

# Archway gyratory

## Design development of SDG42

11 April 2014

1. Option SDG42 proposes the full closure of the Lower Highgate Hill arm of the gyratory, only allowing access for cyclists in both directions.
2. Design work and modelling for the PM peak has been carried out, and a number of key issues were identified. This note sets out the design changes proposed to address these issues, summarised in the table below.

No.	Issue	Suggested change to address issue
a.	Too much delay for bus route 41	<ul style="list-style-type: none"><li>• Vorley Road / MacDonald Road would be one-way again, but clockwise.</li><li>• Route 41 would stand on MacDonald Road (next to the leisure centre).</li><li>• Routes 210 and 41 would go via Junction Road (SB), Vorley Road, and MacDonald Road (as in SDG42).</li><li>• Route 41 would leave via Tollhouse Way, Archway Road and St John's Way; first pick up stop at St John's Way (like 210) or add a bus stop on MacDonald Road near junction with Highgate Hill.</li></ul>
b.	Too much delay for bus routes coming from Highgate Hill: 4/C11/W5/143	<ul style="list-style-type: none"><li>• The U-turn would be amended and moved further north to allow the 4/C11/W5/143 to stand on Archway Road.</li></ul>
c.	Reduced station/bus interchange	<ul style="list-style-type: none"><li>• Bus stops as proposed in SDG42, with exception of the first stop for route 41 (see point a).</li></ul>
d.	Delay to traffic on Holloway Road NB	<ul style="list-style-type: none"><li>• Split the traffic delay to include other approaches too (detail below).</li></ul>

3. The proposed changes are shown on the attached two drawings, which show slight variations in terms of the alignment of cycle and bus routes on Archway Road.
4. These particular changes will provide the following benefits:
  - a. The bus stand would be by its entirety (apart from route 41) in one location: Archway Road.
  - b. Bus route 41 would no longer stand on Junction Road.
  - c. Fewer parking spaces will be lost on Vorley Road.
  - d. Allowing traffic into Vorley Road might reduce traffic displacement. Although Vorley Road would get some extra traffic, but it will get a significant reduction in buses, so might even out.

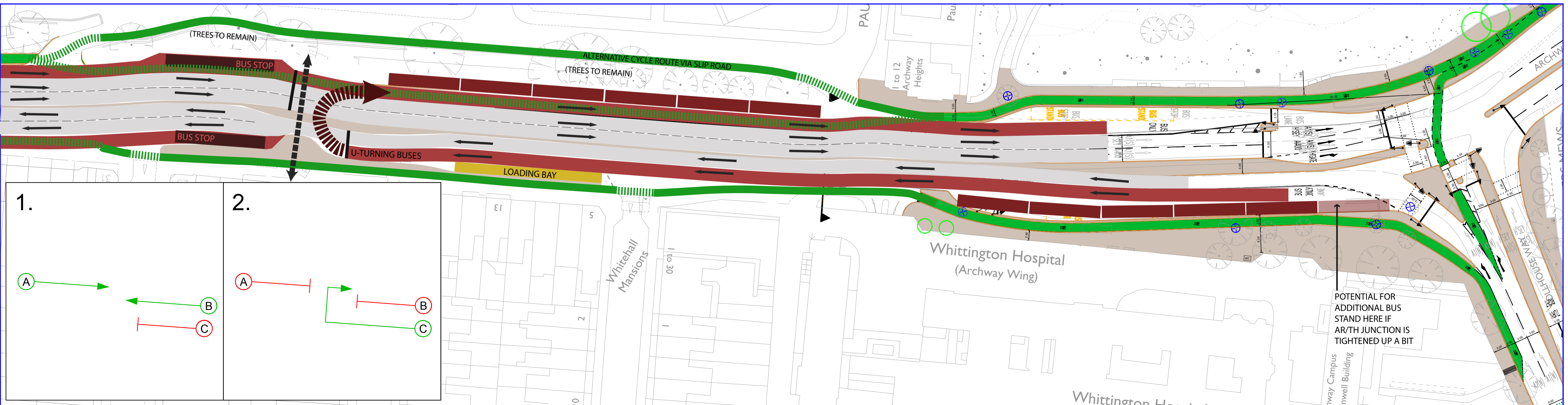
5. Instructions for SDG to change the design:
  - a. Look at the signal staging to provide a good run for Highgate Hill buses (4/C11/143/W5)
  - b. Bus routes from and to Highgate Hill should stand on Archway Road (SB) so that a clear run can be achieved from Highgate Hill to the new standing space.
  - c. Green at Highgate Hill / Tollhouse Way (SB) should also give green for left turn from Tollhouse Way into Archway Road (we assume this would already be the case in SDG41).
  - d. If the Highgate Hill bus services run straight ahead to the U-turn, they should get green here to turn and stand on Archway Road (SB).

It is our understanding currently in the model that if Archway Road traffic from Holloway Road / Junction Road gets green, it gets green at the U-turn whilst U-turning buses are waiting. Therefore, it seems that if traffic is allowed north from Tollhouse Way to Archway Road (including the buses from Highgate Hill), the buses would get green at the U-turn whilst NB general traffic has a red light.
  - e. Routes 17 and 390 should continue to stand on Archway Road (NB) as they would hit a red at the bus U-turn anyway, coming from Holloway Road.
  - f. Investigate if right turn from Archway Road into Tollhouse Way can take place at the start of the cycle rather than at the end (to give Highgate Hill buses an earlier green to the Tollhouse Way bus stop).
  - g. See if it is possible to tidy up the Tollhouse Way / Archway Road junction.

Because no buses are coming from Lower Highgate Hill (NB) anymore, it may be possible to align the Tollhouse Way right turn and Tollhouse Way left turn; it seems like they will be in the same stage, so a stagger from the pedestrian crossing could possibly be removed? This might also provide extra space for a sixth bus stand on Archway Road (NB), which would allow the bus U-turn to be shifted further south (than currently shown on the sketches attached).

Note: To minimise extra travelling time for buses using the new U-turn and bus stands, consider that new bus stands and U-turn should be as close to the previous U-turn as possible. For example, two of the bus stands near the new U-turn could possibly be removed if the two extra bus stands on Archway Road (NB) fit.
  - h. See if it is possible to introduce a pedestrian crossing at the signalised U-turn. If it is possible, then the underpass could be removed, otherwise it will need to stay in. From our initial look, it looks like the proposed changes shouldn't impact on the underpass and retaining walls, but this should be double-checked.
6. In terms of Vorley Road / MacDonald Road (in context of preventing rat-runs), the following traffic movements are considered:
  - a. No left turn from Junction Road into Vorley Road.
  - b. Only right turn from Junction Road into Vorley Road (with bus routes 210 and 41).

- c. Only left turn from MacDonald Road into Highgate Hill (except bus 41 which is allowed to turn right).
  - d. Vehicles wanting to travel from Archway Road to Highgate Hill may start using Vorley Road / MacDonald Road (rather than using other residential streets, such as a loop via St John's Grove or a right turn from Junction Road into Bredgar Road).
  - e. Depending on how many vehicles go from Junction Road to Highgate Hill ([redacted] can you check?), it might be better to allow a left turn from Junction Road into Vorley Road for general traffic.
7. To reduce the queue on Holloway Road, it is proposed to reallocate some of the green time.
- a. As 4/C11/W5/143 and 41 will no longer use Junction Road (NB) (and the narrow critical stretch of St John's Way), it may be possible to reduce Junction Road (NB) green time slightly and give some time to Holloway Road (NB). As the bus lane on Junction Road is not that long, we should prevent the queue being longer than the bus lane so that the 134 and 390 don't get stuck in the queue.
  - b. St John's Way and Archway Road have bus lane approaches that are much longer, so accepting slightly more delay here to traffic seems to be ok in terms of impacting on bus journey times.
  - c. Highgate Hill should not be delayed too much or at all as it will impact on the bus services coming down Highgate Hill, unless a southbound bus lane could be introduced, which may be possible as there is no longer a need for a right turn box into MacDonald Road.
8. On balance:
- a. Providing that the above resolves the unacceptable bus journey time increases (and therefore no real cost increases because of the need to add extra buses to services), two problems remain: traffic journey time increase and bus interchange.
  - b. In terms of traffic, we believe/hope that splitting the delay to more approaches and the fact that less buses are on the critical section might bring it within acceptable level of increase.
  - c. In terms of interchange we accept that this is not an improvement for the 41. But we believe that the full closure and associated regeneration benefits outweighs the disadvantage to some journeys.



Rev.	Date	Comments	Ckd	App

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ORIGINAL ISSUE

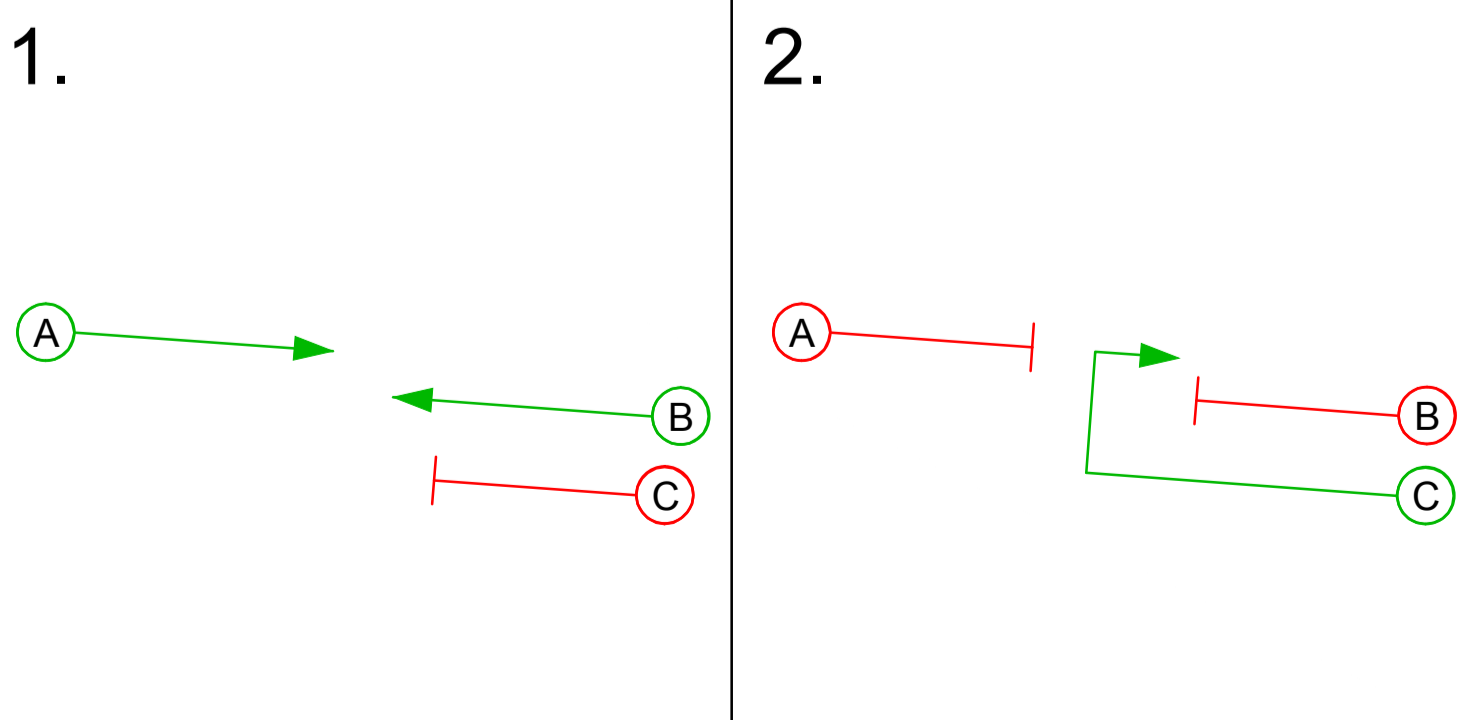
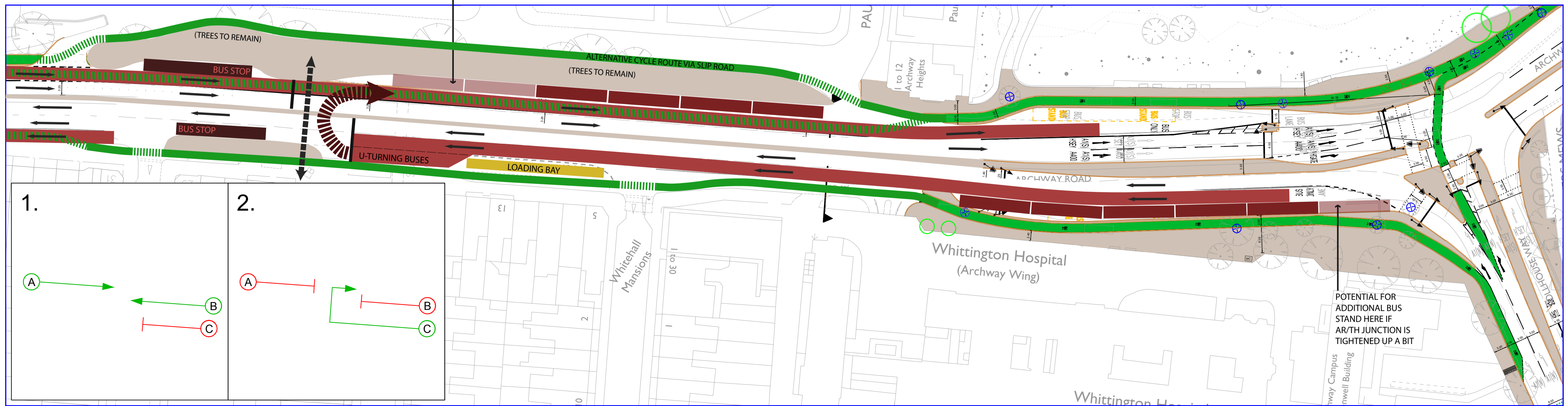
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Client: **Islington Council**

Title: **Archway Road  
 Feasibility Study  
 Provision of off-street  
 cycling facilities on Archway Road**

Drawn <b>CJM</b>	Scale <b>1:500</b>	Rev. <b>@ A1</b>	<b>-</b>
Drawing No. <b>22414101_115</b>	Sheet No. <b>02 of 06</b>		

Plot Date: 28/02/2014 09:17:34 CAD REFERENCE: I:\projects\area\Drawings\Projects\22414101\101\_CAD\Drawings\22414101\_115.dwg - Sheet02



POTENTIAL FOR ONE/BOTH OF THESE BUS STANDS TO BE REMOVED IF IT IS POSSIBLE TO FIT IN 5/6 STANDS ON ARCHWAY ROAD (NB)

POTENTIAL FOR ADDITIONAL BUS STAND HERE IF AR/TH JUNCTION IS TIGHTENED UP A BIT

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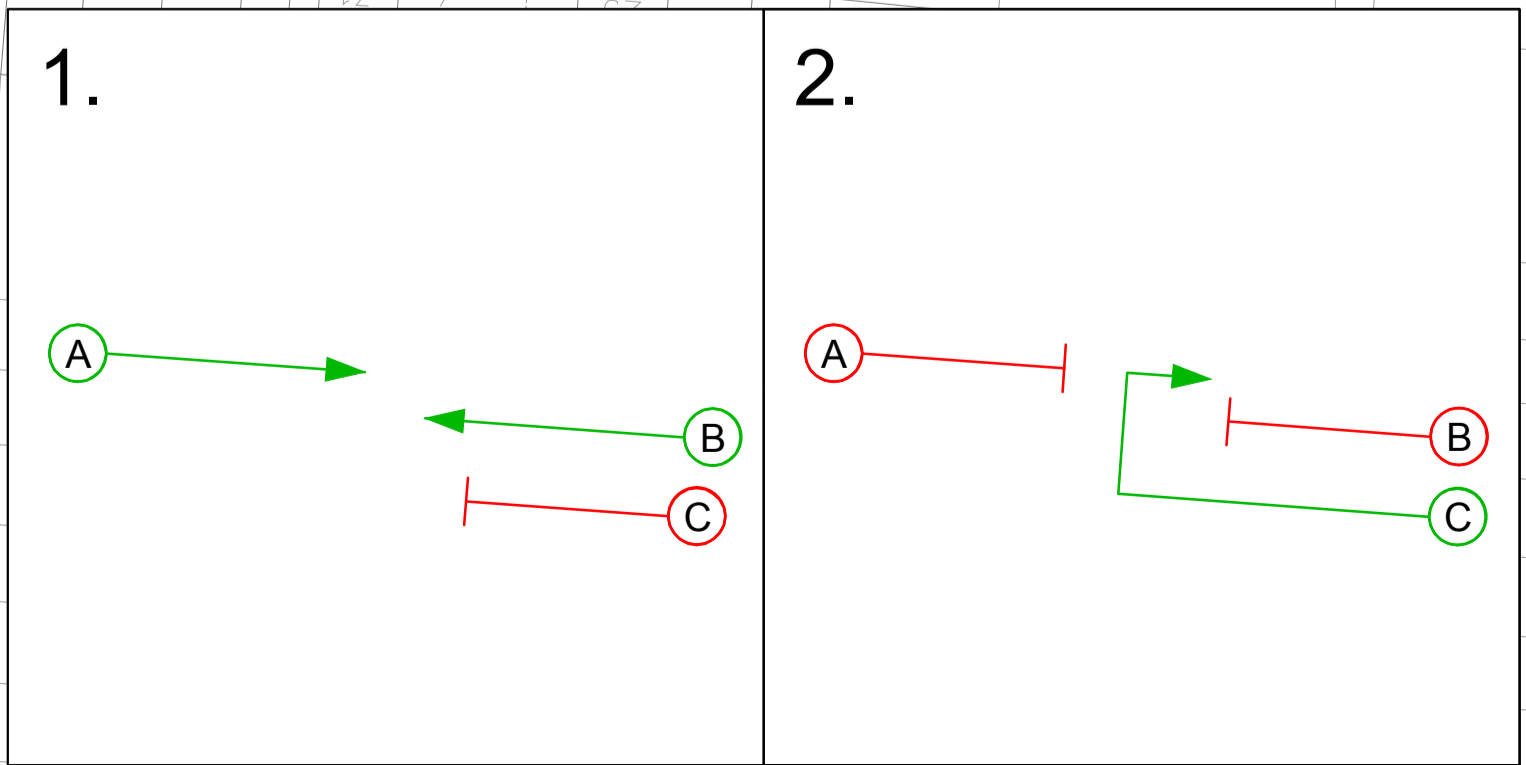
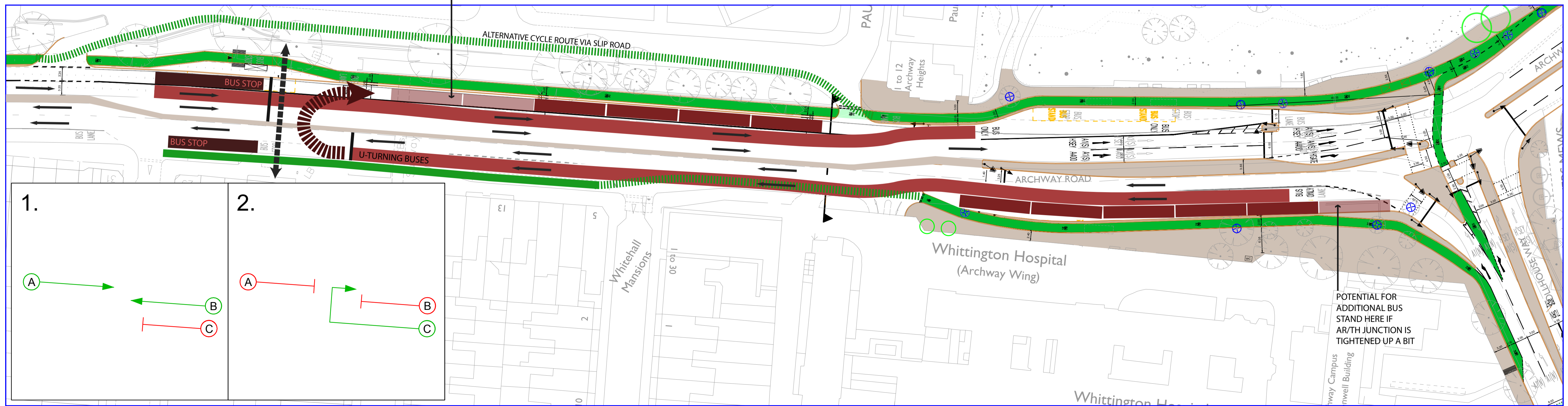
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Drawn: **CJM** Scale: **1:500** Rev: **-**  
Drawing No: **22414101\_115** Sheet No: **02 of 06**

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Archway Gyratory - Bus Journey Time Analysis (s)

Route	Journey Time				Freq (bph)	Base to New Base		New Base to SDG41		New Base to SDG42	
	Base	New Base	SDG41	SDG42							
4 E	191	183	174	174	6	-8	-4%	-9	-5%	-9	-5%
4 W	196	243	214	362	6	48	24%	-29	-12%	119	49%
17 N	272	278	284	267	7	6	2%	6	2%	-11	-4%
17 S	359	395	326	317	7	36	10%	-69	-18%	-78	-20%
41 N	222	221	206	384	12	-1	-1%	-14	-6%	163	74%
41 S	265	210	283	360	12	-55	-21%	73	35%	150	71%
43 N	303	288	330	295	9	-15	-5%	42	14%	7	2%
43 S	262	282	301	303	9	20	8%	19	7%	21	7%
134 N	241	216	299	206	12	-25	-10%	83	38%	-10	-5%
134 S	249	139	294	272	12	-110	-44%	155	111%	133	96%
143 E	157	144	169	192	5	-13	-8%	26	18%	49	34%
143 W	229	226	321	236	5	-3	-1%	95	42%	11	5%
210 W	258	249	273	334	7	-9	-4%	24	10%	85	34%
210 E	224	212	225	225	7	-12	-5%	14	6%	13	6%
263 N	303	288	330	295	6	-15	-5%	42	14%	7	2%
263 S	262	282	301	303	6	20	8%	19	7%	20	7%
271 N	270	272	304	336	7	2	1%	32	12%	64	24%
271 S	342	388	340	341	7	47	14%	-49	-12%	-47	-12%
390 N	220	182	185	175	7.5	-39	-18%	3	2%	-7	-4%
390 S	303	275	295	256	7.5	-28	-9%	20	7%	-20	-7%
C11 E	190	167	180	176	7.5	-23	-12%	13	8%	10	6%
C11 W	201	184	189	352	7.5	-17	-9%	6	3%	168	92%
W5 E	156	143	87	84	5	-13	-8%	-57	-39%	-59	-41%
W5 W	229	226	311	362	5	-3	-1%	85	38%	136	60%
Total	45305	42855	47855	51151	-	-2450	-5%	4999	12%	8295	19%

- >2 minute JT increase
- >1 and <2 minute JT increase
- >0 and <1 minute JT increase
- >0 and <1 minute JT decrease
- >1 and <2 minute JT decrease

Route	Journey Time (s)				Base to New Base	New Base to SDG41	New Base to SDG42
	Base	New Base	SDG41	SDG42			
From Holloway Road							
17 N	272	278	284	267	6	6	-11
43 N	303	288	330	295	-15	42	7
271 N	270	272	304	336	2	32	64
263 N	303	288	330	295	-15	42	7
From Junction Road							
134 N	241	216	299	206	-25	83	-10
390 N	220	182	185	175	-39	3	-7
From Highgate Hill							
143 E	157	144	169	192	-13	26	49
210 E	224	212	225	225	-12	14	13
271 S	342	388	340	341	47	-49	-47
W5 E	156	143	87	84	-13	-57	-59
4 E	191	183	174	174	-8	-9	-9
C11 E	190	167	180	176	-23	13	10
From Archway Road							
43 S	262	282	301	303	20	19	21
134 S	249	139	294	272	-110	155	133
263 S	262	282	301	303	20	19	20
From St John's Way							
41 S	265	210	283	360	-55	73	150
210 W	258	249	273	334	-9	24	85

Route	Journey Time (s)				Base to New Base	New Base to SDG41	New Base to SDG42
	Base	New Base	SDG41	SDG42			
To Holloway Road							
17 S	359	395	326	317	36	-69	-78
43 S	262	282	301	303	20	19	21
271 S	342	388	340	341	47	-49	-47
263 S	262	282	301	303	20	19	20
To Junction Road							
134 S	249	139	294	272	-110	155	133
390 S	303	275	295	256	-28	20	-20
To Highgate Hill							
143 W	229	226	321	236	-3	95	11
210 W	258	249	273	334	-9	24	85
271 N	270	272	304	336	2	32	64
W5 W	229	226	311	362	-3	85	136
4 W	196	243	214	362	48	-29	119
C11 W	201	184	189	352	-17	6	168
To Archway Road							
43 N	303	288	330	295	-15	42	7
134 N	241	216	299	206	-25	83	-10
263 N	303	288	330	295	-15	42	7
To St John's Way							
41 N	222	221	206	384	-1	-14	163
210 E	224	212	225	225	-12	14	13

Overall Summary - PM Peak			Base			New Base			SDG41			SDG42			Base v New Base			New Base to SDG41 Latest			New Base to SDG42		
			Empty	Service	Total	Empty	Service	Total	Empty	Service	Total	Empty	Service	Total	Empty	Service	Total	Empty	Service	Total	Empty	Service	Total
4	Terminating	Arriving	13	176	189	13	160	173	60	117	177	2	171	174	0	-16	-16	47	-43	4	-11	12	1
4	Terminating	Departing	84	106	191	90	100	190	93	108	201	252	114	365	6	-7	0	2	8	11	161	14	175
17	Terminating	Arriving	13	263	276	13	262	275	67	220	288	70	200	270	0	-1	-1	54	-42	13	56	-62	-5
17	Terminating	Departing	84	260	344	90	292	383	199	122	321	183	124	307	6	32	38	108	-170	-62	93	-168	-76
41	Terminating	Departing	84	136	220	90	138	228	66	139	205	269	116	386	6	2	8	-25	1	-23	179	-21	158
41	Terminating	Arriving	13	187	201	13	193	206	43	240	282	181	176	357	0	6	6	30	46	76	168	-17	151
43	Through	N/B	0	301	301	0	289	289	0	339	339	0	293	293	0	-12	-12	0	50	50	0	4	4
43	Through	S/B	0	263	263	0	286	286	0	299	299	0	299	299	0	23	23	0	13	13	0	13	13
134	Through	N/B	0	251	251	0	220	220	0	281	281	0	202	202	0	-31	-31	0	61	61	0	-18	-18
134	Through	S/B	0	250	250	0	224	224	0	295	295	0	274	274	0	-26	-26	0	71	71	0	49	49
143	Terminating	Arriving	13	138	151	13	133	146	94	75	169	116	77	192	0	-5	-5	81	-58	23	102	-56	47
143	Terminating	Departing	32	183	215	32	179	211	266	54	320	174	65	240	0	-5	-4	234	-125	109	142	-114	29
210	Through	W/B	0	254	254	0	249	249	0	273	273	0	336	336	0	-6	-6	0	24	24	0	87	87
210	Through	E/B	0	235	235	0	213	213	0	224	224	0	223	223	0	-22	-22	0	10	10	0	10	10
263	Through	N/B	0	301	301	0	289	289	0	339	339	0	293	293	0	-12	-12	0	50	50	0	4	4
263	Through	S/B	0	263	263	0	286	286	0	299	299	0	299	299	0	23	23	0	13	13	0	13	13
271	Through	N/B	0	279	279	0	269	269	0	308	308	0	392	392	0	-10	-10	0	39	39	0	123	123
271	Through	S/B	0	355	355	0	381	381	0	333	333	0	337	337	0	26	26	0	-48	-48	0	-44	-44
390	Terminating	Arriving	13	209	223	13	169	183	109	77	186	98	82	180	0	-40	-40	96	-92	3	85	-87	-3
390	Terminating	Departing	285	18	303	257	19	275	276	18	295	230	23	253	-28	1	-28	20	0	19	-27	5	-22
C11	Terminating	Arriving	13	176	189	13	160	173	2	175	177	2	171	174	0	-16	-16	-11	15	4	-11	12	1
C11	Terminating	Departing	84	106	191	90	100	190	93	108	201	252	114	365	6	-7	0	2	8	11	161	14	175
W5	Terminating	Arriving	13	138	151	13	133	146	0	75	75	0	77	77	0	-5	-5	-13	-58	-71	-13	-56	-69
W5	Terminating	Departing	84	144	228	90	130	220	129	170	299	270	65	336	6	-15	-8	39	40	79	180	-64	116
Total			831	4993	5824	834	4871	5705	1499	4685	6184	2100	4521	6621	3	-122	-119	665	-186	479	1266	-351	916



Archway Gyratory - Bus Journey Time Analysis (s)

Route	Journey Time				Freq (bph)	Base to New Base		New Base to SDG41		New Base to SDG42	
	Base	New Base	SDG41	SDG42							
4 E	191	183	174	176	6	-8	-4%	-9	-5%	-8	-4%
4 W	196	243	214	443	6	48	24%	-29	-12%	199	82%
17 N	272	278	284	281	7	6	2%	6	2%	3	1%
17 S	359	395	326	311	7	36	10%	-69	-18%	-84	-21%
41 N	222	221	206	179	12	-1	-1%	-14	-6%	-42	-19%
41 S	265	210	283	590	12	-55	-21%	73	35%	380	181%
43 N	303	288	330	301	9	-15	-5%	42	14%	13	5%
43 S	262	282	301	301	9	20	8%	19	7%	19	7%
134 N	241	216	299	250	12	-25	-10%	83	38%	34	16%
134 S	249	139	294	283	12	-110	-44%	155	111%	144	104%
143 E	157	144	169	156	5	-13	-8%	26	18%	13	9%
143 W	229	226	321	218	5	-3	-1%	95	42%	-8	-4%
210 W	258	249	273	358	7	-9	-4%	24	10%	108	43%
210 E	224	212	225	223	7	-12	-5%	14	6%	11	5%
263 N	303	288	330	302	6	-15	-5%	42	14%	13	5%
263 S	262	282	301	301	6	20	8%	19	7%	19	7%
271 N	270	272	304	340	7	2	1%	32	12%	68	25%
271 S	342	388	340	346	7	47	14%	-49	-12%	-42	-11%
390 N	220	182	185	208	7.5	-39	-18%	3	2%	26	14%
390 S	303	275	295	264	7.5	-28	-9%	20	7%	-12	-4%
C11 E	190	167	180	168	7.5	-23	-12%	13	8%	2	1%
C11 W	201	184	189	390	7.5	-17	-9%	6	3%	207	113%
W5 E	156	143	87	87	5	-13	-8%	-57	-39%	-57	-40%
W5 W	229	226	311	403	5	-3	-1%	85	38%	177	79%
Total	45305	42855	47855	53433	-	-2450	-5%	4999	12%	10577	25%

- >2 minute JT increase
- >1 and <2 minute JT increase
- >0 and <1 minute JT increase
- >0 and <1 minute JT decrease
- >1 and <2 minute JT decrease

Route	Journey Time (s)				Base to New Base	New Base to SDG41	New Base to SDG42
	Base	New Base	SDG41	SDG42			
From Holloway Road							
17 N	272	278	284	281	6	6	3
43 N	303	288	330	301	-15	42	13
271 N	270	272	304	340	2	32	68
263 N	303	288	330	302	-15	42	13
From Junction Road							
134 N	241	216	299	250	-25	83	34
390 N	220	182	185	208	-39	3	26
From Highgate Hill							
143 E	157	144	169	156	-13	26	13
210 E	224	212	225	223	-12	14	11
271 S	342	388	340	346	47	-49	-42
W5 E	156	143	87	87	-13	-57	-57
4 E	191	183	174	176	-8	-9	-8
C11 E	190	167	180	168	-23	13	2
From Archway Road							
43 S	262	282	301	301	20	19	19
134 S	249	139	294	283	-110	155	144
263 S	262	282	301	301	20	19	19
From St John's Way							
41 S	265	210	283	590	-55	73	380
210 W	258	249	273	358	-9	24	108

Route	Journey Time (s)				Base to New Base	New Base to SDG41	New Base to SDG42
	Base	New Base	SDG41	SDG42			
To Holloway Road							
17 S	359	395	326	311	36	-69	-84
43 S	262	282	301	301	20	19	19
271 S	342	388	340	346	47	-49	-42
263 S	262	282	301	301	20	19	19
To Junction Road							
134 S	249	139	294	283	-110	155	144
390 S	303	275	295	264	-28	20	-12
To Highgate Hill							
143 W	229	226	321	218	-3	95	-8
210 W	258	249	273	358	-9	24	108
271 N	270	272	304	340	2	32	68
W5 W	229	226	311	403	-3	85	177
4 W	196	243	214	443	48	-29	199
C11 W	201	184	189	390	-17	6	207
To Archway Road							
43 N	303	288	330	301	-15	42	13
134 N	241	216	299	250	-25	83	34
263 N	303	288	330	302	-15	42	13
To St John's Way							
41 N	222	221	206	179	-1	-14	-42
210 E	224	212	225	223	-12	14	11

Overall Summary - PM Peak			Base			New Base			SDG41			SDG42			Base v New Base			New Base to SDG41			New Base to SDG41 LATEST		
			Empty	Service	Total	Empty	Service	Total	Empty	Service	Total	Empty	Service	Total	Empty	Service	Total	Empty	Service	Total	Empty	Service	Total
4	Terminating	Arriving	13	176	189	13	160	173	60	117	177	2	169	171	0	-16	-16	47	-43	4	-11	9	-2
4	Terminating	Departing	84	106	191	90	100	190	93	108	201	197	221	418	6	-7	0	2	8	11	107	121	228
17	Terminating	Arriving	13	263	276	13	262	275	67	220	288	82	202	284	0	-1	-1	54	-42	13	69	-60	9
17	Terminating	Departing	84	260	344	90	292	383	199	122	321	181	122	303	6	32	38	108	-170	-62	90	-170	-80
41	Terminating	Departing	84	136	220	90	138	228	66	139	205	74	104	179	6	2	8	-25	1	-23	-16	-33	-49
41	Terminating	Arriving	13	187	201	13	193	206	43	240	282	543	184	726	0	6	6	30	46	76	530	-9	520
43	Through	N/B	0	301	301	0	289	289	0	339	339	0	298	298	0	-12	-12	0	50	50	0	9	9
43	Through	S/B	0	263	263	0	286	286	0	299	299	0	298	298	0	23	23	0	13	13	0	12	12
134	Through	N/B	0	251	251	0	220	220	0	281	281	0	240	240	0	-31	-31	0	61	61	0	19	19
134	Through	S/B	0	250	250	0	224	224	0	295	295	0	284	284	0	-26	-26	0	71	71	0	59	59
143	Terminating	Arriving	13	138	151	13	133	146	94	75	169	78	77	155	0	-5	-5	81	-58	23	65	-56	9
143	Terminating	Departing	32	183	215	32	179	211	266	54	320	152	69	221	0	-5	-4	234	-125	109	120	-110	10
210	Through	W/B	0	254	254	0	249	249	0	273	273	0	353	353	0	-6	-6	0	24	24	0	104	104
210	Through	E/B	0	235	235	0	213	213	0	224	224	0	221	221	0	-22	-22	0	10	10	0	8	8
263	Through	N/B	0	301	301	0	289	289	0	339	339	0	298	298	0	-12	-12	0	50	50	0	9	9
263	Through	S/B	0	263	263	0	286	286	0	299	299	0	298	298	0	23	23	0	13	13	0	12	12
271	Through	N/B	0	279	279	0	269	269	0	308	308	0	401	401	0	-10	-10	0	39	39	0	132	132
271	Through	S/B	0	355	355	0	381	381	0	333	333	0	340	340	0	26	26	0	-48	-48	0	-41	-41
390	Terminating	Arriving	13	209	223	13	169	183	109	77	186	106	107	214	0	-40	-40	96	-92	3	93	-62	31
390	Terminating	Departing	285	18	303	257	19	275	276	18	295	239	23	262	-28	1	-28	20	0	19	-17	4	-13
C11	Terminating	Arriving	13	176	189	13	160	173	2	175	177	2	169	171	0	-16	-16	-11	15	4	-11	9	-2
C11	Terminating	Departing	84	106	191	90	100	190	93	108	201	197	221	418	6	-7	0	2	8	11	107	121	228
W5	Terminating	Arriving	13	138	151	13	133	146	0	75	75	0	77	77	0	-5	-5	-13	-58	-71	-13	-56	-68
W5	Terminating	Departing	84	144	228	90	130	220	129	170	299	213	178	391	6	-15	-8	39	40	79	122	48	170
Total			831	4993	5824	834	4871	5705	1499	4685	6184	2067	4952	7019	3	-122	-119	665	-186	479	1233	81	1314

TABLE 1 AM PEAK DEGREES OF SATURATION AND QUEUE LENGTH RESULTS (TRANSYT)

Junction	Approach/Movement	SDG41		SDG42	
		DoS (%)	MMQ (pcu)	DoS (%)	MMQ (pcu)
Junction Road/Lower Highgate Hill	St John's Way Sbnd	81	4	58	2
	Holloway Road Wbnd	25	1	-	-
	Junction Road Nbnd	49	5	29	2
	Lower Highgate Hill	-	-	-	-
Highgate Hill/Tollhouse Way	Highgate Hill Left Turn	73	9	53	2
	Highgate Hill Ahead	-	-	-	-
	Lower Highgate Hill Right Turn	34	1	-	-
	Lower Highgate Hill Ahead	14	1	-	-
	Tollhouse Way Left Turn	-	-	-	-
	Tollhouse Way Right Turn	45	5	43	7
Highgate Hill / McDonald Road	Highgate Hill Ebnd Ahead	24	0	59	4
	Highgate Hill Ebnd Right Turn	3	0	15	1
	Highgate Hill Wbnd Ahead	25	0	56	3
	McDonald Road	-	-	10	1
Archway Road/Tollhouse Way	Archway Road Ebnd Ahead	84	14	82	14
	Archway Road Ebnd Right Turn	10	0	24	1
	Tollhouse Way Left Turn	22	3	11	1
	Tollhouse Way Right Turn	74	9	74	9
	Archway Road Wbnd Left Turn	39	4	43	5

Junction	Approach/Movement	SDG41		SDG42	
		DoS (%)	MMQ (pcu)	DoS (%)	MMQ (pcu)
	Archway Road Wbnd Ahead	47	6	53	8
St John's Way/Archway Road	Archway Road Right Turn	76	6	76	6
	Archway Road Left Turn	45	3	45	3
	St John's Way Sbnd	64	1	64	1
	St John's Way Nbnd Left Turn	71	12	79	13
	St John's Way Nbnd Ahead	26	2	26	1
Sandridge Street/St John's Way	St John's Way Sbnd Ahead	87	19	86	19
	<b>Sandridge Street Nbnd Right Turn</b>	<b>97</b>	<b>22</b>	<b>106</b>	<b>42</b>
	St John's Way Nbnd	29	0	37	6
Sandridge Street Pedestrian Crossing	Sandridge Street SB	68	2	68	2
	Holloway Road NB	65	7	65	7
Archway Road Bus Turn-round	Archway Road Nbnd	43	5	41	3
	Archway Road Nbnd U-turn	16	1	25	1
	Archway Sbnd	86	18	86	18
	Archway Sbnd Bus Lane	6	1	6	1
Vorley Road/Junction Road	Junction Road Nbnd	25	2	39	4
	Junction Road Sbnd	55	6	85	4
	Vorley Road Right Turn	10	0	31	1
	Vorley Road Left Turn	3	0	5	0

\*Potentially not the latest values, so just for comparison

TABLE 2 PM PEAK DEGREES OF SATURATION AND QUEUE LENGTH RESULTS (TRANSYT)

Junction	Approach/Movement	SDG41		SDG42	
		DoS (%)	MMQ (pcu)	DoS (%)	MMQ (pcu)
Junction Road/Lower Highgate Hill	St John's Way Sbd	55	1	55	1
	Holloway Road Wbnd	25	1	25	1
	Junction Road Nbnd	82	10	82	10
	Lower Highgate Hill	-	-	-	-
Highgate Hill/Tollhouse Way	Highgate Hill Left Turn	80	11	80	11
	Highgate Hill Ahead	-	-	-	-
	Lower Highgate Hill Right Turn	34	2	34	2
	Lower Highgate Hill Ahead	13	0	13	0
	Tollhouse Way Left Turn	-	-	-	-
	Tollhouse Way Right Turn	58	7	58	7
Highgate Hill / McDonald Road	Highgate Hill Ebnd Ahead	24	0	24	0
	Highgate Hill Ebnd Right Turn	4	0	4	0
	Highgate Hill Wbnd Ahead	29	0	29	0
	McDonald Road	24	0	-	-
Archway Road/Tollhouse Way	Archway Road Ebnd Ahead	70	6	70	6
	Archway Road Ebnd Right Turn	29	1	24	1
	Tollhouse Way Left Turn	20	2	6	0
	Tollhouse Way Right Turn	79	10	79	8
	Archway Road Wbnd Left Turn	47	5	67	8

Junction	Approach/Movement	SDG41		SDG42	
		DoS (%)	MMQ (pcu)	DoS (%)	MMQ (pcu)
	Archway Road Wbnd Ahead	65	9	93	20
St John's Way/Archway Road	Archway Road Right Turn	70	6	70	8
	Archway Road Left Turn	60	5	60	5
	St John's Way Sbnd	48	0	48	0
	<b>St John's Way Nbnd Left Turn</b>	<b>93</b>	<b>28</b>	<b>105</b>	<b>62</b>
	St John's Way Nbnd Ahead	41	3	41	2
Sandridge Street/St John's Way	St John's Way Sbnd Ahead	82	13	80	12
	<b>Sandridge Street Nbnd Right Turn</b>	<b>90</b>	<b>20</b>	<b>97</b>	<b>27</b>
	St John's Way Nbnd	67	2	77	4
Sandridge Street Pedestrian Crossing	Sandridge Street SB	65	6	65	6
	Holloway Road NB	79	7	79	7
Archway Road Bus Turn-round	Archway Road Nbnd	59	4	57	1
	Archway Road Nbnd U-turn	13	0	20	1
	Archway Sbnd	95	21	95	21
	Archway Sbnd Bus Lane	7	1	7	1
Vorley Road/Junction Road	Junction Road Nbnd	42	4	63	8
	Junction Road Sbnd	38	0	57	1
	Vorley Road Right Turn	11	0	31	1
	Vorley Road Left Turn	12	0	34	2

\*Potentially not the latest values, so just for comparison

TABLE 3 BUS JOURNEY TIME RESULTS (TRANSYT)

Route	Peak Hour Frequency	AM Journey Time (min)		PM Journey Time (min)	
		SDG41	SDG42	SDG41	SDG42
4 loop	6	3.7	4.7	3.4	7.2
17 loop	7	7.4	8.1	5.5	7.6
41 loop	12	4.4	8.1	4.2	8.6
W5 loop	5	3.3	4.3	2.9	6.7
C11 loop	7.5	3.7	4.7	3.4	7.2
134 nb	12	3.0	2.3	3.2	5.1
134 sb	12	3.2	3.2	3.1	3.0
390 loop	7.5	6.4	5.3	5.2	7.6
263 nwb	6	3.4	4.5	3.7	5.2
263 seb	6	3.9	3.8	2.9	2.8
210 neb	7	3.2	2.5	3.3	3.0
210 swb	7	3.4	3.8	2.9	3.6
43 nwb	9	3.4	4.5	3.7	5.2
43 seb	9	3.9	3.8	2.9	2.8
271 seb	7	2.8	5.0	2.5	5.5
271 nwb	7	4.5	3.9	3.7	3.4
143 loop	5	7.0	4.3	5.7	4.7
<i>Total (factored by frequency)</i>		<b>534.0</b>	<b>595.6</b>	<b>477.5</b>	<b>691.7</b>

## Summary of Archway Issues

### General

Archway is served by routes 17, 43, 263, 271, 210, 41, 134, 143, W5, 4 and 390.

Routes 4, 17, 41, 143, 390, C11 and W5 terminate at Macdonald Road (a consolidated facility which can accommodate 16 buses).

Several corridors are served from Archway:

Holloway Road (southeast): 17, 43, 263 and 271

St Johns Way (northeast): 41, 210

Archway Road (northeast): 43, 134 and 263

Highgate Hill (northwest): 143, 210, 271 and W5

Highgate Road (southwest): C11

Dartmouth Park Hill (south): 4

Routes will no longer be able to serve the southern arm of the gyratory, outside of Archway Station. Buses will no longer be able to stand at the facility at Macdonald Road. Stands will be split, located on Archway Road (both on the north and side carriageways) and Macdonald Road (on highway).

This results in additional walking time from the station to the stops and the loss of frequency for certain passengers arising through the loss of common stops.

### Journey times

Overall, net changes to cycle times are expected to change as follows, based on the PM peak:

Route	Minutes
17	-4.6
263	-2.9
43	-2.9
390	-1.5
271	-1.4
134	-0.8
41	-0.6
W5	-0.6
4	-0.3
C11	-0.3
143	0.3
210	1.7

Route 210 is the worst affected with an increase of 1.7 minutes, this arises from southbound traffic from St Johns not having the ability to turn right on the revised road layout. On the network level operating costs are expected to remain broadly neutral.



## Passenger disbenefits

Passengers requiring serving the Holloway Road and St Johns Road corridor will still benefit from being able use the same stop, offering no loss to frequency to passengers.

### *Archway Road*

Routes 43, 134 and 263 currently offer a combined frequency of 28 bph from the common stop at 'D', currently situated outside of the tube station. Stop D will be relocated to the east as the part of the scheme, on Holloway Road which will be served by routes 43 and 263 (a combined frequency of 16 bph). Route 134 (12 bph) approaches and will stop on Junction Road at stop 'V', this incurs an additional walk time of around 15 metres.

It has been assumed that passengers requiring common destinations will use stop D. Passengers will incur a slightly longer walk time, including a junction crossing, and will have a frequency reduction of 12 bph (28 to 16 bph).

### *Highgate Hill*

Routes 143, 210, 271 and W5 currently provide a combined frequency of 26.5 bph and serve stop E, again situated outside of Archway Station. Stop E will be relocated to the western arm of the gyratory, however increases in walk time will be minimal compared to the current situation.

Routes 143, 210, 271 and W5 will be able to continue serving stop E. Route 210 (6 bph), towards Brent Cross will stop at 'W' on Junction Road, an increase of around 75 metres.

Passengers requiring common destinations on Highgate Hill are assumed will use stop 'E' meaning that passengers requiring common destinations will have a frequency reduction of 6 bph (from 26.5 bph to 20.5 bph).

## Summary of passenger disbenefits

- Additional walk time for passengers to stop 'D' (**574 peak hrs pax**)
- Loss of frequency for passengers wanting destinations on to Archway Road (**574**)
- Additional walk time for passengers accessing stop 'V' (route 134) (**318**)
- Additional walk time for passengers accessing stop 'W' (route 210) (**300**)
- Loss of frequency for passengers wanting destinations on Highgate Hill (**641**)