Geospatial Commission location data ethics dialogue evaluation

Final evaluation report

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Executive Summary

In 2021, the Geospatial Commission commissioned [Traverse](#) and the [Ada Lovelace Institute](#) to deliver a public dialogue on location data ethics, co-funded by UKRI's [Sciencewise](#) programme. The Geospatial Commission are responsible for setting the direction of geospatial policy across the UK (working with devolved administrations). Their [2020-25 UK Geospatial Strategy](#) set out a programme 'to unlock the significant economic, social and environmental opportunities offered by location data'. The public dialogue was commissioned specifically to inform the development of guidance for users of location data on how to unlock value from location data while mitigating ethical and privacy risks, ensuring compliance with legal principles and retaining the trust of citizens.

This is the first public dialogue in the UK to focus specifically on public attitudes towards location data. The dialogue allows public views to help shape the guidance on the ethical use of location data, alongside other stakeholder voices. This guidance *[Building public confidence in the use of location data: The ABC of ethical use](#)* was published by the Geospatial Commission and launched at an event on 22nd June 2022 and is intended to help public, private and third sector organisations make use of location data in line with what the public think about its unique benefits and risks.

The main dialogue took place over three virtual workshops held between June and September 2021 and a follow-up virtual workshop for a subset of participants. Eighty five participants were recruited from across the UK, with 'top-up' recruitment for some specifically impacted groups. The number and diversity of participants recruited and the integration of a separate track of work with specifically impacted groups were particular strengths of the dialogue, although there was high drop-out of digitally-excluded participants. An Oversight Group provided expertise on both the content and process of the dialogue, in line with Sciencewise guidance. The findings were launched in a virtual event in December 2021 hosted by the Alan Turing Institute, to 106 attendees, of which a third worked in policy and a quarter in industry. Findings have also been disseminated across government, industry bodies and conferences.

The dialogue took an iterative approach, which allowed for an exploration of the factors affecting how participants approached the topic (such as level of anonymity of location data, purpose of location data use, type of user and so on). This approach was appropriate given this was the first dialogue in the UK on this subject, and has built a base upon which further dialogue can be conducted to more systematically test these factors, or specific use cases.

The greatest impact on participants has been an increase in their knowledge about location data, especially the variety of different uses (and users) of location data, and the regulations surrounding its use. Understanding more about the breadth of uses changed some participants' views, with these changes including both those who felt more wary and those who felt more positive about the uses of location data. Some participants also reported a greater openness to hearing the views of other people, as a result of their participation. Participants also felt that the process was a credible one. These impacts have been achieved

as a result of high-quality materials and expert facilitation. Participants hearing from a range of specialists from academia, industry and policy also contributed to these impacts, although their opportunities for *interaction* with specialists were weaker.

The dialogue has been closely linked to the policy making process, informing guidance developed by the Geospatial Commission, which was launched alongside the Geospatial Commission's Annual Plan. A first draft of the guidance was shared with the dialogue's Oversight Group, which was reconvened for this purpose. The Oversight Group was a strength of this dialogue in terms of diversity of perspectives included, engagement with the process and holding the Geospatial Commission accountable to the findings.

Dialogue findings have been integral to the scope, structure and content of this guidance. The guidance is structured around three pillars – an 'ABC' of accountability, bias and clarity – which align well with the dialogue findings. Some of the dialogue findings go beyond the remit and purpose of the guidance and there may be further work for the Geospatial Commission to do to ensure that such findings are taken up by others. These include aspects around agency and feelings of 'digital resignation' which are less clear in the guidance. The dialogue has significantly increased the Geospatial Commission's confidence in making an evidence-based contribution to the narrative on ethical location data use – and has been seen as a credible process by them and other policy stakeholders. An additional policy impact of the dialogue has been the Geospatial Commission understanding more about public awareness of location data, and understanding better how to speak to the public about location data policy. This has already led to changes in language used in further follow-up research.

Impacts on practice amongst private sector users of location data, are anticipated to be achieved through the guidance, rather than the dialogue report findings themselves. These impacts include helping businesses make strategic decisions about their use of location data in creating products and services, communicating to customers about those uses and providing a consistent ethical approach across the industry.

Overall, this has been an effective public dialogue, which has been tied closely to the policy making process and delivered skilfully. It adds new evidence to an important and evolving area of data policy, in order to unlock the economic and social potential of location data in ways which the public feel to be ethical and trustworthy. Public benefit and data re-use are both areas which might be usefully explored in future public engagement on the topic of location data. Lessons for future dialogues include: that digitally excluded groups may require more than technical support for participation; that virtual dialogues should make best use of online platforms for information sharing to ensure sufficient time for interaction with specialists; and that commissioning bodies may need to anticipate and create channels for the findings which fall out of their immediate remit to be taken up by others.

Introduction to this report

This final evaluation report assesses the impact of the Geospatial Commission's location data ethics dialogue project, delivered by Traverse (the lead delivery partner) and the Ada Lovelace Institute, and co-funded by Sciencewise.[1] It draws on data including: direct observation of the workshops and Oversight Group meetings; interviews and surveys with participants and observers, and with members of the commissioning body and delivery team, the Oversight Group and stakeholders; and a review of the dialogue report and subsequent guidance. Full details of evaluation activities are given in Appendix C. [2]

This is a theory-based evaluation drawing on realist evaluation.[3] This means there is a focus on the mechanisms by which outcomes have been achieved, in this particular context. More information about the realist approach is given in Appendix B.

The report has six sections:

1. Section One outlines the policy context for the dialogue
2. Section Two gives a brief overview of the dialogue structure
3. Section Three presents the findings about the impact of the dialogue, for participants, policy, industry and practice, and research
4. Section Four identifies and discusses some of the mechanisms for impact, including credibility, 'readiness' for dialogue and the useability of findings
5. Section Five outlines the costs and economic benefits of the dialogue
6. Section Six summarises some lessons learnt for future dialogues

A set of appendices provide supplementary information including the list of Oversight Group members, evaluation materials and approach used.

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[1] Sciencewise is an internationally recognised public engagement programme which helps to ensure research and policy is informed by the views and aspirations of the public. The programme is led and funded by UK Research and Innovation (UKRI). Sciencewise supports policymakers and research funders to carry out public dialogues on issues with a scientific or technological component.

[2] It follows a baseline evaluation report submitted in May 2021, which covered the context for the dialogue project; an interim evaluation report submitted in November 2021, which covered the delivery of the dialogue workshops and a draft final report in February 2022, which covered emerging impact.

[3] Pawson, P. The science of evaluation: a realist manifesto. London: Sage; 2013.

1. Context and background

1.1 Background to commissioning

The Geospatial Commission is an expert committee established in 2018 as part of the Cabinet Office. They have a remit to set the direction of geospatial policy across the UK (working with devolved administrations). Their 2020-25 UK Geospatial Strategy set out a programme 'to unlock the significant economic, social and environmental opportunities offered by location data'. As part of this strategy, the Geospatial Commission identified four 'missions'. This public dialogue project sits between the Geospatial Commission's policy work and geospatial data adoption work and is most closely associated with Mission 1:

Mission 1: Promote and safeguard the use of location data
Mission 2: Improve access to better location data
Mission 3: Enhance capabilities, skills and awareness
Mission 4: Enable innovation

The Geospatial Commission define 'location data' widely: *Location data, or geospatial data, is the record of what we do, and where we do it. It tells us where people and objects are in relation to a particular geographic location, whether in the air, on the ground, at sea or under our feet[4].*

This was the first public dialogue in the UK to focus specifically on public attitudes towards location data. There has been more work to understand public attitudes towards data more generally, and specific types of data such as health data[5]. As such, there was limited evidence to build on when setting the scope and design of the dialogue, about how the specific characteristics of location data affect public attitudes to use of this sort of data. The public dialogue therefore had a foundational evidence-building remit and has helped to set general foundations for further public engagement and research on the topic.

The dialogue has taken place within the context of data reform, which has included a public consultation led by DCMS at the end of 2021, on reforms to the UK's data protection regime[6]. In addition, during the timescale of this public dialogue, The Locus Charter was published, which sets out an international set of ten principles to govern use of location data, which organisations are encouraged to voluntarily commit to[7].

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[4] As part of the scoping phase of the dialogue project, the Ada Lovelace Institute led on a topic review in which they worked with a stakeholder group to review and clarify a definition for the purpose of the dialogue.

[5] For example, a 2020 dialogue commissioned by Understanding Patient Data and the National Data Guardian, and suppported by Sciencewise, on what counts as 'public benefit' when using health and care data

[6] The *Data: a new direction* consultation ran from September to November 2021. More information available at https://www.gov.uk/government/consultations/data-a-new-direction. Although this consultation has a broader remit than location data, the location data ethics dialogue was referenced as a future source of evidence in the consultation document.

[7] The ten principles of the Locus Charter cover two of the Geospatial Commission's three ethical foundations included in the guidance written as a result of the public dialogue – accountability and bias – but do not cover the third – clarity.

1.2 Dialogue objectives

The objectives set for the dialogue were as follows:

- engage a diverse section of the public, broadly reflective of the UK population;
- explore and understand participants' aspirations and concerns in relation to location data, including how the public perceive the benefits and harms of location data use in a variety of applications;
- understand the values and principles that underlie dialogue participants' views;
- consider specific case studies or uses of location data in more detail;
- publish evidence that can be used to inform wider work and research on location data ethics, in academia, private and public sector;
- provide findings that inform guidance for the private and public sector on the appropriate use of location data, and government's future public engagement and communication approach on location data;
- understand what the public regard as trustworthy location data use, to inform approaches to build meaningful public trust [added following first Oversight Group[8]];
- provide findings that can be explored in innovative ways to inform future research strategy & policy.

1.3 Framing of the questions

In line with the Geospatial Commission's strategy, the dialogue was framed around extending the use of location data, albeit in a way which the public felt to be ethical, rather than debating whether it should be used in the first place.

Reaching the specific questions participants were asked in the dialogue followed a process which took into account findings from a rapid evidence review conducted by the Open Innovation Team and a topic review conducted by the delivery team. These were categorised in terms of the most appropriate method for answering them. In this process, several decisions were made relating to the framing of the content for the final dialogue, including a focus on what was specific to location data, how anonymity was defined, the use of a 'public benefit' lens and a decision not to focus on specific use cases. Further information about this process is in Appendix E, as well as in the in the methodological appendices of the dialogue findings report.

1.4 Opportunities and challenges for the dialogue

Cross-cutting policy areas for impact: Data and technology cut across policy areas, and location data is no different. The Geospatial Commission considers that greater use of location data can help to solve problems in areas as diverse as housing, climate change mitigation, communities, infrastructure and land management. Public dialogue allows members of the public to speak from their lived experience and understanding of the world,

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[8] Discussion related to organisations and institutions putting in place the 'conditions for trust' rather than putting the burden of responsibility for change on the public to trust

which can challenge the existing categorisations and 'silos' of policy-making, leading to unique insights. This creates a wide field in which to land findings and have influence, creating both opportunities and challenges for the policy impact of this dialogue.

Wide scope: The range of areas of use of location data also created a wide range of topics for discussions with the public which were potentially in scope. This made it more difficult for the delivery team to design a process which allowed participants to hear from and engage with a range of specialists who were sufficiently representative of this range of use cases and perspectives.

COVID-19: The dialogue took place within the context of the Covid-19 pandemic, resulting in virtual delivery of the workshops through Zoom and an EngagementHQ platform for asynchronous engagement. The decision over the final workshop being delivered online was taken during the project delivery. This pandemic context throughout gave the public a particularly topical and much-reported use case of location data: the test and trace system. Although the design of the dialogue did not explicitly focus on COVID-19 use cases, references to these came up frequently throughout the discussions and may have led to a specific way of thinking about location data; in particular, participants' relatively higher awareness of tracking location via a mobile phone.

1.5 Timescale and structure

The main dialogue took place over four weeks between June and September 2021 and comprised three virtual workshops held on Saturdays, each workshop running for two two-hour sessions. A fourth and final virtual workshop took place with a smaller subset of dialogue participants around eight weeks later.

Eighty five participants were recruited from across the UK and took part in the dialogue workshops in smaller groups of around seven participants. Recruitment was boosted for two specifically impacted groups (SIGs) identified through the topic review and stakeholder workshop: digitally excluded people (over the phone and with one-to-one support) and Black British people. In addition, focus groups with three other SIGs took place before and after the main dialogue workshops. These included: women who have experienced abuse, forced migrants (refugees and asylum seekers), and people with disabilities[9].

Asynchronous engagement took place on an online platform through EngagementHQ. Participants were asked to complete tasks including:
- to respond to a series of surveys and polls
- to upload photos of an activity to explore their mobile phone location settings
- to conduct research with family and friends

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[9] These groups were a subset of groups identified by the delivery team in their original proposal and further refined through the topic review, stakeholder workshop and work with organisations who support these groups. They were considered to be specifically impacted due to for example: fear that abusers may locate them using their location data or fear of identification and prosecution by immigration authorities through location data tracking.

- to review materials from previous sessions, answers to questions and definitions of technical terms used
- to review and comment on initial findings from the workshops.

Phase 1: Orientation			Phase 2: Exploration		Phase 3: Recommendation			
Survey and screenshot pre-task	SIG groups: Location data uses & impacts 1.5 hours	Workshop 1: Get-to-know-you 1 hour	Workshop 2: Location data uses & impacts 4 hours	Participant led research	Workshop 3: Findings, trust & ethical issues 4 hours	Survey and reflective tasks	SIG groups: Reflect on findings 1 hour	Workshop 4: Findings & recommen-dations 2 hours
Week 1-2 w/c 7 June	Week 2 w/c 14 June	Week 3 w/c 21 June		Week 4-5 w/c 28 June	Week 6 w/c 12 July	Week 7-14 w/c 19 July	Week 13 w/c 30 Aug	Week 14 w/c 6 Sept
		Activities: • Icebreaker • Introduction to dialogue • Questions	Activities: • Introduction to topic • Location data story • Deep dives • Discussion	Activities: • 3 interviews with family and friends • Data collection survey	Activities: • Research reflection • Ladder of trust • Ethical issues map			Activities: • Dialogue findings reflection • Making recomm-endations

Fig 1 - the dialogue outline (Source: *Dialogue Engagement Report* developed by delivery team)

2. Impacts

2.1 Overview

This section outlines the impact the public dialogue has had, as well as anticipated impact in the future. The dialogue report is published on the Geospatial Commission's website and on the Sciencewise website. It was launched in a public event hosted by the Alan Turing Institute in December 2021, and publicised through social media and a press release. The report has been circulated internally through government departments and presented to government networks – including to devolved administrations and to the PADAI Network whose members are civil servants working on data policy who are interested in Public Attitudes towards Data and AI. The findings have also been presented to industry and sector bodies, including to the Association for Geographic Information's ethics forum, GEO Business conference and to the Geospatial Commission's partner bodies. As noted earlier, subsequent guidance has also been produced and launched.

Impacts are organised according to those relating to participants, policy, industry and other research.

2.2 Participants

The greatest impact on participants has been an increase in their knowledge about location data. For example, just 1% of participants felt they knew 'a great deal' about location data before the first workshop, rising to over two-thirds of participants (67%) after the third workshop (see Fig 2). From interviews with a sample of participants, this increased knowledge tended to be about the variety of different uses (and users) of location data, and the regulations surrounding its use.
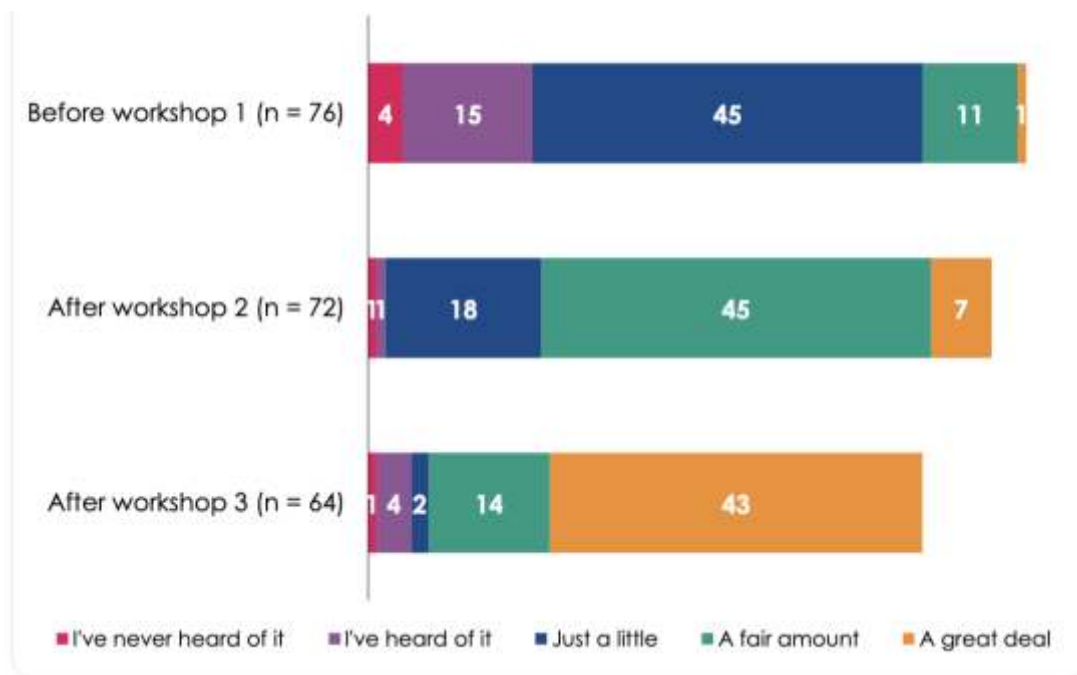
"And I knew, like a lot of apps on our phones and stuff, they ask for location to be sort of consented to […] So, yeah I knew it existed but I didn't know a lot of applications [of] it, […] and I didn't know to what extent it's being used and sort of, what the regulations are around it and what government intends to do." **Participant interviewee, after Workshop 3**

Having learnt about the topic, some participants indicated that their views have changed about location data. This is discussed in detail in the dialogue report written by Traverse and Ada Lovelace Institute. From interviews it was clear that participants felt that it was hearing about the varied range of uses of location data which had changed their opinions, because they were previously unaware of this breadth of use. For some, they felt more wary about location data collection as a result of learning about its ubiquity. Others felt more positive having heard about the many different uses, especially for societal benefit such as crime prevention and planning sustainable cities.

"Simply that I generate so much location data as part of my everyday life and that it largely serves a very positive purpose." **Participant survey respondent, after Workshop 3**

"I'd say I'm a bit more wary. I think that I don't let apps just use my location all the time if I'm not using them for example." **Participant interviewee, after Workshop 3**

For some participants, taking part in the dialogue has led to changes in their own lives. Most commonly, participants reported paying more attention to how their location data is used by apps they download and use. Some mentioned changing their settings to restrict location data sharing[10]. Some mentioned actively speaking about location data with friends and family. A few participants also mentioned feeling that they were more open to hearing other people's views generally.

"[Taking part in the dialogue] reassures me in many ways that the location data is being used and I'm happy for it being used for good reasons. And on the other hand, it also makes me more conscious when I'm […] installing new apps, just to make sure that if I am consenting to location data then what's the purpose it's going to be used for and if it's important, it's going to be sold or shared with other third party organisations as well. I think that's just… I'm just more conscious of that." **Participant survey respondent, after Workshop 2**

"Especially in my small group, there was like different ages as well […] They make points that wouldn't have even crossed my mind, because I haven't thought that it was a problem, because it's not my experience. […] It's opened my eyes to things that I just wouldn't have thought of because it's not the way that I interacted with the world or my experiences" **Participant interviewee, after Workshop 3**

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[10] I attribute this behaviour change directly to an early exercise in the dialogue in which participants were asked to take screenshots of their location data settings on their phones.

All participants said they would be 'fairly' or 'very' likely to take part in a similar public dialogue process in the future (when asked after Workshops 3 and 4). In interviews with participants, they gave a number of reasons for this: having enjoyed the opportunity to speak with different types of people they may not normally interact with; feeling they were able to have a voice on important issues; or enjoying the opportunity to learn about foundational topics relevant to their lives. All participants also said they would be 'fairly' or 'very' likely to stay engaged with the subject of location data in the future (when asked after Workshops 3 and 4).

"It's good to be able to expand our knowledge especially on something that's as critical and relevant to our lives as location data because we use it every day we use it and give it away every day without knowing and so being able to actually discuss it and understand it with other people is really useful." **Participant interviewee, after Workshop 3**

A number of methodological choices contributed to these impacts for participants. High quality materials developed by the delivery team contributed to increased knowledge. In particular, visual methods like the 'location data story' used in the first workshop were memorable for participants and allowed for increasing layers of complexity to be introduced about how location data is captured and linked together, for a range of uses[11]. Additionally, the inclusion of stakeholders from a wide range of different fields e.g. policing, smart cities and public health, worked well to demonstrate some of the range of uses of location data. There was however, less time than originally planned with specialists for participants to interrogate these uses, particularly due to a technical issue moving between breakout rooms. This meant there was not enough time for interaction between participants and specialists, for participants to ask questions to aid their understanding. However, across the dialogue as a whole, the balance of information provision and small group discussion worked well to consolidate participant knowledge. Engagement with tasks on the EngagementHQ platform was high for structured activities and low for unstructured activities (like open forums and Q&A) suggesting that the EngagementHQ platform did not foster an active online learning community[12]. This suggests that greater online facilitation may be required if this is a desired part of future dialogues[13].

The recruitment approach ensured participants were reflective of the UK population. This diversity of participants, as well as skilled facilitation to ensure all voices were heard in small group discussions, contributed to participants feeling able to explore their own views. The uplift for specifically-impacted groups (and the use of personas[14] developed from parallel focus groups with specifically-impacted groups) also helped to bring in a range of perspectives – although the extent to which these personas were brought into discussions by facilitators, following their initial introduction to the group, was mixed.

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[11] Materials used in the delivery of the dialogue are available in the dialogue appendices report – see the location data story on p.36

[12] For example, only two participants contributed to the 'open chat' forum set up for participants to chat and engage with each other.

[13] The choice of platforms may also be important, as EngagementHQ was chosen for its ability to handle different levels of access (for participants, for friends and family etc) rather than its collegiate feel.

[14] Personas are fictional characters developed to represent types of users/groups in society.

However, despite one-to-one support from Traverse, most of the digitally-excluded participants (five out of seven) dropped out ahead of the dialogue. Members of the project team reflected on the relationship between digital exclusion and other types of exclusion, reporting that some of these participants felt overwhelmed or lacked confidence in their ability to take part in discussions on the topic, which went beyond the barriers of accessibility of the technology. This meant that while some could be supported to overcome technical barriers to take part in the dialogue, others had additional barriers which were harder to remove. This is a useful insight for future dialogue projects seeking to involve digitally excluded participants. It is important to recognise the context of an individual's digital exclusion in order to understand the best way to involve them, which may be through other means than by recruiting them as dialogue participants (such as individual phone calls).

The dialogue report was shared with participants.

2.3 Policy

The dialogue had three objectives which focus on the anticipated impact on policy. These were:
- provide findings that inform guidance for the private and public sector on the appropriate use of location data, and government's future public engagement and communication approach on location data;
- understand what the public regard as trustworthy location data use, to inform approaches to build meaningful public trust;
- provide findings that can be explored in innovative ways to inform future research strategy & policy.

Launch and dissemination

In general, all members of the project team have been very satisfied with the final dialogue findings report, which was completed ahead of schedule. In interviews, the Geospatial Commission spoke of the challenge of balancing the independence of the process with their desire to make it the most useful for the purpose of developing guidance. The delivery team were given space and independence (especially during the analysis phase), but there was a significant volume of discussion during the drafting of the final report about the relative weight and priority given to findings, and the nuance around some specific points, such as public benefit and attitudes towards for-profit uses of location data[15].

The launch event which took place in December 2021 was attended by policy makers from government departments with an interest in location data and its use and regulation. Almost a third (31%) of the 106 attendees identified themselves as working in policy,

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[15] The interpretation and nuance around this finding were greatly discussed during report drafting. Whilst members of the project team were all satisfied with how it was finally reported, the point was made that the internal conversations themselves may have resulted in the finding becoming more prominent in the report and dissemination than it would otherwise have been.

including attendees from the Home Office, Cabinet Office, HM Land Registry and devolved administrations in Wales and Scotland. A quarter of attendees identified themselves as working in industry. The event featured engaging presentations of the findings and the panel discussion was well-received. The panel discussion also allowed for an element of 'translating' the dialogue findings for use in policy and practice, by putting the findings into the context of panellists' own organisations' work. This included, for example, talking about how transparency is built into compliance procedures, or whether and how public concerns can be addressed through third party assurance schemes, or how the needs of different groups in society can be listened to and designed for[16]. The choice to separate the delivery team presentation of the findings from the subsequent panel discussion appeared to hinder the Q&A session however, as the delivery team were no longer on the event platform to field methodological questions. These questions could have been quickly and clearly addressed by the delivery team had they been allowed to remain, and perhaps stimulated further discussion about the implications of the findings, beyond the methodology of the dialogue.

Beyond the launch and its coverage on social media, the dialogue report findings have also been disseminated to policy audiences through a press release, publication and dissemination through email lists of the final dialogue report. The findings have been presented by the Geospatial Commission to the PADAI Network (Public Attitudes towards Data and AI), which is a network of civil servants working on data policy, hosted by the Centre for Data Ethics and Innovation – and discussed with devolved administrations. Three blogs[17] have charted the dialogue process, as part of a wider communication strategy for the Geospatial Commission, to raise stakeholder awareness of the dialogue and demonstrate transparency about the process. A 'Routes to Action' stakeholder workshop, which would have included policymakers, initially offered pro bono by the delivery team as an option was not undertaken.

The guidance is due to be launched at an event during Digital Leaders Week, on 22nd June 2022 to coincide with the launch of the Geospatial Commission's Annual Plan. Its positioning alongside the Annual Plan appears a strong statement of the centrality of the evidence from the dialogue to the Geospatial Commission's work.

Understanding public awareness

An additional impact of the dialogue has been in Geospatial Commission understanding more about the level of public awareness of location data, and understanding better how to speak to the public about location data policy. Members of the Geospatial Commission team were particularly struck by the low initial awareness of location data which many participants came into the dialogue with. They have found this to be a significant takeaway message, and a useful reminder to consider when speaking about their work to the public in

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[16] With reference to the ICO's work developing an age-appropriate design code

[17] Guest blogs by Ada Lovelace Institute following the topic review and Sophie Reid on the subject of evaluating the public dialogue, plus a blog written by Callum Adams of the Geospatial Commission on the results of a follow-up nationally representative survey designed to build on the dialogue findings

future. They have also continued to test and explore this insight, and it has informed the direction of follow-up work. For example, the Geospatial Commission commissioned a survey of ~1,800 members of the public through YouGov, in which one of the avenues for analysis was focused on understanding the relationship between the level of awareness of location data and attitudes towards location data use. They also felt that the questions chosen for the survey were influenced by this finding, and would have been more technical had they been setting them before the public dialogue took place.

Whilst understanding the low initial awareness about location data amongst the public has been an important finding for the Geospatial Commission, some members of the project team have questioned the merits of focusing too much on this finding. During the reporting phase, this led to some back-and-forth between the Geospatial Commission and the delivery team on the framing and relative priority of the finding. Firstly, it was argued by members of the delivery team that this misses what they felt to be a more important part of the story – that participants left with a great deal more knowledge by the end of the process. Secondly, there was concern that in foregrounding the complexity of the subject and especially the notion of participant 'inconsistency', it risked undermining what participants actually said during the dialogue. It was felt that this could undermine the credibility of the report findings to stakeholders, and therefore its potential for impact, especially amongst audiences less familiar with the public dialogue methodology (see Mechanisms section of this report on credibility).

Additionally, the finding of low or mixed public awareness about location data was a good example of the multiple ways in which a finding can be interpreted in terms of implications for policy. This was demonstrated in the final Oversight Group meeting, in which members drew different implications from the finding. For some, low public awareness meant that it was important to educate members of the public, and provide more transparency about how location data is used. For others it meant that putting personal responsibility onto members of the public for seeking out this information was inappropriate, and more of the onus should be on users of location data to provide mechanisms and tools for accountability.

Influence on the development of guidance

The Geospatial Commission's process for developing the guidance has drawn closely on the dialogue findings[18]. Members of the Geospatial Commission team felt that they would have been unable to write the guidance without the public dialogue findings, which were central to how it has been constructed. These include in terms of scope, structure, content and framing. Other members of the delivery team, and Oversight Group spoken to for the final stage of the evaluation generally felt that the guidance represented the dialogue findings well.

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[18] Other sources of information which have gone into the guidance include a quantitative survey carried out to test findings against a wider public and situating the findings within an analysis of existing policy, including the National Data Strategy.

- **Scope**: There were different views on the extent to which the dialogue findings have influenced the scope of the guidance. In general, the scope has been set more by the Geospatial Commission's remit and strategy, and desire to futureproof the guidance for future uses as technology develops. However, one member of the Geospatial Commission team interviewed for the evaluation felt that the guidance had been more generally focused on personal mobility data, as this was the area of most concern to participants (as opposed to, for example, the location of objects).
- **Structure**: The three ethical building blocks in the guidance are accountability, bias and clarity. These map closely to the public dialogue findings around transparency, accountability and fairness. The one area which has been less covered by the guidance from the dialogue findings is around agency, loss of control and feelings of 'digital resignation'. This was pointed out in the Oversight Group by some members. It has been seen as outside the Geospatial Commission's remit, but it is not clear under whose remit this falls.

Interviewees did not feel that the public dialogue findings had specifically influenced the granularity of the guidance (how high level or detailed the guidance was). The guidance took a principles-based approach. This was influenced by a strategic decision to futureproof the guidance, because within data and AI it was felt to be very difficult to produce guidance to cover every situation and so focusing on principles was seen as a way to empower organisations to think through ethics in the context of their own use. The principles-based approach was also influenced by the Geospatial Commission's position as an expert committee without specific levers to implement detailed technical guidance (as a regulator would have, for example).

The draft guidance has been shared with Devolved Administrations and Geospatial Commission partner bodies[19]. In addition, the dialogue Oversight Group was reconvened for a fourth meeting to cover the guidance development, which has helped to ensure continuity across dialogue findings into the guidance. Members of the Geospatial Commission project team felt that this offered useful challenge which was rooted in the dialogue process.

"[The Oversight Group] understand, like they were brought through the evidence gathering journey, so they really understand what the public dialogue brought and taught us and so yeah… I think that helped. And they understand… like we have practitioners who are data ethics experts […] and through this process we brought them into, like, thinking more about location and in the same space we have geospatial practitioners who are then learning from data ethics practitioners. So bringing those voices round the table to balance that view was good." **Project team interviewee**

Members of the Oversight Group interviewed in the final stage of the evaluation felt that the dialogue findings report acted as a useful shared resource, when discussing the draft guidance, which allowed for productive discussions between the different perspectives

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[19] The British Geological Survey; The Coal Authority; HM Land Registry; Ordnance Survey; UK Hydrographic Office and The Valuation Office Agency

represented across the group. In addition, they ensured that the public voice was brought into the discussion to maintain focus on who the beneficiaries of the guidance are.

"[The dialogue] gives you that sense of, like, a person that might not be at the table. And actually, probably the most important person which is […] someone that's just living their life and isn't particularly invested one way or another in this topic. That's the individual that you often miss in these situations and is often the key beneficiary or stakeholder so I think […] that's the key thing that I've seen the dialogue really contribute to is give voice at kind of quite a crucial stage." **Oversight Group member**

Members of the delivery team also felt that the reconvened Oversight Group was able to hold Geospatial Commission accountable to the dialogue findings particularly effectively as a result of their involvement throughout the process. Indeed, during the Oversight Group meeting itself, many comments on the draft guidance drew on the dialogue findings, including how some findings had been translated into the guidance, or where they felt some elements of the findings were missing or not weighted as strongly as they had been in the dialogue findings report.

"One of the strands [from the dialogue findings] was citizen agency […] demonstrating accountability to the citizen or providing mechanisms for accountability, which is what the dialogue was a little bit more driving after […] So, you know, I think [the dialogue findings are] in [the draft guidance], kind of nominally, in large parts they're in there, but I think there's little parts that are missing to me, like final connection so that each of the five key themes would be easily read from the dialogue into the guidance." **Oversight Group member**

Members of the Geospatial Commission interviewed for the final stage of the evaluation felt that the dialogue provided a wealth of useful evidence upon which to draw for the guidance. However, when specifically asked, there were two areas which they felt would have, in hindsight, been useful to explore in more detail in the dialogue. This included getting a clearer understanding of the public's view on use of location data 'for public good', and linked to this, about the public's view specifically on data reuse, where data is collected for one purpose but used for another. This room for ambiguity around 'public good', or 'public benefit', was highlighted by the fact that multiple conversations took place within the project team during the dialogue report drafting process and later in the Oversight Group about interpretation of the findings around it. For example, one member of the project team reflected that they felt the nuance around public benefit as a *condition* for acceptability of location data use, rather than location data use for public benefit being something which members of the public actively wanted was lost in the guidance. Public benefit and data re-use are both areas which might be usefully explored in future public engagement on the topic of location data.

Wider data policy context

During the delivery of the dialogue project, there was a formal public consultation led by the Department for Digital, Culture, Media and Sport (DCMS) entitled [Data: a new direction](#)

about reforms to data protection laws. In the consultation document, The Geospatial Commission's public dialogue on location data ethics was footnoted as a piece of evidence which would feed into the consultation, although data reforms in the consultation were not focused on location data specifically. The Geospatial Commission shared information and plans about the public dialogue process with DCMS, the final dialogue report, and the guidance.

Speaking to a policy advisor at DCMS (post-findings but pre-guidance) it was felt that findings from the dialogue on trust and transparency were useful but not particularly novel. In addition, the dialogue findings represented one piece of evidence (specific to location data), within a larger consultation which received several hundred responses. Members of the Geospatial Commission also felt that whilst there were overlaps between data protection law and ethics work, there were also distinctions. It is therefore unlikely that the dialogue has had significant influence on forthcoming[20] reforms to data protection laws – but this was not an objective of the dialogue. Conversely, interviewees felt that the data reforms were unlikely to depart from principles in the guidance, so would not render the guidance any less useful or current to users.

2.4 Industry and practice

The dialogue findings have been disseminated to industry in a variety of ways including a presentation to the GEO Business conference, through mailing lists, and via individual conversations with industry representatives on the Oversight Group and others. Industry representatives will also be invited to join the launch of the guidance on 22nd June, and it will be circulated through DCMS's national data strategy mailing list, which includes industry.

Impacts on practice amongst the users of location data are anticipated to be achieved through the guidance, rather than the dialogue report findings themselves. This was corroborated through interviews with Oversight Group members from industry, where interviewees felt that the dialogue was most useful to them in its translation to guidance, particular for:

- Strategy – making decisions as a business about whether to do something or not. A specific example was given by one interviewee about making insight products from GPS data, which was felt to be a grey area in legislation. In addition, the same interviewee was keen to understand how to ensure ethical practice in their supply chain where they were buying data from a third party (such as whether that third party had the right to collect data, and to share it). They were therefore interested in the idea of a sort of 'kitemark' or ethical 'badging' which was discussed in the public dialogue.
- Communication – being able to reference the guidance would be helpful in showing to customers and regulators that they are following best practice advice.

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[20] A data reform bill was promised in this session of Parliament, in the Queen's speech

- Consistency – the existence of guidance was felt to be positive in ensuring their business did not lose competitive advantage because all companies are held to the same articulated standards (or the business could gain advantage by pointing to the guidance to say that they're doing better than others on ethical use of data).

However, these interviews demonstrated a call for greater specificity for business needs than could be found in the public dialogue findings. These calls positioned the sort of public engagement which would suit business needs more along the lines of a focus group methodology, suggesting that business users found it difficult to interpret the findings of a more expansive and emergent public dialogue, for their own purposes.

"So, if there were a way of doing the exercise which tried to tease out different approaches to privacy and to test the public's reaction, I think that would have been interesting because you might have said ''we put it to ten people that we could approach location data this way" *[…] It would have given you a bit more of a… I don't know. ''These are some different options, and these are what we think about them''. Rather than, ''yeah, this is the state of mind in the UK, which is broadly speaking that it's probably OK, but we're a little bit worried about x, y, z''.* **Oversight Group member**

2.5 Informing wider research and work on location data ethics

Some interviewees felt that the dialogue findings (and the guidance which was written around them) were going to be useful in their further work. These included:

- For the Information Commissioner's Office: addressing messages from the dialogue around accountability and breaches. Ensuring that public views were informing their harms framework, and mitigation of harms, so that areas which the public considered high priority in terms of ethical considerations were being adequately weighted by the regulator
- Academia: a researcher from one research institute who was interested in taking the findings from the public dialogue on location data and looking at them as a use case to explore aspects of data justice – such as power, access to capabilities and resources.

3. Mechanisms

3.1 Overview

Mechanisms explain how outcomes happen in particular contexts. Pawson and Tilley define mechanisms as the *reasoning* of actors in response to the *resources* offered by a programme or project[21]. In this case, the resources offered to dialogue participants include the framing of the topic, stimulus materials, interaction with specialists, skilled facilitation and compensated time to learn and discuss the topic with a diverse group of the public. The resources offered to stakeholders and policymakers include the opportunity to attend workshops to hear public views first-hand as observers or specialist presenters, the dialogue report, and potentially other dissemination and engagement activities.

Building on some emerging mechanisms outlined in the baseline and interim reports, this section provides some more thoughts on these mechanisms.

3.2 Credibility

Credibility can be further disaggregated in terms of who the process needs to be credible to, what makes it credible to them and what impact that leads to. This is summarised in the following table.

Stakeholders	Dialogue process	Dialogue outputs	Impact
Policy-makers	Feel it is a credible process of engagement	Feel these are credible sources of evidence	Influence on policy making
Other professionals	Feel it is a credible process of engagement	Feel these are credible sources of evidence	Influence on practice
Dialogue participants	Feel it is a credible process of engagement, not a 'tick-box' exercise	Feel these represent the discussions and views of participants in the dialogue	Facilitates meaningful engagement and greater sense of connection and increased agency in policy making
Wider public	Feel it is a credible process of engagement, not a 'tick-box' exercise	Feel that participants represent the public	Wider 'social licence' about ethical location data use

Participants interviewed through the evaluation generally felt that the process was a credible one. This was driven by factors including participants' perception of the effort and professionalism that had gone into the process – the numbers of people in the delivery

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[21] Or sometimes the social or psychological factors affecting that reasoning. For more on this, see https://www.betterevaluation.org/en/approach/realist_evaluation

team, representation of a wide range of specialist perspectives and the presence of an independent evaluator. This gave participants the confidence that significant energy, time and consideration had gone into the dialogue process and that the materials and specialists they were being presented with were representative of a range of perspectives. Participants who were interviewed often reported being impressed by the numbers of participants taking part in the dialogue, their level of engagement in the process and the diversity of perspectives and backgrounds represented. Interviewees particularly remarked on the diversity of participants from across different parts of the UK. This appeared to give the dialogue greater credibility amongst participants because it reassured them that the dialogue methodology was sensitive to the different lived experience of those in different parts of the country. Participants' sense of the credibility of the process also resulted from being presented with interim and emerging findings in the final workshop, from which they were able to see how their discussions had been analysed and summarised across the wider group. The fact that this had been done in a way which allowed them to recognise those discussions (and that this had been done in a short period of time), gave a greater sense of credibility to the process and trust that their discussions were being accurately understood, analysed and communicated to others.

As for **policy-makers**, there was a range of factors which increased or decreased the credibility of the process in their eyes. For example, there was some evidence that policy-makers felt the process to be a credible one for many of the same reasons given above – namely the scale of the project, diversity of participants recruited, findings presented in the final report and the presence of an Oversight Group and independent evaluation. The inclusion of the Ada Lovelace Institute in the delivery team lent credibility to the project due to their remit in the critical assessment of technology, rather than necessarily its promotion. This aspect of the independence of the findings has also been highlighted by the Geospatial Commission in communication about the dialogue project, suggesting the importance of that independence for lending credibility to the process and the findings.

Although the Geospatial Commission chose to conduct a follow-up survey to test some of the findings from the dialogue with a representative sample of the public, team members interviewed were clear that the richness of findings they got from the dialogue itself was what made the guidance they wrote credible as an evidence-based contribution to the narrative of location ethics.

> *"I don't think that we could have written the guidance with another form of public engagement. I'm not a public engagement expert, but the public dialogue gave an insight into how the public think and the issues that matter to them, in a way that, for example, the survey could never do. [...] I think back to the public dialogue report and also what went into the dialogue report – the things that individuals said and those sort of minute long disagreements that members of the public had. They still resonate with me. The dialogue allowed me to really get into the mind of members of the public and how they think about location data and I really hope that the guidance does that, sort of, dialogue justice."*
> **Geospatial Commission interviewee**

However, as has been discussed in the section on policy impact, it was suggested by some members of the project team that there was a risk of the credibility of the process being

undermined by a foregrounding of the finding that participants had low public awareness of location data at the beginning of the process, and that they found the topic complex to understand and to discuss. They were concerned that focusing on this finding would make it easy for stakeholders to discount the findings on the grounds that the participants were not well-enough informed to make a meaningful contribution to policy.

This suggests that part of the credibility of dialogue processes (at least to external stakeholders) relies on the 'journey' of increasing knowledge that participants undergo. This is somewhat problematic, as participants are not expected to become 'experts' in the topic over a course of a dialogue, and expecting this risks building public dialogue processes on a 'deficit' model foundation[22]. Elements of the follow-up work undertaken by the Geospatial Commission, in which one strand of survey analysis has been focused on understanding the link between levels of awareness and acceptance of location data uses amongst a wide section of the public, reported on in this Geospatial Commission blog, suggests some element of 'deficit mode' thinking at play in the interpretation of the public dialogue findings.

This also highlights the skill needed in negotiating how to report on participants' 'journeys' alongside their views on the topic, so as to enhance rather than lose credibility for an external audience. In the final dialogue report these were reconciled well, with information about how participants connected with the topic adding context and depth to the findings – and helping to elucidate how the topic fit within participants' worldviews. This included, for example, discussion of the distinctions which mattered (or did not matter) to them, and the topics which elicited the most or the least discussion.

3.3 Readiness for dialogue

Public dialogue participants bring their own life experiences to bear on the deliberations and in this sense are already 'ready' for dialogue. However, public dialogues are also designed to give participants opportunities to understand and learn some of the basic definitions of key terms, and the main conceptual arguments around the topic, through engagement with a range of specialists and stimulus materials. This can help provide shared frameworks for thinking and deliberating.

Whilst participants are not expected to develop technical expertise of the topic, the degree to which technical information is required was debated. For example, one member of the Oversight Group felt that understanding the technical possibilities of how location data could be collected and used was a prerequisite for a meaningful dialogue.

"These are difficult questions that are both socio-technical so they involve both the human component of innovation but they are technical at the end of the day – understanding what

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[22] In particular, the idea that more information brings greater trust and acceptance of scientific and technological development, which has been critiqued by Sciencewise and others. See for example, reflections on this in the context of talking about genetic modification https://sciencewise.org.uk/wp-content/uploads/2018/12/Talking-about-GM-published.pdf

data is, what location data it is, what type of systems might be used to analyse and mine that data. All of that I think are important preconditions for having meaningful dialogue"
Oversight Group member, after first Oversight Group meeting

The participants' existing conceptual understanding of the topic was lower than originally anticipated by the project team, which led to initial confusion for participants in understanding the data landscape, and the differences between location data and other types of personal data. These distinctions were seen to be important for the clarity of discussions, and so a mythbuster presentation was developed after the first workshop, supported by additional stimulus materials. Some members of the project team felt that, in hindsight, they would have liked to have provided more of this material upfront, to save time in the dialogue workshops themselves and therefore be able to get further into the detail of discussions, having ironed out any confusion or misunderstandings. Despite this, following the myth-buster exercise, project team members felt that participants were more prepared for discussions.

"[What was crucial] for me [for] helping keeping us on track and getting to where we need to was the myth busting. And, I don't know if it would have been possible to do that in the first session because I don't know if people need to have encountered it, to have the confusions for us to clarify the confusions. But in an ideal world, sorting those confusions out earlier I think would have driven much more value of the first session, so it depends if you're looking at the first session as a stand alone or as part of the journey, as part of the journey maybe it was great but as a stand alone I felt like people were just very confused."
Geospatial Commission interviewee

A decision was made about use cases during the design of the dialogue, which meant that the dialogue did not present specific scenarios or case studies for participants to discuss in detail. Instead, a range of use cases were given as examples, but the discussion focused more on high-level principles – such as the degree of anonymity, whether use of location data was for public benefit, whether profits were made etc. This has been a useful exercise in drawing out some of the values and principles surrounding public attitudes towards location data use. However, some interviewees felt that the lack of more tangible examples made it more difficult for participants to understand the issues (or at least progressed at a slower pace). In particular, a lack of examples of societal benefits or risks to society from location data use may have exacerbated the focus of discussions on individual benefits and harms.

"I think a lot of the opinions were like, everyone admitted, you know [they] had never really thought about it. So, when you ask someone something that they've never really thought about, it's always… you know it's debatable whether you, you know… it's one thing telling them or explaining what the terms are. You know, ''Oh this is location data'. But it's the context of the location data, the environment it sits in, that I don't think really got talked about enough. Because then all of a sudden your opinion may be a bit more… you may be a bit more opinionated about the location data and the ethics surrounding it." **Participant, after Workshop 3**

"From a public policy perspective, we do need to draw on the particular verticals, these specific use cases, because at the end of the day it's data practices, AI technologies […] raise issues which are cross cutting and cross sectoral but often times the understanding of those issues, those cross cutting issues don't come to you unless you really understand the verticals, you have to… you have to really understand the concrete use cases to start seeing commonalities" **Oversight Group member**

Dialogue participants' 'readiness' for dialogue and the level to which dialogue participants learn about the topic is tied to the credibility the findings have with policymakers and other stakeholders. However this is not always a straightforward relationship. As discussed in this section, in this dialogue there was initial concern that participants were not able to get into meaningful discussions before they had an adequate understanding of the topic.

However, there were also questions from the Oversight Group throughout about the credibility of the findings because participants become a more informed group through the process and are therefore not 'representative' of the wider public.[23] This suggests there is some tension in external perceptions of public dialogue over the level of knowledge dialogue participants must have, in order to have effective deliberations, but not to become so informed as to be completely unrepresentative of the general public. The Geospatial Commission conducted a follow-on survey to 'test' aspects of the findings with a statistically representative sample of an uninformed UK population. Part of the rationale for this was to have a baseline against which to track changes over time in planned subsequent rounds of the survey.[24]

Additionally, 'readiness' for dialogue is not only confined to participants, but extends to stakeholders and commissioners too. Commissioners of public dialogue must be ready for the emergent and non-linear nature of dialogue discussions. They must also have sufficient trust in the participants to be able to experience a range of information and perspectives about the topic, and be able to make sense of their own views, with the support of expert facilitators[25]. Finally, they must be ready for things to come up in the dialogue which fall outside of their remit – and how to handle this in a way which respects participants and gives agency to the dialogue process. This last point on remit is explored further in the 'useability' section.

3.4 Useability

Discussions about the 'useability' of the findings of the public dialogue have taken place since the outset of the project. This is due to the fact that the main route to influence for the dialogue was by informing the development of a set of guidance for policy and practice. This necessitates a form of 'translation' of the public dialogue findings through

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[23] It should be noted that public dialogue as a methodology is not intended to be statistically representative or generalisable to a wider population, and approaches to sampling and recruitment reflect this.
[24] Team members were clear that the different methods serve different purposes and that the survey could not have replaced the dialogue in terms of the depth of findings and diversity of voice.
[25] Without, for example, being concerned that including specific perspectives will derail the discussion.

interpretation or application of the principles they highlight, into guidelines for practitioners to follow[26]. The dialogue report presents the findings, often through the voices of the participants who took part, but the authors do not make judgments or analysis about the implications for policy as a result of those findings. This stance has at times challenged the Geospatial Commission's expectations of what the dialogue would provide, as they found that the report initially lacked some of the analysis they felt was needed to understand the implications of the findings for writing the guidance[27].

There are questions raised by any process of 'translation'. Whose voices or understanding is being 'translated', by whom, and to whom? How are the many different perspectives present in a dialogue retained or collapsed into 'majority thinks'? And what might be lost in that process?[28]. Examples of different interpretations of the same finding in this dialogue, such as on 'public benefit', or the implications for policy of low public awareness of location data, show that public dialogue does not provide simple answers and actionable solutions. As one member of the project team put it, the value of public dialogue is to *"help signal what the public want and signal what some of the practical solutions to some tricky concepts can look like"*, but it does not neatly define those solutions.

For Sciencewise and those commissioning public dialogue in future – this suggests that there may be a need to build in time and budget within public dialogue projects for collective sense-making of the findings and their implications for policy-makers and others. Whilst it is unlikely to be appropriate or desirable for these to be led by dialogue delivery teams, discussions about how policy implications will be drawn from the findings and how delivery teams will be able to contribute to that process could be held at the outset of the project[29].

There are also invariably elements of dialogue conversations which fall outside of a commissioning body's remit. Public dialogues are naturally generative processes, and members of the public can make connections between things in ways which do not fit neatly into the way that policy work is organised. Indeed, this is one of the strengths of public dialogue, in understanding how people actually experience policy, and how their life experiences can influence the policy making process. In discussion about this tension, one member of the Oversight Group meeting felt that the Geospatial Commission could make connections with other bodies in order to ensure that the elements of the dialogue which

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[26]It could be argued that part of this process has already been started through analysis and reporting of the dialogue findings, whereby the richness of deliberative dialogue has itself already been 'translated' into a form which is easier to make sense of for those commissioning it.

[27] The Ada Lovelace Institute have initiated some follow-on work (separate from the public dialogue contract) designed to help 'translate' the dialogue findings into a policy briefing and put them into the context of other research. This has focused especially on areas around which the dialogue provided less clarity, as previously discussed, like 'public benefit'.

[28] For example, Melanie Smallman argues that public dialogue has had limited impact on policy making because 'the public in these debates describe a sociotechnical imaginary of science that is more complicated, less manageable and therefore more difficult to fit into policymaking structures and objectives than the imaginary described by scientific experts'. Smallman, M. (2016) What has been the impact of public dialogue in science and technology on UK policymaking? Doctoral thesis , UCL

[29] The Routes to Action workshop proposed initially by the delivery team may have provided a useful space for some of this work, but was not possible due to budget constraints.

were felt to be beyond their remit, could be picked up and addressed elsewhere in the system.

"There could be a point raised about the Geospatial Commission as saying, well, 'you know, if it's not in your remit then maybe you can draw responsibility to the organisation that does [have the remit]'? Maybe that's the ICO, the NCS, the National Cybersecurity Centre - maybe that's… maybe it's the Centre for Data Ethics and Innovation. […] That's something that I'd encourage the GC to maybe kind of look for, is if they want to see… they want to take ownership of what that dialogue says then that… it can include bringing in partners alongside to… who might have that remit, who might have that expertise to… make sure that that kind of dialogue is fully answered." **Oversight Group member**

As discussed in the section of this report on impact on industry and practice, the impact of the dialogue findings on industry is more directly influenced by the guidelines developed as a result of the dialogue, than the dialogue findings report. This was demonstrated in the attitudes to the dialogue findings amongst interviewed industry members of the Oversight Group. Some of these members felt that the dialogue would have needed to use more specific use cases, for them to make use of the findings directly; although they accepted that the dialogue was not set up to address business needs alone. Some industry members felt that compliance and legislation were more relevant to their business decisions, than ethical considerations.

"It might have been good to almost start the engagement earlier and sort of think about what are the challenges that businesses have in this space, which the consultation needs to address. […] There are some really topical issues for me at the moment right, so can we use GPS data collected from apps to create insight products? […] As a company, we've got to kind of decide how we approach that and should we start doing it because some of our competitors are, or should we steer clear of it. So, for me that's a really important question, which potentially could have been fed into the exercise. […] Now I'm saying that, I don't think the purpose of the study was to help [businesses] with their strategies, so…" **Oversight Group member**

Some of the same criticisms about a lack of specificity have been levelled at the guidance developed as a result of the dialogue. Some members of the Oversight Group felt that in addition to principles, it needed to demonstrate and point to best practice, and that it did not go far enough beyond existing compliance and data protection laws, which they felt would have given it greater use, given the existence of other documents on data ethics[30]. There are different approaches to producing guidance, including risk-based, principles-based and rule-based approaches, and it was not the role of this evaluation to comment on the success of the final guidance. However, it is striking that throughout the dialogue process and subsequent guidance development there have been calls for greater specificity around uses. This perhaps signals that given the area of location data is complex and changing, there is high demand for best practice examples to demonstrate the application of principles (even if these may change as technology and uses develop), in order for users

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[30] Such as for example the ODI's data ethics canvas

to feel confident that they are acting in ways which the public deem to be ethical and trustworthy.

4. Costs and benefits

4.1 Overview

Attributing monetary value to deliberative processes is notoriously difficult and somewhat contentious within the field[31]. Nevertheless, the costs of undertaking deliberative dialogue have historically had little visibility, which can make assessing appropriate levels of funding for deliberative processes more difficult. Whilst this section of the report does not seek to undertake a cost-benefit analysis of this public dialogue on location data ethics, it does try to make visible some of the financial implications of the dialogue, in terms of costs and benefits to individual participants, the commissioning body (in this case an expert committee delivered by a government department), delivery organisation, the economy and society generally.

4.2 Costs

The total financial cost of the delivery and evaluation of the dialogue was £201,600. The budget included provision for participant incentives of up to £350 per person (depending on activities completed). The budget was covered by the Geospatial Commission and UKRI's Sciencewise programme.

Additional in-kind costs came from the ~20 members of the Oversight Group. They attended three Oversight Group meetings and reviewed materials and a second draft of the final dialogue report. This contribution was around 24 days in total[32]. Smaller amounts of time were also contributed in-kind by: stakeholders who took part in a stakeholder workshop during the design phase; civil society organisations who advised on engaging specifically-impacted groups; and specialists (including some Oversight Group members) who took part or observed in parts of the dialogue workshops.

Considerably more days were spent on the delivery of the project by Traverse, compared to those outlined in their original planning estimates. The majority of these additional days were spent in the initial set-up, development of materials, reporting amendments and project management (including regular project team meetings). The total figure above also does not include in-kind costs from additional days spent over budget by the Ada Lovelace Institute, whose work is less tied to day rates and for whom the project is more blended with their other strategic work areas. This suggests that the delivery team and the commissioning body held conflicting expectations over the degree of involvement the

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[31] See for example Involve (2005) The True Costs of Public Participation, London: Involve

[32] Based on 20 people attending three two-hour Oversight Group meetings and spending one hour in preparation/review for each beforehand. The Oversight Group were also reconvened for a fourth meeting to review the draft guidance, although this has not been counted in these cost estimates since it was an extension beyond the dialogue.

commissioning body wanted in the design and reporting of the dialogue. Traverse acknowledged that they would have budgeted for more staff time had this been made more explicit in the tender. Budgetary discussions were held between Traverse and UKRI towards the end of the project, in which Traverse asked for a partial recoup of their staff costs which exceeded the budget and funds for dissemination events (which had originally been offered pro bono). Whilst UKRI were willing to uplift the contract for the dissemination events, the Geospatial Commission decided against holding these events, making the request immaterial. However, UKRI also decided against providing additional discretionary funding towards staff costs. This was because they felt that they had been approached too late and would have preferred to work out a mitigation plan with Traverse if they had been made aware of the issue earlier.

The delivery of the dialogue was of high quality and this was acknowledged by all members of the project team interviewed. The commissioning body did not feel that budgetary constraints impacted on the quality of the dialogue, and were particularly pleased with the numbers of participants recruited and the quality of the final report. An additional easy read summary was also delivered, based on a reallocation of budget as a result of the final workshop taking place online rather than face-to-face. However, mitigating any negative impact on the delivery of the dialogue relied heavily on the delivery team being willing to spend more time than budgeted to ensure the quality of their work. UKRI and the Geospatial Commission appreciated Traverse's professionalism and commitment to the project in this regard.

4.3 Economic benefits

The clearest route to achieving economic benefits from the public dialogue is in its potential to increase or extend uses of location data in ways which are seen as ethical by the public. In the first Oversight Group meeting, some Oversight Group members spoke of a lack of evidence about public attitudes towards location data use having a 'chilling' effect on innovation. This is because businesses fear a negative reputational risk from getting it wrong and are therefore less willing to invest in novel uses of location data. From this perspective, the findings from the public dialogue can act as important evidence in helping businesses unlock economic value from location data, through uses that they know are in line with public views.

"If you're looking at economic questions or environmental questions you need to know about place and my sense was that we do pretty well on this in the UK but the potential is phenomenal. We are being held back because I think people are concerned that they may be overstepping the mark and there have been some mistakes made." **Oversight Group member**

According to economic analysis commissioned by The Cabinet Office, the potential economic value of opening up geospatial data is an estimated £6-11 billion from private

sector uses alone[33]. This modelling was based on specific existing use cases, attributing economic value to savings in time/labour, fuel and materials and relying on a series of assumptions about the rate of adoption. It did not monetise public sector uses or potential novel uses, so the total economic value may be higher. However, it also did not incorporate investment needed, so represents a 'size of the prize' analysis rather than a cost benefit analysis. Valuing data in general is a challenging task, given its intangibility and the subjective nature of 'value'[34].

A more recent study of the geospatial market, commissioned by Geospatial Commission and completed by Frontier Economics, estimated the turnover of geospatial in 2018 at £6 billion but cautioned that this represented a significant underestimate due to the difficulty in attributing value to a market which includes activities that cut across multiple sectors[35]. The estimate also did not attempt to attribute value accruing to other actors in the geospatial ecosystem, including individuals, or 'spillover' benefits to the economy, such as lower emissions as a result of better managed road networks. This report, which was based on interviews with industry stakeholders, also supported the argument that there is a 'chilling' effect on the geospatial industry and market, due to uncertainty as a result of a lack of evidence and guidance about the ethics of data use. The report's authors note that "as with other forms of data, market participants would welcome further clarity around whether the collection method for certain types of location data (especially GPS data harvested from mobile phone applications) requires further safeguards to prevent any risks to privacy and maintain consumer confidence" (ibid).

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[33] Cabinet Office (2018) An Initial Analysis of the Potential Geospatial Economic Opportunity, London: Cabinet Office. Available online

[34] Other studies have used different methods of measuring value, including market-based valuation, income-based valuation, cost-based valuation or contingent valuation based on what users are willing to pay. See Bennett Institute for Public Policy and Open Data Institute (2020) The Value of Data: Summary report available online

[35] Frontier Economics (2020) Geospatial Data Market Study Report - Executive Summary, London: Cabinet Office. Available online

5. Lessons for future dialogues

This section outlines some lessons learnt for future dialogues.

For Sciencewise

1. In public dialogues there is not often time or budget specifically allocated for the involvement of delivery teams in the **dissemination of the dialogue findings**, or consideration of their implications with other policy makers. Topic areas which cut across policy areas or sectors may necessitate further engagement with stakeholders and policy-makers following the dialogue. Sciencewise may want to discuss this with commissioning bodies in the initial development of a dialogue project, to consider earmarking budget and time for delivery teams to be engaged in (but not necessarily leading) this collective sense-making of the dialogue findings at the end of the process.

2. **Sciencewise's role** as 'champion' of the public dialogue process throughout a project and arbiter of occasional methodological debates between the commissioning body and delivery team is highly valued by both sides. Whilst this role tends to take place in the background, it may need to be played more visibly in cases where commissioning bodies are new to public dialogue, so that delivery teams feel supported and are able to focus on delivery.

For commissioners

3. The **Oversight Group** brought together for this dialogue was seen as a great strength of the project, but some project team members felt it could have been used even more, including in the report drafting phase. Commissioners of future dialogues may want to consider the role that Oversight Group members can play in later stages of the dialogue such as reporting and dissemination of the findings. In this dialogue, the Oversight Group was reconvened to review guidance developed as a result of the dialogue, which worked well to ensure a strong link between dialogue findings and policy. Future commissioners of public dialogue may want to consider this.

4. **Online delivery** is not necessarily cheaper than face-to-face delivery of a public dialogue[36]. Whilst costs are saved on transport, accommodation, venue hire and refreshments, additional costs include subscription to and moderation of an online engagement platform, additional time in developing engaging materials for online use and analysis of a greater amount of data from an online platform.

5. For participants, the **credibility of the dialogue process** is linked to its quality, in terms of professionalism, recruitment, specialist involvement and participants having the chance to validate findings along the way. Many of these factors are also important in making the process credible to policy-makers. However, the framing of findings around public awareness or the complexity of the topic, may be detrimental to the credibility of the findings amongst policy-makers and other stakeholders.

6. Public dialogues naturally bring out conversations which fall beyond the **remit** of a commissioning body. Spending time to map out where such findings can be picked

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[36] As has been found in other evaluations of Sciencewise dialogues.

up by others in the system is a useful exercise to ensure the full richness of dialogue findings can be made use of. Time and resource to do this (including potentially with some involvement from delivery teams) should be considered as part of dissemination strategies.

For delivery teams

7. Parallel work with **specifically-impacted groups** alongside the public dialogue workshops worked well. Including digitally excluded participants in an online public dialogue was always going to be challenging, but one-to-one work with these participants revealed that digital exclusion can be linked to other forms of exclusion and therefore alternative methods of engagement may be more appropriate than one-to-one support to use technology.

8. Virtual dialogue delivery allows for a blended model of asynchronous (online tasks, forums, videos, polls etc) and synchronous activities (live presentations, Q&As, small group discussions). In this dialogue, **interaction with specialists** was a weaker element due to difficulties in recruiting specialists and then technical issues and timing during the specialist 'deep dives' in the workshops themselves. These potential (and common) challenges could perhaps be mitigated by a greater use of blended methods, such as pre-workshop specialist videos followed by in-person Q&As.

9. In addition, **virtual platforms** for asynchronous activities have different strengths and weaknesses and so choice of platform may have implications for the sort of online environment created within a hybrid dialogue. In particular, creating a feeling of community and mutual learning, if desired, would appear to need time, considered design and online facilitation.

10. As the first dialogue on the specific subject of location data in the UK, this dialogue took the approach to explore broad ethical principles rather than discuss specific **use cases**. Some evidence from the evaluation suggests that this may have made it more difficult, or slower, for participants to understand the technical issues and therefore have a meaningful discussion about the ethical implications.

11. Public dialogue produces both **knowledge about participants' views** on the topic, and **knowledge about pedagogy** and interaction with the topic. Public dialogue delivery teams are skilled in reconciling these in reporting, but a discussion with the commissioning body about the potential tensions and implications for credibility with external audiences may be useful at the early reporting stage.

Appendix A: List of Oversight Group members

John Pullinger (Chair) and previously the UK's National Statistician

Andy Gregory, Home Office

Ben Lyons, Centre for Data Ethics and Innovation

Charles Kennelly, Esri

Chris Wroe, Telefónica UK

David Leslie, Alan Turing Institute

Ellis Parry/Matthew Rice, Information Commissioner's Office

Jagdev Singh Virdee, Independent Consultant

Jeni Tennison, Open Data Institute

Josh Berle, Mastercard

Marcus Grazette, Privitar

Mick Ridley, Global

Phil Earl, Department for Digital, Culture, Media and Sport (DCMS)

Phillipa Sharma, Department of Business, Energy and Industrial Strategy

Professor Shannon Vallor, Edinburgh Futures Institute (EFI), University of Edinburgh

Professor Yves-Alexandre de Montjoye, Imperial College London

Renate Samson, Which?

Simon Whitworth, UK Statistics Authority

Sue Bateman, Government Digital Service

Toby Wicks, UNICEF

Appendix B: Evaluation approach

This draft final evaluation report follows a baseline evaluation report submitted in May 2021, which covered the context for the dialogue project and an interim evaluation report submitted in November 2021, which covered the delivery of the dialogue workshops. This report will be updated and a final version submitted in May 2022 and published externally.

The evaluation approach has been both summative and formative. This final report represents the summative aspect, with some lessons for future dialogues.

The evaluation draws on Realist Evaluation, first outlined by Pawson & Tilley. This is a theory-based evaluation methodology which asks what works, for whom, in which circumstances and why[37]. The realist evaluation methodology includes:

- identifying the *context* in which the dialogue takes place (controllable or not) which includes the *resources* or *opportunities* offered to participants, policymakers and other stakeholders through the dialogue
- assessing the degree to which desired (and unintended) *outcomes* are achieved through the dialogue
- identifying the *mechanisms* by which outcomes are achieved (the participants /stakeholders' *reasoning* in response to the *resources* offered by the dialogue[38])

The theory of public dialogue which has been tested through the evaluation is: *By providing participants with new resources (stimulus material, interaction with experts, structured and welcoming space to discuss with others), public dialogue enables them to make meaningful contributions to policy development. The public dialogue process and its outputs are seen as credible and are used by policy makers and other stakeholders.*

The evaluation approach is guided by the Sciencewise Guiding Principles, Quality Framework and Guidance on Evaluating Projects. The following diagram indicates how the realist evaluation approach maps onto the Sciencewise Quality Framework public dialogue process.

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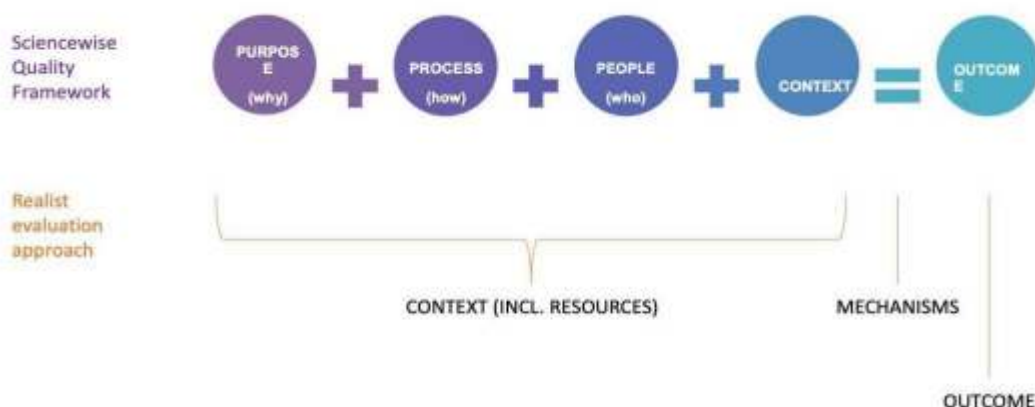
[37] Pawson, P. The science of evaluation: a realist manifesto. London: Sage; 2013.
[38] Or sometimes the social or psychological factors affecting that reasoning. For more on this, see https://www.betterevaluation.org/en/approach/realist_evaluation

The Guidance on Evaluating Projects document outlines six key categories of evaluation questions. The Realist Evaluation approach (context/mechanisms/outcomes) are indicated in brackets against each category.

Objectives	Has the dialogue met its objectives?	OUTCOMES
	Were the objectives set the right ones?	CONTEXT
Credibility	How and why were the dialogue design, delivery and reporting appropriate to the context and objectives, and credible with those expected to use the results?	CONTEXT / MECHANISMS
Quality	Has the dialogue met standards of good practice (according to the Sciencewise Quality Framework and Guiding Principles)?	CONTEXT
	What took place, how, when, where, who with and why?	CONTEXT
	How successful has the governance of the project been, including the role of stakeholders, OGs, the commissioning body and the Sciencewise programme?	CONTEXT
Impacts	Has the dialogue achieved the expected (and any unexpected) impacts on policy and decisions, on organisational change and learning, and on all those involved?	OUTCOMES
	What new insights have been obtained (including on tackling potential social and ethical risks)?	ALL
	Who has seen the results and how have the results been used?	MECHANISMS / OUTCOMES
	What has been the value of the project to those involved, including the extent to which those involved have been satisfied with the dialogue outcomes and process?	MECHANISMS / OUTCOMES
Costs and benefits	What was the balance overall of the costs and benefits of the dialogue (basic costs compared to benefits including potential future costs saved)?	ALL
Lessons	What are the lessons for future public dialogue projects (including from what worked well and less well)?	ALL

Appendix C: Evaluation activities

This table outlines the evaluation activities which have taken place so far, including the report in which the findings were reported. Further activities are planned to feed into the final evaluation report.

Stage	Activity	Note
Baseline (Feb-Apr 2021)	Review of dialogue documentation	Including: rapid evidence review by Open Innovation Team; dialogue tender; dialogue proposal; Geospatial Strategy; Oversight Group documents; topic review
	Observation of first Oversight Group meeting (Feb 2021)	
	Semi-structured interviews with Oversight Group members x5	Interviewees selected to represent a mix of public, private and third sector/academic backgrounds and to include members unable to attend the first OG meeting. The five interviewees comprise a fifth of the OG membership
	Observation of stakeholder workshop	
	Attendance at weekly catch up meetings	
Interim (May-Oct 2021)	Observation of focus groups with specifically impacted groups x2	Including women with experience of abuse, and those with disabilities
	Observation of the dialogue workshops x4	
	Observation of a facilitator briefing x1	
	Surveys with dialogue participants x3	These were sent out after Workshops 2, 3 and 4. Responses: ● W2=73 representing 88% response rate ● W3=43 representing 51% response rate

		• W4=8 representing 36% response rate
	Semi-structured interviews with participants x11	Interviewees selected to represent the wider participant population, including gender, age, ethnicity, health status and location across the four nations. In addition, interviewees were drawn from different small groups and included one digitally excluded participant. Sample equivalent to 13% of total dialogue participants
	Survey with specialists	Sent out following W2 and W3
	Semi-structured interviews with specialists x2	Recruited via consent question in survey
	Semi-structured interviews with members of commissioning body x4	
	Semi-structured interviews with members of the delivery team x3	
	Observation of the second Oversight Group meeting (May 2021)	
	Mid-point review	Structured session with project team members to reflect on success and challenges so far
	Attendance at weekly/bi-weekly catch up meetings	
Final (Nov 2021-May 2022)	Review of dialogue report drafts	
	Observation of the third Oversight Group meeting (Nov 2021)	
	Semi-structured interviews with Oversight Group members x3 (Nov 2021)	
	Observation of the dialogue report launch event (Dec 2021) and review of event analytics	
	Semi-structured interviews with members of the delivery team x2 (Dec 2021)	

	Semi-structured interviews with members of the commissioning body x1 (Dec 2021)	
	Semi-structured interviews with stakeholders x2 (Feb 2022)	Identified through launch
	Review of draft guidance	
	Observation of the fourth Oversight Group meeting (May 2022)	
	Semi-structured interview with Oversight Group member x1 (May 2022)	
	Semi-structured interviews with members of the commissioning body x3 (May 2022)	
	Semi-structured interview with member of the delivery team x1 (May 2022)	

Appendix D: Summary of interview questions

The following is a summary of interview questions used in semi-structured interviews. These questions were used flexibly, so not all questions were asked in each interview and question ordering sometimes fluctuated in line with the conversation. Interviewees were also given a prelude to the interview, including conversation about anonymity, consent and recording. All interviews were recorded and fully transcribed for analysis.

The summary of questions has been edited here for brevity, including:
- The removal of intro and summary or concluding questions
- Merging some questions which were asked in separate parts e.g. challenges and opportunities
- The removal of some prompts incl. those which could identify interviewees

Oversight Group members

Baseline

- Have you been involved in public dialogue before? (when, what topic, what was your role? What did you think of it? What impact did you feel it had, if any?)
- What do you think are some of the challenges and opportunities of public dialogue (especially in relation to this one on location data)?
- What do you think of the timing of the dialogue? (any particularly relevant policy decisions you know of that are coming up / emerging uses of location data?)
- What do you think the impact of the pandemic might be on the dialogue? (Is there anything you think the team should bear in mind for delivery as a result?)
- How do you see the dialogue fitting in to the wider policy development context for location data? (is there a role for public dialogue here? / what is the overall framing of this dialogue?)
- What do you think are some of the dominant frames / messages about location data that different stakeholders put forward?
- What do you think about the objectives set for the dialogue? (are they the right ones? How did you feel about the update to incorporate the role of public trust/trustworthy uses of data?)
- Although these haven't been developed yet, from what you've read in the Oversight Group background reading papers, how do you feel about the range of issues and potential topics highlighted to cover in the dialogue?
- How do you feel about the dialogue's routes to influence policy? (Prompt: guidance)
- Might you/your organisation be one of the users of the guidance that is produced as a result of this dialogue?
  - If yes, what would be useful for your organisation/ you to see in that guidance? (How do you anticipate using it?)
  - If no, do you expect the dialogue to inform your work in any way?
- The dialogue findings will be published in a report, and the guidance developed after that. Other than those, are there any other outputs you'd hope to see from the dialogue?

- What do you think is important for those outputs (and the dialogue process itself) to be like, in order to be seen as credible by its stakeholders?
- Thinking beyond the specific outputs we've talked about, are there any effects or impacts you'd like to see from the dialogue?
- How did you find the first Oversight Group meeting? (What worked well or less well? Do you feel confident about the team delivering the dialogue and their proposed approach?)
- Were there any perspectives missing from that first meeting that you think would be useful to include? (How would you typify the range of perspectives that need to be included?)
- Would the range of perspectives you've described from the OG group be the same ones that need to be included in the dialogue workshops (as specialists, presenters etc)? (Why/why not?)
- How are you expecting to be involved as the dialogue progresses?

Follow-up

- How do you think this public dialogue has coped with some of the challenges of doing dialogue on this topic? (Prompts: complexity of subject, socio-technical conversations, low public awareness, latent technology uses, the range of uses of location data, conceptualising individual and societal benefits and risks)
- During the dialogue, have there been any significant policy developments relevant to location data (or developments in how location data is being used)? (Prompts: which policy areas are most relevant in this case given cross-cutting nature of use?)
- From what you've read in the dialogue report and heard about in the Oversight Group, what reflections do you have on the delivery of the dialogue? (Prompts: range of stakeholders involved, time spent with participants, range of issues and topics covered, 'framing' of the discussions)
- What reflections do you have on the dialogue report? (Prompts: what findings were expected, or a surprise, what stood out to you, comments on clarity of language used, specificity of findings to location data, discussion of 'public good' framing especially in relation to for-profit uses)
- To what extent do you feel the dialogue added new understanding about public attitudes about the ethical use of location data?
- What aspects of the report (and the dialogue process itself) do you think will be seen as credible (or not) by its stakeholders? Why? (Prompts: who are those stakeholders, on qualitative and deliberative method)
- Can you see the dialogue findings being useful in your own work/the work of your organisation? Why/why not? How might you use them? (Prompts: informing future work or areas of focus, informing engagement with public)
- How do you feel about the dialogue's routes to influence policy and practice? (Prompts: reach of dialogue findings, guidance)

- Might you/your organisation be one of the users of the guidance that is produced as a result of this dialogue (if a professional audience)? How would you anticipate using it?
- Are there any other effects or impacts we haven't spoken about that could come from this dialogue?
- How did you find the last Oversight Group meeting? (Prompts: What worked well or less well? Were there a good range of perspectives?)
- Generally being part of the Oversight Group, have you felt you've been able to provide the oversight of the dialogue required? Why/why not?
- Are you expecting to be involved any further in the project (Prompts: kept up to date / suggestion of reconvening OG to feed into guidance etc)?

Members of project team

Interim

- Reflections on delivery:
    - In general (Prompts: spacing, timing, number of participants etc of workshops)
    - On four workshops individually (Prompts: pacing, how activities/materials worked, quality of discussion)
    - On specialist input – did you feel that participants heard a range of different views on location data?
    - On virtual delivery – events over Zoom, use of EngagementHQ (Prompts: what have been challenges and opportunities here, have people used platform as expected/planned for?)
- Have you been surprised by any of participants' deliberations? (Prompts: what they've picked up on, emotional responses etc)
- What has it been like working with commissioning body/delivery team? (Prompt: capacity, communication and review, responsibilities in project team, expectations aligned etc)
- What changes have been made as you've gone through the design process? (Prompts: timing in process, route to influence policy and guidance, what's in and out of scope etc)
- Any other reflections on looking forward to the analysis stage/guidance stage? (Prompt: understanding of expectations, ease of 'translation' for audiences, stakeholders etc)

Follow-up

- What has the report writing process been like?

- - Have there been any sticking points within the project team? How were these resolved?
    - What has the role of Sciencewise and Oversight Group been here? (Prompts: Has that been sufficient/helpful/providing good challenge?)
  - What do you think about the launch? (Prompts: approach to set up, actual event)
  - In what way are the dialogue findings influencing the guidance? (Prompts: specificity, audience, discussions around use cases)
  - In what way are the dialogue findings influencing other follow-on work?
  - How has the overall budget allocated to the dialogue felt?
    - Where have things changed in terms of what is spent on which area? Have there been any areas of significant over- or under-spend?
    - What impact (if any) do you think these budget decisions have had on the delivery or outcomes from the dialogue?
    - [Commissioning body] Impression of value for money

Specialists

Many of the same questions as Oversight Group baseline/follow up interviews, plus:

- - Did you feel clear about your purpose in the session? (Prompts: were you supported to take part, did you understand your role and those of others?)
  - What did you think worked well about the sessions? Why?
  - What was it like being able to interact with the participants in small groups? (Prompts: enough time, quality of facilitation)
  - Did you feel that participants heard a range of different views on location data in the session you were involved in? (Prompts: on how the dialogue is framed)
  - And anything else that could have been improved?
  - What were your reflections on participants' deliberations on the subject? (Prompts: what surprised you/what views confirmed – prior knowledge/importance of topic/misconceptions/what participants picked up on)

Participants

- - To begin, was location data something you thought much about before taking part in the dialogue?
  - What were you expecting taking part in the dialogue to be like?
  - Did you feel that the purpose of the dialogue was clear? Can you tell me a bit about the purpose?
  - What did you think worked well about the sessions? Why?

- How did you find the balance of different activities e.g. balance between hearing from specialists and discussing in small groups?
- What was it like being able to interact with the specialists? (Prompts: enough time, specialist presentations easy to understand? Satisfactory answers to questions)
- Did you feel that you heard a range of different views on location data? (Prompts: across the whole dialogue, in group, from specialists?)
- And what could have been improved?
- How did you find conducting your own research? (Prompts: did you have the information you needed to do this?)
    - Did you find it made a difference during the dialogues, having conducted your own research and being able to discuss your findings with other participants? How? (Prompts: helped your understanding of the subject, brought in other perspectives you hadn't thought about before?)
- What was it like taking part virtually? (Prompts: have you used Zoom or other video conferencing much before? Did you feel supported by the facilitators to use it)
- How have you found using the Engagement HQ participant website? (Prompts: ease of use, how used)
- What's changed for you (if anything) since taking part in the dialogue?
- Has it made any difference to your knowledge of location data or how it's used? In what way?
- Has it changed what you think about the opportunities or risks of location data, compared to before the dialogue? In what way?
- If you had to describe what public dialogue is to your friends and family, what would you say?
- If you had the opportunity to take part in another public dialogue like this, would you? Why/why not?
- [For digitally excluded participants] What was it like taking part over the phone? Were you able to follow the sessions?
- [If attended final session] How was the final session?
- [If attended final session] Did you feel that the guidance/findings presented reflected the views of participants in the dialogue? Why/why not?

Appendix E: Framing the dialogue questions

The process of narrowing down the specific questions for participants to consider in the dialogue has included several stages:

- The research questions set for the dialogue, in collaboration with Sciencewise, which can be loosely summarised as:
    - Public awareness of location data ethics: Awareness of use, choice around use, concerns and benefits
    - Public perception and prioritisation of ethical issues: Risks, opportunities, red lines, uniqueness of location data, values underpinning
    - Conditions for public trust: Organisations, use cases, what organisations can do
- These were informed by a rapid evidence review conducted by the Open Innovation Team, which identified some key issues including the specificity of location data; anonymisation and individual/group privacy
- The process of categorising those research questions according to the methodology best suited to answering them. This was conducted by the delivery team and included organising the questions according to whether they could be answered in short polls (on the EngagementHQ space) or in deliberative dialogue discussions
- The topic review process conducted by the delivery team, which involved a review of previous public attitudes and engagement work on the topic, a review of definitions of location data and a stakeholder workshop to develop topics

As a result of these activities, several decisions were made relating to the framing of the content for the final dialogue:

- **Specificity of location data**: The dialogue focused on specific ethical concerns arising from location data, as opposed to other types of data (e.g. its ubiquity, its level of detail, its difficulty to protect, inferences that can be made using location data).
- **Anonymisation**: Whilst views (from academic literature, business stakeholders and civil society) are divergent on the adequacy of anon/pseudonymisation of location data to protect an individual's identity, the dialogue generally focused on two categories of identifiable and anonymised data.
- **Public good/benefit**: The dialogue also categorised some of the discussion through the lens of uses of location data that are 'for public benefit', which was first identified through the topic review, to build on previous public attitude research.[39]
- **Use cases:** The topic review in particular led to a significant decision to move away from structuring the dialogue around 'domains' or use cases for location data. This meant the discussions tended towards bigger picture questions of ethical use of location data.

More information about this process can be found in the [methodological appendices](#) of the dialogue findings report.
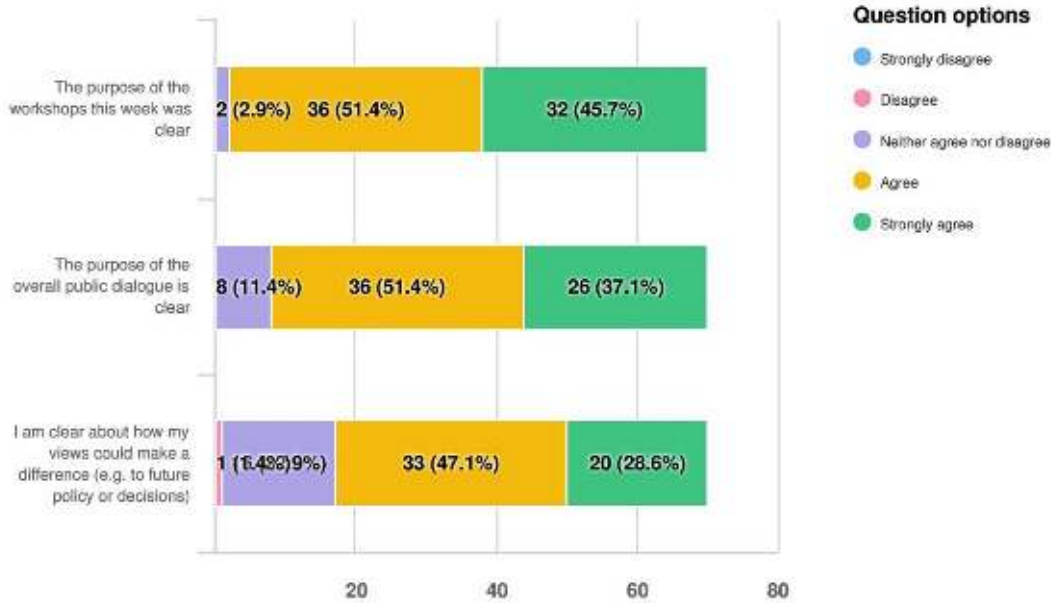
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[39] Whilst this was sometimes contrasted with 'for profit' during the dialogue workshops, this binary setup was challenged by Geospatial Commission during the analysis stage.

Appendix F: Participant survey findings

This appendix presents the findings from the first and second participant surveys sent out to all participants following Workshop 2 and Workshop 3 respectively. Open answer questions are given, but responses to them are not.

Post Workshop 2 survey

Q1 Please indicate to what extent you agree or disagree with the following statements about the workshops

Question options

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

The purpose of the workshops this week was clear: 2 (2.9%) 36 (51.4%) 32 (45.7%)

The purpose of the overall public dialogue is clear: 8 (11.4%) 36 (51.4%) 26 (37.1%)

I am clear about how my views could make a difference (e.g. to future policy or decisions): 1 (1.4%) (5.9%) 33 (47.1%) 20 (28.6%)

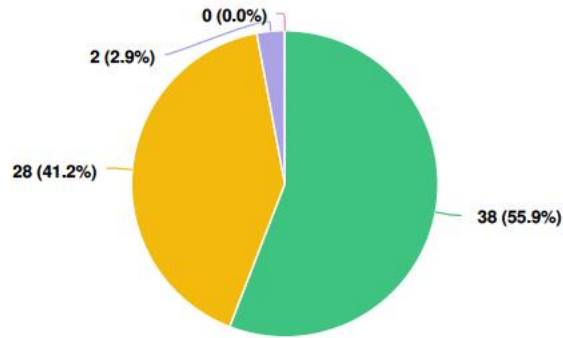Optional question (70 response(s), 0 skipped)
Question type: Likert Question

Q2 Please indicate to what extent you agree or disagree with the following statements about the workshops

Question options
- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Statement	Values
I felt able to contribute my views	1 (1.4%) 31 (44.3%) 38 (54.3%)
There was enough time for me to discuss the t...	4 (5.7%) 5 (7%) 39 (55.7%) 22 (31.4%)
I felt able to interact easily with others in...	3 (4.4%) 38 (54.3%) 28 (40.0%)
The facilitators made it easy for me to parti...	1 (1.4%) (34.3%) 45 (64.3%)
I felt the information I received was balance...	4 (5.7%) 37 (52.9%) 29 (41.4%)
I felt able to interact easily with location ...	3 (4.3%) 9 (13.0%) 34 (48.6%) 24 (34.3%)
I felt supported and respected	1 (1.4%) (37.1%) 43 (61.4%)

Optional question (70 response(s), 0 skipped)
Question type: Likert Question

Full matrix question wording: I felt able to contribute my views / There was enough time for me to discuss the things that mattered to me / I felt able to interact easily with others in the workshop / The facilitators made it easy for me to participate / I felt the information I received was balanced/unbiased / I felt able to interact easily with location data specialists involved in the dialogues / I felt supported and respected

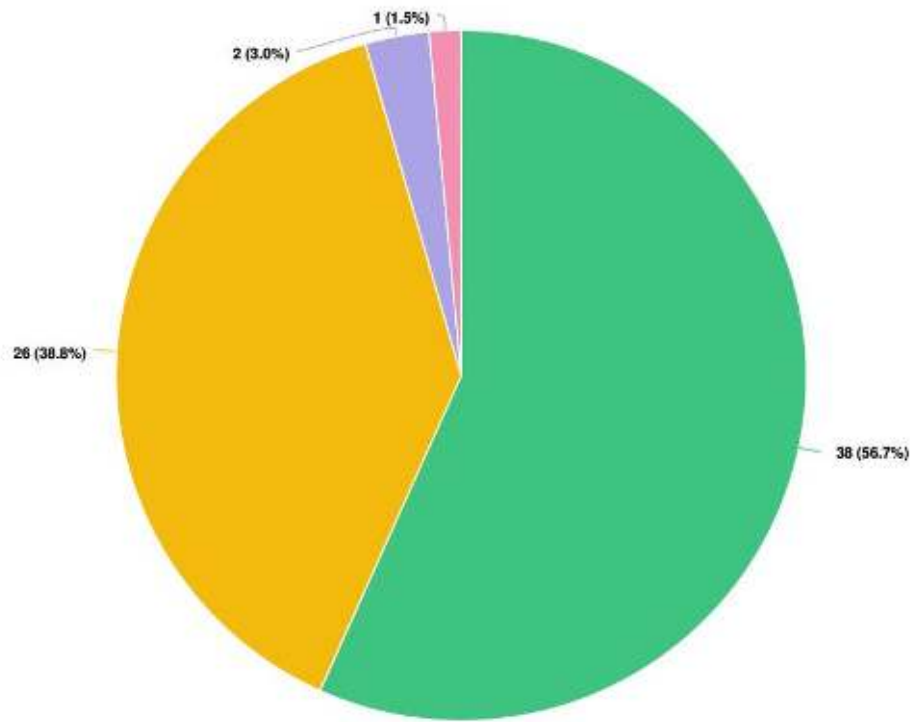**Q3 | How well did you feel the video conferencing technology worked during the workshops?**

0 (0.0%)

2 (2.9%)

28 (41.2%)

38 (55.9%)

Question options

● Very poorly   ● Fairly poorly   ● Fairly well   ● Very well

Optional question (68 response(s), 2 skipped)
Question type: Radio Button Question

Q4 | How easy or difficult have you found it to use the EngagementHQ participant website?

Question options

● Very difficult   ● Fairly difficult   ● Fairly easy   ● Very easy

Optional question (67 response(s), 3 skipped)
Question type: Radio Button Question

Q5 Tell us more about your answers – what worked or didn't work about the video
conferencing technology or Engagement HQ?
Optional question (64 response(s), 6 skipped)
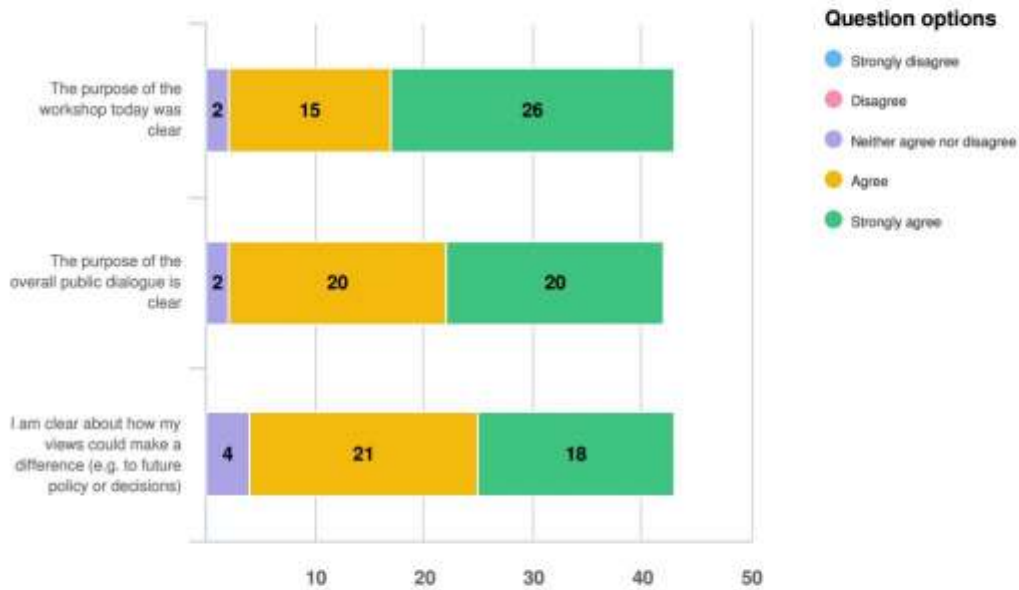Question type: Essay Question

Q6 Anything else you'd like to say about your experience of being involved in the dialogue
so far?
Optional question (53 response(s), 17 skipped)
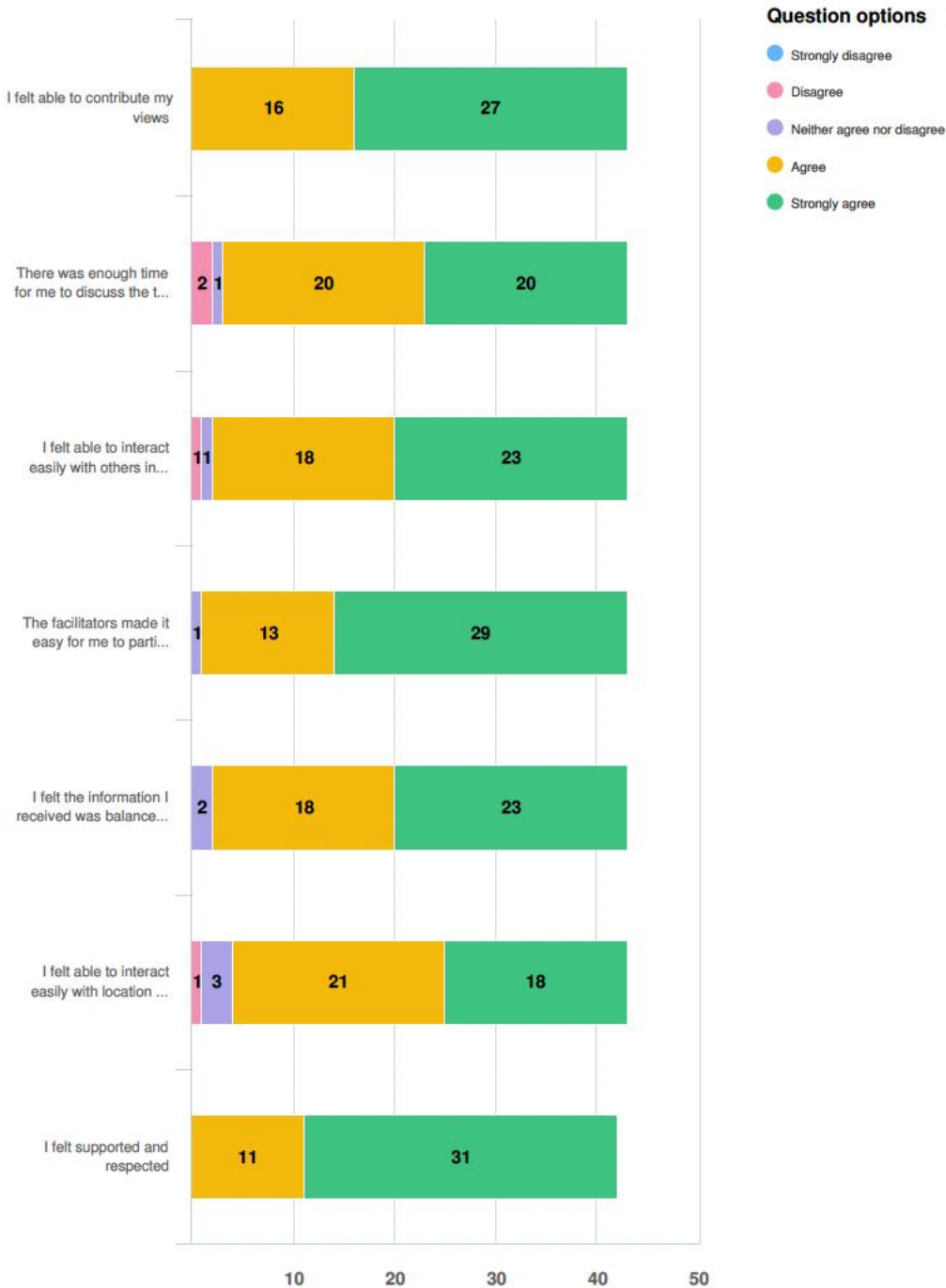Question type: Essay Question

Q1 Please indicate to what extent you agree or disagree with the following statements about the workshops

Question options
- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Statement	Neither agree nor disagree	Agree	Strongly agree
The purpose of the workshop today was clear	2	15	26
The purpose of the overall public dialogue is clear	2	20	20
I am clear about how my views could make a difference (e.g. to future policy or decisions)	4	21	18

Optional question (43 response(s), 0 skipped)
Question type: Likert Question

Q2 Please indicate to what extent you agree or disagree with the following statements about the workshop

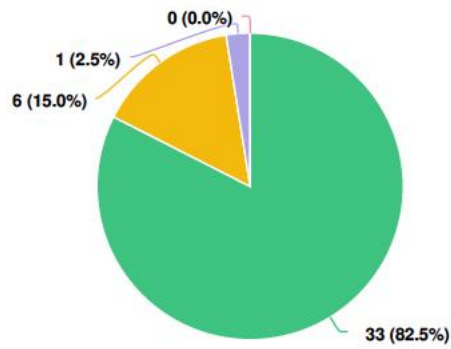Optional question (43 response(s), 0 skipped)
Question type: Likert Question

Full matrix question wording: I felt able to contribute my views / There was enough time for me to discuss the things that mattered to me / I felt able to interact easily with others in the workshop / The facilitators made it easy for me to participate / I felt the information I received was balanced/unbiased / I felt able to interact easily with location data specialists involved in the dialogues / I felt supported and respected

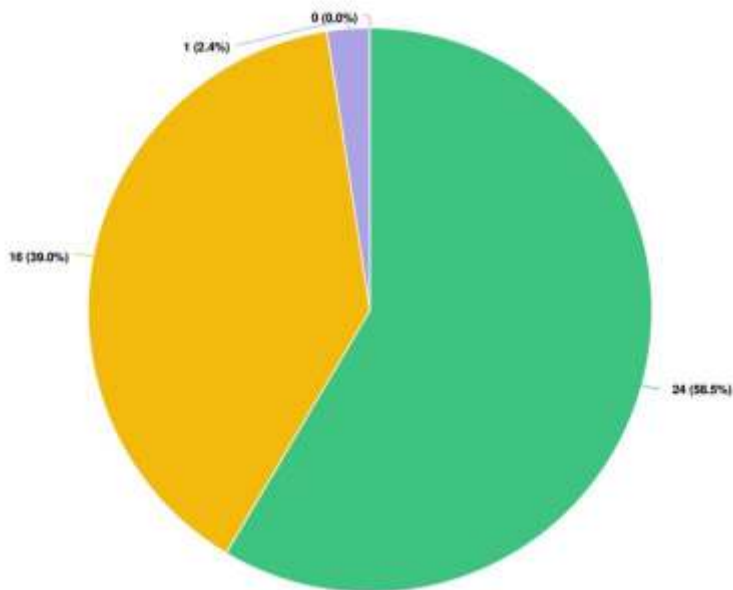## Q3 How well did you feel the video conferencing technology worked during the workshop?

0 (0.0%)

1 (2.5%)

6 (15.0%)

33 (82.5%)

Question options

● Very poorly   ● Fairly poorly   ● Fairly well   ● Very well

Optional question (40 response(s), 3 skipped)
Question type: Radio Button Question

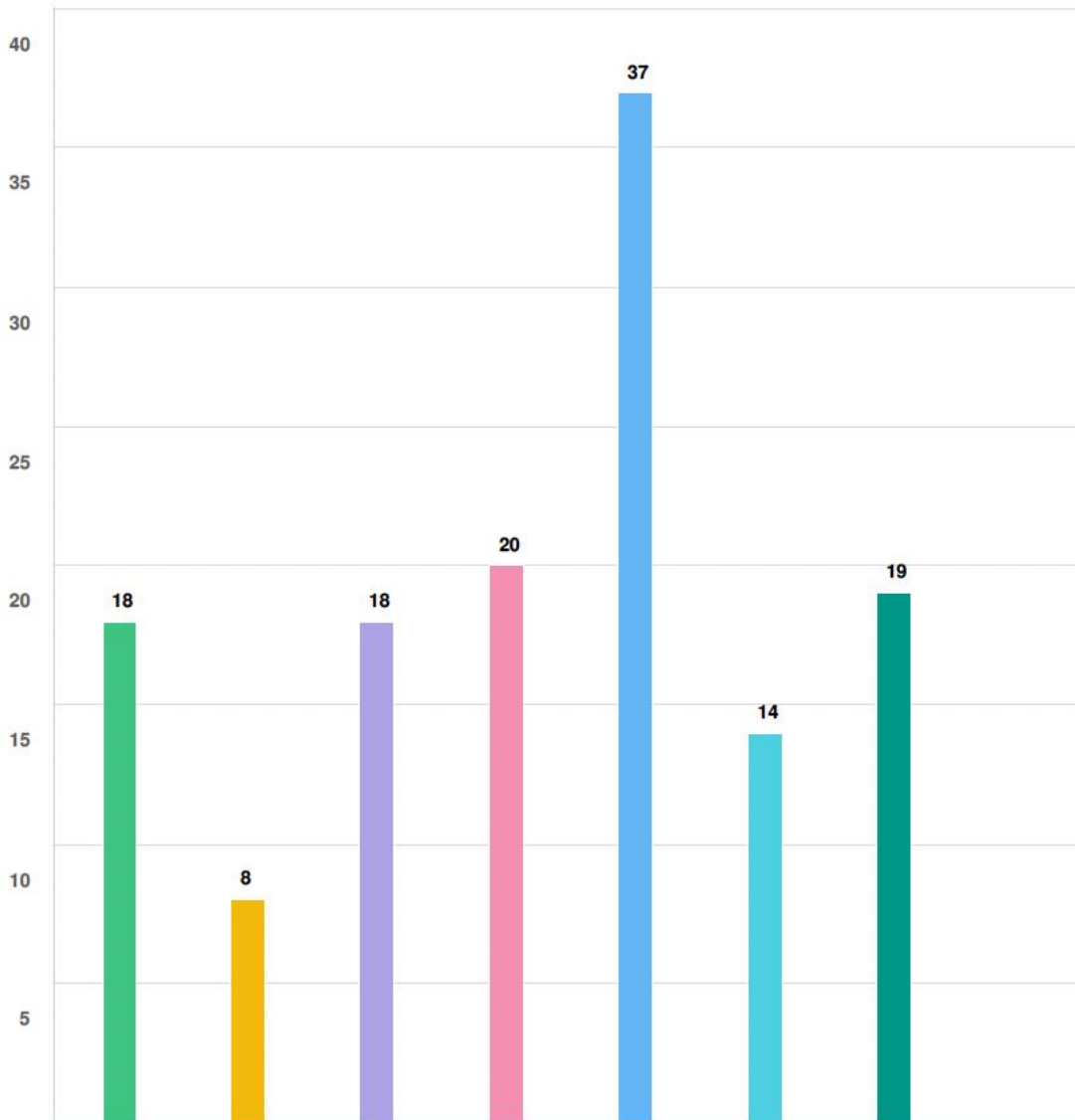## Q4 How easy or difficult have you found it to use the EngagementHQ participant website?

0 (0.0%)

1 (2.4%)

16 (39.0%)

24 (58.5%)

Question options

● Very difficult   ● Fairly difficult   ● Fairly easy   ● Very easy

Optional question (41 response(s), 2 skipped)
Question type: Radio Button Question

Q5 How have you used the EngagementHQ participant website? (tick all that apply)

Question options

- Other (please specify)
- To show family and friends what I have been involved in
- To see answers to questions asked in the workshops
- To do the tasks set between workshops
- To find out more about the dialogue process
- To review what other groups or participants said
- To make points I didn't feel able to make in the workshop discussions
- To go over materials from the workshops

Optional question (41 response(s), 2 skipped)
Question type: Checkbox Question

Q6 Please feel free to give more details about your experience of this public dialogue being delivered online
Optional question (22 response(s), 21 skipped)
Question type: Essay Question

Q7 Overall, how did you find the experience of being a member of this group?
Optional question (43 response(s), 0 skipped)
Question type: Essay Question

Q8 Are there any things that you think could be improved in this process to maximise your

experience as a member of this group?
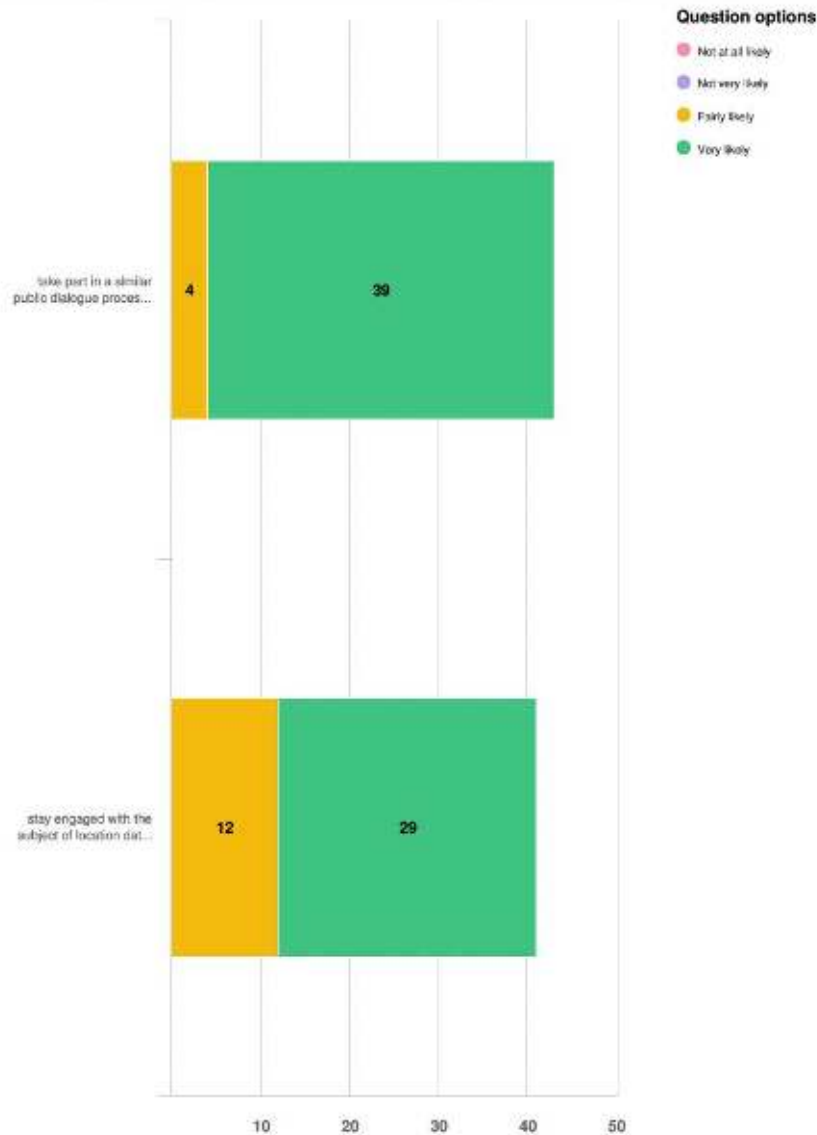Optional question (39 response(s), 4 skipped)
Question type: Essay Question

Q9 What was the most important learning for you personally during this process? Please tell us why that is.
Optional question (42 response(s), 1 skipped)
Question type: Essay Question

Q10 | Based on your experience with this dialogue process, how likely would you be to:

Optional question (43 response(s), 0 skipped)
Question type: Likert Question

Full matrix question wording: take part in a similar public dialogue process in the future? / stay engaged with the subject of location data?

Q11 Have there been any other changes for you as a result of taking part in this dialogue?
Optional question (36 response(s), 7 skipped)
Question type: Essay Question