



Workload Modelling December 2020

Data & Information Department

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Background

Workload Modelling uses the resources provided in the various scenarios to simulate an emergency appliance turnout response to incidents that have occurred historically over three years (2017/18, 2018/19 and 2019/20). These scenarios are then compared to a Base Case to establish the emergency appliance turnout response using the current resources.

The Workload Modeller uses the Ordnance Survey (OS) Integrated Transport Network (ITN) road network and speeds assigned to those roads to determine the time taken to travel to each incident using the nearest available and appropriate resource.

The road speeds used are:

Road Type	Road Speed (MPH)
Motorway	60
A Road	50
B Road	25
Minor Road	20
Local Street	20
Pedestrianised Street	5
Alley	5
Private Road	20

Notes on Data

Within the station based tables, the workload modeller treats reduced callout numbers (-) as a positive and colour codes them green, however reduced target achievement (-) is thought of as a negative and coloured red.

Proposal A

- 16 whole-time cat 01 appliances based at Stn A, Stn C, Stn E, Stn F, Stn G, Stn H, Stn J, Stn K, Stn M, Stn N, Stn Q, Stn S, Stn T, Stn V, Stn W and Stn Y.
- 8 whole-time cat 02 appliances based at Stn A, Stn C, Stn F, Stn J, Stn K, Stn N, Stn Q and Stn V.
- 1 on-call cat 02 appliance based at Stn Z to be available on a 5 min recall to duty.

Service Impact

Proposal A would result in 70 additional callouts within target time. The average attendance time for the Service for all callouts would reduce by 2 seconds.

Service	Proposal A	Callouts	In Target	% of Callouts in Target	Average Attendance Time
All Risk Levels	Base Case	67255	64416	95.78%	00:04:35
	Proposal A	67255	64486	95.88%	00:04:33
	Difference	0	70	0.10%	00:00:02

Service Impact by Risk Level

The average attendance time for the 2nd appliance at a Risk Level 1 and Risk Level 2 incident would reduce by 4 seconds.

Proposal A – Service Comparison						
Risk Level	Arrival Order	Proposal	Callouts	In Target	% of Callouts in Target	Average Attendance Time
Risk Level 1	1 st Appliance	Base case	9983	8524	85.39%	00:04:18
		Proposal A	9983	8531	85.46%	00:04:18
		Difference	0	7	0.07%	00:00:00
	2 nd Appliance	Base case	7424	6806	91.68%	00:04:55
		Proposal A	7424	6853	92.31%	00:04:51
		Difference	0	47	0.63%	00:00:04
Risk Level 2	1 st Appliance	Base case	2947	2590	87.89%	00:04:11
		Proposal A	2947	2592	87.95%	00:04:11
		Difference	0	2	0.07%	00:00:00
	2 nd Appliance	Base case	1562	1442	92.32%	00:04:48
		Proposal A	1562	1452	92.96%	00:04:44
		Difference	0	10	0.64%	00:00:04

Proposal A - Station Impact

Station Overview – Proposal A - All Risk Levels				
Station	Proposal	Callouts	In Target	Δ%
Birtley (W)	Base case	1745	1639	93.93%
	Proposal A	1735	1630	93.95%
	Difference	-10	-9	0.02%
Byker (F)	Base case	6636	6508	98.07%
	Proposal A	6523	6405	98.19%
	Difference	-113	-103	0.12%
Chopwell (Z)	Base case	276	72	26.09%
	Proposal A	276	72	26.09%
	Difference	0	0	0.00%
Farringdon (Q)	Base case	3696	3485	94.29%
	Proposal A	3678	3470	94.34%
	Difference	-18	-15	0.05%
Gateshead (V)	Base case	6425	6313	98.26%
	Proposal A	6182	6096	98.61%
	Difference	-243	-217	0.35%
Gosforth (E)	Base case	3442	3078	89.42%
	Proposal A	3314	2956	89.20%
	Difference	-128	-122	-0.23%
Hebburn (T)	Base case	2290	2230	97.38%
	Proposal A	2280	2221	97.41%
	Difference	-10	-9	0.03%
Marley Park (M)	Base case	1628	1531	94.04%
	Proposal A	1631	1535	94.11%
	Difference	3	4	0.07%
Newcastle Central (C)	Base case	11373	11166	98.18%
	Proposal A	11140	10963	98.41%
	Difference	-233	-203	0.23%
Rainton Bridge (H)	Base case	1822	1675	91.93%
	Proposal A	1822	1675	91.93%
	Difference	0	0	0.00%
South Shields (K)	Base case	5353	5227	97.65%
	Proposal A	5355	5230	97.67%
	Difference	2	3	0.02%
Sunderland Central (N)	Base case	7660	7517	98.13%
	Proposal A	7648	7503	98.10%
	Difference	-12	-14	-0.03%
Swalwell (Y)	Base case	2511	2158	85.94%
	Proposal A	2263	1954	86.35%
	Difference	-248	-204	0.40%
Tynemouth (J)	Base case	4383	4266	97.33%
	Proposal A	4316	4206	97.45%
	Difference	-67	-60	0.12%
Wallsend (G)	Base case	2656	2589	97.48%
	Proposal A	2638	2571	97.46%
	Difference	-18	-18	-0.02%
Washington (S)	Base case	2647	2469	93.28%
	Proposal A	2641	2464	93.30%
	Difference	-6	-5	0.02%
West Denton (A)	Base case	2712	2493	91.92%
	Proposal A	3813	3535	92.71%
	Difference	1101	1042	0.78%

Average Attendance Times by Station						
Station	Proposal	All Risk Levels	RL1 1 st Appliance	RL1 2 nd Appliance	RL2 1 st Appliance	RL2 2 nd Appliance
Birtley (W)	Base case	00:05:11	00:04:35	00:06:57	00:04:02	00:06:48
	Proposal A	00:05:10	00:04:35	00:06:58	00:04:03	00:06:53
	Difference	00:00:01	00:00:00	00:00:01	00:00:01	00:00:05
Byker (F)	Base case	00:04:02	00:03:29	00:04:27	00:03:29	00:04:16
	Proposal A	00:04:00	00:03:28	00:04:25	00:03:28	00:04:18
	Difference	00:00:02	00:00:01	00:00:02	00:00:01	00:00:02
Chopwell (Z)	Base case	00:14:17	00:13:17	00:16:17	00:13:36	00:16:43
	Proposal A	00:14:17	00:13:17	00:16:17	00:13:36	00:16:43
	Difference	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00
Farringdon (Q)	Base case	00:05:02	00:04:49	00:05:11	00:05:07	00:05:18
	Proposal A	00:05:02	00:04:48	00:05:10	00:05:04	00:05:21
	Difference	00:00:00	00:00:01	00:00:01	00:00:03	00:00:03
Gateshead (V)	Base case	00:04:23	00:03:47	00:04:41	00:03:40	00:05:01
	Proposal A	00:04:19	00:03:41	00:04:38	00:03:34	00:04:57
	Difference	00:00:04	00:00:06	00:00:03	00:00:06	00:00:04
Gosforth (E)	Base case	00:05:48	00:05:58	00:07:04	00:05:29	00:07:23
	Proposal A	00:05:44	00:05:59	00:07:14	00:05:30	00:06:51
	Difference	00:00:04	00:00:01	00:00:10	00:00:01	00:00:32
Hebburn (T)	Base case	00:04:42	00:04:15	00:07:10	00:04:19	00:06:34
	Proposal A	00:04:40	00:04:14	00:07:07	00:04:20	00:06:30
	Difference	00:00:02	00:00:01	00:00:03	00:00:01	00:00:04
Marley Park (M)	Base case	00:04:58	00:04:20	00:06:09	00:04:33	00:05:45
	Proposal A	00:04:57	00:04:20	00:06:07	00:04:33	00:05:45
	Difference	00:00:01	00:00:00	00:00:02	00:00:00	00:00:00
Newcastle Central (C)	Base case	00:03:56	00:03:33	00:04:20	00:03:30	00:04:21
	Proposal A	00:03:51	00:03:30	00:04:16	00:03:27	00:04:17
	Difference	00:00:05	00:00:03	00:00:04	00:00:03	00:00:04
Rainton Bridge (H)	Base case	00:05:34	00:05:25	00:05:48	00:05:17	00:05:58
	Proposal A	00:05:34	00:05:25	00:05:47	00:05:20	00:05:45
	Difference	00:00:00	00:00:00	00:00:01	00:00:03	00:00:13
South Shields (K)	Base case	00:04:23	00:04:14	00:04:54	00:04:12	00:04:58
	Proposal A	00:04:22	00:04:13	00:04:52	00:04:12	00:04:58
	Difference	00:00:01	00:00:01	00:00:02	00:00:00	00:00:00
Sunderland Central (N)	Base case	00:03:58	00:03:39	00:04:04	00:03:31	00:03:52
	Proposal A	00:03:58	00:03:39	00:04:04	00:03:32	00:03:50
	Difference	00:00:00	00:00:00	00:00:00	00:00:01	00:00:02
Swalwell (Y)	Base case	00:06:14	00:06:11	00:07:17	00:06:29	00:07:09
	Proposal A	00:06:06	00:06:10	00:07:02	00:06:29	00:06:45
	Difference	00:00:08	00:00:01	00:00:15	00:00:00	00:00:24
Tynemouth (J)	Base case	00:04:18	00:04:04	00:04:33	00:03:57	00:04:16
	Proposal A	00:04:17	00:04:03	00:04:32	00:03:56	00:04:13
	Difference	00:00:01	00:00:01	00:00:01	00:00:01	00:00:03
Wallsend (G)	Base case	00:04:19	00:03:49	00:06:35	00:03:46	00:06:19
	Proposal A	00:04:18	00:03:49	00:06:37	00:03:46	00:06:13
	Difference	00:00:01	00:00:00	00:00:02	00:00:00	00:00:06
Washington (S)	Base case	00:05:08	00:04:51	00:06:42	00:04:47	00:07:02
	Proposal A	00:05:08	00:04:51	00:06:42	00:04:47	00:07:02
	Difference	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00
West Denton (A)	Base case	00:05:23	00:04:50	00:08:43	00:04:47	00:09:07
	Proposal A	00:05:24	00:05:00	00:06:23	00:04:52	00:06:44
	Difference	00:00:01	00:00:10	00:02:20	00:00:05	00:02:23

Proposal B

Reinstate H to wholetime and W to DC(OC) 30 mins

- 15 whole-time cat 01 appliances based at Stn A, Stn C, Stn E, Stn F, Stn G, Stn H, Stn J, Stn K, Stn M, Stn N, Stn Q, Stn S, Stn T, Stn V, and Stn Y.
- 1 day crewing cat 01 appliances based at Stn W between 08:00hr and 20:00hr (then On Call 2000-0800 with delay 30min).
- 8 whole-time cat 02 appliances based at Stn A, Stn C, Stn F, Stn J, Stn K, Stn N, Stn Q and Stn V.
- 1 on-call cat 02 appliance based at Stn Z to be available on a 5 min recall to duty.

Service Impact

Proposal B would result in 31 less callouts within target time. The average attendance time for the Service for all callouts would not change.

Service	Proposal B	Callouts	In Target	% of Callouts in Target	Average Attendance Time
All Risk Levels	Base Case	67255	64416	95.78%	00:04:35
	Proposal B	67255	64385	95.73%	00:04:35
	Difference	0	-31	-0.05%	00:00:00

Service Impact by Risk Level

The average attendance time for the 1st appliance at a Risk Level 1 and a Risk Level 2 incident would increase by 1 second.

The average attendance time for the 2nd appliance at a Risk Level 1 incident would reduce by 3 seconds and the 2nd appliance at a Risk Level 2 incident would reduce by 2 seconds.

Proposal B – Service Comparison						
Risk Level	Arrival Order	Proposal	Callouts	In Target	% of Callouts in Target	Average Attendance Time
Risk Level 1	1 st Appliance	Base case	9983	8524	85.39%	00:04:18
		Proposal B	9983	8457	84.71%	00:04:19
		Difference	0	-67	-0.67%	00:00:01
	2 nd Appliance	Base case	7424	6806	91.68%	00:04:55
		Proposal B	7424	6777	91.29%	00:04:52
		Difference	0	-29	-0.39%	00:00:03
Risk Level 2	1 st Appliance	Base case	2947	2590	87.89%	00:04:11
		Proposal B	2947	2574	87.34%	00:04:12
		Difference	0	-16	-0.54%	00:00:01
	2 nd Appliance	Base case	1562	1442	92.32%	00:04:48
		Proposal B	1562	1440	92.19%	00:04:46
		Difference	0	-2	-0.13%	00:00:02

Proposal B - Station Impact

Station Overview – Proposal B - All Risk Levels				
Station	Proposal	Callouts	In Target	⌘
Birtley (W)	Base case	1745	1639	93.93%
	Proposal B	731	676	92.48%
	Difference	-1014	-963	-1.45%
Byker (F)	Base case	6636	6508	98.07%
	Proposal B	6534	6415	98.18%
	Difference	-102	-93	0.11%
Chopwell (Z)	Base case	276	72	26.09%
	Proposal B	141	74	52.48%
	Difference	-135	2	26.40%
Farrington (Q)	Base case	3696	3485	94.29%
	Proposal B	3693	3479	94.21%
	Difference	-3	-6	-0.09%
Gateshead (V)	Base case	6425	6313	98.26%
	Proposal B	6801	6587	96.85%
	Difference	376	274	-1.40%
Gosforth (E)	Base case	3442	3078	89.42%
	Proposal B	3313	2955	89.19%
	Difference	-129	-123	-0.23%
Hebburn (T)	Base case	2290	2230	97.38%
	Proposal B	2395	2299	95.99%
	Difference	105	69	-1.39%
Marley Park (M)	Base case	1628	1531	94.04%
	Proposal B	1640	1544	94.15%
	Difference	12	13	0.10%
Newcastle Central (C)	Base case	11373	11166	98.18%
	Proposal B	11206	11001	98.17%
	Difference	-167	-165	-0.01%
Rainton Bridge (H)	Base case	1822	1675	91.93%
	Proposal B	1840	1686	91.63%
	Difference	18	11	-0.30%
South Shields (K)	Base case	5353	5227	97.65%
	Proposal B	5361	5235	97.65%
	Difference	8	8	0.00%
Sunderland Central (N)	Base case	7660	7517	98.13%
	Proposal B	7654	7505	98.05%
	Difference	-6	-12	-0.08%
Swalwell (Y)	Base case	2511	2158	85.94%
	Proposal B	2366	2020	85.38%
	Difference	-145	-138	-0.57%
Tynemouth (J)	Base case	4383	4266	97.33%
	Proposal B	4318	4207	97.43%
	Difference	-65	-59	0.10%
Wallsend (G)	Base case	2656	2589	97.48%
	Proposal B	2641	2574	97.46%
	Difference	-15	-15	-0.01%
Washington (S)	Base case	2647	2469	93.28%
	Proposal B	2796	2581	92.31%
	Difference	149	112	-0.96%
West Denton (A)	Base case	2712	2493	91.92%
	Proposal B	3825	3547	92.73%
	Difference	1113	1054	0.81%

Average Attendance Times by Station						
Station	Proposal	All Risk Levels	RL1 1 st Appliance	RL1 2 nd Appliance	RL2 1 st Appliance	RL2 2 nd Appliance
Birtley (W)	Base case	00:05:11	00:04:35	00:06:57	00:04:02	00:06:48
	Proposal B	00:05:14	00:04:27	00:06:57	00:03:53	00:06:55
	Difference	00:00:03	00:00:08	00:00:00	00:00:09	00:00:07
Byker (F)	Base case	00:04:02	00:03:29	00:04:27	00:03:29	00:04:16
	Proposal B	00:04:00	00:03:28	00:04:25	00:03:28	00:04:18
	Difference	00:00:02	00:00:01	00:00:02	00:00:01	00:00:02
Chopwell (Z)	Base case	00:14:17	00:13:17	00:16:17	00:13:36	00:16:43
	Proposal B	00:11:44	00:11:31	-	00:11:37	-
	Difference	00:02:33	00:01:46	-	00:01:59	-
Farrington (Q)	Base case	00:05:02	00:04:49	00:05:11	00:05:07	00:05:18
	Proposal B	00:05:03	00:04:50	00:05:09	00:05:07	00:05:16
	Difference	00:00:01	00:00:01	00:00:02	00:00:00	00:00:02
Gateshead (V)	Base case	00:04:23	00:03:47	00:04:41	00:03:40	00:05:01
	Proposal B	00:04:35	00:04:03	00:04:49	00:03:52	00:05:12
	Difference	00:00:12	00:00:16	00:00:08	00:00:12	00:00:11
Gosforth (E)	Base case	00:05:48	00:05:58	00:07:04	00:05:29	00:07:23
	Proposal B	00:05:44	00:05:59	00:07:14	00:05:30	00:06:51
	Difference	00:00:04	00:00:01	00:00:10	00:00:01	00:00:32
Hebburn (T)	Base case	00:04:42	00:04:15	00:07:10	00:04:19	00:06:34
	Proposal B	00:04:52	00:04:16	00:07:31	00:04:20	00:07:08
	Difference	00:00:10	00:00:01	00:00:21	00:00:01	00:00:34
Marley Park (M)	Base case	00:04:58	00:04:20	00:06:09	00:04:33	00:05:45
	Proposal B	00:04:59	00:04:20	00:06:07	00:04:33	00:05:45
	Difference	00:00:01	00:00:00	00:00:02	00:00:00	00:00:00
Newcastle Central (C)	Base case	00:03:56	00:03:33	00:04:20	00:03:30	00:04:21
	Proposal B	00:03:54	00:03:33	00:04:19	00:03:31	00:04:18
	Difference	00:00:02	00:00:00	00:00:01	00:00:01	00:00:03
Rainton Bridge (H)	Base case	00:05:34	00:05:25	00:05:48	00:05:17	00:05:58
	Proposal B	00:05:36	00:05:23	00:06:33	00:05:19	00:06:12
	Difference	00:00:02	00:00:02	00:00:45	00:00:02	00:00:14
South Shields (K)	Base case	00:04:23	00:04:14	00:04:54	00:04:12	00:04:58
	Proposal B	00:04:22	00:04:13	00:04:52	00:04:12	00:04:57
	Difference	00:00:01	00:00:01	00:00:02	00:00:00	00:00:01
Sunderland Central (N)	Base case	00:03:58	00:03:39	00:04:04	00:03:31	00:03:52
	Proposal B	00:03:58	00:03:39	00:04:05	00:03:32	00:03:53
	Difference	00:00:00	00:00:00	00:00:01	00:00:01	00:00:01
Swalwell (Y)	Base case	00:06:14	00:06:11	00:07:17	00:06:29	00:07:09
	Proposal B	00:06:21	00:06:22	00:07:11	00:06:33	00:07:44
	Difference	00:00:07	00:00:11	00:00:06	00:00:04	00:00:35
Tynemouth (J)	Base case	00:04:18	00:04:04	00:04:33	00:03:57	00:04:16
	Proposal B	00:04:17	00:04:04	00:04:32	00:03:56	00:04:13
	Difference	00:00:01	00:00:00	00:00:01	00:00:01	00:00:03
Wallsend (G)	Base case	00:04:19	00:03:49	00:06:35	00:03:46	00:06:19
	Proposal B	00:04:19	00:03:49	00:06:37	00:03:46	00:06:13
	Difference	00:00:00	00:00:00	00:00:02	00:00:00	00:00:06
Washington (S)	Base case	00:05:08	00:04:51	00:06:42	00:04:47	00:07:02
	Proposal B	00:05:16	00:05:03	00:06:39	00:04:56	00:07:15
	Difference	00:00:08	00:00:12	00:00:03	00:00:09	00:00:13
West Denton (A)	Base case	00:05:23	00:04:50	00:08:43	00:04:47	00:09:07
	Proposal B	00:05:24	00:04:55	00:06:26	00:04:53	00:06:44
	Difference	00:00:01	00:00:05	00:02:17	00:00:06	00:02:23

Proposal C

Reinstate H to wholetime & W to become DC 0800-2000 and cover provided by Q02 2000-0800

- 15 whole-time cat 01 appliances based at Stn A, Stn C, Stn E, Stn F, Stn G, Stn H, Stn J, Stn K, Stn M, Stn N, Stn Q, Stn S, Stn T, Stn V, and Stn Y.
- 1 day crewing 01 appliances based at Stn W between 08:00hr and 20:00hr.
- 1 whole-time cat 02 appliances based at Stn Q between 08:00 and 20:00hr and relocating to Stn W between 20:00hr – 08:00hr.
- 7 whole-time cat 02 appliances based at Stn A, Stn C, Stn F, Stn J, Stn K, Stn N and Stn V.
- 1 on-call cat 02 appliance based at Stn Z to be available on a 5 min recall to duty.

Service Impact

Proposal C would result in 63 additional callouts within target time. The average attendance time for the Service for all callouts would not change.

Service	Proposal C	Callouts	In Target	% of Callouts in Target	Average Attendance Time
All Risk Levels	Base Case	67255	64416	95.78%	00:04:35
	Proposal C	67255	64479	95.87%	00:04:35
	Difference	0	63	0.09%	00:00:00

Service Impact by Risk Level

- The average attendance time for the 2nd appliance at a Risk Level 1 and Risk incident 2 would reduce by 1 second.

Proposal C – Service Comparison						
Risk Level	Arrival Order	Proposal	Callouts	In Target	% of Callouts in Target	Average Attendance Time
Risk Level 1	1 st Appliance	Base case	9983	8524	85.39%	00:04:18
		Proposal C	9983	8503	85.17%	00:04:18
		Difference	0	-21	-0.21%	00:00:00
	2 nd Appliance	Base case	7424	6806	91.68%	00:04:55
		Proposal C	7424	6810	91.73%	00:04:54
		Difference	0	4	0.05%	00:00:01
Risk Level 2	1 st Appliance	Base case	2947	2590	87.89%	00:04:11
		Proposal C	2947	2584	87.68%	00:04:11
		Difference	0	-6	-0.20%	00:00:00
	2 nd Appliance	Base case	1562	1442	92.32%	00:04:48
		Proposal C	1562	1445	92.51%	00:04:47
		Difference	0	3	0.19%	00:00:01

Proposal C - Station Impact

Station Overview – Proposal C - All Risk Levels				
Station	Proposal	Callouts	In Target	Δ%
Birtley (W)	Base case	1745	1639	93.93%
	Proposal C	1429	1341	93.84%
	Difference	-316	-298	-0.08%
Byker (F)	Base case	6636	6508	98.07%
	Proposal C	6562	6438	98.11%
	Difference	-74	-70	0.04%
Chopwell (Z)	Base case	276	72	26.09%
	Proposal C	141	74	52.48%
	Difference	-135	2	26.40%
Farringdon (Q)	Base case	3696	3485	94.29%
	Proposal C	2939	2758	93.84%
	Difference	-757	-727	-0.45%
Gateshead (V)	Base case	6425	6313	98.26%
	Proposal C	6404	6277	98.02%
	Difference	-21	-36	-0.24%
Gosforth (E)	Base case	3442	3078	89.42%
	Proposal C	3311	2953	89.19%
	Difference	-131	-125	-0.24%
Hebburn (T)	Base case	2290	2230	97.38%
	Proposal C	2339	2273	97.18%
	Difference	49	43	-0.20%
Marley Park (M)	Base case	1628	1531	94.04%
	Proposal C	1667	1569	94.12%
	Difference	39	38	0.08%
Newcastle Central (C)	Base case	11373	11166	98.18%
	Proposal C	11176	10986	98.30%
	Difference	-197	-180	0.12%
Rainton Bridge (H)	Base case	1822	1675	91.93%
	Proposal C	1867	1722	92.23%
	Difference	45	47	0.30%
South Shields (K)	Base case	5353	5227	97.65%
	Proposal C	5386	5256	97.59%
	Difference	33	29	-0.06%
Sunderland Central (N)	Base case	7660	7517	98.13%
	Proposal C	8129	7935	97.61%
	Difference	469	418	-0.52%
Swalwell (Y)	Base case	2511	2158	85.94%
	Proposal C	2361	2016	85.39%
	Difference	-150	-142	-0.55%
Tynemouth (J)	Base case	4383	4266	97.33%
	Proposal C	4356	4243	97.41%
	Difference	-27	-23	0.08%
Wallsend (G)	Base case	2656	2589	97.48%
	Proposal C	2652	2582	97.36%
	Difference	-4	-7	-0.12%
Washington (S)	Base case	2647	2469	93.28%
	Proposal C	2705	2510	92.79%
	Difference	58	41	-0.48%
West Denton (A)	Base case	2712	2493	91.92%
	Proposal C	2733	2514	91.99%
	Difference	21	21	0.06%

Average Attendance Times by Station						
Station	Proposal	All Risk Levels	RL1 1 st Appliance	RL1 2 nd Appliance	RL2 1 st Appliance	RL2 2 nd Appliance
Birtley (W)	Base case	00:05:11	00:04:35	00:06:57	00:04:02	00:06:48
	Proposal C	00:05:11	00:04:31	00:06:59	00:03:56	00:06:56
	Difference	00:00:00	00:00:04	00:00:02	00:00:06	00:00:08
Byker (F)	Base case	00:04:02	00:03:29	00:04:27	00:03:29	00:04:16
	Proposal C	00:04:00	00:03:28	00:04:26	00:03:29	00:04:17
	Difference	00:00:02	00:00:01	00:00:01	00:00:00	00:00:01
Chopwell (Z)	Base case	00:14:17	00:13:17	00:16:17	00:13:36	00:16:43
	Proposal C	00:11:44	00:11:31	-	00:11:37	-
	Difference	00:02:33	00:01:46	-	00:01:59	-
Farringdon (Q)	Base case	00:05:02	00:04:49	00:05:11	00:05:07	00:05:18
	Proposal C	00:05:01	00:04:48	00:05:10	00:05:13	00:05:06
	Difference	00:00:01	00:00:01	00:00:01	00:00:06	00:00:12
Gateshead (V)	Base case	00:04:23	00:03:47	00:04:41	00:03:40	00:05:01
	Proposal C	00:04:26	00:03:49	00:04:44	00:03:38	00:05:03
	Difference	00:00:03	00:00:02	00:00:03	00:00:02	00:00:02
Gosforth (E)	Base case	00:05:48	00:05:58	00:07:04	00:05:29	00:07:23
	Proposal C	00:05:44	00:05:59	00:07:16	00:05:30	00:06:51
	Difference	00:00:04	00:00:01	00:00:12	00:00:01	00:00:32
Hebburn (T)	Base case	00:04:42	00:04:15	00:07:10	00:04:19	00:06:34
	Proposal C	00:04:46	00:04:15	00:07:18	00:04:22	00:06:30
	Difference	00:00:04	00:00:00	00:00:08	00:00:03	00:00:04
Marley Park (M)	Base case	00:04:58	00:04:20	00:06:09	00:04:33	00:05:45
	Proposal C	00:04:59	00:04:21	00:06:02	00:04:34	00:05:44
	Difference	00:00:01	00:00:01	00:00:07	00:00:01	00:00:01
Newcastle Central (C)	Base case	00:03:56	00:03:33	00:04:20	00:03:30	00:04:21
	Proposal C	00:03:53	00:03:31	00:04:19	00:03:30	00:04:18
	Difference	00:00:03	00:00:02	00:00:01	00:00:00	00:00:03
Rainton Bridge (H)	Base case	00:05:34	00:05:25	00:05:48	00:05:17	00:05:58
	Proposal C	00:05:39	00:05:21	00:06:30	00:05:23	00:06:10
	Difference	00:00:05	00:00:04	00:00:42	00:00:06	00:00:12
South Shields (K)	Base case	00:04:23	00:04:14	00:04:54	00:04:12	00:04:58
	Proposal C	00:04:24	00:04:14	00:04:53	00:04:10	00:04:59
	Difference	00:00:01	00:00:00	00:00:01	00:00:02	00:00:01
Sunderland Central (N)	Base case	00:03:58	00:03:39	00:04:04	00:03:31	00:03:52
	Proposal C	00:04:07	00:03:44	00:04:27	00:03:33	00:04:12
	Difference	00:00:09	00:00:05	00:00:23	00:00:02	00:00:20
Swalwell (Y)	Base case	00:06:14	00:06:11	00:07:17	00:06:29	00:07:09
	Proposal C	00:06:20	00:06:28	00:06:54	00:06:35	00:07:38
	Difference	00:00:06	00:00:17	00:00:23	00:00:06	00:00:29
Tynemouth (J)	Base case	00:04:18	00:04:04	00:04:33	00:03:57	00:04:16
	Proposal C	00:04:17	00:04:03	00:04:33	00:03:57	00:04:14
	Difference	00:00:01	00:00:01	00:00:00	00:00:00	00:00:02
Wallsend (G)	Base case	00:04:19	00:03:49	00:06:35	00:03:46	00:06:19
	Proposal C	00:04:18	00:03:50	00:06:38	00:03:47	00:06:13
	Difference	00:00:01	00:00:01	00:00:03	00:00:01	00:00:06
Washington (S)	Base case	00:05:08	00:04:51	00:06:42	00:04:47	00:07:02
	Proposal C	00:05:12	00:04:55	00:06:42	00:04:50	00:07:18
	Difference	00:00:04	00:00:04	00:00:00	00:00:03	00:00:16
West Denton (A)	Base case	00:05:23	00:04:50	00:08:43	00:04:47	00:09:07
	Proposal C	00:05:24	00:04:59	00:06:23	00:04:51	00:06:45
	Difference	00:00:01	00:00:09	00:02:20	00:00:04	00:02:22

Proposal D

Reinstate H to wholetime and W to become On-Call

- 15 whole-time cat 01 appliances based at Stn A, Stn C, Stn E, Stn F, Stn G, Stn H, Stn J, Stn K, Stn M, Stn N, Stn Q, Stn S, Stn T, Stn V, and Stn Y.
- 8 whole-time cat 02 appliances based at Stn A, Stn C, Stn F, Stn J, Stn K, Stn N, Stn Q and Stn V.
- 1 on-call cat 02 appliance based at Stn W to be available on a 30 min recall to duty.
- 1 on-call cat 02 appliance based at Stn Z to be available on a 5 min recall to duty.

Service Impact

Proposal D would result in 204 less callouts within target time. The average attendance time for the Service for all callouts would increase by 2 seconds.

Service	Proposal D	Callouts	In Target	% of Callouts in Target	Average Attendance Time
All Risk Levels	Base Case	67255	64416	95.78%	00:04:35
	Proposal D	67255	64212	95.48%	00:04:37
	Difference	0	-204	-0.30%	00:00:02

Service Impact by Risk Level

The average attendance time for the 1st appliance at a Risk Level 1 and Risk incident 2 would increase by 3 seconds.

The average attendance time for the 2nd appliance at a Risk Level 1 and Risk incident 2 would reduce by 1 second.

Proposal D – Service Comparison						
Risk Level	Arrival Order	Proposal	Callouts	In Target	% of Callouts in Target	Average Attendance Time
Risk Level 1	1 st Appliance	Base case	9983	8524	85.39%	00:04:18
		Proposal D	9983	8380	83.94%	00:04:21
		Difference	0	-144	-1.44%	00:00:03
	2 nd Appliance	Base case	7424	6806	91.68%	00:04:55
		Proposal D	7424	6707	90.34%	00:04:54
		Difference	0	-99	-1.33%	00:00:01
Risk Level 2	1 st Appliance	Base case	2947	2590	87.89%	00:04:11
		Proposal D	2947	2558	86.80%	00:04:14
		Difference	0	-32	-1.09%	00:00:03
	2 nd Appliance	Base case	1562	1442	92.32%	00:04:48
		Proposal D	1562	1433	91.74%	00:04:47
		Difference	0	-9	-0.58%	00:00:01

Proposal D - Station Impact

Station Overview – Proposal D - All Risk Levels				
Station	Proposal	Callouts	In Target	Δ%
Birtley (W)	Base case	1745	1639	93.93%
	Proposal D	-	-	-
	Difference	-	-	-
Byker (F)	Base case	6636	6508	98.07%
	Proposal D	6560	6440	98.17%
	Difference	-76	-68	0.10%
Chopwell (Z)	Base case	276	72	26.09%
	Proposal D	141	74	52.48%
	Difference	-135	2	26.40%
Farringdon (Q)	Base case	3696	3485	94.29%
	Proposal D	3701	3472	93.81%
	Difference	5	-13	-0.48%
Gateshead (V)	Base case	6425	6313	98.26%
	Proposal D	7206	6869	95.32%
	Difference	781	556	-2.93%
Gosforth (E)	Base case	3442	3078	89.42%
	Proposal D	3316	2958	89.20%
	Difference	-126	-120	-0.22%
Hebburn (T)	Base case	2290	2230	97.38%
	Proposal D	2487	2353	94.61%
	Difference	197	123	-2.77%
Marley Park (M)	Base case	1628	1531	94.04%
	Proposal D	1641	1545	94.15%
	Difference	13	14	0.11%
Newcastle Central (C)	Base case	11373	11166	98.18%
	Proposal D	11247	11042	98.18%
	Difference	-126	-124	0.00%
Rainton Bridge (H)	Base case	1822	1675	91.93%
	Proposal D	1856	1703	91.76%
	Difference	34	28	-0.18%
South Shields (K)	Base case	5353	5227	97.65%
	Proposal D	5318	5191	97.61%
	Difference	-35	-36	-0.03%
Sunderland Central (N)	Base case	7660	7517	98.13%
	Proposal D	7671	7512	97.93%
	Difference	11	-5	-0.21%
Swalwell (Y)	Base case	2511	2158	85.94%
	Proposal D	2376	2022	85.10%
	Difference	-135	-136	-0.84%
Tynemouth (J)	Base case	4383	4266	97.33%
	Proposal D	4351	4238	97.40%
	Difference	-32	-28	0.07%
Wallsend (G)	Base case	2656	2589	97.48%
	Proposal D	2646	2580	97.51%
	Difference	-10	-9	0.03%
Washington (S)	Base case	2647	2469	93.28%
	Proposal D	2902	2659	91.63%
	Difference	255	190	-1.65%
West Denton (A)	Base case	2712	2493	91.92%
	Proposal D	3836	3554	92.65%
	Difference	1124	1061	0.72%

Average Attendance Times by Station						
Station	Proposal	All Risk Levels	RL1 1 st Appliance	RL1 2 nd Appliance	RL2 1 st Appliance	RL2 2 nd Appliance
Birtley (W)	Base case	00:05:11	00:04:35	00:06:57	00:04:02	00:06:48
	Proposal D	-	-	-	-	-
	Difference	-	-	-	-	-
Byker (F)	Base case	00:04:02	00:03:29	00:04:27	00:03:29	00:04:16
	Proposal D	00:04:00	00:03:28	00:04:27	00:03:28	00:04:18
	Difference	00:00:02	00:00:01	00:00:00	00:00:01	00:00:02
Chopwell (Z)	Base case	00:14:17	00:13:17	00:16:17	00:13:36	00:16:43
	Proposal D	00:11:44	00:11:31	-	00:11:37	-
	Difference	00:02:33	00:01:46	-	00:01:59	-
Farrington (Q)	Base case	00:05:02	00:04:49	00:05:11	00:05:07	00:05:18
	Proposal D	00:05:03	00:04:53	00:05:08	00:05:08	00:05:19
	Difference	00:00:01	00:00:04	00:00:03	00:00:01	00:00:01
Gateshead (V)	Base case	00:04:23	00:03:47	00:04:41	00:03:40	00:05:01
	Proposal D	00:04:44	00:04:21	00:05:01	00:04:06	00:05:23
	Difference	00:00:21	00:00:34	00:00:20	00:00:26	00:00:22
Gosforth (E)	Base case	00:05:48	00:05:58	00:07:04	00:05:29	00:07:23
	Proposal D	00:05:44	00:05:59	00:07:14	00:05:30	00:06:51
	Difference	00:00:04	00:00:01	00:00:10	00:00:01	00:00:32
Hebburn (T)	Base case	00:04:42	00:04:15	00:07:10	00:04:19	00:06:34
	Proposal D	00:05:00	00:04:18	00:07:46	00:04:23	00:07:15
	Difference	00:00:18	00:00:03	00:00:36	00:00:04	00:00:41
Marley Park (M)	Base case	00:04:58	00:04:20	00:06:09	00:04:33	00:05:45
	Proposal D	00:04:59	00:04:20	00:06:07	00:04:33	00:05:45
	Difference	00:00:01	00:00:00	00:00:02	00:00:00	00:00:00
Newcastle Central (C)	Base case	00:03:56	00:03:33	00:04:20	00:03:30	00:04:21
	Proposal D	00:03:55	00:03:34	00:04:20	00:03:30	00:04:19
	Difference	00:00:01	00:00:01	00:00:00	00:00:00	00:00:02
Rainton Bridge (H)	Base case	00:05:34	00:05:25	00:05:48	00:05:17	00:05:58
	Proposal D	00:05:39	00:05:20	00:06:55	00:05:23	00:05:59
	Difference	00:00:05	00:00:05	00:01:07	00:00:06	00:00:01
South Shields (K)	Base case	00:04:23	00:04:14	00:04:54	00:04:12	00:04:58
	Proposal D	00:04:23	00:04:14	00:04:53	00:04:10	00:04:57
	Difference	00:00:00	00:00:00	00:00:01	00:00:02	00:00:01
Sunderland Central (N)	Base case	00:03:58	00:03:39	00:04:04	00:03:31	00:03:52
	Proposal D	00:03:59	00:03:40	00:04:06	00:03:32	00:03:56
	Difference	00:00:01	00:00:01	00:00:02	00:00:01	00:00:04
Swalwell (Y)	Base case	00:06:14	00:06:11	00:07:17	00:06:29	00:07:09
	Proposal D	00:06:21	00:06:21	00:07:19	00:06:36	00:07:32
	Difference	00:00:07	00:00:10	00:00:02	00:00:07	00:00:23
Tynemouth (J)	Base case	00:04:18	00:04:04	00:04:33	00:03:57	00:04:16
	Proposal D	00:04:17	00:04:04	00:04:32	00:03:57	00:04:14
	Difference	00:00:01	00:00:00	00:00:01	00:00:00	00:00:02
Wallsend (G)	Base case	00:04:19	00:03:49	00:06:35	00:03:46	00:06:19
	Proposal D	00:04:19	00:03:49	00:06:34	00:03:46	00:06:13
	Difference	00:00:00	00:00:00	00:00:01	00:00:00	00:00:06
Washington (S)	Base case	00:05:08	00:04:51	00:06:42	00:04:47	00:07:02
	Proposal D	00:05:21	00:05:11	00:06:43	00:05:06	00:07:13
	Difference	00:00:13	00:00:20	00:00:01	00:00:19	00:00:11
West Denton (A)	Base case	00:05:23	00:04:50	00:08:43	00:04:47	00:09:07
	Proposal D	00:05:25	00:05:00	00:06:24	00:04:51	00:06:45
	Difference	00:00:02	00:00:10	00:02:19	00:00:04	00:02:22

