South Yorkshire
FIRE & RESCUE

FIRE COVER REVIEW

2025

Making
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YORKSHIRE
SAFER &
STRONGER

Fire Cover Review

We asked experienced external data specialists to review our fire cover. They used simulation models to predict the impact changes might have on our 999 response service.

Just because we considered various scenarios doesn't mean we're going to implement them. But it's important we understand the impact certain changes could have. Firstly, so we know our fire stations and fire appliances are in the best places to meet local risk. Secondly, to help us think about investments or efficiencies we might need to consider in the future, should our funding significantly improve or reduce.

Call demand

Seven years' data told us our average daily call demand for all incidents, demand by month and time of day and the average number of fire appliances per incident. This helped us to work out whether we have the right level of resources to meet current demand. It also helped us think about the times of day when we deliver our services in the community, informing things like station work routines.

Our data specialists' bespoke simulation model simulates the entire life-cycle of emergency incidents, it is validated to reflect the analysed position of the service and can then be used to assess changes to operations and demand.

Station locations

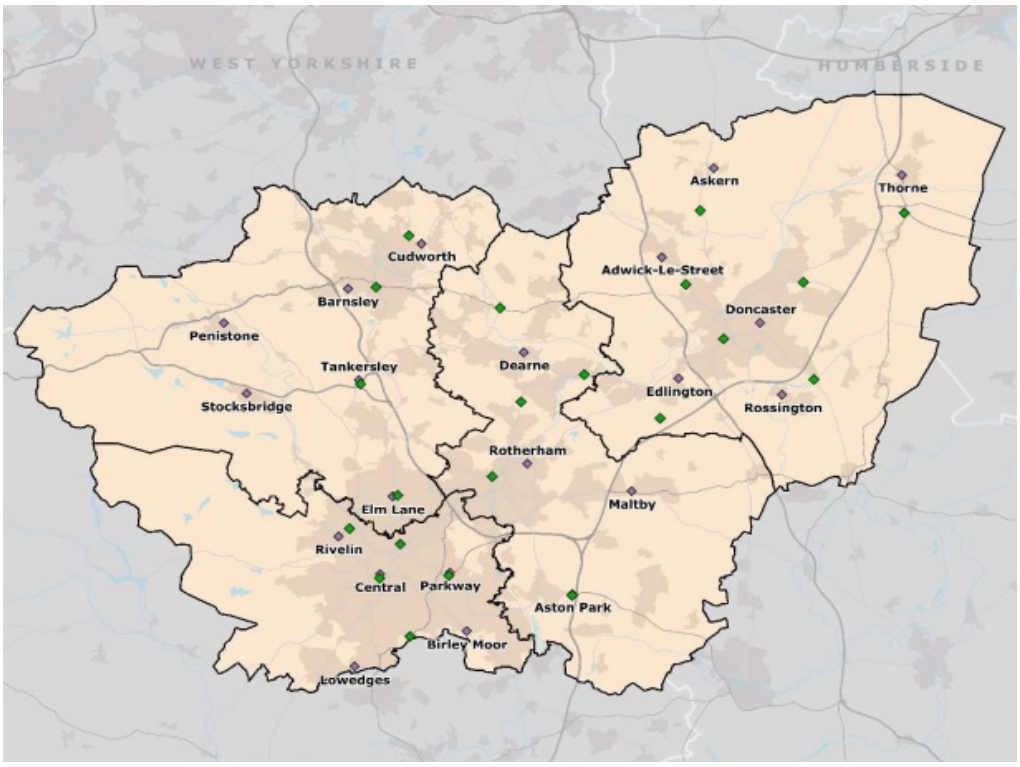
We modelled what would happen if we picked up all our fire stations and appliances and moved them to optimal (based on the data) locations across South Yorkshire. We found very little difference in response times when moving fire stations and appliance from the base location to the theoretical, 'best' locations.

Station	Travel time impact	% of sites providing better travel time
Thorne	-00:05	40
Dearne	-00:04	21
Edlington	-00:04	23
Adwick	-00:04	63
Rotherham	-00:03	8
Elm Lane	-00:02	19
Doncaster	-00:02	10
Barnsley	-00:02	19
Birley Moor	-00:02	27
Tankerersley	-00:02	16
Lowedges	-00:02	33
Central	-00:02	2
Parkway	-00:01	2
Rivelin Valley	-00:01	10
Maltby	-00:01	36
Rossington	-00:01	54
Penistone	-00:00	68
Cudworth	-00:00	3
Askern	-00:00	14
Stocksbridge	-00:00	21
Aston Park	-00:00	1

Station	Travel time impact	% of sites providing better travel time
Penistone	-00:00	68
Adwick	-00:04	63
Rossington	-00:01	54
Thorne	-00:05	40
Maltby	-00:01	36
Lowedges	-00:02	33
Birley Moor	-00:02	27
Edlington	-00:04	23
Stocksbridge	-00:00	21
Dearne	-00:04	21
Elm Lane	-00:02	19
Barnsley	-00:02	19
Tankerersley	-00:02	16
Askern	-00:00	14
Doncaster	-00:02	10
Rivelin Valley	-00:01	10
Rotherham	-00:03	8
Cudworth	-00:00	3
Parkway	-00:01	2
Central	-00:02	2
Aston Park	-00:00	1

For example: moving Thorne station to its optimal site, improves average travel times by 5 seconds service-wide, and 40% of the locations within its 7 minute radius provide better average travel time coverage.

Optimal Locations



We also looked at the impact of moving specific fire stations to new sites. Whilst some changes (like moving Doncaster, Lowedges or Thorne to new locations) would improve response times by a few seconds, the level investment required to build a new fire station on new land doesn't currently justify this decision.

Investments

Next we looked at what the impact would be if a significant increase to our long term funding meant we could invest in frontline response resources.

Increasing on-call appliance availability to 90% would improve response times service wide by six seconds for the first pump and 12 seconds for the second pump. We continue to work hard to achieve the best possible availability of our on-call appliances, though 90% availability is perhaps not realistic given the challenges all fire services face in achieving availability like this.

Local Authority	Mean First Response Impact			Mean Second Response Impact		
	60%	75%	90%	60%	75%	90%
Barnsley	-00:02	-00:04	-00:07	-00:07	-00:12	-00:16
Doncaster	-00:06	-00:11	-00:16	-00:07	-00:14	-00:21
Rotherham	-00:02	-00:03	-00:04	-00:12	-00:17	-00:21
Sheffield	-00:01	-00:00	-00:01	-00:01	-00:01	-00:03
SYFR-wide average	**-00:02**	**-00:04**	**-00:06**	**-00:04**	**-00:08**	**-00:12**

By improving on-call availability to 90%, mean first response improves by 6 seconds service-wide and mean second response by 12 seconds service-wide.

The largest impact is in Doncaster, where improvements to Askern and Rossington allow those stations to be on the run more often and respond to incidents in their catchment.

Making the second fire engines at Barnsley and Rotherham fire stations from day staffing to wholetime would have minimal impact on response times for the first pump. The change would improve response times by 57 seconds and 78 seconds for the second pump at Barnsley and Rotherham fire stations respectively. Given 80% of our incidents involve just one pump though, this doesn't make the level of long term investment required to make this change viable currently.

Single Wholetime Additions – Method

Station WT added to	First impact	Second impact
Elm Lane	-00:03	-00:14
Tankerersley	-00:03	-00:09
Stocksbridge	-00:03	-00:04
Cudworth	-00:02	-00:13
Askern	-00:02	-00:09
Parkway	-00:02	-00:10
Penistone	-00:02	-00:03
Rivelin Valley	-00:02	-00:15
Adwick	-00:02	-00:09
Edlington	-00:02	-00:09
Thorne	-00:01	-00:13
Aston Park	-00:01	-00:09
Maltby	-00:01	-00:06
Lowedges	-00:01	-00:09

Elm Lane would be the best location if we were to **introduce a second wholetime pump at an existing single pump station**, improving the first pump response time across the service by three seconds, and the second pump response time by 14 seconds service-wide. This isn't affordable currently.

SYFR-wide Mean Summary

Local Authority	Mean First Response Impact			Mean Second Response Impact		
	Base	Option	Impact	Base	Option	Impact
Barnsley	08:47	08:47	00:00	10:33	10:32	00:00
Doncaster	08:36	08:36	00:00	10:25	10:25	00:00
Rotherham	07:33	07:33	00:00	10:30	10:30	00:00
Sheffield	06:36	06:32	-00:04	08:04	07:33	-00:31
SYFR-wide average	**07:42**	**07:40**	**-00:02**	**09:19**	**09:04**	**-00:15**

SYFR-wide Mean First Summary

Community Risk	High Incident Risk			Medium Incident Risk			Low Incident Risk		
	Base	Option	Impact	Base	Option	Impact	Base	Option	Impact
High	07:12	07:11	-00:01	07:35	07:34	-00:02	07:57	07:56	-00:01
Medium	07:19	07:18	-00:01	07:18	07:16	-00:02	07:52	07:51	-00:01
Low	07:21	07:18	-00:02	07:25	07:21	-00:04	07:47	07:44	-00:03

If we could afford to **upgrade an on-call fire station to wholetime,** then doing this at Rossington would have to biggest service-wide impact on the first pump response time- improving it by an average of six seconds. Making the same change at Askern would have the biggest impact on the response time of the second pump service-wide.

SYFR-wide Mean Summary

Local Authority	Mean First Response Impact			Mean Second Response Impact		
	Base	Option	Impact	Base	Option	Impact
Barnsley	08:47	08:47	00:00	10:33	10:33	00:00
Doncaster	08:36	08:15	-00:21	10:25	10:10	-00:15
Rotherham	07:33	07:32	00:00	10:30	10:29	-00:01
Sheffield	06:36	06:36	00:00	08:04	08:04	00:00
SYFR-wide average	**07:42**	**07:36**	**-00:06**	**09:19**	**09:15**	**-00:04**

SYFR-wide Mean First Summary

Community Risk	High Incident Risk			Medium Incident Risk			Low Incident Risk		
	Base	Option	Impact	Base	Option	Impact	Base	Option	Impact
High	07:12	07:06	-00:06	07:35	07:30	-00:05	07:57	07:54	-00:03
Medium	07:19	07:12	-00:07	07:18	07:12	-00:07	07:52	07:46	-00:06
Low	07:21	07:14	-00:07	07:25	07:20	-00:05	07:47	07:40	-00:07

If we were to **introduce a new wholetime fire station** anywhere in South Yorkshire, a theoretical location somewhere between Wombwell and Thurnscoe would be the best location. This would improve service-wide first pump response times by 14 seconds, or in Barnsley district by just over a minute. Building and staffing a new wholetime fire station isn't affordable currently.

New Station Location – Method

On-call Upgrade – Method

Station upgraded	First impact	Second impact
Askern	-00:04	-00:05
Penistone	-00:02	-00:02
Rossington	-00:06	-00:04
Stocksbridge	-00:02	-00:03

SYFR-wide Mean Summary

Local Authority	Mean First Response Impact			Mean Second Response Impact		
	Base	Option	Impact	Base	Option	Impact
Barnsley	08:47	07:45	-01:02	10:33	09:27	-01:05
Doncaster	08:36	08:32	-00:04	10:25	10:16	-00:09
Rotherham	07:33	07:26	-00:07	10:30	10:10	-00:21
Sheffield	06:36	06:36	00:00	08:04	08:04	00:00
SYFR-wide average	**07:42**	**07:28**	**-00:14**	**09:19**	**09:05**	**-00:14**

SYFR-wide Mean First Summary

Community Risk	High Incident Risk			Medium Incident Risk			Low Incident Risk		
	Base	Option	Impact	Base	Option	Impact	Base	Option	Impact
High	07:12	06:57	-00:16	07:35	07:23	-00:12	07:57	07:41	-00:16
Medium	07:19	06:57	-00:22	07:18	07:02	-00:16	07:52	07:33	-00:19
Low	07:21	07:12	-00:09	07:25	07:19	-00:06	07:47	07:39	-00:08

Efficiencies

We also looked at the impact of different changes, should we have to make further efficiencies.

Removing the second, on-call appliances at Birley Moor and Dearne fire stations would have little effect on first pump response, including to high-risk incidents. But it would slow the second-pump service wide response time average by four seconds. We don't need to make this change at this time. We also believe these appliances give us resilience for responding to larger incidents or 'spate' conditions.

SYFR-wide Mean Summary

Local Authority	Mean First Response Impact			Mean Second Response Impact		
	Base	Option	Impact	Base	Option	Impact
Barnsley	08:47	08:47	00:00	10:33	10:35	00:02
Doncaster	08:36	08:37	00:01	10:25	10:28	00:03
Rotherham	07:33	07:34	00:01	10:30	10:34	00:04
Sheffield	06:36	06:36	00:00	08:04	08:04	00:00
SYFR-wide average	**07:42**	**07:42**	00:00	**09:19**	**09:21**	**00:02**

SYFR-wide Mean Second Summary

Community Risk	High Incident Risk			Medium Incident Risk			Low Incident Risk		
	Base	Option	Impact	Base	Option	Impact	Base	Option	Impact
High	09:34	09:35	00:01	12:29	12:33	00:04	09:04	09:06	00:01
Medium	10:07	10:12	00:05	13:14	13:18	00:05	08:52	08:56	00:03
Low	09:56	09:57	00:01	12:06	12:07	00:02	08:17	08:17	00:00

SYFR-wide Mean Summary

Local Authority	Mean First Response Impact			Mean Second Response Impact		
	Base	Option	Impact	Base	Option	Impact
Barnsley	08:47	08:47	00:00	10:33	10:32	00:00
Doncaster	08:36	08:36	00:00	10:25	10:25	00:00
Rotherham	07:33	07:33	00:00	10:30	10:31	00:01
Sheffield	06:36	06:37	00:01	08:04	08:09	00:05
SYFR-wide average	**07:42**	**07:42**	00:00	**09:19**	**09:22**	**00:02**

SYFR-wide Mean Second Summary

Community Risk	High Incident Risk			Medium Incident Risk			Low Incident Risk		
	Base	Option	Impact	Base	Option	Impact	Base	Option	Impact
High	09:34	09:35	00:01	12:29	12:33	00:04	09:04	09:06	00:01
Medium	10:07	10:12	00:05	13:14	13:18	00:05	08:52	08:56	00:03
Low	09:56	09:57	00:01	12:06	12:07	00:02	08:17	08:17	00:00

Changing the second pump at Central station from wholetime to day staffing would slow the response time of second pumps to incidents in Sheffield by 49 seconds, or by 24 seconds service-wide. Doing the same thing at Doncaster station would slow second pump response times by 67 seconds in Doncaster district and an average of 16 seconds service-wide. We don't need to make this change at this time.

SYFR-wide Mean Summary

Local Authority	Mean First Response Impact			Mean Second Response Impact		
	Base	Option	Impact	Base	Option	Impact
Barnsley	08:47	08:47	00:00	10:33	10:33	00:00
Doncaster	08:36	08:36	00:00	10:25	10:25	00:00
Rotherham	07:33	07:33	00:00	10:30	10:31	00:00
Sheffield	06:36	06:42	00:05	08:04	08:53	00:49
SYFR-wide average	**07:42**	**07:44**	00:02	**09:19**	**09:43**	**00:24**

SYFR-wide Mean Second Summary

Community Risk	High Incident Risk			Medium Incident Risk			Low Incident Risk		
	Base	Option	Impact	Base	Option	Impact	Base	Option	Impact
High	09:34	09:46	00:12	12:29	12:39	00:10	09:04	09:18	00:13
Medium	10:07	10:27	00:20	13:14	13:34	00:20	08:52	09:20	00:28
Low	09:56	10:14	00:18	12:06	12:34	00:28	08:17	08:55	00:38

SYFR-wide Mean Summary

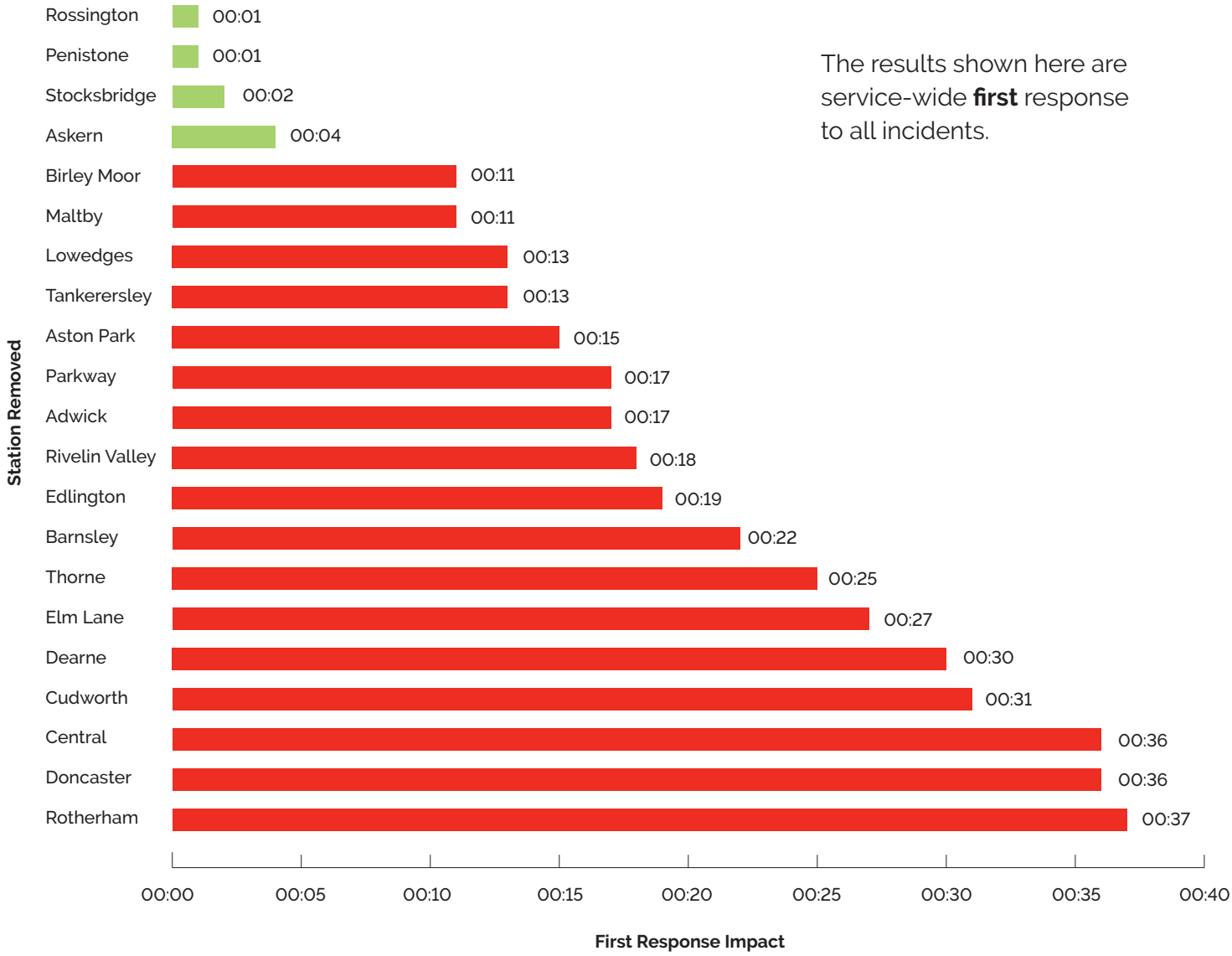
Local Authority	Mean First Response Impact			Mean Second Response Impact		
	Base	Option	Impact	Base	Option	Impact
Barnsley	08:47	08:47	00:00	10:33	10:33	00:00
Doncaster	08:36	08:42	00:06	10:25	11:32	01:07
Rotherham	07:33	07:33	00:00	10:30	10:30	00:00
Sheffield	06:36	06:36	00:00	08:04	08:04	00:00
SYFR-wide average	**07:42**	**07:43**	00:02	**09:19**	**09:35**	**00:16**

SYFR-wide Mean Second Summary

Community Risk	High Incident Risk			Medium Incident Risk			Low Incident Risk		
	Base	Option	Impact	Base	Option	Impact	Base	Option	Impact
High	09:34	09:50	00:16	12:29	12:48	00:19	09:04	09:26	00:21
Medium	10:07	10:19	00:12	13:14	13:28	00:14	08:52	09:03	00:11
Low	09:56	10:11	00:18	12:06	12:33	00:27	08:17	08:32	00:16

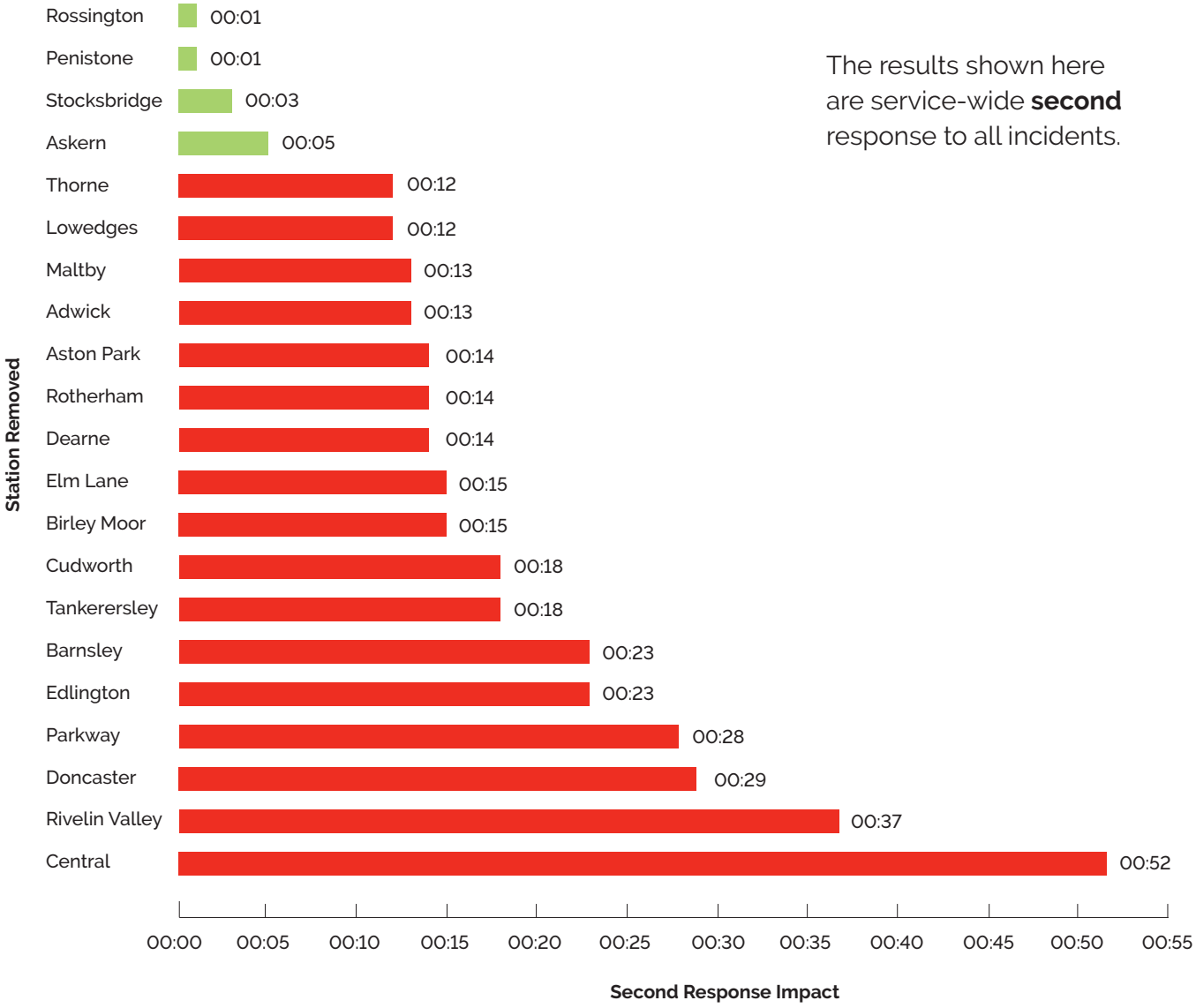
If we were in the position of having to **remove a wholetime fire station**, then removing Birley Moor would have the least impact on our first pump response times- slowing times by an average of 11 seconds service wide. Removing Thorne would have the least impact on our second pump response times- slowing times by an average of 12 seconds service wide. We don't need to make this change at this time.

Station Contribution Results – First Response



The results shown here are service-wide **first** response to all incidents.

Station Contribution Results – Second Response

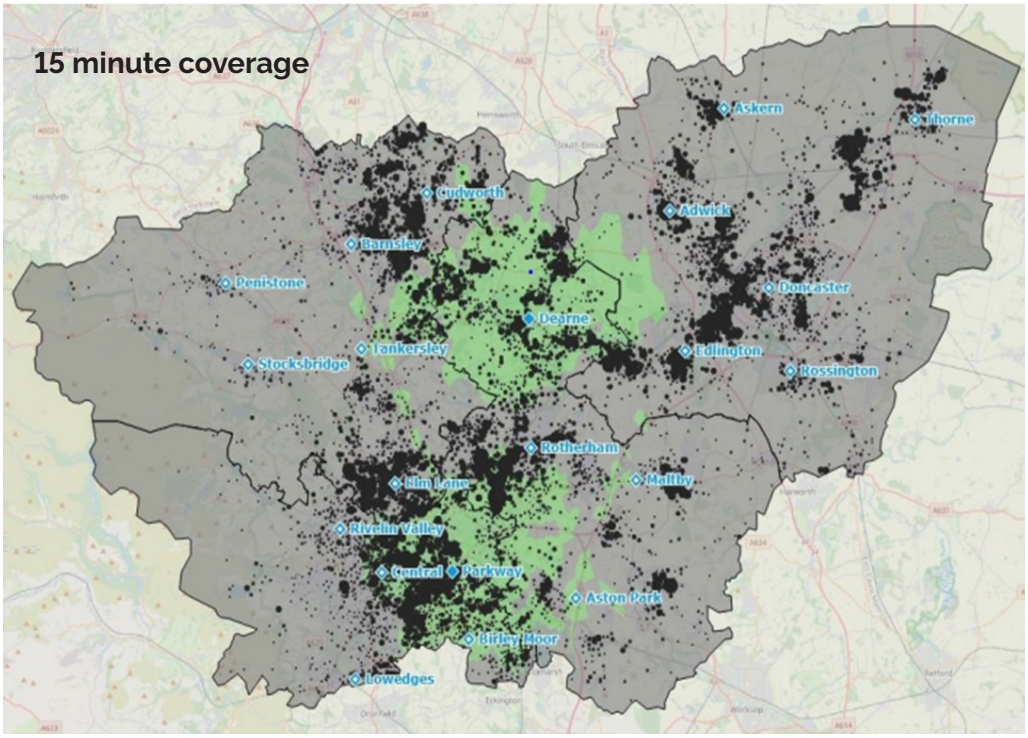


The results shown here are service-wide **second** response to all incidents.

Small Incident Units

We considered whether Cudworth and Rossington small incident units are in the best locations for reaching low risk incidents within 15 minutes- keeping main fire engines available for medium and high-risk incidents. We found Dearne and Parkway to be best locations for these units, as they are able to respond to more low-risk incidents within 15 minutes from those locations.

Optimal Distribution of SIUs – Coverage Images



The black dots represent demand the SIU could respond to, and the green shading highlights the areas the SIUs can reach in the target response time.

We're moving the SIU at Cudworth to Dearne, and widening its remit to include gaining entry calls, in our Community Risk Management Plan. This will also generate some efficiency savings.

We aren't moving the SIU from Rossington to Parkway at this time. We currently use on-call firefighters to staff SIUs. There are currently no on-call firefighters at Parkway fire station. We'd need to carry out a feasibility study to understand if an on-call staffing model could be achieved in the station's current location.

On-call appliances

We considered the impact of replacing the on-call fire appliance at Rossington with the existing wholetime second fire appliance at Doncaster fire station. We found that whilst this would improve first pump response times in the Rossington station area, it would slow response times in other parts of Doncaster district. For this reason, we aren't considering this change at this time.

SYFR-wide Mean Summary

Local Authority	Mean First Response Impact			Mean Second Response Impact		
	Base	Option	Impact	Base	Option	Impact
Barnsley	08:47	08:49	00:02	10:33	10:36	00:03
Doncaster	08:36	09:22	00:46	10:25	12:52	02:26
Rotherham	07:33	07:34	00:01	10:30	10:30	00:00
Sheffield	06:36	06:36	00:00	08:04	08:04	00:00
SYFR-wide average	**07:42**	**07:54**	00:13	**09:19**	**09:54**	**00:35**

SYFR-wide Mean Second Summary

Community Risk	High Incident Risk			Medium Incident Risk			Low Incident Risk		
	Base	Option	Impact	Base	Option	Impact	Base	Option	Impact
High	09:34	10:09	00:35	12:29	13:21	00:52	09:04	09:56	00:52
Medium	10:07	10:36	00:30	13:14	13:50	00:36	08:52	09:19	00:27
Low	09:56	10:24	00:28	12:06	12:57	00:52	08:17	08:47	00:31

Removing Rossington's on-call fire engine in the daytime would have virtually no impact on first pump and second pump response times service wide because existing day-time availability for this appliance is very low. We remain committed to increasing daytime availability for this appliance.

SYFR-wide Mean Summary

Local Authority	Mean First Response Impact			Mean Second Response Impact		
	Base	Option	Impact	Base	Option	Impact
Barnsley	08:47	08:47	00:00	10:33	10:33	00:00
Doncaster	08:36	08:37	00:01	10:25	10:26	00:01
Rotherham	07:33	07:33	00:00	10:30	10:30	00:00
Sheffield	06:36	06:36	00:00	08:04	08:04	00:00
SYFR-wide average	**07:42**	**07:42**	00:00	**09:19**	**09:19**	**00:00**

SYFR-wide Mean Second Summary

Community Risk	High Incident Risk			Medium Incident Risk			Low Incident Risk		
	Base	Option	Impact	Base	Option	Impact	Base	Option	Impact
High	09:34	09:34	00:00	12:29	12:29	00:00	09:04	09:05	00:00
Medium	10:07	10:07	00:00	13:14	13:14	00:00	08:52	08:52	00:00
Low	09:56	09:56	00:00	12:06	12:06	00:00	08:17	08:17	00:00

Lastly, we considered the impact of **moving the wholetime fire engine at Birley Moor fire station to any of our existing on-call only fire stations**. Wherever we moved this to, response time averages for both the first and second pumps would slow service-wide. Birley Moor remains the best place for this appliance therefore.

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