

Starship Technologies - Trial use of personal delivery devices (autonomous droids) to provide a 'last mile' home delivery service in a selected area of Leeds

Date: 2 November 2022

Report of: Transport Strategy Team Leader

Report to: Chief Officer (Highways & Transportation)

Will the decision be open for call in? Yes No

Does the report contain confidential or exempt information? Yes No

Brief Summary

Decarbonising freight through the development and provision of more sustainable urban logistics methods is a key objective of the Connecting Leeds Transport Strategy. The need to trial and implement new and innovation technologies will also be a crucial factor in helping reach the Council's ambitious carbon emissions' target to become net zero by 2030.

The company 'Starship Technologies' currently successfully operates a last-mile grocery delivery service using autonomous zero emission Personal Delivery Droids (PDDs) in several local authorities including Milton Keynes, Cambridge and Northampton which have all seen a reduction in single occupancy car trips, and carbon emissions within their trial areas.

Extensive political engagement with the Portfolio Holder for Climate and Infrastructure and relevant local Ward Members along with key accessibility and disability groups to discuss the proposed trial which included live demonstrations within the proposed trial area and at the University of Leeds.

This report seeks approval for the company Starship Technologies to conduct a pilot trial of this innovative new grocery delivery service in the Northwest area of Leeds. During the trial period residents in participating area will be able to use the Starship delivery service to order groceries via an online app from two CO-OP stores located within the trial area.

Recommendations

The Chief Officer for Highways and Transportation is requested to:

- a) Give authority for Starship Technologies to conduct a trial in the use of Personal Delivery Droids (PDDs) to provide an innovative home delivery grocery service in the Northwest area of Leeds. Initial trial will be for three months with an option to extend the trial period if successful with further approval from Highways Board. Any decision to expand the trial area(s) would need to be brought back to Highways board for further approval and recommendation.

- b) Recognise that there is currently no national legislation which specifically governs the operation of robotic Personal Delivery Devices (PDDs) within the UK. In particular, the legal position on the use of PDDs on the public footpath is unclear.
- c) Accept that PDDs will share the residential footpaths with pedestrians and that the necessary amount of consultation and engagement with key accessibility / disability groups has taken place. Accordingly, routes and operations during the trial can be amended in real-time if required to respond to local feedback.

What is this report about?

Starship Technologies and Connecting Leeds Transport Strategy Objectives

- 1 The report recommends that Leeds City Council (LCC) enters into an agreement with Starship Technologies (Starship) to allow the trial of a new and innovative last mile delivery service using zero emission autonomous personal delivery droids (PDDs).
- 2 Extensive political engagement with the Portfolio Holder and Local Ward members along with key local and district accessibility and disability groups to discuss the proposed trial which included live demonstrations within the ward and at the University of Leeds.
- 3 The need to decarbonise freight through the development and provision of more sustainable urban logistics methods is a key objective of the Connecting Leeds Transport Strategy. The need to trial and implement new and innovation technologies will also be a crucial factor in helping reach the Council's ambitious carbon emissions' target to become net zero by 2030.
- 4 To achieve these ambitious targets, a different approach to freight is required and a better understanding of how to improve management of freight within urban areas, rationalise deliveries and ensure freight is delivered using the lowest-carbon transport modes as possible.
- 5 Starship can only provide a service for small, last minute shopping trips where people traditionally use the car to drive the short distance to the local grocery store or corner shop rather than walk or cycle.
- 6 The PDDs can carry the equivalent of three bags of shopping which is ideal for those essential items such as milk, bread, or the missing items for a meal. Orders are placed through an app-based system with deliveries taking between 15-60 minutes and distribution radius of 2-3 kilometres depending on geography of the area.
- 7 This service will provide an alternative home delivery provision which will particularly benefit residents with mobility problems or those facing other challenges which make accessing local facilities difficult and / or impossible. This could be important during the winter months when elderly and those with reduced mobility are less confident due to inclement weather.
- 8 Research suggests that 70% of deliveries made by their PDDs are replacing single car shopping trips. Given that PDDs are 25 times more energy efficient than a single car shopping trip, there is huge potential for this service to reduce localised emissions in residential areas of Leeds.
- 9 This service could also reduce the number and frequency of traditional supermarket home deliveries, many of which are still using carbon intensive diesel vans.
- 10 The app-based order and delivery service works in conjunction with the CO-OP to provide this home delivery service and access to around 2000 CO-OP product lines.
- 11 Starship Technologies will manage and cover all costs of the trial with LCC providing a supporting role.
- 12 If successful this could help promote further trials of similar innovative technologies which will support our wider Transport Strategy goals on decarbonisation, inclusive growth, education opportunities and

provide much needed inward investment for Leeds. Any extension of the initial 3 month trial period or expansion to other areas of Leeds will be subject to further approval and recommendation.

Trial Location Selection Criteria

- 13 A simple selection method was used to identify the most suitable location to conduct the Starship delivery service trial in Leeds (see Multi Criteria Assessment Tool (MCAT) in appendix 2).
- 14 Each area needed to have at least one local CO-OP store for the service to operate as Starship only provide the delivery service itself.
- 15 There is a total of 26 CO-OP stores across the Leeds district. Each CO-OP store was assessed by Starship and LCC Officers to confirm suitability to operate the service.

Selection methodology outlined below:

- All 6 city centre sites were discounted from the 26 sites as not suitable for trials.
- Of the remaining 20 sites only 10 were considered physically able to operate PDD's.
 - Safe loading areas adjacent to the store
 - Avoids carparks or loading bays
 - Adjacent footpaths of a decent standard with drop kerbs or equivalent.
 - Trial route from the site avoids immediate road / pedestrian crossings.
- Only 4 of the remaining sites where the local CO-OP teams could accommodate the service?
 - Local CO-OP management happy to operate the trial service.
 - Sufficient resource to receive orders and pick, pack and load the PDDs
- Of these 4 sites only 3 had access to 2 or more CO-OP stores within 2km distance. Access to two stores reduces the risk of any stock shortages and subsequent customer dissatisfaction. It will also allow the CO-OP teams to better co-ordinate resource to maintain a good standard of service.
- Only the smaller local CO-OP stores were considered for the initial trials as this would require less investment/fewer PDDs and would be easier to project manage. Further sifting identified 2 sites suitable to operate the service. The two sites were Adel and Tinshill (Spen Lane).

- 16 The potential locations were then assessed again primarily on the need to further mitigate operation risk when using the PDDs on the footpaths and crossing smaller roads.

17 Further criteria assessment included:

- High percentage of residential housing with average house size of 2 to 2.5 and a sufficient population with propensity to access the service.
- Low pedestrian density and high proportion of 'B' roads and limited number of 'A' roads with low traffic flows and potential pinch points.
- Significant number of enclosed house estates with 'Cul de sacs' with limited through traffic
- Limited or no requirement to use signalised pedestrian crossings or cross busy roads.
- Well established and maintained footpaths/pavements with drop kerbs and low levels of pavement parking.

- 18 The two selected CO-OP stores also meet all the additional requirements outlined above which further cemented the decision for this area to be the preferred trial location.

- 19 The trial location also needed to align with Starship Technologies pre-conditions to be both commercially viable and work operationally for the CO-OP and any future partners if successful.

- 20 At the same time, the project team looked to ensure the area covered a wide variety of different socio-economic groups and demographic characteristics. It is important the trial is conducted in an area which is representative of Leeds as a whole to provide the most meaningful results and help identify if this service could be replicated in other parts of the city.
- 21 Key ward statistics for the trial area can be accessed via the following links - [Weetwood](#) and [Adel & Wharfedale](#) which confirm the selected location is typical of a Leeds suburban area.

Final Trial Location

- 22 The final trial area includes Cookridge, Adel, Lawnswood, Holt Park and Tinshill neighbourhoods and covers parts of both Adel & Wharfedale and Weetwood wards (see Figure 1).
- 23 Starship will partner with the following local CO-OP stores located within the trial area:
- CO-OP, 433 Spen Lane, Tinshill, Leeds LS16 6JE
 - CO-OP, The Crescent, Adel, Leeds, LS16 6AA



Figure 1 – Map of the proposed trial location area in Leeds.

What impact will this proposal have?

- 24 If successful the trial could help reduce the number of single car shopping trips in the trial areas, helping to reduce local emissions and greenhouse gases (GHG) in line with the wider Transport Strategy objectives and provide a benchmark for other areas of Leeds.
- 25 The trial will also allow LCC to understand how this technology could support the more vulnerable members of our communities as well as supporting research into the development of digital and robotic

accessibility solutions. Discussions with colleagues at the Centre for Disability Studies at the University of Leeds have indicated that they have particular interest in this trial.

- 26 All existing trials including Milton Keynes, Northamptonshire, Bedfordshire, and Cambridgeshire have shown that footfall in stores using the Starship service increases which is good for local businesses and the economy.
- 27 Starship delivery service allow participating stores to meet the growing demand in an ethically and environmentally sustainable way.
- 28 A recent engagement session at the Older Peoples Action in Locally (OPAL) project, located in the trial area, suggests that elderly residents could benefit from the Starship service and would welcome further direct involvement in the trial if approved.
- 29 Previous engagement by Starship suggests that people with neurological deficiencies such as autism appear to have a real connection with the PDDs both when using the service and directly working with the PDDs. Further research is required to understand the reasons in more detail with a potential for the University of Leeds Institute of Transport Studies and the Centre for Disability Studies to support further research.
- 30 The PDDs could also provide support to those in the community with accessibility and disabilities who are unable to safely walk to the shops, those with neurological conditions, suffer from acute anxiety and other protected characteristics who do not feel safe walking outside.
- 31 Potential future applications linked to the PDDs operation could help provide other highways services with useful information i.e., footpath quality, potholes, street lighting, wheelie bins causing obstructions. Milton Keynes Council are in early discussions with Starship to explore this potential application.
- 32 The trial could also have a positive impact on anti-social behaviour and help identify issues including pavement parking with information passed to the police or other relevant emergency services to enforce. Further research would be required to understand the practical and legal implications.

How does this proposal impact the three pillars of the Best City Ambition?

Health and Wellbeing

Inclusive Growth

Zero Carbon

33 Health and Wellbeing:

- The proposed trial using PDDs will provide alternative delivery options but is also innovative and a fun way to receive groceries. Extensive trials in other parts of the UK shows the positive impact the PDD service appears to have on the local communities, especially the younger demographic. The social interaction and associated wellbeing surrounding this service has been noted through social media / Facebook group accounts. Experience from other districts shows the PDD's have become a real part of the community.

34 Inclusive Growth:

- This delivery service can support both national and smaller independent businesses. It is simple business model and flexible app-based operating system is easy to integrate and allows local independent companies to offer a zero-emission local delivery service. The service is easy to use and provides a viable delivery alternative for all residents especially vulnerable groups to order items rather than rely on traditional delivery services or help from carers or supporting family members. This delivery service proved invaluable during the Covid-19 pandemic when social interactions were restricted. Starship also works with Leeds based company AQL which is a significant local employer which supports technological excellence in Leeds and across West Yorkshire.

35 Zero Carbon:

- PDDs are electrically powered and zero emission and have proven to reduce single-car trips in local areas where the trial has taken place. In Milton Keynes, deliveries have reduced CO2 emissions by an estimated 320,000kg since 2018. Starship can help to make Leeds a greener, cleaner place to live and thereby contribute to Leeds becoming net zero by 2030.

What consultation and engagement has taken place?

Wards affected: Weetwood and Adel & Wharfedale

Have ward members been consulted? Yes No

- 36 The joint project team (LCC & Starship) has engaged with the following key stakeholders through detailed briefings, live demonstrations and shared documents, presentations, and videos:
- Executive Member for Infrastructure and Climate on 1st & 15th August 6th October
 - Ward member briefings on 12th and 13th September 2022
 - LCC Highways, Accessibility and Adults Health Officers.
 - Presented to the Access and Use-Ability Group (AUAG) on 7th October
 - Contacted representatives of the Disability and Wellbeing Network (DAWN)
 - Contacted representatives of the Leeds Disabled Peoples Forum (LDPO)
 - Engaged with members of the Leeds Old Peoples Forum and Older Peoples Action in the Locality (OPAL) Project members on the 3rd October.
 - Conducted live demonstrations with members and students from the University of Leeds Disability Centre on the 5th October
 - Continued liaison with colleagues from other Local Authorities involved in similar trials including Milton Keynes City Council and South Cambridgeshire District Council.
- 37 Early discussions were held with Executive Member for Infrastructure and Climate and will continue throughout the remaining scheme development and trial.
- 38 Ward members have been briefed on the scheme with support from Starship to answer more complex questions on the technical aspects of the PDDs.
- 39 The LCC team has endeavoured to engage with as many key accessibility and disability groups in Leeds and within the proposed trial area as possible.
- 40 The project team approached the Transport Strategy, LCC Accessibility, Adult Health Officers with support from Connecting Leeds to help steer the project and provide contacts for key groups and individuals who would be interested in getting involved. This led to a number of meetings and email briefings where information (presentations, videos, info links) were shared to provide further context.
- 41 The project team and Starship presented to the Access and Use-Ability Group (AUAG) with the approach and proposed trial broadly welcomed but encouraged further / continued engagement with their members.
- 42 Two live demonstrations and presentations with the PDD's were conducted in October at the OPAL project centre and the Centre for Disability Studies at the University of Leeds. The OPAL centre was attended by members of LDPO and local residents (including some people who dropped in during a coffee morning). Further meetings are planned with the Disability and Wellbeing Network (DAWN).
- 43 The University event was attended by people with physical and mental disabilities and was also supported by LCC Neuro Commissioning programme lead and other LCC Officers. The project team have since reached out to two of the PHD students, both with disabilities to help support further engagement. One student, who uses a wheelchair also lives in the proposed trial area and is keen to stress test the service.

44 There is ongoing engagement with other district officers currently trialling the Starship service. This included a site visit to Cambourne, South Cambridgeshire to watch the PDD's in action and meet the CO-OP, Council Officers and Starship teams involved.

Consultation and Engagement Responses

Summary of Discussion Points

45 Executive Member and Ward Members

Generally Positive:

- Both Executive Member and the Ward Members welcomed the potential trial and understood the potential benefits of the trial for residents and key accessibility groups.
- All Members were again happy to support and promote a trial citing the potential economic benefits and interest in new innovative zero emission technologies.
- The environmental and future technological innovation aspects of the PDDs are well supported and fits into the wider Transport Strategy in the wards.
- All Members understand the low risks although have requested continued engagement throughout the trial to understand levels of support from residents and be informed of any incidents or complaints via regular updates.
- All Members noted the particular benefit to vulnerable groups who may currently struggle to access the local stores at certain times without assistance.

Potential Concerns:

- Some concerns were raised about the use of PDDs on the footpath particular in locations where the paths are narrow. Weetwood members noted parts of the Ward were particularly challenging however on further analysis this was outside of the planned trial area.
- Some concerns from Ward Members about the level of technology / accuracy of the service, would it go to the wrong address, get lost or run out of power. It was noted that the system is not perfect however each PDD can be controlled remotely if required as back-up in the event of things going wrong.
- Some Members stated current issues with street maintenance, and the prevalence of pavement parking adjacent to the stores could hinder the movement of the PDDs. The PDDs can accommodate these types of obstructions however this points to wider debate about highway access and maintenance protocols.
- Questions raised about the security and potential vandalism of the PDDs whilst delivering. These concerns were addressed in the presentations but will be closely monitored during the trial.
- Some Members mentioned potential complaints of unfair competition from other grocery stores in the area not able to use the Starship service.

46 Accessibility, Disability and Protected Characteristic Groups.

Generally Positive Response

- All groups' members see the potential benefits and would welcome a trial to better understand how this would best support their individual situation.
- Happy that Starship/LCC have/are addressing the needs of specific accessibility and disability groups and noted in this report however they would welcome further development.
- Actively involved in the demo sessions held in Oct 2022 and willing to provide ongoing support and engagement throughout the trial. Some members also live in the trial area.
- All respondents were willing to assist further with any trial to aid the wider scheme development process with a general excitement that this could happen in Leeds.

Potential Concerns

- Not all accessibility challenges addressed especially for Blind or partially sighted. Specifically, mentioned conflicts on the footpath and how quickly these would be resolved (remote assistance response time critical).
- Some concerns over the audio volume of the PDDs and can it be heard about general traffic. Note this will only be an issue when PDDs are travelling adjacent to the main roads.
- Several questions about how accessible the PDDs are for residents who are unable to leave the house or walk to the nearest access point in front of their property.
- Many people were asking if specific accessibility requirements option can be included when ordering via the online app to notify the CO-OP store of any individual packing/loaded requirements to aid the customer.

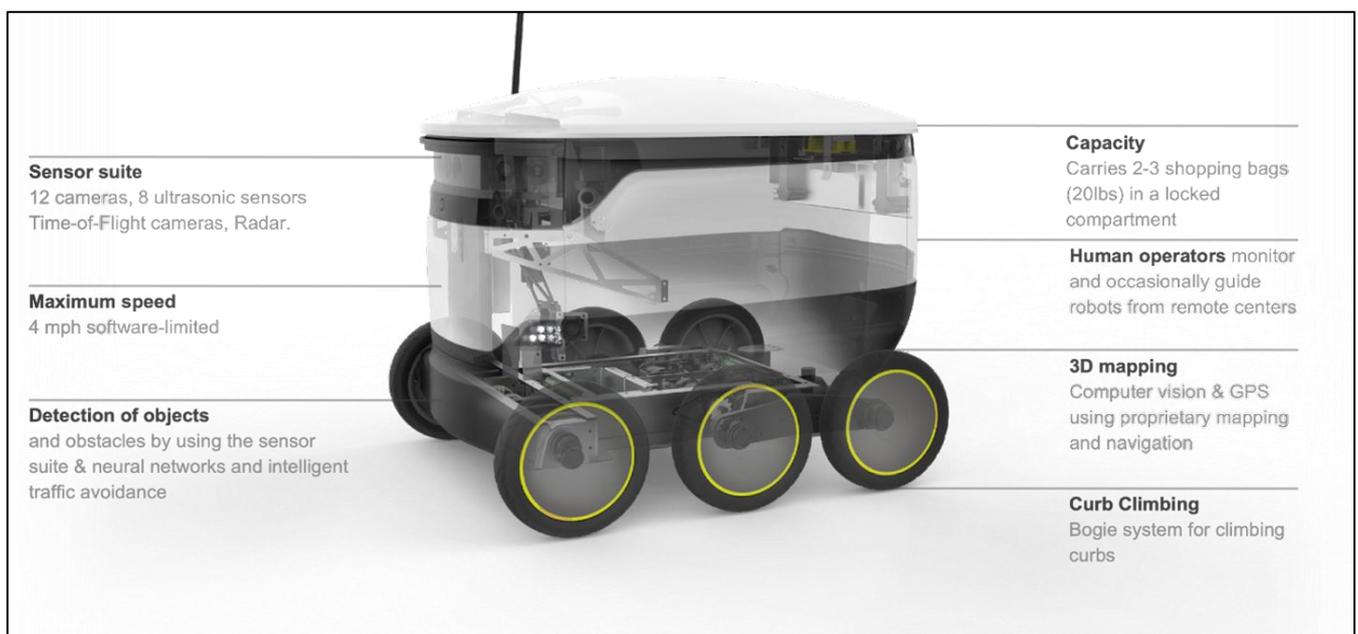
What are the resource implications?

47 Starship Technologies are to fund all aspects of the trial with LCC only to provide a supporting role. Potential for LCC staff costs to be re-embused by Starship if the trial is approved.

What are the key risks and how are they being managed?

Operational Safety and Security

- 48 Safety is at the forefront of Starship Technologies.
- 49 While the PDDs are autonomous, they can only travel within a predetermined network of routes. Before Starship service is launched anywhere, the area is digitally mapped, operators assess pavements quality, how busy the road crossings are, position of drop kerbs and make routes the PDDs are allowed to operate autonomously in. All pre-set routes are responsive, so if there is something causing an issue in the community, it can easily be changed or deleted to stop PDDs travelling that way.
- 50 Potential risk of PDDs colliding with a pedestrian are extremely low due to the level of built-in avoidance technology. If a collision does occur, it is likely to have little or no impact/injury to the individual or object. The PDD's can only operate a low speed, on average 3.7 mph and are small light weight (33kg) with a total high of 571mm (excluding the visibility aid flag). Starship will report all incidents to LCC and outline any detailed remedial action taken to resolve.
- 51 All PDDs have what is known as a 'bubble of awareness'. Unlike a pedestrian or driver, it has 360-degree view of its environment. The PDD has a suite of sensors with twelve cameras, radar, ultrasonic sensors, and time of flight cameras. The time-of-flight cameras are key as they tell the PDD how quickly objects are coming towards them. (See figure 2 below)



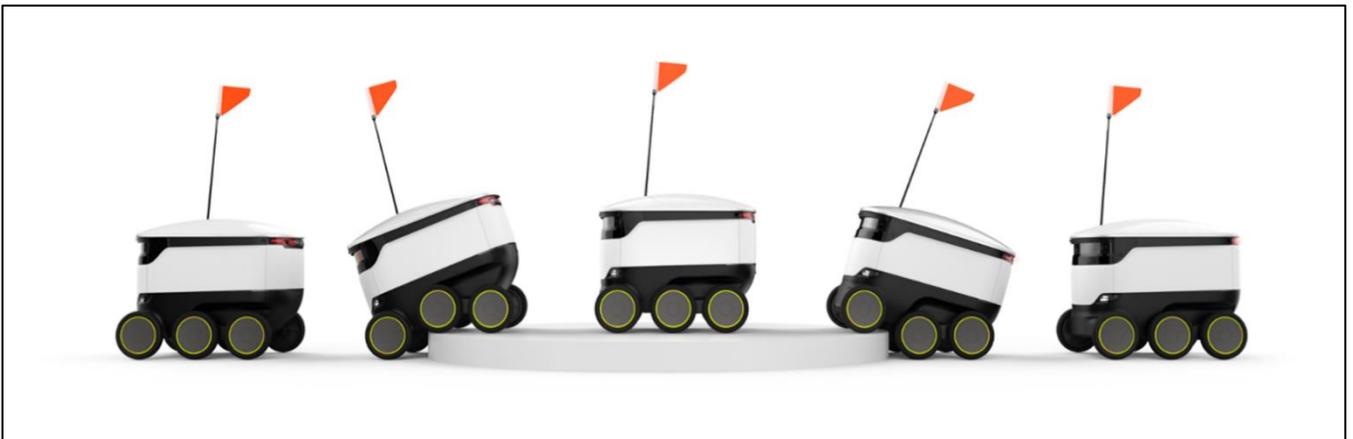


Figure 2 – Images of the Starship Technologies Personal Delivery Droid (PDD)

- 52 The sensors and programming of the PDDs mean it will behave like a cautious pedestrian. Where a human might look at a road crossing and think 'I can make it,' the PDD will not. It cannot because it is programmed not to take a risk. When it approaches an obstacle at all, its aim is to safely get out of the way, if it cannot do that it will stop.
- 53 If the PDD gets confused by an unexpected obstacle or unplanned roadworks, it will let a remote assistant know and a human back-up will intervene to resolve the issue.
- 54 If there is an issue with any PDD, or it is unsure what to do, it will stop, and local field or remote assistant will assume control of it and make it a priority to address any situation promptly. A contact phone number is displayed on the side of each PDD.
- 55 If the robots are unable to operate effectively within the geography of the trial area, this could cause a high number of incidents and bring associated, potential reputational risk to the council. The trial will include an appropriate safety audit alongside the short trial timeframe of 3 months and clause to terminate the agreement immediately - which could help reduce this risk (see legal implications section).
- 56 The agreement with Starship Technologies does not fully discharge the local authority of any liability and the council would still ultimately remain responsible for any incident under our statutory duties as local highway authority.
- 57 The PDD are equipped with an audible alarm system and speaker to warn off potential anti-social behaviour and theft of the vehicle or its contents which is triggered if the PDD stops for too long or goes off route. The PDD's can also be tracked to exact location which can be passed on to the Police.
- 58 The PDD are deceptively sturdy weighing 33KG so are not easy to pick up or steal.
- 59 The typical footpath width within the trial area is 1.8 metres with the width of the PDDs at only 569mm which leaves ample space for pedestrians to pass unimpeded. (See PDD weights and dimensions below in figure 3).

Unladen Weight	33 kg
Average Speed	3.7mph
Length	697mm
Width	569mm
Height of unit	571mm
Height with flag (aid visibility)	1187mm

Figure 3 - PDD weights and dimensions

Working with Accessibility and Disability Groups

- 60 Starship continue to invest in making sure that the service is not just safe but that it also offers a service which is accessible to all accessibility and disability groups. Each PDD is equipped with an orange flag and LED lights to aid the visually impaired.
- 61 Starship work with the Royal National Institute for the Blind (RNIB) and have worked with Guide Dogs UK to test how guide dogs respond to the PDDs. Results show the guide dogs treat the PDDs just like other pedestrians. The PDDs also emit a low-level noise so can be heard. Further research is ongoing to understand how to control the level of this noise to ensure its both loud enough to be heard over road traffic noise but not too loud to negatively impact local residents.
- 62 Importantly, robots now specifically recognise wheelchairs. If a robot recognises a wheelchair, and there is an issue where remote assistance is needed, any instance where a wheelchair is involved will take priority. Starship has developed this additional level of certainty to all wheelchair users to ensure they received the highest prior. The PDDs lid is also designed to be easily opened by people in wheelchairs.
- 63 A recent survey in Cambridgeshire recorded 17% of all Starship customers in that area either had a disability or lived with someone else who did. This was further supported when engaging with elderly groups in the recent demo at the OPAL centre in Tinshill.
- 64 Starship's service app is fully compliant with Web Content Accessibility Guidelines ("WCAG") 2.0 AA.
- 65 Separate EDCI screening documents has been completed to accompany this report (Appendix 3).

What are the legal implications?

- 66 The information in Appendix 1 of this report has been identified as Exempt/Confidential under the Access to Information Rules 10.4 (3). The public interest in maintaining the exemption in relation to the confidential Appendix outweighs the public interest in disclosing the information and financial details which, if disclosed would adversely affect the business of the Council and the business affairs of Starship Technologies.
- 67 Officers have also sought a view from the Centre for Connected and Autonomous Vehicles (CCAV, part of DfT (Department of Transport)) regarding the legal implications of Starship's proposal. CCAV stressed that the legal framework is not clear, given that the existing legislation is not designed to cover these kinds of vehicles, and recommend that LCC seek independent legal advice. However, the DfT expressed their view that the robots are likely to fall within the legal definition of a mechanically propelled vehicle and, if intended or adapted to be used on the road, also a "motor vehicle." If classed as a motor vehicle, the laws that apply to motor vehicles would apply to delivery robots when used on a public road (which includes a public footway or pavement).
- 68 Regarding insurance and liability, a Memorandum of Understanding in the form of a Legal Indemnity document supported by a Joint Trial Agreement Document has been agreed with Starship, which states that Starship are completely liable for any incident. It is understood that this is the approach taken by Milton Keynes. This document will allow the council to quickly terminate any agreement with Starship Technologies if an accident or incident were to occur. Further legal advice is required to understand if this document would fully discharge the local authority of any liability, or we if we would still ultimately remain responsible for any incident under our statutory duties as local highway authority.
- 69 LCC has agreed in principle that Starship Technologies indemnifies the Local Authority for all risks related to their operations. For this reason, legal counsel advise that they consider the legal risks to a local authority (for example, liability for loss or damage) to be **very low** (or alternatively any such risks are highly likely to be protected or covered by the relevant indemnity).
- 70 LCC understand that there is no current legal definition of PDD nor any specifics in legislation about their operations because the traffic-related legislation governing our roads and highways was passed when

Starship Technologies' robots/devices were not in contemplation (or could not possibly have been contemplated).

71 Much of the debate in this uncertain or grey area of law comes down to whether current traffic-related legislation and regulation should apply in any way to Starship Technologies' robots/devices (as a modern mode of delivery) and, if so, to what extent (including under the Road Traffic Act 1988, Highways Act 1835, and the Highways Act 1980).

72 The Department for Transport agrees that there is no current express definition that would cover the PDDs. It takes a position that current highways and road safety legislation would 'likely' apply to Starship's operations in their own opinion, but stops short of making any further judgment, offering that it is not for them but rather for the courts to decide. In other words, they believe the legislation could apply but it appears that they will not be taking action to enforce it, and that it will be up to the courts to decide on this matter should a case be taken before them (for example, a legal case or action by a third party).

73 Other UK local authorities currently participating in Starship (see figure 4), have all recorded little or no incidents with the PDDs during the ongoing trials which has led to a potential judicial review or a need to pause any trial. In every case the trials have been extended past the original planned date due the popularity of the service.

Other existing UK trial locations	Start dates of existing UK trials
Milton Keynes	April 2018
Northampton	Nov 2020
Cambourne, South Cambridgeshire (expanding in 2 new areas)	May 2022
Bedford and Kempston (Bedfordshire Borough Council)	July 2022
North Northamptonshire (expanded in to 5 areas)	July 2022

Figure 4 – Locations of existing UK pilot/trial projects

74 LCC has signed a trial agreement which outlines the responsibilities of both parties on the use of PDDs in Leeds.

75 LCC has the power to stop the trial at any point with immediate effect if the situation arises and cancel the trial / service with all parties within 72 hours.

76 LCC is in ongoing discussions with officers from the Centre for Connected and Autonomous Vehicles (CCAV) team at the Department of Transport (DfT).

Options, timescales and measuring success

What other options were considered?

77 This delivery service using PDDs is unique to Starship Technologies in the UK with no other alternative providers available at this stage.

How will success be measured?

78 Starship Technologies upload all operational information into a central database which can be accessed by the Council related to operations in Leeds and any expanded Service Area that is subsequently agreed with the Council.

79 Starship Technologies have created an online performance dashboard with a suite of KPI's that can be accessed in real-time by members of the LCC Project Team. This information can be easily downloaded in CSV or Exel format to help measure the success of the trial.

The performance dashboard and associated reports will include:

- a. number of households serviced;
- b. number of cumulative miles driven by the Operator's PDDs;
- c. Estimated reductions in CO₂ emissions in the city: a calculation based on personal trips and deliveries that would have been made by traditional combustion engines but were instead made by the Operator's PDDs.
- d. an estimated reduction in cumulative Vehicle Miles Driven.
- e. Any reported issues with accidents or contact with pedestrians and drivers of the highways that cause injury or damage
- f. Any complaints that are received as a consequence of the pilot undertaken under this agreement and what steps were taken to resolve. This information may be anonymised if the customer does not give consent for personal data to be shared with the Council.

80 The Council may still also request additional service or operational information from Starship at any time to assist with ongoing performance monitoring and evaluation.

81 The LCC project team will work with Connecting Leeds to provide Comms and Engagement support on the Commonplace platform and through social media updates, similar to other authorities, currently trialling the devices. This will include a customer survey as well as other essential information including frequently asked questions (FAQs) and contact information about the Starship trial.

82 The Connecting Leeds team has also set up an online webpage using Commonplace which will host further information including a local resident survey to understand how well the trial is being received from a LCC perspective. Information obtain through this survey will complement data received from Starship Technologies outline above.

83 Starship also utilise social media extensively to communicate and engage with the local community. Starship set up a Facebook group in every area to encourage two-way conversations with residents and customers, to report service issues and to also share fun pictures and messages. Any further services issues are immediately reported back to the operational team. The Council will also have access to these social media feeds and associated service information / comments to complement the existing customer service content provided.

84 LCC has also developed an online presence and social media accounts supported by our Connecting Leeds Comms and engagement team. This will also include FAQ (frequently asked questions) and an online survey which will ring for the duration of the trial and used for regular updates

85 The LCC project team will use this to provide a regular update for the senior LCC Highways and Transportation officers. This information will also be shared with key political and internal stakeholders to help support future decisions.

86 Continued feedback and engagement with local accessibility / disability groups and interested parties from LCC, including representatives from the University of Leeds Centre for disability group, will feed into the development and assessment of the trial.

87 Regular trial performance updates will also be shared with officers from the Centre for Connected and Autonomous Vehicles (CCAV) team at the Department of Transport (DfT).

What is the timetable and who will be responsible for implementation?

88 The trial is due to be launched in the **week commencing 28th November 2022** with Starship and the participating CO-OP stores.

89 LCC Traffic Engineering and Traffic Management teams have confirmed that a site assessment is not required prior to launch however this will be programmed into the timetable for review during the early phase of the trial.

- 90 Starship will be responsible for implementing the trial, liaising with the CO-OP Stores, digital mapping the area, local marketing/advertising the new service with LCC providing a supporting role.
- 91 It is expected that LCC and Starship will develop and share some of the initial comms, press releases and community engagement in the lead up to the service launch and during the trial.

Appendices

- 92 Appendix 1 - Legal Counsel document – Confidential
- 93 Appendix 2 - Trial Location - Multi Criteria Assessment Tool (MCAT)
- 94 Appendix 3 - EDCI Screening

Background papers / links

- [Starship Technologies webpage](#)
- [Milton Keynes Council - Update](#)
- [South Cambridgeshire Council - trial webpage](#)
- [North Northamptonshire Council - Update](#)
- [Bedford Borough Council](#)