Appendix A

Summary of protected characteristics in Borough/Districts potentially directly affected by proposed changes to fire and rescue cover.

Data from Surrey-i.

Percentages are given to 3 significant figures.

A more detailed breakdown of data by Borough/District and protected characteristic can be found in Appendix B.

In any group where representation was 25% or more above the Surrey average (mean), mention has been given to this group in this summary. In the tables in Appendix B, these figures are highlighted in yellow. Although seemingly arbitrary, this figure allowed a consistent methodology to be applied to all groups within each protected characteristic for which we have data. The figure of 25% highlighted areas that had a greater representation of people from certain characteristics than the Surrey mean. A number much lower than 25% would provide too many examples for meaningful analysis, and a number much higher would provide too few examples, so 25% was chosen as the threshold.

No data is available for the protected characteristics of gender reassignment, pregnancy and maternity, sexual orientation or carers (protected by association).

Borough/District	Summary of specific demographics in Borough.
Elmbridge	Analysis of Surrey-i data shows no group with protected characteristics for which we have data with a population 25% or greater than the mean.
Epsom and Ewell	2011 data show Epsom and Ewell having a population of people from the ethnic group "Asian/Asian British: Indian" as 33.3% above the Surrey mean (2.4% and 1.8% respectively). The same data show people from the ethnic group "All Black/African/Caribbean/Black British ethnic groups" as 36% above the Surrey mean (1.5% and 1.1% respectively). No other ethnic group show a population 25% or higher than the mean. 2011 data show Epsom and Ewell having a population of people from the Hindu religion as 92% above the Surrey mean (2.5% and 1.3% respectively).The same data show a population of people from the Muslim religion as 36% above the Surrey mean (3% and 2.2% respectively). No other religious group show a population 25% or higher than the mean. No other group within other protected characteristics for which we have data show a population 25% or greater than the mean.
Guildford	2017 age group estimates show Guildford having a population in the 15-30 age range as 44.4% above the Surrey mean (24.1% and 16.7% respectively). No other age group show a population 25% or higher than the mean. No other group within other protected characteristics for which we have data show a population 25% or greater than the mean.
Mole Valley	Analysis of Surrey-i data shows no group with protected characteristics for which we have data with a population 25% or greater than the mean.

Reigate and Banstead	2011 data show Reigate and Banstead having a population of people from the ethnic group "All Black/African/Caribbean/Black British ethnic groups" as 43.2% above the Surrey mean (1.57% and 1.10% respectively). No other ethnic group show a population 25% or higher than the mean. No other group within other protected characteristics for which we have data show a population 25% or greater than the mean.
Runnymede	2017 age group estimates show Runnymede having a population in the 15-30 age range as 41.7% above the Surrey mean (23.6% and 16.7% respectively). No other age group show a population 25% or higher than the mean. 2011 data show Runnymede having a population of people from the ethnic group "Asian/Asian British: Indian" as 40.6% above the Surrey mean (2.51% and 1.79% respectively). No other ethnic group show a population 25% or higher than the mean. No other group within other protected characteristics for which we have data show a population 25% or greater than the mean.
Spelthorne	2011 data show Spelthorne having a population of people from the ethnic group "Asian/Asian British: Indian" as 135% above the Surrey mean (4.20% and 1.79% respectively), the same data show people from the ethnic group "All Black/African/Caribbean/Black British ethnic groups" as 47.2% above the Surrey mean (1.62% and 1.10% respectively). No other ethnic group show a population 25% or higher than the mean. 2011 data show Spelthorne having a population of people from the Hindu religion as 83.9% above the Surrey mean (2.44% and 1.33% respectively). No other religious group show a population 25% or higher than the mean. Internal data show Spelthorne having a population of people classed as vulnerable to fire as 36% above the Surrey mean (0.079% and 0.058% respectively). No other group within other protected characteristics for which we have data show a population 25% or greater than the mean.
Surrey Heath	Analysis of Surrey-i data shows no group with protected characteristics for which we have data with a population 25% or greater than the mean.
Tandridge	Internal data show Tandridge having a population of people classed as vulnerable to fire as 34% above the Surrey mean (0.078% and 0.058% respectively). No other group within other protected characteristics for which we have data show a population 25% or greater than the mean.
Waverley	Analysis of Surrey-i data shows no group with protected characteristics for which we have data with a population 25% or greater than the mean.
Woking	2011 data show Woking having a population of people from the ethnic group "Asian/Asian British: Indian" as 31.4% above the Surrey mean (2.35% and 1.79% respectively). The same data show people from the ethnic group "Asian/Asian British: Pakistani" as 500% above the Surrey mean (5.73% and 0.96% respectively). The same data show people from the ethnic group "All Black/African/Caribbean/Black British ethnic groups" as 27% above the Surrey mean (1.39% and 1.10% respectively). No other ethnic group show a population 25% or higher than the mean. 2011 data show Woking having a population of people from the Hindu religion as 48.4% above the Surrey mean (1.97% and 1.33% respectively). The same data show a population of people from the Muslim religion as 243% above the Surrey mean (7.38% and 2.15% respectively). No other religious group show a population 25% or higher than the mean. No other group within other protected characteristics for which we have data show a population 25% or greater than the mean.

Appendix B

Population information by protected characteristic by Surrey Borough/Districts.

Data from Surrey-i.

Percentages are given to 1 decimal point or 3 significant figures as appropriate.

No data is available for the protected characteristics of gender reassignment, pregnancy and maternity, sexual orientation or carers (protected by association).

Age data was sourced in 5-year divisions and has been grouped into larger blocks for analysis.

B1 – Age groups per Borough/District (adapted from Surrey-I – ONS Population estimates by 5 year age groups and gender).

Region	All ages	Age 0-14	%0-14	Age 15-30	%15-30	Age 30-44	%30-44	Age 45-64	%45-64	Age 65+	%65+
England	*55619430*	*10048365*	*18.1*	*10478495*	*18.8*	*10842801*	*19.5*	*14219258*	*25.6*	*10030511*	*18.0*
Surrey	***1185321***	***219560***	***18.5***	***197622***	***16.7***	***228477***	***19.3***	***317430***	***26.8***	***222232***	***18.7***
Elmbridge	136379	28656	21.0	18191	13.3	27268	20.0	37686	27.6	24578	18.0
Epsom and Ewell	79451	15231	19.2	12993	16.4	15789	19.9	21003	26.4	14435	18.2
Guildford	147777	24886	16.8	35579	24.1	27327	18.5	35696	24.2	24289	16.4
Mole Valley	87128	14588	16.7	12428	14.3	14301	16.4	25785	29.6	20026	23.0
Reigate and Banstead	146383	28245	19.3	22112	15.1	30679	21.0	38860	26.5	26487	18.1
Runnymede	86882	14277	16.4	20519	23.6	15927	18.3	21318	24.5	14841	17.1
Spelthorne	99120	18220	18.4	15356	15.5	20511	20.7	26625	26.9	18408	18.6
Surrey Heath	88765	16012	18.0	13940	15.7	16420	18.5	25272	28.5	17121	19.3
Tandridge	87297	15745	18.0	13149	15.1	15882	18.2	24625	28.2	17896	20.5
Waverley	125010	23248	18.6	18487	14.8	21782	17.4	34265	27.4	27228	21.8
Woking	101129	20452	20.2	14868	14.7	22591	22.3	26295	26.0	16923	16.7

B2 – Long term illness or disability per Borough/District (taken Surrey-i - 2011 census data)

Region	All persons	Number without long term illness or disability	% Without long term illness or disability	Long term illness or disability - All with day-to-day activities limited	Long term illness or disability - % with day-to-day activities limited
England	*53012456*	*43659870*	*82.4*	*9352586*	*17.6*
Surrey	***1132390***	***979036***	***86.5***	***153354***	***13.5***
Elmbridge	130875	115044	87.9	15831	12.1
Epsom and Ewell	75102	65036	86.6	10066	13.4
Guildford	137183	119867	87.4	17316	12.6
Mole Valley	85375	72833	85.3	12542	14.7
Reigate and Banstead	137835	118569	86.0	19266	14.0
Runnymede	80510	69355	86.1	11155	13.9
Spelthorne	95598	81334	85.1	14264	14.9
Surrey Heath	86144	75304	87.4	10840	12.6
Tandridge	82998	70686	85.2	12312	14.8
Waverley	121572	104695	86.1	16877	13.9
Woking	99198	86313	87.0	12885	13.0

B3 – Race/Ethnicity per Borough/District (taken from Surrey-i - 2011 census data)

Region	All People	White British	% White British	White: All other White ethnic groups	% White: All other White	All mixed/multiple ethnic groups	% All mixed/multiple ethnic groups	Asian/Asian British: Indian	% Indian	Asian/Asian British: Pakistani	% Pakistani	All Black/African/Caribbean/Black British ethnic groups	% Black/African/Caribbean/Black British	All other Asian ethnic groups	% other Asian ethnic group	Other ethnic groups	% Other ethnic groups	All non-white ethnic groups	% non-white ethnic groups	All ethnic groups except white British	% not white British
Surrey	1132390	945673	83.5	78009	6.9	23554	2.1	20232	1.8	10818	1.0	12430	1.1	32448	2.9	9226	0.8	108708	9.6	186717	16.5
Elmbridge	130875	104508	79.9	13615	10.4	3411	2.6	2489	1.9	555	0.4	1010	0.8	4031	3.1	1256	1.0	12752	9.7	26367	20.1
Epsom and Ewell	75102	59049	78.6	5453	7.3	1922	2.6	1828	2.4	667	0.9	1128	1.5	3989	5.3	1066	1.4	10600	14.1	16053	21.4
Guildford	137183	114510	83.5	10197	7.4	2501	1.8	1661	1.2	487	0.4	1656	1.2	4468	3.3	1703	1.2	12476	9.1	22673	16.5
Mole Valley	85375	76907	90.1	4261	5.0	1257	1.5	707	0.8	152	0.2	399	0.5	1318	1.5	374	0.4	4207	4.9	8468	9.9
Reigate and Banstead	137835	117092	85.0	7787	5.6	3037	2.2	2192	1.6	1189	0.9	2166	1.6	3611	2.6	761	0.6	12956	9.4	20743	15.0
Runnymede	80510	64397	80.0	7236	9.0	1671	2.1	2022	2.5	378	0.5	862	1.1	3161	3.9	783	1.0	8877	11.0	16113	20.0
Spelthorne	95598	77411	81.0	6044	6.3	2382	2.5	4013	4.2	656	0.7	1545	1.6	2626	2.7	921	1.0	12143	12.7	18187	19.0
Surrey Heath	86144	73179	84.9	4513	5.2	1626	1.9	1713	2.0	667	0.8	861	1.0	3009	3.5	576	0.7	8452	9.8	12965	15.1
Tandridge	82998	74095	89.3	3785	4.6	1789	2.2	746	0.9	139	0.2	882	1.1	1279	1.5	283	0.3	5118	6.2	8903	10.7
Waverley	121572	110190	90.6	6527	5.4	1623	1.3	533	0.4	246	0.2	538	0.4	1504	1.2	411	0.3	4855	4.0	11382	9.4
Woking	99198	74335	74.9	8591	8.7	2335	2.4	2328	2.3	5682	5.7	1383	1.4	3452	3.5	1092	1.1	16272	16.4	24863	25.1

B4 – Religion per Borough/District (taken from Surrey-i - 2011 census data)

Region	All residents	Christian	% Christian	Hindu	% Hindu	Muslim	% Muslim	Other religion	% Other	No religion	% No religion	Not stated	% Not stated	All non-Christian religions	% Non-Christian
England	*53012456*	*31479876*	*59.4*	*806199*	*1.5*	*2660116*	*5.0*	*1147929*	*2.2*	*13114232*	*24.7*	*3804104*	*7.2*	*4614244*	*8.7*
Surrey	***1132390***	***711110***	***62.8***	***15018***	***1.3***	***24378***	***2.2***	***16994***	***1.5***	***280814***	***24.8***	***84076***	***7.4***	***56390***	***5.0***
Elmbridge	130875	83973	64.2	1593	1.2	2406	1.8	2447	1.9	30606	23.4	9850	7.5	6446	4.9
Epsom and Ewell	75102	46222	61.5	1913	2.5	2277	3.0	1109	1.5	18254	24.3	5327	7.1	5299	7.1
Guildford	137183	82621	60.2	1301	0.9	2713	2.0	1839	1.3	38108	27.8	10601	7.7	5853	4.3
Mole Valley	85375	54926	64.3	564	0.7	669	0.8	960	1.1	21514	25.2	6742	7.9	2193	2.6
Reigate and Banstead	137835	85325	61.9	1880	1.4	2637	1.9	1597	1.2	36262	26.3	10134	7.4	6114	4.4
Runnymede	80510	51037	63.4	1181	1.5	1556	1.9	1628	2.0	19297	24.0	5811	7.2	4365	5.4
Spelthorne	95598	60954	63.8	2332	2.4	1808	1.9	2298	2.4	21511	22.5	6695	7.0	6438	6.7
Surrey Heath	86144	54646	63.4	1369	1.6	1607	1.9	1733	2.0	20610	23.9	6179	7.2	4709	5.5
Tandridge	82998	53841	64.9	612	0.7	596	0.7	750	0.9	20976	25.3	6223	7.5	1958	2.4
Waverley	121572	79220	65.2	321	0.3	786	0.6	1254	1.0	30745	25.3	9246	7.6	2361	1.9
Woking	99198	58345	58.8	1952	2.0	7323	7.4	1379	1.4	22931	23.1	7268	7.3	10654	10.7

B5 – Sex/ Gender per Borough/District (adapted from Surrey-i – ONS population estimates by broad age and gender)

Area	Year	Males - All ages	% male	Females - All ages	% female
ENGLAND	*2017*	*27,481,053*	*49.4*	*28,138,377*	*50.6*
Surrey	***2017***	***581,836***	***49.1***	*603,485*	*50.9*
Elmbridge	2017	66,063	48.4	70,316	51.6
Epsom and Ewell	2017	38,600	48.6	40,851	51.4
Guildford	2017	73,891	50.0	73,886	50.0
Mole Valley	2017	42,567	48.9	44,561	51.1
Reigate and Banstead	2017	71,476	48.8	74,907	51.2
Runnymede	2017	42,251	48.6	44,631	51.4
Spelthorne	2017	48,959	49.4	50,161	50.6
Surrey Heath	2017	43,946	49.5	44,819	50.5
Tandridge	2017	42,493	48.7	44,804	51.3
Waverley	2017	61,177	48.9	63,833	51.1
Woking	2017	50,413	49.9	50,716	50.1

B6 – Marital status by Borough/District (taken from Surrey-I - 2011 census data). N.b. 2011 census data gathered prior to legalisation of same-sex marriage in 2014.

Region	All Residents Aged 16 and Over	Single (never married or in civil partnership)	% Single	Married	% Married	In a Registered Same-Sex Civil Partnership	% In a Registered Same-Sex Civil Partnership	Separated (but Still Legally Married or Still Legally in a Same-Sex Civil Partnership	% Separated	Divorced or Formerly in a Same-Sex Civil Partnership which is Now Legally Dissolved	% Divorced or Formerly in a Same-Sex Civil Partnership which is Now Legally Dissolved	Widowed or Surviving Partner from a Same-Sex Civil Partnership	% Widowed or Surviving Partner from a Same-Sex Civil Partnership
England	*42989620*	*14889928*	*34.6*	*20029369*	*46.6*	*100288*	*0.2*	*1141196*	*2.7*	*3857137*	*9*	*2971702*	*6.9*
Surrey	***913899***	***275477***	***30.1***	***480655***	***52.6***	***1602***	***0.2***	***20563***	***2.3***	***74056***	***8.1***	***61546***	***6.7***
Elmbridge	103005	28321	27.5	56760	55.1	245	0.2	2308	2.2	8482	8.2	6889	6.7
Epsom and Ewell	60371	18711	31	31950	52.9	94	0.2	1259	2.1	4384	7.3	3973	6.6
Guildford	112589	39639	35.2	55650	49.4	174	0.2	2337	2.1	8282	7.4	6507	5.8
Mole Valley	69580	18557	26.7	38252	55	111	0.2	1534	2.2	5846	8.4	5280	7.6
Reigate and Banstead	110725	34056	30.8	57055	51.5	194	0.2	2481	2.2	9251	8.4	7688	6.9
Runnymede	66653	23657	35.5	31353	47	111	0.2	1532	2.3	5580	8.4	4420	6.6
Spelthorne	78089	24562	31.5	38984	49.9	153	0.2	2042	2.6	6870	8.8	5478	7
Surrey Heath	69302	18791	27.1	38960	56.2	100	0.1	1489	2.1	5578	8	4384	6.3
Tandridge	66922	19265	28.8	35350	52.8	111	0.2	1582	2.4	5791	8.7	4823	7.2
Waverley	97478	26219	26.9	53874	55.3	161	0.2	2124	2.2	7848	8.1	7252	7.4
Woking	79185	23699	29.9	42467	53.6	148	0.2	1875	2.4	6144	7.8	4852	6.1

B7 – Vulnerability to House Fires – Data calculated from people 75 or over who are prescribed oxygen.

Region	count of vulnerable people	Area (sq km)	vulnerable people per sq km	Estimated Population mid-2017	vulnerable people per 1000 population
Surrey	**693**	**1662**	**0.417**	**1185321**	**0.585**
Elmbridge	57	95	0.600	136,379	0.418
Epsom and Ewell	39	34	1.147	79,451	0.491
Guildford	65	271	0.240	147,777	0.440
Mole Valley	46	258	0.178	87,128	0.528
Reigate and Banstead	92	129	0.713	146,383	0.628
Runnymede	57	78	0.731	86,882	0.656
Spelthorne	78	45	1.733	99,120	0.787
Surrey Heath	55	95	0.579	88,765	0.620
Tandridge	68	248	0.274	87,297	0.779
Waverley	80	345	0.232	125,010	0.640
Woking	56	64	0.875	101,129	0.554

Appendix C

Modelled response times in Surrey Borough/Districts – Data from internal modelling

The impact of our proposed change to response times to incidents varies by Borough and District, by the day of the week and the time of day. There are many factors that affect how quickly we arrive at an emergency, such as the amount of traffic on the roads and the location of our nearest available fire engine. To give the most accurate comparison, we have looked at the time it takes us to arrive at an emergency under ideal conditions now, against the time it will take if we go ahead with our preferred proposal.

Appendix C1 shows critical incident response comparisons between the proposal versus the status quo.

Appendix C2 shows all incident response comparisons between the proposal versus the status quo.

To understand the impact that the proposed changes to crewing patterns will have on the communities that they serve, response time data must be analysed.

There are three data sets available for use in this analysis:

1. Modelled response times *under the proposed Plan*, assuming full wholetime appliance availability, and on-call availability based on historical performance.

2. Modelled response times *under existing crewing systems*, assuming full wholetime appliance availability, and actual on-call availability.

3. Historical actual response times over the past 5 years.

In each of these sets, there is data available on critical incidents and all incidents. In recent years, our crewing system has been under-established, in large part due to lack of recruitment as a result of constrained finances. Therefore, the reality of what has been available has been significantly different to what would be available if full crewing had been available. Under the proposed plan, restructuring of the available firefighter workforce would allow crews will be much closer to the full planned established. However, as the proposals change the details of SFRS's planned response, compared to our previous plans, it is important to compare the planned response, and not the proposed plans compared to the historical delivery.

Modelling data suggests that there will be varying impacts on response times, depending on the area in question, the time of day, and the day of the week. It should be noted that modelled based on set average road speeds. They do not reflect the speeds under blue light conditions that fire appliances would ordinarily respond under, so the time taken to respond may, in reality, be faster.

Overall the modelling suggests that response times to *critical* incidents will increase from our base model to the proposed model under the Plan by 12 seconds overall, up from 07:22 minutes to 07:34 minutes. This is an average across all times of the day and week. The daily breakdown is as follows:

- The weekday day time response will remain the same (07:23 minutes).

- The weekend day time response will improve by 12 seconds from 07:26 minutes to 07:14 minutes.
- Night time response (any day of the week) time will increase by 38 seconds from 07:18 to 07:56 minutes.

Furthermore the modelling suggests that response times to *all* incidents will increase from our base model to the planned model by 12 seconds overall, up from 07:28 minutes to 07:40 minutes.

This is an average across all times of the day and week. The daily breakdown is as follows:

- The weekday day time response will remain the same (07:27 minutes).
- The weekend day time response will improve by 12 seconds from 07:35 minutes to 07:23 minutes.
- Night time response (any day of the week) time will increase by 38 seconds from 07:26 to 08:04 minutes.

However, the increased community and business safety work will reduce the likelihood of emergencies happening in the first place, so there will be less occurring as a result. In further mitigation, we are introducing improvements that will reduce the time it takes between a call coming in and our firefighters leaving the station. We believe this will help us to get resources to the scene of an emergency more quickly. We are also introducing technology that will improve our measurement of this will tell us if we are being successful.

Appendix C1 – Critical incident response times modelled under the proposal outlined in the Plan in comparison to the current modelled situation. Modelling based on 100% wholetime availability and actual on-call availability.
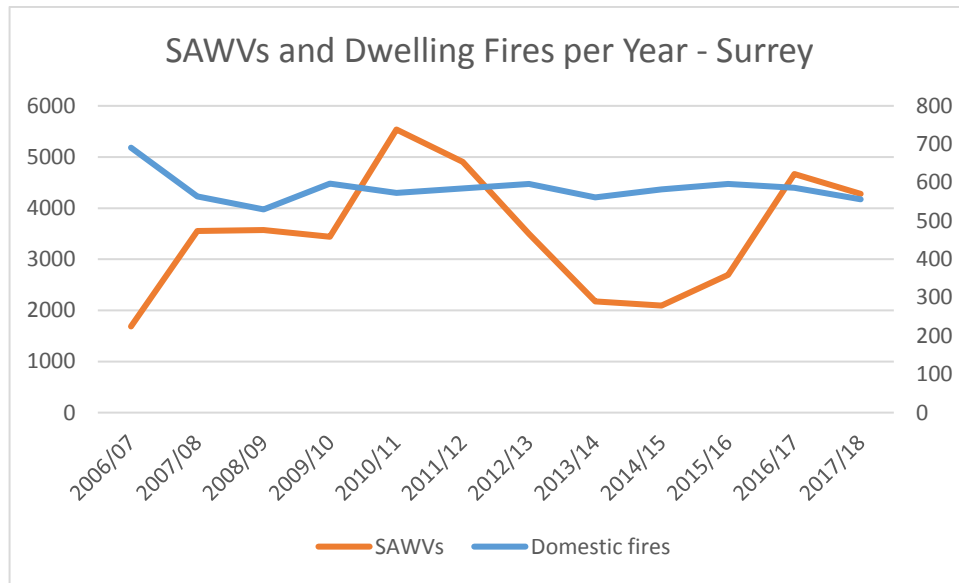
Weekday			Weekend Day		Night		All times of day	
Borough/District	Proposed arrival time of 1st appliance	Current arrival time of 1st appliance	Proposed arrival time of 1st appliance	Current arrival time of 1st appliance	Proposed arrival time of 1st appliance	Current arrival time of 1st appliance	Proposed arrival time of 1st appliance	Current arrival time of 1st appliance
Elmbridge	05:54	05:54	05:47	06:55	07:46	06:59	06:33	06:27
Epsom and Ewell	05:45	05:44	05:39	05:38	05:41	05:26	05:43	05:36
Guildford	07:16	07:17	07:06	07:05	07:23	06:47	07:17	07:04
Mole Valley	08:10	08:10	08:12	08:13	08:06	07:59	08:09	08:07
Reigate and Banstead	07:29	07:29	07:17	07:19	07:57	07:14	07:37	07:22
Runnymede	06:30	06:30	06:03	06:06	08:04	05:56	06:59	06:13
Spelthorne	06:34	06:35	06:31	06:41	07:24	06:42	06:54	06:39
Surrey Heath	07:40	07:42	07:36	07:37	07:53	07:28	07:44	07:36
Tandridge	11:38	11:33	10:24	10:34	10:58	11:03	11:10	11:11
Waverley	08:39	08:39	08:54	09:26	09:15	09:05	08:55	08:56
Woking	05:53	05:53	06:00	06:01	06:19	05:41	06:04	05:50
ALL DISTRICTS	**07:23**	**07:23**	**07:14**	**07:26**	**07:56**	**07:18**	**07:34**	**07:22**

Appendix C2 – All incident response times modelled under the proposal outlined in the Plan in comparison to the current modelled situation. Modelling based on 100% wholetime availability and actual on-call availability.
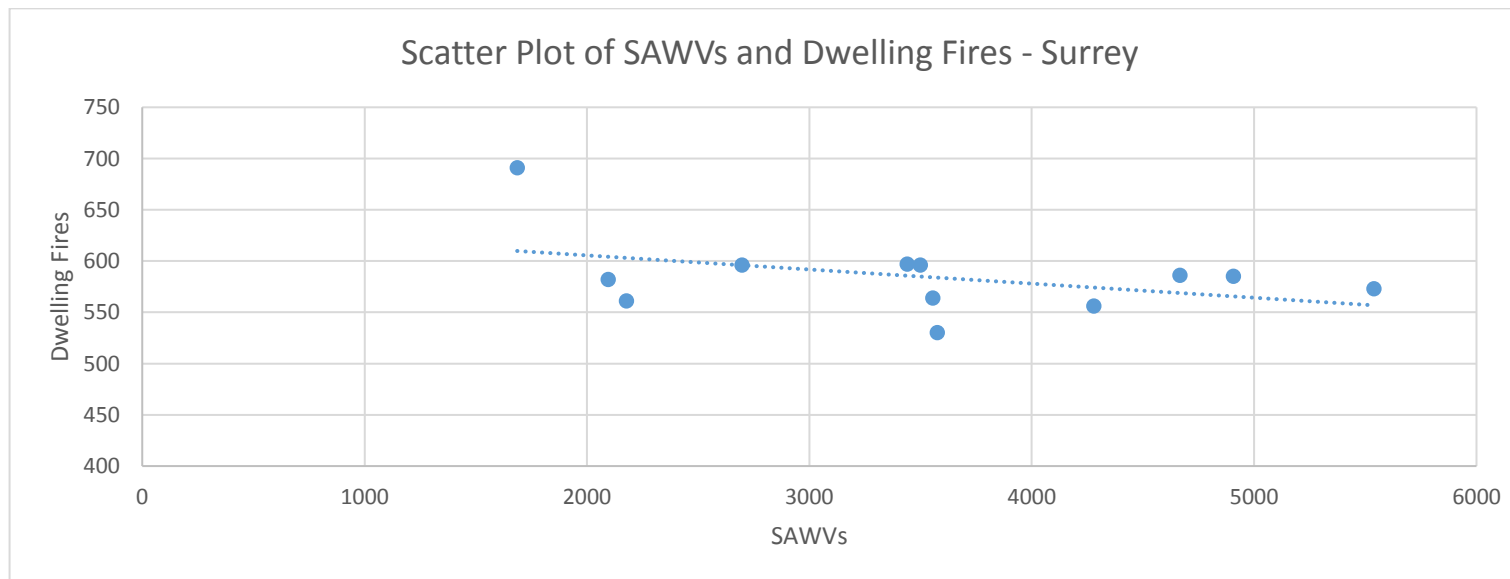
Borough/District	Weekday			Weekend Day			Night			All times of day	
	Proposed arrival time of 1st appliance	Current arrival time of 1st appliance		Proposed arrival time of 1st appliance	Current arrival time of 1st appliance		Proposed arrival time of 1st appliance	Current arrival time of 1st appliance		Proposed arrival time of 1st appliance	Current arrival time of 1st appliance
Elmbridge	05:53	05:52		05:49	06:53		07:49	06:59		06:34	06:26
Epsom and Ewell	05:39	05:38		05:41	05:41		05:58	05:39		05:47	05:39
Guildford	07:26	07:27		07:26	07:26		07:47	07:01		07:34	07:17
Mole Valley	08:16	08:16		08:13	08:13		08:09	08:00		08:13	08:10
Reigate and Banstead	07:23	07:23		07:18	07:19		07:57	07:16		07:35	07:20
Runnymede	06:33	06:33		06:15	06:19		08:06	06:04		07:04	06:20
Spelthorne	06:29	06:30		06:31	06:41		07:28	06:45		06:54	06:38
Surrey Heath	07:54	07:56		07:52	07:53		08:04	07:40		07:57	07:50
Tandridge	11:42	11:39		10:47	10:51		11:05	11:04		11:17	11:17
Waverley	08:54	08:55		08:58	09:34		09:24	09:13		09:05	09:08
Woking	05:53	05:54		06:03	06:04		06:18	05:39		06:04	05:50
ALL DISTRICTS	**07:27**	**07:27**		**07:23**	**07:35**		**08:04**	**07:26**		**07:40**	**07:28**

Appendix D – Graphs of Safe and Well Visits and Dwelling Fires in Surrey.

D1 – Line Graph of Safe and Well Visits and Domestic Dwelling Fires per Year.

SAWVs and Dwelling Fires per Year - Surrey

D2 – Scatter Plot of Safe and Well Visits and Domestic Dwelling Fires.

Scatter Plot of SAWVs and Dwelling Fires - Surrey

A statistical analysis of the relationship between numbers of SAWVS and Dwelling fires using correlation coefficient produces a result of -0.423319. This is a weak to moderate negative linear correlation.