

# SMART CITY ROAD MAP REPORT

SEPTEMBER 2020

CARDIFF RESEARCH  
CENTRE

# SMART CARDIFF

CARDIFF COUNCIL'S  
SMART CITY ROAD MAP



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## **1. Background**

Smart Cardiff explores the use of technology and data to enhance the lives of the people living, working and visiting the Capital.

The 'draft' smart city roadmap has been designed to be flexible and will act as a catalyst for collaboration, innovative thinking, better designed services and allow the city to exploit advances in technology.

It is important to point out that our smart city approach is ambitious but attempts to avoid the pitfalls of the early smart city initiatives. It does not involve huge centralisation projects or advocate the use of technology with no real purpose. Instead, we intend to learn from other cities experiences, work with our citizens and target initiative's that will deliver high value solutions for the people who live, work and visit the city.

Cardiff's Smart City Roadmap has five missions. These missions promote collaborative working, advocate data-driven decision-making, aim to expand connectivity, seek to improve health and well-being, enhance mobility, and will help to ensure that Cardiff continues to be a sustainable city.

## **2. Consultation methodology**

The electronic online survey was available to complete from Monday 17<sup>th</sup> February to Monday 30<sup>th</sup> March 2020.

The engagement programme used a variety of online engagement methods:

### **a) Email**

The survey was promoted via email to:

- The Citizens' Panel (approximately 6,000 residents).
- Councillors, Senior Management Team and Cardiff Public Services Board members.
- The survey was advertised via a banner on the council's website homepage during the consultation period.
- The survey was promoted as a 'Quick Link' on the council's Intranet pages.
- An email was sent out Via 'Staff Information', which goes to 8,182 email addresses across the council.

### **b) Internet/Intranet**

- Links to the survey were available via Cardiff council's dedicated web page:  
<https://www.smartcardiff.co.uk/>

### c) Social Media

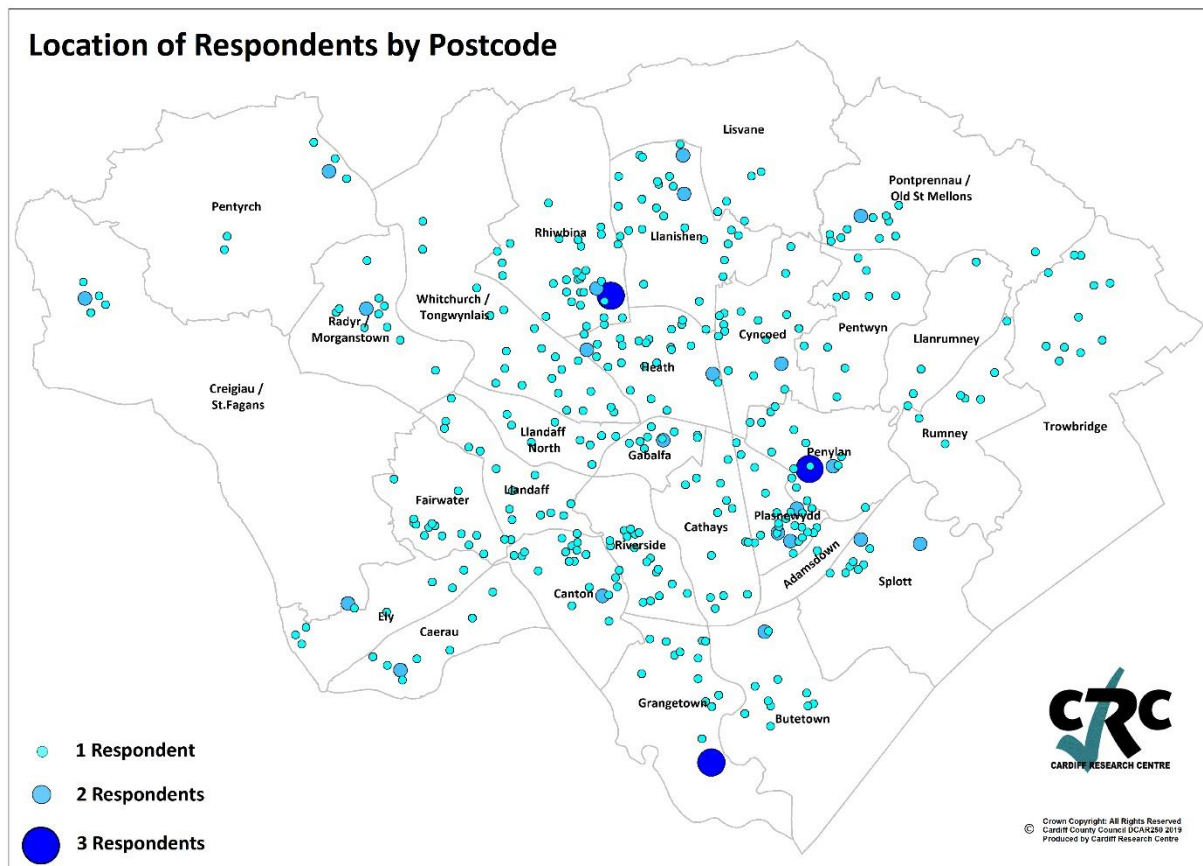
- The Corporate Communications Team promoted the survey to almost 90,000 followers via Facebook and Twitter.

## 3. Results

There were 760 valid responses received over the consultation period.

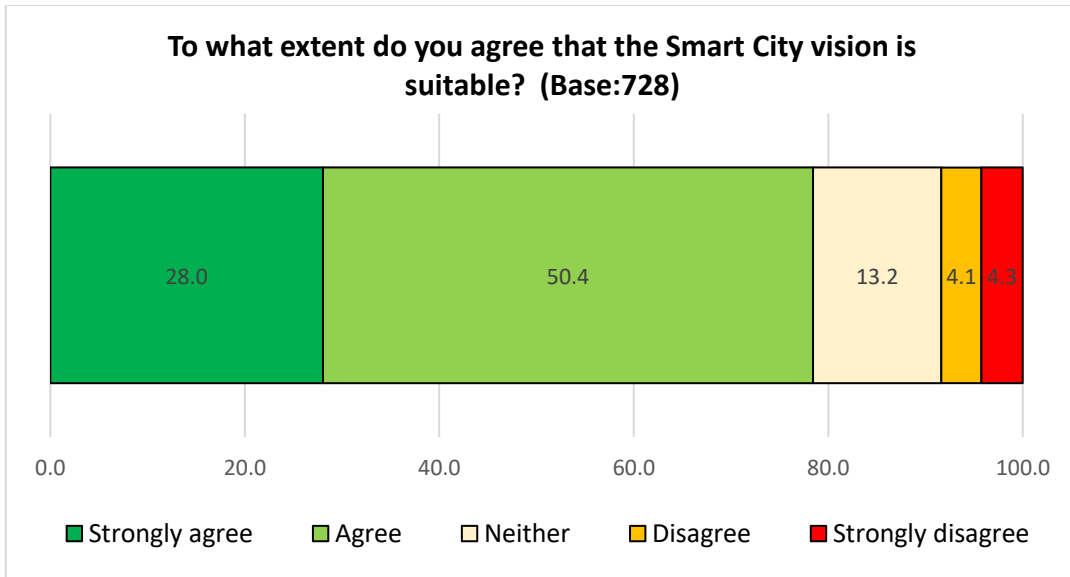
Whilst the total sample gives robust results, analysing the results of different demographic groups reduces the sample size and increases the margin of error meaning that care should be taken with such analyses.

The place of residence of respondents (who provided a valid postcode) from across Cardiff can be seen in the map below:



**Q1. To what extent do you agree that the Smart City vision is suitable?**

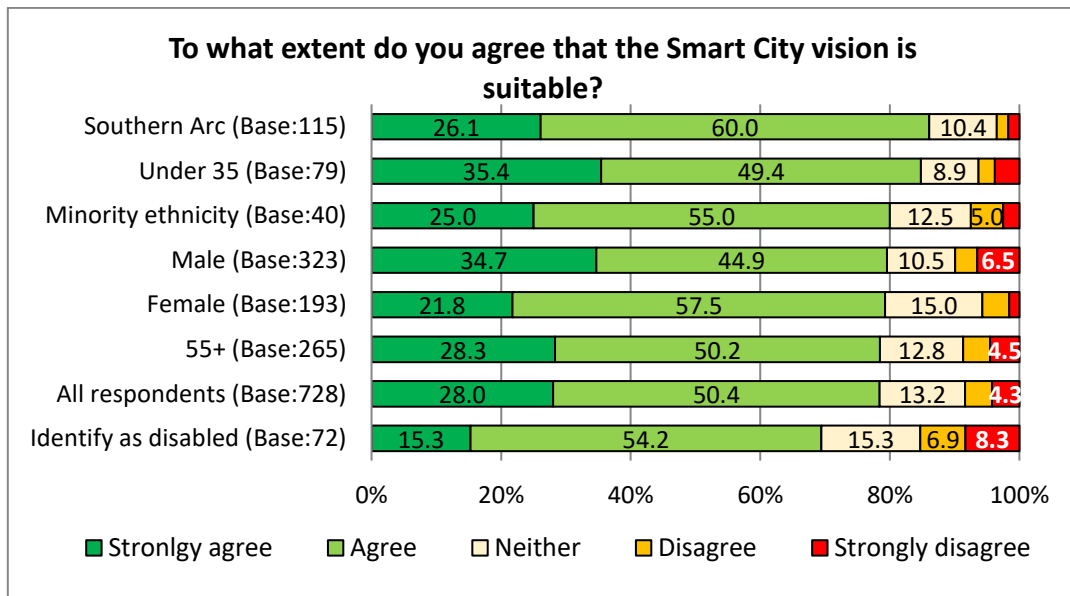
Over three quarters of respondents (78.4%) agreed that the Smart City vision is suitable, this included 28.0% who strongly agreed. In contrast, less than one in ten (8.4%) disagreed.



*Base sizes shown in brackets; excludes Don't Know responses*

Respondents residing in the southern arc of the city and those aged under 35 were most likely to agree that the Smart City vision is suitable (86.1% and 84.8% respectively).

Around one in six (15.3%) respondents that identify as disabled disagreed with the suitability of the vision.



*Base sizes shown in brackets; excludes Don't Know responses*

(NB: - Caution should be taken with low base sizes.)

### Q1a. Is there anything you could add to this vision?

Respondents were given the opportunity to explain if there was anything they felt could be added to the vision. These comments were then analysed and grouped into themes.

The top three themes along with some example comments can be seen below. A full list of comments can be viewed in Appendix 2.

Theme	No.	%	Example comments
Infrastructure	28	20.6	<ul style="list-style-type: none"><li>• A central bus station would be a starting point. The capital of Wales and no bus station is just unbelievable in this day and age. This should be a basic requirement for a city never mind a capital city.</li><li>• Dig once for future fibre infrastructure....promote to all utilities for encouragement to contribute to the cause.</li><li>• Good public transport infrastructure.</li></ul>
Easy read/clarity	21	15.4	<ul style="list-style-type: none"><li>• There is no clarity on what exactly a smart city is, these are just words with no substance so can't agree as I don't know what it exactly is the council wants.</li><li>• Lots of unfamiliar ideas - IoT, gamification etc. What could you mean?.</li><li>• The vision is appropriate - but it is unclear to me if the Council has sufficient capacity to respond to all the different strands mentioned in the map.</li></ul>
Accessibility	20	14.7	<ul style="list-style-type: none"><li>• First you must ensure that all have access to digital services and understand how to use them.</li><li>• Please do not disenfranchise those who do not readily engage with new technology or ignore how a smart city will affect those who travel to Cardiff for jobs and leisure from the valleys and surrounding areas. They must also have an input.</li></ul>

## Mission 1: A Collaborative City

How we work together and share information within the city is important. To succeed as a smart city we believe that people should be at the forefront of everything that we do.

We need to engage with our citizens, businesses, universities, health board, charities, community groups and entrepreneurial start-ups to ensure that we are creating a smart city which meets their needs and expectations.

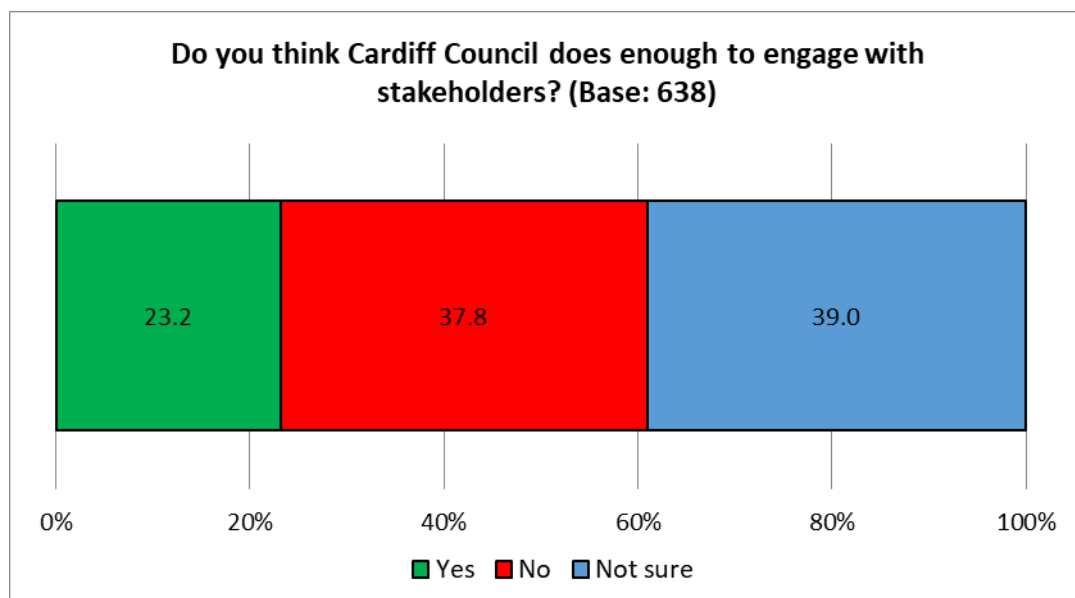
The Capital has diverse needs and difficult challenges ahead. These challenges will only be solved through collaboration and engagement.

In order to achieve this mission Cardiff will work on the following:

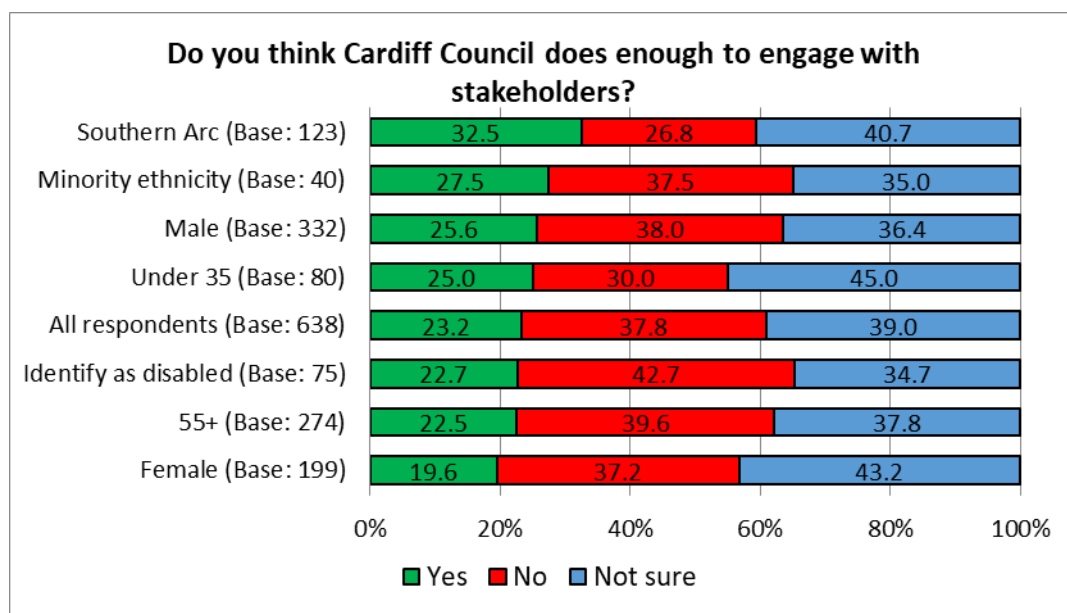
- Collaborate and explore better ways to engage with the city
- Engage with employees to maximise outcomes
- Tackle digital exclusion and digital literacy
- Commit to partnership working

### Q2. Do you think Cardiff Council does enough to engage with stakeholders?

Less than one in four (23.2%) respondents felt the council did enough to engage with stakeholders, contrasting with almost two in five (37.8%) who claimed the council didn't do enough. A further 39.0% were unsure.



Respondents located within the southern arc were most likely to agree with this statement (32.5%), whereas those that identified as disabled were most likely to disagree (42.7%).



Base sizes shown in brackets  
(NB: - Caution should be taken with low base sizes.)

### Q2a. What could the Council do to engage better with the city?

Respondents answering 'No' to the question above were asked to explain 'What the council could do better?' For this question, 211 responses were received, the comments when analysed resulted in 10 themes.

The top three themes along with some example comments can be seen below. A full list of comments can be viewed in Appendix 2.

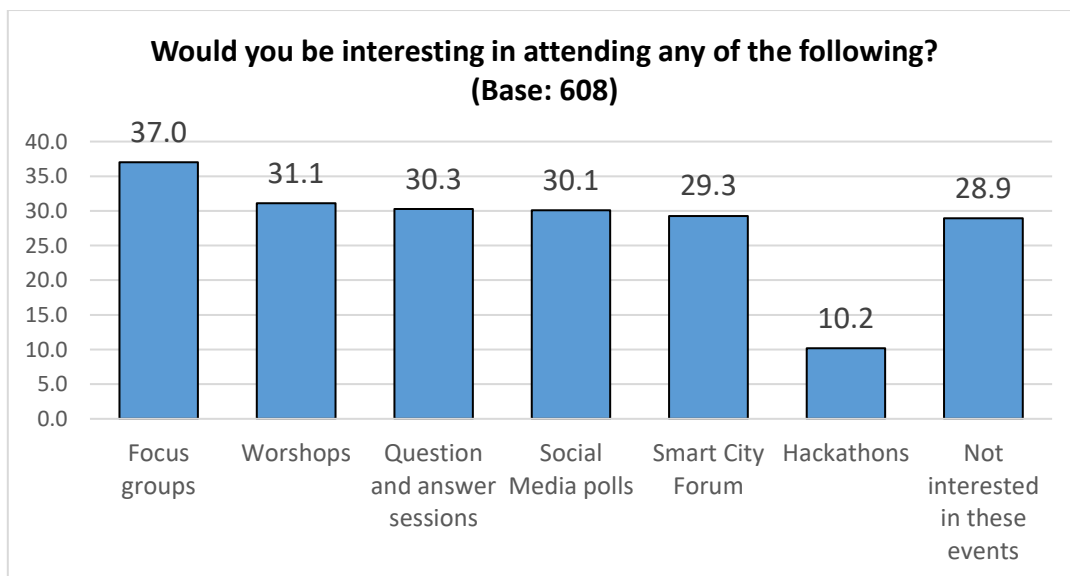
Theme	No.	%	Example comments
Better Communication	80	37.9	<ul style="list-style-type: none"> <li>Talk to people - don't assume that internet "chats" are an appropriate method of gathering reliable.</li> <li>Recent updating of technology has deterred residents from contacting Council. Currently there is NO feedback to the user of Council reporting systems.</li> <li>Someone to talk to regarding particular issues would be helpful.</li> <li>Better Communication. Its shocking.</li> <li>I am a new Cardiff resident and I follow various initiatives, LA and government channels... however I don't feel that the city is currently connected enough. There are key individuals and communities that work towards better services, a</li> </ul>



			better digital and physical infrastructure needs to be in place to make things happen.
<b>More forms/opportunities for engagement</b>	<b>70</b>	<b>33.2</b>	<ul style="list-style-type: none"> <li>• More forums. Encouragement for start ups. Support innovation.</li> <li>• The council generally relies on electronic communication and should use a variety of methods to ensure inclusivity.</li> <li>• Host events to bring people together.</li> <li>• Where to start. How many work places have you visited? How many Schools? How many households? How many vacant shops have you covered into 'smart service' centres for the citizens, workers, visitors? How many 'people' are signed up? How many businesses?</li> <li>• Open it doors more and collaboration with more of the world.</li> </ul>
<b>Better promotion</b>	<b>44</b>	<b>20.9</b>	<ul style="list-style-type: none"> <li>• Advertise engagement opportunities more widely.</li> <li>• More positive PR campaigning, as the general view of the council amongst the public is tepid. You will struggle to achieve buy-in if the public is generally distrusting that improvements can be achieved. Generate more buzz about the exciting elements of the 'Smart Cardiff' project.</li> </ul>

**Q3. Would you be interesting in attending any of the following?**

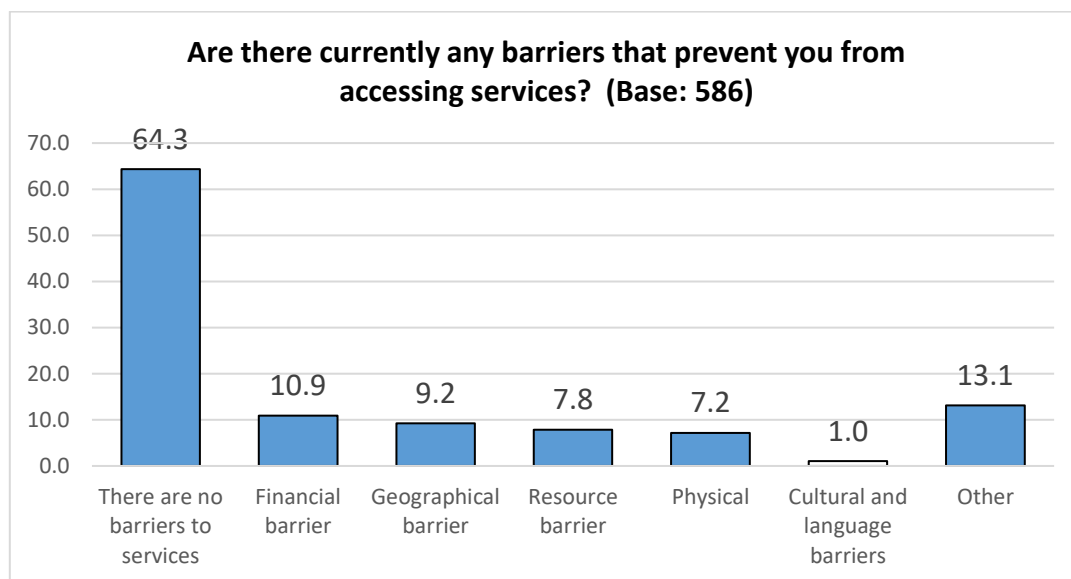
Focus groups was the most popular form of engagement (37.0%), closely followed by workshops (31.1%), question and answer sessions (30.3%) and social media polls (30.1%). In contrast, only one in ten (10.2%) respondents had an interest in hackathon events.



(NB. Percentages do not sum to 100.0% because respondents could give multiple answers.)

#### Q4. Are there currently any barriers that prevent you from accessing services?

Around two-thirds (64.3%) of respondents indicated they had no barriers in accessing services.



(NB. Percentages do not sum to 100.0% because respondents could give multiple answers.)

A third (32.4%) of respondents that identify as disabled indicated that biggest barrier in accessing services was a physical barrier, whilst a third (33.8%) highlighted there were no barriers to services.

Under 35's biggest barrier was in the form of finance with one in five (20.8%) citing this.

Physical	5.6	7.3	8.4	5.9	5.7	<b>32.4</b>	9.4	7.2
	<b>20.8</b>	6.2	13.7	9.8	<b>17.1</b>		9.4	10.9
Geographical barrier	11.1	6.2	11.1	7.8	11.4	17.6	7.7	9.2
Cultural and language barriers	2.8	0.8	0.0	1.6	0.0	2.9	0.0	1.0
Resource barrier	9.7	6.9	7.9	8.8	<b>17.1</b>	11.8	6.0	7.8
Other	12.5	<b>13.8</b>	<b>14.7</b>	<b>11.1</b>	8.6	14.7	<b>13.7</b>	<b>13.1</b>
There are no barriers to services	59.7	68.8	62.1	67.0	<b>62.9</b>	33.8	69.2	64.3

#### Q4a. If other please specify

74 respondents provided a response to the question, which resulted in 7 themes

The top three themes along with some example comments can be seen below. A full list of comments can be viewed in Appendix 2.

Theme	No.	%	Example comments
Time	23	31.1	<ul style="list-style-type: none"><li>• My time as I am too busy in work.</li><li>• Timing - needs to be evenings or weekends.</li></ul>
Awareness	16	21.6	<ul style="list-style-type: none"><li>• The services are not known to many.</li><li>• I don't know how and each time I have tried, I have been unsuccessful. Services don't exist for me.</li></ul>
Accessibility	10	13.5	<ul style="list-style-type: none"><li>• Cannot access council departments by phone, numbers unavailable or no reply.</li></ul>

## Mission 2: A Data-Driven City

How we manage data is important to the city. Data-driven decision making has become the 'norm' for most private sector organisations but many local authorities have not embraced this change.

Cardiff already holds vast amounts of data but up until now the main focus has been using the data for a targeted purpose – the potential benefits have not been fully realised. We will look to change this and ensure that we use data to develop more efficient and effective services. Being more strategic with data will not only benefit Cardiff Council, it will benefit our partner organisations, businesses and citizens.

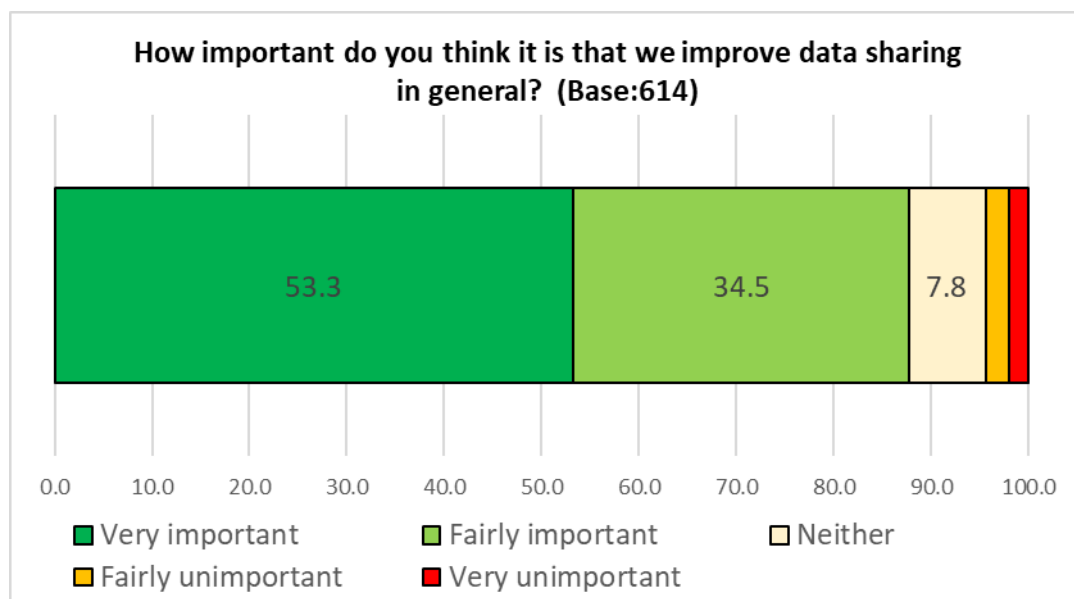
It will give us insight into what works well, allow us to make evidence-based decisions and will move us towards more proactive methods of delivery. Cardiff aims to be a city that uses data to make informed decisions.

To succeed in this area we will embark on the following:

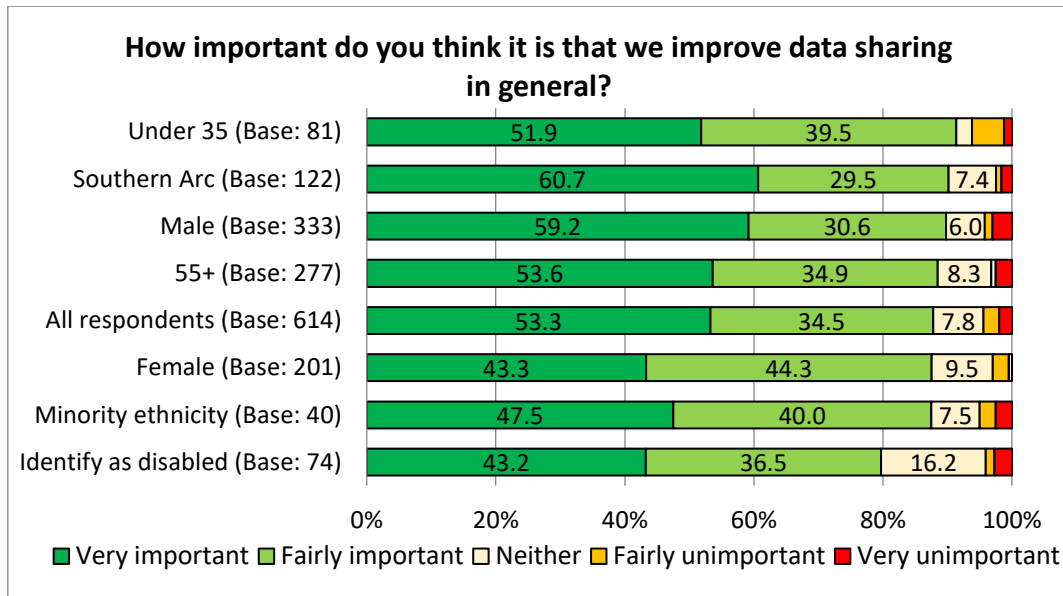
- Use data more effectively
- Invest in and develop data skills
- Make data more openly available
- Develop public trust in the sharing and use of data

### Q5. How important do you think it is that we improve data sharing in general?

Almost nine out of ten respondents (87.8%) felt it is important that the Council improve data sharing in general, compared to just 4.4% who felt it unimportant. A further 7.8% were undecided.



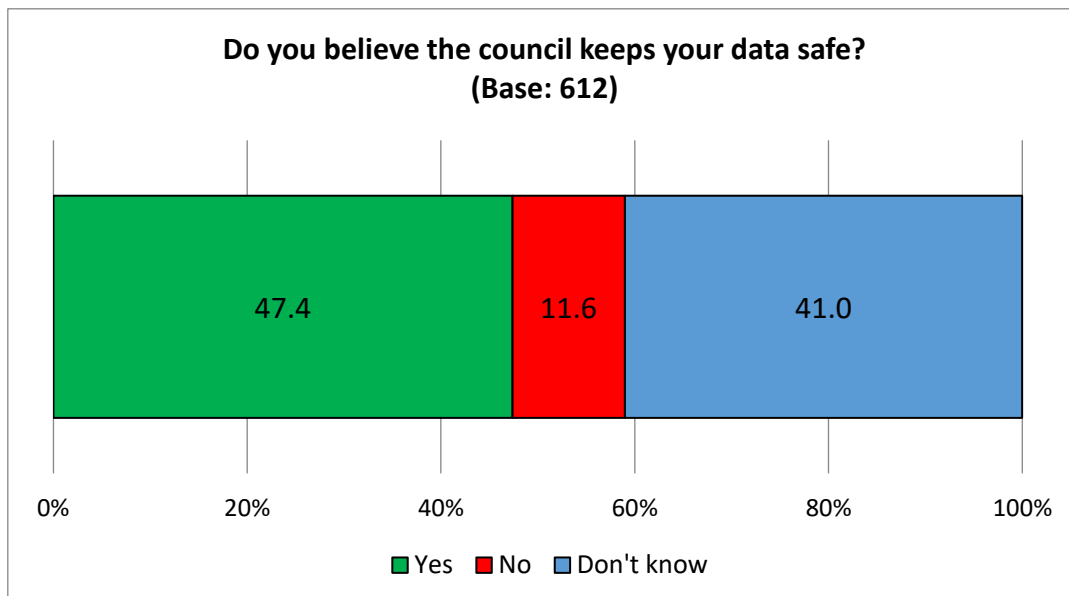
The importance of an improvement in data sharing by the Council was highest amongst those aged under 35 (91.4%), followed by those residing in the southern arc (90.2%) This figure drops to around four in five respondents (79.7%) when viewed by those that identify as disabled.



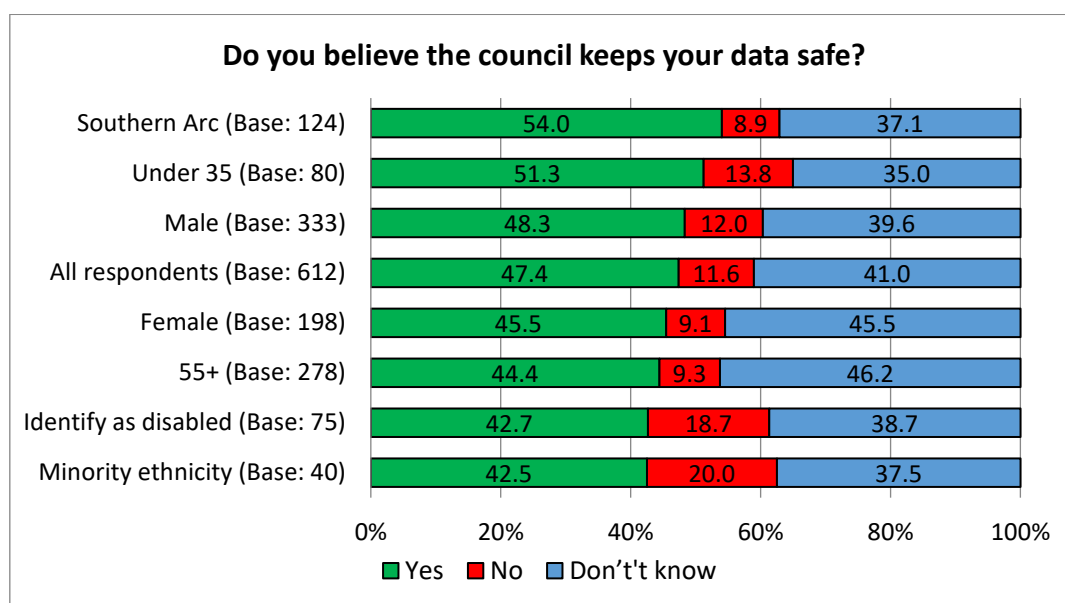
(NB: - Caution should be taken with low base sizes.)

**Q6. Do you believe the council keeps your data safe?**

Just under a half (47.4%) of respondents believe that their data is kept safe by the Council. In contrast, around one in nine believe their data is not safe. A further two fifths (41.0%) of respondents didn't know either way.



Belief in the Council keeping data safe was highest amongst residents of the southern arc (54.0%) and those aged under 35 (51.3%). The highest level of disagreement was amongst minority ethnicity respondents (20.0%) and those identifying as disabled (18.7%).



(NB: - Caution should be taken with low base sizes.)

#### Q6a. If 'No', please specify

Respondents answering 'No' to the question above were asked to explain their concerns. A total of 59 respondents provided a response to the question, which resulted in 7 themes.

The top three themes along with some example comments can be seen below. A full list of comments can be viewed in Appendix 2.

Theme	No.	%	Example comments
<b>Always a risk/Data not Safe</b>	<b>21</b>	<b>35.6</b>	<ul style="list-style-type: none"> <li>As I work in IT, no data is ever truly safe in the connected world.</li> <li>Because it is impossible to keep data totally safe</li> </ul>
<b>No confidence</b>	<b>16</b>	<b>27.1</b>	<ul style="list-style-type: none"> <li>Who knows indeed. I have no confidence.</li> <li>I wouldn't trust any data to the council.</li> </ul>
<b>Data Sharing/being sold a</b>	<b>16</b>	<b>27.1</b>	<ul style="list-style-type: none"> <li>It depends on who you share the data with for money; any data gathered must be confidential.</li> <li>I have concerns about the way governments use citizen data for commercial gain.</li> </ul>

## Mission 3: A Connected City

The number of connected devices is expected to increase rapidly over the coming years. This will dramatically change how people and devices interact with content and services. As a result connectivity will have to be ubiquitous and capable of connecting both low powered and high throughput devices.

The Internet of Things has the potential to blur the boundaries between the physical and the digital world. It will allow us to constantly monitor and control our built and natural environments and will help us inform decision making. We need to ensure we have the necessary infrastructure in place to support these devices.

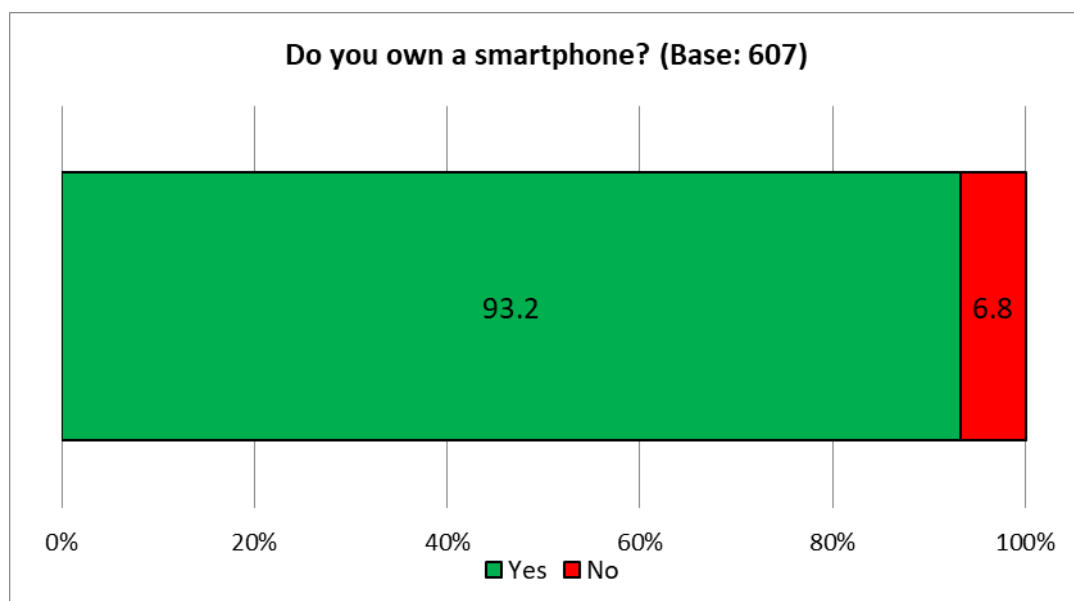
In order for Cardiff to prosper we need to look ahead and improve connectivity so that everyone benefits from the digital era. This will involve collaboration with telecommunication suppliers, landowners and public bodies to ensure that the city has the right digital infrastructure for the future.

In order for Cardiff to improve connectivity in the region we will:

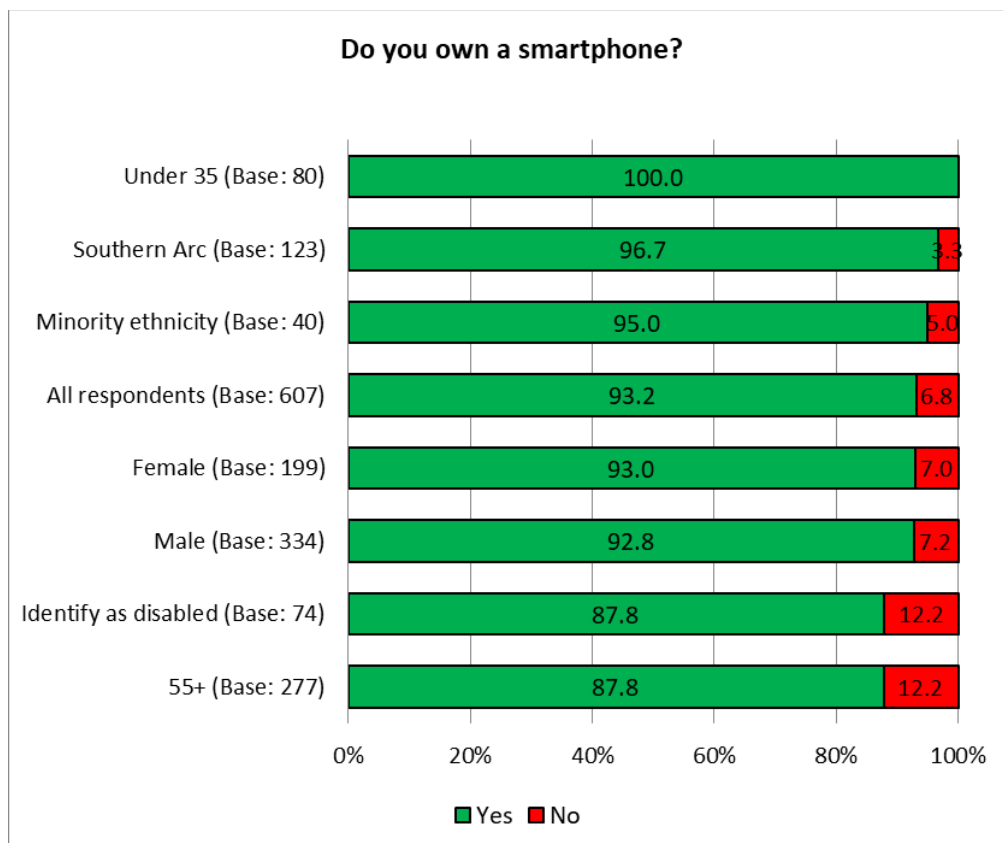
- Improve fibre infrastructure in the city
- Embed Cardiff Internet Exchange into the region, to provide low latency services
- Ensure the smooth roll out of 5G and enhance mobile coverage
- Harness the power of the Internet of Things

### Q7. Do you own a smartphone?

Over nine in ten respondents (93.2%) owned a smartphone.



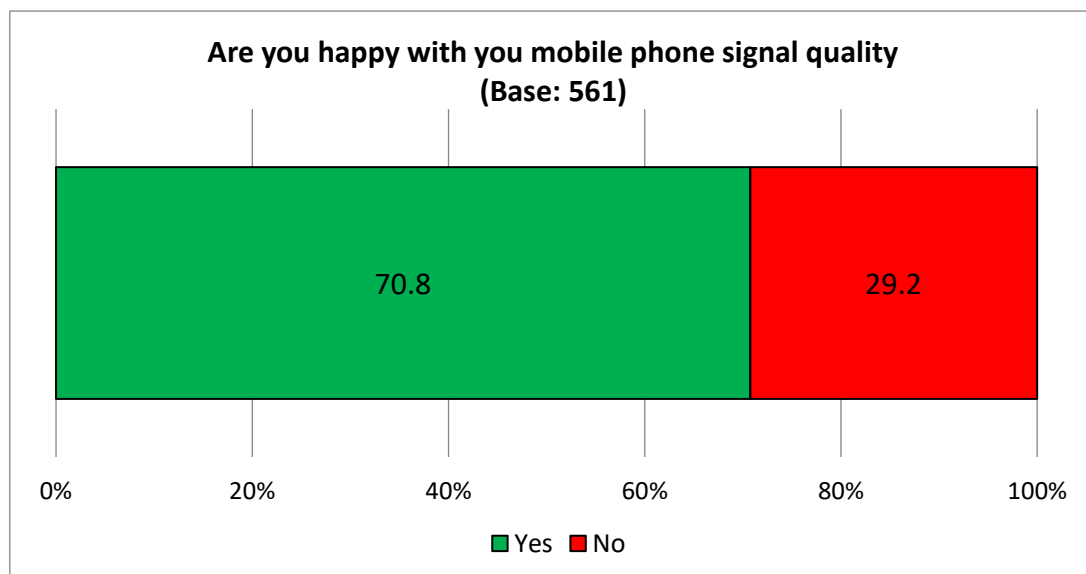
Perhaps unsurprisingly all respondents under 35 owned a smartphone, whilst ownership was lowest amongst the over 55's, and those identifying as disabled (both 87.8%).



(NB: - Caution should be taken with low base sizes.)

### Q8. Are you happy with you mobile phone signal quality?

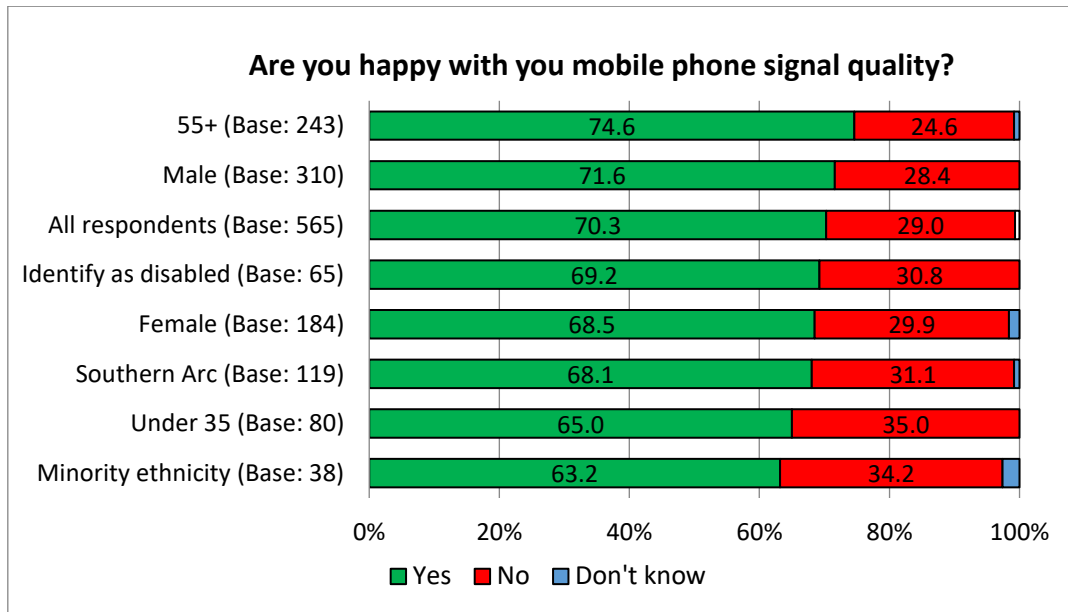
Seven in ten (70.7%) respondents were happy with the quality of their mobile signal.



NB. Analysis excludes Don't Know responses

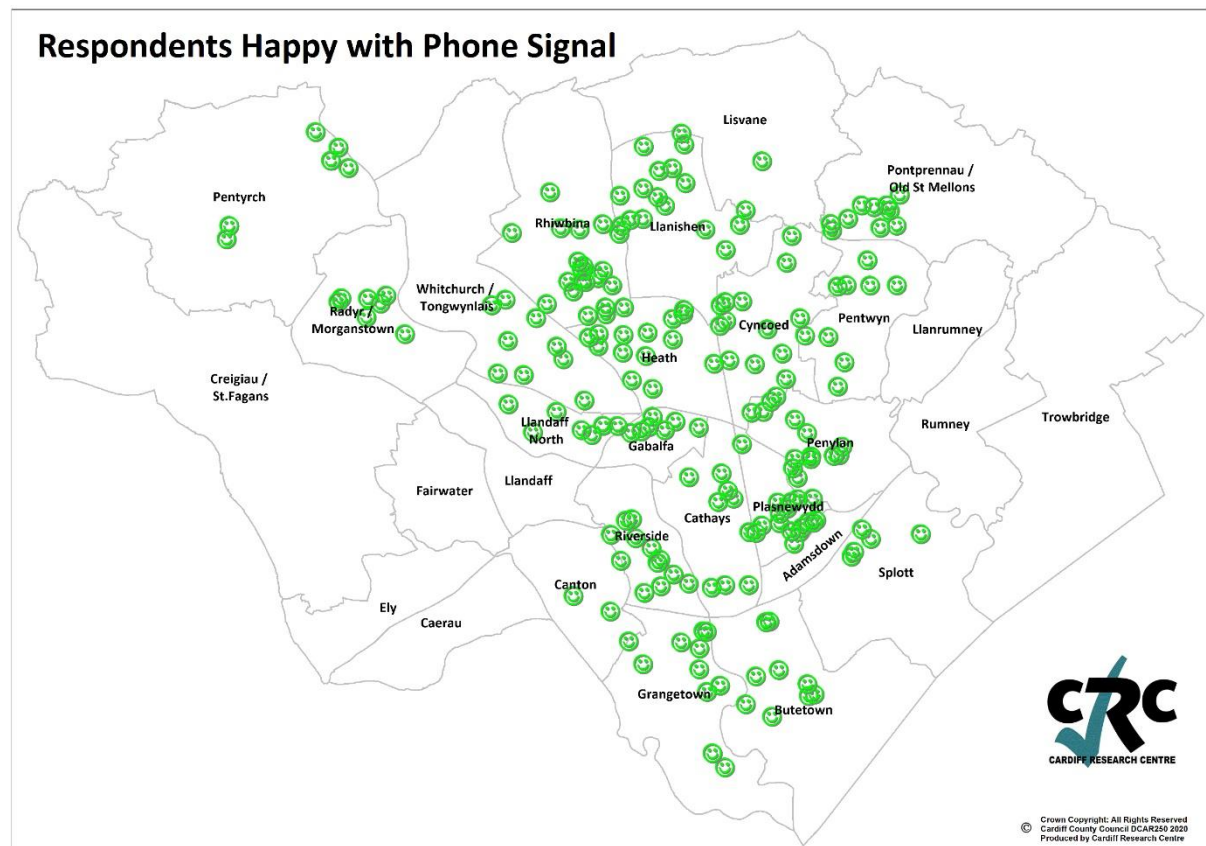


Respondents aged 55+ and males were most likely to be happy with their mobile phone quality (74.6% and 71.6% respectively). Over a third of respondents aged under 35 and those that identified as disabled claimed to be unhappy with signal quality (35.0% and 34.2% respectively).

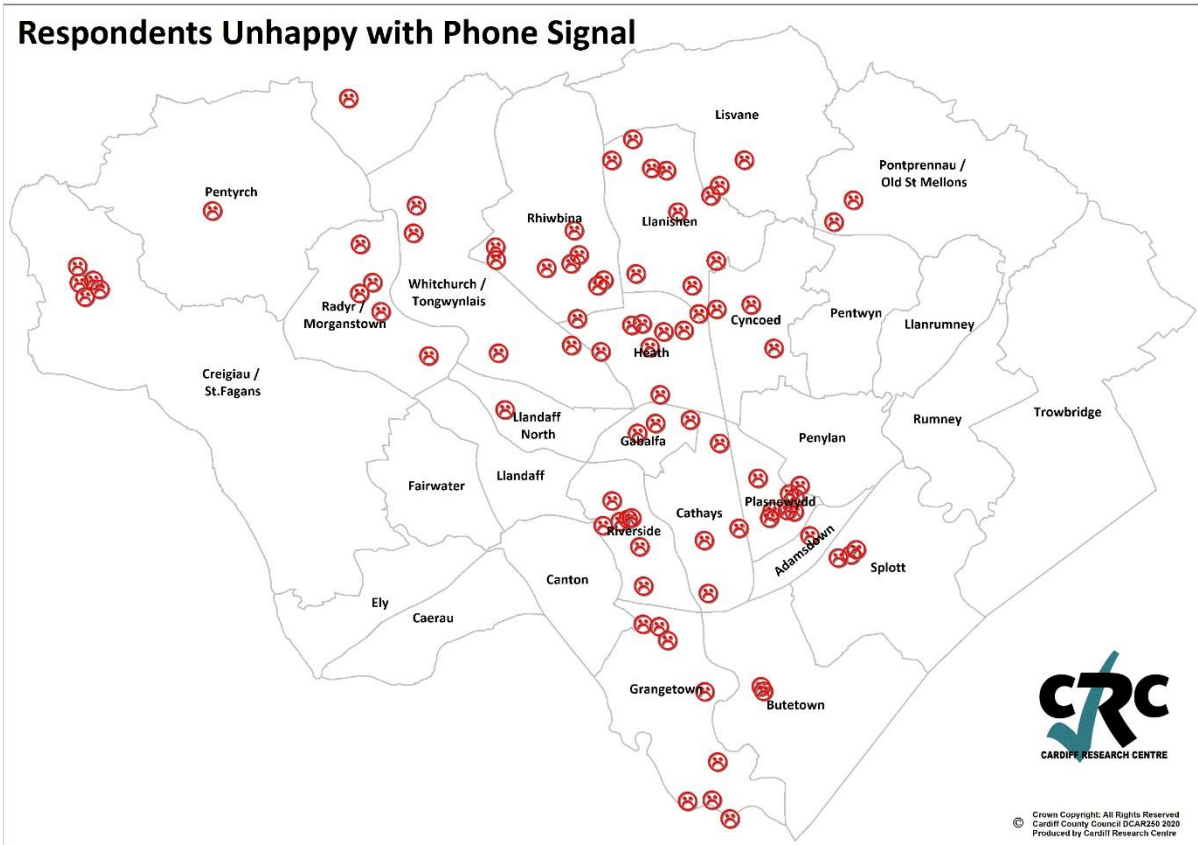


(NB: - Caution should be taken with low base sizes.)

Respondents that indicated they were both 'Happy' and 'Unhappy' with their phone signal, where location details were available were mapped across the city, as detailed below.

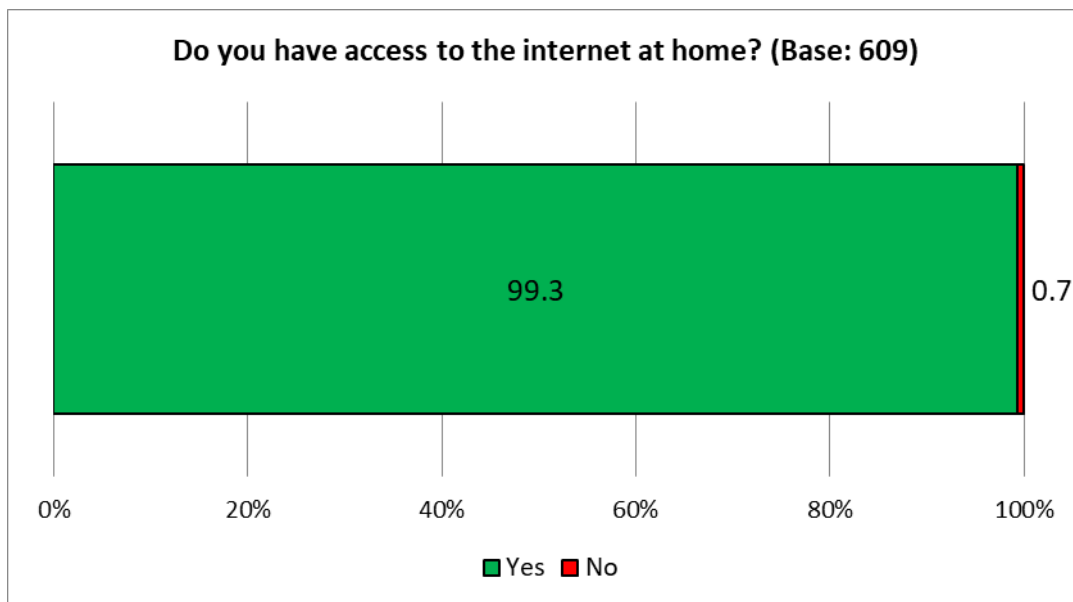


## Respondents Unhappy with Phone Signal

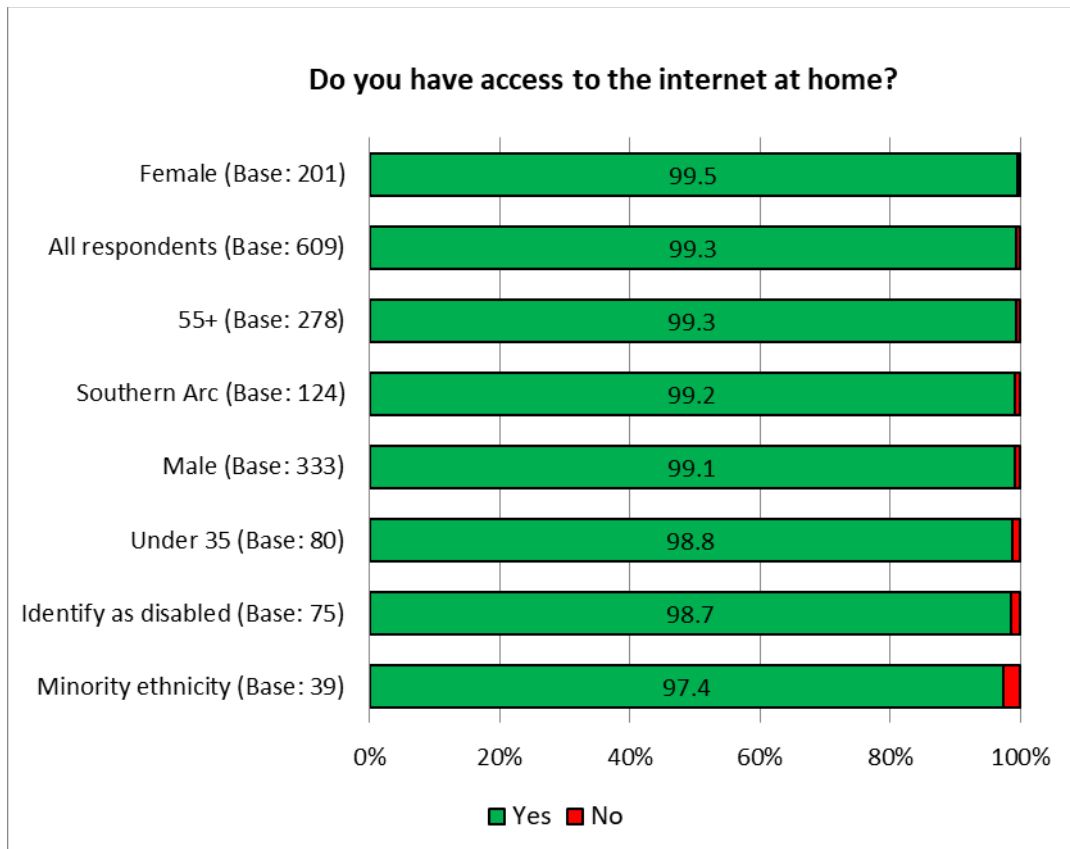


### Q9. Do you have access to the internet at home?

Almost all (99.3%) respondents had access to the internet at home.



These findings were broadly consistent across all of the demographic groups analysed.



(NB: - Caution should be taken with low base sizes.)

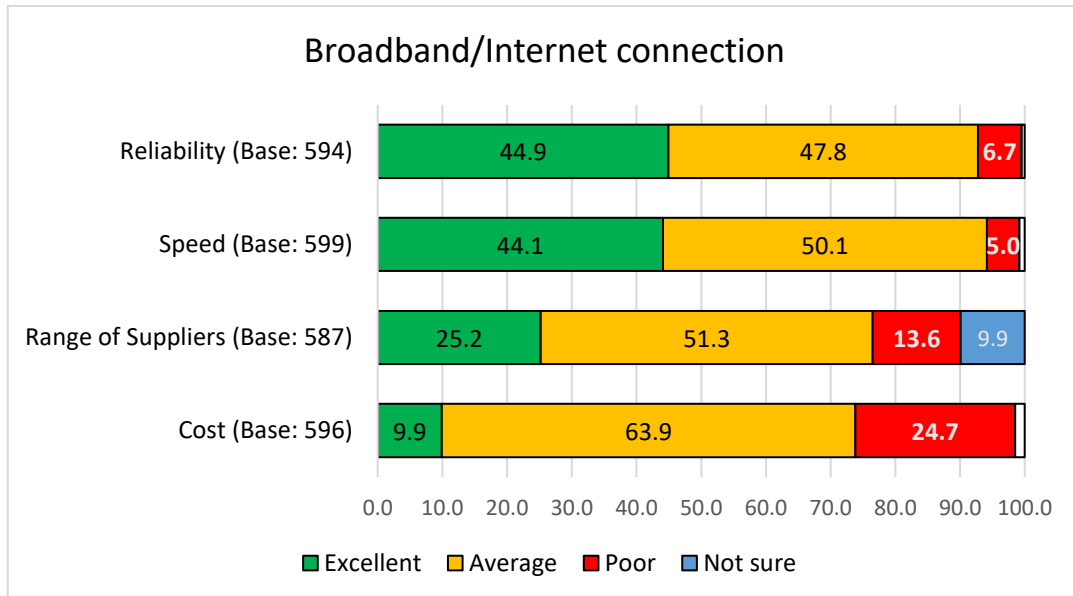
**Q9a. If 'No', Why don't you have access to the internet at home?**

	No.
Don't want it	-
Too expensive	3
Poor connections options where I live	1
Out of date computer	1

### Q9b. If yes, please describe your broadband/internet connection

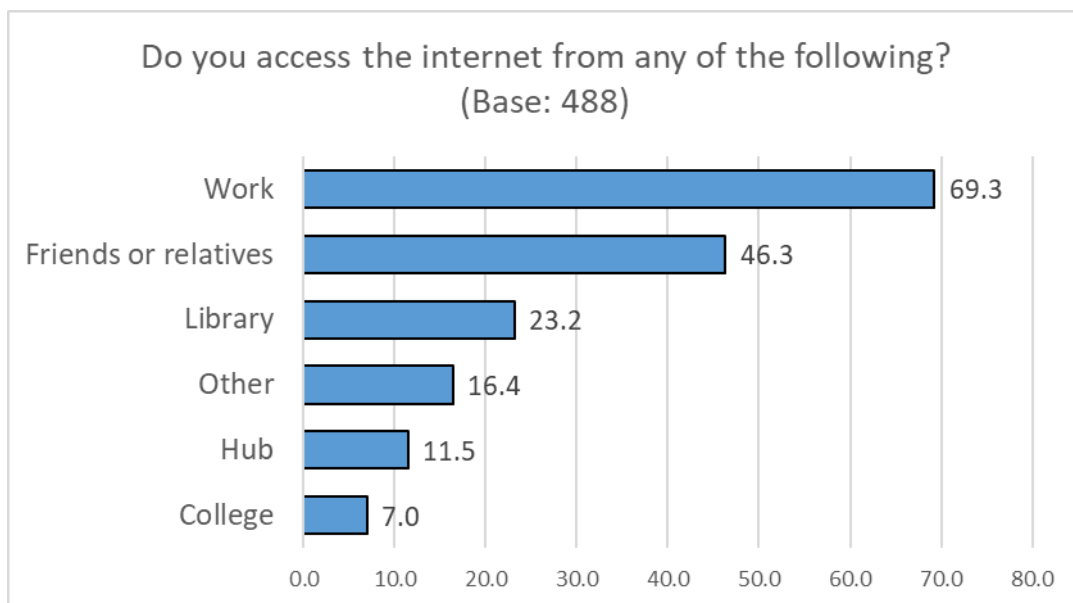
Those respondents that indicated a home internet connection, were asked to rate their service against a number of variables.

Respondents were most satisfied with the reliability (44.9%) and speed (44.1%) of their connection. The greatest level of dissatisfaction with the broadband/internet connection was around the cost, with a quarter (24.7%) rating this as poor.



### Q10. Do you access the internet from any of the following?

Outside of their household respondents accessed the internet mainly in work (69.3%), via friends or relatives (46.3%) or within a library (23.2%).



(NB. Percentages do not sum to 100.0% because respondents could give multiple answers.)

### Q10a. If 'Other' please specify

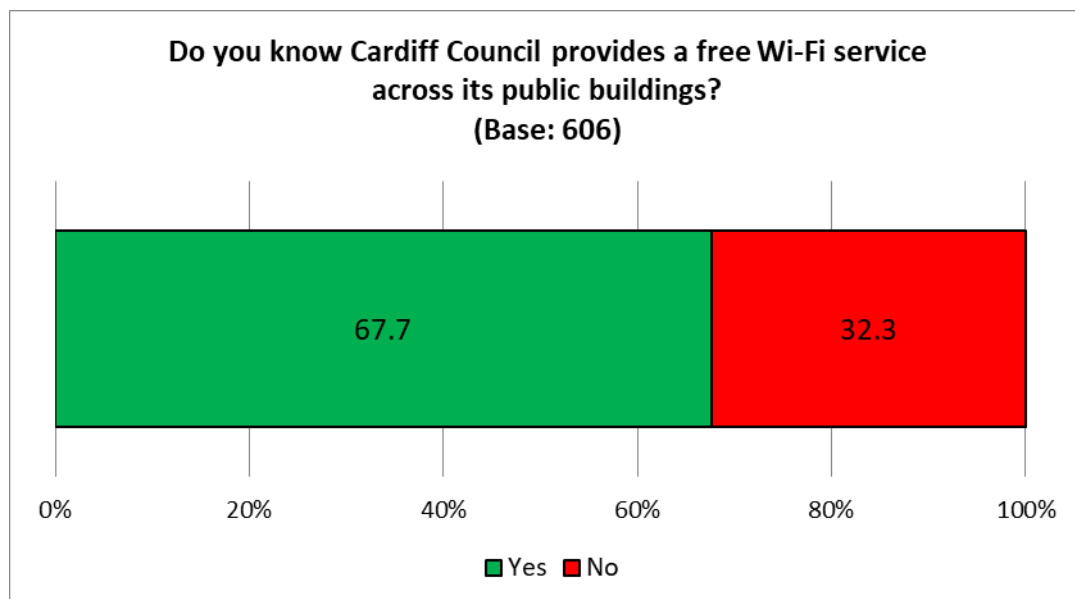
A total of 64 respondents provided a response to the question, 8.4% of total respondents for the whole survey. The comments when analysed resulted in 13 themes, which are detailed below.

	No.	%
Café	20	31.3
Public Wi-Fi	19	29.7
Home	16	25.0
Transport	8	12.5
Hotels	7	10.9
Mobile Data	6	9.4
Bars	6	9.4
Retail Outlets	6	9.4
Other	4	6.3
Social Groups	3	4.7
Restaurants	3	4.7
None	1	1.6
Banking	1	1.6

*(NB. Percentages do not total 100% as comments could fall into multiple themes)*

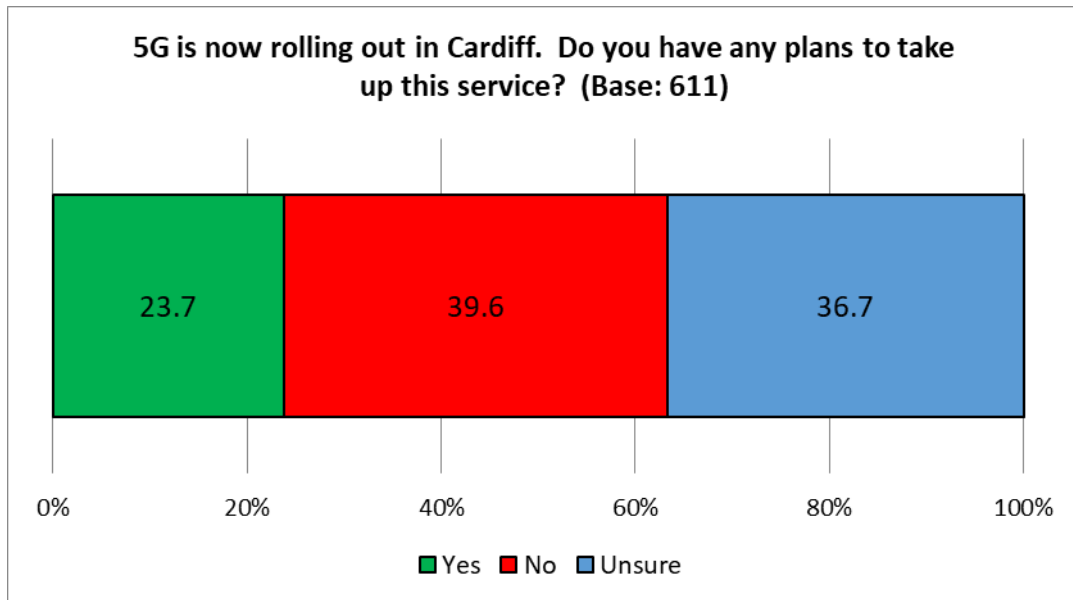
### Q11. Do you know Cardiff Council provides a free Wi-Fi service across its public buildings?

Just over two-thirds (67.7%) of respondents were aware that the Council provides a free Wi-Fi service across its public buildings, whilst one-third (32.3%) did not know.

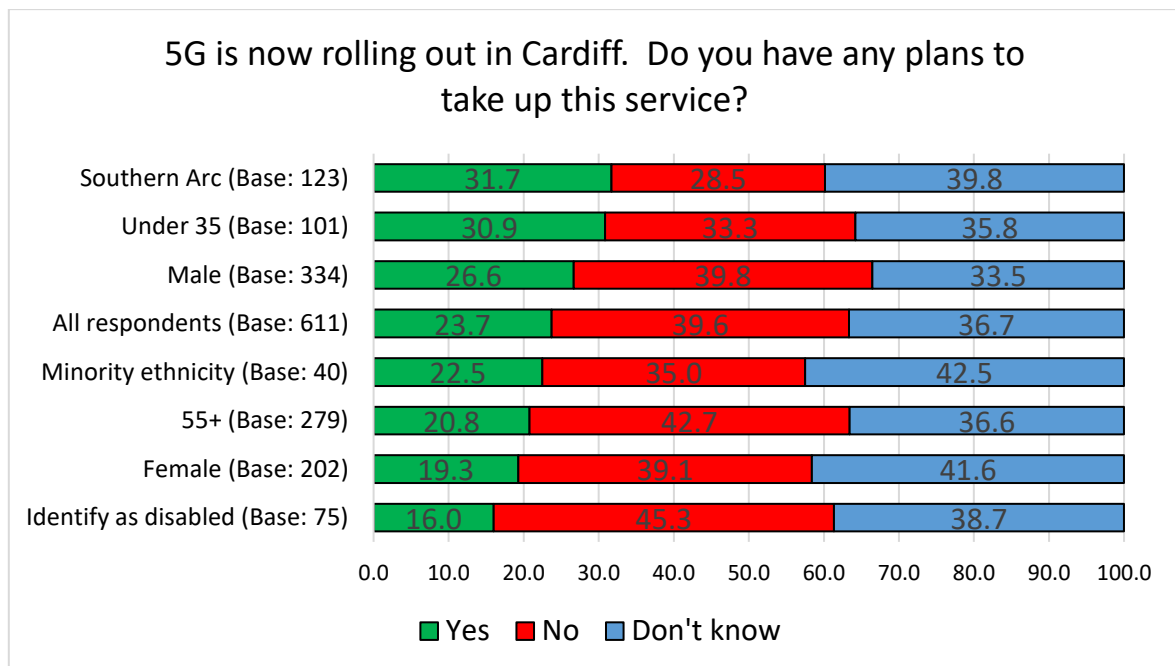


**Q12. 5G is now rolling out in Cardiff. Do you have any plans to take up this service?**

Plans to use the 5G were low amongst respondents, with just under one quarter (23.7%) indicating they would use the service. In contrast, two-fifths (39.6%) who had no plans in using 5G and around one third (36.7%) who were undecided.



Respondents that reside in the southern arc (31.7%), were around twice as likely to take up 5G, than respondents that identified as disabled (16.0%).



## Mission 4: A Mobile & Sustainable City

The city is expected to grow exponentially over the next 20 years. This growth will put pressure on the city's transport and energy infrastructure as well as its natural environment. Cardiff needs to ensure that the impacts of population growth are managed in a sustainable manner whilst ensuring that people can easily move around the Capital.

Cardiff has a target of achieving a 50:50 modal split by 2026 (i.e. 50% of journeys to be made by sustainable transport). To help achieve this target Cardiff needs to adopt smart technologies. These technologies will enable us to effectively manage the network, tackle air pollution, prioritise public transport and active travel provision, influence travel behaviour and provide data that will help us plan better.

Smart city approaches could also make Cardiff more sustainable - Understanding how people move, how energy is consumed, and how resources flow, can allow for better management of infrastructure, improve efficiency and reduce wastage. Bins can be collected when they are full; smart grids can balance energy supply and demand; lights can shine when and where people actually need them.

Digitisation of products and services can bring less demand for resources and fewer journeys. Just as Spotify replaces the trip to buy a physical CD, online learning allows the teaching to come to the student.

Smart city tools, can also enable more sustainable behaviours. Digital platforms are supporting the sharing economy - car clubs, co-working, and peer-to-peer exchange. Navigation Apps are designed to make walking or cycling options easier, which aims to encourage more sustainable choices.

To ensure we keep Cardiff moving and grow more sustainably Cardiff is proposing the following initiatives:

- Use the latest technology to keep Cardiff moving.
- Explore infrastructure requirements for autonomous vehicles.
- Develop smarter infrastructure and smarter built environments.
- Implement smart energy infrastructure.

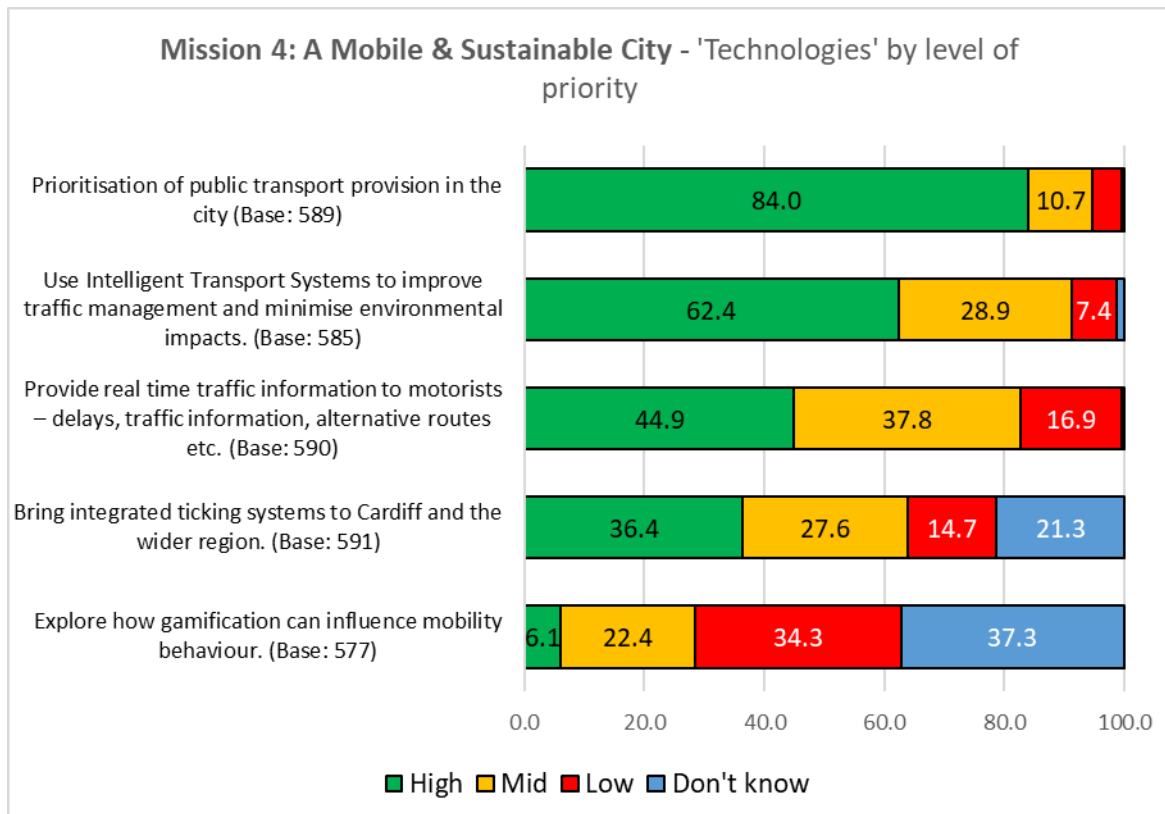
### Q13. Please place the following 'Technologies' into a level of priority for Cardiff Council

Respondents were given a list of five technologies, and asked to rank which they would prioritise in terms of High, Medium and Low priority.

The top three areas identified with 'High' ranking, for prioritising were:

1. Prioritisation of public transport provision in the city (84.0%)
2. Use Intelligent Transport Systems to improve traffic management and minimise environmental impacts. (62.4%)
3. Provide real time traffic information to motorists – delays, traffic information, alternative routes etc. (44.9%)

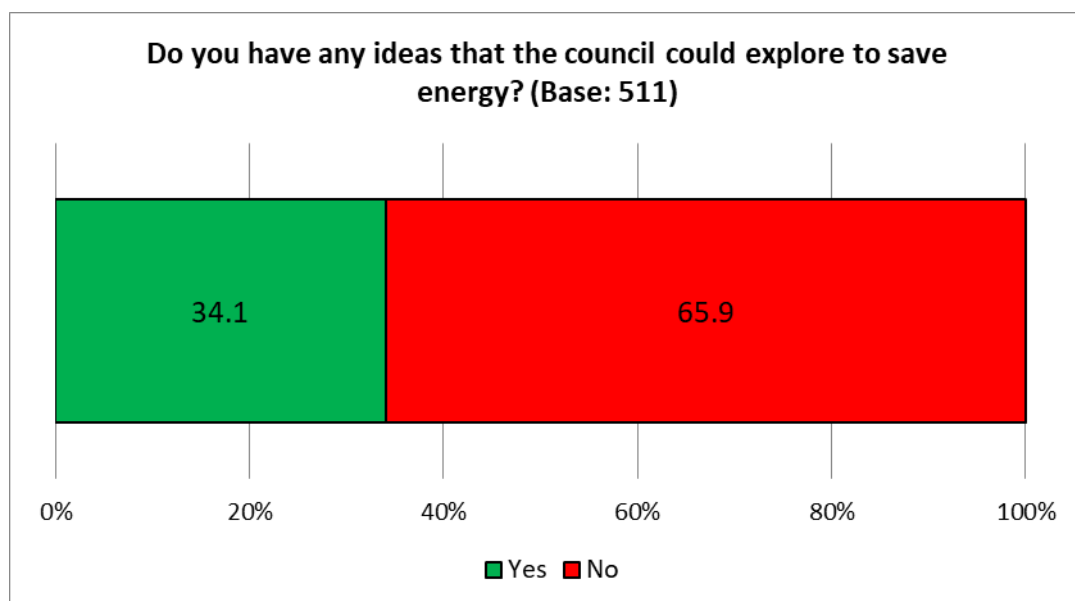
All demographic groups analysed ranked prioritisation of public transport provision in the city as the top priority. A full breakdown of priorities by demographic is provided in Appendix 3.



## IMPROVING ENERGY USE WITHIN COUNCIL BUILDINGS

### Q14. Do you have any ideas that the council could explore to save energy?

Just over a third (34.1%) of respondents indicated they had ideas that the Council could explore to save energy.





### Q15. What idea(s) do you have?

A total of 159 respondents provided a response to the question. The comments when analysed resulted in 12 themes.

The top three themes along with some example comments can be seen below. A full list of comments can be viewed in Appendix A.

Theme	No.	%	Example comments
<b>Renewables</b>	<b>78</b>	<b>49.1</b>	<ul style="list-style-type: none"> <li>• Use solar more widely and perhaps wind power.</li> <li>• All lights in council offices on affixed cycle to turn off and staff, if present, turn back on.. There if a factory in Duffryn, Newport developing a new form of flexible solar panel, cheaper than the existing rigid and could be considered for attachment to existing as well as new buildings.</li> <li>• Better use of the rivers, Cardiff Barrage and Bristol Channel to build various types of turbines. Water taxis along the rivers Taff and Ely. Free solar panels to all Cardiff citizens.</li> <li>• Further explore options for council buildings to create their own power cleanly via sun/wind or water if appropriate.</li> <li>• Invest in municipal green energy: solar, wind and electrolysis (green hydrogen).</li> </ul>
<b>Energy efficiency</b>	<b>74</b>	<b>46.5</b>	<ul style="list-style-type: none"> <li>• Stop wasting power and stop unnecessary traffic lights after rush hours to reduce pollution.</li> <li>• Improved insulation and glazing to all buildings. Correct the damage done by cavity wall insulation. Train ALL staff in the correct use of heating and A/C systems - i.e. don't use A/C systems with open windows or heaters on and not all day.</li> <li>• Ensure council buildings are fitted with windows which shut properly in winter and open wide in hot weather to stop use of unnecessary air conditioning units and extra fan heaters beneath council workers desks.</li> <li>• More energy efficient street lighting.</li> <li>• Update waste collection fleet to more sustainable options. Modernise signage and all lighting.</li> </ul>
<b>Infrastructure</b>	<b>42</b>	<b>26.4</b>	<ul style="list-style-type: none"> <li>• Traffic control and flows improvements.</li> <li>• Better paving of roads which will reduce fuel burnt by vehicles.</li> </ul>

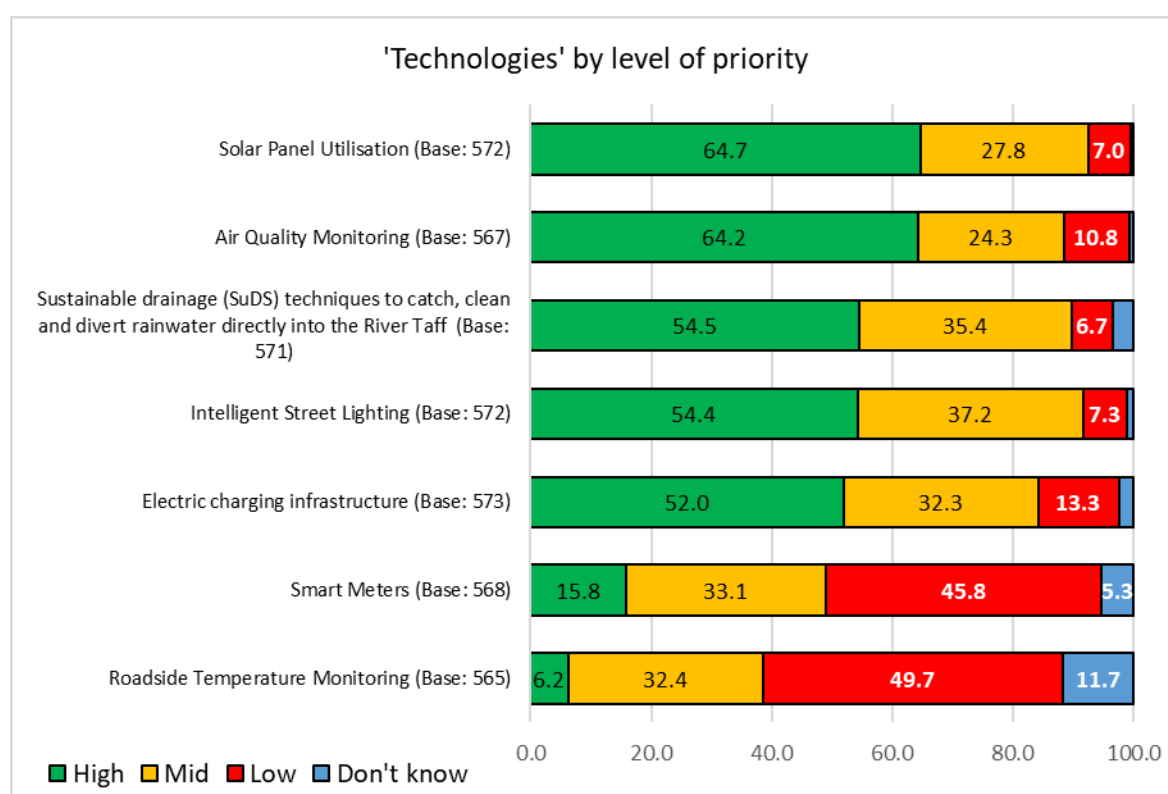
## Q16. Please place the following 'Technologies' into a level of priority for Cardiff Council

Respondents were given a list of seven technologies to use in Council buildings, and asked to identify which they would prioritise.

The top three areas identified for prioritising were:

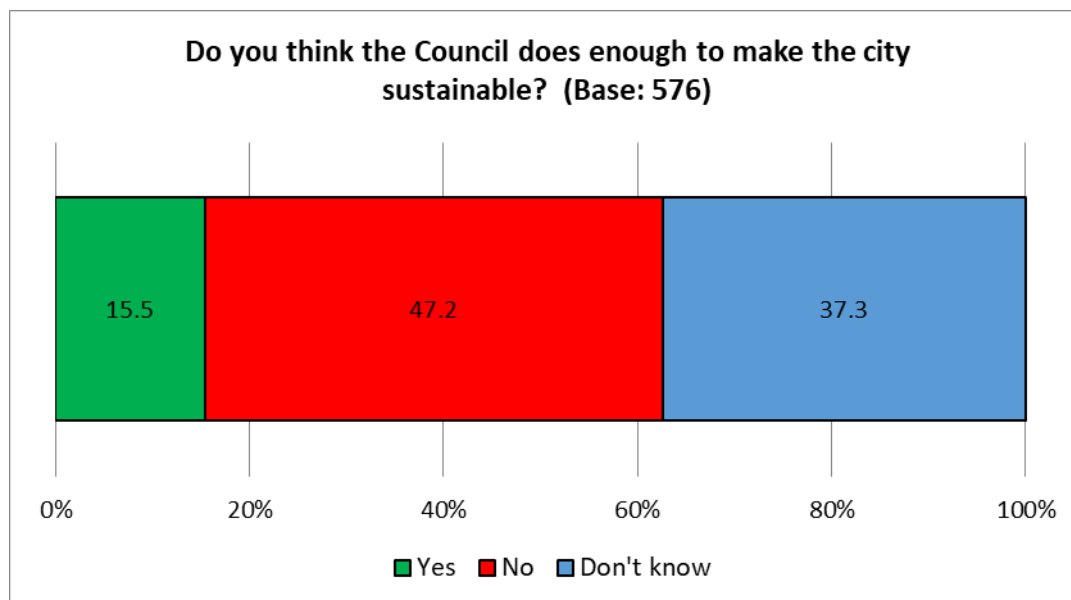
1. Solar Panel Utilisation (64.7%)
2. Air Quality Monitoring (64.2%)
3. Sustainable drainage (SuDS) techniques to catch, clean and divert rainwater directly into the River Taff. (54.5%)

All demographic groups analysed ranked prioritisation Solar Panel Utilisation and Air Quality Monitoring within their top two priorities with the exception of female respondents that had Air Quality Monitoring top followed by Sustainable drainage (SuDS) techniques to catch, clean and divert rainwater directly into the River Taff. A full breakdown of priorities by demographic is provided in Appendix 4.



**Q17. Do you think the Council does enough to make the city sustainable?**

Just under half (47.2%) of respondents thought the Council does not do enough to make the city sustainable, around one-third (37.3%) indicated they did not know; just 15.5% felt the council did enough.



**Q17a. If 'No', can you advise what the Council could do to become more sustainable?**

A total of 114 respondents provided a response to the question, 15.0% of total respondents for the whole survey. The comments when analysed resulted in 15 themes, which are detailed below with sample comments.

Theme	No.	%	Example comments
<b>Improve infrastructure/transport options</b>	<b>60</b>	<b>52.6</b>	<ul style="list-style-type: none"> <li>No real priority for bus routes on 55,57,58 journeys over cars resulting in slower progress at peak times. There are obviously other routes with similar problems. E.g. Traffic lights times from Richmond Road onto Newport Road far too quick for bus movement.</li> <li>Electric charging points and improved cycle lanes.</li> <li>Stop giving priority to Cars. Invest in public transport. Invest in energy schemes that utilise Wales's natural resource - Water.</li> </ul>
<b>Reduce Car usage</b>	<b>19</b>	<b>16.7</b>	<ul style="list-style-type: none"> <li>Keep cars out of the city centre. Don't make it so easy for multiple car households to take up all the parking on their residential street.</li> </ul>

<b>Increase renewable energy usage</b>	<b>19</b>	<b>16.7</b>	<ul style="list-style-type: none"> <li>Renewable energy in ALL Council buildings; street lights off when daylight.</li> </ul>
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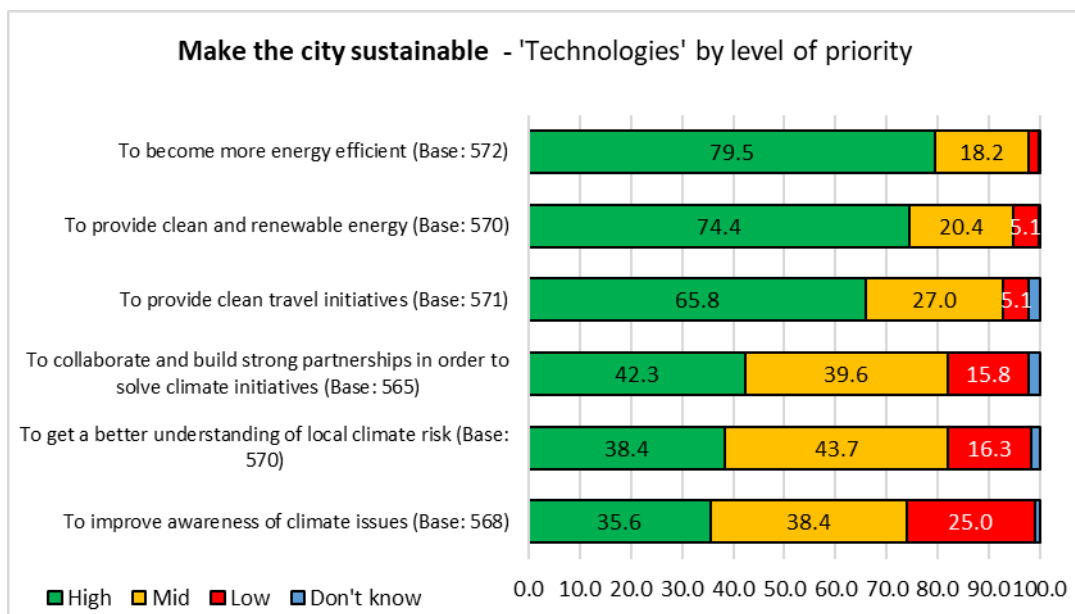
**Q18. Make the city sustainable - Please place the following 'Technologies' into a level of priority for Cardiff Council.**

Respondents were given a list of six technologies and asked to identify which they would prioritise

The top three areas identified for prioritising were:

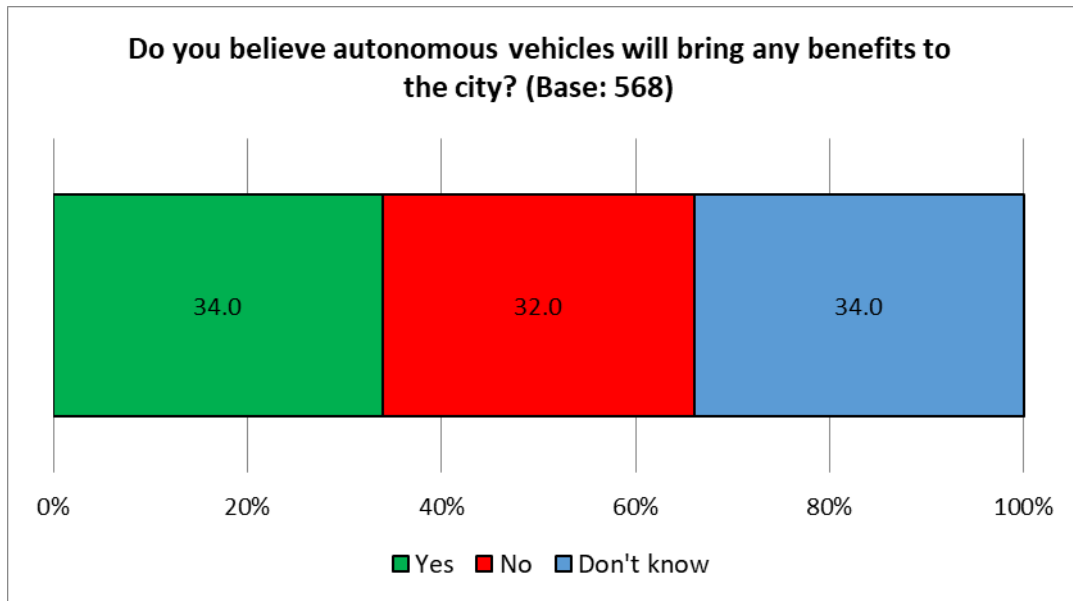
1. To become more energy efficient (79.5%)
2. To provide clean and renewable energy (74.4%)
3. To provide clean travel initiatives (65.8%)

All demographic groups analysed ranked prioritisation of the top three technologies as above, however their positioning did differ. A full breakdown of priorities by demographic is provided in Appendix 5.

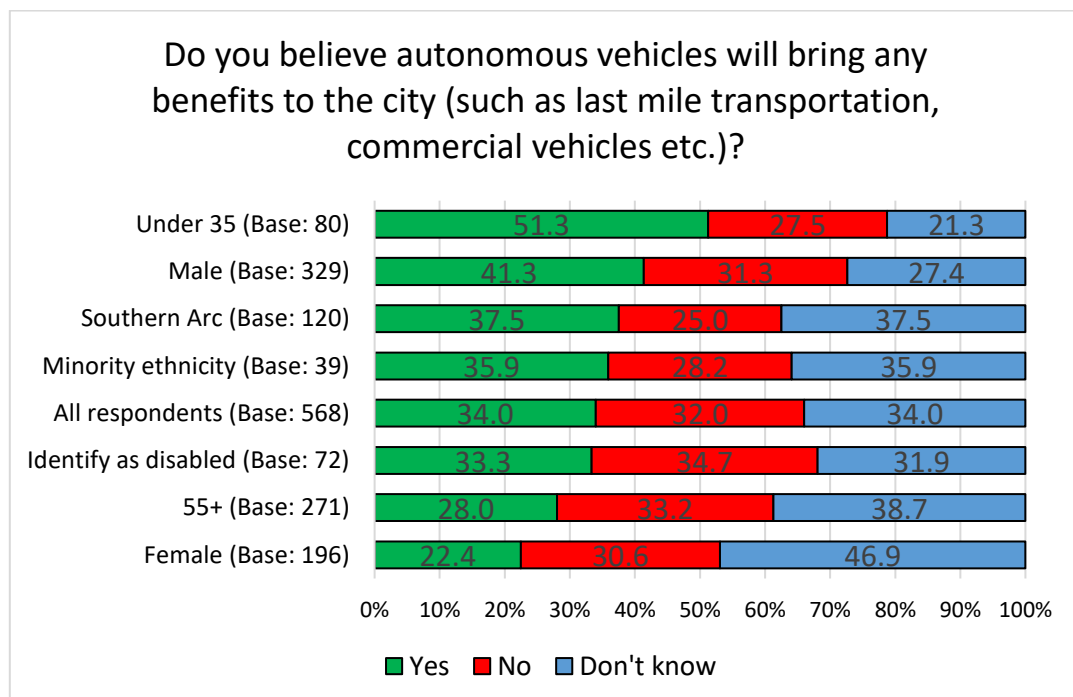


**Q19. Do you believe autonomous vehicles will bring any benefits to the city (such as last mile transportation, commercial vehicles etc.)?**

Opinion was split amongst respondents belief that autonomous vehicles will bring a benefit to the city. Around a third (34.0%) believe there to be a benefit, 32.0% felt there'd be no benefit and a further 34.0% who were unsure.



Over a half (51.3%) of respondents aged Under 35 believe that autonomous vehicles will bring benefits to the city. Respondents that identified as disabled were most likely to disagree that this would bring any benefits (34.7%).



## Mission 5: A Healthy City

Health, care and well-being has always been a challenging area with reduced budgets, demographic challenges, a rising demand for care and a requirement for more citizen-centred services. All these challenges open up some real opportunities to accelerate Cardiff in becoming a smarter city.

We want to nurture an ecosystem that looks at new ways of gathering, analysing and presenting data - via new and established technologies such as wearables, machine learning, virtual assistants, sensors, telecare and telehealth solutions. Innovative digital technology with the effective use of data will allow citizens to lead healthier and more independent lives. It will also promote preventative and early intervention methods which will create efficiencies and reduce financial pressures on all parts of the health care system.

We will work with partners to:

- Use digital technology to support users to remain independent.
- Co-design health technology.
- Join up Public Services.
- Use technology to promote physical activity and improve well-being.

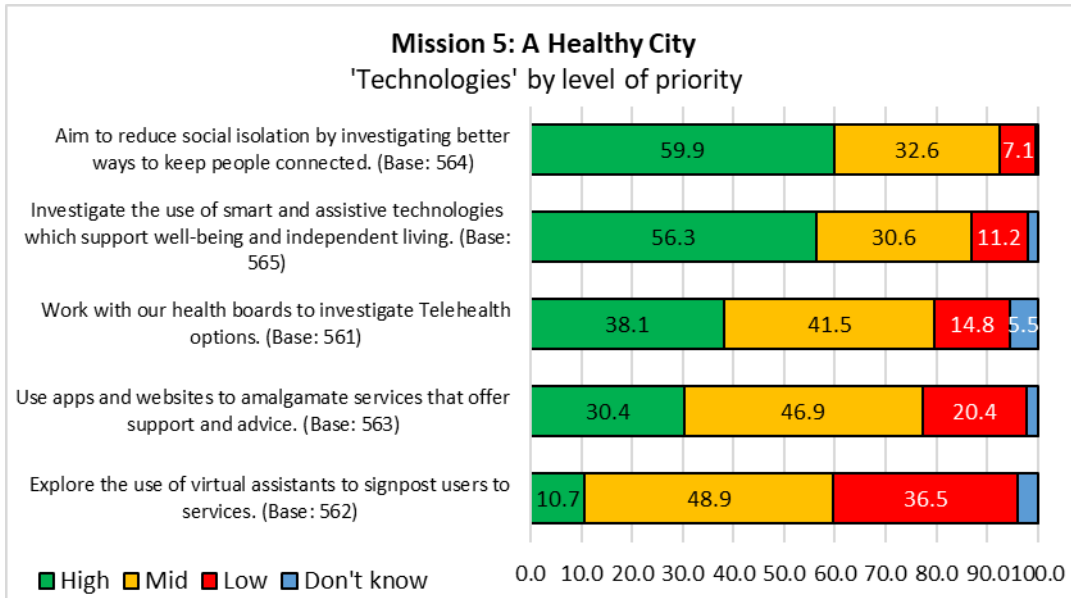
### Q20. Please place the following 'Actions' into a level of priority for Cardiff Council:-

Respondents were given a list of five technologies related to a healthy city and asked to identify which they would prioritise.

The top three areas identified for prioritising were:

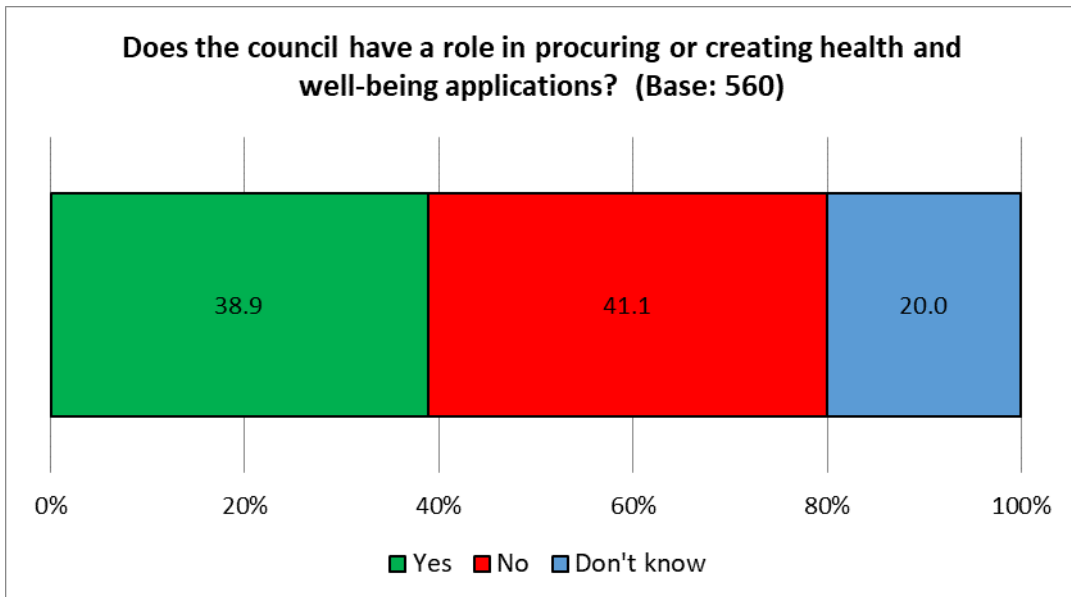
1. Aim to reduce social isolation by investigating better ways to keep people connected (59.9%)
2. To provide clean and renewable Investigate the use of smart and assistive technologies which support well-being and independent living. (56.3%)
3. Work with our health boards to investigate Telehealth options. (38.1%)

All demographic groups analysed ranked prioritisation of the top three technologies as above, however their positioning did differ. A full breakdown of priorities by demographic is provided in Appendix 6.

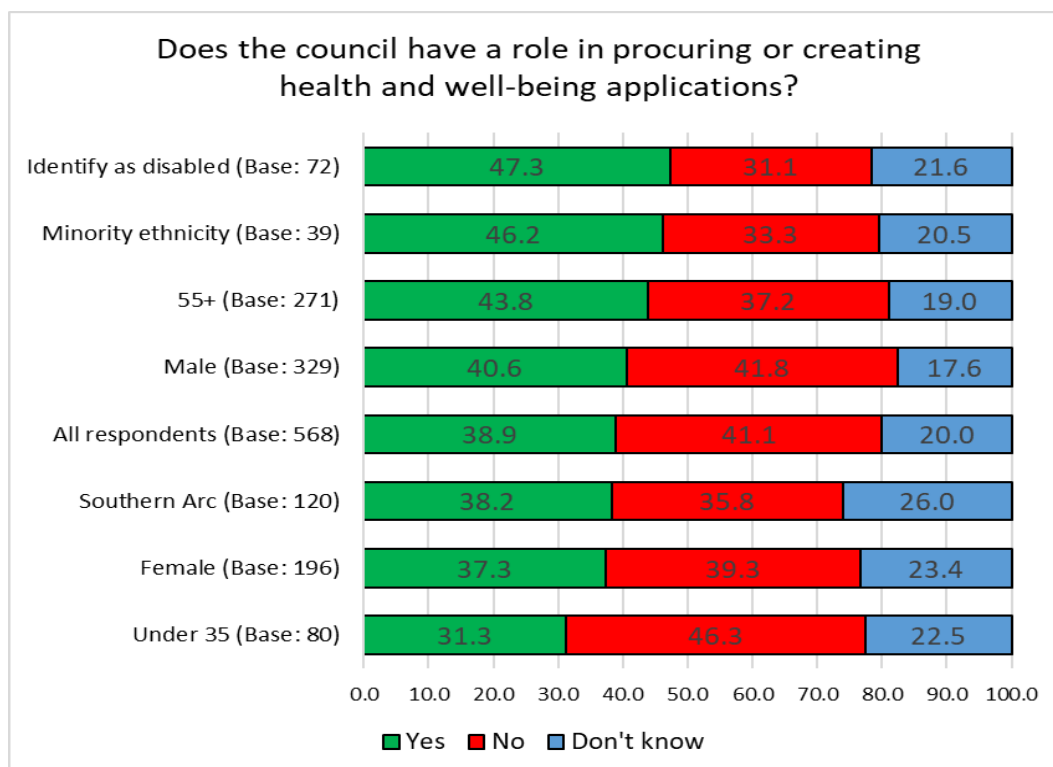


**Q21. Does the council have a role in procuring or creating health and well-being applications?**

Opinion was split amongst respondents belief that the Council has a role in procuring or creating health and well-being applications, 38.9% agreed, whilst 41.1% disagreed. A further one in five (20.0%) didn't know.



Just under half (47.3%) of respondents that identify as disabled and those of a minority ethnicity (46.2%) agreed that the council has a role in creating/procuring health and well-being applications. Disagreement was highest amongst those aged under 35 (46.3%).



**Q22. Are there any other comments you would like to make about Cardiff Council's Smart City Roadmap?**

A total of 129 respondents provided a response to the question, which resulted in 12 themes.

The top three themes along with some example comments can be seen below. A full list of comments can be viewed in Appendix A.

Theme	No.	%	Example comments
<b>Achievability/Clarity of vision</b>	<b>35</b>	<b>27.1</b>	<ul style="list-style-type: none"> <li>The language used makes it difficult to understand for those who are not directly involved in IT.</li> <li>Don't try and move on with the future when you're failing in the present.</li> <li>Lots of good words in the vision but much repetition and little about how it will be achieved.</li> </ul>
<b>Improve/Poor Transport</b>	<b>27</b>	<b>20.9</b>	<ul style="list-style-type: none"> <li>Improving public transport should be the Council's highest priority. Our current system is woeful.</li> <li>All feels a little unnecessary. There are bigger issues for Cardiff to solve (e.g. improve transport).</li> </ul>
<b>Positive Approach</b>	<b>16</b>	<b>12.4</b>	<ul style="list-style-type: none"> <li>Very ambitious, but that's how positive change is achieved.</li> </ul>



## **Appendix 1 - About You**

**What was your age on your last birthday?**

	No.	%
16-24	19	3.4
25-34	62	11.2
35-44	80	14.5
45-54	98	17.8
55-64	124	22.5
65-74	126	22.8
75+	29	5.3
Prefer not to say	14	2.5
<b>Total</b>	<b>552</b>	<b>100.0</b>

**What best describes your gender?**

	No.	%
Female	202	36.7
Male	335	60.9
Prefer not to say	13	2.4
Other	1	0.2
<b>Total</b>	<b>550</b>	<b>100.0</b>

**Do you identify as a disabled person?**

	No.	%
Yes	75	13.8
No	446	81.8
Prefer not to say	24	4.4
<b>Total</b>	<b>545</b>	<b>100.0</b>

Please tick any of the following that apply to you:

	No.	%
Long-standing illness or health condition (e.g. cancer, HIV, diabetes, or asthma)	79	41.6
Mobility impairment	45	23.7
Mental health difficulties	46	24.2
Deaf/ Deafened/ Hard of hearing	46	24.2
Visual impairment	14	7.4
Learning impairment/ difficulties	7	3.7
Wheelchair user	3	1.6
Prefer not to say	32	16.8
Other	10	5.3
<b>Total Respondents</b>	<b>190</b>	<b>-</b>

Do you regard yourself as belonging to any particular religion?

	No.	%
Yes	204	38.1
No, no religion	331	61.9
<b>Total</b>	<b>535</b>	<b>100.0</b>

If yes, please specify:

	No.	%
Christian (Including Church in Wales, Catholic, Protestant and all other Christian denominations)	170	85.9
Muslim	6	3.0
Hindu	4	2.0
Buddhist	2	1.0
Jewish	2	1.0
Sikh	0	0.0
Prefer not to answer	6	3.0
Other	8	4.0
<b>Total</b>	<b>198</b>	<b>-</b>

### How would you describe your sexual orientation?

	No.	%
Heterosexual / Straight	431	79.8
Bisexual	18	3.3
Gay Man	22	4.1
Gay Woman/ Lesbian	6	1.1
Prefer not to answer	58	10.7
Other	5	0.9
<b>Total</b>	<b>540</b>	<b>100.0</b>

### Are you:

	No.	%
Married / Registered Civil Partnership	296	54.8
Single	89	16.5
In a long-term relationship	81	15.0
Separated/Divorced	44	8.1
Widowed	22	4.1
Other	8	1.5
<b>Total</b>	<b>540</b>	<b>100.0</b>

### Do you consider yourself Welsh?

	No.	%
Yes	367	68.9
No	166	31.1
<b>Total</b>	<b>533</b>	<b>100.0</b>

## What is your ethnic group?

	No.	%
White - Welsh/English/Scottish/Northern Irish/British	465	85.2
White - Any other white background	19	3.5
Asian/Asian British - Indian	8	1.5
White - Irish	9	1.6
Mixed/Multiple Ethnic Groups - Any other	4	0.7
Black/African/Caribbean/Black British - African	2	0.4
Mixed/Multiple Ethnic Groups - White and Black Caribbean	2	0.4
Mixed/Multiple Ethnic Groups - White & Asian	2	0.4
Asian/Asian British - Bangladeshi	1	0.2
Asian/Asian British – Pakistani	2	0.4
Arab	0	0.0
Mixed/Multiple Ethnic Groups - White and Black African	0	0.0
Black/African/Caribbean/Black British - Any other	1	0.2
Black/African/Caribbean/Black British – Caribbean	1	0.2
Asian/Asian British - Chinese	1	0.2
Asian/Asian British - Any other	3	0.5
White - Gypsy or Irish Traveller	1	0.2
Prefer not to say	22	4.0
Any other ethnic group	3	0.5
<b>Total</b>	<b>546</b>	<b>100.0</b>

## Appendix 2 – Coded Questions / Example Comments

Q1a. Is there anything you could add to this vision?

Theme	No.	%	Example comments
Infrastructure	28	20.6	<ul style="list-style-type: none"> <li>• A central bus station would be a starting point. The capital of Wales and no bus station is just unbelievable in this day and age. This should be a basic requirement for a city never mind a capital city.</li> <li>• Dig once for future fibre infrastructure....promote to all utilities for encouragement to contribute to the cause.</li> <li>• Good public transport infrastructure.</li> </ul>
Easy read/clarity	21	15.4	<ul style="list-style-type: none"> <li>• There is no clarity on what exactly a smart city is, these are just words with no substance so can't agree as I don't know what it exactly is the council wants.</li> <li>• Lots of unfamiliar ideas - IoT, gamification etc. What could you mean?.</li> <li>• The vision is appropriate - but it is unclear to me if the Council has sufficient capacity to respond to all the different strands mentioned in the map.</li> </ul>
Accessibility	20	14.7	<ul style="list-style-type: none"> <li>• First you must ensure that all have access to digital services and understand how to use them.</li> <li>• Please do not disenfranchise those who do not readily engage with new technology or ignore how a smart city will affect those who travel to Cardiff for jobs and leisure from the valleys and surrounding areas. They must also have an input.</li> </ul>
Development concerns/issues	19	14.0	<ul style="list-style-type: none"> <li>• The vision should include an ambitious town planning vision for building with sustainable low carbon materials, eschewing the use of concrete, steel, plastic cladding and tarmac in favour of natural and sustainable alternatives. Buildings that have natural light, heat &amp; ventilation. Buildings that collect and utilize rainwater, that do not require car parking because they are well served by public transport. The public transport network needs a lot of work to make it suitable - especially the bus service which is still run on a 1960/70s model of dedicated stops, mainly focussed on bringing people into the city centre and does not run sufficient routes that the public actually want when they want it.</li> </ul>
Needs to be inclusive	18	13.2	<ul style="list-style-type: none"> <li>• It's only inclusive to those who can access it, either because they have the technology or because they know how to utilise it. To anyone else, it's quite exclusive.</li> </ul>
Environmental concerns	13	9.6	<ul style="list-style-type: none"> <li>• Addressing climate change should be made an explicit aim, not an 'add on'.</li> </ul>

<b>Cardiff City Region</b>	<b>12</b>	<b>8.8</b>	<ul style="list-style-type: none"> <li>• It doesn't seem regional enough.</li> </ul>
<b>Security concerns</b>	<b>11</b>	<b>8.1</b>	<ul style="list-style-type: none"> <li>• I'd appreciate some clarity on privacy issues (eg: a ban on facial recognition) And more details on the security of IoT devices mentioned.</li> </ul>
<b>Financial implications</b>	<b>10</b>	<b>7.4</b>	<ul style="list-style-type: none"> <li>• This is down to cost, but Cardiff says it doesn't have money for NHS, schools, pot holes but can afford this? Totally confused.</li> </ul>
<b>Data sharing</b>	<b>8</b>	<b>5.9</b>	<ul style="list-style-type: none"> <li>• There should be something about responsible, secure and appropriate use of data. People's data is owned by them and should be used with consent.</li> </ul>
<b>Other</b>	<b>23</b>	<b>16.3</b>	<ul style="list-style-type: none"> <li>• People shouldn't depend on technology. Proper design is better than making it more technologically advanced.</li> <li>• Culture and creativity should be included - ways of connecting people to their cultural assets and help them to participate in cultural events</li> <li>• Education and ensuring pupils are being taught skills required for the future of cardiff.</li> </ul>

**Q2a. What could the Council do to engage better with the city?**

<b>Theme</b>	<b>No.</b>	<b>%</b>	<b>Example comments</b>
<b>Better Communication</b>	<b>80</b>	<b>37.9</b>	<ul style="list-style-type: none"> <li>• Talk to people - don't assume that internet "chats" are an appropriate method of gathering reliable.</li> <li>• Recent updating of technology has deterred residents from contacting Council. Currently there is NO feedback to the user of Council reporting systems.</li> <li>• Someone to talk to regarding particular issues would be helpful.</li> <li>• Better Communication. Its shocking.</li> <li>• I am a new Cardiff resident and I follow various initiatives, LA and government channels... however I don't feel that the city is currently connected enough. There are key individuals and communities that work towards better services, a better digital and physical infrastructure needs to be in place to make things happen.</li> </ul>
<b>More forms/opportunities for engagement</b>	<b>70</b>	<b>33.2</b>	<ul style="list-style-type: none"> <li>• More forums. Encouragement for start ups. Support innovation.</li> <li>• The council generally relies on electronic communication and should use a variety of methods to ensure inclusivity.</li> <li>• Host events to bring people together.</li> </ul>

			<ul style="list-style-type: none"> <li>• Where to start. How many work places have you visited? How many Schools? How many households? How many vacant shops have you covered into 'smart service' centres for the citizens, workers, visitors? How many 'people' are signed up? How many businesses?</li> <li>• Open it doors more and collaboration with more of the world.</li> </ul>
<b>Better promotion</b>	<b>44</b>	<b>20.9</b>	<ul style="list-style-type: none"> <li>• Advertise engagement opportunities more widely.</li> <li>• More positive PR campaigning, as the general view of the council amongst the public is tepid. You will struggle to achieve buy-in if the public is generally distrusting that improvements can be achieved. Generate more buzz about the exciting elements of the 'Smart Cardiff' project.</li> </ul>
<b>Better feedback as to how engagement affects decisions</b>	<b>29</b>	<b>13.7</b>	<ul style="list-style-type: none"> <li>• Listen to people's views on things like major infrastructure projects or planning matters, i.e. actively engage with their arguments rather than ignoring them.</li> <li>• Listen to the public and act on suggestions.</li> </ul>
<b>More Clairty/Transparency</b>	<b>29</b>	<b>13.7</b>	<ul style="list-style-type: none"> <li>• Give more concise information about your plans.</li> <li>• Greater transparency.</li> </ul>
<b>Involve Cllrs / Stakeholders</b>	<b>24</b>	<b>11.4</b>	<ul style="list-style-type: none"> <li>• Individual councillors should be more proactive with their residents personally and not just when canvassing for votes, not that we have ever had that luxury.</li> <li>• Speak to business, make public the data that is held and encourage other organisations and business to make use of it for the collective good.</li> </ul>
<b>Inclusive</b>	<b>21</b>	<b>10.0</b>	<ul style="list-style-type: none"> <li>• Make sure they include everyone.</li> </ul>
<b>Accessibility</b>	<b>20</b>	<b>9.5</b>	<ul style="list-style-type: none"> <li>• Actively engage with hard to reach groups who cannot respond to your social media posts.</li> </ul>
<b>Don't know</b>	<b>12</b>	<b>5.7</b>	<ul style="list-style-type: none"> <li>• I dont know how the council currently engages with stakeholders.</li> </ul>
<b>Other</b>	<b>42</b>	<b>19.9</b>	<ul style="list-style-type: none"> <li>• Cardiff Council, especially the Planning Committee hardly ever engage with communities and when they do, it is merely tokenism.</li> <li>• Follow popular trends in youth movements regarding free public transport and car-free cities."</li> <li>• Build a transport network and have a smooth transition between bus stations - not a gap of several years."</li> </ul>

*(NB. Percentages do not total 100% as comments could fall into multiple themes)*

**Q6a. If 'No', please specify**

<b>Theme</b>	<b>No.</b>	<b>%</b>	<b>Example comments</b>
<b>Always a risk/Data not Safe</b>	<b>21</b>	<b>35.6</b>	<ul style="list-style-type: none"> <li>As I work in IT, no data is ever truly safe in the connected world.</li> <li>Because it is impossible to keep data totally safe</li> </ul>
<b>No confidence</b>	<b>16</b>	<b>27.1</b>	<ul style="list-style-type: none"> <li>Who knows indeed. I have no confidence.</li> <li>I wouldn't trust any data to the council.</li> </ul>
<b>Data Sharing/being sold a</b>	<b>16</b>	<b>27.1</b>	<ul style="list-style-type: none"> <li>It depends on who you share the data with for money; any data gathered must be confidential.</li> <li>I have concerns about the way governments use citizen data for commercial gain.</li> </ul>
<b>Council ICT Security concerns</b>	<b>10</b>	<b>16.9</b>	<ul style="list-style-type: none"> <li>The Council uses antiquated systems prone to attack.</li> </ul>
<b>Hope so</b>	<b>4</b>	<b>6.8</b>	<ul style="list-style-type: none"> <li>I hope they do!</li> </ul>
<b>Not sure</b>	<b>1</b>	<b>1.7</b>	<ul style="list-style-type: none"> <li>Not sure what kind of personal data you're talking about. Would be helpful to give examples.</li> </ul>
<b>Other</b>	<b>10</b>	<b>16.9</b>	<ul style="list-style-type: none"> <li>Even this survey requested use of cookies. I attempted to block but found it impossible. More design to allow privacy required.</li> </ul>

*NB. Percentages do not total 100% as comments could fall into multiple themes)*

**Q15. What idea(s) do you have?**

<b>Theme</b>	<b>No.</b>	<b>%</b>	<b>Example comments</b>
<b>Renewables</b>	<b>78</b>	<b>49.1</b>	<ul style="list-style-type: none"> <li>Use solar more widely and perhaps wind power.</li> <li>All lights in council offices on affixed cycle to turn off and staff, if present, turn back on.. There if a factory in Duffryn, Newport developing a new form of flexible solar panel, cheaper than the existing rigid and could be considered for attachment to existing as well as new buildings.</li> <li>Better use of the rivers, Cardiff Barrage and Bristol Channel to build various types of turbines. Water taxis along the rivers Taff and Ely. Free solar panels to all Cardiff citizens.</li> <li>Further explore options for council buildings to create their own power cleanly via sun/wind or water if appropriate.</li> <li>Invest in municipal green energy: solar, wind and electrolysis (green hydrogen).</li> </ul>
<b>Energy efficiency</b>	<b>74</b>	<b>46.5</b>	<ul style="list-style-type: none"> <li>Stop wasting power and stop unnecessary traffic lights after rush hours to reduce pollution.</li> </ul>



			<ul style="list-style-type: none"> <li>Improved insulation and glazing to all buildings. Correct the damage done by cavity wall insulation. Train ALL staff in the correct use of heating and A/C systems - i.e. don't use A/C systems with open windows or heaters on and not all day.</li> <li>Ensure council buildings are fitted with windows which shut properly in winter and open wide in hot weather to stop use of unnecessary air conditioning units and extra fan heaters beneath council workers desks.</li> <li>More energy efficient street lighting.</li> <li>Update waste collection fleet to more sustainable options. Modernise signage and all lighting.</li> </ul>
<b>Infrastructure</b>	<b>42</b>	<b>26.4</b>	<ul style="list-style-type: none"> <li>Traffic control and flows improvements.</li> <li>Better paving of roads which will reduce fuel burnt by vehicles.</li> </ul>
<b>Replace Assets</b>	<b>28</b>	<b>17.6</b>	<ul style="list-style-type: none"> <li>Replace older buildings in the Council's estate which are not energy efficient to heat (such as City Hall and County Hall).</li> <li>Develop sustainable utility use across Leisure facilities as a matter of priority. Focus Section 106 funding on installation of renewables in Third Sector premises..</li> </ul>
<b>Change vehicles</b>	<b>13</b>	<b>8.2</b>	<ul style="list-style-type: none"> <li>Electrify all City Employee vehicles.</li> </ul>
<b>Help homeowners/council tenants</b>	<b>11</b>	<b>6.9</b>	<ul style="list-style-type: none"> <li>Enabling citizens to save more energy through home insulation, boiler replacement etc. Also enabling investment to scale these schemes (e.g. green bonds).</li> </ul>
<b>City Developments</b>	<b>10</b>	<b>6.3</b>	<ul style="list-style-type: none"> <li>All new builds required to have solar panels on the roof. No planning permission given unless 50% minimum of journeys to the building can be made sustainably.</li> </ul>
<b>Recycling</b>	<b>8</b>	<b>5.0</b>	<ul style="list-style-type: none"> <li>Simpler, free options for leaving household waste for collection, e.g. wallpaper and bulky items. If it does not fit in my bin SO WHAT. It'll fit just fine in the garbage compactor truck!</li> </ul>
<b>Flexible working patterns</b>	<b>7</b>	<b>4.4</b>	<ul style="list-style-type: none"> <li>Enable people to work from home/ more flexible working so less buildings are required and less journeys are made.</li> </ul>
<b>Partner with Private sector</b>	<b>5</b>	<b>3.1</b>	<ul style="list-style-type: none"> <li>Better recycling facilities, more accessible to communities. Better use of recycled materials (at source). Working with supermarkets to reduce waste.</li> </ul>
<b>Education</b>	<b>3</b>	<b>1.9</b>	<ul style="list-style-type: none"> <li>A much greater education in schools &amp; community centres on how not to waste energy in the home. Just having a smart meter is not enough. It's not an outdated energy network, its consumer</li> </ul>

			attitude towards energy - it's not a God-given right.
<b>Other</b>	<b>33</b>	<b>20.8</b>	<ul style="list-style-type: none"> <li>• Look more broadly at all activities e.g. events, Christmas lights etc. - radical change in needed due to climate emergency.</li> <li>• Start by charging vehicles that enter a mile radius of the centre around the castle area. I believe that there shouldn't be any vehicles allowed by the castle.</li> </ul>

*(NB. Percentages do not total 100% as comments could fall into multiple themes)*

**Q17a. If 'No', can you advise what the Council could do to become more sustainable?**

<b>Theme</b>	<b>No.</b>	<b>%</b>	<b>Example comments</b>
<b>Improve infrastructure/ transport options</b>	<b>60</b>	<b>52.6</b>	<ul style="list-style-type: none"> <li>• No real priority for bus routes on 55,57,58 journeys over cars resulting in slower progress at peak times. There are obviously other routes with similar problems. E.g. Traffic lights times from Richmond Road onto Newport Road far too quick for bus movement.</li> <li>• Electric charging points and improved cycle lanes.</li> <li>• Stop giving priority to Cars. Invest in public transport. Invest in energy schemes that utilise Wales's natural resource - Water.</li> </ul>
<b>Reduce Car usage</b>	<b>19</b>	<b>16.7</b>	<ul style="list-style-type: none"> <li>• Keep cars out of the city centre. Don't make it so easy for multiple car households to take up all the parking on their residential street.</li> </ul>
<b>Increase renewable energy usage</b>	<b>19</b>	<b>16.7</b>	<ul style="list-style-type: none"> <li>• Renewable energy in ALL Council buildings; street lights off when daylight.</li> </ul>
<b>Improve waste management</b>	<b>18</b>	<b>15.8</b>	<ul style="list-style-type: none"> <li>• Cardiff should have another. Recycling Depot on the Northeastern side of the city. The easier you make recycling the more people will do. CHARGING POINTS FOR ELECTRIC CARS ARE A MUST.</li> </ul>
<b>New developments - more sustainable</b>	<b>13</b>	<b>11.4</b>	<ul style="list-style-type: none"> <li>• A bolder approach to progressing to a post car City is required. New housing developments should only start building the houses once the travel infrastructure is in place e.g. Plasdwr should have had buses, trains and cycling sorted before a house was built. Likewise, Central Square bus station should have been first. This enables users to begin with a sustainable transport habit rather than the old ways and then have to persuade them to change. This should be a priority for anything in future.</li> </ul>
<b>Better energy efficiency</b>	<b>13</b>	<b>11.4</b>	<ul style="list-style-type: none"> <li>• Ground source heating and air source heating. Plus electrical heating funding by solar panels to all buildings in council ownership where possible. Also smarter controls for heating and lighting based on occupancy.</li> </ul>

<b>Increase/Protect greenery</b>	<b>11</b>	<b>9.6</b>	<ul style="list-style-type: none"> <li>Implement a policy forcing all new buildings to have a rooftop garden and encourage all present buildings to adopt one. Even just moss or wildflowers would be ideal. We need to do more to conserve our nature in Cardiff.</li> </ul>
<b>Work with/Support Private sector</b>	<b>10</b>	<b>8.8</b>	<ul style="list-style-type: none"> <li>Business recycling schemes should be compulsory. All council bins in public places should be split for recycling."</li> </ul>
<b>Greater enforcement</b>	<b>6</b>	<b>5.3</b>	<ul style="list-style-type: none"> <li>I think there should be harsher measures taken to stop the effect of climate change.</li> </ul>
<b>Set Targets and adhere to them</b>	<b>3</b>	<b>2.6</b>	<ul style="list-style-type: none"> <li>Agree and monitor targets for key indicators.</li> </ul>
<b>Increase allotment capacity</b>	<b>2</b>	<b>1.8</b>	<ul style="list-style-type: none"> <li>Make many more sites for allotments cutting down food miles.</li> </ul>
<b>Better education</b>	<b>2</b>	<b>1.8</b>	<ul style="list-style-type: none"> <li>A lot more education into schools, colleges and universities.</li> </ul>
<b>Local Procurement</b>	<b>2</b>	<b>1.8</b>	<ul style="list-style-type: none"> <li>Cardiff based resources as a brand could encourage sustainability - encouraging people to buy locally, promote a sense of community and self-sufficiency.</li> </ul>
<b>It does enough</b>	<b>1</b>	<b>0.9</b>	<ul style="list-style-type: none"> <li>It does enough.</li> </ul>
<b>Other</b>	<b>15</b>	<b>13.2</b>	<ul style="list-style-type: none"> <li>First define what is meant by 'Sustainable'. As far I am aware, no activity is sustainable. E.g. The production of Lithium batteries exploits child labour in the DRC, causes pollution of water supplies &amp; kills forests/animals in Chile.</li> </ul>

*(NB. Percentages do not total 100% as comments could fall into multiple themes)*

**Q22. Are there any other comments you would like to make about Cardiff Council's Smart City Roadmap?**

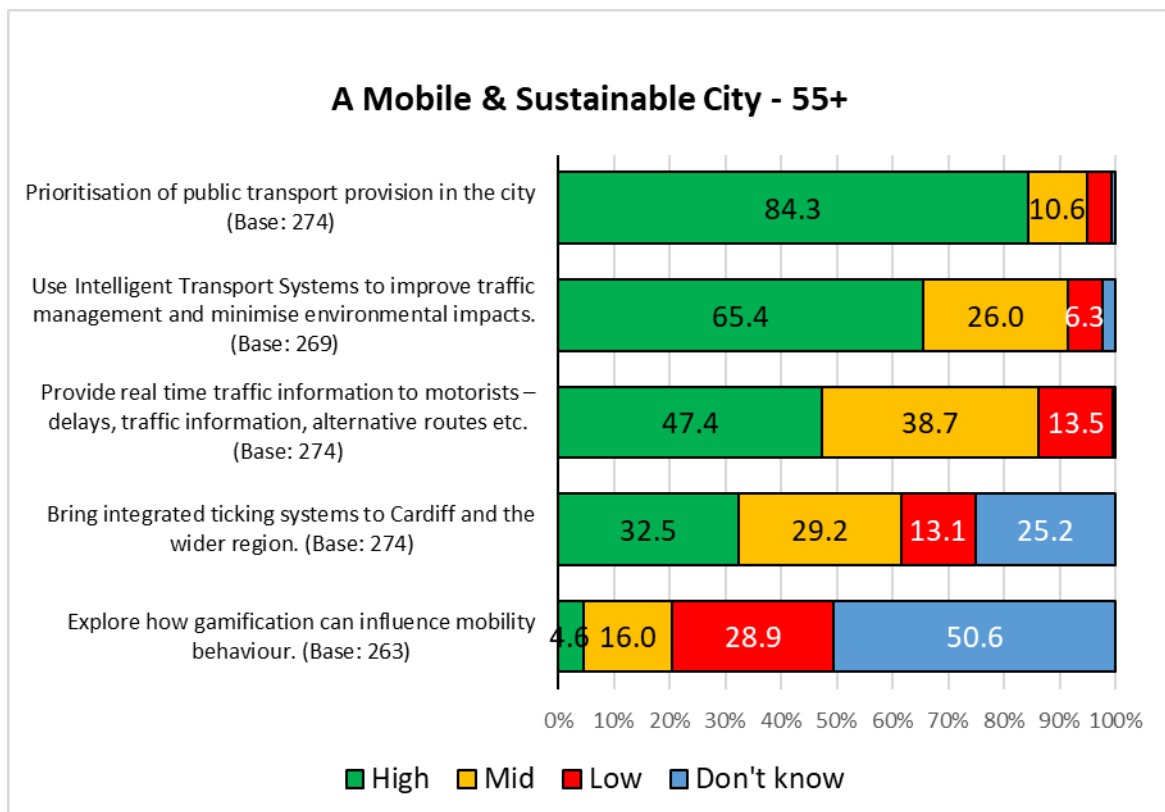
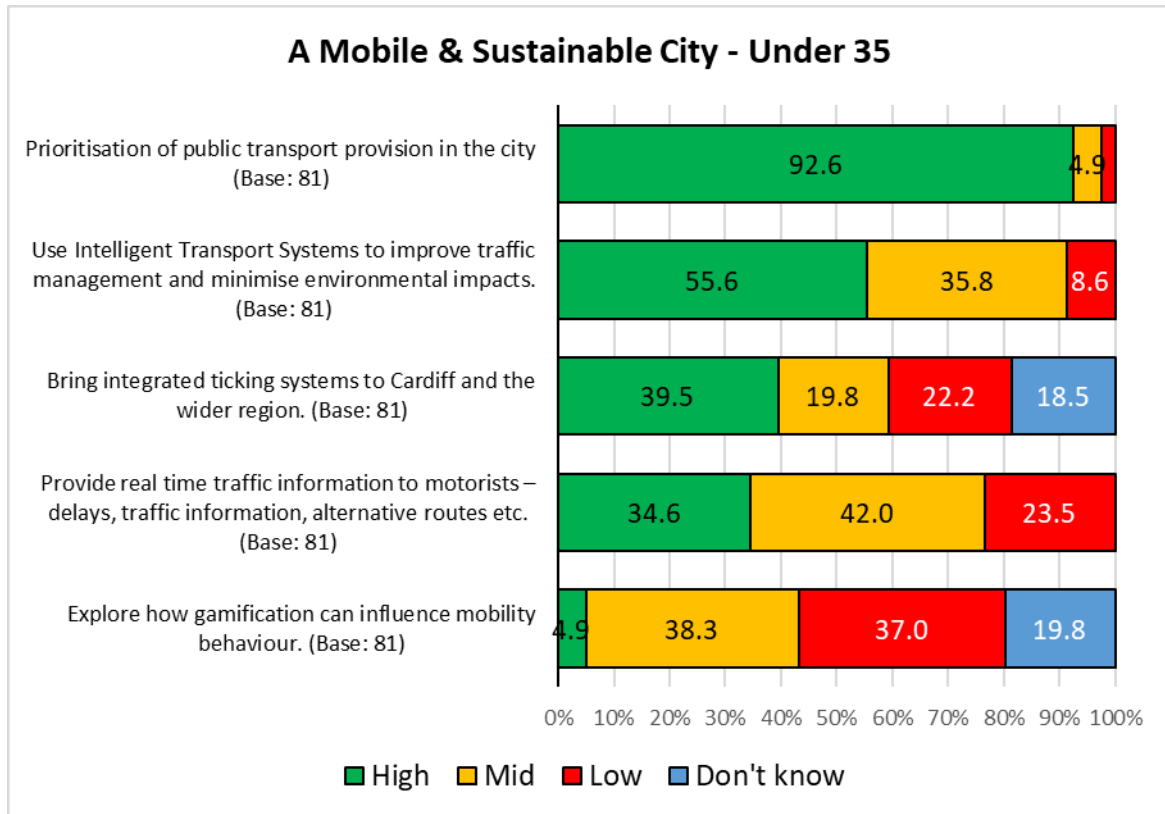
<b>Theme</b>	<b>No.</b>	<b>%</b>	<b>Example comments</b>
<b>Achievability/Clarity of vision</b>	<b>35</b>	<b>27.1</b>	<ul style="list-style-type: none"> <li>The language used makes it difficult to understand for those who are not directly involved in IT.</li> <li>Don't try and move on with the future when you're failing in the present.</li> <li>Lots of good words in the vision but much repetition and little about how it will be achieved.</li> </ul>
<b>Improve/Poor Transport</b>	<b>27</b>	<b>20.9</b>	<ul style="list-style-type: none"> <li>Improving public transport should be the Council's highest priority. Our current system is woeful.</li> <li>All feels a little unnecessary. There are bigger issues for Cardiff to solve (e.g. improve transport).</li> </ul>
<b>Positive Approach</b>	<b>16</b>	<b>12.4</b>	<ul style="list-style-type: none"> <li>Very ambitious, but that's how positive change is achieved.</li> </ul>
<b>Accessibility</b>	<b>14</b>	<b>10.9</b>	<ul style="list-style-type: none"> <li>Please remember the disabled, particularly people with hidden impairments such as ME/CFS.</li> </ul>

<b>Focus on core services</b>	<b>14</b>	<b>10.9</b>	<ul style="list-style-type: none"> <li>• Stick to core functions waste collection cleaning streets etc.</li> </ul>
<b>Pollution concerns</b>	<b>8</b>	<b>6.2</b>	<ul style="list-style-type: none"> <li>• Concentrate on the levels of traffic in and around Cardiff, the air quality is appalling.</li> </ul>
<b>City Region</b>	<b>4</b>	<b>3.1</b>	<ul style="list-style-type: none"> <li>• Needs more smart thinking on linking Cardiff to its immediate area and beyond.</li> </ul>
<b>Competitive Market Place</b>	<b>4</b>	<b>3.1</b>	<ul style="list-style-type: none"> <li>• Plenty of health apps with huge amounts of investments council would not be able to compete.</li> </ul>
<b>Data management</b>	<b>3</b>	<b>2.3</b>	<ul style="list-style-type: none"> <li>• Who owns the data - the developer or the council, how is this data stored and access?</li> </ul>
<b>Reduce cars</b>	<b>2</b>	<b>1.6</b>	<ul style="list-style-type: none"> <li>• Concentrate on the levels of traffic in and around Cardiff, the air quality is appalling.</li> </ul>
<b>Greater Partnership working</b>	<b>1</b>	<b>0.8</b>	<ul style="list-style-type: none"> <li>• Forge strong links with our universities to draw on their knowledge to help drive this work forward.</li> </ul>
<b>Other</b>	<b>24</b>	<b>18.6</b>	<ul style="list-style-type: none"> <li>• How can social inclusion be achieved with no human contact.</li> </ul>

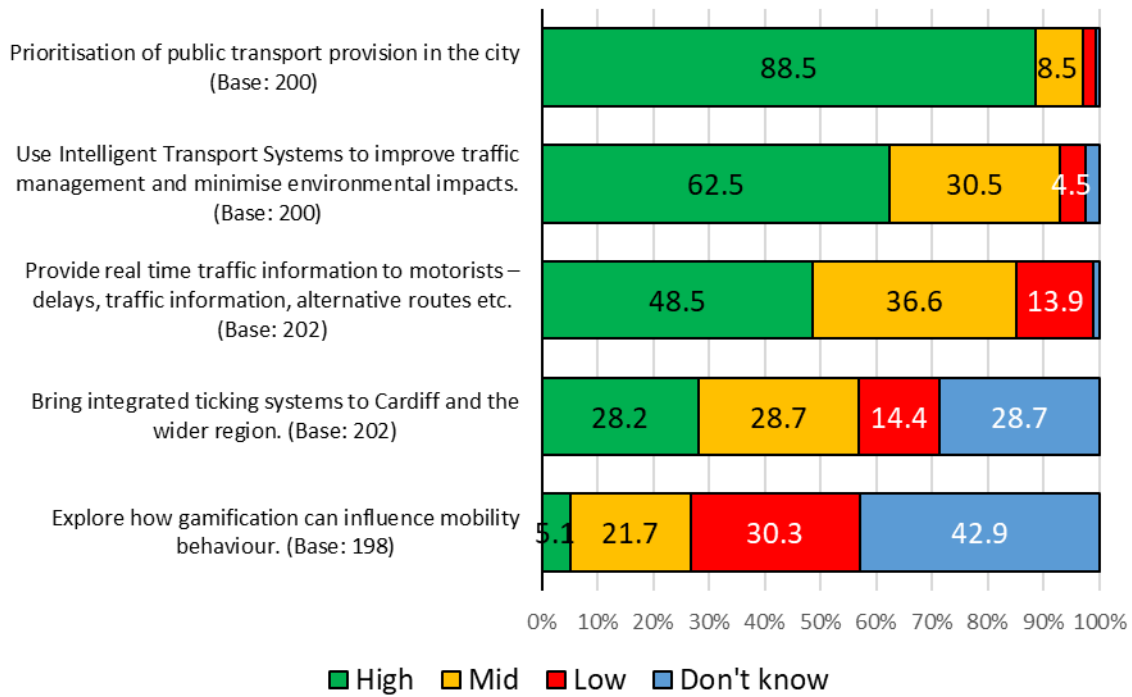
*(NB. Percentages do not total 100% as comments could fall into multiple themes)*

## Appendix 3 – Mission 4: A Mobile & Sustainable City

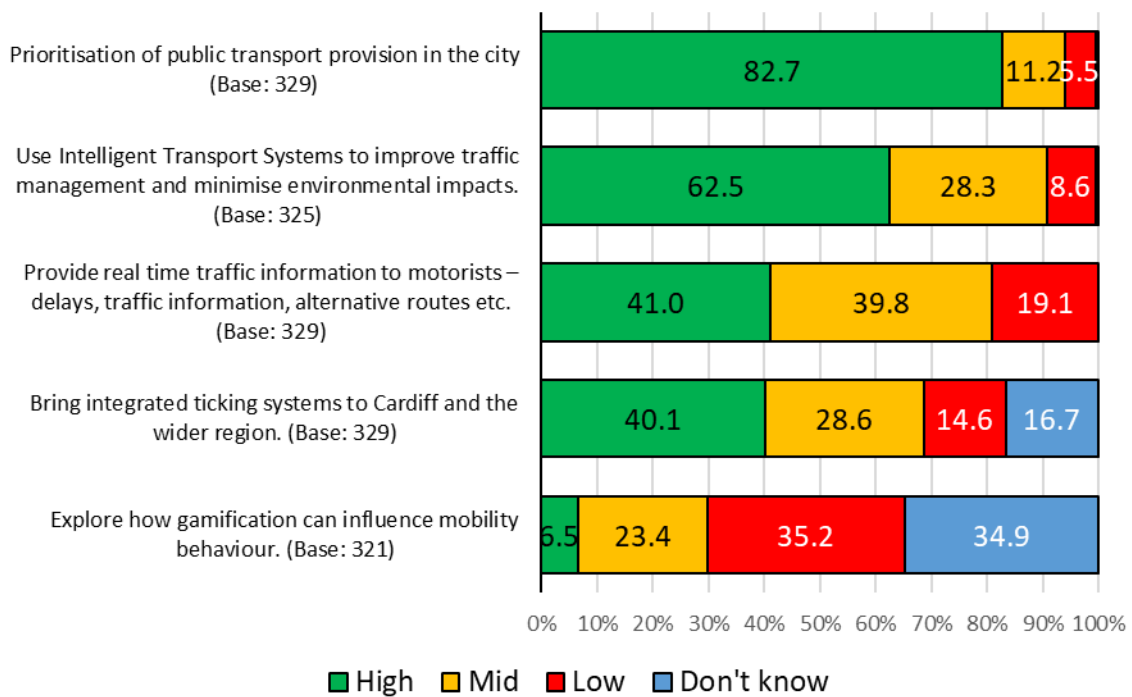
### 4. Priorities by Demographic



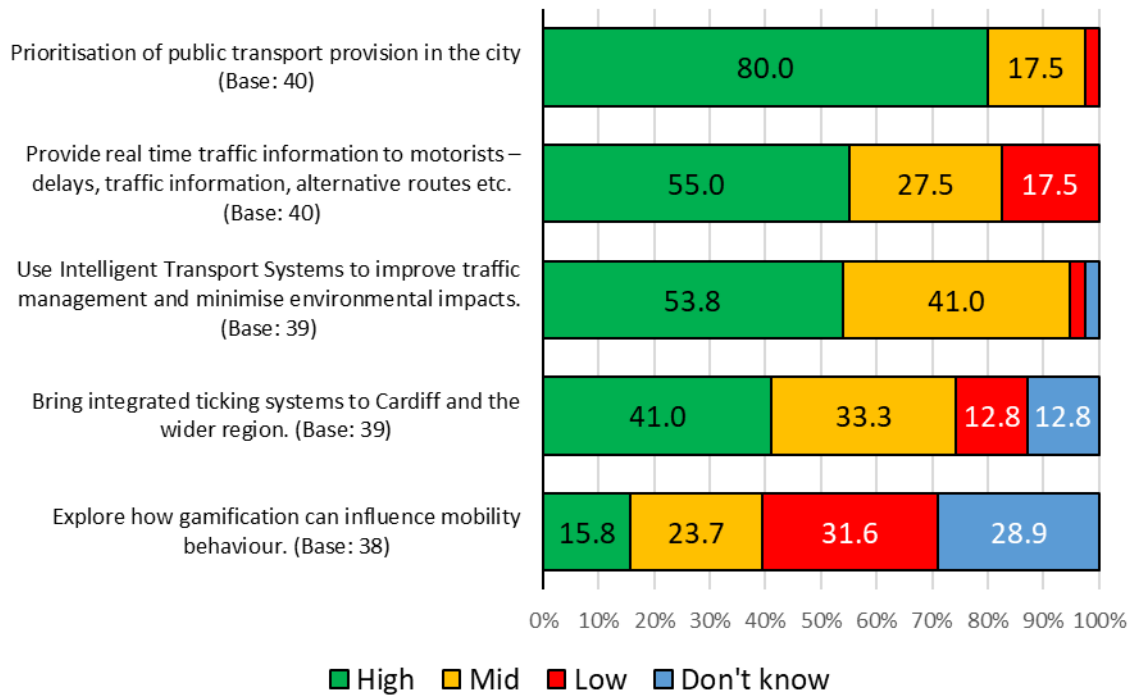
### A Mobile & Sustainable City - Female



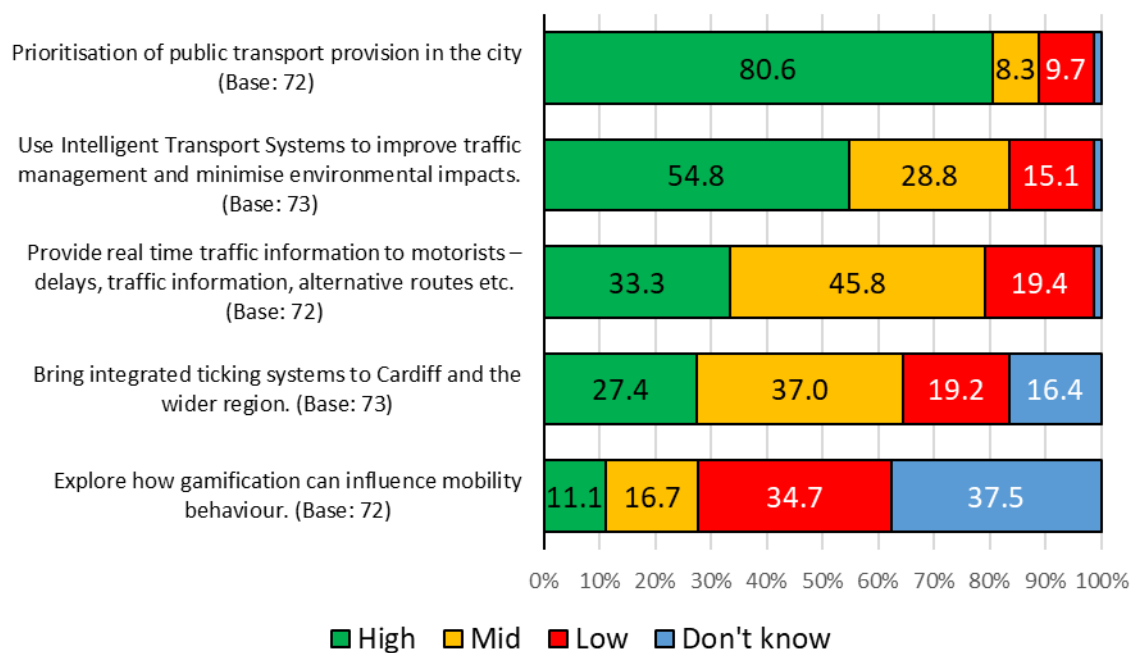
### A Mobile & Sustainable City - Male



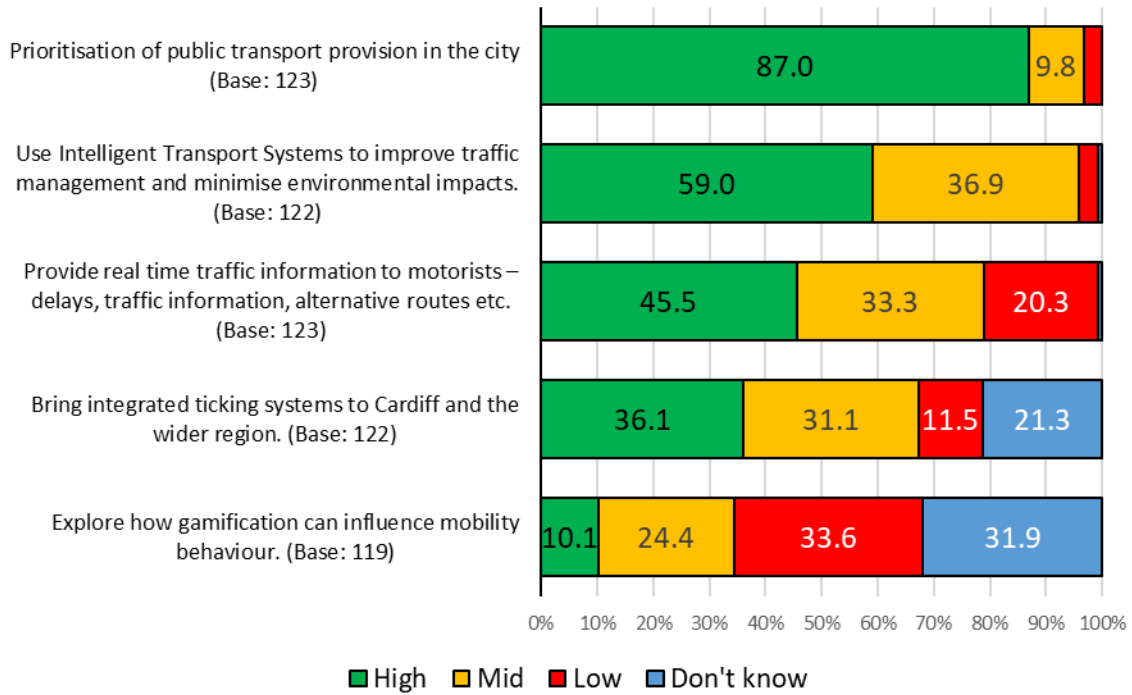
### A Mobile & Sustainable City - Minority ethnicity



### A Mobile & Sustainable City - Identify as disabled



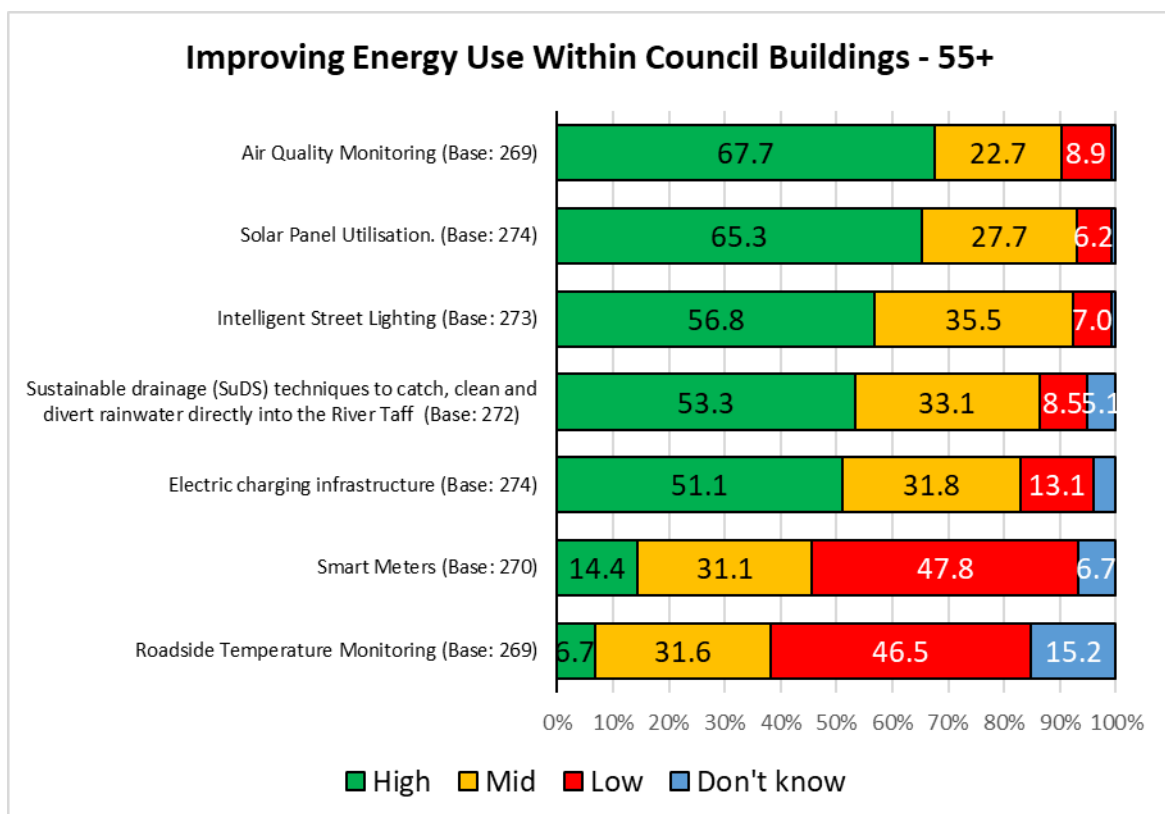
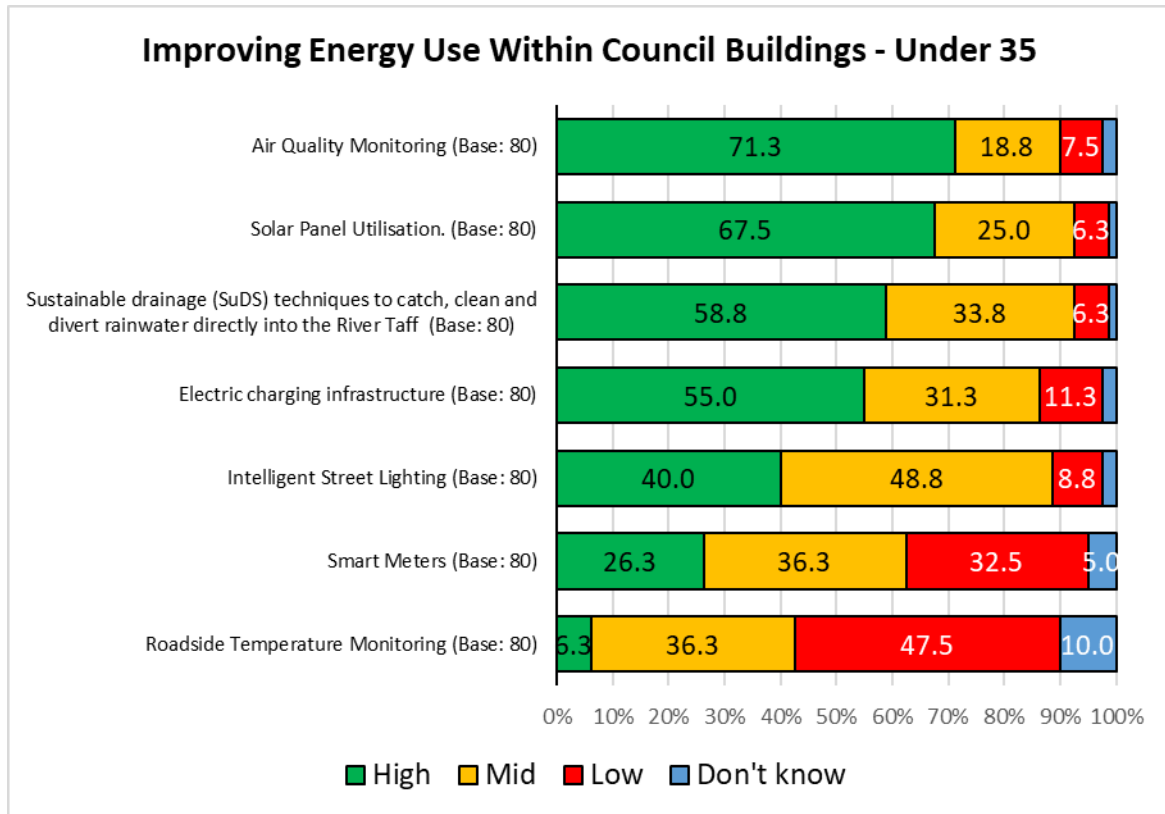
## A Mobile & Sustainable City - Southern Arc



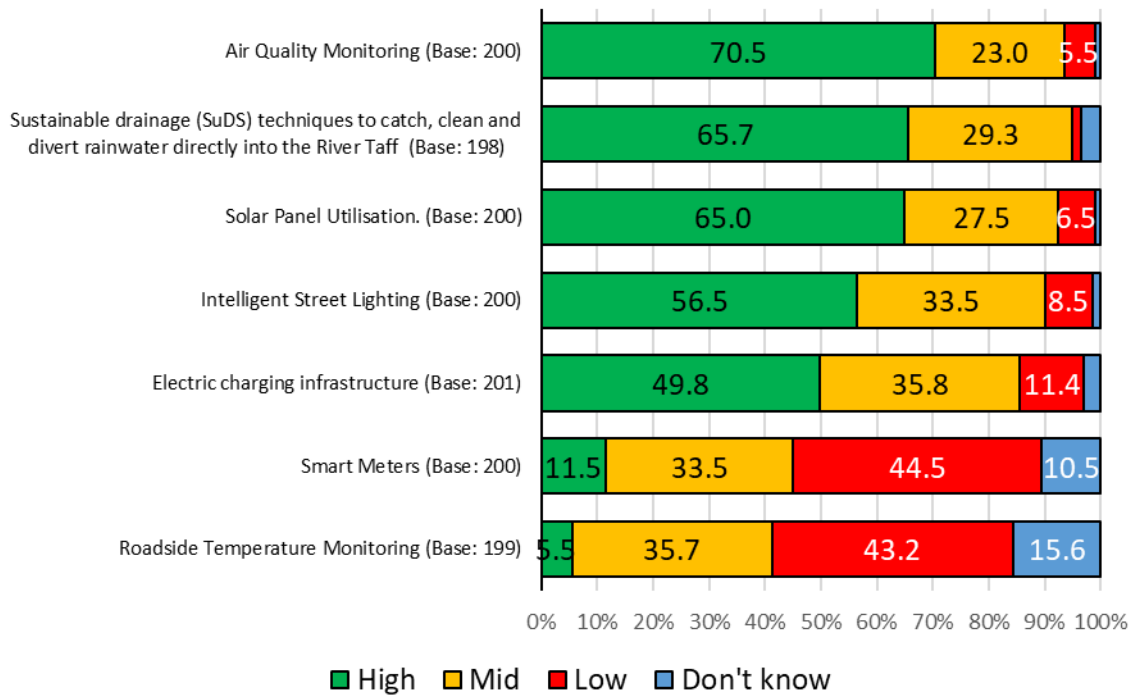


## Appendix 4 – IMPROVING ENERGY USE WITHIN COUNCIL BUILDINGS

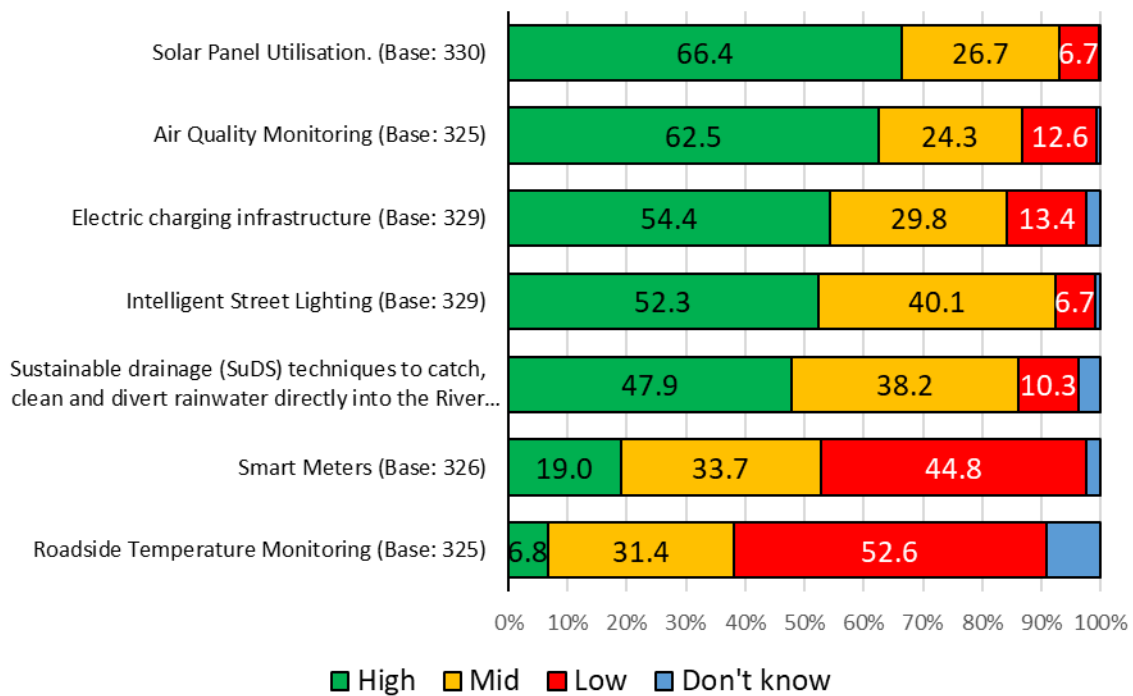
### 5. Priorities by Demographic



### Improving Energy Use Within Council Buildings - Female

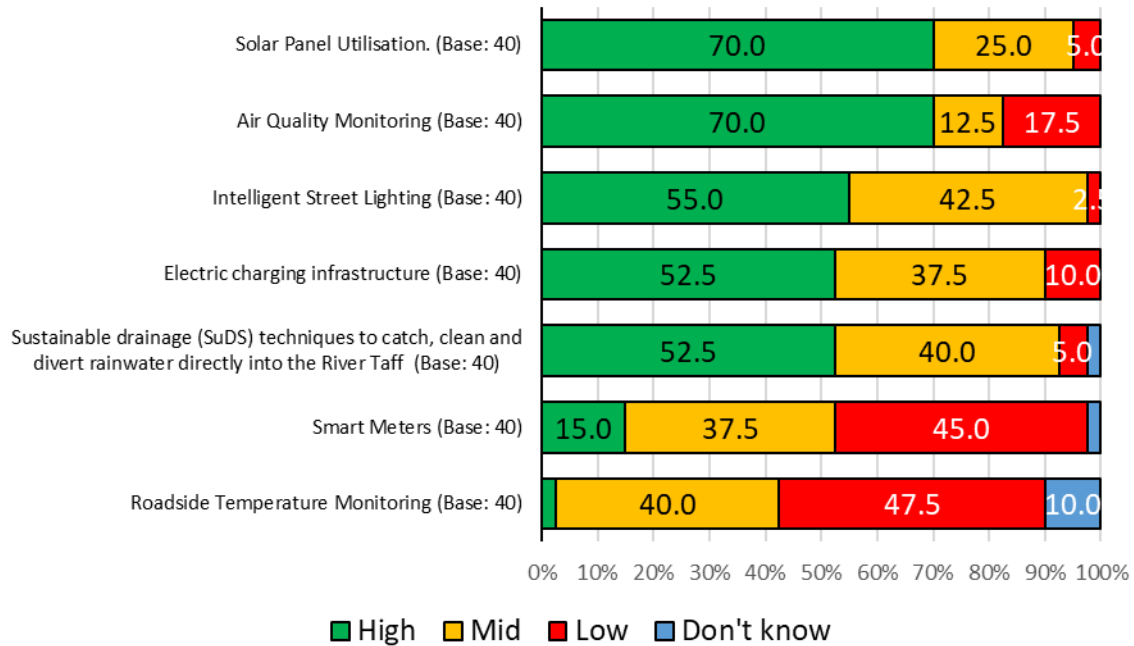


### Improving Energy Use Within Council Buildings - Male



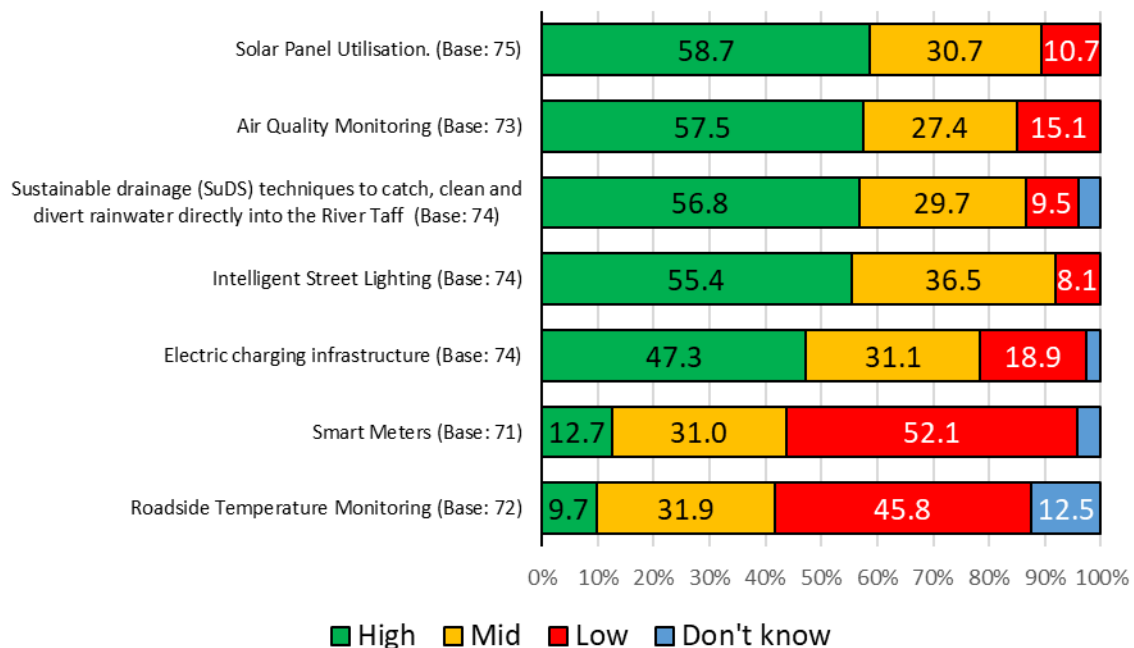
## Improving Energy Use Within Council Buildings

### Minority ethnicity

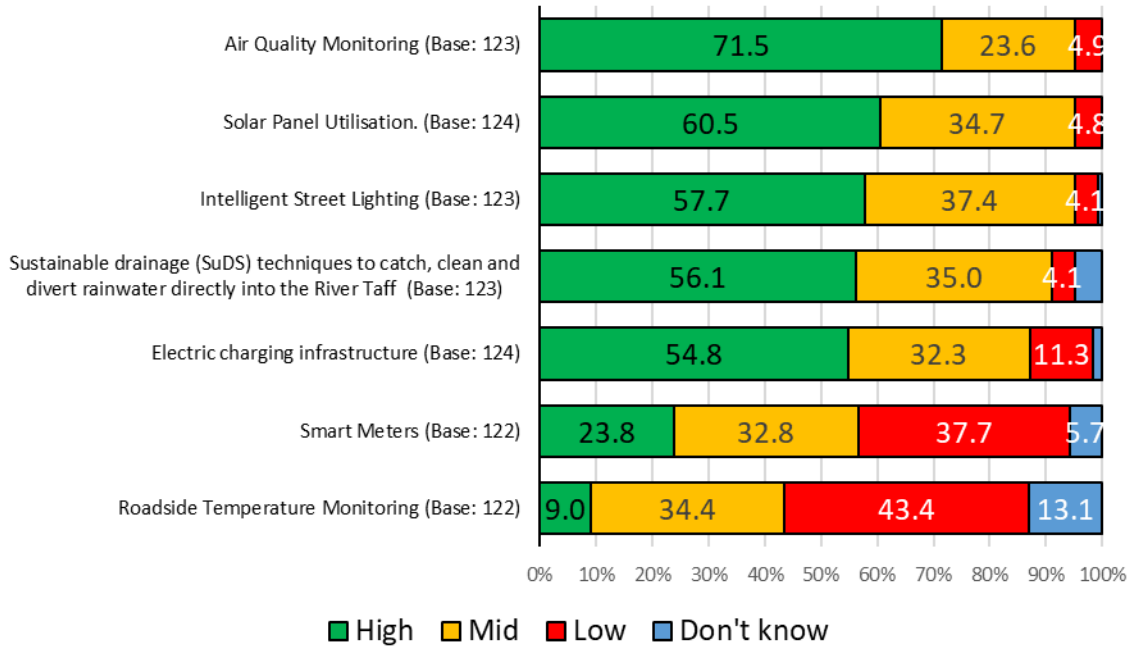


## Improving Energy Use Within Council Buildings

### Identify as disabled

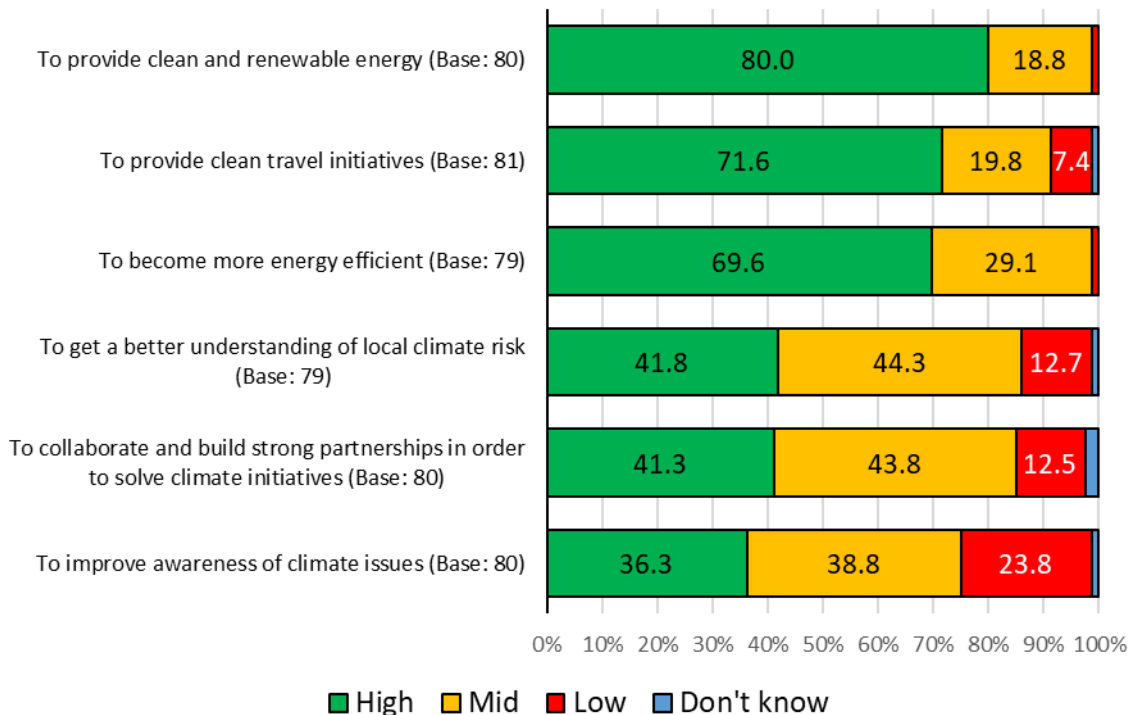


## Improving Energy Use Within Council Buildings Southern Arc

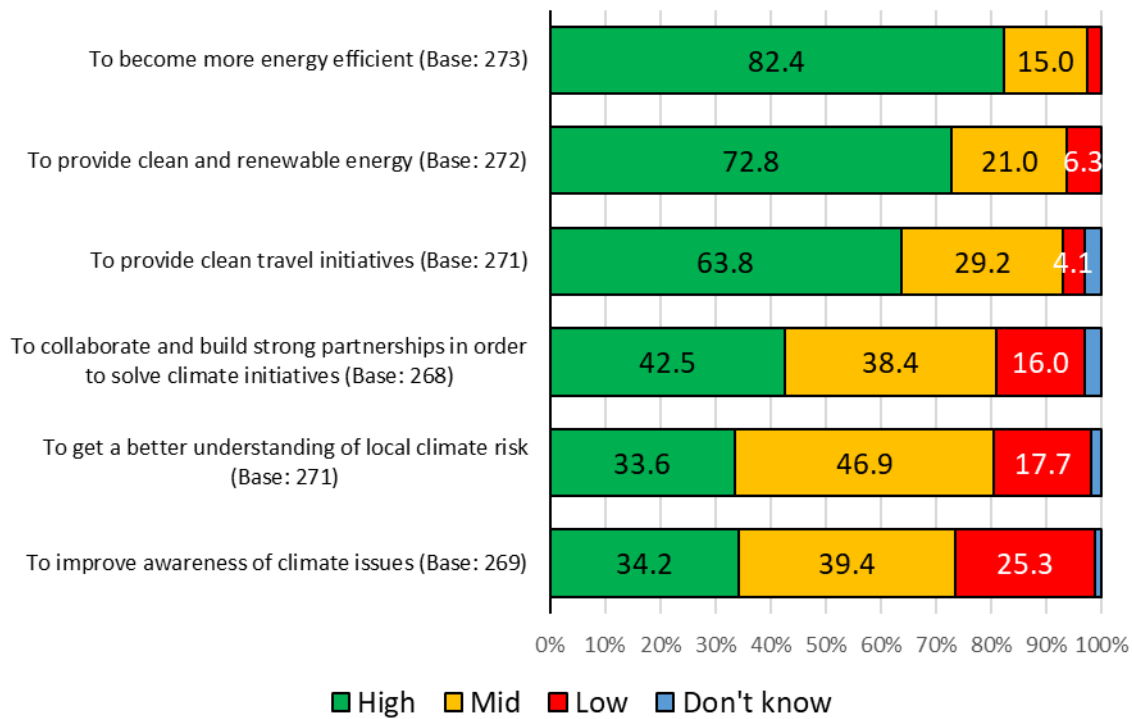


## Appendix 5 – Mission 4: A Mobile & Sustainable City Priorities by Demographic

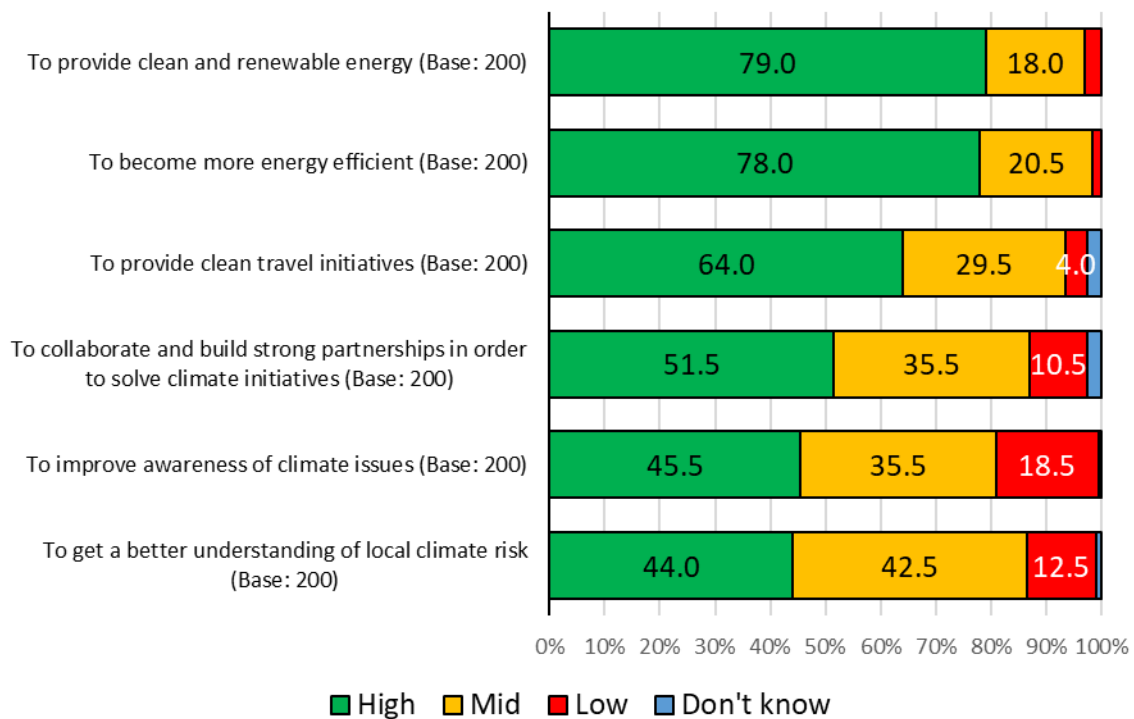
### Make the city sustainable - Under 35



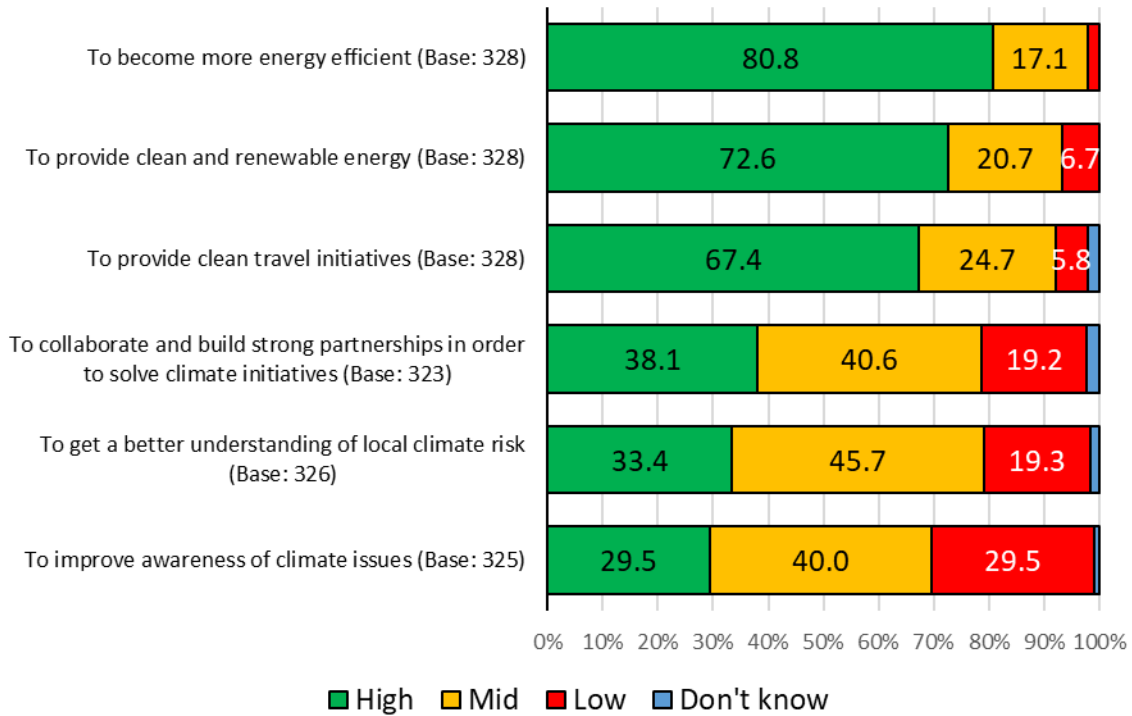
### Make the city sustainable - 55+



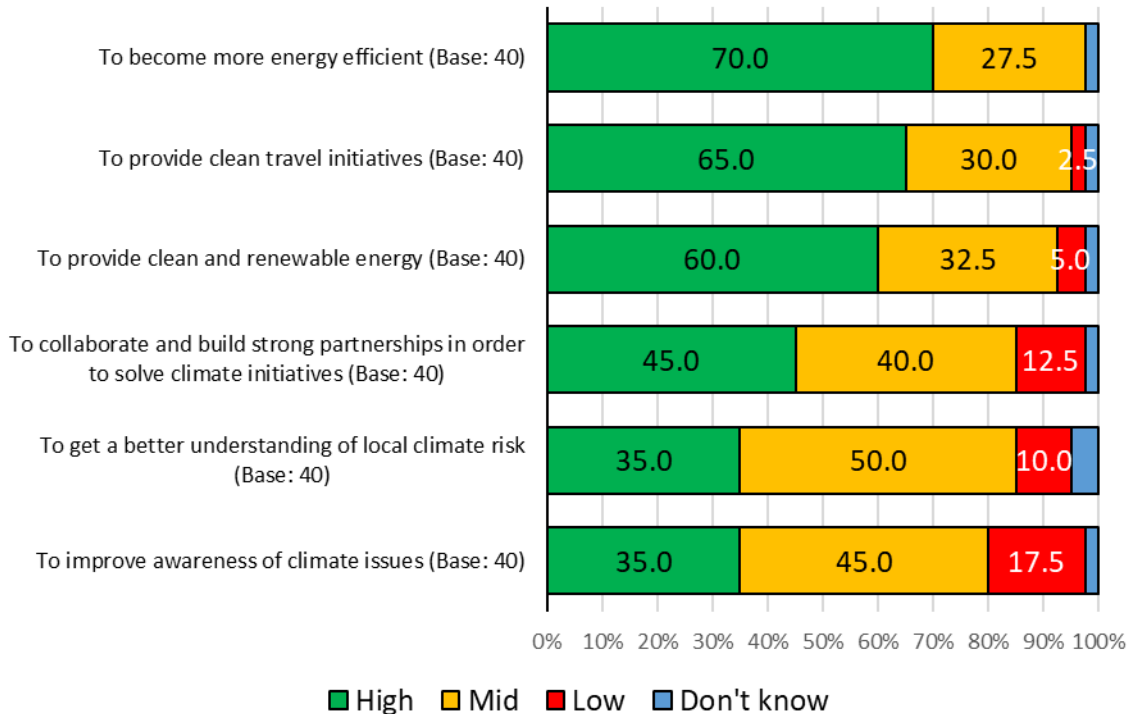
### Make the city sustainable - Female



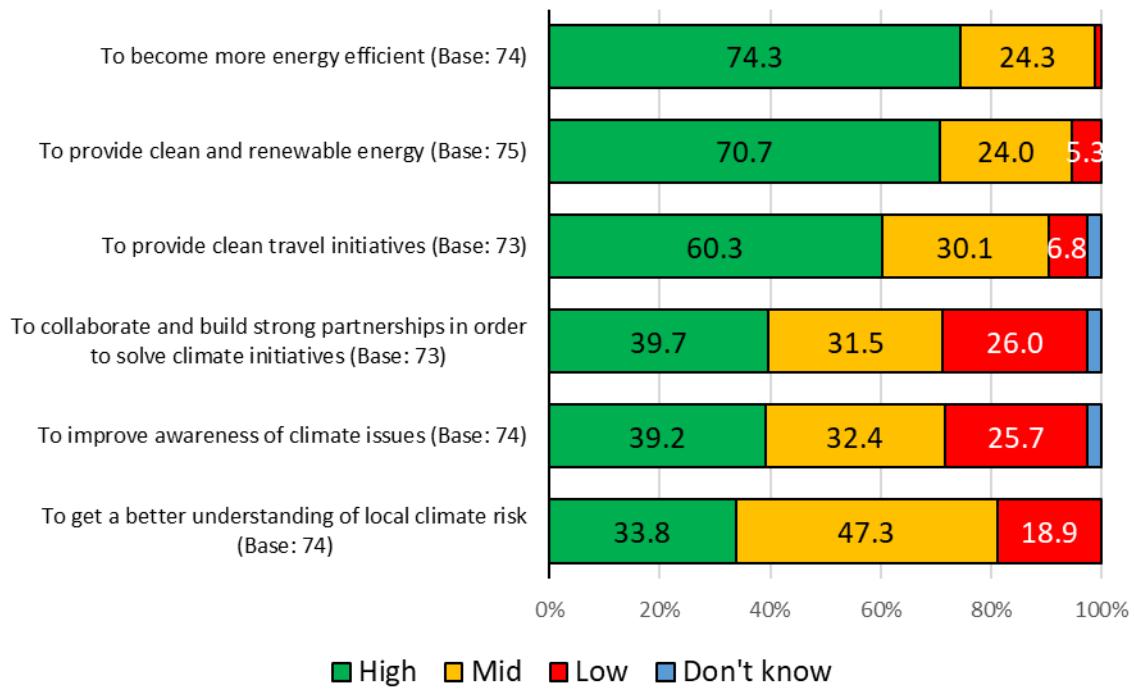
### Make the city sustainable - Male



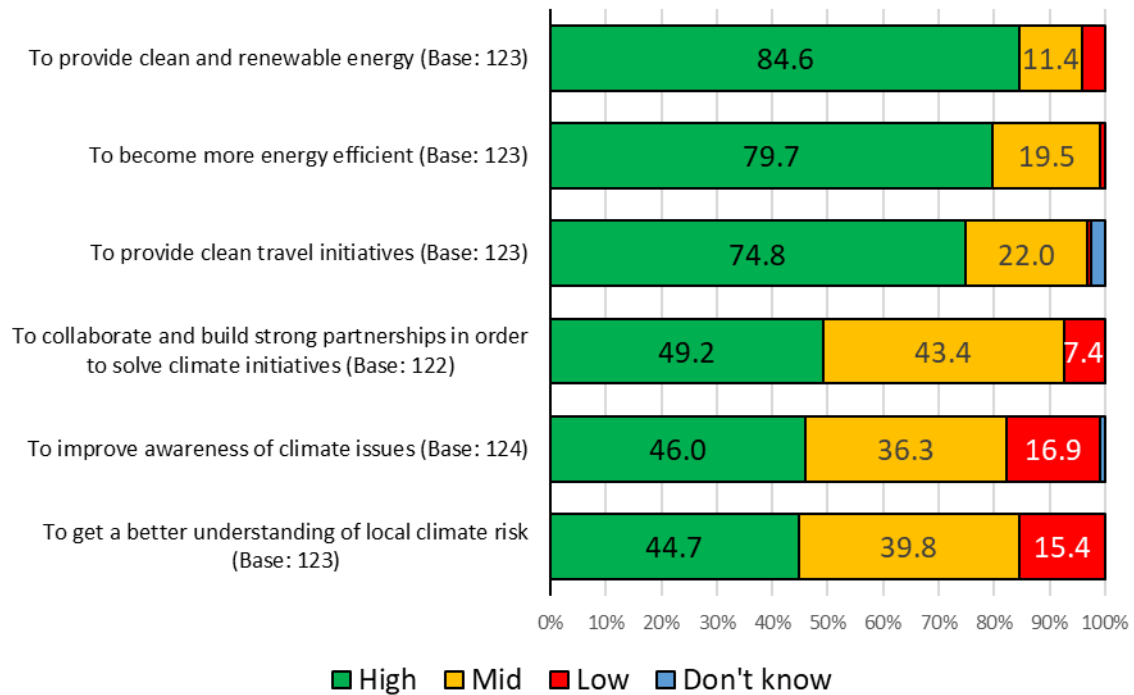
### Make the city sustainable - Minority ethnicity



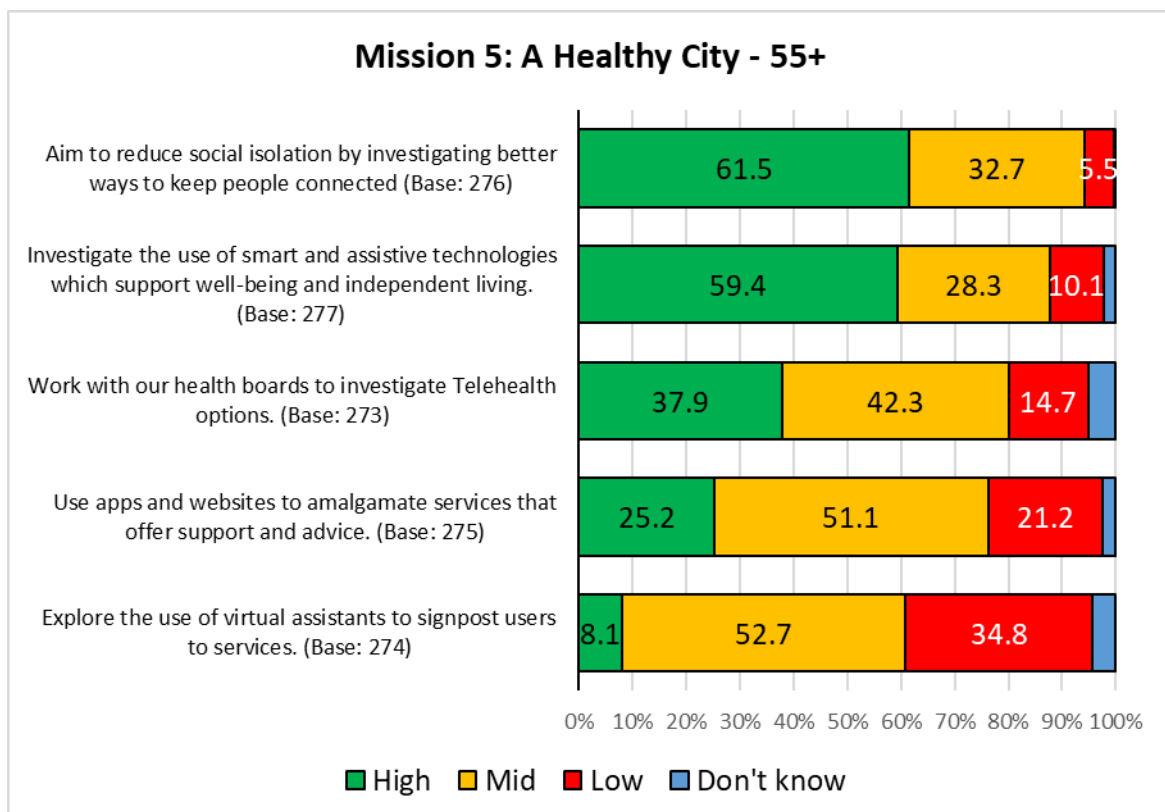
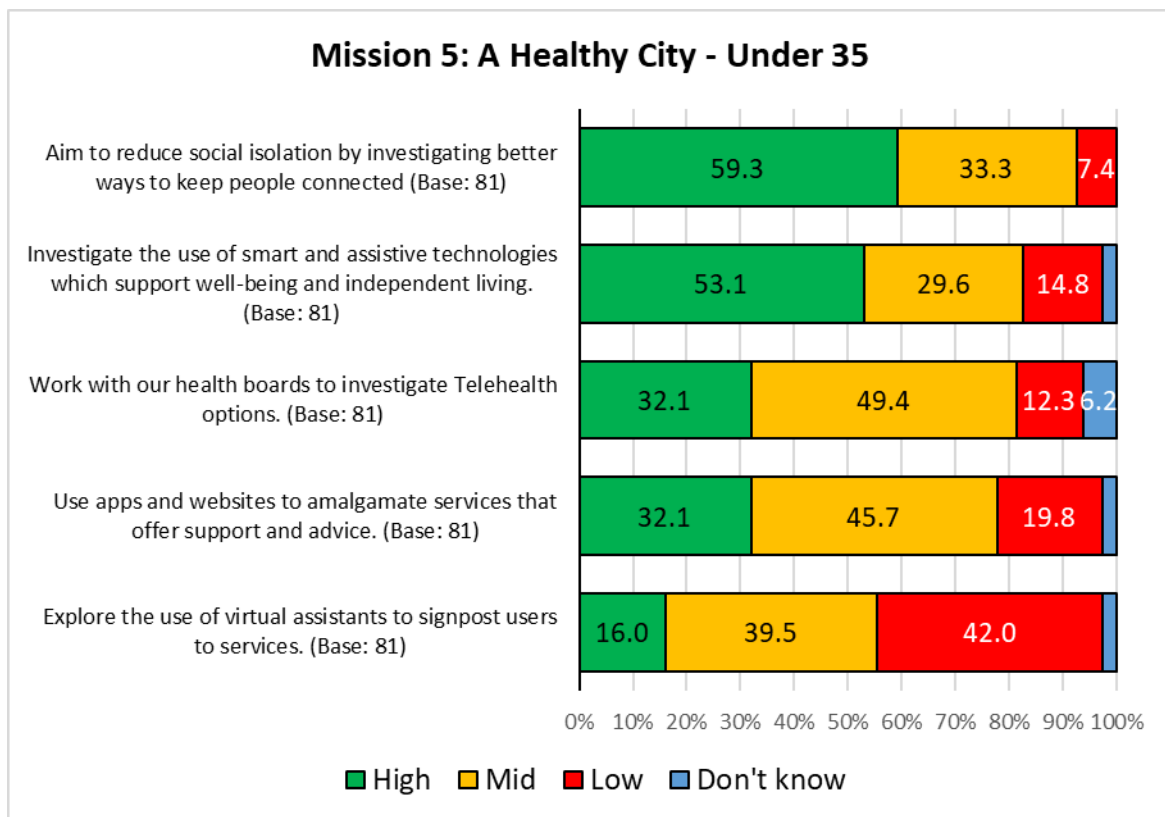
### Make the city sustainable - Identify as disabled



### Make the city sustainable - Southern Arc

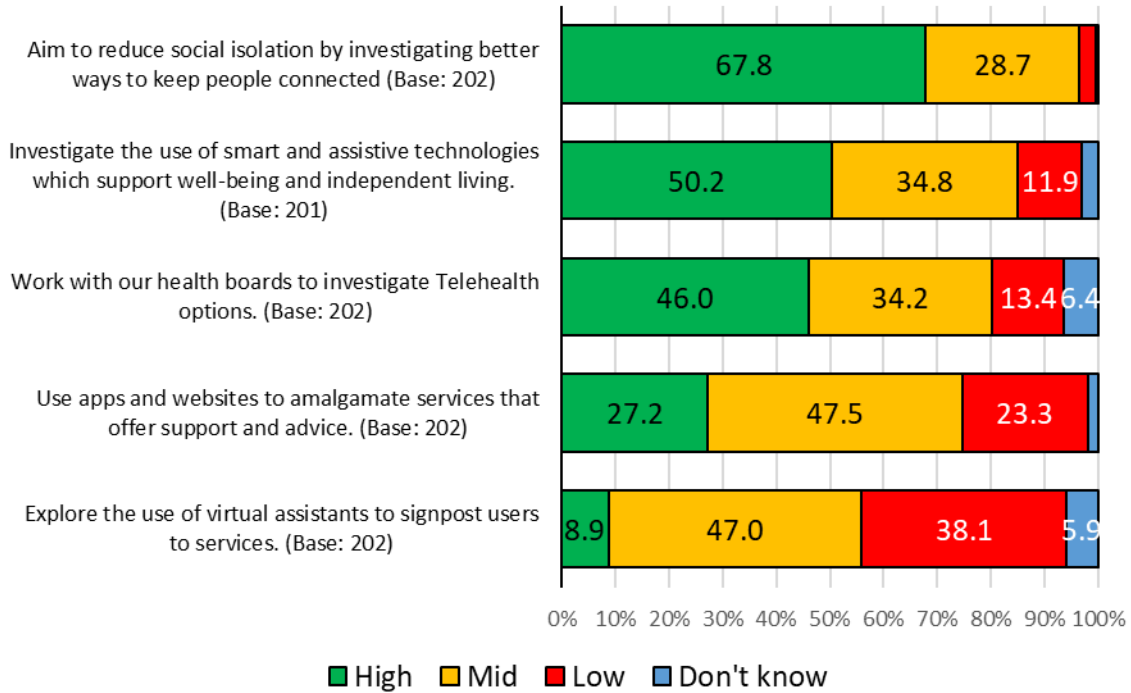


## Appendix 6 – Mission 5: A Healthy City Priorities by Demographic

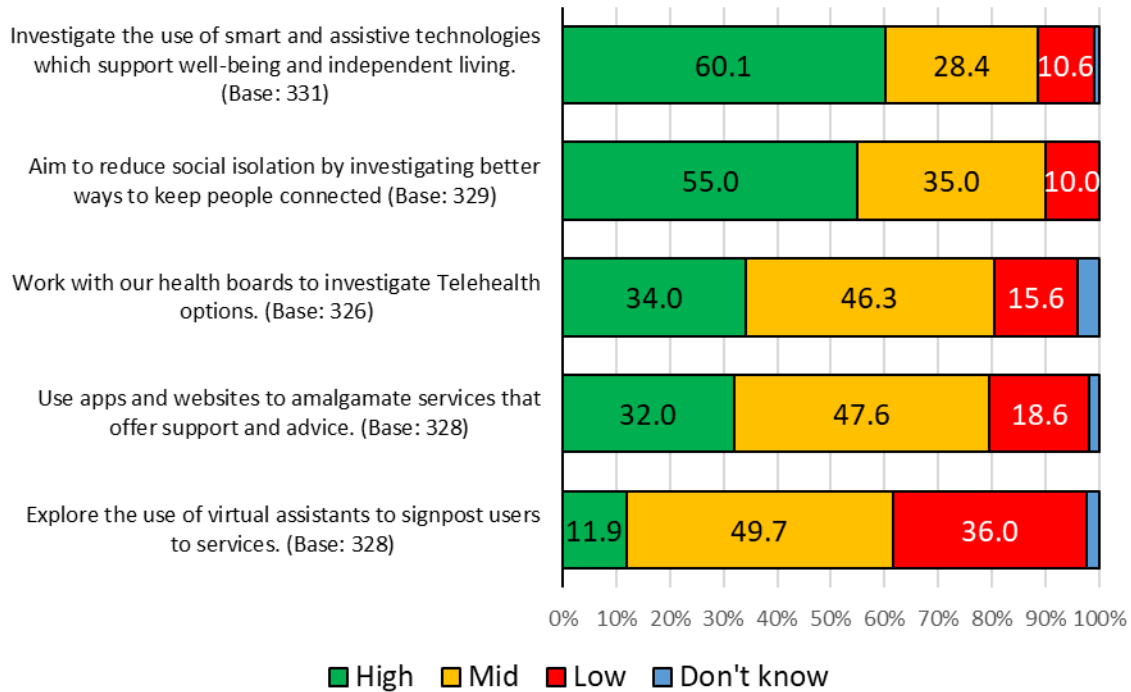




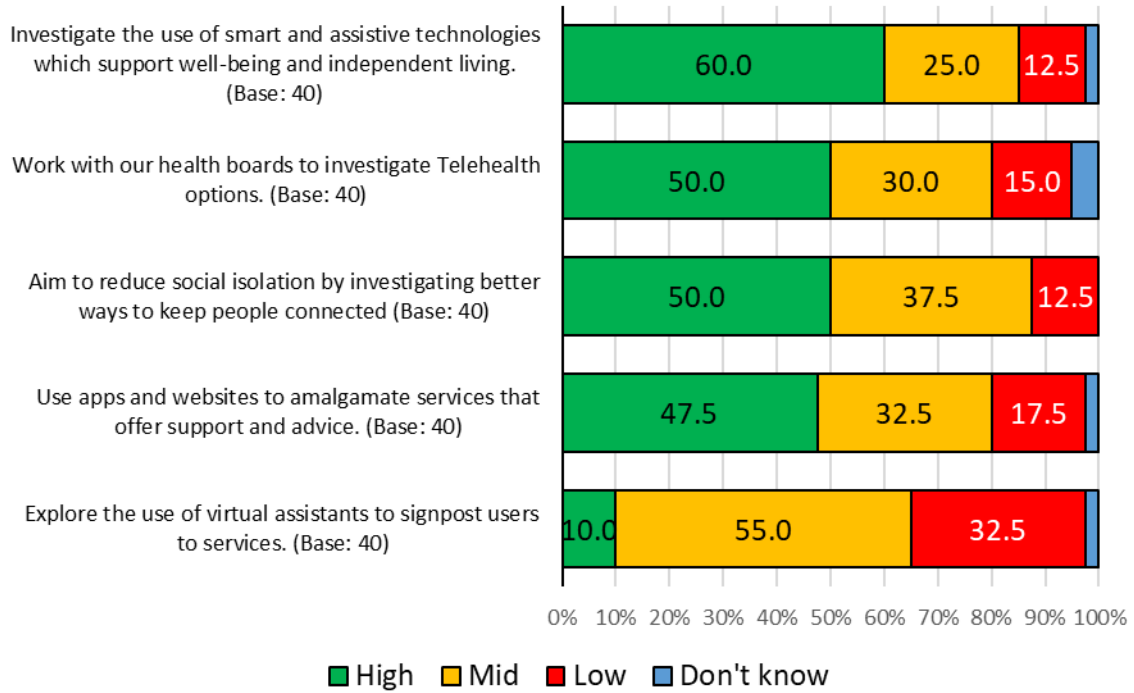
### Mission 5: A Healthy City - Female



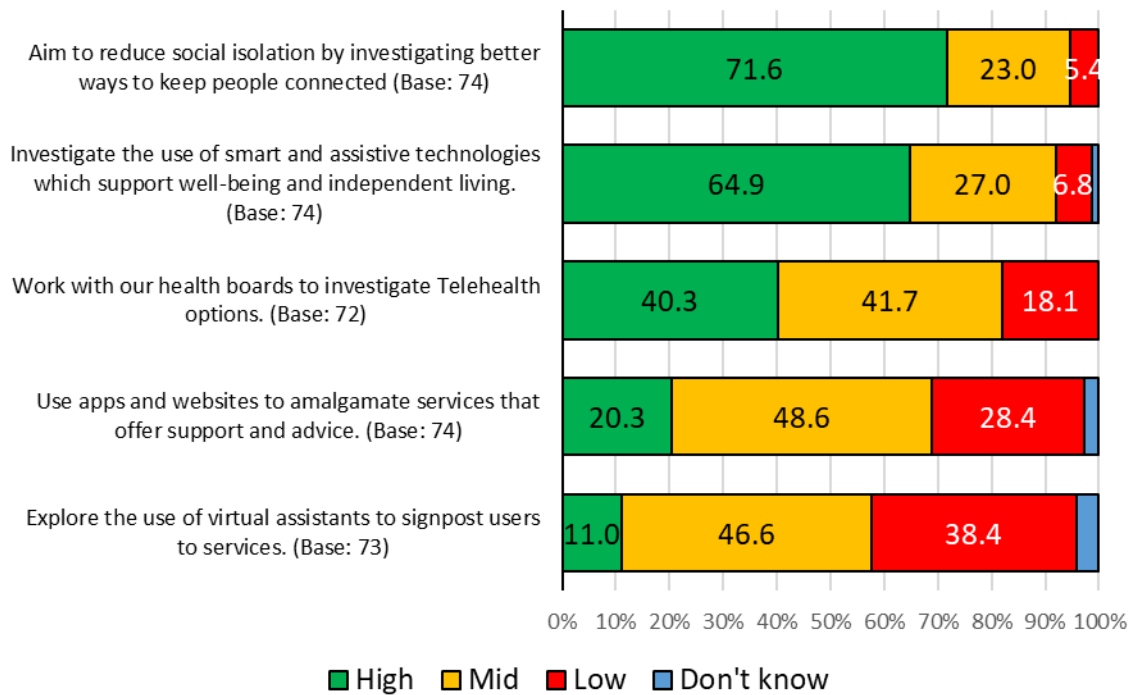
### Mission 5: A Healthy City - Male



### Mission 5: A Healthy City - Minority ethnicity



### Mission 5: A Healthy City - Identify as disabled



### Mission 5: A Healthy City - Southern Arc

