



Smart Infrastruc ture Pilots Program me Evaluatio n

Final process, impact and
economic evaluation report

December 2025

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Glossary

Table 1: Abbreviations

Key term	Definition
CA	Contribution Analysis
DSIT	Department for Science, Innovation and Technology
IoT	IoT stands for Internet of Things and refers to the collective network of connected devices (or 'things') usually embedded with sensors, software and/or other technologies for the purpose of connecting and exchanging data with other devices and systems over the internet
LA	Local Authority
LoRaWAN	LoRaWAN stands for Long Range Wide Area Network. It is a low-power wide-area network (LPWAN) protocol designed for long-range communication with low power consumption, making it suitable for Internet of Things (IoT) devices
MNO	Mobile Network Operator
PAS	Publicly Available Specification
SIPP	Smart Infrastructure Pilots Programme
UKTIN	UK Telecoms Innovation Network

Table 2: Glossary

Key term	Definition
Activities	The material and human resources used to undertake the tasks which underpin an intervention
Attribution	The extent to which measured changes can be attributed to the intervention
Benefits	Positive outputs and outcomes (including economic, social, and environmental) resulting from an individual SIPP use case or project
Benefits tracker	The monitoring template filled out by LAs to illustrate progress made on a range of different outputs and/or outcomes
Impact	The changes which result from the outputs and outcomes from an intervention over the short, medium and longer term and that would not have happened otherwise
Intervention area	Area that received funding from DSIT for the SIPP intervention

Network/ tech provider	Providers of telecoms networks and connectivity services
Outcomes	The changes which result from the intervention outputs over the short and medium term
Outputs	The deliverables that directly result from the inputs and activities related to an intervention
Stackable use cases	The provision, or layering, of a number of different use cases on one network without needing to build additional capacity
Steering Group	The Steering Group for the evaluation has the role of providing advice, guidance, scrutiny and challenge to the evaluation. It consists of DSIT officials and a member of the Cabinet Office’s Evaluation Taskforce
Theory of Change (ToC)	A theory of change describes and illustrates the changes an intervention is seeking to make, how it is expected to happen, and the measurable outputs, outcomes and impacts associated with the intended change
Use case stakeholders	Providers, users and procurers of advanced connectivity use cases and associated technologies/ solutions. The use cases can span many sectors and purposes

Executive summary

Introduction

To support the Department for Science, Innovation and Technology's (DSIT) ambition to deliver world-class digital infrastructure across the UK, drive innovation and unlock opportunities for economic growth, DSIT established the Smart Infrastructure Pilots Programme (SIPP).

[SIPP](#) was a £1.5 million programme that sought to support local authorities (LAs) to procure and test 'smart' multi-purpose columns for mobile and wireless connectivity services and other relevant uses. It was intended that the £1.5 million would be matched by smart service providers working with the participating LA. Through this combined funding, areas were to procure and test 'smart' multi-purpose columns for mobile and wireless connectivity services, and other relevant uses, which, among other things, would help them make efficiency savings and increase connectivity for their local communities.

[SIPP](#) sought to build upon the learnings of the Digital Connectivity Infrastructure Accelerator programme (DCIA Phase One) which developed new Publicly Available Standards (PAS) to help LAs assess what type of smart multi-purpose columns could support their current and future connectivity plans. PAS 191 concerns the design and procurement of new smart multi-purpose columns. SIPP was focused on applying the PAS 191 standard to the design and procurement of new smart infrastructure for LAs.

Programme delivery commenced in October 2023 and was originally planned to run until March 2025. Four SIPP projects concluded in March 2025, while the delivery timeframe was extended by DSIT (through to August 2025) for two SIPP projects to allow those projects more time to complete the installation of their multi-purpose poles.

DSIT commissioned KPMG to undertake the programme-level evaluation of SIPP. The evaluation seeks to answer the following overarching evaluation research questions:

- Process evaluation: What went well and what could be improved with regard to SIPP, specifically in relation to the design and delivery (from both a DSIT and LA or partner organisation perspective)?
- Impact evaluation: To what extent did SIPP achieve the outcomes it set out to achieve within the timescale of the evaluation and to what extent can these outcomes be attributed to the programme?
- Economic evaluation: Is there evidence that the benefits from some of the use cases delivered by SIPP to date outweigh the costs?

Process, impact and economic evaluation methodology

The approach taken to delivering the evaluation aligns with that set out in the scoping and baseline report¹ as well as the principles of the [HM Treasury Magenta Book](#).

A range of research and data collection methods have been employed to obtain the evidence needed to answer the evaluation research questions. The main sources of data and information used includes: programme documentation (e.g benefits trackers² and project completion reports³); interviews with SIPP project leads, DSIT officials and officials from the UK Telecoms Innovation Network (UKTIN); surveys of other stakeholders involved in SIPP projects (primarily network providers and use case stakeholders); as well as other literature.

Process evaluation

For the process evaluation, thematic analysis was conducted on the evidence outlined above to identify key themes and insights. An assessment is made of how the processes and approaches adopted for SIPP have affected the delivery of the programme. Any lessons that can be learnt from the delivery of the programme for future programme delivery for instance are also outlined.

Impact evaluation

The purpose of the impact evaluation is to assess what changes have occurred up to the end of August 2025 as a result of SIPP and the extent to which such changes can be attributed to the programme itself.

In the absence of viable quasi-experimental methods⁴ a theory-based approach to the SIPP impact evaluation is applied. [Theory-based impact evaluations](#) draw conclusions about an intervention's impact through rigorous testing of whether the causal chains thought to bring about change are supported by sufficiently strong evidence and alternative explanations can be ruled out. A Theory of Change (ToC) describes and illustrates the changes an intervention is seeking to make, how it is expected to happen, and the measurable outputs, outcomes and impacts associated with the intended change.

At a broad level, the ToC for SIPP (see Figure 2.1 in section 2 for more detail) assumed that LAs would procure the fabrication and installation of PAS 191 standard multi-purpose poles. The process of procuring and fabrication of multi-purpose poles was expected to improve understanding across LAs and the wider industry of the PAS 191 standard. Using their matched funding, LAs were to work with partners to establish various different use cases (e.g. small cells, electrical vehicle (EV) chargers, internet of things (IoT) applications, CCTV) on the multi-purpose poles. Ultimately, this was intended to deliver various use case specific outcomes and

¹ KPMG, 5G Innovation Regions and Smart Infrastructure Pilots Programme Evaluation: Scoping and baseline report, May 2024

² The benefits tracker was a spreadsheet used to track progress against each project's intended benefits.

³ Project completion reports (also called closure reports) were produced by SIPP LAs to capture the LAs approach to the project and to highlight key findings (like outcomes, benefits and lessons learnt) from each individual SIPP project

⁴ 5G Innovation Regions and Smart Infrastructure Pilots Programme Evaluation: Scoping and baseline report, May 2024

impacts (e.g. increased connectivity to areas; improved air quality; improved security). The learning derived from projects was to be documented and disseminated to provide information for other LAs around the benefits from installing multi-purpose poles as well as the process for doing so. This was expected to lead to greater demand for the PAS 191 standard pole and consequently their installation in more areas - providing for greater connectivity and the opportunity to exploit technology in more areas. All of these activities involve LAs and the private sector working together and so improving the understanding and realisation of the benefits of utilising street furniture and other assets for network deployment.

In line with the approach set out in the scoping report, the theory-based approach of contribution analysis⁵ (CA) is applied to assess the extent to which the activities undertaken by SIPP areas have been implemented in accordance with the ToC. It is used to test the extent to which the chains of causality, and underlying assumptions, in the ToC are supported by and confirmed by the evidence available. However, based on the evidence available and the change that is currently visible, it is too early to apply fully a CA framework because outputs and outcomes are still emerging and/or uncertain. As a result, in what follows, the contribution story and a narrative of how the programme has contributed to change is presented. To that end, the evaluation assesses the extent to which the activities undertaken by SIPP areas are consistent with the future delivery of expected outcomes and impacts as illustrated in the ToC.

Economic evaluation

The purpose of the economic evaluation, as set out in the research question, is to consider whether there is evidence that the benefits from some of the use cases delivered by SIPP to date outweigh the costs. This research question reflects the fact that, at the time of the evaluation, a full cost-benefit analysis of the programme was not possible because many of the future outcomes and impacts targeted by the programme had not been evidenced or achieved yet. Instead, the economic evaluation focuses on the likely benefits that either have been achieved or might be expected to be achieved over the lifetime of a multi-purpose pole. These benefits are then compared to the costs of multi-purpose poles in order to assess whether the benefits from use cases that might typically be deployed on a multi-purpose pole are expected to outweigh the costs of the pole.

Key findings

Summary of the SIPP process evaluation findings

The overarching research question for the process evaluation is: What went well and what could be improved with regard to SIPP, specifically in relation to the design and delivery (from both a DSIT and local authority (LA) or partner organisation perspective)?

To help answer this overarching research question a number of supplementary process evaluation research questions were developed through the use of the ToC

⁵ Contribution analysis is considered the most appropriate theory-based approach to apply to this evaluation because of the ability to use the range of evidence and information to test and, where relevant, attribute causality to linkages in the ToC.

(see section 2 for more details). These questions covered issues around: the delivery of the programme; the spreading of knowledge outside the intervention areas; things that could have been improved with respect to the design and, or, delivery of the programme; and the influence of the funding method used for the programme on delivery.

This section considers the evidence used to answer these supplementary questions. The evidence identified the following key findings:

By August 2025 the majority of multi-purpose poles originally planned across the six SIPP areas had been installed:

- By March 2025 (the original deadline for the programme), 31 multi-purpose poles had been installed across five of the six SIPP areas (as compared to a target of 71 poles at the start of the programme); one SIPP area had not installed any multi-purpose poles by March 2025. By the end of August 2025, this had increased to a total of 67 poles across all of the six SIPP areas.
- The deployment of use cases necessarily lagged the installation of poles. By March 2025, 25 use cases had been deployed on poles across the three SIPP areas; three SIPP areas had not deployed any use cases by March 2025. This compared to original plans for at least 138 use cases to be deployed by March 2025.
- By August 2025, the number of use cases deployed had increased to 58 with at least one use case deployed in all but one SIPP area. By August 2025, more than one use case had been deployed on at least 15 multi-purpose poles. However, due to the delays in the installation of multi-purpose poles, by August 2025 a number of poles were yet to have use cases deployed on them.
- Use cases deployed by August 2025 included small cells, CCTV cameras, traffic management monitors, air quality monitors, audio speakers and advertising screens.

Various factors impacted on the delivery of the programme and projects:

- Most SIPP areas viewed the delivery timeframe as short for infrastructure projects of this nature. Two SIPP areas were unable to complete the installation of poles within the original time period. Given the two areas had clear plans for the installation of multi-purpose poles, DSIT granted an extension for the two areas to August 2025.
- SIPP LAs said that DSIT had provided good support, particularly technical advice, to help the delivery of their projects.
- SIPP areas said that a range of factors delayed both the fabrication and installation of poles for their projects. These factors included: procurement; changes to designs; planning delays; as well as practical issues with the physical installation of poles.
- A number of these issues were particular to the design and installation of multi-purpose poles. As such they might be considered as part of the normal learning process that organisations go through when procuring and installing a new product or service (like the PAS 191 specification multi-purpose poles).

Spreading of knowledge outside SIPP areas has been limited:

- SIPP areas recorded being involved in 14 dissemination events in the period to August 2025. Most activity in this area has focused on internal dissemination through internal meetings and events.

The funding model used for SIPP supported its delivery:

- Funding was provided to LAs via a non-ring fenced capital grant in preference to a more traditional method of funding (where funds are spent in line with a Grant Funding Agreement and then spend is claimed back from the funding body). This approach was chosen to provide LAs with increased flexibility and freedom to deliver their plans when compared to more traditional methods of funding.
- All SIPP LAs praised the funding model; they said that having the funding available upfront made it much easier and quicker to go through LA finance or procurement processes to enable effective delivery of the project when compared to more traditional methods.
- As well as providing more flexibility to LAs, DSIT officials said that channelling the funding through LAs, who are subject to similar levels of scrutiny over spending as central government departments, meant less DSIT resource needed to be expended on the scrutiny of LA's spending.

In terms of areas for improvement, the main areas identified included:

Funding for project management:

- A number of SIPP LAs said there was a need for revenue funding to be provided alongside the capital funding element of the programme. These LAs said that such revenue funding could have been used to increase the project management capacity for their SIPP projects and help support delivery.

Better initial planning of projects by LAs:

- A number of SIPP areas highlighted the need for comprehensive planning of projects from the start. In particular engagement with both internal and external stakeholders likely to be involved in the manufacture and installation of multi-purpose poles was stated as being necessary for a successful project.

Summary of the SIPP impact evaluation findings

The overarching research question for the impact evaluation is: to what extent did SIPP achieve the outcomes it set out to achieve within the timescale of the evaluation and to what extent can these outcomes be attributed to the programme?

This section looks at the evidence used to answer the supplementary impact evaluation research questions which were developed through the use of the ToC. In what follows, evidence on the following topics is considered, reflecting the themes covered by the supplementary research questions: the benefits of using street furniture for network deployment; documentation and dissemination of learning; and improved understanding within LAs of the benefits of using street furniture for network deployment. The evidence identified the following key findings:

Benefits of using street furniture for network deployment

- Evidence from the benefit trackers and other programme documentation shows that the provision of funding to SIPP projects led to the manufacture and installation of multi-purpose poles across SIPP areas.
- SIPP has illustrated the viability of manufacturing and installing PAS 191 multi-purpose poles with 67 poles being installed across the six SIPP areas by August 2025. It has also demonstrated the increased capacity that such poles have for hosting multiple use cases. By the end of August 2025, 15 multi-purpose poles had more than one use case deployed on them; in total, 58 use cases had been deployed on poles with more planned to follow.
- All SIPP areas reported that their projects would not have gone ahead without DSIT funding and there is no evidence of PAS 191 poles being installed elsewhere in the country. Furthermore, the installation of multiple use cases on certain other street furniture, like standard street lighting columns for instance, is not structurally viable, and therefore could only be done using PAS 191 poles (or a similar new alternative design). As a result there is considered to be strong evidence that these activities and outputs are attributable to the programme.

Documentation and dissemination of lessons learnt

- Most SIPP areas said they had updated specifications for the procurement of multi-purpose poles. The revised specifications covered issues like aesthetics, shallow foundations and the integration of various different use cases and would be useful for other LAs looking to procure and install multi-purpose poles in their areas. Such activity would not have been possible without the procurement and installation of multi-purpose poles by SIPP areas and so is attributable to the programme.
- However, the dissemination of these specifications and the wider lessons learnt from the experience of manufacturing and installing multi-purpose poles by August 2025 had been limited. This creates a potential weakness in the chain of causality in the ToC and potentially threatens the wider adoption of PAS 191 poles because other LAs may not be made aware of the practicalities of procuring and installing multi-purpose poles and so may not install more poles.

Improved understanding within LAs of the benefits of using street furniture for network deployment

- Given the stage of delivery of most projects at the time of the evaluation, most of the improved understanding within LAs from their SIPP projects related to technical and practical installation aspects – aspects that relate directly to the programme itself (i.e. the procurement, fabrication and installation of PAS 191 poles).
- All SIPP LAs said they had improved their understanding of smart infrastructure possibilities as a result of the programme. They said that new internal capacity and knowledge around the technical and practical deployment of smart infrastructure had been created in their organisations. A number of SIPP LAs said that a multi-purpose pole was likely to be a viable option in strategic locations

where there was likely to be multiple use case demands, for instance densely populated, urban areas.

- In addition, a majority of respondents to the network provider and use case stakeholder surveys (see Appendix 2) said that SIPP had increased their understanding of the benefits of street furniture for network or use case deployment.
- However, going forward, integrating the use of multi-purpose poles within LAs will depend on convincing a number of different LA departments (like street lighting and environment for example) of the benefits. This may not be straight-forward given the different objectives of different departments.

Taking all this evidence together, SIPP has delivered the vast majority (94%) of the multi-purpose poles proposed by SIPP areas and in so doing has improved the understanding in LAs of the practicalities of installing multi-purpose poles; outcomes that are attributable to DSIT funding.

Future adoption will rely on the dissemination of learnings from the procurement, fabrication and installation of PAS 191 poles as well as collaboration across different LA teams. There may, therefore, be a role for DSIT to undertake such dissemination activity in the future.

Summary of the SIPP economic evaluation findings

The evaluation research question for the economic evaluation is: Is there evidence that the benefits from some of the use cases delivered by SIPP to date outweigh the costs?

To answer the research question, the costs of PAS 191 standard multi-purpose poles are investigated and these costs compared against the benefits that might be expected to derive from use cases deployed on the poles. The evidence identified the following key findings:

Costs of multi-purpose poles

- Estimates of the cost of multi-purpose poles varied significantly across SIPP areas. In part this difference in cost was attributable to differences in the exact nature and attributes of the poles procured.
- The costings provided by SIPP areas suggested that a central estimate of the cost of a PAS 191 multi-purpose pole might be around £11,200. However, there is a lot of variation around this central estimate. Moreover, it is possible that it is at the higher end of what might be considered the longer term cost. This is because the cost would be expected to fall over time were the use of PAS 191 poles to become more commonplace, meaning manufacturers could benefit from economies of scale and the consumer benefit from more competition between manufacturers.

Benefits of multi-purpose poles

- The principal value of PAS 191 multi-purpose poles is that they are designed to accommodate a number of use cases in locations where existing street furniture is unable to accommodate multiple use cases. Though the PAS 191 pole is not envisaged to be a like-for-like replacement, the main piece of street furniture which the PAS 191 poles replaced in SIPP was conventional street lighting poles, which do not have the structural capability to accommodate multiple use cases.
- A number of SIPP LAs said that, going forward, in certain situations a multi-purpose pole would be preferred to a standard lamppost. The LAs said this would likely occur in strategic locations where there was likely to be multiple use case demands made on existing street lampposts.
- A number of benefits can be derived from deploying a number of different use cases on multi-purpose poles including:
 - SIPP areas identified potential revenue raising opportunities from small cells, electric vehicle charging points and potential advertising revenue from electronic display screens.
 - SIPP areas said that a number of use cases like CCTV and environmental or traffic sensors incurred a cost to the LA and did not, usually, generate any revenue. However, such use cases were usually deployed for wider, non-revenue generating, benefits.
 - These non-revenue benefits might include: lower crime from increased CCTV coverage; better traffic flow (and so reduced travel times) from increased traffic sensor coverage; and improved air quality from a better understanding of emissions resulting from increased coverage of air quality sensors. Evidence from literature suggests that the non-revenue benefits that could accrue to these use cases are not insignificant.
 - In addition, other non-revenue benefits from multi-purpose poles mentioned by LAs included reduced clutter on streets and more efficient future deployment of use cases (when compared to other street furniture).

Assessment of costs and benefits

- Comparing estimates of the revenue benefits that could accrue to the deployment of a small cell and EV charging point on a multi-purpose pole over an assumed 30 year lifespan with the central estimate of the cost of a multi-purpose pole results in a net present value of -£5,600. That is, there is a net cost of £5,600 in net present value terms from using the PAS 191 pole.
- However, this estimate takes no account of any other benefits that might accrue to the PAS 191 pole from other, non-revenue generating, use cases that could be deployed on the pole. Other use cases would need to generate around £386 per annum or more in societal benefits to deliver a positive net present value. Estimates of the potential societal benefits that could accrue to the use cases outlined above (CCTV, traffic sensors and environmental sensors), suggest that generating this level of societal benefit does not seem unreasonable.
- Taking all the economic evaluation evidence together (for instance revenue and non-revenue benefits) suggests that PAS 191 multi-purpose poles would be considered value for money in certain cases. Whilst PAS 191 poles will not be

viable replacements for standard street lampposts in all situations, in locations with particular opportunities, challenges or needs (e.g. demand for improved mobile connectivity; demand for EV; crime; congestion; air pollution) the PAS 191 poles could represent a value for money choice in order to host a number of different use cases. This is most likely to occur in densely populated urban areas.

1 Introduction

1.1 Introduction to this report

To support the Department for Science, Innovation and Technology's (DSIT) ambition to deliver world-class digital infrastructure across the UK, drive innovation and unlock opportunities for economic growth, DSIT established the Smart Infrastructure Pilots Programme (SIPP).

[SIPP](#) was a £1.5 million programme that sought to support local authorities (LAs) to procure and test 'smart' multi-purpose columns for mobile and wireless connectivity services and other relevant uses. This aimed to help them make efficiency savings and increase connectivity for their local communities.

[SIPP](#) sought to build upon the learnings of the Digital Connectivity Infrastructure Accelerator programme (DCIA Phase One), which invested £7 million up to the end of 2022/23 to accelerate the deployment of 5G infrastructure in local communities, and create efficiencies and improved ways of working for Mobile Network Operators (MNOs), other network providers and LAs.

The demand for greater advanced connectivity network capacity and coverage, particularly for 5G services, will require increased network densification. To support this, operators are increasingly looking to deploy 5G small cells⁶ on infrastructure owned or overseen by LAs. These include assets such as lamp posts, traffic lights and signposts for example. These assets can also be used to help LAs meet other local needs, for example around electric vehicle charging points, CCTV cameras and Internet of Things (IoT) sensors (see original [SIPP guidance](#)).

Technology and components for "smart" street infrastructure are quickly evolving through advancements in technology and market demands. However, early research that informed [DCIA Phase One](#) suggested that existing standards and specifications in relation to smart infrastructure did not specifically consider smart street infrastructure. To address this issue, in DCIA Phase One, the British Standards Institution (BSI) developed new Publicly Available Standards (PAS) to help LAs assess what type of smart multi-purpose columns could support their current and future connectivity plans. PAS 191 helps with the design and procurement of new smart [multi-purpose columns](#). The [SIPP competition](#) was focused on applying the PAS 191 standard to the design and procurement of new smart infrastructure for LAs.

The £1.5 million of DSIT funding allocated to the programme was intended to be matched by smart service providers working with the participating LAs. The overall objective of the [programme](#) was to improve the understanding and realisation of the benefits of utilising street furniture and other assets for network deployment.

⁶ Small cells are low-powered cellular radio access nodes that operate in licensed and unlicensed spectrums that have a range of 10 metres to a few kilometres

Following a competitive process, [six LAs received DSIT funding](#) through the programme.

Programme delivery commenced in October 2023 and was originally planned to run until March 2025. Four SIPP projects concluded in March 2025 while the delivery timeframe was extended by DSIT to August 2025 for the remaining two SIPP projects to allow those projects more time to complete the installation of their multi-purpose poles.

1.2 About the evaluation

Government departments are expected to undertake comprehensive, robust and proportionate [evaluations](#) of their policy interventions in order to understand how policies and programmes are working and to ensure the best value for public money. To that end, in February 2024, DSIT commissioned KPMG to undertake the programme-level evaluation of SIPP.

In May 2024, KPMG produced a scoping and baseline report⁷, setting out: the research questions to be answered by the SIPP evaluation; the approach to the evaluation; and its associated timings. The subsequent evaluation activity has followed the methodology set out in the scoping and baseline report, which was designed to align with guidance set out in HM Treasury's [Magenta Book](#) and [Green Book](#).

As commissioned, the evaluation of SIPP was to include:

- a scoping and baseline report
- six-monthly reporting
- a process evaluation covering both the application process and the design and delivery of the programme
- an impact evaluation
- an economic evaluation

This report provides the evaluation of SIPP, comprising of a process, impact and economic evaluation.

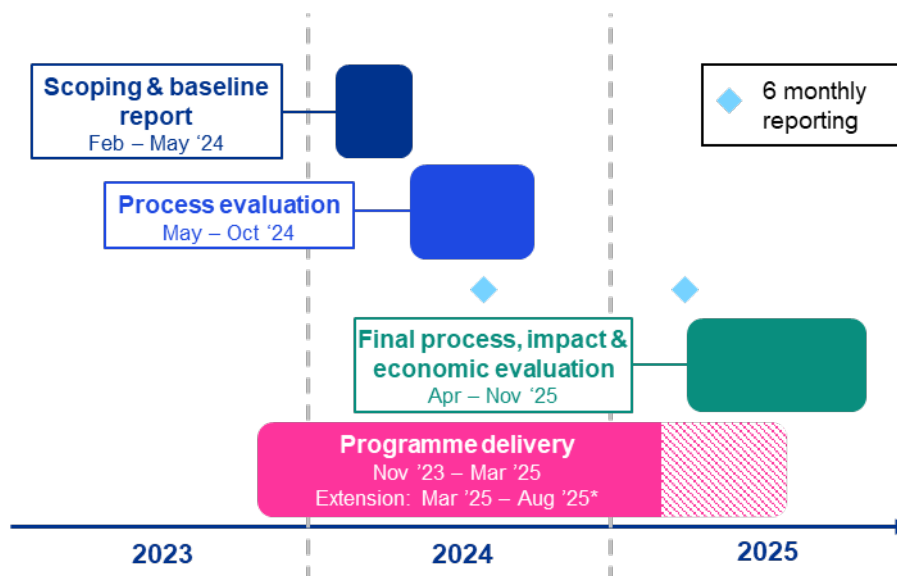
In delivering this evaluation, the DSIT evaluation project team⁸ (hereafter referred to as the DSIT evaluation team) has provided input and support throughout.

The different elements of the evaluation and respective timings are set out in Figure 1.1 below.

⁷ KPMG, 5G Innovation Regions and Smart Infrastructure Pilots Programme Evaluation: Scoping and baseline report, May 2024

⁸ The DSIT evaluation project team has overall responsibility for the evaluations and provides ongoing input and direction in relation to the evaluation such that it meets DSIT's requirements; the team is comprised of DSIT officials.

Figure 1.1: Elements of the SIPP evaluation and associated timings



A brief summary of each element of the evaluation is set out below.

Scoping and baseline report: The scoping stage of the evaluation sought to understand the nature of the intervention, the research questions that needed to be answered and developed a framework for delivering the evaluation. The output from the scoping phase was a scoping report accompanied by a baseline for the evaluation. The purpose of the baseline was to set out the situation at the start of the programme, before any intervention-related activity had taken place, to allow for comparison with observed outcomes and impacts post-intervention.

Six-monthly reporting: Updates on the progress of the SIPP projects was provided to DSIT through 6-monthly updates in August 2024 and April 2025⁹. This reporting was in the form of a dashboard with the data reported based on information gathered from the DSIT benefits trackers.

Process evaluation of the application process: The process evaluation of the application process for SIPP was conducted between May and October 2024. This evaluation answered the evaluation research question: “what went well and what could be improved with regard to SIPP, specifically in relation to the application process?”. The main themes covered in the evaluation included: how the programme was originally advertised; how much interest in the programme was generated through advertising and marketing activity; what impact the funding method proposed for the programme had on applications; and areas for improvement in the application process.

Process, impact and economic evaluation: The SIPP evaluation, which this report covers, comprises a process, impact and economic evaluation. The evaluation follows the methodology set out in the scoping and baseline report and covers the

⁹ These dates reflect the time by which completed benefits trackers were received from all SIPP areas

activity and outputs or outcomes achieved up to the end of March 2025. The evaluation seeks to answer the following overarching evaluation research questions:

- Process evaluation: What went well and what could be improved with regard to SIPP, specifically in relation to the design and delivery (from both a DSIT and LA or partner organisation perspective - where 'partner organisation' refers to other stakeholders involved in the delivery of SIPP projects)?
- Impact evaluation: To what extent did SIPP achieve the outcomes it set out to achieve within the timescale of the evaluation and to what extent can these outcomes be attributed to the programme?
- Economic evaluation: Is there evidence that the benefits from some of the use cases delivered by SIPP to date outweigh the costs?

These questions were developed in collaboration with the DSIT evaluation team and reviewed and agreed by the Steering Group¹⁰ as part of the scoping phase of the evaluation. In order to answer the overarching evaluation research question, additional research questions are considered for each of the process, impact and economic evaluations. These supplementary questions are set out in sections 2.1.1, 2.1.2 and 2.1.3 respectively. In this report, the questions are considered in the context of the delivery of projects up to the end of August 2025.

1.3 Structure of this report

The purpose of this report is to present the findings from the process, impact and economic evaluation of SIPP.

The rest of this report is structured as follows:

- Section 2 sets out the approach to the evaluation, including:
 - an overview of the methodologies to be used for the process, impact and economic evaluation – detailed in section 2.1
 - sources of information used to answer the evaluation research questions including the approach to the interview and surveys used to answer the evaluation research questions for SIPP – detailed in section 2.2
- Section 3 reports the main findings from the process evaluation for SIPP
- Section 4 reports the main findings from the impact evaluation for SIPP
- Section 5 reports the main findings from the economic evaluation for SIPP
- Section 6 reports the main findings from the evaluation for future programme delivery

¹⁰ This group was established with the role of providing advice, guidance, scrutiny and challenge to the evaluation, with the aim of supporting the evaluation and ensuring the findings are robust and provide useful insights to build the evidence base in relation to digital infrastructure. It consists of DSIT officials covering the areas of policy, analysis, benefits realisation and technical expertise with respect to SIPP, together with a member of Cabinet Office's Evaluation Taskforce.

2 Approach to the evaluation

2.1 Overview of evaluation methodologies

This section provides a summary of the methodologies used for each of the different evaluations. More detail on the methodologies employed can be found in the scoping and baseline report¹¹.

2.1.1 Process evaluation

The process evaluation examines how the processes employed in the delivery of SIPP up to the end of August 2025 have contributed to the programme's outcomes and any lessons learnt for future delivery. The evaluation seeks to answer the overarching and supplementary evaluation research questions set out below.

Evaluation research questions for the process evaluation

What went well and what could be improved with regard to SIPP, specifically in relation to the design and delivery (from both a DSIT and LA or partner organisation perspective)?

- Whether the delivery of the programme went as expected?
- Whether the spreading of knowledge outside the intervention areas worked as expected?
- Whether there was anything that could have been improved with respect to the design and, or, delivery of the programme?
- Whether the funding of the programme influenced its delivery and effectiveness?

A range of research and data collection methods have been employed to obtain the evidence needed to answer the process evaluation research questions. These include:

- a review of programme documentation
- interviews with SIPP areas; DSIT officials; and UKTIN officials
- three surveys of stakeholders to the various SIPP projects (one covering manufacturers of multi-purpose poles; one covering network providers; and one covering use case stakeholders to the projects).

This evidence is brought together and thematic analysis conducted to identify key themes and insights from the various stakeholders and data sources. Through this process, an assessment is made of how the specific processes and approaches adopted for SIPP have affected the overall delivery of the programme through to the end of August 2025. Any lessons that can be learnt from the delivery of the programme for future programme delivery for instance are also outlined.

¹¹ KPMG, 5G Innovation Regions and Smart Infrastructure Pilots Programme Evaluation: Scoping and baseline report, May 2024

Section 3 sets out the findings of the process evaluation.

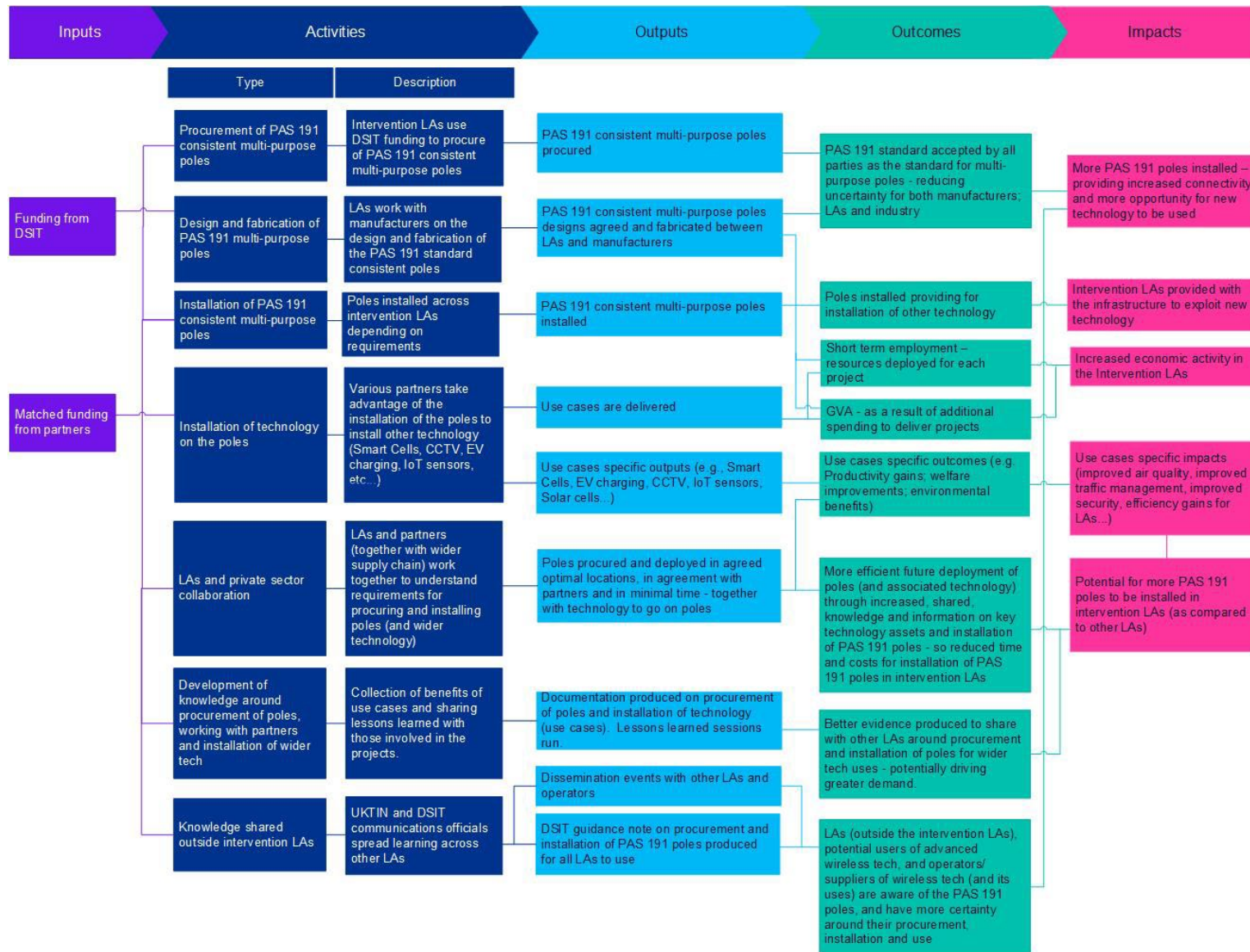
2.1.2 Impact evaluation

The purpose of the impact evaluation is to assess what changes have occurred up to the end of August 2025 as a result of SIPP and the extent to which such changes can be attributed to the programme itself. The overarching evaluation research question is: To what extent did SIPP achieve the outcomes it set out to achieve within the timescale of the evaluation and to what extent can these outcomes be attributed to the programme?

At the scoping stage, and in the absence of viable quasi-experimental methods¹², a theory-based approach to the SIPP impact evaluation was set out in order to answer this evaluation research question. [Theory-based impact evaluations](#) draw conclusions about an intervention's impact through rigorous testing of whether the causal chains thought to bring about change – set out in a detailed 'Theory of Change' (ToC) – are supported by sufficiently strong evidence and alternative explanations can be ruled out. The ToC set out in Figure 2.1 below (with more detailed narrative set out in the scoping report), illustrates the changes that SIPP was seeking to make, how they are expected to happen, and the measurable outputs, outcomes and impacts associated with the intended change. The ToC goes beyond the primary objective of SIPP which was to improve the understanding and realisation of the benefits of utilising street furniture and other assets for network deployment, to include longer term impacts that may result from the programme in line with the broader strategies (like the [Wireless Infrastructure Strategy](#)) within which SIPP sits.

¹² 5G Innovation Regions and Smart Infrastructure Pilots Programme Evaluation: Scoping and baseline report, May 2024

Figure 2.1: SIPP ToC



In order to help answer the overarching evaluation research question, the ToC was used to support the development of supplementary research questions (which are set out below). These supplementary questions test the extent to which causal links in the ToC have been demonstrated and, therefore, whether future outcomes and impacts are likely to be realised. As such, the supplementary questions focus on the key intended outputs and outcomes of the programme expected to be achieved within the evaluation timescales (up to the end of August 2025). The questions were designed to support the theory-based evaluation methodology as proposed within the scoping and baseline report¹³.

Evaluation research questions for the impact evaluation

To what extent did SIPP achieve the outcomes it set out to achieve within the timescale of the evaluation and to what extent can these outcomes be attributed to the programme – specifically:

- To what extent has SIPP provided evidence of the benefits of utilising street furniture and other assets for network deployment?
- To what extent have lessons learned from SIPP around the procurement and installation of technology been documented and disseminated?
- To what extent has SIPP improved the understanding within the intervention LAs of the benefits of utilising street furniture and other assets for network deployment and how this can be delivered?

To answer the overarching research question and assess the impact of the programme, in line with the scoping report¹⁴, the theory-based approach of contribution analysis (CA) was considered the most appropriate to apply. This was because of the ability to use the range of evidence to understand the strength of the cause-effect links identified within the ToC.

CA tests the extent to which the chains of causality and underlying assumptions in the ToC are confirmed, or otherwise, by the evidence available. It assesses attribution by exploring the range of evidence to understand the strength of the cause-effect links identified within the ToC, including through analysis of observed changes in outcomes (relative to baseline), evidence that activities and outputs have contributed to the outcomes, and analysis of other influencing factors that could affect programme related outcomes.

Data and evidence gathered as part of the evaluation is used to validate the ToC. This assessment includes consideration of the following three areas:

- Achievement of programme outcomes – assessment of the evidence to confirm whether the programme was implemented as planned and whether the expected outputs and outcomes were observed.

¹³ 5G Innovation Regions and Smart Infrastructure Pilots Programme Evaluation: Scoping and baseline report. May 2024

¹⁴ 5G Innovation Regions and Smart Infrastructure Pilots Programme Evaluation: Scoping and baseline report. May 2024

- Evidence to support the assumptions within the ToC and the logical links at each stage – assessment of the evidence to confirm, disconfirm, or call into question the causal assumptions.
- Analysis of other influencing factors – examination of the evidence in relation to whether other factors, non-programme related, might have an influence on the outcomes observed.

In applying CA to SIPP, each causal link in the ToC was considered and its contribution to the relevant output, outcome and, or, impact in the ToC assessed as set out above. While CA is considered the most appropriate approach to use, based on the evidence available, it was not possible to apply fully a CA framework. This is because outputs and outcomes are still emerging and/or uncertain. As a result, for this report, the contribution story and the narrative of how the programme has contributed to change is presented. The analysis is structured around the evaluation research questions which are designed to help consider the cause-effect links in the ToC expected to have been realised by the end of the programme. Appendix 1 provides a more detailed consideration of this assessment.

In section 4, which sets out the findings of the impact evaluation, the analysis is structured around the evaluation research questions which are designed to help consider the cause-effect links in the ToC and the outputs and outcomes expected to have been realised by the end of August 2025.

2.1.3 Economic evaluation

The purpose of the economic evaluation is to answer the following evaluation research question:

- Is there evidence that the benefits from some of the use cases delivered by SIPP to date outweigh the costs?

This evaluation research question reflects the fact that, at the time of the evaluation, a full cost-benefit analysis of the programme would not be possible because many of the future outcomes and impacts targeted by the programme would not have been evidenced or achieved. Instead, the economic evaluation focuses on the benefits that either have been achieved or are expected to be achieved over the lifetime of a multi-purpose pole. These benefits are then compared to the costs of multi-purpose poles in order to assess whether the benefits from use cases that might typically be deployed on a multi-purpose pole are expected to outweigh the costs of the pole.

As a result, in order to answer the overarching research question, the cost of a PAS 191 multi-purpose pole is considered and compared to the realised or expected benefits from the multiple use cases that can be deployed on a multi-purpose pole. Information from the benefits trackers, project completion reports (closure reports)¹⁵, interviews, surveys as well as wider literature are used to produce a robust

¹⁵ Project completion reports (also called closure reports) were produced by SIPP LAs to capture the LAs approach to the project and to highlight key findings (like outcomes, benefits and lessons learnt) from each individual SIPP project.

understanding of the nature and scale of benefits that can be expected by LAs installing PAS 191 poles as compared to their costs.

Section 5 sets out the findings of the economic evaluation.

2.2 Sources of information

2.2.1 Overview of sources of information

The evaluation draws on the following sources of data and information:

- Programme documentation – in particular:
 - SIPP benefits trackers¹⁶
 - SIPP project completion reports
- Interviews with project leads from SIPP LAs regarding the delivery and impact of their projects to the end of March 2025 and beyond
- An interview with DSIT officials responsible for policy and technical delivery, in relation to the delivery and impact of the programme to the end of March 2025 and beyond
- An interview with officials from UKTIN on the documentation and dissemination events conducted in relation to the programme to the end of March 2025 and beyond
- Surveys of other stakeholders involved in SIPP projects: one covering manufacturers of multi-purpose poles; one covering network providers to the projects; and one covering use case providers to the projects

Each of these sources is explained in more detail below.

2.2.2 Programme monitoring and reporting

All SIPP LAs were required to provide a benefits tracker spreadsheet to DSIT each quarter. The tracker was designed to record the following information:

- All benefits associated with the SIPP project: The tracker was the main tool used to track progress against the project's intended benefits. This included technical, financial and non-financial benefits. In addition, the tracker recorded the baseline and target information for each benefit measure.
- Lessons that emerged from each project: This included lessons specifically for the SIPP project, lessons that might be relevant to the broader sector, or lessons for DSIT specifically.
- Knowledge creation and dissemination activities for each SIPP project: Both planned (e.g. in the coming quarter) or undertaken (in the preceding quarter).

At the end of the programme (i.e. March 2025 for four SIPP areas and August 2025 for the two SIPP areas for which the timeline was extended), all SIPP LAs were also required to produce a project completion report (or closure report) for their SIPP

¹⁶ The benefits tracker is a spreadsheet completed by SIPP LAs and used to track progress against each project's intended benefits.

project. The objective of the report was to capture a high-level overview of the LAs approach to the project covering areas including design, build, management and operational aspects. Key findings from the project were to be documented including outcomes and benefits achieved together with any learnings derived from the project. The reports provide both an audit trail covering the delivery of projects and also information to help guide future projects and encourage innovation and further activity in this area.

2.2.3 Interviews

As shown in Table 2.1 below, KPMG conducted a total of 8 semi-structured interviews with a range of programme stakeholders. The objective of the interviews was to obtain insights and, primarily, qualitative evidence to inform the evaluation. An interview guide was developed for use in the interviews. All interviews were conducted using MS Teams and comments from the interviews have been anonymised in all instances. The individuals to be interviewed were selected based on their involvement in the delivery of the SIPP projects and were agreed between KPMG and the DSIT evaluation team (with particular input from the DSIT technical advisers).

Table 2.1: Interviews conducted for the SIPP evaluation

Interview	No. of interviews	No. of individuals interviewed	Length of interview
SIPP LAs	6 (all SIPP LAs)	15	1 hour
DSIT officials	1	7	1.5 hours
UKTIN officials	1	3	1 hour
Total	8	25	

2.2.3.1 Interviews with SIPP LAs

Interviews were held with individuals leading on the delivery of SIPP interventions.

The interviews sought to obtain information and views on the following aspects:

- delivery of the project, including procurement
- relationships established through the project
- support received from DSIT
- how the funding mechanism influenced the delivery of the project
- outputs and benefits achieved to date
- documentation and dissemination of learning from the project

2.2.3.2 DSIT officials' interview

One interview was held with DSIT officials involved in the design and delivery of SIPP. Participants included officials involved in the original design of the programme and the subsequent delivery of the programme (including technical advisers to the programme).

The interview sought to obtain information and views on the following aspects:

- the overall delivery of the programme
- the support provided by DSIT to SIPP LAs
- how the funding mechanism influenced the delivery of the programme
- outputs and benefits achieved
- documentation and dissemination of learning from the project

During the interview, when a particular point was made by a DSIT official, other participants had the opportunity to provide alternative views and perspectives. Where no other alternative views were put forward, and no DSIT officials disagreed with the point made, this was taken as the consensus view among the group. As a result, when reporting on the findings from the interim evaluation, statements are reported as the views of DSIT officials where such a consensus was achieved.

2.2.3.3 UKTIN interview

One interview was held with officials from UKTIN. UKTIN is a DSIT funded initiative which seeks to support research, development and the commercialisation of new technologies in the UKs telecom industry. The interview sought to obtain information and views primarily on the documentation and dissemination of learning from the SIPP interventions, including any evidence of impact.

2.2.4 Surveys

2.2.4.1 SIPP manufacturers of multi-purpose poles, network providers and use case stakeholders surveys

All SIPP LAs were asked for contact details of the company (or companies) that manufactured the multi-purpose poles as well as the company (or companies) providing network services and use cases for each SIPP project. A survey was sent to all these companies. The survey was built using an online survey tool and covered the following topics:

- the procurement process undertaken by the SIPP LA
- the providers' experience of delivery of the SIPP project
- the extent to which on-going relationships were established by the project
- views as to whether the project was likely to continue after funding ceased

The surveys opened in July 2025 and closed on 20th August.

Table 2.2 below sets out the responses received to each of the surveys conducted. It should be noted that network providers in one SIPP LA were not surveyed because the project did not have a network provider during the course of the programme. In addition, the total number of responses can exceed the number of SIPP areas responding because there can be more than one network provider, and particularly use case stakeholder, for a SIPP project. Finally, the organisation response rate may be lower than the number of responses divided by the number of organisations

contacted because more than one response may have been received from the same organisation.

Table 2.2: Responses to the surveys for the SIPP evaluation

Survey	No. of SIPP areas surveyed	No. of SIPP areas responding	Total no. of responses	No. of organisations contacted	Organisation response rate
Manufacturer of multi-purpose poles	6	2	2	7	29%
Network provider	5	3	4	6	50%
Use case stakeholder	6	5	6	10	60%

2.3 Caveats and limitations

When interpreting the findings of this evaluation there are a number of caveats and limitations to be aware of:

- At the time of the evaluation (based on the period up to end of August 2025) many of the multi-purpose poles had been installed for a relatively short amount of time. As a consequence, many use cases had yet to be deployed, or had been deployed for a very short space of time. This meant that, as of end August 2025, many outcomes and impacts were yet to be realised from the SIPP programme and so the evaluation cannot be definitive about the full impact of the programme.
- Much of the evidence for the evaluation has been drawn from interviews and surveys with programme stakeholders. A limitation of this approach is that it relies on self-reporting of the effectiveness of SIPP LAs delivery and reasons for any delays or failures, which may contain bias. To mitigate the impact of this, the outputs from the interviews and surveys have been reviewed against one another for consistency. In addition, other sources of information, albeit also self-reported by SIPP areas (e.g. in programme documentation and the benefits trackers), have been reviewed to consider the extent to which the findings from the interviews and, or, surveys are supported, or otherwise, by other evidence.
- Low response rates to some of the surveys means there is a risk that the information drawn from the surveys may not be robust or representative. To mitigate the impact of this the results from the network provider and use case stakeholder surveys have been assessed both separately as well as combined and the results are used in this evaluation where they point unambiguously in the same direction and are of similar magnitude. The results from the manufacturer of poles survey are not explicitly relied on to draw any conclusions in the evaluation with the exception of a cost estimate for standard street columns (used in the economic evaluation).
- The quantitative recording of project-level benefits has been undertaken by each SIPP LA individually. This creates a risk of inconsistency in reporting across SIPP LAs. Steps have been taken to minimise this risk, through provision of guidance

and support to SIPP LAs by DSIT and KPMG in relation to the completion of the benefits tracker. In addition, benefits trackers have been checked and any identified inconsistencies or concerns raised with individual SIPP LAs. Nevertheless, this evaluation is reliant on the accuracy and completeness of data provided.

3 Findings of the process evaluation

3.1 Introduction

The findings set out in the following sections seek to answer the process evaluation research question for SIPP which is: What went well and what could be improved with regard to SIPP, specifically in relation to the design and delivery (from both a DSIT and LA or partner organisation perspective)?

To do this, a number of supplementary research questions are considered before concluding on the overarching research question. The supplementary research questions are:

- Whether the delivery of the programme went as expected?
- Whether the spreading of knowledge outside the intervention areas worked as expected?
- Whether the funding of the programme influenced its delivery and effectiveness?
- Whether there was anything that could have been improved with respect to the design and, or, delivery of the programme?

Each section below considers the main findings relating to the particular evaluation research question, based on evidence gathered as detailed in section 2.

3.2 Finding: Whether the delivery of the programme went as expected

3.2.1 Introduction

This section considers the extent to which the delivery of SIPP went as expected. To do this the section starts by considering what had been delivered through SIPP in terms of multi-purpose poles installed and use cases deployed by March 2025 and August 2025. It then considers the main factors identified as affecting delivery at the programme level and project level separately, before concluding on this research question.

In answering the research question a range of evidence is drawn on, including: the application guidance, benefits trackers, closure reports, and interviews with DSIT officials and SIPP areas.

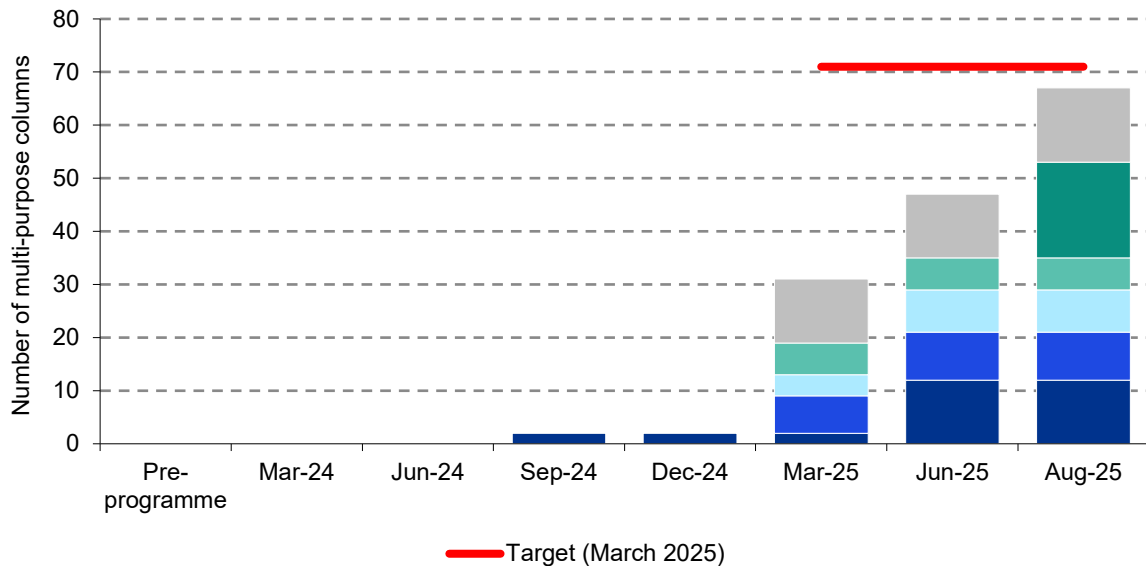
3.2.2 Evidence on whether the delivery of the programme went as expected

3.2.2.1 Installation of multi-purpose poles and use cases

Figure 3.1 below shows the total number of multi-purpose poles installed across the SIPP programme (split by individual SIPP areas) in the period to March 2025. Beyond March 2025, SIPP areas no longer completed or returned the formal benefits trackers. As a result, KPMG contacted SIPP areas through email and used information from the interviews to understand the delivery of certain aspects of their SIPP projects at June 2025 and August 2025. As a result, the charts that follow

incorporate estimates of the installation of poles as at the end of June 2025 and August 2025 based on the understanding developed through interviews and follow up emails.

Figure 3.1: Total number of multi-purpose poles installed across SIPP over time (split by anonymised SIPP areas with each colour representing a different area)



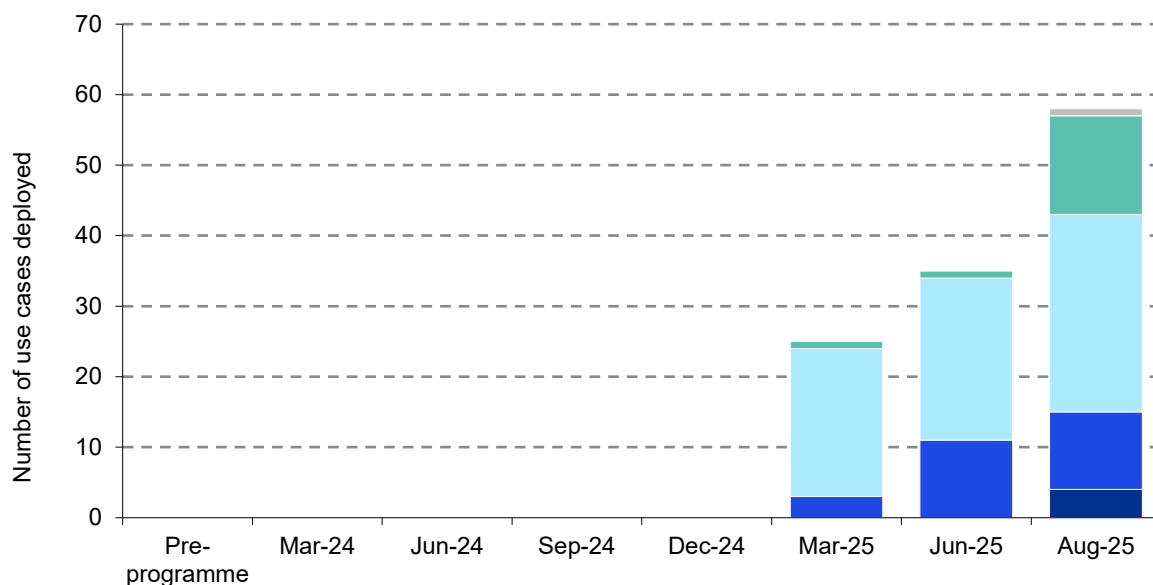
Source: KPMG analysis based on SIPP benefits tracker data, closure reports and interviews

The chart shows that 31 multi-purpose poles had been installed across the programme by the end of March 2025. This compares to SIPP areas’ original plans for 71 poles to be installed by March 2025, with many of these planned to have been installed during 2024 (i.e. earlier in programme delivery). Five out of the six SIPP areas had installed at least one multi-purpose pole by the end of March 2025. Information collected from SIPP areas after March 2025 suggests that all SIPP areas had installed multi-purpose poles by the end of August 2025, with a total of 67 poles being installed across the six areas, marginally below SIPP areas’ original plans of 71. The difference between the original target of 71 and the 67 poles installed is accounted for by: two more poles being due to be installed after August 2025; one SIPP area having installed an extra pole (over original plans); and one SIPP area having reduced its original installation plans by three poles.

Delivery of use cases

Figure 3.2 below shows the total number of use cases deployed across SIPP areas in the period to March 2025 as well as August 2025 (based on information collected from SIPP areas).

Figure 3.2: Total number of use cases deployed across SIPP over time (split by anonymised SIPP area with each colour representing a separate area)



Source: KPMG analysis based on SIPP benefits tracker data, closure reports and interviews

Given the timing of multi-purpose pole deployment shown in Figure 3.1, use case deployment was necessarily backloaded. SIPP areas’ original plans had an estimated total of at least 138 use cases being deployed on multipurpose poles shortly after the installation of multipurpose poles. As such, many SIPP areas planned for use cases to start being deployed in 2024 and for full deployment to have taken place by the end of March 2025.

However, data from the benefit trackers shown in Figure 3.2 above, shows that, as of March 2025, 25 use cases had been deployed across three SIPP areas with the majority of these attributable to one SIPP area. There had been no use case deployments in the other three SIPP areas by this time. The SIPP area that constituted the majority of use cases deployed by March 2025 integrated the deployment of many of its use cases with the physical installation of multi-purpose poles in a way that other SIPP areas did not. By August 2025, information collected from SIPP areas suggests that 58 use cases had been deployed across five SIPP areas. These use cases included small cells, CCTV cameras, traffic management monitors, air quality monitors, audio speakers and advertising screens This compares to an estimated total of at least 138 use cases planned for deployment based on SIPP areas’ original plans. As a result, more than one use case had been deployed on at least 15 multi-purpose poles. However, due to the delays in the installation of multi-purpose poles, by August 2025 a number of poles were yet to have use cases deployed on them. Whilst one SIPP area had not deployed use cases by August 2025 (because of the delay in installing multi-purpose poles), it had plans to do so in the following months. Most other SIPP areas also had plans to deploy more use cases in the coming months.

Taking all this evidence together suggests that SIPP areas found the timeline for installing poles challenging. As set out below, it took longer for SIPP areas to install

the multipurpose poles than they had originally planned for and SIPP areas had not delivered the intended number of poles by March 2025. As a consequence, the deployment of use cases had also been delayed from what had originally been intended. By the end of August 2025, whilst most of the multipurpose poles had been installed, most SIPP areas were still in the process of deploying use cases on the multipurpose poles.

3.2.2.2 Factors affecting delivery at the programme level

Delivery timescales for SIPP

As set out in the [programme guidance](#), all multi-purpose poles were to be installed by the end of March 2025. The guidance stated that non-DSIT funding (i.e. on use case deployment and operation) could be spent after the original timeline. However, the expectation in the guidance was that use cases would also be deployed and documentation and dissemination activities undertaken by March 2025 (suggesting non-DSIT funding would have been spent before March 2025).

Whilst SIPP areas had applied for the SIPP funding on the basis of installing both multipurpose poles and use cases by March 2025, in interviews, most SIPP LAs said that the deadline was unrealistic for full project delivery, meaning the manufacture of poles; installation of the poles; the deployment of use cases on the poles; and the realisation of benefits from use cases. LAs viewed the delivery timeframe as too short for infrastructure projects of this nature i.e. delivering previously untested infrastructure (the PAS 191 multi-purpose poles) and illustrating the benefits from its installation.

Reflecting this, two SIPP areas were unable to complete the installation of poles within the original time period. Given these two areas had clear plans for the installation of multi-purpose poles in the months following the end of the original timeline, DSIT granted an extension for these two areas. The implications of this finding for future programmes is covered in Section 6.

DSIT delivery support to SIPP areas

In the interview with DSIT officials, they commented that they had supported the effective delivery of the programme by acting as a “critical friend” rather than an instructor. DSIT officials explained that their role involved: facilitating knowledge sharing between areas, providing procurement guidance, offering flexible and collaborative approaches, and supporting cross project learning.

In the interviews, some SIPP LAs said that DSIT had provided good support, particularly technical support, to their projects. Two SIPP areas specifically noted they had been provided with useful support from DSIT in terms of facilitating connections with stakeholders to help with the delivery of their projects.

3.2.2.3 Factors affecting the delivery of individual SIPP projects

In line with the data presented in Figure 3.1 and Figure 3.2 above, in the interviews, SIPP areas said that, in general, it had taken more time than originally expected to

procure the fabrication of multi-purpose poles and then install them. The main issues highlighted by SIPP areas as impacting on delivery included:

- **Procurement:** A number of LAs said they had experienced difficulties in the procurement of multi-purpose poles. These LAs noted difficulties in identifying contractors to manufacture the multi-purpose poles and getting them to respond to procurement exercises. This meant the procurement process generally took longer than had originally been expected. Some LAs noted that the relatively small nature of the procurement was not a priority for manufacturers who were more used to dealing with larger orders of standard poles.
- **Design and manufacture of poles:** A number of LAs said that the design of the multi-purpose poles had taken longer than had originally been expected. Three SIPP areas said this was because of the specific requirements regarding the aesthetics of the multi-purpose poles from local street lighting teams. That is, these LAs said that designs had to be tailored to the aesthetic requirements of the local area in which they were being installed and this added time to the fabrication process. Two SIPP areas said that the design of multi-purpose poles needed to be adapted to account for the shallow foundations into which the poles would be installed. These LAs said that the multi-purpose poles typically required quite deep foundations which was not possible in some installation areas and so new designs to the foundations of the poles were required. As a result of all these issues, some LAs said that the design and subsequent fabrication of multi-purpose poles took longer than originally expected.
- **Access to information required to deliver projects:** Some SIPP areas noted that it had taken time to get access to key information required to install the poles, for example on land ownership; services currently installed in areas where multi-purpose columns were proposed to be sited; and existing mobile connectivity levels. The extra time taken to get this information had delayed their projects beyond the originally planned timescales
- **Planning:** Some SIPP areas highlighted that the planning process had impacted on their timelines for delivery. In particular, they highlighted the need to get planning permissions for the installation of poles, and in one instance the use case deployed on poles, and that this had taken more time than they had originally planned for.
- **Issues with the physical installation of poles:** In interviews, a number of SIPP LAs cited practical issues encountered with the installation of multi-purpose poles. These included:
 - **Technical issues with installation:** Some SIPP areas encountered technical challenges with the practical installation of multi-purpose poles. In some of these areas, inaccurate or incomplete information meant that the presence of pre-existing services (like live underground power cables for example) where poles were intended to be installed were not identified prior to installation. This resulted in the exact location of the pole needing to change – taking more time than had originally been anticipated.
 - **Complexity of coordinating multiple stakeholders:** For some SIPP areas, dependencies on other internal stakeholders (like the LA's CCTV team for instance) impacted the delivery schedule. That is, either the installation of poles or the installation of use cases often depended on another service or

function which could not always be planned to fit with the SIPP projects timelines.

- Power: Some SIPP areas highlighted the difficulty of routing power cables to multi-purpose poles as impacting on delivery timelines. Some SIPP areas said that organising for power suppliers to route and connect power to poles often took a lot of time. In addition, some SIPP areas noted that the provision of power to poles sometimes involved extra design requirements (e.g. installation of extra power feeder pillars alongside multi-purpose poles).
- Events: For some SIPP areas certain local events delayed the installation of poles (or use cases) from what was originally planned. These included festive activities and other events planned in the streets concerned which delayed installation plans.
- **EV charging:** At least 5 SIPP areas either mentioned EV charging points in their original application or considered its deployment during the programme. Following the application stage, SIPP areas that looked into providing EV charging on their multi-purpose poles reportedly encountered issues which meant that, as evidenced in the benefits trackers, no EV charging points had been provided by the end of August 2025. Factors highlighted as affecting the installation of EV charging points included:
 - The time required to install metered connections required for EV charging – SIPP areas felt installation would have taken too long and would not have been possible within the project timelines.
 - The need for a power connection with sufficient capacity to enable EV charging – in most cases this would have required a dedicated power supply to the pole and would require expensive groundworks and more time for installation, which was prohibitive.
- **Small cells:** All SIPP areas proposed to install small cells on multi-purpose poles as part of their SIPP projects. By August 2025, only four small cells had been deployed across two SIPP areas, although plans existed for around 30 more small cells to be deployed after August 2025 (primarily in the two SIPP areas that had their delivery timelines extended). Assuming the 30 small cells are installed, then small cell provision will have occurred predominantly in dense, urban or city areas. One of the more rural areas that had planned to deploy small cells but had not installed any small cells during the project said that no immediate demand for small cells had been identified during the project. However, this SIPP area said that the deployment of small cells would remain a potentially viable future use case, subject to demand.

In line with the insights from the SIPP areas, evidence from the network provider and use case stakeholder surveys (see Appendix 2) shows that seven out of the nine respondents to the two surveys tended to agree or strongly agreed that there had been challenges in the delivery of advanced connectivity networks or use cases in their SIPP projects.

3.2.3 Conclusion on whether the delivery of SIPP went as expected

The six SIPP areas encountered a number of issues with the procurement, design, fabrication and installation of multi-purpose poles for their projects. These included,

for instance, identifying manufacturers with the ability and interest to fabricate the poles; the design of poles to deal with shallow foundations; and the requirement experienced by some SIPP areas to change the design of the pole to account for power requirements. Such factors might be considered part of the normal learning process that organisations go through when procuring and installing a new product or service and relate to the focus of the programme on testing a new specification for street furniture (the PAS 191 specification).

Nonetheless, the fact that all SIPP areas were delayed in installing their multipurpose poles and associated use cases, together with the fact that two areas needed an extension to the original timelines in order to install their multipurpose poles, suggests that the original timeline for the programme was too short. In the future, as well as challenging LAs on their delivery plans when bidding for programmes, programme design should consider allowing a longer timeline for delivery for programmes that are testing new specifications or goods and services where that is possible.

3.3 Finding: Whether the spreading of knowledge outside the intervention areas worked as expected

3.3.1 Introduction

The SIPP application guidance stated that knowledge and benefits from the programme were to be widely shared across the UK for the benefit of other LAs (see page 11 of [original guidance](#)). As illustrated in the ToC, this sharing of knowledge was expected to lead to a wider understanding of the process for procuring and installing PAS 191 poles, as well as their practical use. This section considers the evidence on the spreading of knowledge outside the intervention area, and the extent to which this worked as expected, drawing on information taken from the benefits trackers, sector deployment reports and interviews.

3.3.2 Evidence on the spreading of knowledge outside SIPP areas

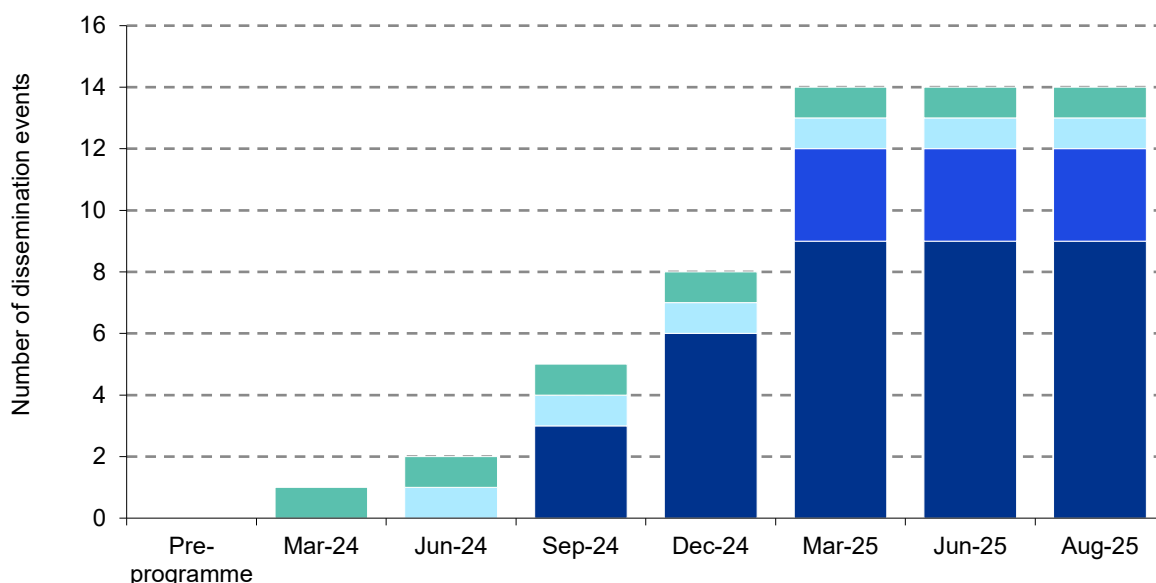
In relation to how knowledge would be shared, and the expectations on SIPP areas, the SIPP [application guidance](#) stated that SIPP areas would be, “encouraged to plan, support and deliver communication activities to ensure the benefits of their work are demonstrated and shared as widely as possible with the ecosystem”. In the interview, DSIT officials said that their expectation for LAs to spread knowledge outside the intervention areas was appropriate to the size of the programme and not overly ambitious. That is, while there was an expectation that SIPP areas would disseminate their findings across other areas, DSIT expected the scale of this activity would be proportionate to the programme’s size and that, as a result, most activity would be within SIPP’s own area.

UKTIN officials said that they had not been contracted specifically to support SIPP. As a result, UKTIN officials said there was no UKTIN led proactive programme of dissemination specifically relating to SIPP and UKTIN’s engagement with SIPP areas had been limited. However, UKTIN officials said that SIPP areas had been invited to UKTIN’s regular cluster meetings (indeed some SIPP areas reported

having had attended such meetings) and that any relevant SIPP publications would be published on the UKTIN website.

Data on the number of dissemination events recorded over time from the benefits tracker, as shown in Figure 3.3 below, provides evidence of dissemination activity up to August 2025.

Figure 3.3: Total number of dissemination events recorded by SIPP LAs over time (split by anonymised SIPP area with each colour representing a different area)



Source: KPMG analysis based on SIPP benefits tracker data, closure reports and interviews

Figure 3.3 shows that dissemination activity varied across SIPP areas, with one SIPP area accounting for the majority of dissemination events by August 2025. Four SIPP areas together recorded being involved in a total of 14 dissemination events in the period to August 2025; two SIPP areas had not delivered a dissemination event by August 2025. There was no discernible pattern in the delivery of dissemination events; with SIPP areas that were delayed in the installation of poles delivering dissemination events in the period in much the same way as those that were more advanced in delivery.

Evidence from the benefits trackers and interviews suggests that dissemination events tended to be focused on LAs' immediate areas – primarily disseminating early findings through internal meetings and events to local and regional councils in the immediate vicinity of the project. However, one SIPP area had presented early findings from their project to cities from across Europe at a 'City Telecoms Association' event.

In the interviews, a number of LAs said that they had not pursued extensive dissemination activities because of the relatively early stage of delivery of the

project. These LAs said that dissemination would be more effective when the use cases installed on poles had delivered benefits.

Despite the relatively low level of dissemination outside of SIPP areas, DSIT officials noted that some regions not directly involved in the programme (e.g. North Wales) had actively sought to learn from SIPP areas.

3.3.3 Conclusion on whether the spreading of knowledge outside the intervention areas worked as expected

The benefits tracker shows that 14 dissemination events had taken place by March 2025. Moreover, evidence from the closure reports and the interviews with SIPP areas showed some SIPP areas had discussed their project and the learnings they had taken from it with other LAs among other bodies. This suggests that dissemination of learnings has happened, to some extent, in four SIPP areas. For the most part, the spreading of knowledge that has occurred has been primarily to other LAs and associated regional bodies, rather than outside the intervention area.

3.4 Finding: Whether the funding of the programme influenced its delivery and effectiveness

3.4.1 Introduction

The [application guidance](#) stated that DSIT would make grant funding of up to £250,000 available to each individual project. The grant was for the procurement of smart multi-purpose columns. LAs were expected to secure equivalent (or higher) matched funding from suppliers for the cost of the use case infrastructure and the associated costs of trialling the use case on the columns. The guidance also highlighted that DSIT would be "... receptive to a range of arrangements" on the nature of match funding. However, grant awards were contingent upon demonstration that match funding had been secured. All grant funded activities were to be completed by 31 March 2025. Non-grant funded activities could continue beyond that date.

The guidance set out that funding would be provided to LAs in England and Wales via a non-ring fenced capital grant under Section 31 of the Local Government Act 2003; and for LAs in Scotland and Northern Ireland via a capital grant under Section 8 of the Industrial Development Act 1982¹⁷.

This funding approach was preferred by DSIT for this programme compared to the more traditional method of funding where those delivering the project spend funds in line with a Grant Funding Agreement (usually legally binding) and then claim the spend back from the funding body. This funding approach provided LAs with increased flexibility and freedom to devise and deliver their plans when compared to more traditional methods of funding.

¹⁷ The guidance also noted that whilst applicants awarded grants under the Industrial Development Act would be expected to sign a Grant Funding Agreement with DSIT – DSIT would ensure those applicants did not incur a higher burden than applicants funded under the Local Government Act.

This section considers the extent to which the funding of the programme influenced its delivery.

3.4.2 Evidence on whether the funding of the programme influenced its delivery and effectiveness

In all SIPP areas, DSIT capital funding covered the fabrication and installation of the multi-purpose poles. The provision of use cases, such as small cells, CCTV security, and environmental monitoring, for example, was supported by LA or private sector funding to meet the match funding aspect of the programme.

All SIPP LAs praised the upfront funding model used for SIPP as being more effective than the more traditional funding model where funds are claimed back retrospectively. Indeed, one SIPP LA said that they would not have applied for the programme had the more traditional funding model been used. A number of LAs said that having the funding available upfront made it much easier and quicker to go through LA finance and procurement processes to enable effective delivery of the project when compared to more traditional methods.

DSIT officials felt that the funding mechanism provided more flexibility to LAs in the delivery of their projects. However, given the nature of SIPP (primarily concerning the purchase and installation of multi-purpose poles), DSIT officials said that it was likely that most, if not all, of the funding would need to have been provided upfront in any event. In this sense, for this programme the traditional method of funding might have looked quite similar to the method of funding actually chosen for SIPP.

DSIT officials also noted that LAs were subject to similar levels of scrutiny on public spending as DSIT itself. As a result, DSIT officials said that by using the funding model used for SIPP and channelling funding through LAs, it potentially allowed for less DSIT resource to be spent on the scrutiny of LA spending on the programme when compared to a more traditional funding mechanism (where LAs spending would be monitored against the purchases they made for example).

3.4.3 Conclusion on whether the funding of the programme influenced its delivery and effectiveness

All SIPP LAs said that the funding method used for SIPP had helped in the delivery of their projects. Specifically, the upfront provision of funding made it easier for SIPP project leads to spend funds in line with their project deliverables, when compared with the more traditional method of funding.

3.5 Finding: Whether there was anything that could have been improved with respect to the design and delivery of the programme

3.5.1 Introduction

This section considers what could have been improved with respect to the design and delivery of the programme. The main aspects identified for potential improvement relate primarily to lessons learnt by SIPP areas in the delivery of their

individual projects. These aspects are presented here on the basis that more effective delivery of individual projects will help the overall delivery of the programme. The main aspects covered are:

- Availability of PAS 191 specification
- Funding provision for project management
- Initial planning of projects

3.5.2 Evidence on aspects that could have been improved with respect to the design and delivery of the programme

3.5.2.1 Availability of PAS 191 specification

In DCIA Phase One, the British Standards Institution (BSI) developed the [PAS 191 standard](#) which concerns the design and procurement of new smart multi-purpose columns. One SIPP area stated that the PAS 191 specification had, initially, been difficult to both find and access online. The LA said that, if other LAs are expected to use the PAS 191 specification to manufacture multipurpose poles, improvements could be made by DSIT or UKTIN to the signposting of the specification to enable LAs (or others searching for the PAS 191 specification) to access it more easily. Whilst no other SIPP area raised this issue, the LA that did note that, among the SIPP LAs, it was probably the LA that was least familiar with procuring and installing street furniture. As such, this view may be reflective of other non-SIPP LAs (or other organisations) that are not familiar with procuring and installing street furniture.

3.5.2.2 Funding for project management

In the interviews, a number of SIPP LAs said there was a need for revenue funding to be provided alongside the capital funding element of the programme to support delivery. These LAs said that such revenue funding could have been used to increase the project management capacity for their SIPP projects. The LAs highlighted that staff involved in the projects had individual day jobs to complete alongside delivering their SIPP project, such that there was often limited staff capacity to focus on delivery. With more funding for project management capacity LAs might have been in a better position to both deliver their interventions and to plan their intervention effectively from the start (see below).

3.5.2.3 Initial planning of projects

Whilst it does not reflect on DSIT's design and delivery of the SIPP programme, a number of SIPP areas highlighted the need for comprehensive planning of their projects from the start. This included:

- Early collaboration with all LA services that might make use of poles or be involved with their installation before procurement (e.g. CCTV, lighting, highways, planning, events). This would allow for a comprehensive and effective specification for procurement and planning of installation. Such early engagement was felt by SIPP areas to be essential in avoiding delays and ensuring all requirements were understood and incorporated from the outset. It also allowed for better coordination on planning matters, made for timely approvals on various aspects related to the delivery of the project, realistic civil work timelines, and

alignment on technical specifications. All of this would ultimately support more efficient project delivery.

- As well as early collaboration with LA services, early engagement with other partners involved in the procurement and delivery process like: manufacturers; MNOs; and Highway or Civil contractors (involved in the installation of the poles) was also highlighted as being beneficial to effective project delivery.

A number of SIPP areas did consider these points in their initial applications, at least in part due to the initial application question which asked about LAs “capacity to work with partners”. LAs’ answers to this initial application question highlighted various different stakeholders that would be required to work with and often included letters of support from at least some of these stakeholders. However, it seems that LAs’ experience of the programme is that the consideration of what partners the LA would need to work with and how needed to be more detailed and more in-depth to allow for proper planning of the project from the start. Whilst such detail may be difficult and/or disproportionate for LAs to deliver at the proposal stage, it may be that the provision of funding for project management purposes (as set out above) would enable those LAs that were successful in their application to effectively plan their projects from the start (following notification of their success).

3.5.3 Conclusion on things that could have been improved with respect to the design and delivery of the programme

Section 3.2 highlighted a number of factors that led to delays in the manufacture and installation of multi-purpose poles across SIPP projects. Whilst some of these were difficult to foresee – as with any new product or service being introduced – a number might have been foreseen or contingency time built into delivery timescales to account for potential uncertainties in delivery. Indeed, the need for effective initial planning was raised by a number of SIPP areas as a lesson to learn from the programme. This could be supported by allowing funding from the programme to be used for project management purposes.

3.6 Conclusions on the interim process evaluation research questions

The installation of SIPP multi-purpose poles happened later than LAs’ original plans:

- LAs’ original applications were based on installing multipurpose poles and deploying use cases in advance of March 2025. However, all SIPP areas found the original programme timelines challenging such that the installation of multipurpose poles happened later than LAs’ original plans. The programme was extended to August 2025 for two areas, to allow for the installation of multipurpose poles in those two areas. By August 2025 the vast majority of originally planned multi-purpose poles had been installed across the six SIPP areas.

As a result, use case deployment on multi-purpose poles was similarly delayed:

- Use case deployment necessarily followed multipurpose pole installation, and was therefore also delayed. By August 2025, 58 use cases had been deployed on the multipurpose poles. This compared to an estimated total of at least 138 use cases planned for deployment based on SIPP areas' original plans. More than one use case had been deployed on at least 15 multi-purpose poles. However, due to the delays in the installation of multi-purpose poles, by August 2025 a number of poles were yet to have use cases deployed on them. Most SIPP areas planned for more use case deployment in the coming months.

Various factors impacted on the delivery of the programme and projects:

- SIPP involved the testing of a new specification for street furniture. As such it is reasonable to expect that unforeseen issues are likely to be encountered in both the physical fabrication and the subsequent installation of the PAS 191 multi-purpose poles. Nevertheless, it is clear that LAs did not provide enough contingency time in their original plans for these unforeseen issues. A number of SIPP LAs said that the programme could have been improved if revenue funding had been provided, which LAs said would have enabled them to increase project management capacity. With more project management capacity LAs might have been in a better position to both deliver their interventions as well as plan their intervention effectively from the start.

Spreading of knowledge outside SIPP areas has been limited:

- Given the delays that LAs encountered with fabricating and installing the PAS 191 multi-purpose poles, dissemination activities have been rather limited across the SIPP areas. The evidence (from benefits trackers, closure reports and the interviews) suggests that what dissemination of learning has occurred, has primarily been within SIPP LAs.

The funding model used for SIPP supported its delivery:

- All SIPP LAs said that the funding method used for SIPP had helped in the delivery of their projects. The upfront provision of funding made it easier for SIPP project leads to spend funds in line with their project deliverables when compared with the more traditional method of funding.

4 Findings of the impact evaluation

4.1 Introduction

As noted earlier, the main objective of SIPP was: to improve the understanding and realisation of the benefits of utilising street furniture and other assets for network deployment.

Section 2 set out how this evaluation seeks to assess what changes have occurred up to the end of August 2025 as a result of SIPP and the extent to which such changes can be attributed to the programme itself. To support this consideration, this section seeks to answer the impact evaluation research questions which are repeated below.

4.1.1 Evaluation research questions for the impact evaluation

To what extent did SIPP achieve the outcomes it set out to achieve within the timescale of the evaluation and to what extent can these outcomes be attributed to the programme – specifically:

- To what extent has SIPP provided evidence of the benefits of utilising street furniture and other assets for network deployment?
- To what extent have lessons learnt from SIPP around the procurement and installation of technology been documented and disseminated?
- To what extent has SIPP improved the understanding within the intervention LAs of the benefits of utilising street furniture and other assets for network deployment and how this can be delivered?

Each of the supplementary impact evaluation research questions is considered in turn in the sections that follow, each reflecting the outcomes expected to be achieved through the programme within the timescales of the evaluation.

In each case, CA is applied to the extent possible in order to assess the extent to which the relevant outputs and outcomes have been achieved, the strength of the causal linkages and what other factors could have influenced outcomes. Appendix 1 sets out more detail on the CA assessment for each causal link in the ToC.

To support this analysis, each section starts with a summary of the components of the ToC for SIPP relevant to the evaluation research question being considered. This summarises the relevant activities, outputs and outcomes that are expected to be delivered in order for the main objective of, as well as the longer term impacts from, the programme to be achieved, and the associated casual linkages that the analysis aims to test.

Each section then draws on evidence from the benefits trackers and other project or programme documentation, interviews with SIPP LAs, DSIT officials and UKTIN officials, surveys of manufacturers of poles, use case stakeholders and network

provider, as well as wider research and evidence where relevant, to answer the research question and draw conclusions around the impact of the programme.

4.2 Finding: To what extent has SIPP provided evidence of the benefits of utilising street furniture and other assets for network deployment?

4.2.1 Summary of activities, outputs and outcomes expected from the ToC

The ToC for SIPP identifies that to achieve its objective, and through this deliver longer term impacts, including increased installation of PAS 191 compliant poles, increased economic activity in intervention LAs, and use case specific impacts (e.g. improved air quality, reduced crime etc), there is a need for SIPP to provide evidence of the benefits of utilising street furniture and other assets for network deployment. Such evidence should increase understanding of the benefits and strengthen the case for subsequent investment in PAS 191 multi-purpose poles and associated use cases.

Progress of SIPP towards providing evidence of the benefits of utilising street furniture and other assets for network deployment is assessed by drawing on the ToC, considering whether the outputs and outcomes that are expected to lead to this outcome have been achieved and the extent to which the programme is considered to have contributed to their achievement.

For the programme to have provided evidence of benefits of utilising street furniture and other assets in network deployment, a number of activities and outputs or outcomes are required. These include:

- LAs need to have used DSIT funding to procure, fabricate and install PAS 191 standard multi-purpose poles, and through this, the poles need to have enabled the installation of other technology (use cases).
- The installation of multi-purpose poles should allow for the deployment of multiple use cases. Using match funding, SIPP areas need to have worked with partners to establish and install various different use cases (e.g. small cells, electric vehicle (EV) chargers, internet of things (IoT) applications, CCTV) on the multi-purpose poles.
- Use cases need to deliver cumulative financial or non-financial benefits that demonstrate the demand and value of multiple use cases deployed together.

Together, the outputs and outcomes set out above are expected to provide evidence of the viability and value of multi-purpose poles, and so the benefits of utilising street furniture and other assets in network deployment. In answering the research question, evidence of the delivery of these outputs and outcomes and the strength of the causal pathways is assessed in the following section.

4.2.2 Evidence on the extent to which SIPP has provided evidence of the benefits of utilising street furniture and other assets for network deployment

4.2.2.1 Use of DSIT funding to procure, fabricate and install multi-purpose poles

As set out in section 3.2 and in line with the chains of causality in the ToC, DSIT funding was spent on the procurement, fabrication and subsequent installation of multi-purpose poles across six SIPP areas. That section showed that most SIPP areas experienced challenges in the design, fabrication and installation of multi-purpose poles. Nevertheless, data from the benefits tracker, interviews and other programme documentation (presented in section 3.2) shows that in total, 31 multi-purpose poles were installed by the end of March 2025. This compared to an original target number of installations of 71. Following the programme extension, the number of multi-purpose poles installed increased across all six SIPP areas to 67 by August 2025, representing 94% of SIPP areas' originally targeted number of multi-purpose poles.

Five different manufacturers were procured through SIPP to fabricate the PAS 191 multi-purpose poles. Given the PAS 191 specification was published in April 2023, it is likely that SIPP was the first time these manufacturers had experienced the standard. This means that these manufacturers have a greater awareness of the standard and have demonstrated the ability to fabricate poles in accordance with the standard. However, the scale of PAS 191 poles fabricated for SIPP is very small in the context of the wider industry. For instance, there are over 7 million traditional street lighting columns in the UK. Assuming a 30 year lifespan for each column would suggest, on average, around 240,000 columns need to be replaced each year. Therefore, the volume of poles manufactured for SIPP is very small in the context of the wider street furniture market. This is supported by the statement made by SIPP areas (and set out in section 3.2.2.3) that the relatively small nature of the procurement was not seen as a priority for pole manufacturers who were more used to dealing with larger orders.

Whilst there were challenges with the design, fabrication and installation of multi-purpose poles, these challenges were overcome to allow for the installation of multi-purpose poles. Moreover, the evidence set out in section 3.2 suggested that many of the issues faced by LAs in the delivery of their projects were related to the fact that the programme was testing a new specification for street furniture (the PAS 191 specification). The experience and learning generated by SIPP should help LAs design, fabricate and install multi-purpose poles more effectively going forward. Therefore, whilst not delivered within the original programme timelines, outputs of the procurement, physical fabrication and installation of multi-purpose poles expected within the ToC had been largely achieved.

In terms of attribution, in interviews, all SIPP areas said that their projects would not have gone ahead without DSIT funding. Moreover, whilst there is evidence that other, non-SIPP, LAs had installed use cases on existing street furniture (see for instance: [City of London](#), [Hammersmith and Fulham](#) and [Edinburgh](#)), no publicly

available evidence was identified that suggested that PAS 191 multi-purpose poles had been installed elsewhere across the country¹⁸.

4.2.2.2 Match funding used to establish and install multiple use cases on PAS 191 poles

Delays to the installation of multi-purpose poles was found to have impacted the delivery of use cases on poles when compared to SIPP areas' original plans. By the end of the original programme timeline (March 2025), 25 use cases had been deployed compared to an estimate of at least 138 use cases set out in SIPP areas original applications. The delivered use cases included: one small cell; five CCTV deployments; three traffic management systems; two environmental monitoring systems; and 14 other use cases (principally display screens and audio speakers). By August 2025, an additional 33 use cases had been deployed totalling 58 use cases and consisting of more CCTV cameras, more air quality sensors, more traffic sensors and a small number of additional small cells (although not as many as had originally been planned).

Although initially planned, no EV charging points had been deployed as of August 2025. SIPP LAs reported that this was due to the longer timescales required for installation of EV charging points, which could not be delivered within the programme timeline.

Therefore, following the installation of poles, the deployment of multiple use cases had been progressing in line with the assumed outputs within the ToC, however, by August 2025 the use case deployment had been delayed and so was smaller in number than had originally been planned for. In addition, no EV charging points had been deployed and a lower number of small cells than originally expected had been deployed. For EV charging points the need to provide extra power to the pole, and the associated logistics coupled with the need to identify a partner and agree a revenue share agreement meant no SIPP area was able to deploy an EV charging point in the timescale of the programme. For small cells, partners in some SIPP areas did not go ahead with their originally planned deployments. In one instance this was put down to a lack of demand. In another the SIPP area said it was still in conversations with a Neutral Host for trials of small cells. This suggests that the assumption in the ToC in relation to the ease of deployment and timescales for delivery did not fully hold. This may have implications for the timings of end impacts being realised.

The ToC assumes that for SIPP to provide evidence of the benefits of utilising street furniture and other assets for network deployment, the PAS 191 poles need to successfully be used for the deployment of multiple use cases, providing for increased connectivity and more opportunity for new technology to be used. Evidence from benefits trackers, interviews, and other programme documentation

¹⁸ An internet search was conducted to identify multi-purpose pole projects and smart lamp posts implemented by UK local authorities. A variety of keywords were used in the search, including terms such as "PAS 191 poles"; "smart lamp post UK councils"; "smart street furniture local UK authority"; and "UK multi-purpose poles". Search results were then reviewed and filtered to prioritise official government and council websites/documents and press releases or reporting from technology companies or other recognised industry bodies. In addition, the five unsuccessful applicants to SIPP were emailed to ask if they had installed any PAS 191 poles. One area responded to say that they had not installed any poles.

(reported in section 3.2) identifies that, by March 2025, multiple use cases had been deployed on PAS 191 multi-purpose poles in four SIPP areas, with plans to deploy multiple use cases in the two other SIPP areas.

In terms of attribution to the programme, this testing of the deployment of multiple use cases would not have been possible on standard street lampposts because of structural concerns. That is, standard lampposts or street columns usually only have the structural capacity to host a single use case; not multiple use cases. As a result, there is considered to be a strong causal link between installation of the PAS 191 poles and the ability of areas to deploy and test multiple use cases.

4.2.2.3 Realised benefits from use cases

A further aspect of the ToC relevant to this evaluation research question concerns the benefits realised from use cases deployed on multi-purpose poles. The ToC assumes that the realisation of benefits from each use case deployed on a pole will help illustrate the benefits from installing PAS 191 poles and lead to greater use of such poles.

In relation to this, the benefits trackers and other programme documentation included little information or evidence in relation to the benefits of use cases deployed. This is largely because by March 2025, the date at which the last benefits tracker was supplied to DSIT, only 25 use cases had been deployed on multi-purpose poles and the vast majority of those had been deployed for a very short space of time. Indeed, a number of SIPP LAs said that the timing of the deployment of use cases (late in the programme, as shown in Figure 3.2) meant that it was too early to see the benefits from individual use cases. There is no evidence, therefore, that realised benefits from use cases have been achieved within the programme timescales. SIPP areas said that, as the use cases became operational, they expected benefits to emerge and these would be assessed over the next year or so.

Whilst use cases had yet to deliver benefits, three SIPP areas said that the poles themselves had demonstrated an increased capacity to host multiple use cases when compared to traditional street furniture. Moreover, most of the use cases that had yet to be operated on the multi-purpose poles have been used on other street furniture in the past and delivered benefits. This is the case with CCTV (reduced crime), traffic sensors (improved traffic flow), environmental sensors (like air quality sensors helping to reduce air pollution); small cells (improved connectivity) and EV charging points (reduced car pollution). Whilst these use cases have not been used on the same pole previously, the fact that they have been used and derived benefits on other street furniture provides confidence that they should do the same when operated on a multi-purpose pole. As noted above, based on the ToC, the realisation of end impacts will be dependent on such benefits emerging as expected.

4.2.3 Conclusion on the extent to which has SIPP provided evidence of the benefits of utilising street furniture and other assets for network deployment

By August 2025, installation of PAS 191 poles was in line with programme targets and 58 use cases had been deployed on multi-purpose poles across the SIPP areas,

with plans for more to follow in the coming months. SIPP LAs reported that SIPP had illustrated the viability of manufacturing and installing PAS 191 multi-purpose poles and had demonstrated the increased capacity that such poles have for hosting multiple use cases when compared to traditional street lampposts. However, within the original programme timescales (i.e. up to the end of March 2025), progress against expected outputs required for SIPP to provide evidence of the benefits of utilising street furniture and other assets for network deployment was limited. Moreover, delays to use case deployment meant that benefits of specific use cases had not yet been realised.

All SIPP areas reported that their projects would not have gone ahead without DSIT funding and there is no evidence of PAS 191 poles being installed elsewhere in the country. Furthermore, the installation of multiple use cases on certain other street furniture, like standard street lighting columns for example, is not structurally viable, therefore could only be done using PAS 191 poles (or a similar new alternative design). As a result there is considered to be strong evidence that outputs delivered are attributable to the programme.

The analysis identifies some weaknesses within the ToC. Specifically, challenges faced in the installation of poles and deployment of use cases and resulting delays may have implications for the timings of end impacts being realised. In addition, they may limit the benefits of PAS 191 poles and potential use cases. For example, no SIPP area was able to deploy EV charging as a use case and the number of small cells deployed was lower than originally expected.

Nevertheless, all SIPP areas intend to continue with, and add to, the use cases deployed on poles. Longer term, realisation of programme impacts will rely on use case benefits also being realised and evidenced to support the case for investment in more PAS 191 poles in the future.

4.3 Finding: To what extent have lessons learnt from SIPP around the procurement and installation of technology been documented and disseminated?

4.3.1 Summary of activities, outputs and outcomes expected from the ToC

The ToC for SIPP identifies that to achieve its objective, and through this deliver longer term impacts, including increased installation of PAS 191 compliant poles and new technologies, the programme needs to enable more efficient future deployment of poles and associated technologies. This is expected to be achieved through LAs identifying, documenting and disseminating lessons in relation to the procurement and installation of new technologies. The ToC assumes that by documenting and disseminating lessons learned, the time and costs of installation can be reduced for future deployment, making subsequent installation more viable and leading to more poles being installed.

Progress of SIPP towards achieving these outcomes is assessed by drawing on the ToC and by considering whether the outputs and outcomes that were expected to lead to this outcome had been achieved and the extent to which the programme was

considered to have contributed to their achievement. Specifically, the following outputs and outcomes are required:

- LAs need to have worked with partners to understand requirements for procuring and installing poles, and wider technology, leading to the deployment of poles and use cases in agreement with partners
- LAs need to have produced documentation on the procurement of poles and installation of new technology
- LAs need to have disseminated the lessons learnt e.g. through running of events or sessions including with other LAs
- DSIT and UKTIN officials need to spread learning across other LAs, including through the publication of guidance on procuring and installing PAS 191 poles.

Therefore, in answering the research question, evidence of the delivery of these outputs and outcomes and the strength of the causal pathways is assessed in the following section.

4.3.2 Evidence on the documentation and dissemination of lessons learnt

4.3.2.1 Work with partners to understand requirements for procuring and installing poles and wider technology

Section 3.5.2 showed that in their initial applications, SIPP areas identified various different stakeholders to work with on the SIPP project. Section 3.2.2.3 showed that SIPP areas experienced some challenges in delivering their projects to the original timelines, sometimes due to difficulties engaging stakeholders in the project (for various reasons). Nevertheless, section 3.2.2 shows that SIPP areas worked with stakeholders to overcome these challenges and by August 2025 all areas had fabricated and installed PAS 191 multi-purpose poles and most areas had deployed multiple use cases on the poles.

4.3.2.2 Documentation produced on the procurement of poles and installation of new technology

Based on interviews with SIPP areas, most SIPP LAs reported that documentation activity in the period to the end of August 2025 had been focused on technical specifications for future procurement and internal use. They reported that broader dissemination and learning had been limited. The technical specifications covered issues like: dealing with shallow foundations; the aesthetics of poles; and incorporating a variety of different use cases. In line with the ToC, such specifications provide information that would likely be useful for other LAs interested in procuring and installing multi-purpose poles in the future. In the interview, DSIT officials said that the quality of documentation on issues like procurement and installation varied (e.g. in terms of detail) but was considered to be adequate. In terms of attribution, this documentation relates to design and fabrication of PAS 191 multi-purpose poles for the individual SIPP projects which was a direct result of the programme.

Some SIPP areas said that they plan to develop documentation outlining the factors to take into account when considering the deployment of PAS 191 poles. These

areas said this documentation would provide guidance on when and where to locate multi-purpose poles as well as providing guidance on the processes or specifications required to deploy multi-purpose poles. However, there is no evidence that this activity had been delivered as of August 2025. In line with the ToC, such activity will be required if the longer term impact of increased installation of PAS 191 compliant poles and new technologies is to be delivered. Specifically, this type of documentation is expected to support different departments within LAs (involved in either the installation of multi-purpose poles or associated use cases) as well as LAs outside SIPP areas in future delivery of both multi-purpose poles and use cases.

4.3.2.3 Dissemination of lessons learnt

As set out in section 3.3, data from the benefits trackers showed that the spreading of knowledge outside the intervention area had varied across SIPP areas and been limited in the period to the end of August 2025. The data showed that four SIPP areas together had been involved in a total of 14 dissemination events by the end of August 2025, with two SIPP areas not having delivered a dissemination event by that point in time. Whilst, in the interview, DSIT officials noted that LAs had organised various internal dissemination activities as well as with other LAs, most dissemination that had occurred had been confined to the individual LA or with LAs in the immediate vicinity of the SIPP project. In terms of attribution, and as with documentation, the activity that has occurred has related to the PAS 191 multi-purpose poles which would not have happened without the initial design, fabrication and installation of poles (attributable to the programme).

Despite the limited dissemination by LAs of SIPP findings to August 2025, some SIPP LAs and other stakeholders noted that other areas and organisations had enquired about LAs' experience of installing multi-purpose poles. This suggests that the awareness of SIPP had increased outside of intervention areas. Whilst enquiries had been made, no evidence of multi-purpose poles being yet deployed elsewhere in the UK was found. In line with the ToC, dissemination of the lessons learnt from the delivery of SIPP projects will be required if the longer term impact of increased installation of PAS 191 compliant poles and new technologies is to be achieved. The greater awareness among non-SIPP areas of the potential benefits that could be derived from multi-purpose poles and practical guidance on how to design, procure and install such poles is expected to increase demand for more multi-purpose poles outside SIPP areas.

4.3.2.4 DSIT and UKTIN officials spread learning across other LAs

As set out in section 3.3.2, some SIPP areas had attended UKTIN's cluster meetings and UKTIN officials said that any relevant SIPP publications would be published on the UKTIN website. However, officials said there was not a UKTIN led proactive programme of dissemination specifically relating to SIPP.

By August 2025, DSIT officials had received closure reports from most SIPP areas which aimed to capture the LAs approach to their SIPP project and to highlight key findings (like outcomes, benefits and lessons learnt). However, at the time of the evaluation these had not been published and it was not clear whether or when the closure reports and any other documentation produced by SIPP areas might be

published on the UKTIN website or used by DSIT (or UKTIN) in other ways to spread the learning from the programme outside SIPP areas. As noted for the section on dissemination of lessons learnt above, if the longer term impact of increased installation of PAS 191 compliant poles and new technologies is to be achieved then dissemination of the findings from SIPP to non-SIPP areas is required. In line with the ToC, DSIT (potentially with UKTIN) have a role in pooling the learning across SIPP areas in order to produce a guidance note, or similar, on the procurement and installation of PAS 191 poles for all LAs across the country to use.

4.3.3 Conclusion on the documentation and dissemination of lessons learnt

To the point of the evaluation, the main documentation produced by SIPP areas related to updated technical specifications for the design and fabrication of PAS 191 multi-purpose poles. This information would likely be useful for other LAs interested in procuring and installing multi-purpose poles in the future.

However, the dissemination of these specifications and the wider lessons learnt from the experience of manufacturing and installing multi-purpose poles by August 2025 had been limited. This lack of dissemination both by SIPP areas and UKTIN or DSIT by August 2025, creates a potential weakness in the chains of causality in the ToC and potentially threatens the wider adoption of PAS 191 poles.

For end impacts to materialise in line with the ToC, it would require that the SIPP areas document the lessons learnt from the fabrication and installation of multi-purpose poles as well as the benefits derived from the use cases deployed on them and disseminate such findings widely. This would help increase the understanding among other LAs and organisations in the area and outside of the practicalities of the procuring and installing multi-purpose poles and their benefits and so help deliver the end impact of more poles installed. However, whilst the individual LAs involved in SIPP may disseminate these learnings through their normal course of business both internally and with other local LAs, there are no clear plans for wider dissemination either by SIPP areas or UKTIN or DSIT at this stage of the programme to areas that did not receive SIPP funding.

4.4 Finding: To what extent has SIPP improved the understanding within the intervention LAs of the benefits of utilising street furniture and other assets for network deployment and how this can be delivered?

4.4.1 Summary of activities, outputs and outcomes expected from the ToC

The ToC for SIPP identifies that to achieve its objective, and through that deliver longer term impacts including increased installation of PAS 191 compliant poles and new technologies, and subsequent use case specific impacts to be achieved, the programme needs to have led to an improved understanding within intervention LAs of the benefits of utilising street furniture and other assets for network deployment and how this can be delivered.

The ToC assumes that by improving this understanding within intervention LAs, the efficiency of subsequent installation of PAS 191 poles can be increased – reducing the time and costs of installation – and a stronger and more informed case for investment in network deployment leading to increased investment and associated use case benefits.

Progress of SIPP towards achieving these outcomes is assessed by drawing on the ToC and by considering whether outputs and outcomes that are expected to lead to this outcome have been achieved and the extent to which the programme is considered to have contributed to their achievement. Specifically, the following outputs and outcome are required:

- LAs need to have worked with partners to understand requirements for procuring and installing poles, and wider technology, leading to the deployment of poles and use cases in agreement with partners
- In relation to the above outputs, the ToC assumes that the process of procuring and installing poles and wider technology is achievable within the timescales of the programme as well as being repeatable post-SIPP
- LAs need to have identified benefits of use cases (e.g. small cells, electrical vehicle (EV) chargers, internet of things (IoT) applications, CCTV) facilitated via installation of multi-purpose poles
- This knowledge and understanding needs to have been disseminated within SIPP LAs

Therefore, in answering the research question, evidence of the delivery of these outputs and outcomes and the strength of the causal pathways is assessed in the following section.

4.4.2 Evidence on the extent to which SIPP improved understanding within LAs of the benefits of using street furniture for network deployment

4.4.2.1 LAs work with partners to understand requirements for procuring and installing poles

Section 3.5.2 showed that SIPP areas identified various different stakeholders to work with on the SIPP project including pole manufacturers; MNOs; and Highway or Civil contractors (involved in the installation of the poles) among others. Section 3.2.2.3 showed that SIPP areas experienced some challenges in delivering their projects. Section 3.2.2 showed that SIPP areas worked with stakeholders to overcome these challenges and by August 2025 all areas had fabricated and installed PAS 191 multi-purpose poles and most areas had similarly deployed multiple use cases on the poles. This suggests that LAs worked effectively with partners to understand the requirements for procuring and installing poles.

4.4.2.2 Process of procuring and installing poles is achievable within the timescales of the programme as well as being repeatable post-SIPP

The fact that all SIPP areas were delayed in installing their multipurpose poles, together with the fact that two areas needed an extension to the original timelines in order to install their multipurpose poles, suggests that the procuring and installing of

multi-purpose poles within the original timescales of the programme was challenging. As set out in Section 3.2.3, many of the factors that led to delays might be considered part of the normal learning process that organisations go through when procuring and installing a new product or service and relate to the focus of the programme on testing a new specification for street furniture (the PAS 191 specification). Nevertheless, by August 2025 the vast majority of originally planned poles had been installed and LAs will have learnt from this process, suggesting that future instalments might be conducted more efficiently and speedily.

In the interview, DSIT officials said that whilst the programme fell short of ambitious numerical targets for pole installations (to original timelines), they believed it had succeeded in meeting the broader objective of strengthening LA capabilities in the use of street furniture for advanced connectivity services. Indeed, all SIPP areas said that SIPP had improved their understanding of smart infrastructure possibilities. In line with the chains of causality in the ToC, LAs said that the projects had, through the design, fabrication and installation of PAS 191 multi-purpose poles, created new internal capacity and knowledge around the technical and practical deployment of smart infrastructure. This included a better understanding of aspects such as the requirements for an effective procurement; planning requirements; the integration of poles with existing infrastructure and systems; and operational and maintenance requirements. Given all SIPP areas said their projects would not have gone ahead without DSIT funding and given the lack of evidence of multi-purpose poles being installed elsewhere in the country this improved understanding is attributable to the SIPP programme.

Moreover, evidence from the network provider and use case stakeholder surveys (see Appendix 2) shows that eight out of the nine respondents to this question across the two surveys said that SIPP had increased their understanding of the benefits of street furniture for network and use case deployment. Eight out of nine respondents to this question in the two surveys also said that SIPP had created an ongoing relationship with the LA that would facilitate future engagement or activity. This provides further supporting evidence to the finding that LAs have increased their understanding of the benefits of using street furniture because it shows effective collaboration between the LAs and other stakeholders (one of the activities in the ToC) in both the fabrication of poles and also the deployment of use cases on poles.

4.4.2.3 LAs identify the benefits of use cases

Section 4.2.2 showed that there was no evidence, by August 2025, that benefits had been realised from use cases within the programme timescales. However, three SIPP areas said that whilst use cases had yet to deliver benefits, the poles themselves had demonstrated an increased capacity to host multiple use cases when compared to traditional street furniture. Another potential benefit deriving from the use of multi-purpose poles mentioned by one SIPP area was the potential reduction in street clutter, providing more space for pedestrians as well as a better looking street environment. Furthermore, (as illustrated further in the economic evaluation section, Section 5) most of the use cases that had yet to be operated on the multi-purpose poles have been used on other street furniture in the past and

delivered benefits which provides confidence that they should do the same when operated on a multi-purpose pole.

4.4.2.4 Knowledge and understanding is disseminated within SIPP LAs

In the interview, DSIT officials noted that LAs had organised various internal dissemination activities and that most dissemination that had occurred to August 2025 had been confined to the individual LA or its immediate vicinity.

However, one issue that SIPP areas raised, in the context of LAs' understanding the benefits from smart infrastructure, was the range of different LA departments or sections potentially involved in the deployment of smart infrastructure. A number of LAs said that the integration of multi-purpose poles with existing LA infrastructure and services was not straightforward due to the different responsibilities and objectives of different LA departments. For instance, the objectives of the street lighting department were not always aligned with the objectives of the environment department or the digital or connectivity services department which sometimes caused issues in the implementation of multi-purpose poles (and their associated use cases). This meant that in order for PAS 191 multi-purpose poles to be incorporated into LAs' future plans, coordination across different LA departments would be necessary as well as these departments also being convinced of the value of multi-purpose poles.

4.4.3 Conclusion on the extent to which SIPP improved understanding within LAs of the benefits of using street furniture for network deployment

Given the stage of delivery of most projects at the time of the evaluation, most of the improved understanding within LAs from their SIPP projects related to technical and practical installation aspects (i.e. the fabrication and installation of PAS 191 poles). Evidence from the interviews and programme documentation suggests the LAs that led SIPP projects have learnt a lot in terms of how best to procure the manufacture and installation of multi-purpose poles. This learning ranges from what bodies to involve in the initial design of the project through to the practical issues to be considered in the installation of poles. Whilst there are examples of other LAs installing single use cases on street furniture, there is no widespread evidence of LAs deploying multiple use cases on either poles or other street furniture, suggesting that the improved understanding is attributable to the programme.

As the use cases deployed on multi-purpose poles become operational, LAs expect to learn more about the benefits that can be derived from having multiple use cases on a single pole. At this stage, the expectation is that the benefits from multiple use cases deployed on a multi-purpose pole will be at least as great as the sum of the same use cases being deployed, individually, on existing street furniture. The use of multi-purpose poles might also lead to reduced street clutter and an increased density of use cases, like CCTV or air quality monitors for example. Evidence from the stakeholder surveys suggest that effective relationships have been developed with LAs. Assuming that benefits are derived from the multiple use cases deployed on multi-purpose poles, then these relationships could help the future installation of multi-purpose poles and associated use cases.

4.5 Conclusion on the impact evaluation research question

The main objective of SIPP was to improve the understanding and realisation of the benefits of utilising street furniture and other assets for network deployment. For the evaluation, the overarching evaluation research question is: to what extent did SIPP achieve the outcomes it set out to achieve within the timescale of the evaluation and to what extent can these outcomes be attributed to the programme? To help answer this overarching question, additional supplementary research questions drawn from the development of the ToC were drafted. This concluding section considers the findings from the analysis for each of the supplementary evaluation research questions.

Evidence of the benefits of utilising street furniture and other assets for network deployment

- By August 2025, DSIT funding had been used to design, fabricate and install multi-purpose poles across the six SIPP areas involved in the programme. The vast majority of multi-purpose poles originally planned for by SIPP areas had been installed by August 2025. Moreover, a number of use cases had been deployed on the multi-purpose poles. To that end, SIPP has demonstrated that PAS 191 poles can be manufactured and installed and can host more use cases than traditional street lampposts.
- All SIPP areas said their projects would not have gone ahead with DSIT funding and there is no evidence of PAS 191 poles being installed elsewhere in the country. As a result, the design, fabrication and installation of these multi-purpose poles is considered to be attributable to DSIT funding.
- However, very few benefits from use cases had yet to be realised. Moreover, no SIPP area was able to deploy EV charging as a use case and the number of small cells deployed was lower than originally expected.
- All SIPP areas intend to continue with, and add to, the use cases deployed on poles which, in time, should illustrate the benefits achievable from multi-purpose poles. In line with the ToC if such benefits are realised, this should support the installation of more PAS 191 poles in the future.

Evidence on whether the lessons learnt from SIPP around the procurement and installation of technology have been documented and disseminated

- All SIPP areas have updated their procurement specifications following their experience of the programme. In terms of attribution, this documentation relates to design and fabrication of PAS 191 multi-purpose poles for the individual SIPP projects which was a direct result of the programme. A number of SIPP areas also intend to further develop their documentation to support the procurement and installation of future multi-purpose poles. However by, August 2025, documentation and dissemination activities by SIPP areas had been relatively limited and confined to the individual SIPP LAs (or LAs in close proximity to SIPP areas). At the time of the evaluation, it is not clear how any future documentation produced by LAs in relation to the fabrication and installation of PAS 191 poles – or the benefits from using such poles – will be disseminated more widely.

Evidence on the extent to which SIPP improved the understanding within LAs of the benefits of utilising street furniture for network deployment and how this can be delivered

- All SIPP areas said they had improved their understanding of how to procure and install PAS 191 multi-purpose poles as a result of their projects. All SIPP areas also said they had developed relationships with various stakeholders involved in both the manufacture and installation of poles as well as those who would use poles. Going forward, if the multiple use cases deployed on multi-purpose poles prove their value, then these improved relationships (which were also reflected by stakeholders in their survey responses) will help in the delivery of future smart infrastructure.

Overarching conclusion

- Taking all this evidence together, SIPP has delivered the vast majority of the multi-purpose poles proposed by areas, on which DSIT grant funding was required to be spent. SIPP areas stated that, in doing so, the programme has improved their understanding of the practicalities of procuring and installing multi-purpose poles – the main objective stated for the programme. Moreover, the evidence suggests that these outcomes are wholly attributable to DSIT funding.
- Nevertheless, use cases are yet to provide evidence of realisable benefits which, in line with the ToC, is a necessary condition for LAs to understand fully the value that PAS 191 multi-purpose poles can bring. Moreover, dissemination activity has been limited and it is not clear whether future learning, for example from the realisation of benefits from use cases installed on PAS 191 poles, will be disseminated outside SIPP areas. In order for the longer term impact of more PAS 191 poles being installed across the country to be achieved both the realisation of benefits from use cases and the dissemination of learning outside SIPP areas will be required.

5 Findings of the economic evaluation

5.1 Introduction

The findings set out in the following sections seek to answer the economic evaluation research question which is:

- Is there evidence that the benefits from some of the use cases delivered by SIPP to date outweigh the costs?

As noted in section 2, this evaluation research question reflects the fact that, at the time of the evaluation, a full cost-benefit analysis of the programme was not possible because many of the future outcomes and impacts targeted by the programme had not been evidenced or achieved.

To answer the research question, the costs of PAS 191 standard multi-purpose poles are investigated and these costs compared against the benefits that might be expected to derive from use cases deployed on the poles. Information from the benefits trackers, closure reports, interviews and surveys as well as wider information drawn from existing relevant literature are used to produce an assessment of the nature and scale of benefits that can be expected by LAs installing PAS 191 poles as compared to their costs.

5.2 Finding: Is there evidence that the benefits from some of the use cases delivered by SIPP to date outweigh the costs?

5.2.1 Costs of multi-purpose poles

Given SIPP tested the viability of manufacturing and installing PAS 191 multi-purpose poles for the first time, established market prices for PAS 191 poles are difficult to find. Estimated costs are therefore based on costs provided by SIPP areas relating to their own procurement of poles.

Estimates of the cost of multi-purpose poles varied significantly across SIPP areas. Reported costs across five of the six SIPP areas for which cost figures were available, and relating to 61 poles, ranged from just over £6,000 to just under £35,000 per column.

Table 5.1 sets out the range of cost estimates provided by SIPP areas together with the mean, mode and median of the estimates.

Table 5.1: Range of PAS 191 multi-purpose pole costs (figures rounded to nearest £100)

Lowest cost	Mode (most frequent cost)	Median (midpoint cost)	Mean cost (simple average)	Highest cost
£6,200	£8,200	£11,200	£13,500	£34,500

Source: KPMG based on benefits trackers, closure reports, interviews and surveys (relating to 61 procured poles)

Based on information provided by SIPP areas, the difference in costs appeared to largely reflect differences in the exact nature of the pole procured, with costs for different types of poles varying within some individual SIPP areas. For instance, higher costs pertained to poles that were designed with specific aesthetics; designed to be installed with shallow foundations; or designed with particular use cases or functionality already incorporated.

The fact that the mean cost of a multi-purpose pole is above both the mode and median suggests that the mean is skewed upwards by a few high cost poles estimates, with eight of the 61 poles for which we were provided data having a cost of over £20,000 associated with them. Reflecting this, for the purposes of the analysis the median value is used as the central estimate of the cost for a multipurpose pole (£11,200).

It should however be noted that, as illustrated by the high and low values in Table 5.1, there is a lot of variation in reported costs, meaning there is uncertainty around this average figure. Furthermore, it is possible that the median cost, though below the mean value, is still at the higher end of what might be considered the longer term cost. This is because the cost might be expected to fall over time were the use of PAS 191 poles to become more commonplace, meaning increased production, and potential for a reduction in costs as a result of economies of scale and increased competition; this point is considered in section 5.2.3.

Therefore, in what follows, whilst this central cost estimate is used for the purposes of estimating a central net present value for PAS 191 multi-purpose poles, supplementary analysis is provided on how the net present value would change for different cost values.

5.2.2 Benefits of multi-purpose poles

As set out in section 3.2, by August 2025, 58 use cases had been deployed on multi-purpose poles across the six SIPP areas. These use cases consisted of some small cells; CCTV cameras; air quality monitors; traffic sensors; display screens; and audio speakers. However, given the very limited time that these use cases had been deployed for, there was no robust evidence from SIPP areas' on the benefits derived from them. As a result, various sources are drawn on to estimate what the potential benefits accruing to multi-purpose poles might be.

5.2.2.1 Overarching benefits

The principal value of PAS 191 multi-purpose poles is that they are designed to accommodate a number of use cases in a way that other street furniture, like conventional street lighting poles for example, cannot. Grouping use cases together allows for multiple revenue and non-revenue benefits to be achieved from a single pole in a way that is not possible with most other street furniture, including a standard lamppost.

One SIPP area said that it was increasingly receiving multiple use case requests for some traditional street lighting columns. It said that accommodating the multiple requests was not possible on its standard lampposts because the result would be

failed structural tests for the additional load. The SIPP area said that going forward, in these scenarios, it would be requesting a PAS 191 post where possible (so the post could accommodate multiple use cases). Similarly, another SIPP area said that the benefit of the multi-purpose poles was that they had allowed for the deployment of additional equipment in a way that existing traditional street furniture, like street lighting columns, could not (given structural capacity constraints). The SIPP area said that in order to accommodate the same amount of equipment, two street lighting poles would have been required – each with its own power supply and annual maintenance fee going forward. One SIPP area said that the use of multi-purpose poles could, in some instances, reduce street clutter and provide more space for pedestrians as well as a better looking street environment.

For SIPP, use cases included small cells, EV charging, CCTV, traffic management systems and environmental monitoring systems. Estimates of the benefits that can be derived from these different use cases are set out below.

5.2.2.2 Revenue benefits

In interviews, SIPP areas identified the main revenue raising opportunities from the use cases deployed on multi-purpose poles as being small cells and electric vehicle charging points. One SIPP area also highlighted potential advertising revenue from electronic display screens. That SIPP area said that whilst it did not have any plans to generate advertising revenue from the screens during SIPP timelines, the potential was there in the longer term. In assessing the revenue potential from multi-purpose poles, the two use cases cited by all SIPP areas are considered: small cells and EV charging. Potential revenue from advertising screens is not assessed because only one SIPP area highlighted this as a potential use case and that SIPP area didn't have plans to use the screens for advertising at the time of the evaluation. The same reasoning applies to audio speakers.

Small cells

- SIPP areas said a small, annual, payment was possible from the small cell owner in terms of rent. Some SIPP areas said the return from small cells could be more than just the annual rental – for instance a commercial revenue share agreement (where the LA receives a portion of the revenue generated from network sharing) – although this would depend on the exact nature of the agreement.
- Data from the interviews with SIPP areas estimates the monetised benefit of a small cell to be around £300 per annum per multi-purpose column.¹⁹ This is consistent with existing evidence from 2022 published by [West Midlands 5G](#) which suggests a rental fee £250 - £300 per small cell, per year is, “fair and reasonable”.

¹⁹ Based on interviews, four different SIPP areas estimated the return from small cells as being: £350; £300; £300; and 'a few hundred pounds' per annum.

EV charging

- SIPP areas said a revenue share model was likely with an EV service provider. In this arrangement the LA would take a share of any revenue raised by the EV charging point.
- Data from [Hammersmith and Fulham London Borough Council](#) estimated that one EV charging facility could generate an annual income of around £1,770 (when averaged over 5 years and assuming strong income growth over the 5 years). However, this income would then need to be split between the service provider and the LA. In the Hammersmith and Fulham instance the revenue share was assumed to be 95% to the service provider and 5% to the LA – equating to an annual average of approximately £89 to the LA per multi-purpose column.

Table 5.2: Estimated revenue benefits from small cells and EV charging points

Small cell rental (£ p.a)	EV charging point (£ p.a)
£300	£89

Source: KPMG based on closure reports, interviews and wider research

5.2.2.3 Non-revenue benefits

SIPP areas said that a number of use cases deployed on multi-purpose poles, like CCTV cameras and environmental or traffic sensors for example, incurred a cost to the LA and did not, usually, generate any revenue. However, such use cases were usually deployed to generate wider, non-revenue, benefits.

The potential benefits from such non-revenue generating use cases are set out below.

5.2.2.4 CCTV

A study from the [College of Policing](#) found that CCTV was associated with a statistically significant reduction in crime, with overall crime rates around 13% lower in areas with CCTV compared to those without, across a range of settings. Whilst this reduction in crime will not be directly attributable to a single CCTV use case installed on a multi-purpose pole, it does demonstrate that increased CCTV coverage could result in lower crime in the area covered by such a camera. For instance, the existence of the camera might result in less property crime (e.g. vehicle crime, vandalism; retail theft; and, or, burglary) and potentially less street crime (e.g. robbery), and thus reduce the societal cost of these. The benefit of a CCTV installation on a multi-purpose pole is likely to be increased CCTV coverage (i.e. allowing for more CCTV cameras to be installed in an area than might otherwise be the case) and, potentially, as a result, a lower level of displacement of crime.

Monetised values of the cost of crime are produced by the [Home Office](#). This illustrates that, the cost as a consequence of robbery (i.e. the costs incurred by the individual as a result of the crime) was estimated at £8,350 with additional costs of

£6,200 in response to the crime (i.e. the costs to police and criminal justice system of dealing with the crime)²⁰. The costs of other crimes like domestic burglary and theft of a vehicle both have estimates of over £4,000 as the cost as a consequence of the crime (with additional public costs from dealing with the crime). This suggests that were the additional CCTV coverage provided for by a multi-purpose pole to reduce crime (including displaced crime) there could be associated societal benefits. Indeed, if the additional CCTV camera were to lead to one fewer vehicle theft for example, then the annual benefit (spread over the assumed 30 year lifetime of a multi-purpose pole) would be around £206 (in terms of avoided costs to the individual only).

5.2.2.5 Traffic sensors

Increased traffic sensor coverage could result in better traffic management and flow in the area covered by the sensor (and beyond). The benefit of a traffic sensor on a multi-purpose pole is likely to be increased coverage of the road network and therefore improved traffic management particularly in areas of high congestion and/or where existing poles are more dispersed. One of the main potential benefits derived from [improved traffic management](#) and flow is reduced travel time. One [study](#) of a traffic monitoring system demonstrated that such interventions can substantially ease congestions, with traffic flow efficiency improving by 25% to 40% and associated vehicles emissions decreasing by over 20%.

Monetised values of the [benefit](#) from reduced travel time are provided by the [Department for Transport \(DfT\)](#). The exact value of any improvement in traffic management will depend on factors including: the volume of traffic affected; the nature of existing congestion and traffic; and the nature of the journeys most affected by any improvement (e.g. commuting journeys and, or, leisure journeys). DfT guidance provides monetised values on the value of time to road users ranging from over £27 per hour for a car driver travelling on business to around £7 per hour for a road user travelling for leisure purposes. Whilst the exact value of improved traffic management will vary by location, this suggests that were the additional traffic coverage provided for by a multi-purpose pole to reduce travel time for road users there would be commensurate societal benefits. For example, assuming average vehicle usage for A-roads and minor roads; applying the improvements in traffic flow set out above to average estimates of delays from DfT statistics; and using the leisure value of time from DfT TAG, suggests that a traffic monitoring scheme could provide benefits of at least £54 per annum for a minor road and £500 per annum for an A-road. These values would be greater in urban areas than in rural areas. However, it should be noted that these estimates of the benefits from traffic flow schemes would accrue to the whole traffic flow scheme – not to an individual traffic flow monitor.

5.2.2.6 Environmental sensors

Increased environmental sensor coverage, for example air quality sensors, could result in a better understanding of air quality in the area covered by the sensor. The benefit of an environmental air quality sensor on a multi-purpose pole is likely to be increased coverage of data on air quality across the LA concerned. One potential

²⁰ It should be noted that the Home Office publication provides these costs in 2015/16 prices. The costs have been updated to 2024/25 prices using the UK GDP deflator series (and rounded to the nearest £100).

benefit derived from improved air quality monitoring is the ability to then implement policies to better manage and reduce emissions in the area. [The Breathe London Pilot](#) demonstrated how expanding sensor coverage provided a granular picture of London's air quality, revealing street-level variations in Nitrogen Dioxide (NO₂) and Particle Matter (PM) exposure. These insights have since been used to inform data-driven solutions and support policy measures such as low-emission zones and targeted interventions around schools and busy roads.

Monetised values of the potential benefit from reduced emissions are provided by [DfT](#). The exact value of any improvement in air quality will depend on a range of factors in the area including the nature of the area (e.g. rural or urban) and the main source of air pollution in the area. DfT guidance provides monetised values on the value of reducing emissions and so improving air quality. For example, the central value of reducing one tonne of PM_{2.5}²¹ emissions ranges from just over £28,000 (in a rural area) to £500,000 in central London and the central value of reducing one tonne of NO_x ranges from just over £4,000 up to £67,000 in central London. By way of context, whilst larger in scale than use cases within SIPP areas, the [London Ultra Low Emission Zone \(ULEZ\)](#) scheme 6 month report estimated a saving of almost 6 tonnes of PM_{2.5} across London and 424 tonnes of Nox as a result of the ULEZ scheme. Using the central London values cited here that would equate to a benefit of around £31 million. Whilst the exact value of improved air quality will vary by location and the nature of air quality improved, this suggests that were the additional coverage of air quality provided for by a multi-purpose pole able to reduce emissions there would be associated societal benefits.

5.2.3 Assessment of costs and benefits

5.2.3.1 Financial net present value of a multi-purpose pole

To quantify the net financial benefits that might be attributable to a PAS 191 pole over the longer term, the cost estimates outlined earlier were compared with the revenue benefits that could accrue to PAS 191 multi-purpose poles over time. To do this the central estimate of the cost of a PAS 191 pole, £11,200, was compared, over an assumed 30 year lifetime (with various [sources suggesting](#) that [30 years](#) is a reasonable period to use), with the revenue benefits of a small cell and EV charging point.

Drawing on the analysis of revenue benefits above, this calculation assumes:

- the LA receives £300 per annum (rising by 2% inflation each year) for one small cell to be deployed on the multi-purpose pole
- the LA receives £89 per annum (rising by 2% inflation each year) for an EV charging point to be deployed on the pole
- the cost of the multi-purpose pole is £11,200 (median cost pole)
- all benefits over the 30 year period are discounted using a discount rate of [3.5%](#)

²¹ PM_{2.5} refers to fine particulate matter with a diameter of 2.5 micrometers or less, which are tiny particles suspended in the air that can penetrate deep into the respiratory tract and lungs, causing serious health problems.

Based on this, and accounting only for cashable costs and benefits, the net present value of the PAS 191 pole over the 30 year period is -£5,600. That is, there is a net cost of £5,600 in present value terms from installing and using the PAS 191 pole.

The net present value calculations set out above, do not account for wider societal benefits that might accrue to the PAS 191 pole from other, non-revenue generating, use cases that might be deployed on the pole. As noted in section 5.2.2 there are a number of societal benefits that could accrue to other use cases which could be deployed on the multi-purpose pole. Based on the assumptions applied, and as shown in Table 5.3 below, these other use cases would need to generate £386 per annum or more in societal benefits to deliver a positive net present value for the median cost multi-purpose pole. Given the range of values outlined in section 5.2.2 for these different use cases (i.e. CCTV, traffic sensors and environmental sensors), generating this scale of societal benefits does not seem unreasonable.

As a result, PAS 191 multi-purpose poles are likely to be the street furniture of choice for LAs in certain strategic locations where there is a demand for multiple use cases to be installed; this is most likely to be in densely populated urban areas. Indeed, as a result of its SIPP project, one SIPP area increased the number of multi-purpose poles it installed. This suggests that the SIPP area saw the installation of another multi-purpose pole as a good use of its funds.

Reflecting uncertainty in relation to the relevant costs, Table 5.3 below sets out similar net present value calculations for each of the different multi-purpose pole cost estimates (i.e. maximum cost, mean cost, median cost, mode cost and minimum cost). As well as the net present value, the scale of annual non-revenue benefits required to make the net present value positive is set out.

Table 5.3: Net present value of PAS 191 multi-purpose pole (£)

	Min	Mode	Median	Mean	Max
Cost of multi-purpose pole (£)	6,200	8,200	11,200	13,500	34,500
Revenue benefit (£pa)	389	389	389	389	389
Net Present Value (£ over 30 year appraisal period)	-600	-2,600	-5,600	-7,900	-28,900
Required non-revenue benefit to break-even (£pa)	40	179	386	545	2,000

Source: KPMG based on benefits trackers, closure reports, interviews, surveys and other literature

5.2.3.2 Potential future impact of economies of scale

As noted above, it may be that costs for multi-purpose poles could fall in time through economies of scale, improving the value for money of installation. [Literature on economies of scale](#) suggests that cost reductions of up to 25-30% with each doubling of cumulative output are common for different sectors of the economy. Of the industries covered in empirical estimates, ‘machining’ might be considered as the industry most aligned to the manufacturing of multi-purpose poles. For machining, [empirical estimates](#) suggest that reductions in cost of between 5-20% with a

doubling of cumulative output might be expected. Empirical estimates for the reduction in costs from machining vary depending on the extent of 'manual assembly' involved in the manufacture of the relevant good/product. For the purposes of estimation, it is assumed that the manufacture of a multi-purpose pole might involve 75% machining and 25% manual assembly; this results in a 10% empirical estimate for the reduction in costs for every doubling in output.

To use this type of information to estimate the potential reduction in costs for a multi-purpose pole requires an estimate of the longer-term potential size of market for multi-purpose poles. As noted earlier, SIPP areas said that multi-purpose poles would not be a direct like-for-like replacement to a standard street lighting column; multi-purpose poles are seen as being more viable in urban areas with high footfall or high levels of traffic rather than rural areas. Estimating the future size of a potential market is very speculative and highly uncertain. However, for the purposes of estimation it is assumed that the future size of the multi-purpose pole market in the UK might be similar in size to the number of traffic lights across the UK. The reasoning for this is that traffic lights are likely to be used more frequently in urban areas where there are high volumes of vehicular traffic, or for pedestrian crossings, which are areas where the demand for multi-purpose poles might also be high (for CCTV, traffic sensors, air quality sensor deployment for example). Available estimates of the number of traffic lights include the [RAC](#), which in 2011 estimated the number of traffic lights in the UK at 25,000 and a more recent estimate that there are [more than 33,000](#) traffic lights across the UK. A figure between these two estimates, of 30,000, is used as a proxy for the potential number of multi-purpose poles in the future and results in an annual requirement of around 1,000 multi-purpose columns (assuming a thirty year lifespan). This figure is around 15 times greater than the 69 multi-purpose poles procured for SIPP.

Based on the assumed 10% reduction for every doubling of output, and annual production of 1,000, then the median cost of a multi-purpose pole would fall from £11,200 to around £7,300 (an overall reduction of 34%) in the long term.

However, the literature on economies of scale in [multi-product firms](#), suggests that manufacturing firms exploit most if not all product-specific economies on the best-selling 20% of their products, and fall short of realising minimum costs on the remaining low-volume items. All the manufacturers of multi-purpose poles used in SIPP also manufacture traditional street light columns for which the volumes will be greater than the volumes for multi-purpose poles. Therefore, there is a question as to how much more costs would reduce for multi-purpose poles, given they are unlikely to become the main product produced by these firms (because of the size of the street lighting column market in comparison).

In line with the literature on multi-product firms, if we assume that only half of the cost savings materialised in the long run, the median cost of a multi-purpose pole would fall to around £9,300. It should be noted that it would take time for this cost reduction to materialise so the calculation here is best considered as what the assessment might look like in the longer term.

Table 5.4 below sets out net present value calculations for each of the different multi-purpose pole costs (i.e. maximum cost, mean cost, median cost, mode cost and minimum cost) assuming the full empirical 10% long-run cost reduction is applied as well as the cost-reduction consistent with the evidence on multi-product firm cost reductions. As well as the net present value, the scale of annual non-revenue benefits required to make the net present value positive is set out.

The table shows that, assuming the same revenue benefits as used earlier, and assuming the multi-product firm reduction in cost, then the median cost multi-purpose pole would result in a net present value of -£3,700 (that is, there is a net cost of £3,700 in net present value terms from using the PAS 191 pole). The median pole would, therefore, require annual non-revenue benefits from the other additional use cases totalling £253 for the net present value to turn positive.

The table shows that assuming the multi-product firm long-run cost reduction and assuming the revenue benefits set out earlier, the lowest cost multi-purpose pole generates a positive net present value. The table also shows that if the higher cost reduction from economies of scale were applied then both the minimum cost pole and the mode cost multi-purpose pole would generate positive net present value (assuming just the revenue benefits set out earlier).

Table 5.4: Net present value of PAS 191 multi-purpose pole assuming reduced costs through the exploitation of economies of scale (£)

	Max	Mean	Median	Mode	Min
Reduction in costs from half long-run economies of scale					
Cost of multi-purpose pole (£)	28,600	11,200	9,300	6,800	5,100
Revenue benefit (£pa)	389	389	389	389	389
Net Present Value	-22,900	-5,600	-3,700	-1,200	500
Required non-revenue benefit to break-even (£pa)	1,600	385	253	81	-
Reduction in costs of full long-run economies of scale					
Cost of multi-purpose pole (£)	22,600	8,900	7,300	5,400	4,100
Revenue benefit (£pa)	389	389	389	389	389
Net Present Value	-17,000	-3,200	-1,700	200	1,600
Required non-revenue benefit to break-even (£pa)	1,200	224	120	-	-

Source: KPMG based on benefits trackers, closure reports, interviews, surveys and other literature

5.2.3.3 Deploying use cases on PAS 191 poles when compared with other street furniture

To this point, the benefits derived from multiple use cases have been set against the costs of procuring a multi-purpose pole only. However, in a number of instances the choice facing LAs is likely to be whether to install a multi-purpose pole or some other

piece of street furniture. In such instances the LA would be considering the relative costs and benefits of the multi-purpose pole, compared to those associated with an alternative piece of street furniture.

Whilst not a direct substitute, the main other piece of street furniture that SIPP areas compared the multi-purpose pole to was the traditional street lighting column. In interviews, SIPP areas said that, in most instances, the PAS 191 multi-purpose pole would likely take the place of an existing street lighting column which was to be replaced. Evidence from the interviews, programme documentation and external sources suggests that the cost of a standard street column varies depending on the exact nature of the column. As illustrated in Table 5.5 below, the evidence suggests that the cost of a standard column might be expected to range from around £1,000 to £7,100, with two SIPP areas stating the usual cost of a street column as being £2,500.

Table 5.5: Range of standard street column costs (figures rounded to the nearest £100)

Lowest cost	Mode (most frequent cost)	Median (midpoint cost)	Mean cost (simple average)	Highest cost
£1,000	£2,500	£2,500	£3,200	£7,100

Source: KPMG based on benefits trackers, closure reports, interviews and surveys

Evidence from the interviews and other project documentation suggests that traditional street lighting columns would, structurally, be able to host one use case only. This means that the costs of a multi-purpose pole with 5 use cases on it (e.g. small cell, EV charging point, CCTV, environmental monitor and a traffic monitor) would need to be compared with the costs of 5 separate standard street lighting columns (with the same 5 different use cases spread across the 5 columns). For this comparison, which assumes the benefits (from the 5 different use cases) are the same in both cases, the multi-purpose pole would be more cost effective (i.e. the multi-purpose pole cost of £11,200 being less than 5 times the median cost of a standard street lighting column (£12,500)). This calculation does not account for installation costs, which would be higher for the standard street lighting columns (i.e. given the need to dig up 5 separate locations as compared to one with the multi-purpose pole) or the potential for the cost of multi-purpose poles to fall over time. These latter two factors suggest that a multi-purpose pole with 4, or possibly even 3, use cases deployed would be more cost effective than deploying the equivalent number of use cases on standard street lighting columns. This comparison also does not account for the fact that it is likely that the traffic monitor, CCTV camera and traffic monitor are all likely to be desired in the same area to account for the high levels of traffic for example – and so spreading them out on different street lighting columns would not achieve the same benefits, or results, as with a multi-purpose pole.

5.2.3.4 Network deployment benefits

In addition to the benefits for LAs, specifically in relation to small cells, MNOs may benefit from the deployment of more small cells on LA street furniture through

reduced costs of network provision that they might otherwise incur. That is, it may be that in certain instances – most likely in dense urban areas – there would be a reduced need for the MNO to invest in additions to its macro network of masts and antennas and instead substitute with the use of small cells. The exact cost savings would depend on the nature of the location and existing macro network provision. However, [evidence](#) on the cost difference between new telecommunications equipment and upgrades for MNOs suggests that rooftop provision of telecommunications infrastructure could cost between 3 to 7 times more than small cell provision. However, where MNOs or other neutral host providers opt to locate small cells, the revealed preference is that they see value from the provision of the small cell at least as great as the cost of installation and on-going rental.

5.2.4 Conclusion on whether the benefits from some of the use cases delivered by SIPP to date outweigh the costs

The economic evaluation research question is:

- Is there evidence that the benefits from some of the use cases delivered by SIPP to date outweigh the costs?

Limited evidence of realised benefits from use cases

- Given that most use cases were deployed either at the very end of the original timelines for SIPP, or thereafter, by the end of August 2025 there was very limited evidence of realised benefits from use cases. Nevertheless, the ability of a PAS 191 pole to host multiple use cases has been demonstrated by the programme.

Assessment of costs and benefits of PAS 191 poles

- In the central case, comparing the potential revenue benefits that might accrue from having a small cell and EV charging point, where there is demand for these services, on a multi-purpose column to a central estimate of the cost of a PAS 191 column suggests a negative net present value of £5,600 (that is the cost of the pole over a 30 year period outweighs the revenue benefits from the two use cases).
- In order for the societal benefits to outweigh the costs, annual wider societal benefits of £386 would be required to be generated from use cases. Based on evidence in relation to potential use cases, it is considered that benefits of this scale could be generated in the right locations.
- This is expected to be increasingly the case moving forward given the price of multi-purpose poles may well fall as more are procured.
- Therefore, PAS 191 multi-purpose columns are likely to be a viable option for LAs in certain strategic locations where there is a demand for multiple use cases to be installed, and in such cases could bring about significant wider societal benefits, as well as potential benefits to MNOs, that would outweigh the costs.
- The value of PAS 191 multi-purpose poles is highlighted by some SIPP areas stating that they intend to use such poles in strategic placements (i.e. where there are multiple use case demands) going forward and one SIPP area already installing more PAS 191 poles than it originally planned.

6 Implications for future delivery

This section sets out the main findings and implications drawn from the evaluation, in relation to:

- Delivery of longer term impacts from SIPP
- Effective delivery of future programmes

6.1 Delivery of longer term impacts from SIPP

The main finding from the evaluation in terms of what is needed to enable longer term benefits from SIPP to be realised, is in relation to dissemination activity.

Dissemination of the PAS 191 specifications, which were revised and updated by SIPP areas through their projects, and the wider lessons learnt from the experience of manufacturing and installing multi-purpose poles has been limited. Disseminating such information would help increase the understanding among other LAs and organisations across the country of the practicalities of the procuring and installing multi-purpose poles and their benefits and so help deliver the end impact of the programme of more PAS 191 poles being installed.

Given the programme has ended it is not clear if further dissemination of the PAS 191 specification (including where it can be found online and the revisions made by SIPP areas) and, or, documentation on the lessons learnt from the fabrication and installation of multi-purpose poles will be disseminated. There may therefore be a role for DSIT or UKTIN in supporting this in order to maximise the benefits from the programme.

6.2 Effective delivery of future programmes

The following findings provide insights and learnings from delivery of SIPP that could be inform future programme design and delivery:

- Programme timescales: The fact that all SIPP areas were delayed in installing their multipurpose poles and associated use cases, together with the fact that two areas needed an extension to the original timelines in order to install their multipurpose poles, suggests that the original timeline for the programme was too short. Some of the factors that led to delays in the installation of multi-purpose poles might be considered as part of the normal learning process that organisations go through when procuring and installing a new product or service (in this instance the PAS 191 specification). As a result, in the future, programme design could consider allowing a longer timeline for delivery for programmes that are testing new specifications or goods and services where that is possible.
- Funding for project management resource: A number of SIPP LAs said there was a need for revenue funding to be provided alongside the capital funding element of the programme to support delivery (particularly through the provision of project management resource). The evidence from this evaluation suggests that with more project management capacity/capability LAs would likely have been in a

better position to deliver their interventions. Moreover, more project management capacity, or capability, would have enabled LAs to better plan their intervention from the start – which was another area that SIPP LAs said would have helped the ultimate delivery of their projects.

- Funding model: All SIPP areas said that the funding method used for SIPP had helped in the delivery of their projects. Specifically, the upfront provision of funding made it easier for SIPP project leads to spend funds in line with their project deliverables, when compared with the more traditional method of funding. Moreover, channelling funding through LAs, who are subject to similar levels of scrutiny over spending as central government departments, meant less DSIT resource needed to be expended on the scrutiny of LA's spending. This suggests that a similar funding model could be beneficial in future programmes where DSIT (or other Government departments) contract through LAs.

Appendix 1: CA for SIPP

Table A1.1: Activities to outputs CA assessment

Theory of Change - Activity	Leading to Theory of Change Outputs	Contribution claim	Assessment of contribution claim
Procurement of PAS 191 consistent multi-purpose poles	PAS 191 consistent multi-purpose poles procured	SIPP areas use DSIT funding to procure PAS 191 consistent multi-purpose poles	<p>Benefits trackers, interviews and other project documentation provide evidence of SIPP areas working with various stakeholders to procure PAS 191 multi-purpose poles. Similar sources show PAS 191 poles were procured.</p> <p>There is no evidence from publicly available documentation that PAS 191 multi-purpose poles have been procured in other LAs across the country.</p> <p>All SIPP areas said their project would not have gone ahead without DSIT funding. There is no identified evidence that PAS 191 multi-purpose poles have been procured in other LAs across the country.</p> <p>Overall assessment: Contribution claim supported.</p>
Design and fabrication of PAS 191 multi-purpose poles	PAS 191 consistent multi-purpose poles designs agreed and fabricated for SIPP areas	SIPP areas work with manufacturers (or other stakeholders) on the design and fabrication of the	Interviews showed a range of issues encountered by different SIPP areas in the design and fabrication of PAS 191 poles. This included aesthetics, designs for foundations and designs incorporating different types of use cases. These factors were incorporated into the final designs for SIPP areas before fabrication.

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		PAS 191 standard consistent poles	<p>There is no evidence from publicly available documentation that PAS 191 multi-purpose poles have been designed or fabricated for other LAs across the country.</p> <p>All SIPP areas said the project would not have gone ahead without DSIT funding. There is no identified evidence that PAS 191 multi-purpose poles have been designed in other LAs across the country.</p> <p>Overall assessment: Contribution claim supported.</p>
Installation of PAS 191 consistent multi-purpose poles	PAS 191 consistent multi-purpose poles installed	PAS 191 multi-purpose poles are installed across SIPP areas as a result of the project	<p>Benefits trackers, other project documentation and interviews provide evidence that the majority of originally planned PAS 191 multi-purpose poles were installed across the six SIPP areas by August 2025 – although only 31 had been delivered by the original programme deadline of March 2025.</p> <p>There is no evidence that PAS 191 multi-purpose poles have been installed in other LAs across the country.</p> <p>All SIPP areas said the project would not have gone ahead without DSIT funding.</p> <p>Overall assessment: Contribution claim supported.</p>
Installation of technology on the poles	Use cases are deployed on multi-purpose poles	SIPP areas work with various partners, using their match-funding, to take advantage of the	<p>SIPP areas' initial applications set out a range of stakeholders to work with to install use cases on multi-purpose poles. Benefits trackers, other project documentation and the interviews all provided evidence of LAs working with other stakeholders to deploy use cases on multipurpose poles.</p>

		<p>installation of the poles and install other technology/use cases (e.g. small cells, CCTV, EV charging, IoT sensors, etc...)</p>	<p>By August 2025, 58 use cases had been deployed on poles with plans for more to follow. A range of use cases had been installed including: small cells; CCTV cameras; environmental sensors; traffic sensors; display screens; and audio speakers. However, deployment of use cases has been delayed when compared to original plans. No EV charging points were deployed (contrary to original plans) and only four small cells had been deployed on multi-purpose poles by August 2025, although SIPP areas have plans to deploy more.</p> <p>Whilst some other, non-SIPP, LAs have installed use cases on street furniture there is no evidence that PAS 191 multi-purpose poles have been installed in other LAs across the country – so there is no evidence that multiple use cases have been deployed on street furniture elsewhere.</p> <p>Overall assessment: Contribution claim supported</p>
<p>LAs and private sector collaboration</p>	<p>Poles procured and deployed in agreed optimal locations, in agreement with partners and in minimal time - together with technology to go on poles</p>	<p>LAs and partners (together with wider supply chain) work together to understand requirements for procuring and installing poles (and wider technology)</p>	<p>Interviews, benefits trackers and other project documentation provides evidence that SIPP areas had challenges in installing the multi-purpose poles to planned timescales. This was often due to conflicting priorities within LAs (i.e. different departments within LAs like street lighting; events department; planning). Similar practical issues with the fabrication and installation of multipurpose poles were raised by some SIPP areas with the private sector stakeholders they were working with. For instance, some LAs experienced issues with the fabrication of poles (sometimes necessitating a change in supplier) and some experienced issues with the use cases to be deployed (particularly small cells and whether there was sufficient demand in the area for small cell deployment).</p>

In the interviews SIPP areas said they worked with partners (be they within the LA or other stakeholders) to procure and install the multi-purpose poles. By August 2025 the majority of originally planned multi-purpose poles had been installed across the six SIPP areas. The fact that these poles were deployed, given the issues outlined above, suggests that SIPP LAs worked effectively with stakeholders to both understand the requirements for procuring and installing poles and overcame the issues experienced in procuring and installing the poles. Therefore there is a lot of evidence of the SIPP area delivery team working with other stakeholders (both public and private) in understanding the requirements for procuring and installing multi-purpose poles.

Other evidence that supports this assessment comes from the network provider and use case stakeholder surveys. These surveys showed that eight out of the nine respondents to the surveys tended to agree or strongly agreed that a relationship had been created with the LA that would facilitate future engagement/activities.

Whilst there is evidence that other LAs have installed technology (or other use cases) on traditional street furniture – involving working with other partners to deliver such use cases – this would not have involved multiple use cases on one pole (because of structural restrictions on what a traditional street column can hold in terms of use cases) and therefore would not have provided the necessary learning in relation to multi-purpose poles.

Overall assessment: Contribution claim supported.

<p>Development of knowledge around procurement of poles, working with partners and installation of wider technology</p>	<p>Documentation produced on procurement of poles and installation of technology (use cases).</p>	<p>The process of designing, fabricating and installing PAS 191 multi-purpose poles and the deployment of multiple use cases on the poles develops learning. This learning is documented by LAs in order that it can be shared internally and with others.</p>	<p>Interviews, benefits trackers and other project documentation show that all SIPP areas have updated the technical specification documents used to procure PAS 191 poles in their respective areas. In the interviews, some SIPP areas said they would produce more documentation to support decisions around when and where a PAS 191 multi-purpose pole might be preferable to a standard street column, but this had not yet been delivered.</p> <p>The updates to PAS 191 specifications reflect specific learning from procurement of PAS 191 poles and therefore can be directly attributable to the programme.</p> <p>Overall assessment: Contribution claim supported –PAS 191 technical specifications have been updated and can be attributed to the programme.</p>
<p>Knowledge shared outside intervention LAs</p>	<p>-Dissemination events with other LAs and operators</p> <p>- DSIT guidance note on procurement and installation of PAS 191 poles produced for all LAs to use</p>	<p>SIPP areas and DSIT take the documentation of lessons learnt from the programme and spread the learning (through various channels) across other LAs</p>	<p>Evidence from the benefits tracker shows that by August 2025 a relatively limited number of dissemination events had been delivered by SIPP areas – with one area accounting for the majority of dissemination events. Moreover, these dissemination events have primarily been within the LAs themselves (rather than with LAs outside the intervention area). Indeed in interviews SIPP areas said they had devoted limited resources to dissemination activity (particularly that outside their immediate area).</p> <p>UKTIN said it had invited SIPP LAs to regular meetings – but beyond this there was no official programme for dissemination</p>

			<p>relating to SIPP. By August 2025 the DSIT guidance stated in the ToC had yet to be produced.</p> <p>As of August 2025, the dissemination activity that has occurred has related the to the fabrication and installation of PAS 191 poles, which can be directly attributed to the initial fabrication and installation of such poles.</p> <p>Overall assessment: Contribution largely unsupported, whilst some SIPP areas have disseminated learnings within their LA and this can be attributed to the programme, the dissemination of knowledge outside SIPP areas has been very limited.</p>
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Table A1.2: Outputs to Outcomes CA assessment

Theory of Change - Output	Leading to Theory of Change Outcome	Contribution claim	Assessment of contribution claim
<p>PAS 191 consistent multi-purpose poles procured and PAS 191 designs agreed and fabricated between LAs and manufacturers</p>	<p>PAS 191 standard accepted by all parties as the standard for multi-purpose poles - reducing uncertainty for both manufacturers; LAs and industry</p>	<p>The use of the PAS 191 standard for the design and fabrication of multi-purpose poles through SIPP proves effective and increases familiarity with the infrastructure with manufacturers, LAs and potential users of the poles.</p>	<p>The interviews, benefits trackers and other programme documentation shows that a number of issues were encountered by SIPP areas in designing and fabricating the PAS 191 multi-purpose poles. The main issues, where designs were altered with manufacturers as a result, were: aesthetics; coping with shallow foundations; and incorporating different types of use cases. SIPP areas agreed revised designs for the PAS 191 poles with manufacturers, or suppliers of the poles (which were subsequently fabricated and installed). This shows that, ultimately, the PAS 191 specification was accepted by both the SIPP areas and suppliers of poles.</p> <p>A range of PAS 191 multi-purpose poles were fabricated incorporating a range of different designs. Given the issues encountered with the fabrication of poles in some areas, and the fact that these issues were overcome, suggests that both SIPP areas and suppliers of poles will have learnt about the process of procuring and fabricating poles - increasing their familiarity with the process.</p> <p>The programme specifically sought to test the PAS 191 specification which had not been used prior to this programme and has not been implemented elsewhere in the same timescale – suggesting that the increased familiarity and adoption of the PAS 191 specification is attributable to the programme.</p>

			Overall assessment: Contribution claim supported.
PAS 191 consistent multi-purpose pole designs agreed and fabricated between LAs and manufacturers and PAS 191 multi-purpose poles subsequently installed	Poles installed providing for installation of other technology	SIPP leads to the installation of PAS 191 multi-purpose poles and SIPP areas work with various partners to take advantage of the poles and install other technology/use cases (e.g. small cells, CCTV, EV charging, IoT sensors, etc...)	<p>SIPP areas’ initial applications set out a range of other stakeholders to work with to install use cases on multi-purpose poles. Benefits trackers, other project documentation and the interviews all provided evidence of LAs working with other stakeholders to deploy use cases on multipurpose poles.</p> <p>By August 2025, 58 use cases had been deployed on poles with plans for more to follow. A range of use cases had been installed including: small cells; CCTV cameras; environmental sensors; traffic sensors; display screens; and audio speakers.</p> <p>However, plans to deploy use cases have been delayed when compared to original plans. No EV charging points were deployed (contrary to original plans). Only four small cells had been deployed on multi-purpose poles by August 2025 (although SIPP areas have plans to deploy more).</p> <p>Whilst some other, non-SIPP, LAs have installed use cases on street furniture there is no evidence that PAS 191 multi-purpose poles have been installed in other LAs across the country – so there is no evidence that multiple use cases have been deployed on street furniture elsewhere.</p> <p>Overall assessment: Contribution claim supported – although delivery has been delayed when compared to original plans.</p>
PAS 191 consistent multi-purpose pole	Short term employment – resources	The design, fabrication and installation of	Evidence from benefits trackers, other project documentation and the interviews shows that multi-purpose poles were fabricated and then installed. Given the PAS 191 specification was introduced in April

<p>designs agreed and fabricated between LAs; manufacturers and PAS 191 multi-purpose poles subsequently installed; and use cases delivered</p>	<p>deployed for each project</p>	<p>PAS 191 multi-purpose poles and then the deployment of multiple use cases generates employment involved in delivering the project</p>	<p>2023, PAS 191 poles will not have been produced previously. As a result, manufacturers will have needed to devote resource (both employment and machinery) to the fabrication of the poles. Evidence of the scale of resource devoted to their production is provided by the payments made by SIPP areas for the poles.</p> <p>Similarly, the poles were physically installed by relevant organisations – again requiring labour resource (again shown by the installation costs experienced by SIPP areas). Lastly, where the poles have had use cases deployed this will similarly have required labour resource to fix the use cases to the poles – although because of the delays to the programme this will not have been to the level expected at the beginning of the programme. For the most part use cases were deployed using match funding – in line with the original application requirements.</p> <p>All SIPP areas said that they would not have installed PAS 191 poles without DSIT funding.</p> <p>Overall assessment: Contribution claim supported – and more employment resource will be required to deploy planned use cases.</p>
<p>PAS 191 consistent multi-purpose pole designs agreed and fabricated between LAs; manufacturers and PAS 191 multi-purpose poles</p>	<p>GVA – as a result of additional spending to deliver projects</p>	<p>The design, fabrication and installation of PAS 191 multi-purpose poles and then the deployment of multiple use cases generates economic</p>	<p>Evidence from benefits trackers, other project documentation and the interviews shows that multi-purpose poles were fabricated and then installed. Given the PAS 191 specification was introduced in April 2023, PAS 191 poles will not have been produced previously. As a result, manufacturers will have needed to devote resource (both employment and machinery) to the fabrication of the poles. Evidence of the scale of resource devoted to their production is provided by the payments made by SIPP areas for the poles.</p>

<p>subsequently installed; and use cases delivered</p>		<p>activity related to the delivery of the project</p>	<p>Similarly, the poles had been physically installed by relevant organisations – again requiring economic activity (and again shown by the installation costs experienced by SIPP areas). Lastly, where the poles have had use cases deployed this will similarly have resulted in more economic activity in order to deploy (and then use) the use cases. For the most part use cases were deployed using match funding – in line with the original application requirements.</p> <p>All SIPP areas said that they would not have installed PAS 191 poles without DSIT funding.</p> <p>Overall assessment: Contribution claim supported – and more economic activity will result from the deployment of planned use cases.</p>
<p>Use case specific outputs (e.g. small cells, EV charging, CCTV, IoT sensors) and poles procured and deployed in agreed optimal locations, in agreement with partners and in minimal time – together with technology to go on poles</p>	<p>Use cases specific outcomes (e.g. Productivity gains; welfare improvements; environmental benefits)</p>	<p>The installation of PAS 191 multi-purpose poles allows for the deployment of multiple use cases which generate various outcomes like improved connectivity; improved welfare and improved environmental</p>	<p>By August 2025, 58 use cases had been deployed on poles with plans for more to follow. A range of use cases had been installed including: small cells; CCTV cameras; environmental sensors; traffic sensors; display screens; and audio speakers. However, plans to deploy use cases had been delayed when compared to original plans. No EV charging points were deployed (contrary to original plans). Only four small cells had been deployed on multi-purpose poles by August 2025 (although SIPP areas have plans to deploy more).</p> <p>By August 2025 very few benefits had been realised from the use cases deployed because most, whilst deployed, were not yet operational.</p> <p>Some other, non-SIPP, LAs have installed use cases on street furniture and, where those use cases are operational, will have derived benefits from those use cases (for instance CCTV installed on street lampposts reducing crime in the area). However, there is no</p>

		<p>benefits for example</p>	<p>publicly available evidence that PAS 191 multi-purpose poles have been installed in other LAs across the country. As a result, there is no evidence that multiple use cases have been deployed on PAS 191 poles elsewhere. Therefore, there is no evidence that multiple benefits have been realised from the deployment and operation of multiple use cases on one PAS 191 pole.</p> <p>Overall assessment: Contribution claim largely unsupported because most use cases were not operational by the time of the evaluation.</p>
<p>Poles procured and deployed in agreed optimal locations, in agreement with partners and in minimal time – together with technology to go on poles</p>	<p>More efficient future deployment of poles (and associated technology) through increased, shared, knowledge and information on key technology assets and installation of PAS 191 poles - so reduced time and costs for installation of PAS 191 poles in intervention LAs</p>	<p>Through LAs working with partners (together with the wider supply chain) to procure and install PAS 191 poles, all stakeholders become more familiar with the specification, the poles, as well as the requirements to effectively install poles which leads to more efficient future</p>	<p>There is a lot of evidence of the SIPP area delivery team working with other stakeholders (both public and private) in understanding the requirements for procuring and installing multi-purpose poles.</p> <p>The network provider and use case stakeholder survey also showed that eight out of the nine respondents to that survey tended to agree or strongly agreed that a relationship had been created with the LA that would facilitate future engagement/activities. The establishment of such relationships suggest it would be easier, in the future, for SIPP areas to work with these stakeholders to fabricate and install more PAS 191 poles.</p> <p>One SIPP area had installed an extra PAS 191 multi-purpose pole by August 2025 (over and above their original plans). Arguably this illustrates that the area had established good relationships with suppliers involved in the fabrication and installation of poles which made it easier to install another pole (over and above original plans).</p> <p>Whilst other LAs have installed technology (or other use cases) on traditional street furniture – involving working with other partners to deliver such use cases – this would not have involved multiple use</p>

		<p>deployment of PAS 191 poles.</p>	<p>cases on one PAS 191 pole (because of structural restrictions on what a traditional street column can hold in terms of use cases).</p> <p>Overall assessment: Contribution claim largely supported – all SIPP areas have developed experience of fabricating and installing PAS 191 poles which should allow for future effective deployment; indeed one SIPP area had installed an extra pole (as compared to their original plans).</p>
<p>Documentation produced on procurement of poles and installation of technology (use cases). Lessons learnt sessions run</p>	<p>Better evidence produced to share with other LAs around procurement and installation of poles for wider tech uses - potentially driving greater demand.</p>	<p>The process of designing, fabricating and installing PAS 191 multi-purpose poles and the deployment of multiple use cases on the poles develops learning. This learning is documented by LAs in order that it can be shared with others</p>	<p>Interviews, benefits trackers and other project documentation show that all SIPP areas have updated the technical specifications used to procure PAS 191 poles.</p> <p>In the interviews, some SIPP areas said they would produce more documentation to support decisions around when and where a PAS 191 multi-purpose pole might be preferable to a standard street column.</p> <p>The PAS 191 specifications could not have been updated unless PAS 191 poles were procured, suggesting this updated documentation is attributable to the programme.</p> <p>Overall assessment: Contribution claim part supported – whilst PAS 191 technical specifications have been updated, other documentation of the lessons learnt from the programme is sparse</p>

<p>Dissemination events with other LAs and operators and DSIT guidance note on procurement and installation of PAS 191 poles produced for all LAs to use</p>	<p>LAs (outside the intervention LAs), potential users of advanced wireless technology, and operators/suppliers of wireless tech (and its uses) are aware of the PAS 191 poles, and have more certainty around their procurement, installation and use</p>	<p>SIPP areas disseminate lessons learnt from the programme to other LAs across the country and this leads to better knowledge outside SIPP areas of the value of the PAS 191 poles and how they can practically be procured and installed</p>	<p>Evidence from the benefits tracker shows that by August 2025 a relatively limited number of dissemination events had been delivered by SIPP areas, with one area accounting for the majority of dissemination events. Moreover, these dissemination events have primarily been within the LAs themselves (rather than with LAs outside the intervention area). Indeed, in interviews SIPP areas said they had devoted limited resources to dissemination activity (particularly that outside their immediate area).</p> <p>UKTIN said it had invited SIPP LAs to regular meetings, but beyond this there was no official programme for dissemination relating to SIPP.</p> <p>Despite the low level of dissemination outside of SIPP areas, DSIT officials noted that some other areas (most notably North Wales) had expressed an interest in PAS 191 poles and had contacted SIPP areas.</p> <p>Overall assessment: Contribution largely unsupported – whilst some SIPP areas have disseminated learnings within their LA and DSIT officials said that LAs in North Wales had expressed an interest in the PAS 191 poles, the dissemination of knowledge outside SIPP areas has been very limited. Therefore there is limited evidence of activity that could contribute to this outcome.</p>
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Table A1.3: Outcomes to Impacts CA assessment

Theory of Change - Outcome	Leading to Theory of Change - Impact	Contribution claim	Assessment of contribution claim
<p>PAS 191 standard accepted by all parties as the standard for multi-purpose poles - reducing uncertainty for both manufacturers; LAs and industry</p>	<p>More PAS 191 poles installed – providing increased connectivity and more opportunity for new technology to be used</p>	<p>DSIT funding tests the procurement and fabrication of PAS 191 poles and leads to the fabrication and installation of PAS 191 poles providing for multiple use cases to be deployed</p>	<p>Whilst a range of PAS 191 multi-purpose poles were fabricated incorporating a range of different designs in SIPP areas, there is no publicly available evidence that PAS 191 multi-purpose poles have been procured in other LAs across the country.</p> <p>Overall assessment: Insufficient evidence to fully assess contribution claim.</p>
<p>Poles installed providing for installation of other technology</p>	<p>Intervention LAs provided with the infrastructure to exploit new technology</p>	<p>Through the installation of PAS 191 poles, SIPP areas have the opportunity to deploy a range of use cases</p>	<p>Benefits trackers, other project documentation and interviews show that the majority of originally planned PAS 191 multi-purpose poles were installed across the six SIPP areas by August 2025.</p> <p>By August 2025, 58 use cases had been deployed on poles with plans for more to follow. A range of use cases had been installed</p>

		<p>testing new technology</p>	<p>including: small cells; CCTV cameras; environmental sensors; traffic sensors; display screens; and audio speakers.</p> <p>Some other, non-SIPP, LAs have installed use cases on street furniture which depending on the exact use case could be used to test new technology. However, there is no evidence that PAS 191 multi-purpose poles have been installed in other LAs across the country – and so the testing of multiple use cases (or new technology in combination with other use cases) – will not have been possible.</p> <p>Overall assessment: Insufficient evidence to fully assess contribution claim</p>
<p>Short term employment – resources deployed for each project and GVA – as a result of additional spending to deliver projects</p>	<p>Increased economic activity in the Intervention LAs</p>	<p>The design, fabrication and installation of PAS 191 multi-purpose poles and then the deployment of multiple use cases generates economic activity related to the delivery of the project</p>	<p>Evidence from benefits trackers, other project documentation and the interviews shows that multi-purpose poles were fabricated and then installed. Given the PAS 191 specification was introduced in April 2023, PAS 191 poles will not have been produced previously. As a result, manufacturers will have needed to devote resource (both employment and machinery) to the fabrication of the poles. Evidence of the scale of resource devoted to their production is provided by the payments made by SIPP areas for the poles.</p> <p>Similarly, the poles were physically installed by relevant organisations – again requiring economic activity (and again shown by the installation costs experienced by SIPP areas). Lastly, where the poles have had use cases deployed this will similarly have resulted in more economic activity in order to deploy (and then use) the use cases. For the most part use cases were deployed using match funding – in line with the original application requirements.</p>

			<p>All SIPP areas said that they would not have installed PAS 191 poles without DSIT funding.</p> <p>Overall assessment: Contribution claim supported and more economic activity is expected to result from the deployment of planned use cases.</p>
<p>Use cases specific outcomes (e.g. Productivity gains; welfare improvements; environmental benefits)</p>	<p>Use cases specific impacts (improved air quality, improved traffic management, improved security, efficiency gains for LAs...)</p>	<p>Through the deployment of multiple use cases on PAS 191 poles a number of use case specific outcomes are achieved leading to use case specific impacts like improved air quality, improved connectivity, improved security etc</p>	<p>By August 2025, 58 use cases had been deployed on poles with plans for more to follow. A range of use cases had been installed including: small cells; CCTV cameras; environmental sensors; traffic sensors; display screens; and audio speakers. However, contrary to original plans no EV charging points were deployed and only four small cells had been deployed by August 2025 (although SIPP areas have plans to deploy more).</p> <p>By August 2025 very few benefits had been realised from the use cases deployed because most, whilst deployed, were not yet operational.</p> <p>The wider literature shows that benefits can be expected to flow from the use cases that have been deployed on multi-purpose poles. That is, there is evidence of the benefits that would accrue to use cases like CCTV; traffic sensors; environmental sensors; and small cells for example. However, such benefits are yet to be evidenced deriving from a multi-purpose pole.</p> <p>Therefore, at the time of the evaluation, there was no evidence that multiple benefits have been realised from the deployment and operation of multiple use cases on one PAS 191 pole.</p>

			<p>Overall assessment: Insufficient evidence to fully assess contribution claim.</p>
<p>More efficient future deployment of poles (and associated technology) through increased, shared, knowledge and information on key technology assets and installation of PAS 191 poles - so reduced time and costs for installation of PAS 191 poles in intervention LAs</p>	<p>Potential for more PAS 191 poles to be installed in intervention LAs (as compared to other LAs)</p>	<p>The increased knowledge developed around the procurement and installation of PAS 191 poles, generates efficiencies (reduced time and costs for installation of poles) and results in more PAS 191 poles being installed</p>	<p>There is a lot of evidence of the SIPP area delivery team working with other stakeholders (both public and private) in understanding the requirements for procuring and installing multi-purpose poles. Moreover, the network provider and use case stakeholder survey also showed that eight out of the nine respondents to that survey tended to agree or strongly agreed that a relationship had been created with the LA that would facilitate future engagement/activities. This suggests that SIPP areas and their stakeholders are likely to have learnt a lot about the process of fabricating and installing multi-purpose poles which should generate efficiencies for future installations.</p> <p>Indeed, one SIPP area had installed an extra PAS 191 multi-purpose pole by August 2025 (over and above their original plans).</p> <p>However, there is no publicly available evidence of other LAs (outside SIPP areas) having installed a PAS 191 multi-purpose pole. Moreover, whilst other LAs have installed technology (or other use cases) on traditional street furniture – involving working with other partners to deliver such use cases – this would not have involved multiple use cases on one pole (because of structural restrictions on what a traditional street column can hold in terms of use cases).</p> <p>Overall assessment: Contribution claim largely unsupported – whilst all SIPP areas have developed experience of fabricating and installing PAS 191 poles which should allow for future effective deployment and indeed one SIPP area had installed an extra pole (as compared to</p>

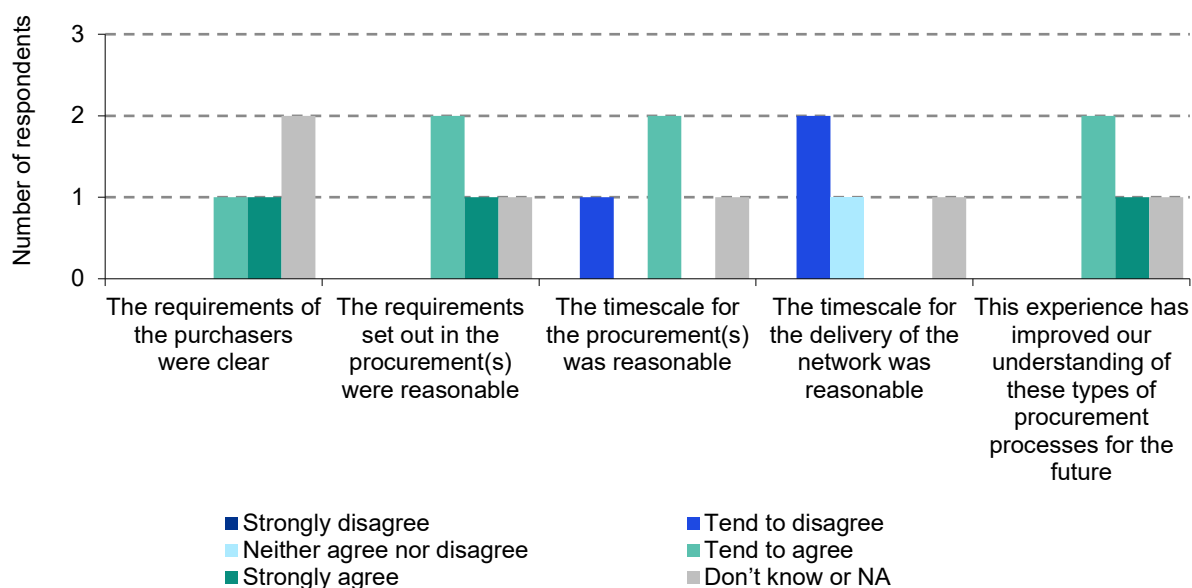
			their original plans) - no other SIPP areas had deployed more PAS 191 poles.
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Appendix 2: Results from the network provider and use case stakeholder surveys

This appendix sets out the main findings from the network provider and use case stakeholder surveys.

Figure A2.1 below shows network providers' views on the procurement of advanced connectivity networks for SIPP projects.

Figure A2.1: Network providers' views of the procurement of SIPP advanced connectivity networks (n=4)

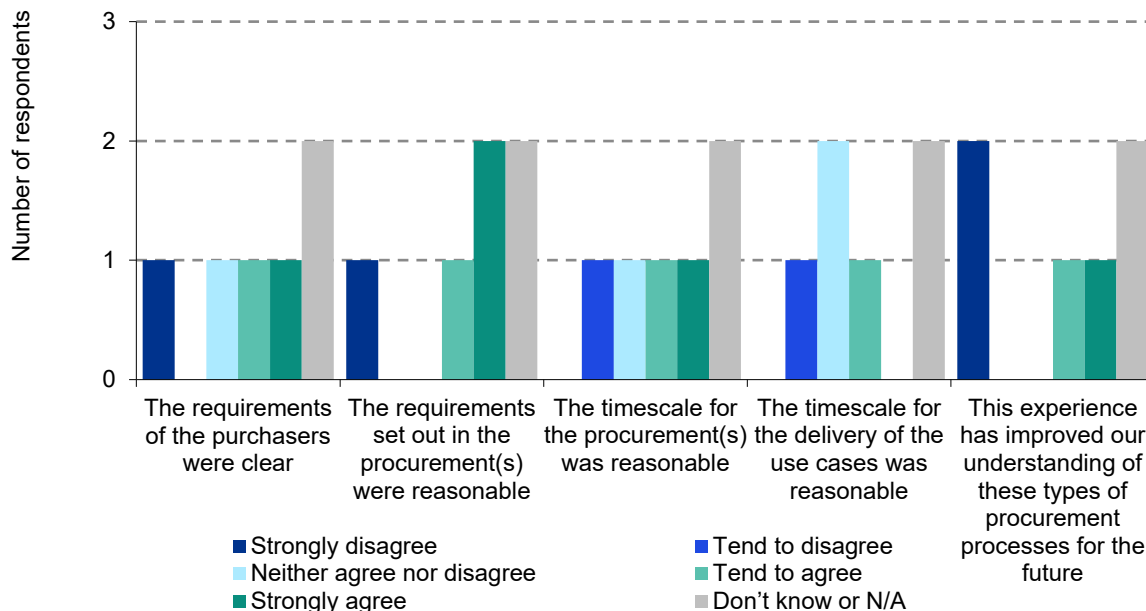


Source: KPMG SIPP network provider survey

Figure A2.1 shows that three out of the four network providers that responded to the survey tended to agree or strongly agreed that the requirements set out in the procurement were reasonable. However, two of the four network providers that responded to the survey tended to disagree that the timescale for delivery of the network was reasonable. Three out of the four network providers that responded to the survey tended to agree or strongly agreed that their experience on the SIPP

project had improved their understanding of these types of procurement processes for the future.

Figure A2.2: Use case stakeholders' views of the procurement of SIPP use cases (n=6)

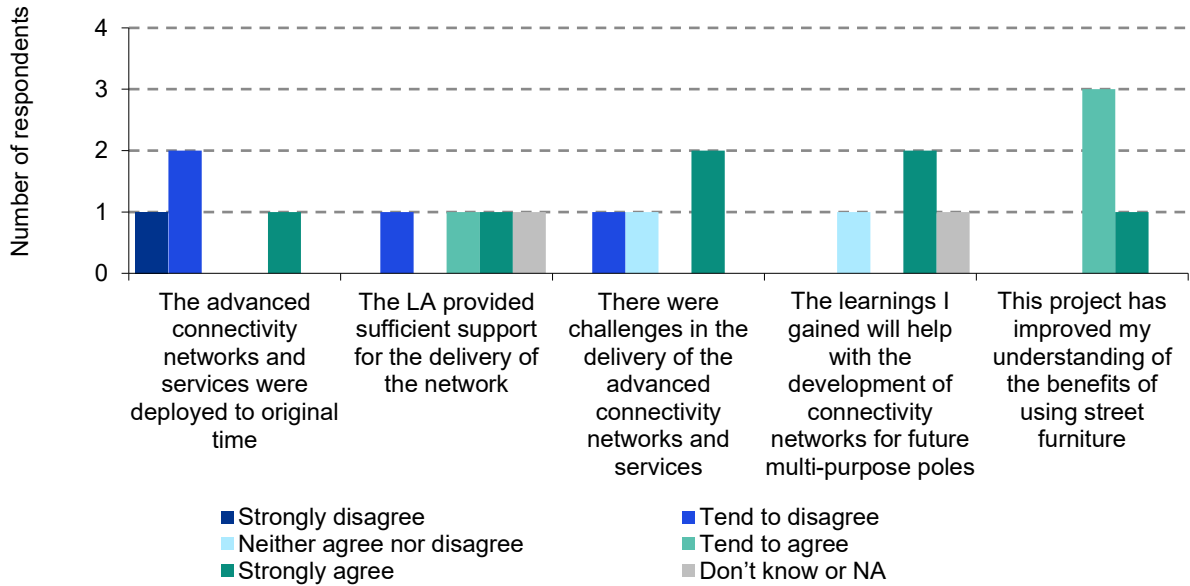


Source: KPMG SIPP use case stakeholder survey

Figure A2.2 shows use case stakeholders' views on the procurement of use cases for SIPP projects. The chart shows that views on the procurement process were mixed. Two out of the 6 respondents said they did not know in response to the procurement questions (or said the questions were 'not applicable'). Three out of the six respondents tended to agree or strongly agreed that the requirements set out in the procurement were reasonable. For most other statements on procurement views

were split equally between respondents tending to agree with the statements and respondents tending to disagree with the statements.

Figure A2.3: Network providers' views of the delivery of SIPP networks (n=4)

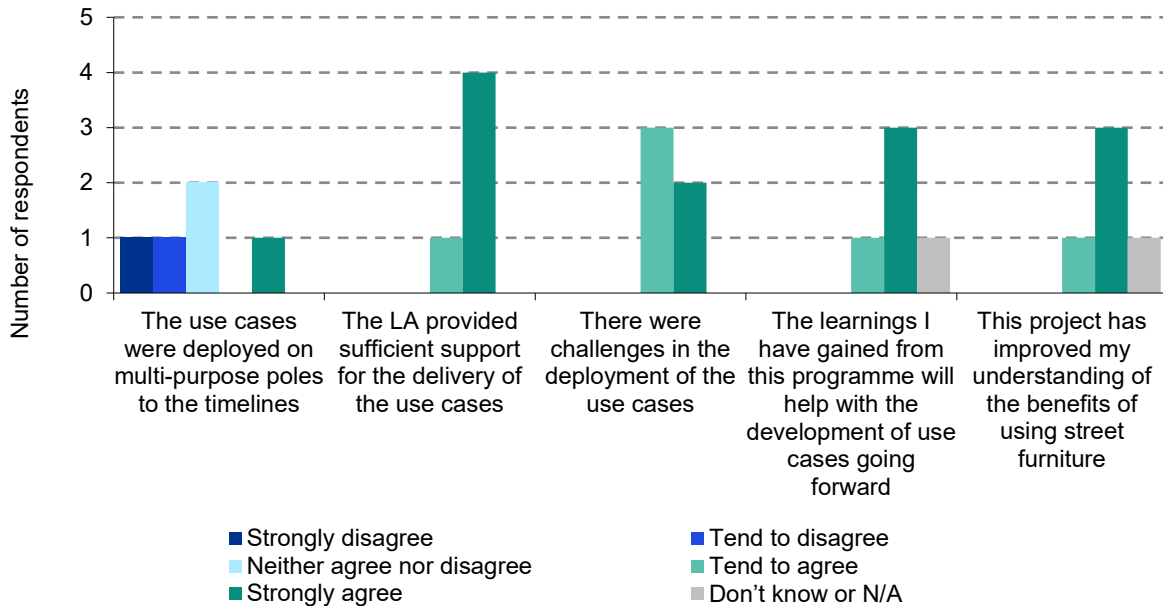


Source: KPMG SIPP network provider survey

Figure A2.3 shows that three of the four network providers that responded to the survey tended to disagree or strongly disagreed that the advanced connectivity networks were deployed to the original timelines. Two of the four network providers that responded to the survey strongly agreed that there were challenges in the delivery of advanced connectivity networks. All network providers that responded to the survey tended to agree or strongly agreed that the project had improved their

understanding of the benefits of using street furniture for advanced connectivity network deployment.

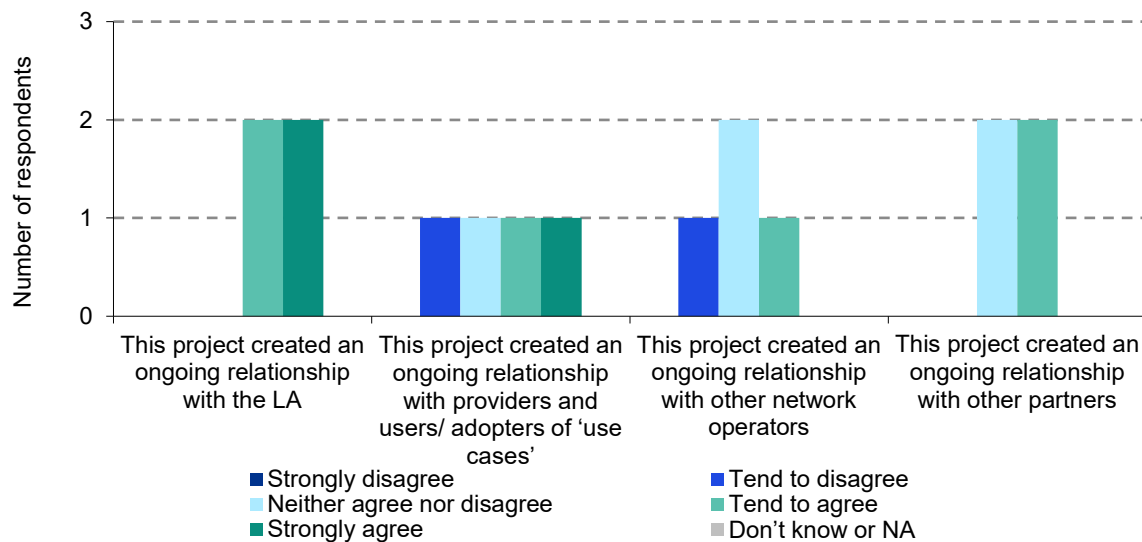
Figure A2.4: Use case stakeholders' views of the delivery of SIPP use cases (n=5)



Source: KPMG SIPP use case stakeholder survey

Figure A2.4 shows that all five use case stakeholders that responded to this question in the survey tended to agree or strongly agreed that there were challenges in the deployment of use cases on SIPP projects. Four of the five respondents to the survey said that the project had improved their understanding of the benefits of using street furniture for advanced wireless network deployment.

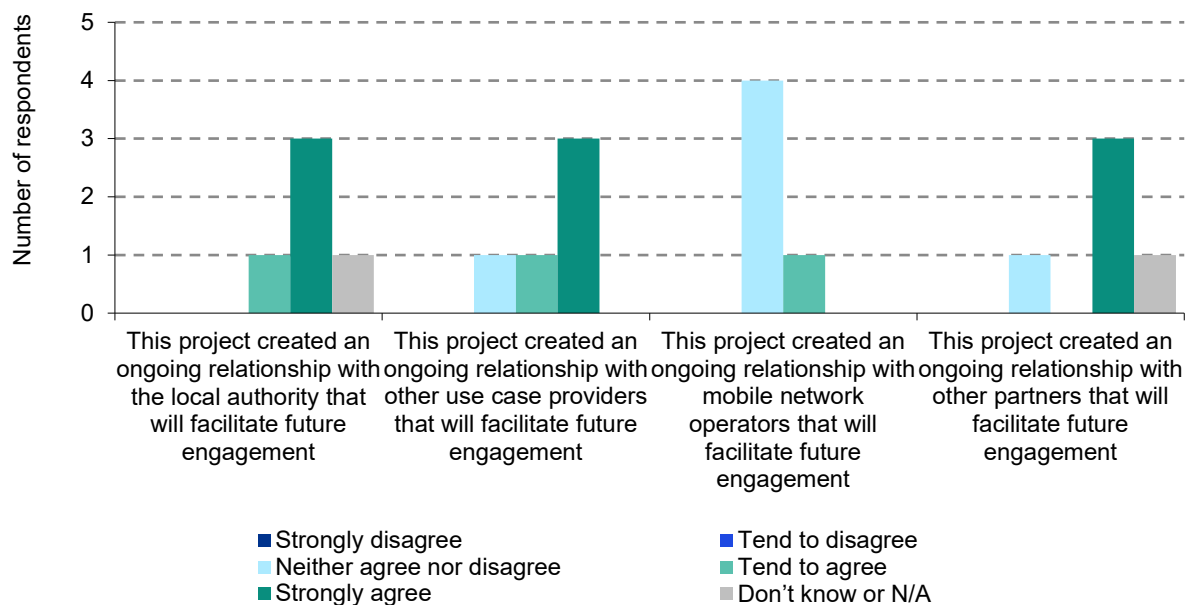
Figure A2.5: Network providers' views on the relationships developed through SIPP projects (n=4)



Source: KPMG SIPP network provider survey

Figure A2.5 shows that all four network providers that responded to the survey tended to agree or strongly agreed that the SIPP project had created an ongoing relationship with the LA that would facilitate future engagement or activities.

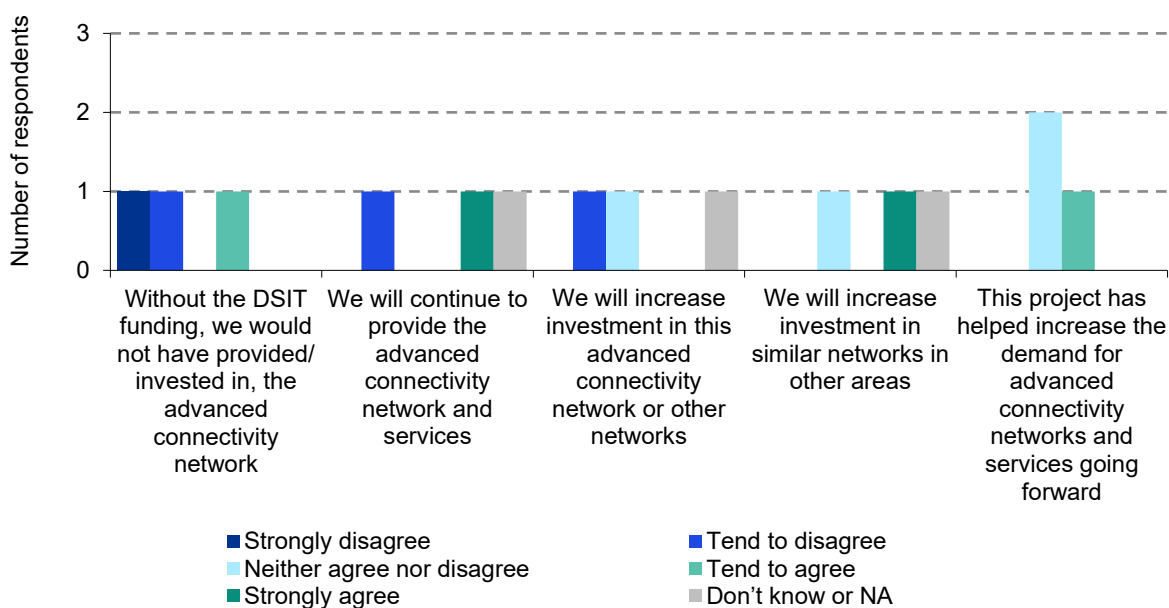
Figure A2.6: Use case stakeholders' views of the delivery of SIPP use cases (n=5)



Source: KPMG SIPP use case stakeholder survey

Figure A2.6 shows that four of the five use case stakeholders that responded to the survey tended to agree or strongly agreed that the SIPP project created an ongoing relationship with the LA that would facilitate future engagement or activities.

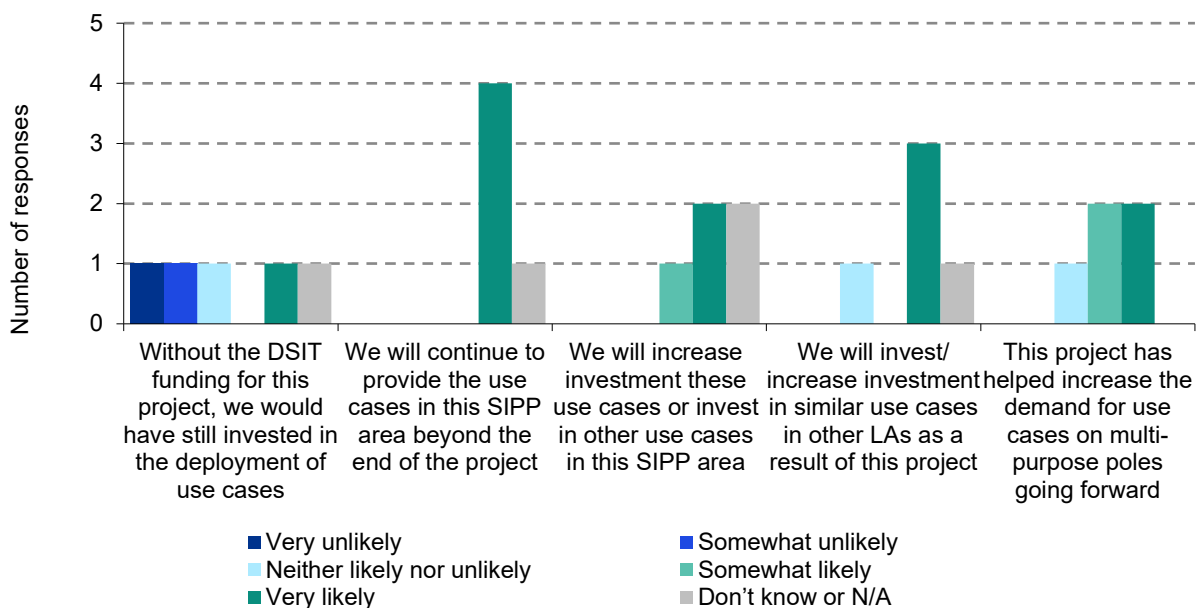
Figure A2.7: Network providers' views on the provision of SIPP, or related, networks (n=3)



Source: KPMG SIPP network provider survey

In response to the network provider survey, one network provider said they were providing the advanced connectivity network used in the SIPP project prior to DSIT funding. Figure A2.7 shows that, of the three network providers that said they were not providing the SIPP network prior to DSIT funding, two of the three tended to disagree or strongly disagreed that, without DSIT funding, they would not have provided or invested in the advanced connectivity network.

Figure A2.8: Use case stakeholders’ views on the provision of SIPP, or related, use cases (n=5)



Source: KPMG SIPP use case stakeholder survey

Figure A2.8 shows that, of the five use case stakeholders that responded to the survey, two felt it was very or somewhat unlikely that, without DSIT funding, they would have invested in the deployment of use cases in the SIPP area. Four of the five use case stakeholders that responded to the survey felt it was somewhat or very likely that the project had helped increase the demand for use cases on multi-purpose poles going forward.

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