7%
11	North	A59 Skipton Road	EB	823	888	65	7.9%	869	46	5.6%	755	-68	-8.3%	543	-280	-34.0%	853	30	3.6%
11	North	A59 Skipton Road	WB	960	951	-9	-0.9%	982	22	2.3%	902	-58	-6.0%	788	-172	-17.9%	952	-8	-0.8%
2	North	A61 Ripon Road	SB	940	1042	102	10.9%	1124	184	19.6%	1033	93	9.9%	844	-96	-10.2%	1044	104	11.1%
2	North	A61 Ripon Road	NB	829	805	-24	-2.9%	874	45	5.4%	863	34	4.1%	773	-56	-6.8%	805	-24	-2.9%
22	North	Bilton Lane	NEB	211	215	4	1.9%	221	10	4.7%	216	5	2.4%	388	177	83.9%	225	14	6.6%
22	North	Bilton Lane	SWB	135	141	6	4.4%	141	6	4.4%	127	-8	-5.9%	452	317	234.8%	138	3	2.2%
7	South	A61 Leeds Road	SB	550	574	24	4.4%	527	-23	-4.2%	528	-22	-4.0%	523	-27	-4.9%	516	-34	-6.2%
7	South	A61 Leeds Road	NB	661	669	8	1.2%	663	2	0.3%	654	-7	-1.1%	615	-46	-7.0%	647	-14	-2.1%
8	South	A61 Leeds Road	SB	580	599	19	3.3%	597	17	2.9%	578	-2	-0.3%	569	-11	-1.9%	541	-39	-6.7%
8	South	A61 Leeds Road	NB	700	709	9	1.3%	706	6	0.9%	655	-45	-6.4%	586	-114	-16.3%	680	-20	-2.9%
19	South	Burn Bridge Lane	SB	461	428	-33	-7.2%	368	-93	-20.2%	351	-110	-23.9%	337	-124	-26.9%	75	-386	-83.7%
19	South	Burn Bridge Lane	NB	337	313	-24	-7.1%	268	-69	-20.5%	245	-92	-27.3%	209	-128	-38.0%	253	-84	-24.9%
17	West	B6161 Leathley Lane	NB	372	405	33	8.9%	353	-19	-5.1%	353	-19	-5.1%	345	-27	-7.3%	143	-229	-61.6%
17	West	B6161 Leathley Lane	SB	538	542	4	0.7%	501	-37	-6.9%	488	-50	-9.3%	494	-44	-8.2%	368	-170	-31.6%
12	West	B6162 Otley Road	NEB	332	310	-22	-6.6%	320	-12	-3.6%	308	-24	-7.2%	302	-30	-9.0%	352	20	6.0%
12	West	B6162 Otley Road	SWB	501	512	11	2.2%	496	-5	-1.0%	495	-6	-1.2%	466	-35	-7.0%	438	-63	-12.6%
16	West	C241 Penny Pot Lane	SEB	292	312	20	6.8%	322	30	10.3%	263	-29	-9.9%	224	-68	-23.3%	155	-137	-46.9%
16	West	C241 Penny Pot Lane	NWB	399	471	72	18.0%	486	87	21.8%	454	55	13.8%	445	46	11.5%	421	22	5.5%

# Relief Road Corridor Options – Modelled Locations



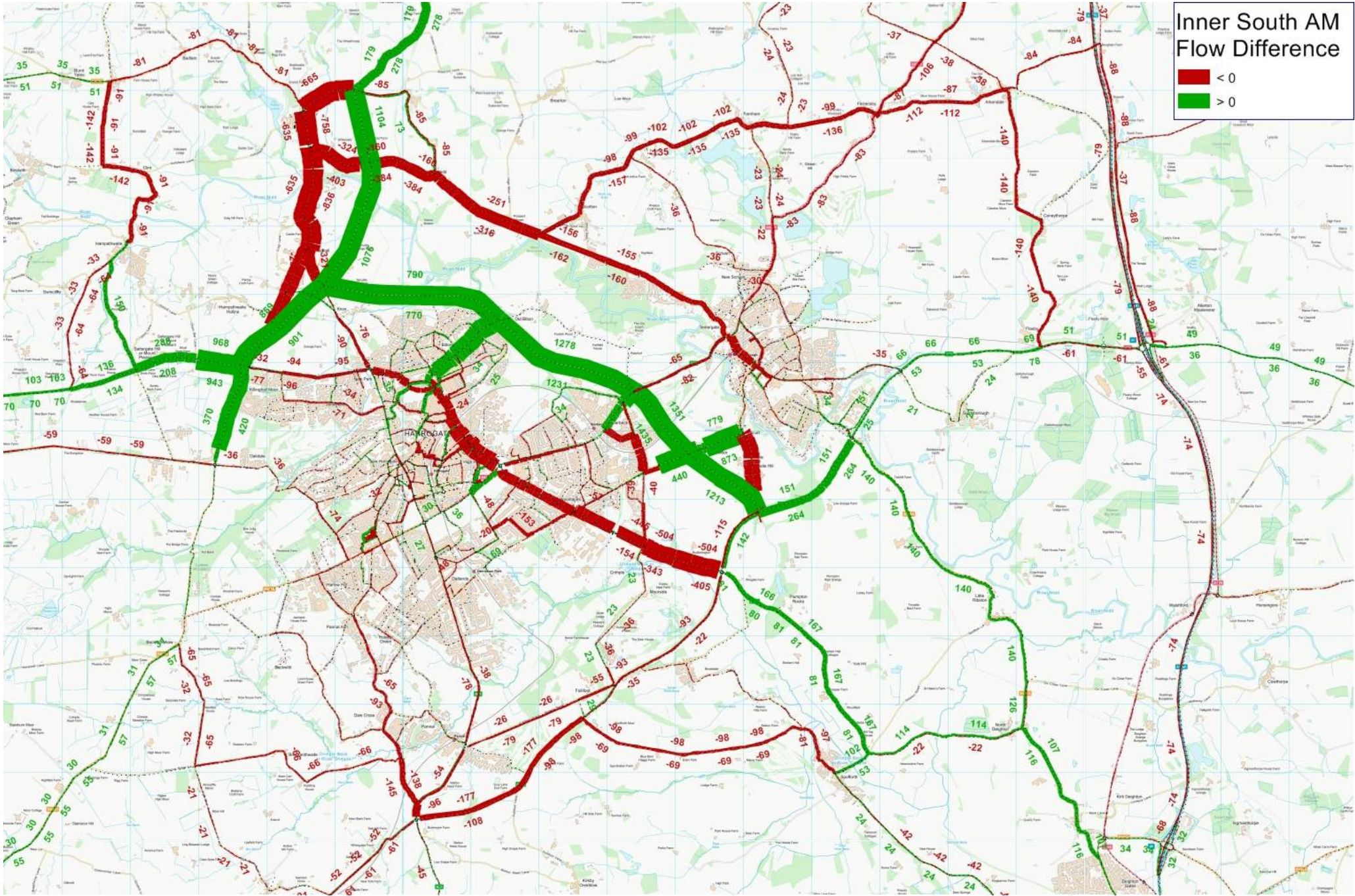


# Northern AM Flow Difference





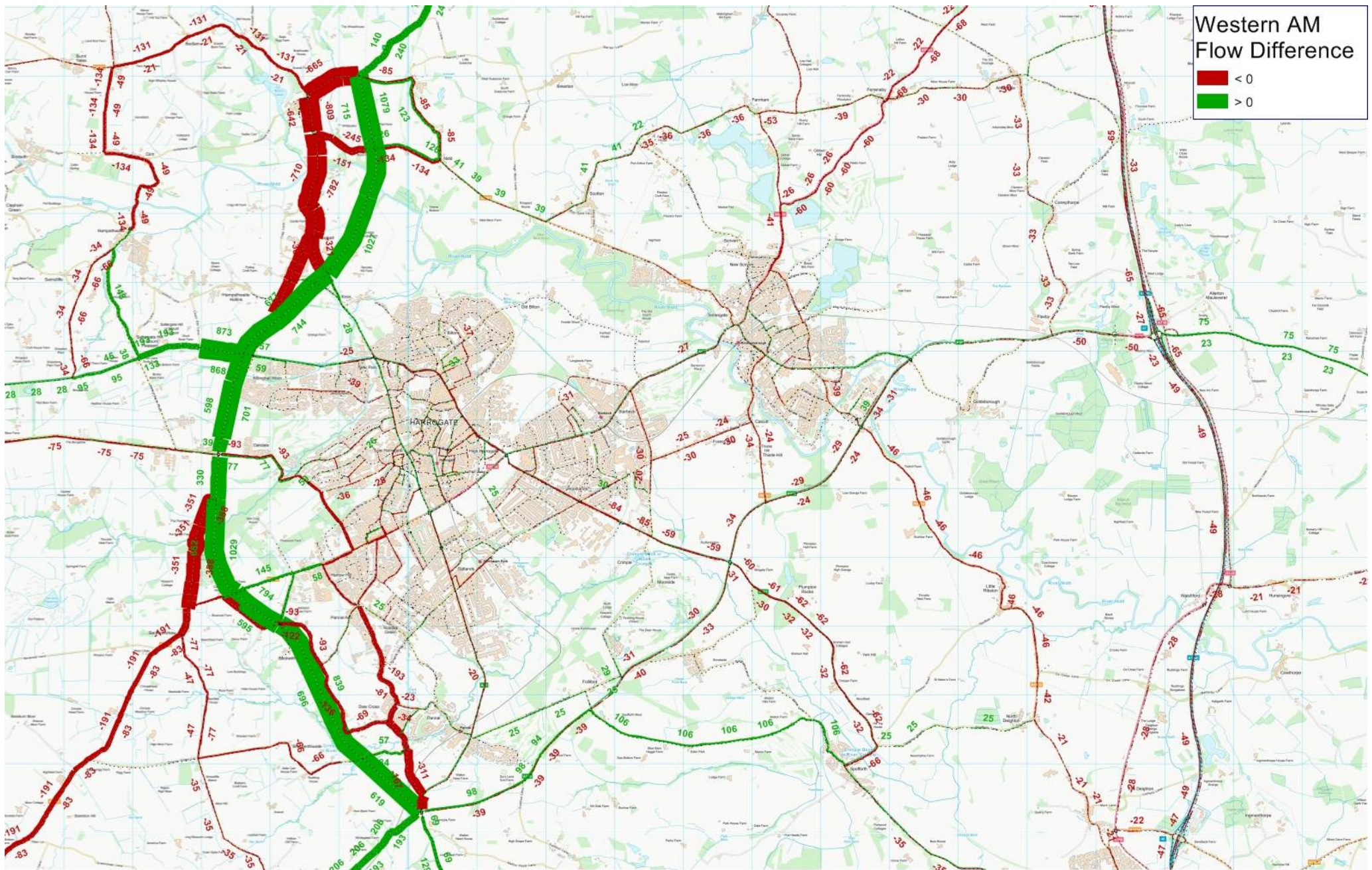
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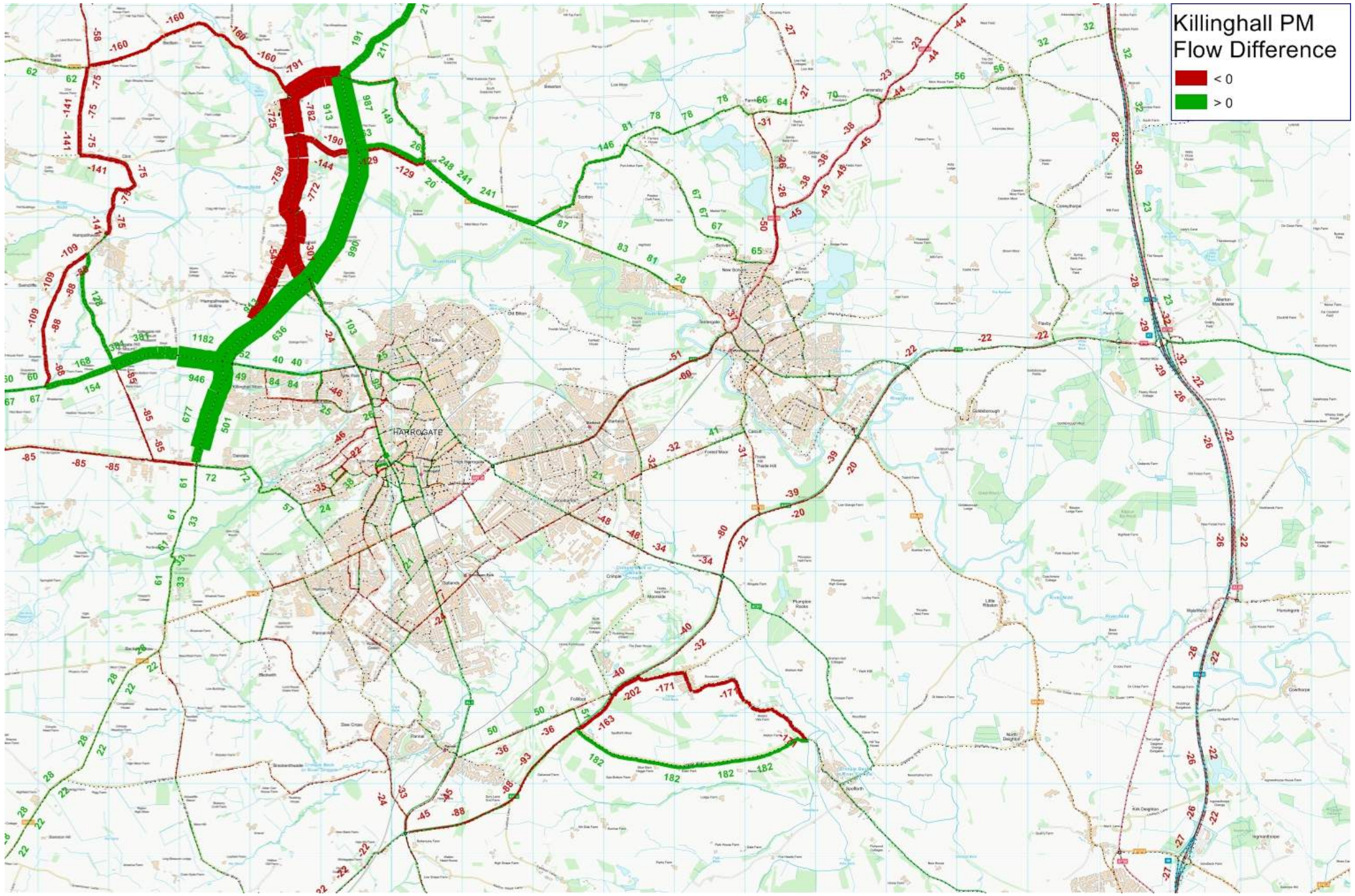




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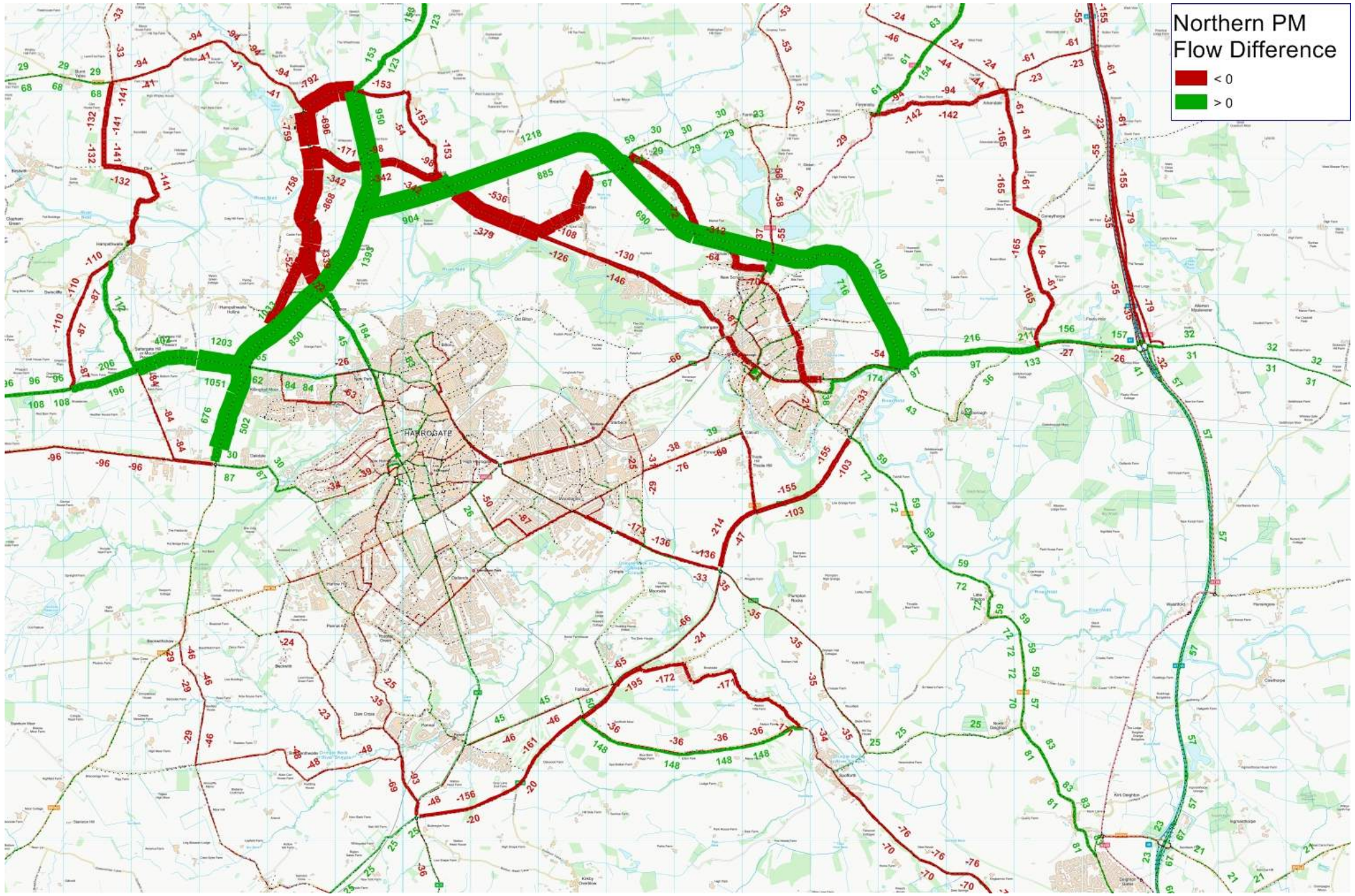
- █ < 0
- █ > 0





**Killinghall PM  
Flow Difference**

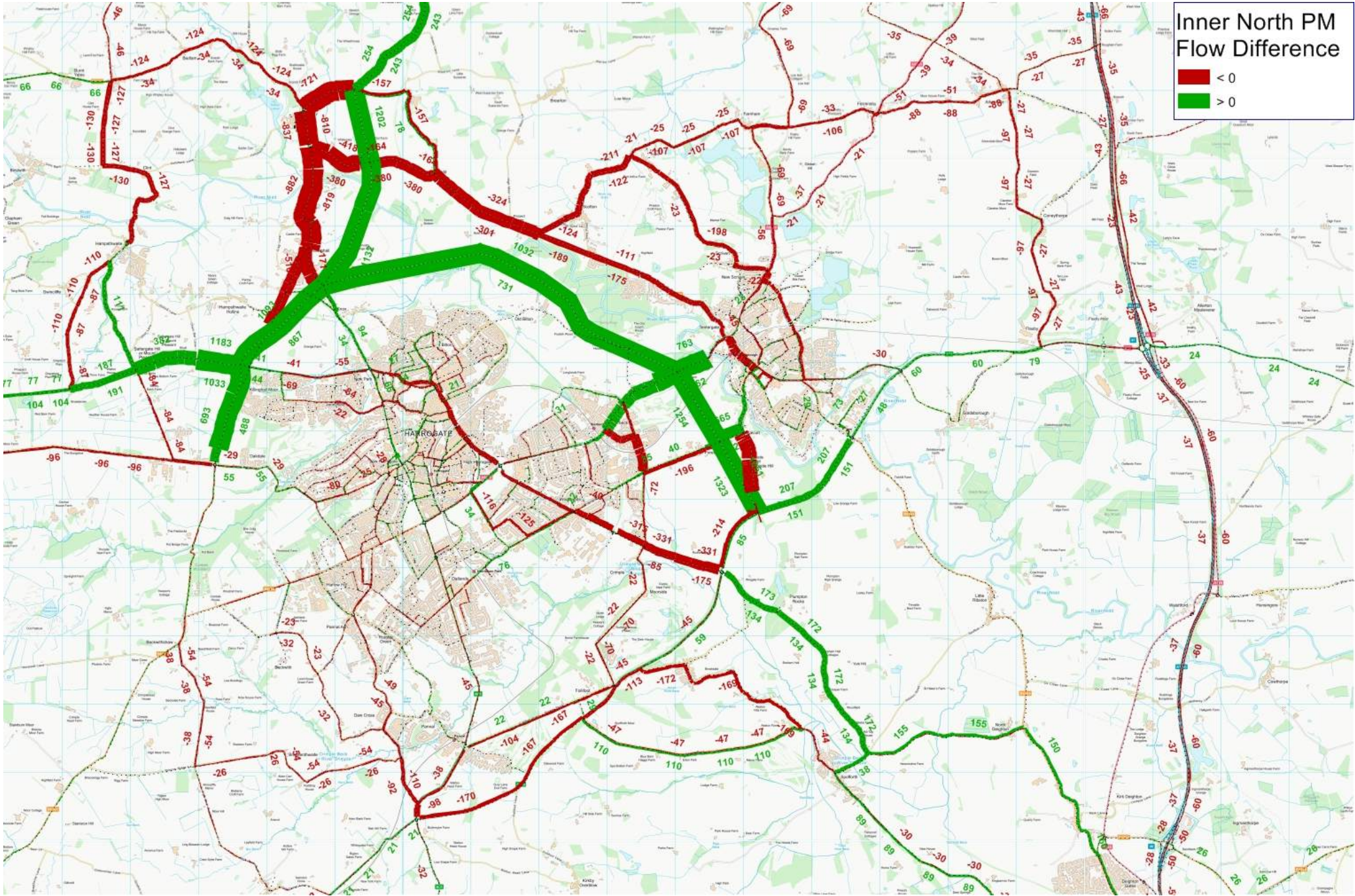
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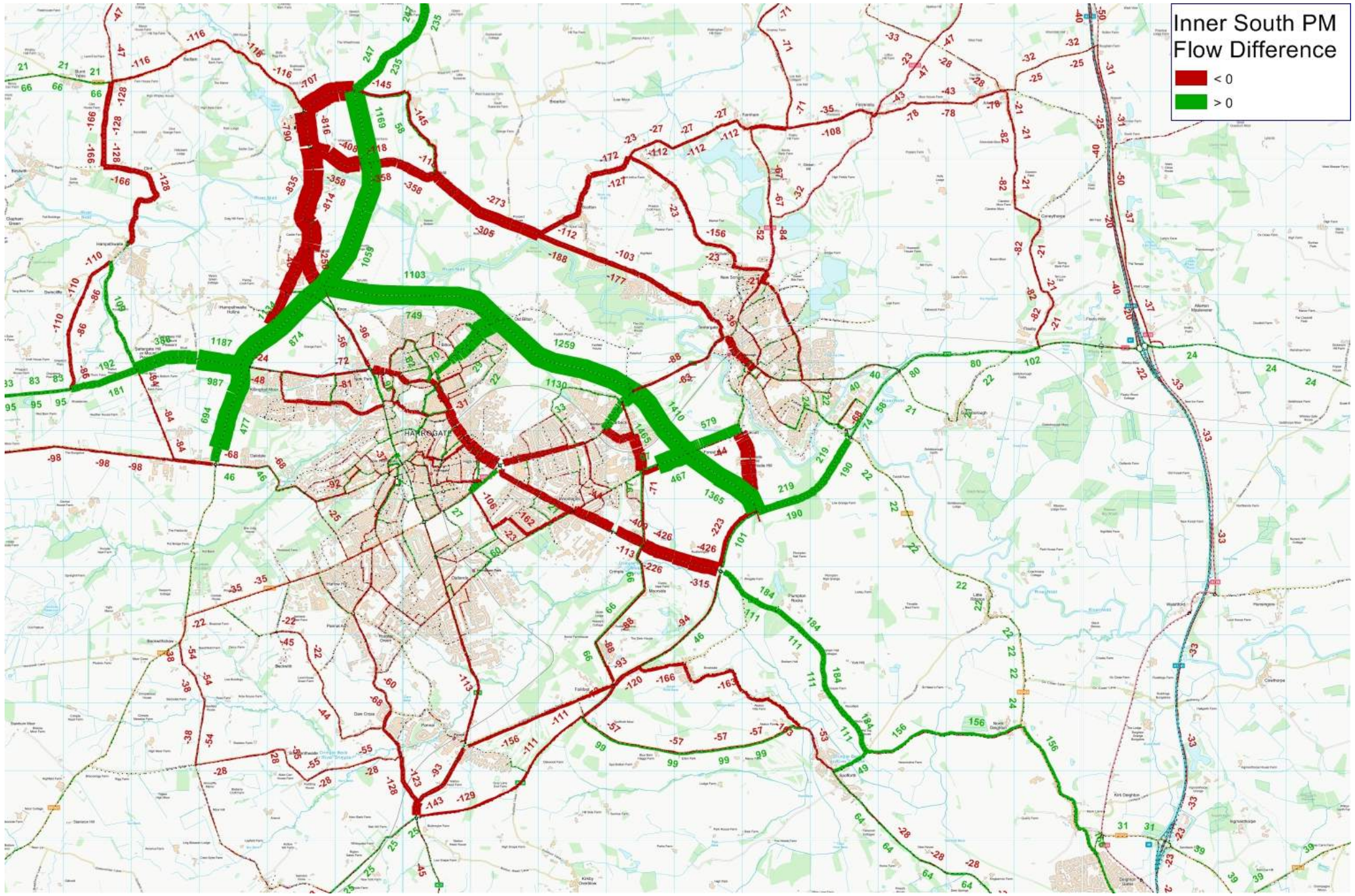


Northern PM  
Flow Difference

Red line:  $< 0$   
Green line:  $> 0$

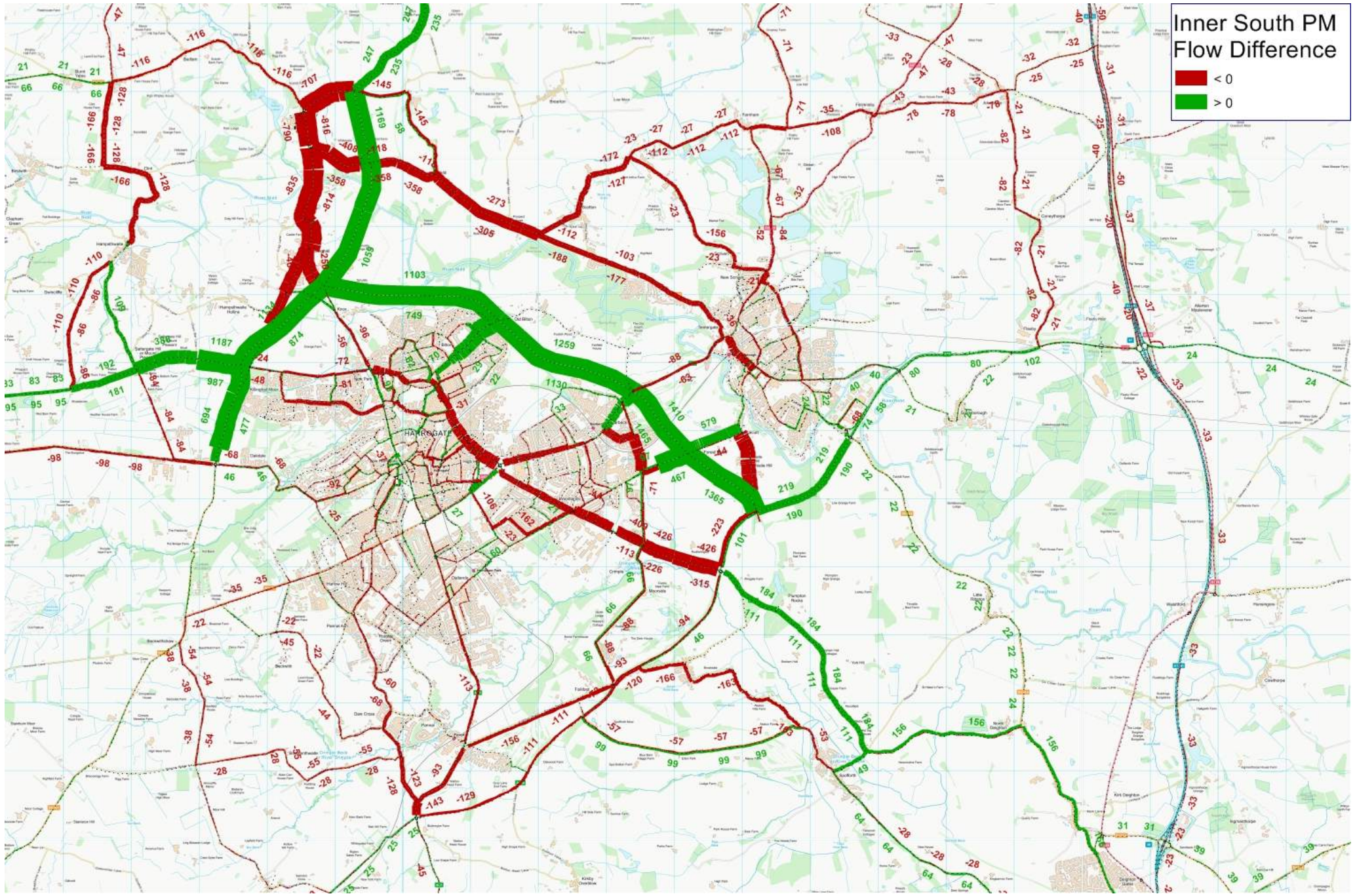
# Inner North PM Flow Difference





### Inner South PM Flow Difference

- █ < 0
- █ > 0



# Western PM Flow Difference

