



Department
for Transport

Future of NaPTAN Discovery Report

Research prepared and undertaken by Deloitte Digital for the Department for Transport
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Contents

3	<u>Executive Summary</u> <i>One page overview of the most important details of the Discovery</i>
4	<u>Discovery Report</u> <i>Main Discovery report and summary findings</i>
11	<u>Recommendation: Accessibility and related facilities</u>
15	<u>Recommendation: Shared mobility – bikes, e-bikes and e-scooters</u>
19	<u>Delivery considerations</u>
22	<u>Appendix</u>
24	<u>Terminology definitions</u> <i>One page overview of terminology</i>
25	<u>Approach and Methodology</u> <i>How we went about it, who we engaged and user profiles</i>
35	<u>What we learnt</u> <i>Research insights</i>
42	<u>Further details on recommendations</u> <i>Suggested areas for improvement and considerations</i>
49	<u>Current NaPTAN technology and capability</u> <i>As-is visualizations of NaPTAN</i>
54	<u>Technology considerations</u> <i>Schema options and standards</i>
61	<u>Sources used in this report</u>
62	<u>Data board show and tell 08 September 2022</u>

Executive Summary

The Challenge

User expectations of public transport are increasing, and with that the demand for accurate and informative transport data has grown. The National Public Transport Access Nodes (NaPTAN) is a key data set used in numerous journey planner apps and websites.

NaPTAN has recently undergone a redevelopment to improve the upload and download service, allow the download of data by region, and has moved to Google Cloud Platform. The basic functions remain the same, but the new service will be stable, secure and extensible.

The DfT want to understand the future scope of NaPTAN, taking into account current future trends and developments in transport and transport data, including:

- New transport modes changing how people travel (e.g., shared mobility)
- Greater number of transport data sets being created and openly exposed (e.g. BODs)
- Future data models the department is actively working towards to support the future of transport including kerbside management, parking (i.e. APDS/TRO-D), micromobility and electric charging (i.e., OCPI)
- Tackling existing data gaps and quality issues within NaPTAN

This discovery sets out to learn about

- What user needs should NaPTAN be solving?
- Should it remain multi-modal? If so – how should data on non-bus nodes be collected?
- Have we got the right data schema? Should the schema be different for the different modes of transport, e.g. mandate train platform data be supplied?
- Should we have accessibility information available within NaPTAN?
- What role should NaPTAN play in the wider transport data ecosystem?

8 transport modes and 6 data areas that NaPTAN could hold

This report sets out findings, opportunity areas and actionable next steps from the Future of NaPTAN Discovery. An eight week research project to support the Department for Transport's aim of helping people make better public transport decisions and to use public transport confidently.

This report affirms the vision of the NaPTAN service as *'a centralised aggregated open data set with clear standards and governance, that provides the needed static infrastructure data on all public transport mode nodes across England, Scotland and Wales'*.

User research confirmed the value of the 7 modes NaPTAN currently holds and further identified 'shared mobility' as an additional mode:

- Bus,
- Rail,
- Tram,
- Coach,
- Taxi,
- Aviation,
- Maritime, and
- + Shared Mobility

"Incorporating [shared mobility] with public transport systems will make it more accessible and increase awareness" – Research participant

And, this report also identified 6 data areas that NaPTAN should cover for key modes of transport:

- Location,
- Stop name,
- + Accessibility data,
- + Facilities data,
- + Mode specific data,
- + Other languages.

"If you have accessibility issues, accessibility data is crucial to being able to use public transport. Its core" – Disability representation group

This report identifies some of the constraints faced by Local Authorities to respond to NaPTAN changes.

Identified improvements that can help better meet user needs

1. NaPTAN should hold accessibility data and related accessibility facilities data
 - *Closing the transport accessibility gap could reach an economic benefit of £72.4bn per annum¹*
 - *25% of working age disabled people cite inaccessible transport as a key barrier to participation in employment, and 30% say it has reduced their independence¹.*
2. NaPTAN should hold the location data of shared mobility parking bays / hubs for bikes, e-bikes and e-scooters
 - *Shared mobility could replace 1/5 short car trips², which could help the transition to Net Zero and improve air quality. If this was achieved in London it would reduce the worst pollutants in our air by 445 tonnes³.*
3. User research identified NaPTAN as the 'natural home' for static transport infrastructure data
 - *It has the reach of all Local Authorities and the mandate to aggregate disaggregated data for transport services.*
 - *It has a direct route into consumer planner apps which may best deliver accessible planning options when the data is available, on a national scale.*

To deliver these recommendations, this report finds that

- The DfT NaPTAN team need access to additional capabilities to deliver the roadmap of improved functionality
- A database may offer advantages and should be further considered as part of the redevelopment of the NaPTAN data service

This report also recognises the significant effort required to respond to NaPTAN data changes among data providers and data consumers. It is recommended that DfT further test the large lead-in times cited by these groups in this research - up to 12 months.

NaPTAN may need to adapt to remain purposeful – *Why was this Discovery done now?*

External pressures

Passenger expectations of public transport are changing

- Limited, inconsistent and disaggregated accessibility data for transport nodes is preventing accessible transport users planning and making journeys suitable for their needs
- Emerging shared mobility schemes (e.g., bikes, e-bikes and e-scooters) are growing around the UK and changed where and when we use public transport, including supporting first and last mile connectivity to public transport
- The transport sector makes up 27% of the UK's greenhouse gas emissions and will have to fundamentally change to reach Net Zero⁴. Part of this transitioning to EVs and mode shift - shifting passengers from private to public or active travel
- Public safety awareness is increasing, with more expectations of planning end-to-end journeys that are as safe as possible, avoiding isolated or dark areas for example

Internal pressures

DfT and wider Government

- The first phase of NaPTAN redevelopment completed, and the team are currently mapping out the next phases of work and evaluating team capability requirements
- The NaPTAN team have limited resources and require help exploring, defining and prioritising strategic objectives
- Local authorities struggle with limited funding, training, and capabilities to gather and manage new data generally while balancing BAU demands
- Understanding of NaPTAN's data quality and completeness relies on strong engagement between NaPTAN and data owners, putting pressure on assurance processes
- DfT National Bus Strategy (2021) committed to ensuring accessibility data on bus stations and stops is available to help disabled passengers plan journeys⁵
- A major audit of UK railway stations is underway to inform the data required to deliver an accessible transport experience for disabled passengers⁶
- DfT Data Strategy team are publishing a new data strategy in October*
- An e-scooter trial is underway in 31 regions in England to assess the safety of these vehicles
- DfT active travel team have created a new executive agency to fund schemes around the UK that promote use of public transport or walking

* October publication data indicative as at August 2022. Subject to change

What should NaPTAN do to respond to these pressures to remain purposeful, and can it deliver the changes required?

We have spent eight weeks learning about how NaPTAN helps users plan and make travel decisions today, and how it might help them in the future

Questions to address

The discovery sets out to answer the questions:

1. What transport experience and transport mode data is desired now, and in the future, that is not currently provided or is not easily accessible?
2. Is NaPTAN best placed to provide this data?
3. Is it feasible for NaPTAN to provide this data?

Goals

- Define NaPTAN's future purpose by testing the hypothesis that NaPTAN is the best place to centralise disaggregated transport infrastructure data, across different transport modes
- Identify and prioritise the key users and their needs
- Identify and prioritise actionable solutions that would help to address unmet user needs, answering:
 - If the solution is in the scope of NaPTAN
 - If the solution is feasible for NaPTAN to deliver

Objectives

- Conduct user research with a set of prioritised key stakeholders and user groups (see page 8) to understand their needs and wants
- Visualise the current state ecosystem through working sessions with stakeholders
- Develop an understanding of how other organisations, authorities, or countries are tackling the same challenges
- Produce a clear set of recommendations, next steps and areas of further discovery based on user needs

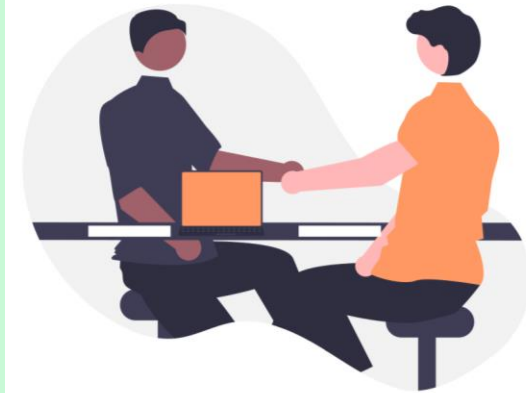
Overview of the eight-week Discovery

The purpose of NaPTAN is to enable an excellent transport experience, we therefore focused this discovery on the customer experience. We engaged people and organisations from across the transport data ecosystem, from data providers through to the end consumer.

25 in-depth
exploratory research
interviews

6 focus groups, and
3 internal workshops

88 people
engaged



"I was really impressed with the approach to the user research, the range of stakeholders who we had spoken with and also the method utilised asking people to design their own journey to understand their expectations" – Research participant



32 hrs spent
interviewing
stakeholders

15 improvement
ideas uncovered

Our user research has shown that a high-quality aggregated data set on public transport is, and will remain to be, crucial for the public transport ecosystem

Aggregated transport node data enables passengers to plan and make public transport journeys, LAs and LTAs to plan routes, and make infrastructure and investment decisions. For it to be successful, it may require incentives and mandates to encourage data quality, and data must have nationwide coverage.

An aggregated open data set on public transport nodes is a key enabler to public transport

- It facilitates:
 - Passenger confidence in planning and making local and national journeys, enabled through journey planner apps
 - Transport operators to propose and manage routes locally and nationally
 - Local Authorities and transport authorities to deliver effective transport services in their communities
 - Multi-modal travel by revealing the proximity between transport nodes, allowing people to make journeys using public transport they previously would have had trouble planning, supporting Net Zero ambitions and their engagement with new transport modes
 - Innovation and creates cost savings – it has been estimated that open data saves £70-95m per annum for London passengers alone^Z
- As part of the levelling up agenda, it is important that all communities have accurate transport data to connect communities and enable tourism, commerce and local benefit
- However, without the right standards, national data coverage, high data quality, and continued maintenance of data, these promises are unfulfilled
- The potential impact of this is that communities with smaller budgets, resources and capabilities fall behind, limiting their ability to deliver transport experience improvements for their communities and their engagement with new transport modes
- This gap between Local Authorities will continue to grow unless they are equipped to manage and provide their data effectively

We identified a set of prioritised user needs for citizens, data providers and data consumers which NaPTAN could help solve now and in the future



Citizen



**Local Authority / local transport authority
(data provider)**



**Digital service providers
(data consumer)**

My goal is to plan and make a journey, locally and nationally, suitable for my needs

My goal is to manage and provide data easily for the transport stops in my area

My goal is to use high-quality, nationwide data to create experience improvements for my product or service

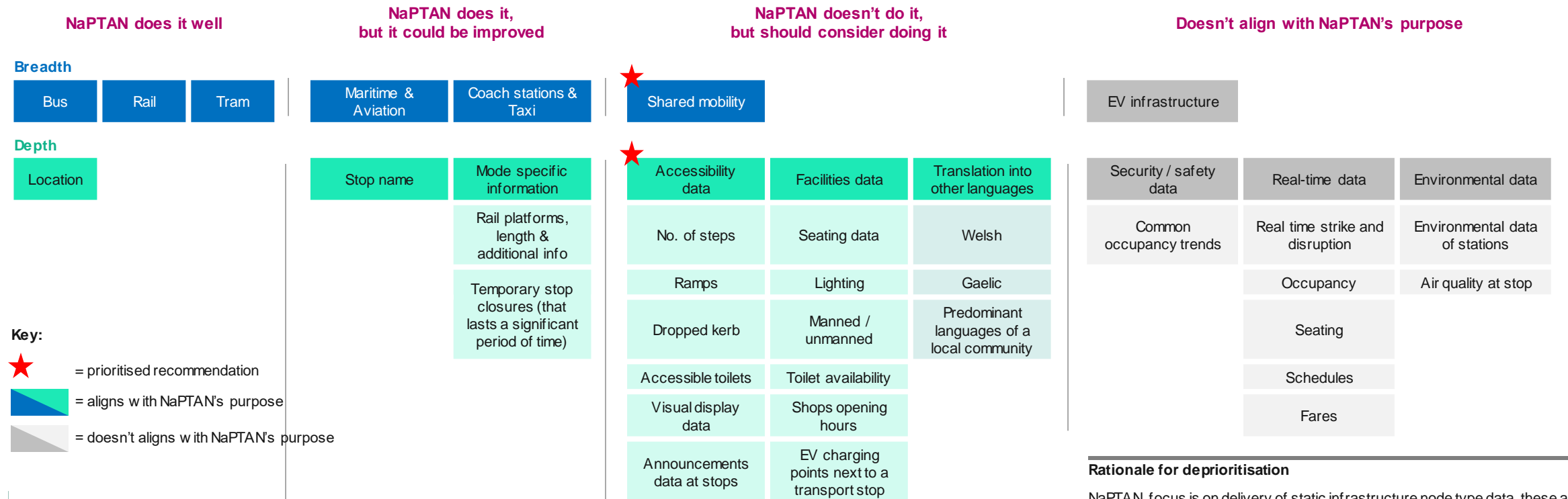
-
- 1 I need to plan a journey that supports a variety of accessible needs (such as number of steps, availability of toilets, and seating)
 - 2 I need to plan last mile journeys by identifying where other transport services exist, such as taxis, coaches or bike stations
 - 3 I need accurate and reliable information about stop locations and real-time information on journey disruptions
 - 4 I need to efficiently navigate between stops and platforms
 - 5 I need clarity on the data standards that will help me gather data in an interoperable way
 - 6 I need to have adequate training and support materials on how to upload and manage NaPTAN data
 - 7 I need to have lots of visibility and notice (12 months) to prepare to capture any new data
 - 8 I need to upload NaPTAN easily while I balance my other BAU tasks
 - 9 I need NaPTAN to accommodate the Welsh language / second languages
 - 10 I need access to high quality standardised data that applies to GB / multiple areas, ideally in one source of truth
 - 11 I need more granular information on transport nodes to provide accurate and reliable information about stop locations and improve the customer experience
 - 12 I need help ensuring customer feedback is actioned by the correct data owner so that my customer experience is always excellent

Our research identified 8 modes of transport that NaPTAN should hold information on, and 6 data areas that each mode should cover

The future of NaPTAN is defined by 2 strategic choices: its breadth (the number of transport modes it provides data on) and its depth (the level of granularity of data it provides for each mode). NaPTAN currently has good coverage of bus, train and tram stop locations, but could improve on maritime, aviation, coach and taxi rank coverage, as well as stop name conventions and mode-specific information. NaPTAN currently does not cover shared mobility (e.g. bike, e-bike and e-scooter) data, accessibility data, facilities data or other languages. Improving in these areas could help NaPTAN meet key user needs, fulfil its purpose of helping customers have an excellent public transport experience, and grow strategically.

A prioritisation exercise was run to determine which options should be explored in more depth (see appendix page 26). Shared mobility and accessibility (and related facilities) data were prioritised for further review as these represented expanding what NaPTAN does, and could be the most strategically impactful.

Details of the findings are located on page 42-43 of this report.



Rationale for deprioritisation

NaPTAN focus is on delivery of static infrastructure node type data, these are either real-time or not node type data. It is also recognised that other routes to real-time data exist, such as the Bus Open Data Service.

Recommendation: Accessibility and related facilities data

Accessibility and related facilities data case of change

Disabled people travel less and feel less confident when travelling compared to people without disabilities¹². Part of the reason for this is the lack of real time and transport infrastructure accessibility information.

The transport accessibility gap

In 2019, **disabled adults made 26% fewer trips, and travelled 41% fewer miles, than those without a disability**⁸.

55% of disabled adults never use trains or use them less than once a year, compared to 3% of people without disabilities⁹.

This difference is called the 'transport accessibility gap'.

Journey planning and the role of information

There are many reasons for the transport accessibility gap, one being **the lack of adequate provision and granularity of accessibility and facilities information across both public and private modes of transport**^{1,8,9,10,11}.

For some disabled people, journey planning around their accessible needs is crucial. Disabled people often spend longer planning their journeys, and make fewer spontaneous trips¹¹.

13% of disabled people did not travel if information about the availability of accessibility facilities (e.g. lifts and ramps) were lacking¹².

Currently there is inconsistency of availability accessibility and facilities information and therefore a limitation in the functionality of apps in providing for disabled passengers¹¹.

Impact

30% of disabled people say that difficulties with public transport has reduced their independence¹.

10% of disabled people in the UK state that inaccessible transport is a key barrier to their education¹.

25% of working age disabled people cite inaccessible transport as a key barrier to participation in employment¹.

Closing the transport accessibility gap could generate an additional economic benefit of £72.4bn per annum, as it would improve wellbeing, and give better access to education and employment for disabled people¹.

Prioritised recommendation 1: Accessibility and related facilities data – what and why

Recommendation – harder to implement, higher impact

NaPTAN should hold accessibility data, and related accessibility facilities data (e.g., toilets, seating, lighting, and shelter) to help people plan and use public transport with increased confidence. Consider a separated but linked data set to minimize disruption to local authorities changing schemas.

User Need

- Our research found that there is currently **inadequate provision and granularity of accessibility and related facilities information** across public transport modes
- It found that this is **limiting people’s ability to use public transport and subsequently reducing their independence and confidence when travelling**
- People have to rely on multiple different services to plan an accessible journey, making their travel planning more complex
- People without accessibility needs told us they want toilet information during trips, especially trips made with families

“If you have accessibility issues, accessibility data is crucial to being able to use public transport. Its core.”

– Disability representation group

Impact of addressing

- Empowering people to be able to plan and use public transport for their needs, and use it with confidence
- Enabling mode shift and supporting the Net Zero transition with increased use of public transport

“If people are really unsure they stick to familiar journeys, or take someone with them”

– Disability representation group

Current landscape / why it is not being addressed currently

- Some LAs, LTAs, transport providers and private organisations are collecting accessibility data due to passenger demand and growing expectations - however this is being gathered for some transport types, at some locations
- Those who are capturing accessibility data are gathering it against their own standards, meaning it is not interoperable
- For these reasons accessibility data is not trusted by journey planner apps and therefore does not help people make effective travel planning decisions

“We will only provide accessibility data when it is 100% correct, as it is so crucial [that it is correct]”

– Journey planner app

Why NaPTAN

- NaPTAN has the reach of all Local Authorities and the mandate to aggregate disaggregated data for transport services
- It has a direct route into consumer planner apps which may best deliver accessible planning options when the data is available

92% of people asked believe that Government should set a standard for transport node accessibility data, and 84% believe that this data should be housed in NaPTAN

Prioritised recommendation 1: Accessibility and related facilities data – next steps

We advise that a further discovery should cover the following:

1. Conduct primary qualitative and quantitative user research with a range of accessible transport users (e.g., physical, cognitive, sight, hearing needs users) to understand their motivations and barriers to planning and taking public transport, and their service exclusion experience
2. Prioritise experience into areas that NaPTAN can solve vs other areas; identify who can solve the other areas and engage
3. Translate priority user experiences into proposed data required to deliver this experience; the number of steps, and the availability of toilets for example appeared in this research
4. Engage with the Local Authorities and Local Transport Authorities to view their accessibility data, understand how to take their current data and re-use as much as possible while informing a suitable standard
5. Propose an accessibility data standard that can support these users achieving an accessibility-inclusive transport planning experience

Problems to solve

1. How might we help users with accessible needs plan a successful end-to-end public transport journey?
2. What are the first- and last-mile considerations made by these users?
3. How might we best support LAs and LTAs to capture, provide and manage accessibility data?
4. Which other DfT / government departments are best able to jointly address the accessible users' needs?

Stakeholders to engage

- Accessibility representative groups to help reach these users: e.g., DPTAC, Transport for All, Royal National Institute of the Blind, People for Research / Acumen / Mind for a range of users
- Local Authorities and Local Transport Authorities
- Data strategy transport team
- Accessibility team within DfT
- Data standards authority

Capabilities needed to deliver*

We believe this discovery may involve working across teams within the department

- Inclusive design specialist x 1
- Inclusive design researcher x 1
- Service designer x 1
- Business analyst x 1
- Data analyst x 1
- Technical architect x 1 (part time)

Outcomes to achieve

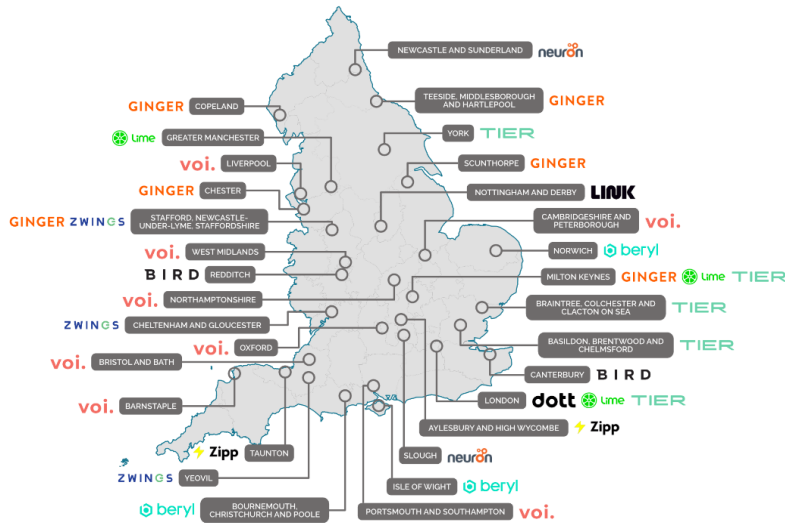
1. An end-to-end understanding of an accessible user's current travel experience
2. List of user stories meeting users' needs and pain points
3. A proposed data standard for infrastructure accessibility information
4. List of hypotheses and uncertainties to test in a GDS Alpha

Recommendation: Shared mobility - bikes, e-bikes and e-scooters

Shared mobility case of change

Shared mobility (e.g. bikes, e-bikes and e-scooters) is considered to support the transition to Net Zero as it can increase the catchment area of public transport, replace short car journey, reduce congestion and can be a catalyst for people to re-engage in cycling

Shared mobility is becoming increasingly popular, particularly in urban areas. There are currently 39 bike/e-bike schemes, and 10 e-scooter schemes operating across the UK¹³. It is the fixed parking bays that can be classed as a public transport node, and are relevant for NaPTAN.



The benefits of shared mobility

Shared mobility enables mode shift and support the transition to Net Zero in a number of ways:

1. They increase the catchment areas of public transport, providing first and last-mile connections, while shortening commuting time and reducing reliance on cars^{14,15}
2. They replace short car journeys, with 53% of all bike-share users say they would have made their last trip by car or taxi if shared mobility had not been available¹⁵
3. Bike and e-bike shares can act a “catalyst” to getting people back on bikes, with 50% of bike/e-bike scheme users saying it got them to start cycling again¹⁵

Impact

Predictions show that shared mobility could replace 1/5 short car trips², which could help the transition to Net Zero and improve air quality. If this was achieved in London it would reduce the worst pollutants in our air by 445 tonnes³.

Prioritised recommendation 2: Shared mobility (bikes, e-bikes and e-scooters) – what and why

Recommendation – quick win, lower impact

NaPTAN should hold the location data of shared mobility parking bays (e.g., for bikes, e-bikes and e-scooters) – to aid its integration into the public transport system, supporting modal shift and the transition to Net Zero

User Needs

- Users in areas with shared mobility use a variety of different apps to locate the nearest vehicle; none are integrated into end-to-end public transport planning
- LAs want to manage the infrastructure of shared mobility and tracking the location of approved bays happens outside of NaPTAN
- Currently shared mobility location data is partly available in some journey planner apps, but it lacks parking bay information which we believe is impacting the service's integration into end-to-end public transport planning

“Incorporating in public transport systems will make them more accessible and increase awareness”
– Research participant in public meeting

“If managed properly, they could very well be public transport and contribute to the whole multi-modal thing”
– Research participant in public meeting

Impact of addressing

- Shared mobility acts as a catalyst for get people engaged in active travel, increases the catchment area of public transport and often replaces short car journeys - **supporting modal shift and the transition to Net Zero**
- Shared mobility is an emerging public transport mode, and it is anticipated that most urban UK cities will have shared mobility services in the future

The transport sector produces 27% of the UK's total greenhouse gas emissions⁴. Increasing adoption of shared mobility would be a step towards reducing this figure.

Current landscape / why it is not being addressed currently

- E-scooter use is currently under legislative review; providers have created their own apps to locate and use vehicles
- Some journey planner apps and shared mobility providers have relationships to provide their data in these apps, but this may limit new operators' routes to market, competition and innovation
- To our knowledge, there is no plan for government to aggregate or standardise bike or e-bikes bay location data, though this is being discussed for e-scooters

“At the moment we get bay location directly through operators” – Journey planner app

“Some shared mobility providers come to us directly [to establish their bay location in our app]”
– Journey planner app

Why NaPTAN

- Having bay location in NaPTAN could enable planning services to connect shared mobility into transport planning
- LAs provide shared mobility operators licences and hold the decision of the location of bays, so have full oversight of bay location data already

77% of surveyed LAs, LTAs, technology providers and government departments view shared mobility as a form of public transport

Prioritised recommendation 2: Shared mobility (bikes, e-bikes and scooters) – next steps

We advise that a development project could be undertaken to:

1. Define data fields and standards needed to reflect shared mobility parking bay locations in NaPTAN. Suggested: stop type (bay with fixed parking arms such as Santander bikes, or free parking bay for undocked bikes and scooters), bay length or area, where to measure exact location of bay etc.
2. Engage DfT Micromobility team and Data Standards Authority to agree proposed data fields and standards in NaPTAN
3. Engage Local Authorities and Local Transport Authorities to impact assess change required and the support required to be successful; understand the governance process of how and when changes will be made, and the feedback loop for if a customer identifies incorrect bay location information
4. Engage Software providers to impact assess change required from these groups
5. Identify which Schema to add shared mobility parking bay location data to, and impact assess current architecture to create requirements for change: Expand validation rules of NaPTAN ingestion process

Problems to solve

1. What data will allow users plan an effective shared mobility journey?
2. How might bay location information be absorbed by travel planner apps such as Google and City Mapper?
3. What specific changes to the file validation mechanism are required to have a new shared mobility schema ingested?

Stakeholders to engage

- LAs and LTAs (Suggested engaging the Local Authorities undertaking or actively engaged in organising shared mobility hubs)
- Software providers
- DfT Micromobility team
- Data standards authority
- planner apps and services, such as Google, Citymapper, Traveline to confirm how they will ingest new bay location data

Capabilities needed to deliver*

- Researcher/Business analyst x 1
- Data analyst x 1
- Technical architect x 1 (part time)
- Developer x 1
- Tester x 1

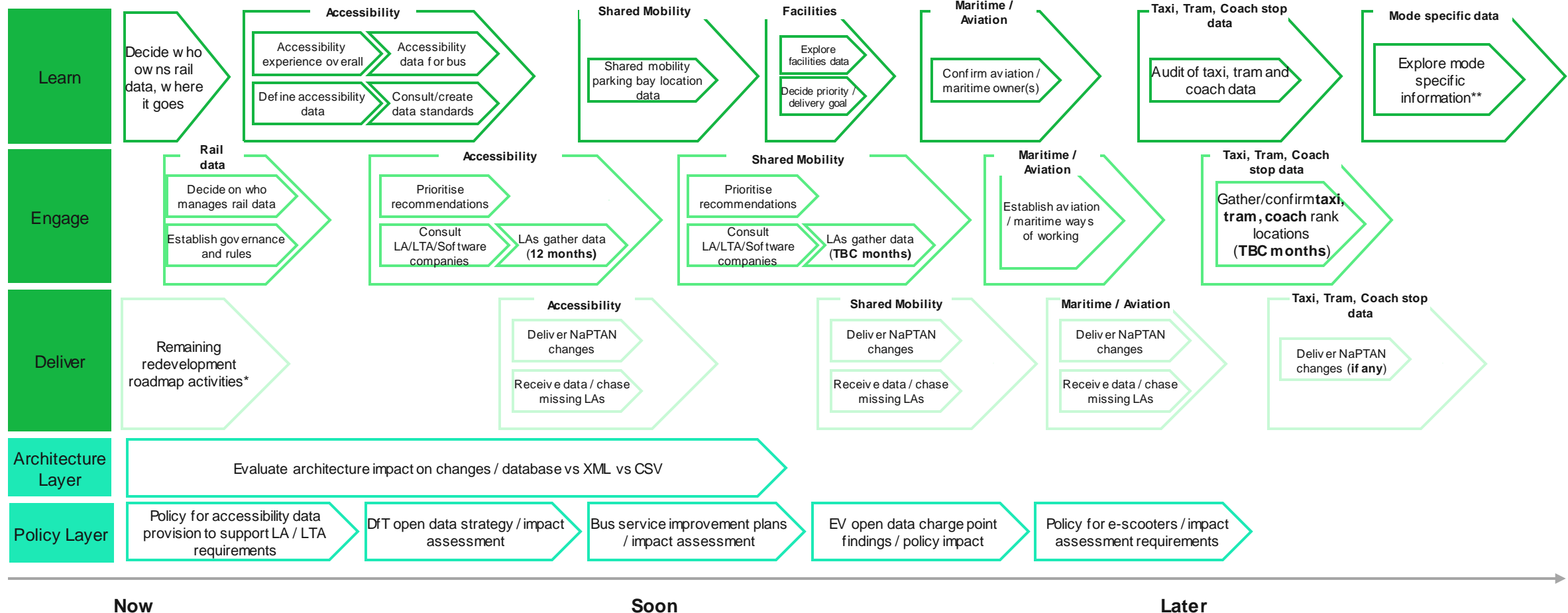
Outcomes to achieve

1. Defined and agreed data set for shared mobility parking bay location information
2. A shared mobility parking location data standard
3. Understanding of how to best enable data providers to gather and provide the required data
4. User stories / requirements for change

Delivery considerations

NaPTAN improvements may be achieved in a cyclical learn, engage, deliver approach of continuous development and delivery

Engagement with LAs/LTAs is critical to the success of NaPTAN development and will require long lead in times to gather data, cognisant also of the wider constraints faced by these groups to gather, provide and quality assure data (funding, time, capability).



*Outstanding redevelopment activities: Welsh / Second language, temporary closure of stops

**Mode specific data, such as more data on railway stations/platforms / taxi rank facilities / coach station facilities

To achieve a continuous delivery lifecycle and the recommendations made by this report, the current team will have to grow

Team capabilities today:

- The current redevelopment team are winding down in September
- The NaPTAN product is moving into a run state (with some backlog development tasks) while future strategy is informed by this report

Function	Role	Capability now	Capability in September
Learn	User Researcher	2	0
	Service Designer	1	0
	BA	2	2
Engage	Product owner	2	1
	Product manager	0	0
	Delivery manager	0	1
Deliver	Tech lead	1	0
	Developer	4	2
	Junior Developer	1	1
	Data analyst	1	1
Total		14	8

Indicative team capabilities required:

- **The team capability will have to grow to meet the proposed backlog and strategic ambitions of NaPTAN as set out on the previous page**
- To achieve a continuous development and delivery, the team will require a blend of research, service design, and delivery capabilities
- Below, we have identified indicative capabilities required based upon typical continuous delivery profile. Any team profile is subject to delivery priority, funding, and policy considerations

Function	Role	Capability required relative to September*
Learn	User Researcher	+2
	Service Designer	+ 1 or 2
	BA	<i>Same as September</i>
Engage	Product owner	<i>Same as September</i>
	Product manager	+1
	Delivery manager	<i>Same as September</i>
Deliver	Tech lead	+1
	Developer	+2
	Junior Developer	<i>Same as September</i>
	Data analyst	<i>Same as September</i>
Total		16 to 17 resources

Appendix

Contents

- [24](#) [**Terminology definitions**](#)
One page overview of terminology
- [25](#) [**Approach and Methodology**](#)
How we went about it, who we engaged and user profiles
- [35](#) [**What we learnt**](#)
Research insights
- [42](#) [**Further details on recommendations**](#)
Suggested areas for improvement and considerations
- [49](#) [**Current NaPTAN technology and capability**](#)
As-is visualizations of NaPTAN
- [54](#) [**Technology considerations**](#)
Schema options and standards

Terminology definitions

Term used in this report	Definition within the scope of this report
Accessibility data	The metadata describing the infrastructure within and around a transport stop/station that supports an accessible user in their interaction with that stop/station. Examples identified in this report include: the number of steps, the gradient of a ramp, the availability of staff, seating, lighting, toilets, induction loops for the blind.
Disabled	As defined by the Equality Act 2010 – a person is disabled if they have a physical or mental impairment that has a ‘substantial’ and ‘long-term’ negative effect on their ability to do normal daily activities.
Shared mobility	<p>Refers to lightweight vehicles (bikes, e-bikes, scooters or e-scooters) that may be borrowed as part of a self-service scheme in which people hire them for short-term use.</p> <p>It is specifically the fixed parking bays of these vehicles that are of relevance to NaPTAN, not the floating vehicles locations, as we consider the parking bays/mobility hubs to be transport access nodes.</p>

Approach and methodology

Strategic options prioritised

To choose which areas are a priority, we mapped all breadth and depth options against their potential positive impact and feasibility of implementation.

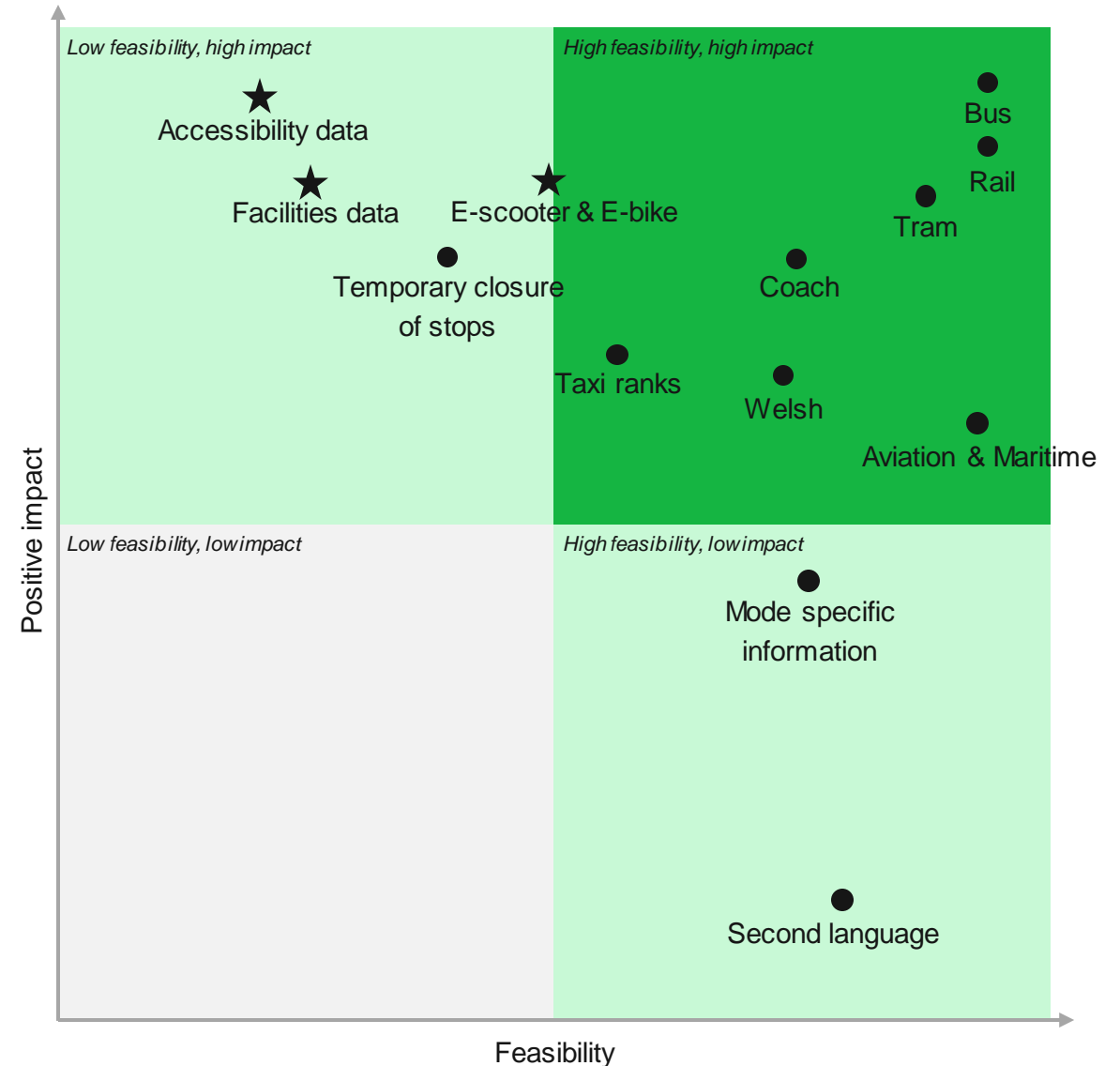
Broadly the top right quadrant (higher positive impact and higher feasibility of being able to achieve this with naptan) represented improving what NaPTAN currently does, and the top left quadrant (higher positive impact lower feasibility) represented expanding what NaPTAN does.

The team prioritised digging deeper into the expanding what NaPTAN does, namely:

Breadth: Bike, E-scooter and E-bike bays

Depth: Accessibility and facilities data

Other options could/should be considered, please review pages 42-43 in the appendix to see further details on these.



Research approach and methodology

User research was conducted across a range of participants identified on DfT's internal engagement list; members of this list have previously engaged with DfT on NaPTAN work or taken part in user engagement sessions previously.

As there was a bias risk that participants would be familiar with the NaPTAN service, our approach was broken down into two parts for all participants.

In-depth interview (one hour)

Methodology

- One-hour structured interview across areas:
 - *About them & their role*
 - *Their involvement in NaPTAN (providing or consuming data)*
 - *Their current data projects / views on data quality / future transport modes*
- Range of open and closed questions tailored to the individual and/or user grouping

Purpose

- Learn about the participant and their needs and pain points in the current transport landscape
- Learn about process of providing/consuming NaPTAN data
- Learn about the impact of changes to NaPTAN on them

Travel experience activity (30 mins)

Methodology

- 30-minute tailored activity to explore their travel expectations as a travel passenger / transport consumer
- Specific constrained scenario

Purpose

- To elicit the travel experience and remove experience bias in the approach
- Constrained scenario designed to elicit service expectations:
 - *E.g., overcoming a train delay, overcoming a complex multi mode journey in a new environment, travelling with an elderly relative.*
- To identify travel needs from range of accessibility considerations

Research participants we spoke to (1/2)

User Group Name	Name	
Local Authorities	Bigwood Central Bedfordshire	
	Bournemouth	
	Bridge end (who manage 5 Local Authorities' data)	
	Christchurch	
	Connect Tees Valley (on behalf of 5 Tee Valley Local Authorities)	
	Denbighshire	
	Dorset	
	Hampshire	
	Isle of Wight	
	Kent (who manage 6 Local Authorities' data, including their own)	
	National PTI (who managed 33 Local Authorities' data)	
	Poole	
	Rhondda Cynon	
	Southend on Sea	
	Vale of Glamorgan	
	Warwickshire	
	West Berkshire	
	Local Transport Authorities	Transport for Wales
		Transport for Scotland
		Transport for London
Transport for Greater Manchester		
Transport for Greater Manchester Digital Team		
West England Combined Authority		
South Yorkshire Combined Authority		
Bus Open Data Service		
Office for Rail and Road		
Office for Zero Emissions Vehicles		
Internal Department for Transport Teams	Redevelopment Team Researcher	
	Active Travel Team	
	Micromobility Team	
	Aviation and Maritime Data Team	
	Data Strategy Team	

Research participants we spoke to (2/2)

User Group Name	Name
Government, <i>other</i>	Data Standards Authority
	React
	Basemap
	Podaris
	Passenger Technology Group
B2B Software provider	Smart Applications Manager
	Google Maps
Journey planner apps	City Mapper
	First Bus
	2x Anonymous Bus Providers
	Beryl
Transport providers	Tier
	Transport Focus
Representative Group of the General Public	Age UK

User profiles – Local Authorities



About

An administrative body in local government who is responsible for providing all NaPTAN data for their local area. This responsibility is often held by one person in the Local Authority.

Quotes

“NaPTAN is a low priority compared to my other tasks”

“We haven’t got the resilience or robustness to maintain the data”

“It would help if all the other counties [near me] were on the same tools and schema so that I can get help off them“

Attributes

- Has local knowledge of their area
- Desire to have up to date NaPTAN data for their local community
- LAs have differing levels of motivation, demands, capabilities, methods and tools for collecting and uploading NaPTAN data

Tech capabilities



Tech capabilities differ across different LAs, but tend to be low to medium

Pains

- Face resource and funding constraints with limit ability to prioritise NaPTAN work and changes
- Cost of NaPTAN data management software and cost of any changes to that software
- Fear of not being involved or not having visibility and time to adapt to changes
- NaPTAN expertise is often held in one person, and when they leave it leaves a capability gap
- Lack of training around NaPTAN and uncertainty when, and what to upload
- Data quality issues due to lack of consistent standards, schemas and naming conventions
- Fear of NaPTAN schema changes due to the above financial and capability constraints

Needs

- To understand the rationale behind changes to NaPTAN and made aware of changes to NaPTAN effectively and in a timely manner
- Adequate time to prepare for and respond to changes (and recognition of financial and time constraints faced to make changes happen)
- Available training on NaPTAN data quality, standards
- Consistent schema use, naming conventions and standards across LAs
- Additional funding or resources if they have to provide new data or increased engagement

User profiles – Transport Authorities



About

An authority that regulates or administers transportation in a region of the UK. They provide oversight and aggregation for their Local Authorities when it comes to transport related matters.

Quotes

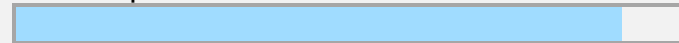
“Frustrating that we can’t fix data quality issues when we notice them”

“NaPTAN is crucial to many of the services we run”

Attributes

- Holistic thinkers when it comes to transport, with the broader transport strategy and consumer in mind
- Knowledgeable of schemas and the NaPTAN process
- Knowledge of NaPTAN is often held by a specialist or dedicated member of the team
- Proactive in updating and maintain NaPTAN
- Often provide their own consumer facing service (e.g. a journey planner)

Tech capabilities



Pains

- Data gap in accessibility, security, second language translation (namely Welsh) results in suboptimal services in our communities
- Resource constrained due to BAU activities
- Difficult and time consuming to engage Local Authorities due to LAs’ resource constraint, technological capabilities and motivation differences generally
- Not being able to correct data in NaPTAN directly
- Don’t have a standard process or a reliable source of information for finding out about stop changes
- Lack of consistent standards across LAs means they have to do additional work

Needs

- To be made aware of changes to NaPTAN effectively and in a timely manner
- Consistent schema use across LAs
- LAs to be better engaged and able to manage NaPTAN data
- Confidence that the data they receive is accurate
- Data on accessibility to better serve their communities
- Ability to put Welsh and Gaelic translations of stop names into NaPTAN
- Data and information of emerging transport modes

User profiles – B2C Providers (Journey Planners And Transport Operators)



About

Private or public organisations that provide a transport related service to the public as their main product (e.g. journey planner app, bus or rail operator, e-scooter hire, etc.)

Quotes

“Centralised national data systems are simpler and easier to use for data consumers”

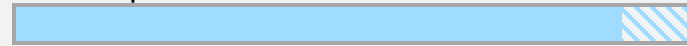
“Data is only beneficial if it is accurate and updated regularly”

“It would be a really poor experience if someone was relying on stop information that was out of date”

Attributes

- Confident aggregating and manipulating data from many sources
- Customer experience focused
- Actively seek out data they can use to improve their service
- Care about data quality, as it affects the customer experience

Tech capabilities



Pains

- Collecting fragmented data from many different sources
- Poor quality data is costly to clean and could impact user experience and the number of users if it's wrong
- Lack of consistent data standards harms the useability of the data
- Lacking availability of data (e.g. accessibility information) limiting what can be done to create / improve these important experiences
- Frustration knowing something is wrong with the data and not being able to provide feedback or fix it at source
- Unplanned maintenance and disruptions aren't reflected in the data adequately and this results in a worse consumer experience

Needs

- Availability of data that covers all or most of the UK
- Confidence that the data they use is accurate (e.g. information on when the data was last updated)
- Data in a consistent and standard form, especially if UK-wide
- Easy access to data – preferring one central open data set
- Live information to support feature creation, such as stop closures / disruptions
- Transport infrastructure accessibility information

User profiles – Passengers (with more accessibility needs)



About

Member of the general public who has accessibility needs and uses public transport

Quotes*

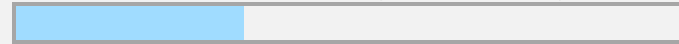
“If you have accessibility issues, accessibility information is crucial to being able to use public transport”

“Accessibility data needs to be more granular”

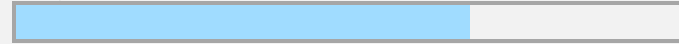
Attributes

- Less confident planning and making journeys
- Needs more time to plan a journey to identify particular requirements
- Engaged in ways digital and non-digital depending on need
- Needs additional information to feel confident making a journey such as step information, manned/unmanned areas for physical support
- More concerned navigating ad-hoc changes to a journey, such as disruptions
- May use specialist technologies to aid them, such as screen readers

Confidence when planning and making travel



Digital literacy and confidence



Pains

- Uncertainty of their ability to make journeys due to accessibility needs
- Fear of navigating unfamiliar routes or operating transport in unfamiliar locations, especially the last leg of the journey
- Lack of knowledge of amenities and accessible facilities in unfamiliar locations along journeys
- Lack of granular accessibility information (e.g. number of steps on a journey instead of the ‘this journey has steps’)
- Not knowing where accessible facilities are actually located
- Not knowing when accessible facilities are out of service when planning a trip
- Length of time it takes to plan a trip and find out accessibility information
- Obstacles along walking paths

Needs (in addition to ‘passengers with fewer accessibilities’ profile)

- Granular accessibility information when planning and deciding to take journey (e.g. number of steps along the journey)
- Real time information on if accessible facilities (e.g. lifts and toilets) are in service
- The above information to be easily available and integrated into standard journey planner apps

User profiles – Passengers (with fewer accessibility needs)



About

Member of the general public who uses public transport

Quotes

"I only need to know the route, how long it will take me and how much it will cost"

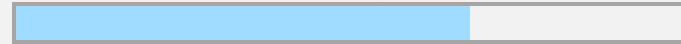
"Would use signage or ask someone if I didn't have the information I needed"

"I am worried about missing connections"

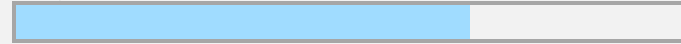
Attributes

- Cares predominately about time and cost of travel
- User fewer apps or services to make local / familiar journeys (e.g. commuting)
- Uses multiple apps or services to plan national / unfamiliar journeys
- Confident navigating ad-hoc changes, such as disruptions and strikes

Confidence when planning and making travel



Digital literacy and confidence



Pains

- Not knowing whether a delay is occurring on their journey, and what time implications it has on their journey
- Uncertainty over making connections: Which platform or bus stop do I need to find, do I have enough time to get there, where is the platform
- Worried of navigating transport in unfamiliar or new locations, and finding transport in those locations
- Lack of knowledge of amenities in unfamiliar locations along journeys
- Worry about payment methods accepted on public transport in areas they are unfamiliar with
- Worried about safety on journeys at night

Needs

- Real time data on journeys to manage expectations and inform connections
- Access to journey planning information (what, when, where and price of journey)
- Ability to plan and make safe travel options at night
- Clear information on how long connections will take them to make
- Clear navigation around stations (either physical or from travel apps)
- Would like to have recommendations on what to do between connections
- More clarity on cause and impact of disturbances to journeys (e.g. strikes / planned maintenance)
- To be provided additional information when travelling in unfamiliar locations such as where travel connections are, and methods of payment
- To be able to charge their devices on long journeys

What we learnt

Revisiting our hypotheses - What we learnt in Discovery

We set out to test several hypotheses to reach conclusions about NaPTAN's future purpose.

Hypotheses:

NaPTAN is well placed to centralise disaggregated transport data, across different transport modes.

The scope of NaPTAN should be limited to infrastructure transport node data.

The consumer experience can be improved through aggregating data across transport modes, such as accessibility and security data.

Enhanced data quality and management can be achieved by defining a common process of providing data.

Proven

- No other fully open data aggregator source exists for the provision of quality infrastructure-type public authority data.
- Primary research indicated a common view that NaPTAN was a trusted and reliable data source, and an essential source to access public authority data.

Proven

- NaPTAN has an existing strong market reputation for the provision of location and infrastructure type data, particularly recognised for Bus infrastructure data.
- NaPTAN's strategic focus is on the provision of static data, where many existing real-time data sources support the delivery of transport decisions such as the Bus Open Data Service (BODS).
- Internal workshops that explored the future purpose and vision of NaPTAN affirmed the internal view that this should continue.

Partially proven

- B2C data consumers rely on access to high quality data and agree that accessing a single source is easier than multiple sources as it reduces the cleaning activities before it can be used.
- B2C consumers use data to design experiences, and they look for the data to exist first. (Data driven experience design).

Partially proven

- Local Authority and transport authority data providers face several burdens to data quality: commonly staff have other BAU activities which are more important in their community, and they have limited budgets for data training / technical tools for data quality.
- There's a rural and urban split in capability, wherein rural authorities are more likely to have more resource and financial constraints.
- However, data providers recognise that data standards and a unified / agreed single data set will deliver consistent high quality transport travel experiences

Impactful quotes to express users' perspectives and needs

NaPTAN

"NaPTAN is a key data set, a lot of the services we run rely on it" - Local Transport Authority

"NaPTAN does what it does well, we must be careful to protect this" - Local Authority

Motivation for better experience

"We want to allow [people] to make the most informed decisions about their journeys"
- Journey planner app

"Accessibility on the kerb would be fantastic, and would help drive services"
- Bus operator

The need for centralised data

"Centralised data is key, as more people will engage and quality check it if there is one true and trusted source"
- Local Transport Authority

"Centralised open transport infrastructure data is a critical enabler for the world to enact the sustainability objectives we [as a society] have"
- Journey planner app

The need for quality data

"The more confidence we can build around data quality the more people will innovate on top of it"
- Journey planner app

"Data quality affects user trust and engagement in mode shift"
- Journey planner app

Research participants desire better information on accessibility and connecting transport modes to make better, more comfortable journeys

During 10 interviews, we asked participants to tell us about their local or national travel experiences, and we asked them to design a multi modal travel journey from one part of the UK to another to understand their expectations of travel.

Granular accessible and facilities data is critical for people with accessibility need to plan and make public transport journeys

Research participants expressed strong need to plan in advance for accessibility needs criteria such as the number of stairs, the availability of toilets, and seating availability. Granularity of information is important, as for instance some users are comfortable with some stairs but not all.

“Is the step too steep, and where is the toilet?” – Disabilities representation group

“Is there someone I can talk to about my second bus?” – Disabilities representation group

Reaching the last mile of new destinations presented several navigational and situational challenges

Participants commonly expressed uncertainty about how to locate buses or taxis, and pay for transport at new destinations.

“Worried about being asked to pay in cash” – Local Transport Authority

“Not having local knowledge. Is there a bike hire scheme, what is taxi number” – Local Transport Authority

Navigating unfamiliar stations, particularly under pressure, was stressful

Research participants believe that navigating new train stations could be made simpler with digital information to help them make efficient train platform connections in addition to physical signage.

“Thinking about how long it takes to get to the next platform, so I'd there immediately” – Local Transport Authority

“I'm checking live data when you get close to connection stops (last 10 minutes) [to find the next platform number]” – Local Transport Authority

Peoples' expectations around the quantity and accuracy of information about their journeys is increasing

Users believe that knowledge of real time location information and planned strikes help them make local journeys, while information on changeover times, platform numbers and locations, and facilities information helps them plan national travel.

“Most frustrating was that all trains were still showing as 'on time'. The feeling of optimism [was frustrating]” – DfT Department

Travel experiences rely on accurate and regularly updated data to increase adoption, which may be provided and maintained through private sector support

Need for accurate and regularly updated data is essential to enable mode shift

B2C groups have mechanisms in place to cleanse and improve data quality in order to improve and design new customer experiences. Data also provides passengers with confidence.

"If the bus timetable is wrong due to inaccurate data, we have messed up that journey and may have lost the customer" – Journey planner app

"Improving the customer experience of public transport, through better provision of information, enables mode shift" – Journey planner app

B2C companies service quality is limited by what data is available

Service providers and journey planner apps are actively looking to improve their services, considering things like accessibility and security information, but are limited by available high quality data.

"We would use and display any reliable and accurate data that was provided to us" – Journey planner app

"We park initiatives if the data isn't available" – Journey planner app

Role of private sector to create new data and improve data quality

LAs find new ways of managing data from paid-for data quality audits, using operator networks to volunteer quality activities, or to writing it into operator franchise contracts. Data consumers often pick up data inaccuracies, and wish to have a way of feeding this back.

"We get feedback from users like this bus stop isn't here anymore and could give NaPTAN that information to go fix [more easily]" – Journey planner app

NaPTAN has a strong reputation in the market for providing quality data but more data is becoming disaggregated, impacting how experience improvements are delivered

Organisations create their own data sets where NaPTAN is not adequate

Some communities have specific language requirements not supported currently in NaPTAN, and many others are creating their own data sets to support growing passenger expectations.

“We will have to create WaPTAN [for Welsh language requirements]” – Local Transport Authority

“For Newcastle, the Tyne & Wear metro will define a 'steep ramp' and a 'very steep ramp' no way to know if that can be used by a wheelchair.” – Journey planner app

“Accessibility is on our roadmap [for our journey planner app] and we are starting to collect some data” – Journey planner app

NaPTAN is essential and reliable for the delivery of transport planning

NaPTAN is recognised positively as the best gateway to access transport infrastructure data.

“Google use NaPTAN - loads of people use this!” – DfT Department

“It’s the really important connector” – DfT Department

“Key pillar to delivering the transport system in the UK” – DfT Department

“NaPTAN is reliable and accurate” – Journey planner app

Data ownership and provider engagement is complex

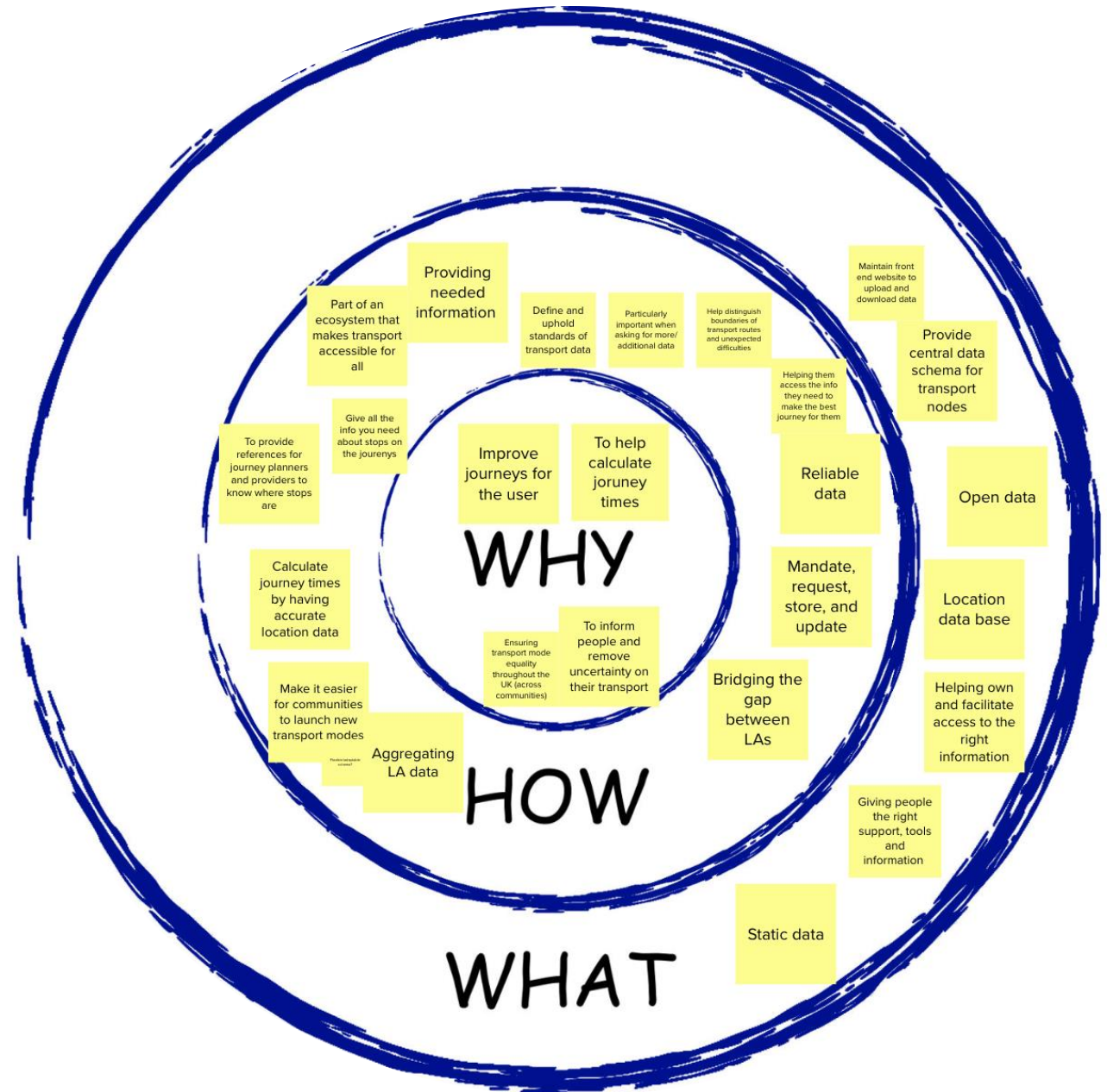
When considering expanding NaPTAN's data set, the landscape is complicated by a mixed private and public multi authority ownership of transport infrastructure, across the Devolved Authorities which will require significant agreement between multiple parties.

“Authorities are all quite different / find it difficult to find common traits. They all have niche setups. They all use different software” – Local Authority

“[Schema changes] are perceived as a big change – scary” – Local Authority

Purpose and vision

<p>Words we can own</p> <table border="1"> <tr> <td>Accurate</td> <td>Referenced by others</td> <td>Reliable</td> <td>Location information</td> </tr> <tr> <td>NaPTAN</td> <td>Stop references</td> <td>Foundational elements of transport</td> <td>Bus stop</td> </tr> <tr> <td>Transport infrastructure</td> <td>National public transport stop points</td> <td>Future transport</td> <td>Trust</td> </tr> <tr> <td>Aggregator</td> <td>Centralised</td> <td></td> <td></td> </tr> </table>	Accurate	Referenced by others	Reliable	Location information	NaPTAN	Stop references	Foundational elements of transport	Bus stop	Transport infrastructure	National public transport stop points	Future transport	Trust	Aggregator	Centralised			<p>NaPTAN's promise</p> <table border="1"> <tr> <td>★ Helping journeys join up</td> <td>Efficiently mapping the transport network</td> <td>We can tell you where you can board transport anywhere in the country</td> <td>★ Representing all communities</td> <td>Trusted and reliable information on buses and trains and other stops</td> </tr> <tr> <td>★ ★ ★ Putting stops on the map</td> <td>Collating the stop information you need</td> <td>Navigating your city more efficiently</td> <td>Supporting excellent customer experiences</td> <td>★ aggregated the disaggregated</td> </tr> <tr> <td>enabling transport innovation</td> <td>★ Promising you'll get from a to b</td> <td>promise to provide a centralised data from lots of people</td> <td>helping you access and use public transport data</td> <td>strengthening local community transport</td> </tr> </table>	★ Helping journeys join up	Efficiently mapping the transport network	We can tell you where you can board transport anywhere in the country	★ Representing all communities	Trusted and reliable information on buses and trains and other stops	★ ★ ★ Putting stops on the map	Collating the stop information you need	Navigating your city more efficiently	Supporting excellent customer experiences	★ aggregated the disaggregated	enabling transport innovation	★ Promising you'll get from a to b	promise to provide a centralised data from lots of people	helping you access and use public transport data	strengthening local community transport
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Further details on recommendations

Recommendations: We identified three areas that NaPTAN can expand its breadth, and five areas for it to grow in depth

We prioritised areas that aren't currently covered and were seen as strategic priorities by the team (shared mobility and accessibility data) for additional research

NaPTAN includes, but it could be improved

Breadth

Re-engage maritime and aviation, establishing contacts, refreshing the current NaPTAN data, and agreeing cadence of upload

Providing full coverage across modes and confidence in the data set internally and externally

3 10 11

Consider improving taxi rank and coach node data

Providing full coverage across modes and confidence in the data set internally and externally

2 3 10 11

Depth

Explore how to include railway platforms, length, and additional information such as where doors open

This could facilitate better connection planning and help users better interact with and navigate stations

4 11

Create and communicate a clear data standard, particularly around naming conventions and the ability to indicate temporary closures in NaPTAN

Creating clarity on data field expectations and improving consistency and quality. Help hold LAs to account by quality assuring against the standard proactively

3 5 10

NaPTAN does not include but should consider it



Include shared mobility (bike, e-bike and e-scooter) fixed parking bay location data in NaPTAN

Facilitating better integration and uptake of shared mobility, facilitating the transition to Net Zero and encouraging active travel

2 3 10 11



Include accessibility and related facilities (e.g. toilets, lights, shelter) data on transport nodes, starting with bus stops

Enabling people with accessibility needs to access public transport and travel with confidence, as well as improving everyone's transport experience

1 11

Explore including other facilities data for stations and larger transport nodes (e.g. if there is a shop, opening times, manned vs. unmanned)

Providing a richness of data that could improve peoples' ability to plan their travel

11

Create an option for stop names to be in Welsh or other second languages in that community

Allowing Welsh LAs and LTAs to represent their community, and helping other communities with additional languages, now and in the future

9

Recommendations: We identified a further five areas where process improvements can be made, and four areas to improve data provision and quality

Through our research, we have identified wider recommendations that could help NaPTAN deliver improved engagement with data providers, improved data quality, and make it easier for data consumers to access NaPTAN's data set. We recognise these recommendations impact upstream and downstream activities. We advise that each recommendation should be subject to further evaluation and consideration at this stage.

Improving the process

<p>Move everyone onto one schema, retiring all others</p>	<p>Improve data governance between LAs/LTAs, NaPTAN and data consumers escalate data issues in an agreed process</p>	<p>Extract value from NaPTAN data from analytics to identify service and data improvements / create audit capabilities</p>
<p>Ensuring consistency across data providers and simplifying the process of data governance</p> <p>6 8</p>	<p>Improving data quality, providing an ongoing understanding of pain points, and fostering collaboration across the transport data community</p> <p>3 10 12</p>	<p>Use analytics to identify trends such as frequency of upload, comparisons between uploads, common data-type update trends</p> <p>3 10</p>
<p>Consider opportunities for standardisation or improvements in the software that LAs/LTAs use to manage NaPTAN data</p>	<p>Consider whether XML upload is suitable for the wider strategic ambitions</p>	
<p>This would provide consistent processes, creating potential for improved training on how to manage NaPTAN data and allowing for better LA collaboration in doing so</p> <p>6 8</p>	<p>Evaluate whether another architecture helps better serve NaPTAN, or makes the LA engagement easier when considering more data within NaPTAN</p> <p>8 9 11</p>	

Improving engagement and data provision

<p>Explore if a combined transport data service might encourage NaPTAN data quality and help LAs with local route planning for example</p>	<p>Create quick to digest training materials for LAs on what NaPTAN is, its value and how to upload and manage NaPTAN data</p>
<p>Helping LAs manage their transport data in a single service. E.g., NaPTAN data and bus scheduling combine to calculate operator efficiency and location accuracy,</p> <p>3 8 10</p>	<p>Providing LAs the knowledge and skills to manage their own NaPTAN data, and the ability to quickly upskill someone to do so in the event of a vacancy</p> <p>6 8</p>
<p>Explore new LA/LTA data submission methods, such as an API</p>	<p>Explore how real-time and static data can be better linked at a strategic and governance level</p>
<p>Helping make it easier for LAs to provide data and expand software providers' capability; share only LA data that has changed, thus removing the as-is export + upload XML data</p> <p>8</p>	<p>This could enable a holistic view of transport data and a better rounded user experience, which relies on static data and real-time information</p> <p>1 3</p>

Considerations on accessibility data

- Standards will likely need to be mode specific as we expect there to be common data fields for that supports multi modes (e.g. drop kerb, step information, etc.) and unique data fields that support only one or some modes (e.g. shelter)
- Our research suggests that accessibility and facilitates data should be held in a linked but separate data set, so to not affect the quality and reliability of NaPTAN during its initial collection
- There is a lot of work already done in this space, with a variety of guidelines and data having already been collected (see page 46 for further details). A systemic review of guidelines, standards and existing data will be needed to define standards and aid initial data collection

NaPTAN schema 2.5 and current data collection

For the Olympics and Paralympics, Transport Direct was commissioned to provide a Spectator Journey Planner for the Games, which included an accessible journey planner that enabled travellers to request details of a step free journey, a journey with staff assistance available, and a step free with assistance journey. To support this the below 5 data sets were created, and NaPTAN schema 2.5 was adapted to incorporate accessibility information:

- Transport Direct Accessibility Networks (TDAN) Stations List (IF136)
- Mode Accessibility (IF145)
- Stops not suitable for wheelchairs (IF157)
- Operator assistance booking (IF156)
- Accessible Stop Spatial Query Data (IF160)

NaPTAN schema 2.5 has not been universally adopted, with the majority of LAs using schema 2.4, and data collection for these accessibility fields is sparse. Further investigation into why it was not adopted, and if these schema is fit for purpose for accessibility data is needed, however it provides an excellent starting point.

Current accessibility and facilities data across transport modes

Private and public organisations are currently collecting accessibility and facilities data for different modes, however data collected (if at all) is not consistent across operators, regions, or modes. Below is a view of data fields collected by mode. Whilst this is not adequate, it is a good starting point for defining standards and initial data collection

Facilities	Train Station (National Rail)	Bus Stops (not interchange)	Bus Stations (interchange)	Airports	Ferries
Taxi Rank	X		X	X	
Parking	X		X	X	X
Cycle Storage	X		X		
Seated Area	X	X	X	X	X
Station Buffet	X		X	X	X
Waiting room	X		X	X	
Toilets	X		X	X	X
Baby Change	X				X
Wi-Fi hotspot	X		X	X	X
Trolleys	X		X	X	
ATM Machine	X		X	X	X
Shops	X		X	X	X
Showers	X			X	
Bureau De Change	X			X	
Telephones			X	X	
CCTV	X	X	X	X	
Left Luggage	X		X		
Charge points				X	
Meeting rooms				X	
Postal Services	X			X	
Smoking Breaks				X	
Play Areas				X	
Faith and worship	X			X	
Vending Machines			X		X
Bench		X			
Lit		X			
Bin		X			
Highway bus stop		X			
Shelter		X			
Tactile paving		X			

Accessibility	Train Station (National Rail)	Bus Stops (not interchange)	Bus Stations (interchange)	Airports	Ferries
Induction Loop	X				
Step Free Access	X		X		
Ramp Access	X				
Impaired Mobility Set Down	X				
Accessible Ticket Machines	X		X	X	
Height Adjusted Ticket Office Counter	X				
Changing Places	X				
National Key Toilets	X				
Staff Help Available	X		X	X	
Wheelchairs Available	X		X	X	
Changing Places	X				
Accessible toilets	X		X	X	

References:

- [Accessible bus stop design guidance \(tfl.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/612222/accessible-bus-stop-design-guidance.pdf)
- [Nearest Bus Stop Near Me. Nearby Stations to You Place \(nearestme.info\)](https://nearestme.info/)
- <https://www.altogethertravel.co.uk/airport-accessibility/>
- [National Rail Accessibility Map](https://www.nra.gov.uk/naa/)
- [General Transit Feed Specification \(gtfs.org\)](https://www.gtfs.org/)
- [Accessibility and mobility help | Heathrow](https://www.heathrow.com/airport-accessibility/)
- [Special Assistance Home | Manchester Airport](https://www.manchesterairport.co.uk/special-assistance/)
- [Ferry - Ferry Facilities - Port of Dover \(doverport.co.uk\)](https://www.doverport.co.uk/ferry-facilities/)
- [Accessibility | Hull to Rotterdam | P&O Ferries \(poferry.com\)](https://www.poferry.com/)
- [Bus travel for disabled passengers | Metro \(wymetro.com\)](https://www.wymetro.com/en/transportation/accessible-bus-travel/)

Considerations for shared mobility infrastructure

- There may need to be communication on the benefits of shared mobility to get all stakeholders on board, as some LAs have expressed hesitancy in having shared mobility (e.g. bikes, e-bikes and e-scooters) in their areas/NaPTAN due to:
 - Shared mobility being more suited to rural areas, and therefore not relevant to rural areas
 - Safety concerns, particularly relating e-scooters
 - A view that e-scooters replace walking, reducing active travel
 - Concerns that the vehicles would littering the streets and becoming unsafe obstacles
- Shared mobility bays also change location at a higher frequency than the infrastructure currently in NaPTAN. Shared mobility operators indicate that these changes are relevantly infrequently (one changes every couple weeks nation wide) and believe NaPTAN could accommodate this. However further investigation is needed to figure out how/if NaPTAN can ensure a timely update of shared mobility parking bay location.
- To aid initial collection of shared mobility parking bay location, the central NaPTAN team could work with the 39 schemes directly to obtain bay location data and then validate this with LAs to reduce administrative burden for them.

People, technology and process considerations for data providers when making changing to NaPTAN

People insights from research

- LAs have multiple business-as-usual local transport tasks which are prioritised higher than NaPTAN and wider DfT data management activities
- Limited time is given to managing NaPTAN data quality due to constrained resource and lack of training on what high quality data is / how to manage quality
- Typically, there are few full time resources in the local communities transport team
- LAs use software to manage their NaPTAN data requirements (e.g. Deeva, Tripeze, Omnibus, etc.)
- LAs may rely on the private sector to gather new data or manage data quality, which incurs a cost and skills to maintain

People considerations to deliver changes

In order to deliver a change to NaPTAN, a Local Authority will require:

- **Time and purpose** - Given time, context and purpose of changes
- **Motivation** - Feel empowered and motivated to make the change through a purpose
- **Authority** - The authority to make changes
- **Capability** - Trained on how to provide data and assess quality
- **Technical capability** – Not restricted by technical constraints, or able to overcome them confidently
- **Governance and process** – A clear understanding of their points of support and interaction to successfully provide data

Technology, process and data quality considerations to deliver changes

- **LAs need 12 months to prepare** - The estimated length of time to gather and assure new data may be up to 12 months before they can confidently provide the required data
- **New data may require use of private sector** - LAs told us that they are likely to procure private sector support for new data, which will require funding and internal processes
- **Software changes incur a cost** - LAs rely on software to manage their transport data which may incur a change cost to support new data streams – one example was £5000 for a small change. This will also require funding and time to implement
- **LA training required on new data** - They will require training on new software which may incur additional fees – some LAs share training expenses to cut costs
- **Regular and detailed engagement is critical** - DfT and Local Authority comms and engagement should be established through recurring engagements to enable roll out of any change
- **Impact on data quality** – LAs don't have the resource, finance, capability, or governance process to manage data quality

Current NaPTAN technology and capabilities

NaPTAN redevelopment team roadmap and team capabilities in detail

Delivered items:

- Improve the upload and download service, and take into Beta using GDS Design Standards and a better user experience
- Offer feature to download data by region
- Tech improvements; Full redevelopment of the system onto Google Cloud Platform , GCP (from previous infrastructure on Azure) also coded in Terraform so it can be deployed as code.

Backlog items (not shown in priority order):

- Internal and external LA stop editor and gazetteer editor to remove internal administrative burdens and provide more data ownership to LAs
- Enhance data quality through business rules, deletion of stops to replace archiving, a data quality standard and tools for LAs to help them create and provide quality data
- NaPTAN website enhancements such as a change of address, upload history, and change logs between uploads
- API changes to only share the changed data, offer a push service, and create a new API for NaPTAN data upload
- Close down legacy schemas, and focus on a single schema for all data providers
- Address data quality with an internal focus on identifying and correcting data quality issues, and creating a feedback mechanism to data providers

Wider NaPTAN priorities:

- Decide whether management of rail data remains with NaPTAN team, how to best manage this data and enable high quality data input using XML or another method

Backlog items and team size as at August 2022. Backlog based on redevelopment team goals from public meeting(s)

Team capabilities:

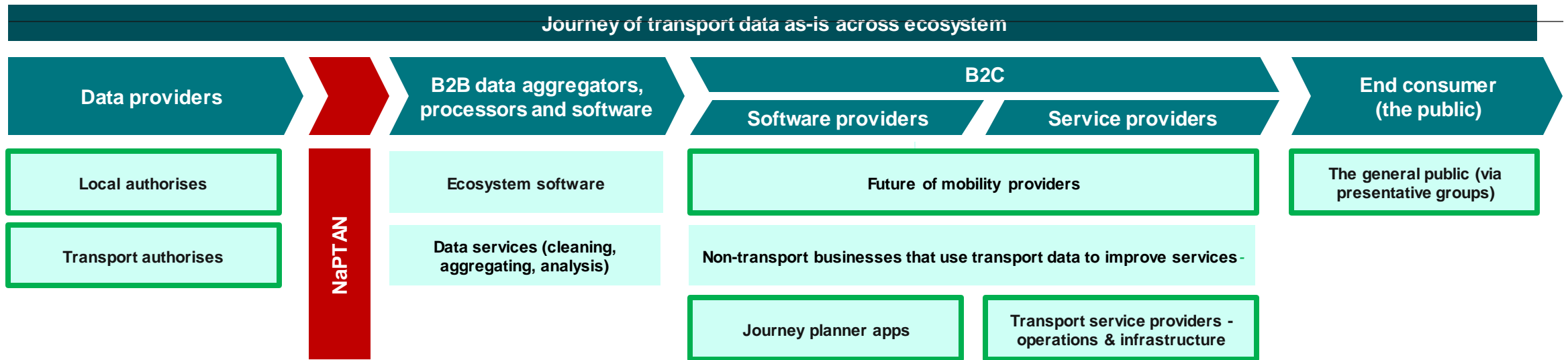
- The current redevelopment team are winding down in September and the NaPTAN product is moving into a run state (with some backlog development tasks*) while future strategy is informed by this report
- **The team capability will have to grow to meet the backlog and strategic ambitions of NaPTAN**

Role	Capability now	Capability in September
BA	2	2
Delivery manager	0	1
Product owner	2	1
Tech lead	1	0
User Researcher	2	0
Developer	4	2
Junior Developer	1	1
Service Designer	1	0
Data analyst	1	1

Visualization of the as-is data journey and who is involved at each stage

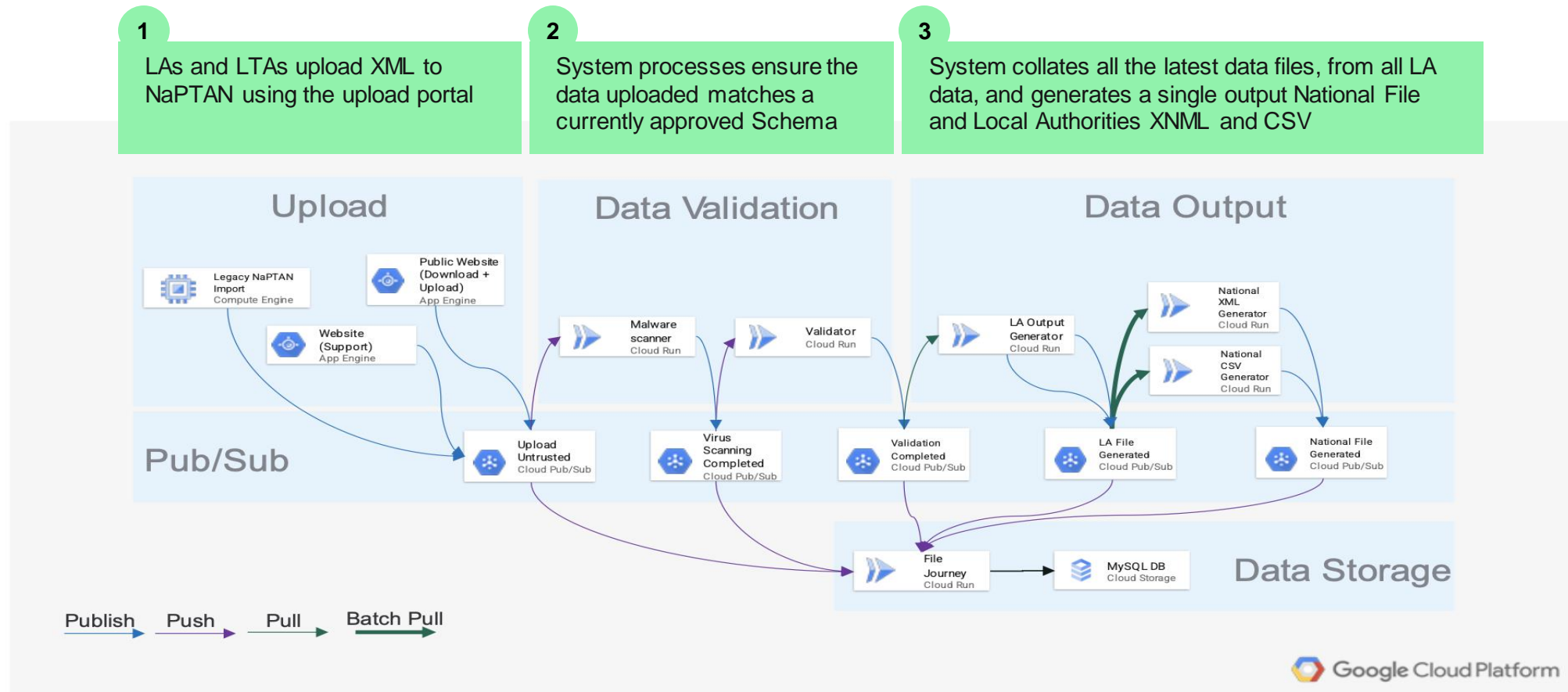
NaPTAN sits between Data providers and downstream consumers (aggregators and business-to-customer groups). The NaPTAN as-is data journey is:

1. Local Authorities and transport authorities organise their transport data using procured or in-house software (4 common commercial softwares identified: Diva, Trapez, React, Omnibus) to generate a single XML file
2. Local Authorities and transport authorities provide the XML data to NaPTAN using NaPTAN upload
3. NaPTAN system automatically re-generates a collated transport data file upon ingestion of each new file; this is consumed by aggregators, software providers and service providers by either API or manual download from the NaPTAN public website
4. End consumers receive the benefit of NaPTAN through service and software providers when they absorb the data and use it for services such as Google maps transport advice



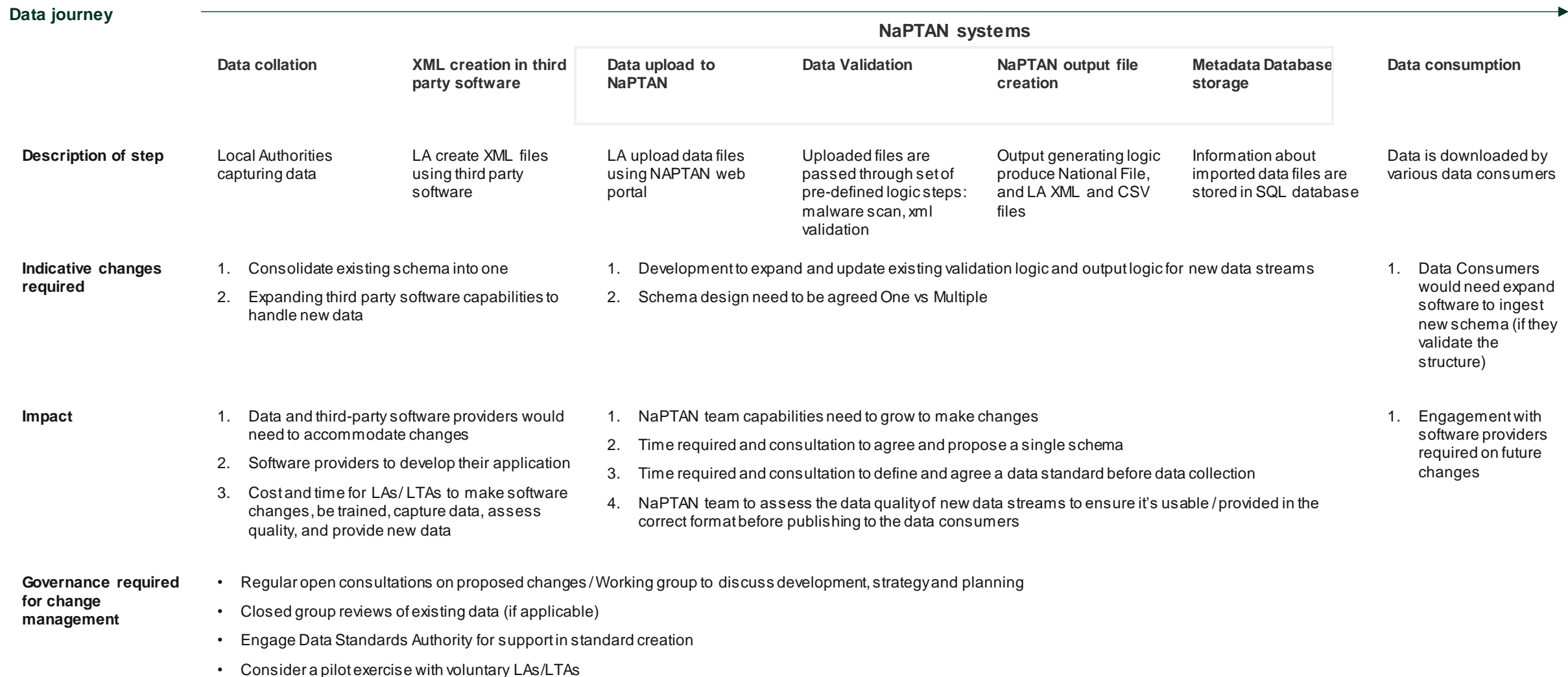
While this report has identified recommendations that impact upstream and downstream activities, as at August 2022 these are not part of NaPTAN's strategic road-map and each recommendation should be subject to further evaluation and consideration.

Simplified NaPTAN architecture end to end – As at Aug 2022



- Output is mostly consumed using the National File and Local Authorities single file output, however an API does exist.
- The API allows users to select the Local Authority and/or stop details they are interested in, and automatically obtain the data when it's changed.

Architecture end to end of how NaPTAN data is ingested and used, with impact of changes and indicative change requirements for new data capture



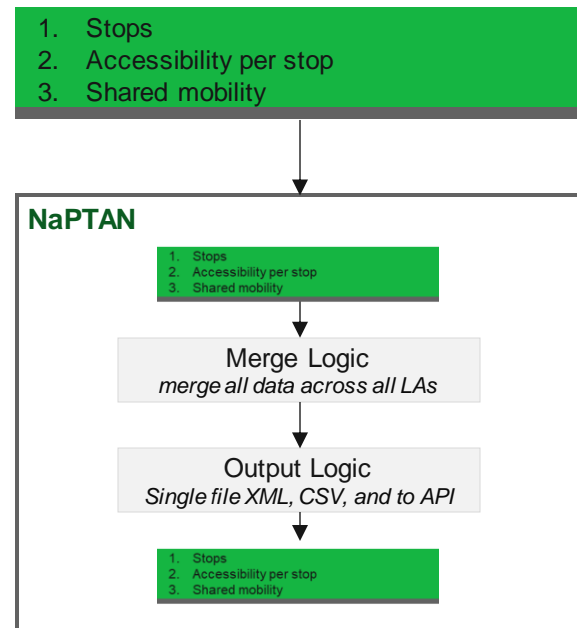
Technology considerations

Schema options for accessibility and shared mobility data (schematic representation)

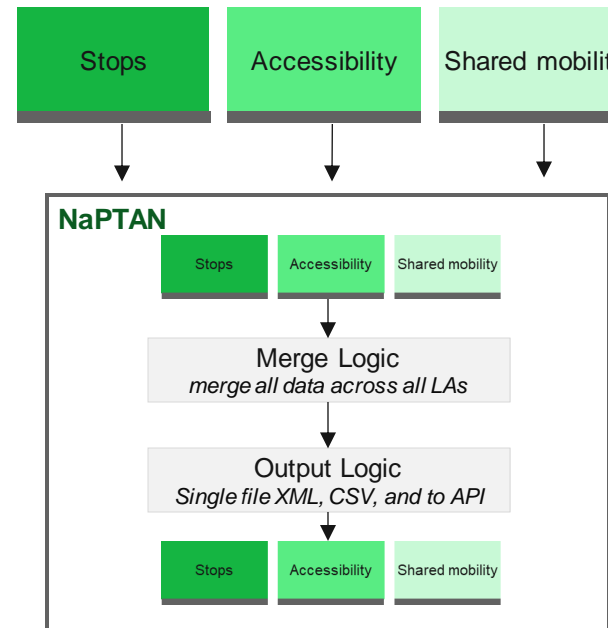
LAs and LTAs may provide new data in a single schema or in multiple schemas. Depending on DfT considerations, new accessibility and shared mobility data could be absorbed in three different ways.

However both options require software providers to change to accommodate the new data for LAs/LTAs, and both options require NaPTAN to enhance validation rules or create new merge rules.

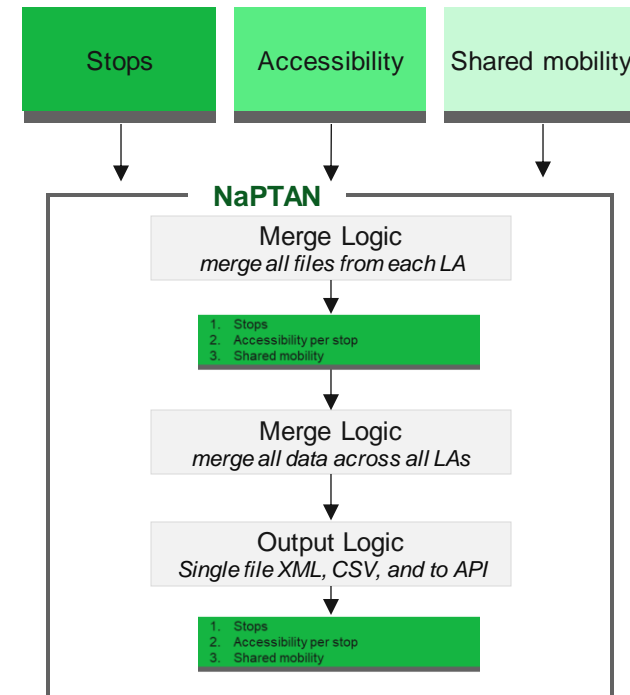
1. LAs continue to create a single XML/CSV with new data sets



2. LAs upload three separate files, NaPTAN publishes three files



3. LAs upload three separate files, we merge in NaPTAN producing one file



Schema options for accessibility and facilities data considerations in detail

New data could be added to one single schema, or it could be managed through individual schemas providing more flexibility for the LAs/LTAs over time. However, both require third party software updates for the LAs and LTAs, which is constrained by local resource and funding considerations. Both options also require changed to NaPTAN

Options considered	Benefits	Considerations	Scale of change	Impact on data providers	Impact on data 3 rd party software providers
Integrate data into a current schema (Option 1)	<ol style="list-style-type: none"> 1. Less space need to be used 2. Easier to manage – all in one place 	<ol style="list-style-type: none"> 1. Logic to link data is required to be built 2. Some of the data points will not be shared between different transport mode e.g. sheltered bus stop – only apply to buses 	Smaller change	<p>Third party software updates required to allow new columns of data in XML to be generated</p> <p>May feel like a large forced change for LAs and LTAs</p>	
New schema for each data set (accessibility and shared mobility) (Option 2 and 3)	<ol style="list-style-type: none"> 1. New data can be managed and accessed separately 2. Improved scalability – only required schema might be scaled ? Flexible to change elements within each schema when they are treated separately 3. Data is segmented into logical containers 	<ol style="list-style-type: none"> 1. Difficult to manage multiple schemas, particularly with smaller team capability 	Larger change	<p>Third party software updates required to produce separate XML files.</p> <p>May be easier initially as LAs will be slowly gathering the data and providing at different times</p> <p>Internally – merge rules required to be updated to accept three files</p> <p>Internally (if desired) – new output files need to be made available individually or combined</p>	

No data standard exists to enable NaPTAN's accessibility and shared mobility recommendations

Open standard reviewed	What type of data does this standard define?	Data field identified
The General Transit Feed Specification (GTFS).	Data specification that allows public transit agencies to publish their transit data in a format that can be consumed by a wide variety of software applications. Today, the GTFS data format is used by thousands of public transport providers including Google Maps.	<ul style="list-style-type: none"> • Trips file: Wheelchair accessible bus (y/n) • Stops file: Wheelchair boarding indicator
The General Transit Feed Specification (GTFS) – Pathway (Extension)	GTFS extension focused for pathways linking together locations within transit stations for route planning and wayfinding. It Contains additional information such as text-to-speech instructions, wheelchair assistance information, equipment-failure reporting, planned or scheduled entrance or exit closures, and elevator and escalator outages need to be added.	<ul style="list-style-type: none"> • Max_slope (of wheelchair ramp) • Steps (y/n)
Open Referral UK data standard - record and share information about public services provided by Local Authorities.	Defines a way of gathering and using Local Authorities public services data in a common and consistent directory structure. This makes the data as useful as possible for service users, and people providing local services.	<i>No relevant data identified</i>
Tabular data standard - RFC 4180 definition of CSV (Comma Separated Values) for publishing tabular data in government.	RFC 4180 defines a standard dialect for CSV, that specifies delimiters, quoting, line breaks, as well as requiring the same number of fields on each line.	
Exchanging contact information in government -RFC6350 vCard standard.	Standards for consistent exchange of location point information.	
World Geodetic System 1984 (WGS84) and European Terrestrial Reference System 1989 (ETRS89) - standards for consistent exchange of location point information in government.	Unique identifier for every addressable location across the UK. An addressable location maybe any kind of building, or it may be an object that might not have a 'normal' address – such as a bus shelter.	
Use the Unique Property Reference Number (UPRN) and the Unique Street Reference Number (USRN) standards to identify geographic locations.	Unique and persistent identifier for every street, road, track, path, cycle track or cycle way in Great Britain.	
UK Geospatial Data Standards - Coordinate Reference Systems - UK Geospatial Data Standards - Coordinate Reference Systems - GOV.UK (www.gov.uk)	Government guidance on the choice of recommended coordinate reference system.	
dates and times in a machine-readable format in government systems - ISO 8601:2004	Standard - representation of dates in the Gregorian calendar, times in the 24-hour timekeeping system, time intervals and recurring time intervals. need to be added.	

The Data Standards Authority have access to resources to help create new data standards. Once approved they can publish in the standards catalogue

Data Standards Authority (DSA) are a multi-disciplinary team drawn from a variety of data-related backgrounds in technology, strategy and policy, leads the cross-government conversation around data standards. The DSA recommends a number of standards, guidance and other resources to follow when working on data projects.

How NaPTAN and DSA might work together

DSA can help the NaPTAN team to:

- Understand how to implement data standards
- Provide the guidance on how to use data appropriately and responsibly while expanding NaPTAN capabilities
- Help to publish and endorse new data standards
- Facilitate conversations with other data related government bodies for quality assurance and best practice, and the open data standards board
- Help to design governance for newly created data standards, how to roll them out and improve them
- Publish an approved standard as DSA-approved in the standards catalogue

Technology considerations for expanding the data availability within NaPTAN

Current data ways of working

1. LAs produce XML data feeds using third party software OR Local Authorities produce XML data feeds manually populating data entries
2. They upload XML into the NaPTAN upload portal
3. If they wish, they re-download the NaPTAN data file for their use

The technology and process constraints*

- Currently multiple schemas exist
- Some LAs are using a schema which is not supported in the new redevelopment upload process
- Not all operator\data providers are capturing same data points in the same way, e.g. ticket office vs Height Adjusted Ticket Office Counter
- Data is stored using multiple formats by each LA
- XML software is limiting the scalability of your data
- If you want add new data we are limited by the schema and reliance on third part apps to make a change to allow it. (rate limiting step)
- We don't know how often data is refreshed, updated and revaluated
- No governance process is set for new data

* List not exhaustive

Future questions you may wish to consider when expanding NaPTAN's data set and schema

1. Use of a database instead of \ as well as XML
 1. Enable to audit trail, data quality checks
 2. Improve data accuracy and governance
 3. Enable data insight through analytics
2. New ways of ingesting data such as a LA front-end service to
 1. Lower the licencing cost for 3PTY software
 2. Two way data exchange capability
 3. LA would feel more involved\owning (not sure how to phrase it)
3. Improve data exchange capabilities by enabling CSV, .json, and other data file formats
4. Implement data visualisation tools\apps
 1. Bus stop viewer
 2. Operators line performance
 3. Schedule adherence

Wider technology recommendations and opportunities

Recommendation / opportunity	How this might be done	What problem is this solving?	Benefits of addressing this recommendation	Considerations or uncertainties
1 Move everyone onto one schema, retiring all others	<ul style="list-style-type: none"> Retire the schemas that are least used to minimise impact on LAs and LTAs 	<ul style="list-style-type: none"> Multiple different LAs use different versions of the schema NaPTAN has to support multiple versions of the schema Limiting potential to improve how NaPTAN grows its data set 	<ul style="list-style-type: none"> Simplify and streamline architecture – to make it easier to understand and implement changes easier Minimise data processing – this could potentially save maintenance and development costs Allow software providers to simplify their applications and reduce cost and time required for development – speeding up change process 	<ul style="list-style-type: none"> LAs use multiple schemas so the approach will be unique LAs need significant notice and engagement to changes to schemas
2 Extract value from the NaPTAN data from analytics to target service and data improvements	<ul style="list-style-type: none"> Google Cloud has data analytics functions built in Examine trends such as frequency of upload, comparisons between uploads, common data-type update trends 	<ul style="list-style-type: none"> Some Local Authorities are disengaged with NaPTAN and we don't have a complete view of who and why Data quality challenges persist, and service improvements aren't prioritised against quantifiable common errors 	<ul style="list-style-type: none"> Use analytics to understand data trends and challenges facing LA's – offer help and assistance where is needed most Improve customer/travellers experience by addressing high priority issues identified by data analytics 	<ul style="list-style-type: none"> NaPTAN Team capabilities will have to grow: a data analyst will be required to help map and model the data Further research required into useful data insights and KPIs
3 Improve data governance and audit capabilities, allowing for automated QA and the NaPTAN team and data consumers to escalate data issues they find	<ul style="list-style-type: none"> Establish a mechanism of feeding back Local Authority data quality issues Create rules for data quality that validate when data is received Auto notification of failures 	<ul style="list-style-type: none"> LAs don't know what steps to follow to own and correct their data NaPTAN team are burdened with managing data quality NaPTAN team often the recipients of data quality issues from data consumers Data consumers provided input to fix data quality issues at source 	<ul style="list-style-type: none"> Adequate governance procedures will minimise data errors Improved LA understanding of collated data elements enable them to "own" this data Time allocated for correcting data issues NaPTAN team can dedicate for application development Fosters collaboration across the transport data community 	<ul style="list-style-type: none"> L/LTAs lack funding and capability to naturally know how to resolve data issues, so will require supporting materials or easier to understand notifications Any major data quality changes should be communicated in advance of rules being implemented

Sources used in this report

1. [Motability \(2022\). *The Transport Accessibility Gap*](#)
2. [ScienceDirect. Fan, Z. and Harper, C.D. \(2022\). Congestion and environmental impacts of short car trip replacement with micromobility modes](#)
3. [Centre for London \(2021\). *Micromobility in London Report*](#)
4. [Department for London \(2021\). *Transport and environment statistics: Autumn 2021*](#)
5. [Department for Transport \(2021\). *Bus Back Better*](#)
6. [Transport accessibility and mobility \(2021\). *National strategy to boost accessibility for disabled passengers*](#)
7. [Deloitte \(2017\). *Assessing the value of TfL's open data and digital partnerships*](#)
8. [Department for Transport \(2021\). *Transport: Disability and Accessibility Statistics, England 2019/20*](#)
9. [Transport for London \(2019\). *Travel in London: Understanding our diverse communities 2019*](#)
10. [House of Commons \(2022\). *Access to transport for disabled people*](#)
11. [Scope \(2019\). *Travel Fair Report*](#)
12. [Department for Transport and NatCen \(2021\). *Inclusive Transport Strategy Evaluation Baseline Report*](#)
13. [CoMoUK.org.uk](#)
14. [ITF \(2021\). *Micromobility, equity and sustainability: Summary and Conclusions*](#)
15. [CoMoUK \(2021\). *CoMoUK Bike share survey report*](#)



Department
for Transport

The Future of NaPTAN

DfT Data Board update

The Future of NaPTAN discovery

08th September 2022

Preface to this presentation

On 9th September 2022, this show and tell was presented to the DfT data board. We asked three prompting questions within this presentation, and three questions on menti.com,

Question in this document or on Menti	Discussion received at the board
What other policy objectives and challenges do you think are relevant?	<ul style="list-style-type: none"> • What3Words could be used for more accurate geolocations
What implications will the future of open transport data policy have on NaPTAN?	<ul style="list-style-type: none"> • NaPTAN could be linked and used for place making • NaPTAN could be linked to more dynamic data like events, micromobility locations, and demand responsive pickups
What wider policy implications should we consider regarding these recommendations?	<ul style="list-style-type: none"> • 15-minute cities and 20-40-minute regions
Menti: Breadth of NaPTAN – how much do you agree or disagree that NaPTAN should hold this data? (scale of 1-5)	<ul style="list-style-type: none"> • Score of 4.4 out 5, from 10 participants • Discussion that the use cases for holding maritime and aviation data are not clear • Recognition that the aviation and maritime data may not be complete due to missing relationship with the data owners of that data • NaPTAN is probably the best place for the data breadth identified
Menti: Depth of NaPTAN - how much do you agree or disagree that NaPTAN should hold this data? (scale of 1-5)	<ul style="list-style-type: none"> • Score of 4.1 out 5, from 12 participants • NaPTAN should be working closely with other DfT stakeholders on accessibility • Validation of the need and use case for each data point is needed in further work
Menti: Hypothesis 3 – a database can best support holding more data in NaPTAN. To what extent do you agree or disagree? (scale of 1-5)	<ul style="list-style-type: none"> • Score of 3.6 out 5, from 12 participants

Contents of today's discussion

1 **Discovery context**

What is NaPTAN, Policy and Challenges, Discovery goals

2 **Summary of Discovery approach**

3 **What we learnt**

Purpose and vision

User goals and needs

Data

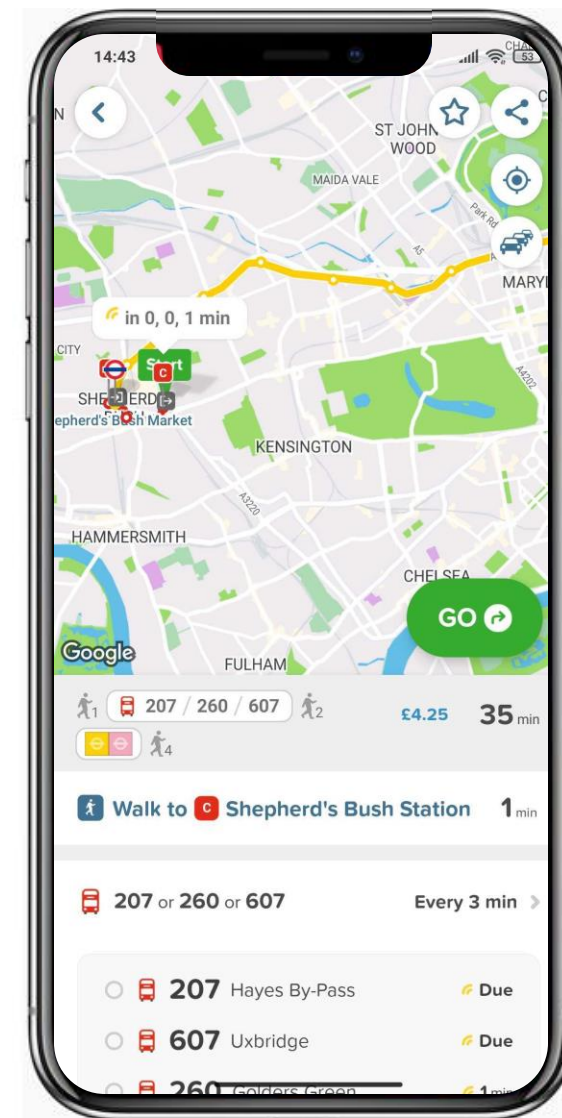
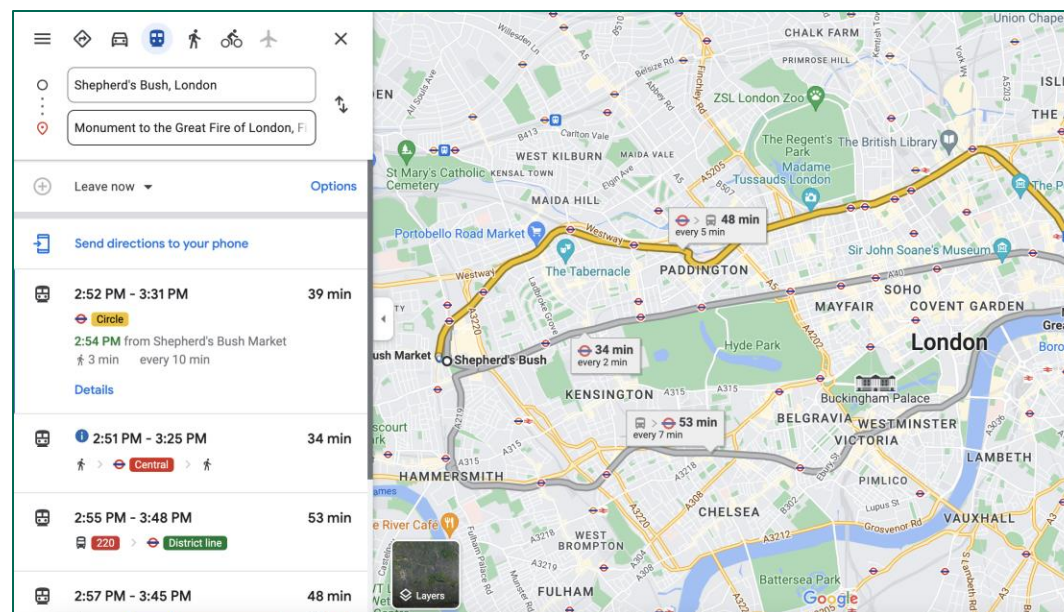
Process and technology landscape

4 **Improvements we might be able to make**

5 **Next steps**

NaPTAN is used by planner apps every day, helping people find and use public transport in GB

- The most popular data set you have *never* heard of
- The National Public Transport Access Nodes (NaPTAN) dataset lists all public transport access points in Great Britain, including bus, rail, tram, metro, underground, air and ferry service
- Over 380,000 active transport locations
- Google download it every day along with City mapper and other major transport apps



Policy objectives



1. Decarbonising transport
2. Investing in active travel
3. Sustainable PT - National Bus Strategy/Rail Reform
4. Opening-up transport data

The challenges



- Consumer expect more from their travel experience
- Introduction of new modes of transport
- Demand for more journey information & insights
- Open data quality issues & lack of standards



What other policy objectives and challenges do you think are relevant?

We have spent eight weeks learning about how NaPTAN helps users plan and make travel decisions today, and how it might help them in the future

The discovery sets out to answer the questions:

1. What transport experience users seek now, and in the future?
2. Is NaPTAN best placed to provide this data?
3. Is it feasible for NaPTAN to provide this data?

Overview of the eight-week Discovery

25 in-depth
exploratory research
interviews

6 focus groups, and
3 internal workshops

88 people
engaged



*"I was really impressed with the approach to the user research, the range of stakeholders who we had spoken with and also the method utilised asking people to design their own journey to understand their expectations" – **Research participant***



32 hrs spent
interviewing
stakeholders

15 improvement
ideas uncovered

What we learnt in Discovery

Key learnings from Discovery that we'll show you today


Purpose

to access public

cellent public transport

ality public

s points



NaPTAN's Future Vision

a centralised aggregated


clear standards and govern

provides the needed stati

data on all public transpo

mode nodes across

England, Scotland and Wales



Local Authority / local transport authority (data provider)

My goal is to manage and provide data easily for the transport stops in my area

Clarity on the data standards needed

Advanced notice of changes to NaPTAN

Balance NaPTAN requirements with other BAU tasks

BREADTH OF DATA

Bus Rail Tram Maritime & Aviation Coach stations & Taxi **Shared mobility**

DEPTH OF DATA

Location	Stop name	Mode specific information	Accessibility data	Facilities data	Translation into other languages
		Rail platforms, length & additional info	No. of steps	Seating data	Welsh
		Temporary stop closures (that lasts a significant period of time)	Ramps	Lighting	Gaelic
			Dropped kerb	Manned / unmanned	Predominant languages of a local community
			Accessible toilets	Toilet availability	
			Visual display data	Shops opening hours	
			Announcements data at stops	EV charging points next to a transport stop	

Key:

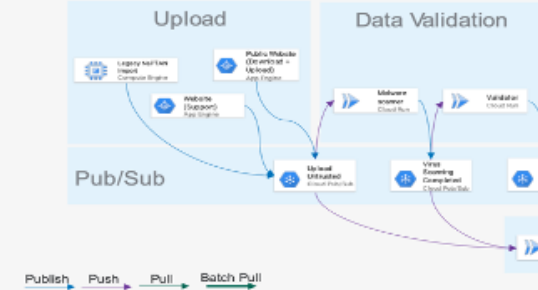
- ★ = prioritised recommendation
- 🟢 = aligns with NaPTAN's purpose
- 🔴 = doesn't align with NaPTAN's purpose

Department for Transport

1 LAs and LTAs upload XML to NaPTAN using the upload portal

2 System processes ensure the data uploaded matches a currently approved schema

3



Upload Data Validation

Pub/Sub

Publish Push Pull Batch Pull

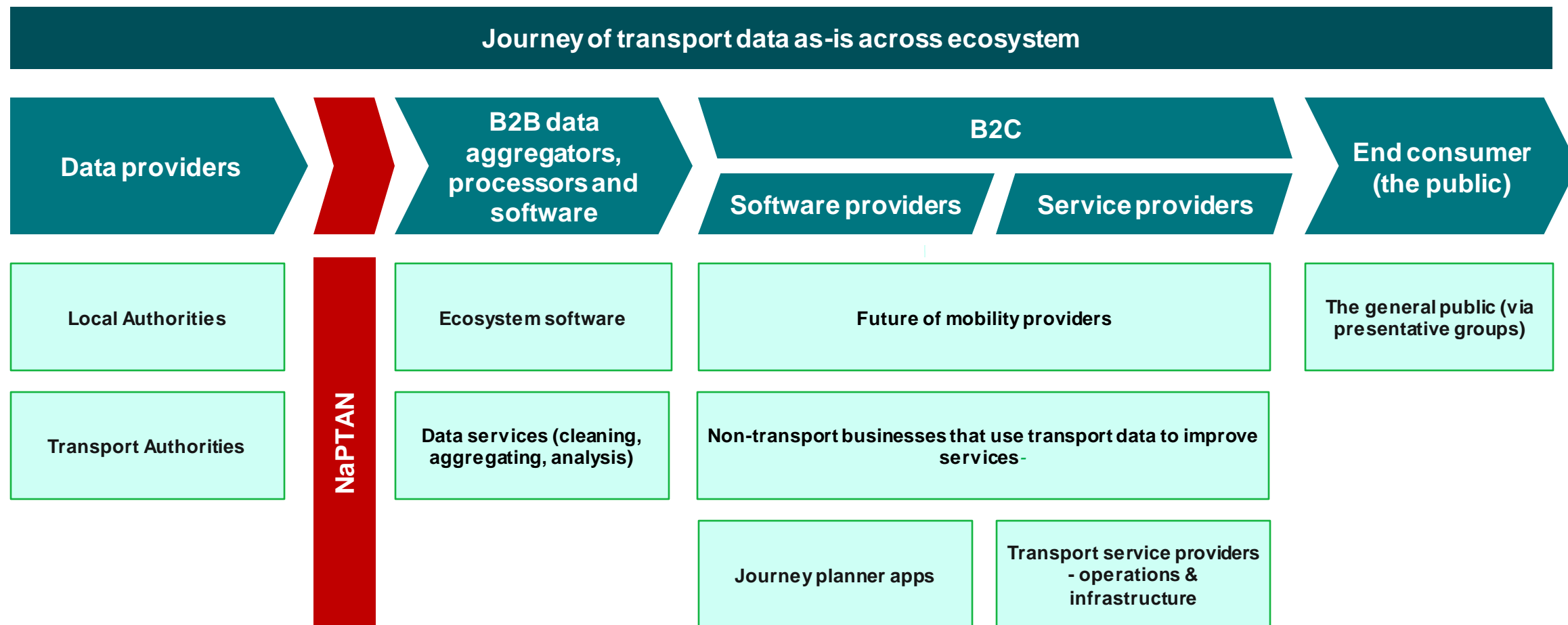
1. Purpose and vision of NaPTAN

2. Who are our users, their goals and needs

3. What data may help them achieve these goals

4. How their needs are met through NaPTAN technology

NaPTAN sits between data providers and data consumers



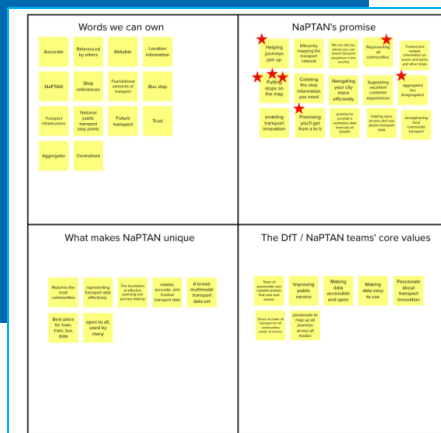
Users valued travel information underpinned by NaPTAN data. It should continue to focus on user needs, enabling access to PT and facilitating an excellent experience

NaPTAN's Purpose

enabling users to access public transport

facilitate an excellent public transport experience

provide high quality information on public transport access points



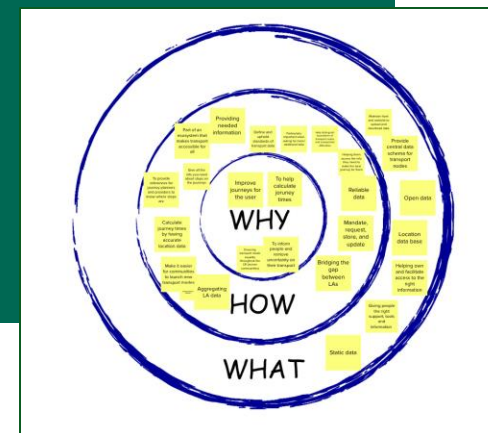
NaPTAN's Future Vision

a centralised aggregated open data set

clear standards and governance

provides needed static infrastructure data on all public transport mode nodes across

England, Scotland and Wales



We identified a set of prioritised user needs for citizens, data providers and data consumers which NaPTAN could help solve now and in the future



Citizen

My goal is to plan and make a journey, locally and nationally, suitable for my needs

- Plan a journey that supports a variety of accessible needs
- Access reliable journey information
- See real-time journey info, like disruptions



**Local Authority /
local transport authority
(data provider)**

My goal is to manage and provide data easily for the transport stops in my area

- Clarity on the data standards needed
- Advanced notice of changes to NaPTAN
- Balance NaPTAN requirements with other BAU tasks



**Digital service providers
(data consumer)**

My goal is to use high-quality, nationwide data to create experience improvements for my product or service

- Access to high-quality standardised data that covers many / most localities
- One source of data truth
- Communicate improvements to data quality

Our research identified 8 modes of transport and 6 data areas that NaPTAN should hold information on (We prioritised 2 data areas for further discovery)

NaPTAN does it well

NaPTAN does it, but it could be improved

NaPTAN doesn't do it, but should consider doing it

Doesn't align with NaPTAN's purpose

BREADTH OF DATA



DEPTH OF DATA

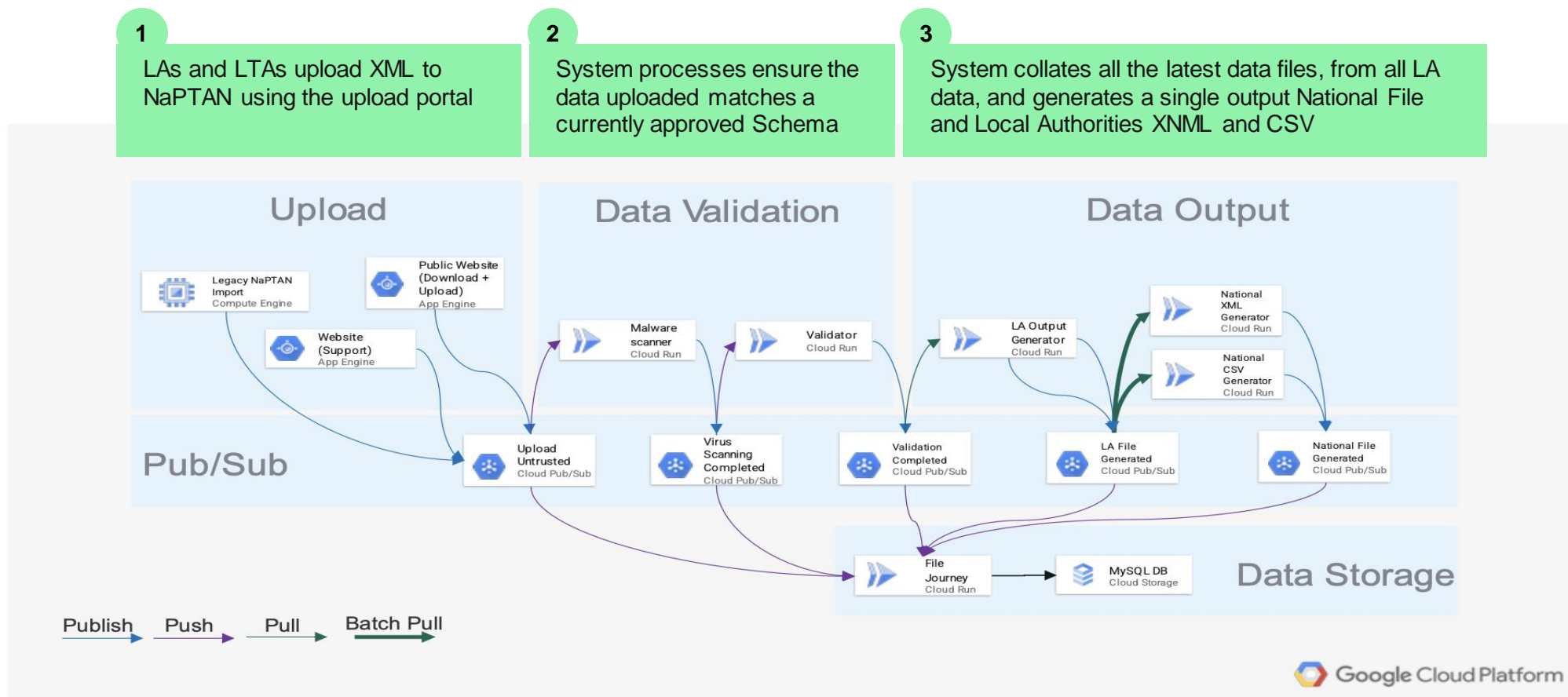
Location	Stop name	Mode specific information	Accessibility data	Facilities data	Translation into other languages	Security / safety data	Real-time data	Environmental data
		Rail platforms, length & additional info	No. of steps	Seating data	Welsh	Common occupancy trends	Real time strike and disruption	Environmental data of stations
		Temporary stop closures (that lasts a significant period of time)	Ramps	Lighting	Gaelic		Occupancy	Air quality at stop
			Dropped kerb	Manned / unmanned	Predominant languages of a local community		Seating	
			Accessible toilets	Toilet availability			Schedules	
			Visual display data	Shops opening hours			Fares	
			Announcements data at stops	EV charging points next to a transport stop				

- Key:**
- = prioritised recommendation
 - = aligns with NaPTAN's purpose
 - = doesn't align with NaPTAN's purpose

Rationale for deprioritisation

NaPTAN focus is on delivery of static infrastructure node type data, these are either real-time or not node type data. It is also recognised that other routes to real-time data exist, such as the Bus Open Data Service.

The architecture data journey of NaPTAN



**Improvements we
might be able to
make**

References for the following report slides/pages

Reference	Source
1	The Transport Accessibility Gap (motability.org.uk)
2 - Slide 63	Rapid survey completed as part of Discovery in focus group (slide/page 63)
3	<u>Congestion and environmental impacts of short car trip replacement with micromobility modes</u>
4	<u>CoMoUK - supporting shared transport</u>

We are emerging from Discovery with three key hypotheses

1. NaPTAN could hold accessibility data, and related accessibility facilities data.
2. NaPTAN could hold the location data of shared mobility parking.
3. NaPTAN could host data on a database.

Hypothesis 1 to de-risk:

NaPTAN could hold accessibility data, and related accessibility facilities data

Impact / why solve this now

- Closing the transport accessibility gap could generate an additional economic benefit of **£72.4bn per annum**.¹
- 30% of disabled people say that difficulties with public transport has reduced their independence.¹
- 25% of working age disabled people cite inaccessible transport as a key barrier to participation in employment.¹



Hypothesis 2 to de-risk:

NaPTAN could hold the location data of shared mobility parking bays

Impact / why solve this now

- 77% of surveyed LAs, LTAs, technology providers and government departments view shared mobility as a form of public transport.²
- It is a catalyst for get people engaged in active travel, enables mode shift, and supports the transition to Net Zero.
- Increases the catchment area of public transport.
- Shared mobility could replace 1/5 short car trips.³
- There are 39 bike/e-bike schemes, and 10 e-scooter schemes operating across the UK – and this is expected to grow.⁴



Hypothesis 3 to de-risk:

NaPTAN could host data on a database

Impact / why solve this now

- **Tech ready:** Recently moved to Google Cloud Platform (GCP)
- **Analytics and rules ready:** GCP has a range of data, process and analytics functions
- Stricter naming / data field conventions
- NaPTAN lacks information and capability to identify and target data quality issues (LAs' data may not be up to date)



Next steps

1. We have created a discovery report on these recommendations, approach and case for change, which we intend on publishing in due course.
2. We have spent an **additional 4 week** on accessibility to evaluate existing literature on the accessible users' bus experience.

The image shows the cover of the 'Future of Discovery' report from the Department for Transport, dated August 2022. The cover features the Department for Transport logo and the text 'Future of Discovery' in large blue letters. Below the title, it says 'Department for Transport August 2022' and 'DRAFT'. The Executive Summary page is also visible, featuring three icons representing a Citizen, a Local Authority, and an Assisted Travel officer. The summary is divided into sections: 'The Challenge', 'We identified 8 transport modes and 6 data themes NaPTAN should hold', and 'Key recommendations to meet "must have" user needs and DfT's objectives'. The 'The Challenge' section lists four points: 1. Need to plan a journey that supports accessible needs, 2. Need to plan last mile journeys, 3. Need accurate and reliable information, 4. Need to efficiently navigate between platforms. The 'We identified 8 transport modes...' section lists: Bus, Rail, Tram, Light rail, Metro, Street trading, Taxi, and Other services. The 'Key recommendations...' section lists: 1. NaPTAN should hold accessibility data, 2. NaPTAN should hold the location data of shared mobility, 3. NaPTAN should hold the location data of shared mobility, 4. NaPTAN should hold the location data of shared mobility.

- a. *Reviewing 23 existing reports*
- b. *Building an experience blueprint*

Sub step	Learning about services	Planning a long distance journey	Booking a journey	Taking a bus service to the train station	Making a connecting bus to
Future user story	Berry is a wheelchair user living in Canterbury. His family is in town for a surprise 50th birthday celebration for his niece, Debbie, and they have invited him to Dungeness, Maidstone next week. Through local disability action groups, he has learnt that accessible travel is easier than he was led to believe. He is confident that his local bus services will be able to get him to Dungeness, Maidstone next week. He has a popular mobile planning app to plan the journey to the Dungeness party. In the app he is able to input that he is a wheelchair user which shows only appropriate routes. He can see the bus route & stop times at both ends. The bus is booked and he is confident making his trip.	This is Berry's first longer distance journey that he has taken. Berry knows that his local bus routes can get him to his local area. Berry feels confident using technology to plan a long distance journey. He uses a popular mobile planning app to plan the journey to the Dungeness party. In the app he is able to input that he is a wheelchair user which shows only appropriate routes. He can see the bus route & stop times at both ends. The bus is booked and he is confident making his trip.	Berry feels confident that the bus services in Dungeness will support his needs. His preferred route involves a train and a bus to reach Debbie's address. He calls the Assisted Travel team of the train provider who help him book a train ticket and organise train travel assistance for most of his journey.	Berry makes his way to his nearest bus stop and waits for the next bus. As it's his regular route, he is familiar with the service times, and that the bus will take his wheelchair. He makes his way to Canterbury East station and finds his Assisted Travel guide who helps him print his tickets and get to the correct platform, and wait for the next train. His journey begins, and he tells his wife's husband that he is on his way on time.	Berry arrives at Chatham station where he meets with the staff of the Assisted Travel team. They take him to the bus stops that are to his station where he expects to find connecting bus. He leads his recent journey again into his journey planning app. He sees that the bus stop is a junction of the bus stop. He also sees marked signs around the bus stop, where he locates the bus stop.
Pain points passengers face currently	<ul style="list-style-type: none"> Limited accessibility information available across all transport services Lack of confidence in using multiple modes of transport with a disability Any strategy on board and family for travel confidence 	<ul style="list-style-type: none"> How to use multiple apps and services to plan Lack of confidence in using multiple modes of transport with a disability Lack of confidence in using multiple modes of transport with a disability Lack of confidence in using multiple modes of transport with a disability 	<ul style="list-style-type: none"> Lack of confidence in using multiple modes of transport with a disability Incremented travel support available between modes of transport creating disjointed experience 	<ul style="list-style-type: none"> Lack of accessible parking near bus stop Bus stop may not allow wheelchair to board or alight safely due to bus stop and kerbside design Bus may not be equipped with ramp to board or alight Wheelchair space may be occupied, preventing access to the bus, delay in route Assisted Travel staff may not be available Bus stop may not be equipped with ramp to board or alight Wheelchair space may be occupied, preventing access to the bus, delay in route Assisted Travel staff may not be available 	<ul style="list-style-type: none"> Assisted Travel staff may not be available Bus stop may not allow wheelchair to board or alight safely due to bus stop and kerbside design Bus may not be equipped with ramp to board or alight Wheelchair space may be occupied, preventing access to the bus, delay in route Assisted Travel staff may not be available
Potential NaPTAN data elements in this experience		<ul style="list-style-type: none"> Bus stop location Bus stop closed indicator Bus stop description data (number availability, stop fees, approach terms, safe crossing options, nearby presence of dropped kerbs) 		<ul style="list-style-type: none"> Bus stop description data (number availability, stop fees, approach terms, safe crossing options, nearby presence of dropped kerbs) Train station accessible entrance ramp information (gradient of ramp, length, width) Train station entrance location data 	<ul style="list-style-type: none"> Bus stop location Bus stop indicator Photo of bus stop Train station accessible entrance ramp information (gradient of ramp, length, width) Train station entrance location data
Non-NaPTAN data elements in this experience		<ul style="list-style-type: none"> Real time route and maintenance information / disruption journey Real time vehicle location data 	<ul style="list-style-type: none"> Contact information for Assisted Travel support 	<ul style="list-style-type: none"> Real time bus occupancy information / availability of wheelchair bay Real time vehicle accessibility features mapped to location 	
How to use this document	<ol style="list-style-type: none"> 1. Read the open board left to right to understand how a disabled passenger can make a bus journey in the future with the provision of one bus stop accessibility data. 2. Read down each column to understand the key people, processes, policy and data elements that help make the future experience real. 				
Process enablers	<ul style="list-style-type: none"> Communication capabilities from Local Authorities to relevant community groups on their views towards accessible data availability 	<ul style="list-style-type: none"> Communication capabilities from Local Authorities to relevant community groups on their views towards accessible data availability 	<ul style="list-style-type: none"> Training Assisted Travel officer training across disability needs, across operators, and across public transport modes 	<ul style="list-style-type: none"> Communication Local bus service timetables available in a range of formats Training Local Authority bus stop training for wheelchair passenger boarding and alighting Bus stop training across a range of disability needs 	<ul style="list-style-type: none"> Assisted Travel officer training for disabled needs across public transport modes
Priority enablers	<ul style="list-style-type: none"> Local Authority Local Transport Authority 	<ul style="list-style-type: none"> Local Authority Local Transport Authority 	<ul style="list-style-type: none"> Assisted Travel officer 	<ul style="list-style-type: none"> Local Authority Local Transport Authority 	<ul style="list-style-type: none"> Assisted Travel officer

Thank you

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