



Future Mobility Zones Fund Application Form – Outline Proposal

This application is for the creation of a single Future Mobility Zone (FMZ). **One application form must be completed for the proposed zone, regardless of how many individual schemes it contains.** Please include all relevant information within your completed application form.

Applicant Information

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SECTION A – Name, location and description of the FMZ

A1. FMZ name and location (please provide a map of the area in an annex):

The name of our proposal is the **North East of England FMZ**. Our proposed Future Mobility Zone covers the entire North East region, with areas of focus within that region:

- Integrated journey planning and ticketing features will be implemented across the whole region. Our proposals for mobility credits are initially focussed on the Metro and DRT networks, but we will discuss with bus and rail operators whether this can be rolled out more widely.
- Our proposals for Future Mobility Gateways are more localised and tailored to specific areas where these interventions can be effective and thrive.
- Our proposals for micro-mobility modes and Shared Dynamic Demand Responsive Transport are aligned to the Future Mobility Gateways for first/last mile travel, peri-urban travel for hard-to-reach destinations and city centres for local travel.
- Our Co-operative ITS proposals are aligned to the main bus corridors in the region, which will very likely also be locations for Future Mobility Gateways.

A map of our FMZ is shown overleaf.

North East Future Mobility Zone - Location Map



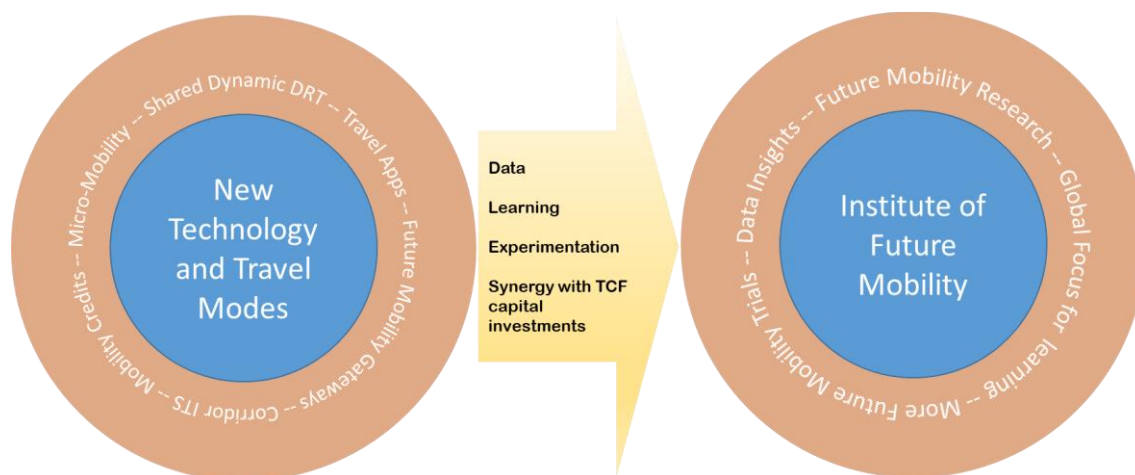
A2. FMZ description

Please provide a short description of the proposed FMZ (max 300 words).

Our Future Mobility Zone will make the North East region – and the UK – the exemplar demonstrator for the introduction and of transport innovation at a city region scale.

There are two key deliverables:

- A package demonstrating that **technology and new travel modes** can combine to improve connectivity and mobility, increase walking, cycling and public transport patronage, with the environmental advantage of reduced car usage and stimulate economic growth.
- An **Institute of Future Mobility** supporting the four grand challenges of the Government's Industrial Strategy through collaboration between leading academic institutions, national innovation centres, local transport authorities and transport operators. The **IFM** will produce insight and research based on the data received from our FMZ and become a globally significant voice that others can tap into as they seek to overcome future mobility deployment challenges in their transport networks.



Our future journey planning and ticketing solution will stand out globally, continually evolving to bring **all modes** into one digital space and customisable to each market sector. It will nudge people towards environmentally friendly choices and reinforce value-for-money travel. Future mobility gateways will be instinctively simple, seamless, secure and navigable on the first visit. They will feel integral to the communities around them.

Constant data generation from these digital and physical assets and more will feed the insights and research which will make the IFM of global significance for the transport industry.

Our FMZ incorporates and builds on established regional assets, making us the natural place for a FMZ:

- 5% of journeys already made using Popcard – our established multimodal, smart ticketing technology ready to be evolved;
- National Innovation Centres for Data and Ageing, plus a Russell Group academic institution already working in future mobility and other relevant disciplines.
- Established North East foundations to enable FMZ success, as illustrated overleaf:

A large and, diverse population that is demonstrably interested in transport innovation.

A polycentric city region that can allow innovative and optimised forms of mobility to gain a foothold and thrive.

An existing commitment to exploring the opportunities offered by Future Mobility.

Strong and well used sustainable transport networks.

SECTION B – The Strategic Case

B1. Background - What are the zone's objectives

Please provide a description of which issues are to be addressed by the zone - congestion, access to employment sites etc. (max 300 words).

Our Future Mobility Zone mission is founded upon four pillars:

- **Improving Customer Experience – a user-centred approach**
Our regional transport surveys show that perceptions of value and convenience are barriers to sustainable transport use for up to 60% of respondents. The FMZ will address this, geographically extending the network, simplifying journey choices and reinforcing value-for-money choices.
- **Decarbonisation and Local Air Quality**
Numerous areas of poor air quality are declared in our region; with road traffic contributing up to 80% of NO₂ emissions. The FMZ will encourage walking, cycling, low/zero emission shared travel and micro mobility that are all integrated with our sustainable networks and presented as a value-for-money and convenient proposition.
- **Delivering the Local Industrial Strategy**
“Driving our Digital Future” is a theme in the North East Strategic Economic Plan which will be a focus for our Local Industrial Strategy. This reflects the strength of the North East digital sector and multiple regional assets in industry, private sector firms, university research and development capabilities and the North East public sector. This includes the UK-leading sensor deployment in transport systems and strengths in zero carbon propulsion. Specialisms (including smart data, design and test bed opportunities for immersive technology) linked to these will be mobilised as a proposition in the Future of Mobility Grand Challenge to offer an extensive innovation programme across a number of themes.
- **Responding to an Ageing Population**
The FMZ will also take a leading role in the development and delivery of transport proposals that address the Government's ageing grand challenge. This will build on a £40m investment in the National Innovation Centre for Ageing, co-located with Newcastle University, which has strong connections across the region that will enable us to develop, test and deploy novel future mobility experiences which are attractive and accessible to our older population.

B2. Strategic Case - What does the FMZ contribute to the programme objectives?

Please provide brief details of each of the schemes to be included in the FMZ alongside an explanation of how the FMZ will fit with the aims of the Future Mobility Zones, including:

trialling new mobility services, modes and models to create a functioning marketplace for mobility that combines new and traditional modes;
improving the integration of services;
increasing the availability of real-time data;
providing access to digital planning and payment options;
exploring options for providing mobility credits, or other low-cost options for low income household; and
exploring options for delivering efficiencies through shared (dynamic) demand responsive transport.

Introduction

Our Future Mobility Zone proposition comprises seven innovative and interlinked proposals founded on the four pillars of our FMZ Mission detailed in Section B1:

- improving customer experiences in transport through a user-centric approach;
- global decarbonisation and local air quality issues;
- delivering our Local Industrial Strategy; and
- responding to an ageing population.

Through delivering the FMZ Mission, the Zone will contribute to the UK's Industrial Strategy and its four grand challenges.

Our seven innovative proposals are:

1. Shared dynamic demand responsive transport
2. Innovative micro-mobility modes
3. Integrated mobility tools driven by an integrated mobility platform architecture
4. Future Mobility Gateways
5. A Mobility Credits scheme
6. Co-operative ITS
7. The Institute of Future Mobility

Collectively, the proposals meet all of the aims of the Future Mobility Zones set out in the FMZ Guidance. The aims that each intervention delivers are set out below, at the start of the detailed description for each element of the FMZ.

Proposal 1: Shared Dynamic Demand Responsive Transport

This proposal meets the following aims of the Future Mobility Zones:

- trialling new mobility services, modes and models to create a functioning marketplace for mobility that combines new and traditional modes;
- improving the integration of services;
- increasing the availability of real-time data;
- providing access to digital planning and payment options;
- exploring options for delivering efficiencies through shared (dynamic) demand responsive transport.

It is proposed that the North East region becomes a test-bed for the implementation of Shared Dynamic Demand Responsive Transport at a scale not yet seen in the UK. Current operations have been implemented on individual communities or corridors, often on a trial basis. These trials have demonstrated the positive acceptance by end-users and passengers, our proposition is to take their implementation to the next level, deploying them across three significant sized areas at scale and, crucially, **fully integrating them with other public transport and sustainable transport networks.**

Our vision for this element of the FMZ is:

...to explore the steps required to fully embed Shared Dynamic Demand Responsive Transport into an urban, peri-urban and rural public transport system, in a way that integrates with and adds value to fixed route public transport networks and drives growth in public transport use.

At first these Shared Dynamic Demand Responsive Transport will be operated alongside existing rail services, commercial bus services and secured bus services. They will be aimed at providing two key outcomes:

- First and last mile connections from transport gateways into suburban areas where conventional fixed route public transport services are unable to provide a reasonable and reliable service; and
- Links between origins and destinations that cannot sustain commercial bus links, but which are important to the travelling public. These could be links to out-of-town major employment sites, hospitals, healthcare facilities and other destinations not located on major bus routes. In time, these could be ideal candidates for zero emission and autonomous vehicle operations.

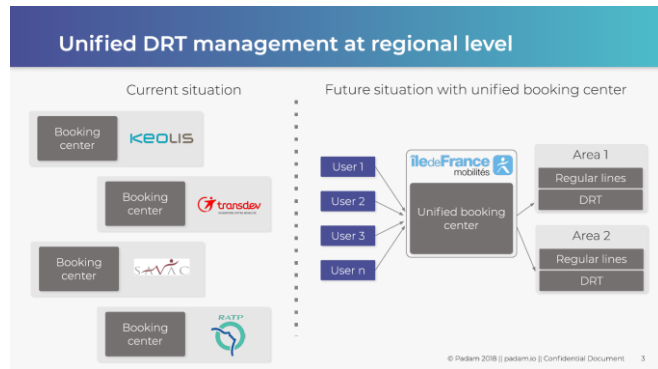
These outcomes will be delivered by providing shared bus services that operate as a demand responsive transport service. Passengers will be able to book a “corner to corner” journey from a safe pickup point very close to their origin, to a similarly safe drop off point at their destination. Journeys will be fulfilled “on-demand” and not require lengthy pre-booking. Our aspiration is that journeys will be fulfilled with a wait time of no more than 10 minutes, and arrival times at destinations will be indicated. The vehicles deployed will be a fleet of high quality 15 seat buses with accessible ramps, comfortable seating and creature comforts such as wi-fi, charging points and tables. Drivers will be friendly and well trained to exemplary standards of customer care. The services will typically be registered bus services that meet the Traffic Commissioner’s operational requirements in full.

As Shared Dynamic Demand Responsive Transport becomes embedded into the transport network and refined, the prospect of merging these operations with existing fixed route bus services will be explored. By enacting this merger, the financial sustainability of both the Shared Dynamic Demand Responsive Transport and the bus service network can be secured into the future.

The Shared Dynamic Demand Responsive Transport programme will be delivered in four co-ordinated and integrated streams of work:

- **A data-led analysis of demographic, transport and employment patterns** that will take a structured approach to selecting candidate areas for Shared Dynamic Demand Responsive Transport operation. The core purpose of this analysis is to select areas where new on-demand links can complement existing fixed route bus and rail services, not compete with them. The North East region is already working with Connected Places Catapult to deliver the DeMAND project for the Department for Transport, which will form the basis of this data-led analysis. We will also work with the National Innovation Centre for Data in Newcastle to further expand on the data analysis that can guide the identification of suitable operating areas, driven by travel data, mobile data and demographics.

- **Procure an integrated back office system** that will enable on-demand transport journeys to be booked, paid for and fulfilled. This back office system will drive the booking of journeys on our DRT smartphone app, and will also provide an API feed into other apps and websites delivered by our FMZ programme. This model of having a single back office system controlled by the transport authority is new to the UK and eliminates the integration risks for developers of multi-modal journey planning apps, who may otherwise need to integrate a multiplicity of back office systems and APIs provided by different DRT operators.



- **Provide a Call Centre to enable booking of Shared Dynamic Demand Responsive Transport** for people who are unable or unwilling to use a smartphone app. The call centre provides a vital backstop for older people, lower income households and other groups of society who may otherwise be digitally excluded from being able to benefit from these new services.
- **Contract with transport operators to deliver Shared Dynamic Demand Responsive Transport** in our selected areas. All operators of Shared Dynamic Demand Responsive Transport will be equipped with systems, equipment and training to use the single back office system. To meet our environmental goals, we will explore whether it is practical to use zero emission vehicles to provide some of the transport links to be contracted.

The coverage of the Shared Dynamic Demand Responsive Transport links will be refined over time in the light of patronage levels and user feedback. This will be undertaken by exploiting the critical link between our operations on the ground, our Data Insights team in the Institute of Future Mobility and the data analysts available through our collaboration with the national Innovation Centre for Data.

This element of our FMZ proposition delivers our Mission in the following ways:

Improving Customer Experience, a User-Centred Approach – shared transport links will address gaps in the current transport market, offering customers opportunities that are fully tailored to their travel needs by enabling corner-to-corner transport connectivity.

Decarbonisation and Local Air Quality – corner-to-corner connectivity is focused on introducing more people to the sustainable transport network and encouraging more people to leave their cars at home.

Delivering the Local Industrial Strategy–shared transport links will improve connectivity to job opportunities and training opportunities, enabling more people to play an active role in the North East’s industrial economy. These shared links will themselves also bring new employment opportunities to the region’s transport market.

Responding to an Ageing Population – by offering more tailored transport connections, the particular needs of older people that find it difficult to access conventional sustainable transport modes will be met.

Proposal 2: Innovative Micro-Mobility Modes

This proposal meets the following aims of the Future Mobility Zones:

- trialling new mobility services, modes and models to create a functioning marketplace for mobility that combines new and traditional modes;
- providing access to digital planning and payment options.

The North East region will work with industry partners to implement innovative micro-mobility modes at scale – including dockless bikes, e-bikes and e-scooters. Our proposal includes commitment to a trial at-scale introduction of e-scooters in the North East, once the legislative barriers to their use on the public highway have been resolved.

Our vision for this element of the FMZ is:

...to explore how existing and new forms of micro-mobility can contribute to encouraging people out of their cars and onto public transport, as part of an integrated transport system in our main centres and at key transport gateways.

The expansion of the deployment of micro-mobility modes in the North East will be aimed at providing two key outcomes:

- First and last mile connections from transport gateways into suburban areas where conventional fixed route public transport services are unable to provide a reasonable and reliable service; and
- Wider connectivity for shorter journeys of 1-3 miles, replacing the use of the private car in our city centres.

We start from a good place – our colleagues at Newcastle City Council have worked with Mobike to introduce and optimise the dockless bike system in the city. While that scheme has now been closed by Mobike, we have learned many lessons that we can deploy as part of the introduction of new forms of micro-mobility. These include the importance of fitting the scheme into the wider urban realm, the importance of sharing data and the focus on key market sectors that complement other transport modes.

We have already had fruitful discussions with several UK and international companies that operate dockless e-bike and e-scooter systems, convincing us that there is a strong appetite for the private sector market to introduce and fund micro-mobility systems in our region. We will ensure that best practice operating principles are agreed with all operators we work with in our FMZ, secured through the letting of operating concession agreements. These agreements will ensure that only micro-mobility operators meeting our requirements will be allowed access to our Future Mobility Gateways, our integrated mobility apps and other regionally owned assets.

The partnerships that we establish will obtain learning about the role of micro-mobility modes in providing first/last mile connections into frequent public transport services, and also attract short journeys that might otherwise be made by car.

A condition on operating within our Future Mobility Zone is that micro-mobility should make openly available their Application Programming Interface (API) for inclusion in our Integrated Mobility and Ticketing Tools. The inclusion of any micro-mobility mode to this platform (and the ability to operate a scheme on our land) will be contingent on the operator sharing data about the journeys fulfilled (volume of journeys, origins, destinations, times,

enquiries not completed as rides, etc). Operators must also be willing to work flexibly within the Future Mobility Zones, deploying their assets across the region as pockets of potential demand emerge (although we recognise that such changes will respect the need to retain a commercially viable operation).

We will therefore ensure that data generated by this new deployment can be shared with our Institute of Future Mobility, so that we can develop learning about our deployment and generate plans to optimise implementation of micro-mobility modes in other cities.

A further condition of operating in our Future Mobility Zone is that operators manage their stock to avoid street clutter, minimise vandalism and deploy their equipment at the places that will generate most demand for them. There is a natural commercial imperative to make such a commitment, and we have been reassured by our discussions with operators that this commitment will be honoured.

From this base, we believe that the North East will become a natural place for trials to happen of new forms of micro-mobility not yet introduced to the market. We will work with industry influencers through our Institute of Future Mobility to offer such opportunities.

This element of our FMZ proposition delivers our Mission in the following ways:

Improving Customer Experience, a User-Centred Approach – providing easy to understand choices about how to access public transport and make shorter journeys, focussed on the personal travel needs of individuals within a shared transport environment.

Decarbonisation and Local Air Quality– encouraging first-last mile and shorter journeys to be made by micro-mobility modes, replacing journeys by private car.

Delivering the Local Industrial Strategy– providing the region with a focus for micro-mobility operations that encourages locally based entrepreneurs to enter the market.

Responding to an Ageing Population – providing access to e-bikes that can attract people out of their cars who can still ride a bike but struggle with hills.

Proposal 3: Integrated Mobility and Ticketing Tools

This proposal meets the following aims of the Future Mobility Zones:

- trialling new mobility services, modes and models to create a functioning marketplace for mobility that combines new and traditional modes;
- improving the integration of services;
- increasing the availability of real-time data;
- providing access to digital planning and payment options;
- exploring options for delivering efficiencies through shared (dynamic) demand responsive transport.

We will develop a single and integrated mobility technology platform that enables apps and websites to provide a fully integrated travel service to transport users – enabling users to plan a journey, pay for a journey, retain a ticket for travel, receive live journey updates and obtain suggestions to avoid disruption. This platform will provide a single source of live and timetable information for all aspects of transport provision, including the new transport modes proposed for the FMZ, car clubs, shared taxis and options to travel by private car. This will include functionality to plan Park & Ride journeys from outlying areas of the region.

To achieve this requires a ‘glue or mesh’ that draws together the multi-sided stakeholders of user(s), operator(s), supplier(s) and authority(s), underpinned by transparent and lean processes, protocols and connectivity that allow free-exchange of information and payment services.

Some components of this platform are already in existence in the North East, but are not integrated into a single travel tool:

- Nexus has a journey planner that performs well, as do individual bus operators. This relies on scheduled timetable information that will be enriched by the DfT’s Bus Open Data programme, which will require operators to take a lead in publishing their own timetable data.
- Real-time information is available for all buses across the region, although the functionality of this system requires updating. Real-time information can also be made available for Metro services with some further investment.
- Nexus has a smart ticketing platform called POP, which is an ITSO international standard system that already allows for the purchase of tickets and production of a paperless token for travel across all Metro and bus services in the North East. This system is about to be launched on a smartphone so that it can be integrated with a travel app. The Bus Open Data programme will ensure that all bus fares are available online and published through an API feed.
- Comprehensive information about the live operation of our key highway networks is available from our state-of-the-art Urban Traffic Management Centre (UTMC). The functionality of this centre will be improved in relation to key transport corridors as a result of investment secured through Tranche 1 of the Transforming Cities Fund.
- Public transport disruption information is already available from a variety of social media sources and is being rationalised into one online source by a Transport for the North project.

These assets in combination can provide all necessary information to a single app that can plan, pay for and validate journeys, then allow journey adjustments en route in response to delays and disruption. Our proposition is to create co-ordinated API feed for all this information and present it to software developers in a manner that can feed apps, websites and other tools.

We know that further assets will become available to the region during the lifetime of the FMZ. For instance, Transport for the North's account-based ticketing project (ABBOT) will enable new ways to pay for transport on account to gain a best value price for travel. Integrating this project into the platform created for the North East will be considered during the system design phase.

Our vision for this element of the FMZ is:

...to provide a single integrated mobility platform that is available to app and website developers, enabling creation of industry-leading integrated travel apps that deliver a realistic and fit-for-the-region Mobility as a Service solution that is transferable to other cities.

This is an ambitious vision for the long term, which will be delivered in series of practical steps over a number of years. The platform will initially be deployed to create a fully integrated North East travel app that includes all modes of travel and all existing ticket products, including booking and paying for future mobility modes set out in this proposal and other transport assets in the region. Our vision for this app is that it will be sufficiently useful to negate the need to use apps offered by individual operators.

We do not underestimate the challenge of introducing ticket payments onto this platform – Nexus has already made strides towards this with the development of its host card emulation project, which enables a mobile phone to act like a smartcard. We are heartened that there is an appetite amongst existing and potential future transport operators in the region to resolve this challenge.

The platform doesn't simply stop at presenting today's information – it will have the functionality to grow as the transport network grows. New transport modes, such as car clubs and micro-mobility modes, can be integrated through the addition of their APIs. New ticketing products can be identified and added as the demand for them becomes apparent, for instance a day multi-modal travel fare cap product or a combined Metro and e-scooter product to better facilitate first/last mile connections. The platform will be scalable to grow with market demands and the supply of travel choices and tickets as they grow within the Future Mobility Zone environment.

The mobility platform can also be developed in time so that it enables the region to offer incentives and nudges to use sustainable transport choices. These incentives could take the form of fare discounts or they could be offers of goods and services from private sector partners (for example, a discount on your coffee on the way home if you make five sustainable transport choices in a week).

The mobility platform will also be made open to all developers, subject to a Fair Use Policy, which will enable a wide range of supporting apps to be developed that meet particular needs. Locality based apps, apps focussed on the student market, apps focussed on the travelling needs of older people – these are examples of the kind of tailored apps that will emerge as a result of creating this open data platform.

This element of our FMZ proposition delivers our Mission in the following ways:

Improving Customer Experience, a User-Centred Approach – a user-centric design will enable people travelling to have a full and comprehensive view of the cost and availability of travel choices, then seamlessly pay for and fulfil their preferred journey choice.

Decarbonisation and Local Air Quality– by enabling the creation of comprehensive and user-focussed smartphone applications that can properly inform people about their travel choices, making their subsequent payment and travel seamless and straightforward. This will be implemented with the express aim of encouraging people onto public transport and sustainable transport modes, leaving their polluting cars behind more often.

Delivering the Local Industrial Strategy– we would like to see national and regional app developers and entrepreneurs work with us to develop the mobility platform and the subsequent apps that emerge.

Responding to an Ageing Population – the mobility platform enables travel tools to be developed that can meet the specific travel and societal needs of older people.

Proposal 4: Future Mobility Gateways

This proposal meets the following aims of the Future Mobility Zones:

- trialling new mobility services, modes and models to create a functioning marketplace for mobility that combines new and traditional modes;
- improving the integration of services;
- exploring options for delivering efficiencies through shared (dynamic) demand responsive transport.

We propose to establish up to six Future Mobility Gateways during the first three years of our Future Mobility Zone. Future Mobility Gateways are where conventional mass transport networks (bus, Metro, rail) connect with surrounding areas through the innovative transport modes we will introduce as part of this proposal that provide first/last mile connections (Shared Dynamic Demand Responsive Transport and micro-mobility modes) as well as other important aspects of offering a transport mix, such as conventional cycle parking and shared use car clubs.

Our Future Mobility Gateways will be national and global exemplars of how conventional rail and bus based networks can be integrated with new and innovative modes of travel. The design process required to develop concepts for these Gateways will be cutting edge and provide countless lessons from which other cities can learn as they introduce future mobility principles to their mass transit networks.

Future Mobility Gateways will be located so that the interchange between mass transit and future mobility modes is facilitated with ease in a modern and comfortable environment. Larger Gateways may include shops, changing facilities and other infrastructure necessary to make the use of future mobility modes an attractive and seamless experience. Gateways will be equipped with vehicle charging infrastructure so that they are ready for the growth in zero emission vehicles in the shared transport market.

Links into these Gateways for cycling, walking and public transport will need to be of a high standard to ensure barriers to using these onward modes are removed as far as possible, funding has been included in this bid for this purpose that will supplement and build upon the Healthy Metro Station investments including in our TCF Tranche 2 bid for the North East region.

Some of the Future Mobility Gateways may also offer car-based Park & Ride facilities, but these will not be prioritised in the scheme layout (and not funded by the Future Mobility Zone programme).

As part of this programme, we will also provide Future Mobility “outstations” at key destinations such as education establishments, retail centres and office parks, so that facilities at the “other end” of popular first/last mile journeys are legible and clearly defined.

Future Mobility Gateways may not be the only places where first/last mile connections can be made. But they will be located at places where the greatest first/last mile activity is attracted and will offer tailored facilities aimed at making the use of public transport as pleasant and informed as possible.

Our vision for this element of the FMZ is:

...to provide modern and comfortable future mobility gateways where interchange between future transport modes and mass transit modes can be focussed. Infrastructure will meet the needs of future mobility users and offer high levels of digital connectivity.

Work on identifying the locations of Future Mobility Gateways has already commenced, Nexus commissioned an initial piece of research in April 2019 to look at demographic, housing, healthcare and transport patterns to identify potential Metro stations and bus interchanges that might have the catchment characteristics to become strong contenders for a Future Mobility Gateway.

Once the North East FMZ has been confirmed, we will build upon this initial work to understand in more detail to travel behaviours and needs of people in the region. This will provide a more considered and data-driven view on the best locations for Future Mobility Gateways. The particular needs of key sectors of society will also be considered as we develop our Future Mobility Gateways – making them age-friendly, inclusive, healthy and capable of being navigated by users with all kinds of mental and physical needs.

As the Shared Dynamic Demand Responsive Transport and micro-mobility trials come on stream, we will use travel behaviour data to learn about where the most popular interchange points exist. Initially, these emerging Gateways will be established with a temporary treatment – paint and temporary fencing will be used to delineate interim parking areas, low cost treatments will be used to establish the best boarding and alighting points for Shared Dynamic Demand Responsive Transport.

Only once passenger behaviour has been observed and analysed over a 12-18 month period will fully specified Future Mobility Gateways be constructed at locations where these modern facilities will have the greatest demonstrable impact.

This element of our FMZ proposition delivers our Mission in the following ways:

Improving Customer Experience, a User-Centred Approach – by providing a highly user-centric approach to design so that the customer experience can be enhanced and maximised.

Decarbonisation and Local Air Quality– by providing physical locations as a focus for new mobility modes and persuading people out of their cars.

Delivering the Local Industrial Strategy– by providing the opportunity for firms to be involved in the design and construction of cutting edge Future Mobility Gateways that respond to the future needs of people using future mobility modes and conventional mass transit modes.

Responding to an Ageing Population – by building the particular needs of older people into the design of Future Mobility Gateways.

Proposal 5: Mobility Credits Scheme

This proposal meets the following aims of the Future Mobility Zones:

- trialling new mobility services, modes and models to create a functioning marketplace for mobility that combines new and traditional modes;
- improving the integration of services; and
- exploring options for providing mobility credits, or other low-cost options for low income household.

The provision of a Mobility Credits scheme is required that will incentivise and facilitate the use of our future mobility proposals amongst lower income households. The graphic overleaf shows the distribution of lower income households (defined as households as having a total income of less than £20,000 per annum, which is 60% or less of the median national income) across the North East region.

Our proposal is to provide free travel for under-12s on the Tyne and Wear Metro, when accompanied by an adult. We will extend this free travel offer to under-12s accompanied by an adult on our Shared Dynamic Demand Responsive Transport services. This benefit will be applicable to all users across the Metro and Shared DRT networks. This proposal will enable lower income families to complete the Metro leg of their journeys more cheaply, which in turn will encourage those families to travel using first/last mile links into our future mobility gateways.

We will also open discussions with commercial bus operators across the North East region so that the benefits of a similar scheme on buses can be understood and the feasibility of a scheme on buses can be tested. We will also look at opportunities to extend this proposal to local heavy rail links in the North East, in conjunction with franchise operators and DfT Rail. Note that the financial details in Section C make no allowance for the potential costs of these further fare discounts on bus and heavy rail.

Our proposals for Mobility Credits and the incentivisation of lower income households to use future mobility modes are at an early stage and we would appreciate a detailed discussion with DfT about this proposal once we are shortlisted to the final six city regions. In particular, we need to discuss the challenge of funding fare discounts through capital investment.

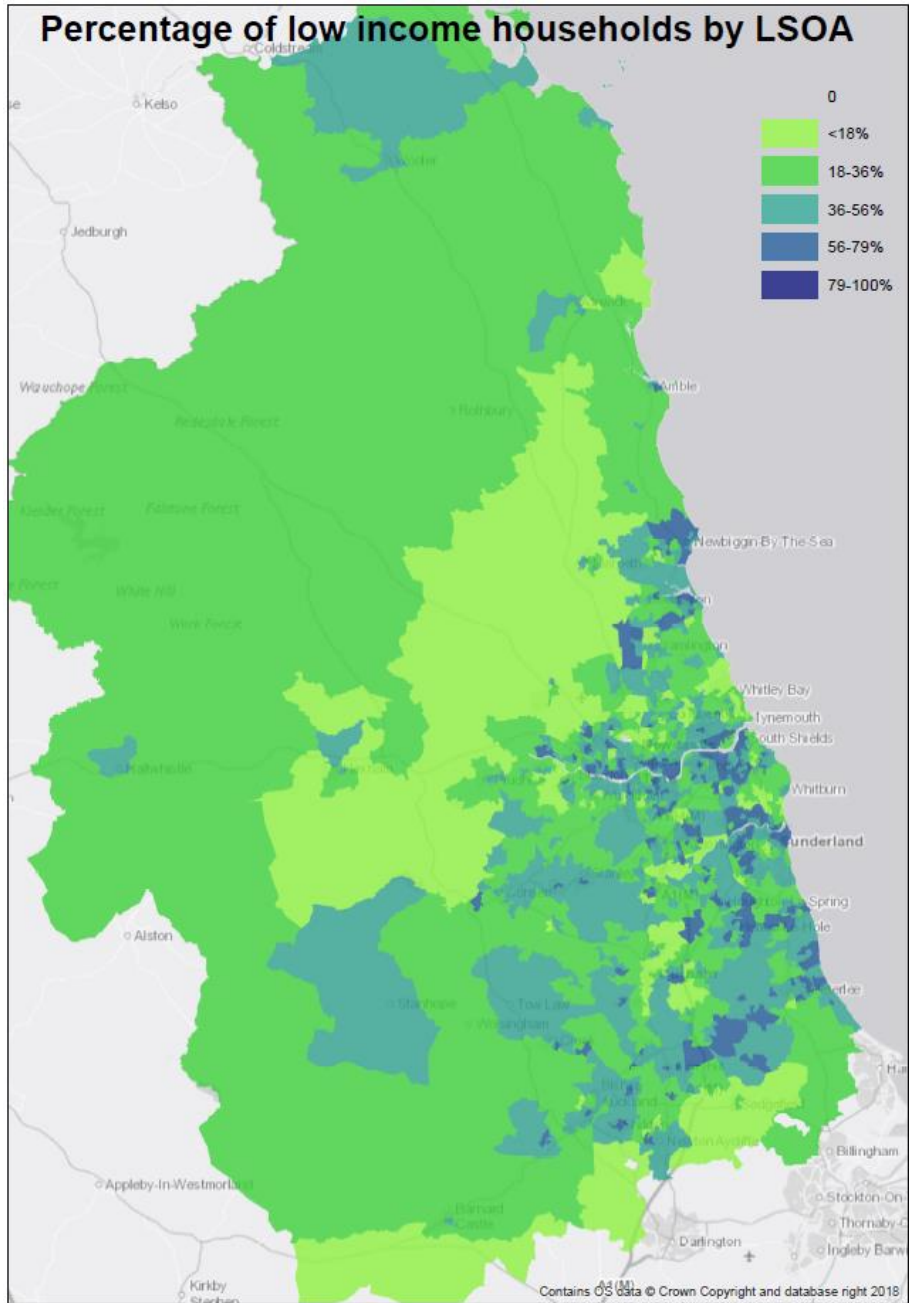
This element of our FMZ proposition delivers our Mission in the following ways:

Improving Customer Experience, a User-Centred Approach – by enabling low income householders to use future mobility modes in a way that may have otherwise not been possible.

Decarbonisation and Local Air Quality– by providing financial encouragement to avoid using a car.

Delivering the Local Industrial Strategy– not applicable

Responding to an Ageing Population – by providing discounted travel via future mobility modes to older people travelling with under-12s.



Proposal 6: Co-operative Intelligent Transport System

This proposal meets the following aims of the Future Mobility Zones:

- improving the integration of services;
- increasing the availability of real-time data.

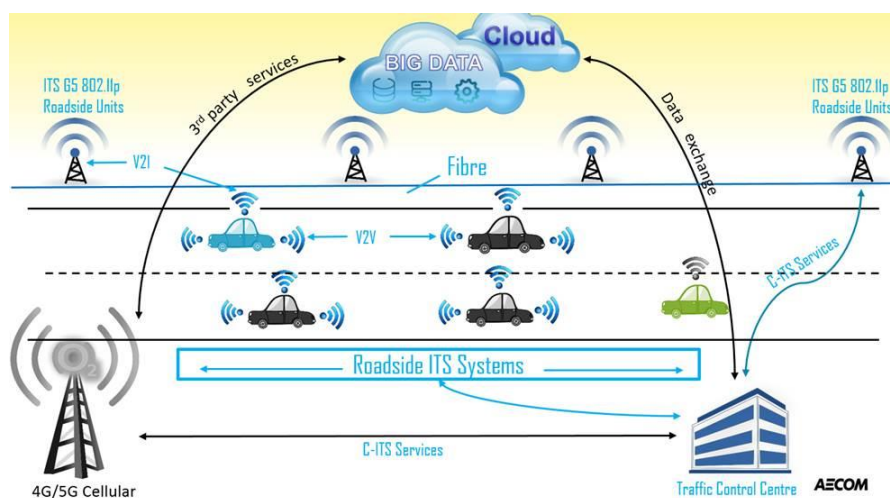
We will introduce Cooperative Intelligent Transport Systems (C-ITS) in key public transport corridors in our region. This system will allow vehicles and transport infrastructure to `talk` to each other sharing data with wireless connectivity, improving information about road conditions and providing data to assist bus users.

Our vision for our Cooperative Intelligent Transport System (C-ITS) is:

...to provide transport networks that are connected to each other so that intelligent automated decisions can be made and updated in real time based on sensors and data. We will bring efficiencies to our transport networks that makes best use of existing assets and capacity and learn from data/ network intelligence so that future investment meets the needs of all modes of transport.

The C-ITS proposal builds upon the North East's existing widespread technology solutions for transport and the long established, nationally acknowledged UTMC centre. Our objectives for this programme are firstly, to use C-ITS to manage traffic signals in real time to prioritise the busiest bus services and sustainable modes of transport; and secondly,

provide in vehicle audible driver advice on appropriate speeds approaching traffic signals to reduce start/stop driving, improve road safety and reduce fuel consumption (Green Light Optimal Speed Advice – GLOSA). A schematic overview of system architecture is illustrated (right).



We will equip buses on key corridors with passenger counting equipment linked to our C-ITS station. This will enable the use of loading data to mitigate competing late services at key junctions and on a corridor basis, allowing for better strategic control of buses using the road network. This technology will also allow us to disseminate loading levels to passengers as part of on-trip and pre-trip information systems.

This on-board and on-street infrastructure will be trialled on some of our busiest transport corridors and city centre locations to promote sustainable modes of travel, improve network efficiency and road safety, reduce journey times, and tackle environmental problems with air quality. These locations will also provide the greatest challenge in handling vast amounts of data for traffic control decisions to be based on. We have listened to our main bus operators in the area and have their support for the programme, knowing that if successful, there is the opportunity to roll out the systems across the UK. The pilot corridors are: Chester Road

in Sunderland; Durham Road in Sunderland; West Road in Newcastle; Great North Road in Newcastle; Coast Road in North Tyneside; plus Newcastle and Sunderland City Centres.

The 'Rules Engine' to control traffic signals on these corridors, and at the same time advise and influence driver behaviour, will be informed by traffic data and intelligence of the current traffic, network and environmental conditions. Data feeds will come from traffic counters, ANPR cameras, CCTV, air quality monitoring stations. Predefined strategies will advise the automated 'decisions' as to how the corridors should perform and what priorities to make given the demands on the network and environmental conditions. We will integrate our UTMC database into a C-ITS station which together, will act as the heart of our decision making 'rules engine'.

For driver information, we will upgrade and equip our signals and C-ITS station with a system which will provide Green Light Optimal Speed Advice (GLOSA) on a wide geography. We will prioritise those corridors that will accommodate our proposed Future Mobility Gateways. We will also target areas that have a history of road accidents and problems with air quality exceedances, to supplement other important agendas in the area. We will publicise and provide this data via mobile phone apps to all residents and visitors to the region making it user friendly and easy to engage with for the widest audience, so the greatest benefits and objectives can be achieved.

Our unique proposition is to build upon the C-ITS evaluation work undertaken nationally by Newcastle University and undertake the most comprehensive 'living lab' evaluation of C-ITS and ITS interventions, in partnership with Newcastle University and the Institute of Future Mobility. Our priorities will be sustainable transport modes and mass movements of these modes on our busiest corridors, as well as environmental conditions, road safety, incidents on the network or planned major events. These interventions will be evaluated in real-time by academic experts and position the North East as the key region for ITS evaluation.

Successful implementation of these pilots will pave the way for future transport provision, particularly the introduction of autonomous vehicles. However, more than this, it will provide a comprehensive testbed for understanding the efficacy of ITS and complex system integration and interaction, using our regional expertise in C-ITS evaluation and our status as a key Urban Observatory to become a world-leading ITS centre of excellence.

This element of our FMZ proposition delivers our Mission in the following ways:

Improving Customer Experience, a User-Centred Approach – the travelling public will receive a better travelling experience that will continually improve through time.

Decarbonisation and Local Air Quality– more effective use of network capacity, prioritising sustainable modes of transport. Potential for direct influence of vehicle speeds and platooning for better fuel efficiency.

Delivering the Local Industrial Strategy – by better transport connectivity, accessibility and efficiency. The rules engine of the C-ITS will develop through time as communications become faster and more sensors are added across the NECA transport network. This provides the opportunity for local firms to develop the future technologies that manage more data streams and speed decisions and information can be sent to the travelling public.

Responding to an Ageing Population – future automation will account for the driving styles and reactions of an older population and safeguard them in dense urban networks, supporting their decision making when necessary.

Proposal 7: Institute of Future Mobility

This proposal meets the following aims of the Future Mobility Zones:

- trialling new mobility services, modes and models to create a functioning marketplace for mobility that combines new and traditional modes;
- improving the integration of services;
- increasing the availability of real-time data;
- providing access to digital planning and payment options;
- exploring options for providing mobility credits, or other low-cost options for low income household; and
- exploring options for delivering efficiencies through shared (dynamic) demand responsive transport.

At the heart of our Future Mobility Zone proposal is our final proposition – the Institute of Future Mobility (IFM). The IFM will be a collaborative partnership between the main players in the future mobility market regionally and nationally.

Our vision for the work of the IFM is threefold:

...to provide a focus for market engagement and lobbying that will attract new transport innovations to be tested in the North East, for the benefit of the UK transport industry.

...to provide original data-led research that can inform the implementation of future mobility innovations in other cities across the UK and the globe.

...to provide data insights that can optimise public and shared transport operations in the North East.

This Institute of Future Mobility will be the focus for globally significant investment and research in future mobility – both for the transport innovations that will be introduced initially in the North East as set out through this Section B2, and through the further innovations that will follow in our region once we are established as a global leader in the future mobility marketplace. This will establish the North East as a world leader in future mobility implementation and research, a position that will enable to UK to enjoy a similar status.

The Institute will be constituted in three sections:

A Data Insights Team that will work in collaboration with the National Innovation Centre for Ageing (NICD) to collate and analyse data from all the future mobility innovations trialled in the North East. The team will also use this analysis to understand travel behaviour, which could be adoption of new modes in general and within segments, as well as monitoring the success of new strategies such as promotion and information design to support travel behaviour shift.

These data insights will be used to improve and optimise the operation of public transport and shared transport modes across the North East, adding value to our transport network and bringing more people onto public transport. The data insights will also be used to feed wider research, as set out below.

The Data Insights Team will also enable innovation by working alongside the NICD core technical team on collaborative projects to transfer data science skills to organisations in the

transport domain. The outcomes for participating organisations include the ability to grow their own in-house data skills whilst potentially creating operational efficiencies and generating additional revenue streams from new products and services in the transport domain.

This relationship will allow the FMZ to leverage:

NICD core technical team – a data science team of PhD qualified experts with skills ranging across data wrangling, scalable computing, maths and statistics, machine learning and data visualisation that can assist and advise on transport specific projects.

NICD activities – a set of three initiatives comprising Data Insights (awareness raising events and activities); Data Connections (networking, signposting and connecting organisations to best practice, skills and expertise); Data Skills (3-6 month collaborative projects).

NICD building – the Catalyst is a new ground-breaking facility that hosts a suite of bespoke facilities and a range of flexible office space to create a vibrant ecosystem between NICD and commercial organisations with a focus on delivering new insights through data analytics and new products and services which help us to age well, for longer.

An Innovation Demonstrator Environment - a facility drawing on data insights, user needs and design expertise, world-class technology competencies and operational experience. This will constitute both a process and environment to assess mobility innovation. The knowledge gained from these trial implementations will be used to both scale-up new forms of mobility in the region, and pass those lessons on to others

A Future Mobility Research Team that will take the data insights generated by the above team and create learning and best practice research that will be made available for other city regions and authorities across the UK and the globe. This team will drill deep into the data to understand the demographic, transport, socio-economic, governance and even topographic influences that our experience tell us can govern relative success or failure when implementing future mobility innovations.

The IFM will provide a partnership of a wide variety of interests in the future mobility field, who will in turn be beneficiaries of the work of the Institute. The partnership will meet regularly to review and guide the work of the Institute. The stakeholders that we intend will become Institute partners include: transport and highway authorities; academic institutions; key national innovation centres based in the region; Government agencies focused on innovation, such as Innovate UK and Connected Places Catapult; the local enterprise partnership; transport operators; and of course the Department for Transport.

The IFM will be led by a Board that will comprise senior figures from Nexus, the North East Local Enterprise Partnership, Newcastle University, Northumbria University and the Department for Transport. The Board will appoint a Director to manage the day to day operations of the Institute.

The IFM will provide a partnership of a wide variety of interests in the future mobility field, who will in turn be beneficiaries of the work of the Institute. The partnership will meet regularly to review and guide the work of the Institute. The stakeholders that we propose will become Institute partners include:

- Nexus, the Tyne and Wear passenger transport executive;
- Newcastle University;
- Northumbria University;
- North East Local Enterprise Partnership;

- The seven county and district highway authorities in the North East (Durham, Gateshead, Newcastle, Northumberland, North Tyneside, South Tyneside, Sunderland);
- The three principal commercial bus operators in the North East (Arriva North East, Go North East, Stagecoach North East);
- The Tyne and Wear Metro and the Shields Ferry (both wholly owned and operated by Nexus);
- Northern Rail;
- Other operators and innovators;
- Innovate UK;
- Connected Places Catapult; and, of course
- The UK Department for Transport.

This element of our FMZ proposition delivers our Mission in the following ways:

Improving Customer Experience, a User-Centred Approach – the research and learning from our FMZ will improve the customer experience of using transport across numerous cities, as well as our own North East region.

Decarbonisation and Local Air Quality– cities across the world will learn how to implement future mobility in a way that helps tackle global and local emissions levels from transport.

Delivering the Local Industrial Strategy– the Institute will provide a significant boost to the regional economy, raising the profile of the North East as a global transport innovator.

Responding to an Ageing Population – the Institute will be able to undertake specific research into transport and older people, working hand in hand with our partners at the National Innovation Centre for Ageing, which will deliver better transport outcomes for older people across many cities, including our own.

Please provide information to show how the zone will help to meet strategic transport objectives in the area.

The Future Mobility principles set out above are closely matched to our regional transport policies and our Strategic Economic Plan, which aim to deliver transport networks that support the economic development of the North East, protect our environments and meet the social needs of our population through transport investment. Our transport challenges in the North East include high levels of deprivation in some urban and rural communities, low rates of car ownership and resulting transport isolation in urban and rural areas. The proposals for our FMZ have been moulded to ensure they make a positive contribution to these challenges.

We are therefore assured that the Future Mobility Zone will make a strong positive contribution to our strategic transport objectives in the area, as well as a broader contribution to our Local Industrial Strategy and our local air quality challenges.

At a national level, the Government's Future of Mobility Urban Strategy and the Department for Transport's call for outline FMZ proposals present the national principles associated with Future Mobility, as set out in the Future of Mobility Urban Strategy extract below.

In facilitating innovation in urban mobility for freight, passengers and services, the Government's approach will be underpinned as far as possible by the following Principles:

1. New modes of transport and new mobility services must be safe and secure by design.
2. The benefits of innovation in mobility must be available to all parts of the UK and all segments of society.
3. Walking, cycling and active travel must remain the best options for short urban journeys.
4. Mass transit must remain fundamental to an efficient transport system.
5. New mobility services must lead the transition to zero emissions.
6. Mobility innovation must help to reduce congestion through more efficient use of limited road space, for example through sharing rides, increasing occupancy or consolidating freight.
7. The marketplace for mobility must be open to stimulate innovation and give the best deal to consumers.
8. New mobility services must be designed to operate as part of an integrated transport system combining public, private and multiple modes for transport users.
9. Data from new mobility services must be shared where appropriate to improve choice and the operation of the transport system.

Our proposed Future Mobility Zone complies with these national principles, delivering genuine transport innovation in an environment that has a particular emphasis on:

- **A fully inclusive approach** – the benefits of the transport innovations in our FMZ will be available to all users through accessible vehicles, safe and secure systems, convenient and frequent services and unrestricted access to information. The benefits will NOT be limited to just the most technologically capable. Indeed, we are proposing interventions that are focussed on providing direct benefits to key sectors of society – including older people and lower income households (Principles 1, 2).
- **Reducing environmental impacts of transport** – we wish to test at scale innovations that will reduce reliance on the private car, as well as tackling the environmental footprint of public transport operations. We will explore how the

innovative transport modes we propose can be provided with zero emissions (Principles 3, 5, 6).

- **Retaining and tailoring core public transport services** – we want to develop innovative proposals that complement and work collaboratively with our mass transit networks, not compete head-to-head with them (Principle 4).
- **Learning and experience that can benefit the worldwide transport industry** – we propose to develop an Institute that will become a world leader in Future Mobility research and innovation, supported by a wide range of regional and national partners (Principle 7).
- **Transport integration** – our proposition seeks to maximise the degree to which new innovative modes and other forms of sustainable transport are seamlessly integrated, through systems and through infrastructure, to make multi-leg and multi-modal journeys as simple and efficient as possible. Our Metro and bus networks were developed in the 1970s and operated until the mid-1980s on the principles of integration – we want to update and extend those integrated networks to meet the mobility needs of the 2020s and beyond (Principle 8).
- **Exploiting the value of data** – transport innovations generate a great deal of data, providing insights into people’s travel. The ethos of open data is already well established and this will be extended to tailor and fine-tune integrated services to meet user needs, resulting in innovative and optimised transport networks (Principle 9).

Outline which user segments are most expected to benefit from the FMZ (e.g. existing commuters, prospective workers with new access to work).

We believe that the innovations proposed for our FMZ will bring benefits to everyone travelling in the North East region. Specifically, the first/last mile and on-demand innovations will benefit commuters and people travelling to hard-to-reach destinations such as out of town business parks and healthcare facilities. Our mobility credits proposals will directly advantage lower income households.

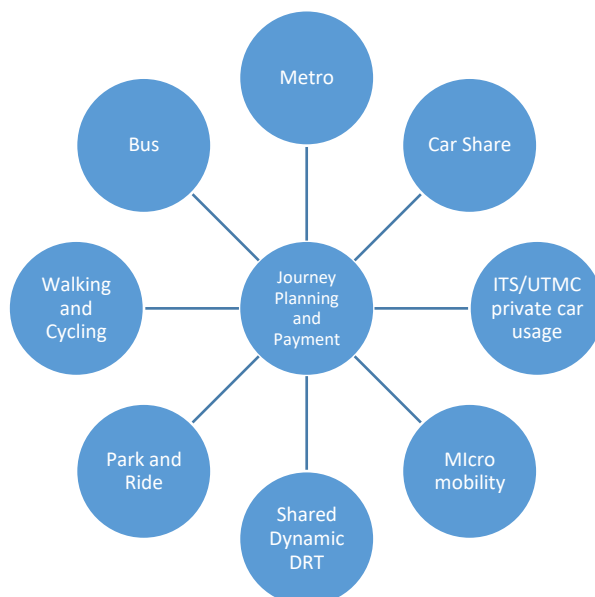
B3. Global significance

Please provide a description of how the individual schemes contained in the FMZ would be combined to create a globally significant demonstrator of new mobility services.

Please describe how you would create an exportable template to replicate the success of your FMZ in other areas, including providing evidence for the efficacy of new services, modes and models, to inform the development of future schemes.

The global significance of our FMZ is that it will evolve to succeed where others have failed. We will know how to overcome the complexities and create a journey planning and payment system that will cover all current modes and integrate new modes into that ecosystem.

We can do this as we have much of the existing infrastructure, physically and contractually, through our Pop Card smart ticketing platform – on which we can build on to make this reality. Unlike other city regions, we are not working from a standing start.



Through our Institute of Future Mobility and the learning that Institute will derive from our FMZ, transport authorities and operators worldwide will come to learn how to:

- Keep the shared transport eco system alive commercially for all involved;
- Navigate the commercial deals to make the system thrive;
- Make financial transactions work for the customer and the service provider;
- Capture the user perceptions and experience through constant feedback; and
- Use data about historic journey choices made and rejected to help achieve numerous goals such as: modelling demand based on season/weather/changes or changes in employment patterns/fuel prices; derive customer elasticities and price sensitivities; identify areas of unmet demand; and understand which “nudge” techniques can be effective in reinforcing value-for-money and environmentally friendly choices.

At the heart of our Future Mobility Zone proposal is our **Institute of Future Mobility (IFM)**. The IFM will be a collaborative partnership between the main players in the future mobility market regionally and nationally.

This Institute of Future Mobility will be the focus for globally significant investment and research in future mobility – both for the transport innovations that will be introduced initially in the North East as set out in B2, and through the further innovations that will follow in our region once we are established as a global leader in the future mobility marketplace. This will establish the North East as a world leader in future mobility implementation and research, a position that will enable to UK to enjoy a similar status.

Our vision for the work of the IFM is threefold:

...to provide a focus for market engagement and lobbying that will attract new transport innovations to be tested in the North East, for the benefit of the UK transport industry.

...to provide original data-led research that can inform the implementation of future mobility innovations in other cities across the UK and the globe.

...to provide data insights that can optimise public and shared transport operations in the North East.

The IFM will provide a partnership of a wide variety of interests in the future mobility field, who will in turn be beneficiaries of the work of the Institute. The partnership will meet regularly to review and guide the work of the Institute. The stakeholders that we intend will become Institute partners include: transport and highway authorities; academic institutions; key national innovation centres based in the region; Government agencies focused on innovation, such as Innovate UK and Connected Places Catapult; the local enterprise partnership; transport operators; and of course the Department for Transport.

SECTION C – The financial case

C1. Financial case – scheme costs

This should include total scheme cost, total Future Mobility Zones Fund contribution, total public sector contribution to scheme, total local and private contributions and any contributions in kind. This should include, if possible, a profile of costs for each financial year up to 2022/23.

Total scheme cost (£m): **£18.855m**
(£14.789m capital; £4.066m revenue)

Total DfT (FMZ) funding contribution (£m): **£17.187m**
(£14.789m capital; £2.398m revenue)

Total public sector contribution (£m): **£1.218m**
(£0.000m capital; £1.218 revenue)

Total local and/or private contribution (£m): **£0.450m¹**
(£0.000m capital; £0.450 revenue)

Details of any ‘contributions in kind’ (e.g. operators agreeing to run a service): Micro-mobility operators will provide their services free of charge without public subsidy.

Please note that these costs are currently indicative and will be subject to further development during the programme co-development phase that will be conducted with the Department for Transport.

¹ Precise contributions from academic institutions and private sector partners are to be confirmed, we are working on a conservative estimate of £150k per annum at present. We already know that both Newcastle and Northumbria Universities are willing to commit in-house resources to the FMZ.

Notes:

1) DfT funding will be awarded in 2019/20.

2) Where appropriate, please indicate the maximum and minimum level of funding needed to create the FMZ and give an indication of scalability.

Our proposals are scalable through the scaling back of individual elements of our proposed FMZ. Where indicated with a *, elements can be scaled down by reducing the areas of coverage or staffing levels.

Numerous options arise from this, however we consider that a minimum of £12.0m capital and £2.0m revenue would be the lowest practical funding envelope that will allow the FMZ proposals to become established and thrive over a three year period.

	Capital	Revenue (FMZ)	Revenue (Match)	Total	% Match
Shared Dynamic Demand Responsive Transport*	£ 800,000	£ 1,500,000	£ 300,000	£ 2,600,000	12%
Micro Mobility Modes	£ 150,000	£ -	£ -	£ 150,000	0%
Integrated Mobility Platform	£ 3,400,000	£ -	£ 108,000	£ 3,508,000	3%
Future Mobility Gateways*	£ 7,694,000	£ -	£ 810,000	£ 8,504,000	10%
Mobility Credits*	£ 1,470,000	£ -	£ -	£ 1,470,000	0%
Co-operative ITS	£ 1,250,000	£ -	£ -	£ 1,250,000	0%
Institute of Future Mobility* (incl. Programme Management team)	£ 25,000	£ 897,632	£ 450,000	£ 1,372,632	33%
TOTAL	£ 14,789,000	£ 2,397,632	£ 1,668,000	£ 18,854,632	9%

3) Please provide details of the source of any local and/or private contribution.

Match funding is combination of:

- Existing revenue spend on maintaining infrastructure and systems that will continue once the FMZ capital investment is made;
- A commitment to integrate on-demand transport links and secured bus services in the second and third year of the FMZ, bridging the funding gap in Year 3 operations.
- Seeking match funding for the Institute of Future Mobility in the form of resource contributions “in-kind” and monetary contributions from regional and national public and private sector stakeholders. We already have significant commitments identified from academic institution partners that will contribute to the target of £150k per annum local private sector match funding.

4) Outline the breakdown in costs year-by-year if possible.

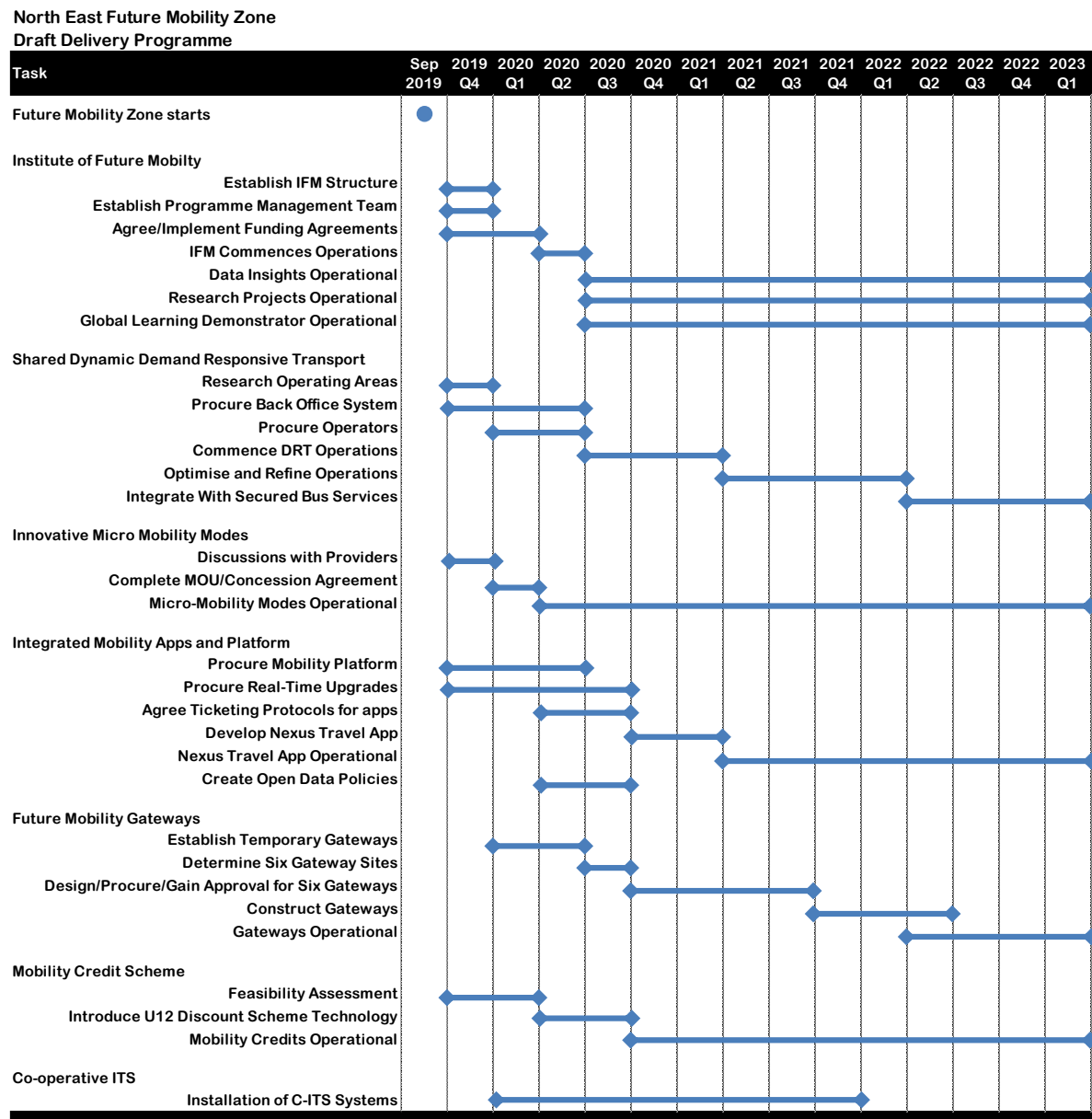
	Year 1 (starts Sep 2019)	Year 2 (starts Sep 2020)	Year 3 (starts Sep 2021)	TOTAL
Capital (FMZ)	£ 4,085,000	£ 6,077,000	£ 4,627,000	£ 14,789,000
Revenue (FMZ)	£ 1,146,000	£ 899,080	£ 352,552	£ 2,397,632
Revenue (local match)	£ 456,000	£ 456,000	£ 756,000	£ 1,668,000
Total	£ 5,687,000	£ 7,432,080	£ 5,735,552	£ 18,854,632

SECTION D – The management case

D1. Management case – Delivery and risk management

Please provide details of key milestones (a detailed project plan is not required at this stage).

The key deliverables for our FMZ are set out in quarterly periods below:



Please provide details of any technical risks around delivery of the schemes and any mitigating actions.

There are a number of strategic risks that have been identified for each of our proposed interventions. These are set out below along with proposed mitigations.

Shared Dynamic Demand Responsive Transport

There are clearly some risks associated with this introduction of a network of Shared Dynamic Demand Responsive Transport at scale in the North East. Principally, initial ridership and revenues may be lower than anticipated or the growth in ridership as the links are embedded in the region may be lower than expected. In these circumstances we will have the opportunity to scale the level of operation (vehicle and driver numbers) to the level of demand and mitigate the financial risk. Our operating contracts will be specified so that the number of vehicles and drivers can be scaled up and down, or deployed to other areas, as demand requires it. The detailed work undertaken by the Data Insights Team within our Institute of Future Mobility will manage these potential risks in an effective and highly data-driven manner.

Innovative Micro-Mobility Modes

A key risk associated with this element of our proposition is the financial viability of the micro-mobility deployment. We are assuming that all deployments will be commercially viable in the medium term and any start-up costs will be covered by the operator at no cost to the public purse. We have seen this model work well in other cities and we are reassured by operators that this can also work in our Future Mobility Zone.

Integrated Mobility Platform and Apps

There are some key risks associated with the mobility platform and associated apps:

Firstly, we may create an integrated platform and smartphone apps that work in a technical sense but do not put the users' needs at their heart. We are committed to eliminating this risk by following a highly user-centric approach to developing apps, be they generic apps for all travellers or bespoke apps tailored to particular sections of the travel market. We will achieve this by using established user panels in the region and engage with users to identify and explore their needs in detail, building on research we have already undertaken that suggests there is strong appetite for transport innovation in the region².

Secondly, the ability to retail tickets on the app relies upon there being an agreed transaction charges between the owner of the retail platform (Nexus) and the operator (Metro, bus operators, mobility providers, etc). This risk is already mitigated by the existence of Network Ticketing Limited, which administers ticket payments for multi-modal Network One products. In addition, arrangements are already in place to sell Metro, ferry and bus tickets through the POP smart ticketing platform on a pay as you go basis, which means a key part of the ticketing proposition is in place across key travel modes.

Thirdly, the usefulness of the journey planning aspects on this platform is governed to a large extent by the accuracy of the timetable, stop and fares data on which the journey

² Nexus commissioned Breaking Blue to undertake new research into Future Mobility Services. Amongst existing public transport users, 42% would use public transport more if an integrated travel and ticketing app was available and 35% would travel more if shared dynamic DRT services were available. Amongst car users, 35% would consider switching to public transport if the integrated travel app was available and 30% would consider switching to a shared dynamic DRT services.

plans are based. The DfT's Bus Open Data programme will ensure that accurate and up-to-date timetable and ticket information is available, which will be matched by investment in Metro timetable information. Our proposed investment in real-time information feeds will ensure that live travel planning information will give reliable and accurate predictions at all times.

Fourthly, this system is likely to rely heavily on cloud-based data storage and distribution systems that can be open to external interference. We will seek to ensure this system is built around UK-based cloud storage systems, reducing the risks and contributing to the UK economy.

Fifthly, there is a risk that we develop one of many regionally bespoke systems that fail to integrate together and bind us into one system for the long term. We will work with national partners (including the DfT and other FMZ cities) and international bodies to ensure that our systems comply with emerging national and international standards and protocols, so that our systems can be portable to other cities in the future. This is a similar approach to the way we adopted ITSO smart ticketing standards ten years ago when we rolled out the POP card on our transport network.

Finally, ICT projects of this kind can be time consuming and cost to procure. Nexus has the advantage of considerable experience of delivering such projects, which will mean such delivery risks can be minimised.

Future Mobility Gateways

The key risk associated with these proposed Future Mobility Gateways is that passenger behaviour and other exogenous factors conspire to mean that the Gateways are not built in the optimal locations. This risk will initially be mitigated by establishing the Gateways flexibly and through temporary installation so use can be monitored and services flex accordingly. For this reason Nexus will consider how best to maintain flexibility while ensuring that unanticipated costs do not arise – this could be achieved via a concession or similar model.

Mobility Credits

There are a number of risks and uncertainties with this proposal that we also wish to discuss with DfT once our Expression of Interest has been accepted.

Institute of Future Mobility

The key risks associated with this proposition are firstly, the volume of data generated requires more staff. In such circumstances we will speak to DfT and our partners at Board level about how to attract more resources to the team.

Secondly, that partners withdraw their funding and leave a shortfall in revenue for the Institute. We have tried to ensure that partners make an up-front commitment to three year funding, however if partners were to drop out and further DfT funding was not available, we would need to scale back the size of the Institute team.

D2. Management case – Governance

Do you have governance processes in place to deliver the scheme?

✓ Yes No

This Future Mobility Zone represents a significant investment in the future of transport in the North East. It is a programme of schemes and innovations that will require careful planning and management. We have developed governance arrangements that is already guiding and controlling delivery of our TCF Tranche 1 investment, and will provide the necessary careful and comprehensive planning to deliver for both this FMZ proposal and our wider TCF Tranche 2 capital programme.

Implementation of the capital infrastructure, capital-funded technology systems and the supporting revenue-funded services will principally be delivered by Nexus (for Tyne and Wear), Northumberland County Council and Durham County Council depending on the location of the infrastructure and services to be delivered.

For the capital investments in our programme, a specific allocation of funding has been allocated to allow for project management requirements during design and delivery phases.

For revenue investments, where individual management roles are associated with projects within the programme, these have been identified.

However there remains the need for a programme management function to oversee the co-ordination and procurement of various aspects of the programme, working hand in hand with lead delivery partners. We estimate that this will require the retention of a 1.0fte Project Manager and a 2.0fte Assistant Project Managers for the three year duration of the programme. The revenue costs for this team will be funded by the Department for Transport as part of the FMZ funding, and we have included them in the wider costs for establishing the Institute of Future Mobility.

Please give brief details including the name and position of the Senior Responsible Owner:

The Senior Responsible Owner is Philip Meikle, Transport Strategy Director for Nexus and the North East Combined Authorities.

SECTION E – The commercial case

E1. Commercial Case

Please provide a brief description of the level of any market engagement.

The North East region has been active in the field of New Mobility Services for many years, through our research institutions (who are leading Mobility as a Service projects for instance) and our local transport authorities (who have invested heavily in smart ticketing for instance). Indeed the region has also been active in transport innovation for the last 50 years or more, be it through integrated transport networks or cutting edge smart ticketing technologies.

More recently a market engagement exercise was launched by Nexus in June 2018. This exercise received an overwhelming and positive response from the market, from all aspects of transport innovation – transport providers, software developers, entrepreneurs, remote sensing system suppliers, new travel modes, and so on – and has enabled us to develop in some detail a series of new mobility propositions that are well founded and based on the views and evidence-based decisions of today's providers in the market, not simply the aspirations of a transport strategist.

Please describe the procurement strategy for the schemes contained in the FMZ.

Our procurement strategy for capital investment is based on the strategy adopted by Nexus for many years to deliver the Asset Renewal Programme (ARP) on the Metro and numerous technology projects across the region. The ARP stagegate process and associated procurement strategy has successfully delivered over £300m of capital investment on time and to budget, it is a proven methodology that we can adapt to deliver the FMZ proposals.

This approach is founded on a Stagegate strategy whereby projects are progressively specified, designed and approved in growing detail in readiness for the launch of a procurement phase. This procurement phase is conducted using industry standard contracting arrangements such as NEC3, MF/1 or another procurement vehicle, depending on the type of project being delivered. This Stagegate design process and subsequent flexible procurement methodology ensures that the most appropriate contracting methods can be identified, ensuring value for money and an appropriate share of risks for each project.

Our procurement strategy for revenue expenditure is based on the long and lasting experience of the Bus Services teams in our region, which have delivered socially necessary secured bus services for many years and delivered significant efficiencies while maintaining frontline services. The region delivers in the order of £20m of secured bus service contracts in the region every year – again, significant experience that can be brought to bear in delivering FMZ proposals.

SECTION F – Additionality

F1. Additionality

Please provide details of how the schemes contained in the FMZ differ from and/or complement schemes expected to be funded as part of the wider TCF programme. Assessors will have access to any information submitted to the TCF, but additional information relating to any TCF bid may be submitted if relevant.

Our Future Mobility Zone proposal is focussed on bringing innovative mobility services, tools and infrastructure to the North East. These proposals are engineered to encourage the availability of innovative transport choices and better information about the full range of travel choices. It is this focus that we believe will encourage the use of more sustainable travel modes in a highly user-centric manner, thereby discouraging the use of polluting private vehicles.

Our FMZ proposals are therefore all distinct and add value to the programme that we are developing for our TCF Tranche 2, adding an extra layer of benefits to our Tranche 2 proposals that is reflected in our Economic Case for that capital programme. In particular, our FMZ proposals integrate well with our investments in all five of our Tranche 2 thematic packages - Cycling/Walking Corridors, Bus Corridors, City Centres, Park and Ride and Metro-Local Rail.

Please provide details of how the schemes contained in the FMZ differ from and/or complement other innovative transport schemes in the area.

Our FMZ proposals are founded on existing investment that can be exploited – our POP smart ticketing infrastructure, our existing steps to introduce a demand responsive transport link with a major industrial developer, our real-time information systems and our nationally significant academic institutes and national innovation centres. The proposals take that basis and build on them by bringing innovative modes and tools to our transport users, placing their needs at the heart of how we design future innovations. We therefore think that our programme strongly complements existing investment in transport innovation in the region.

What additional learning will be gained to inform the development of future schemes?

Our proposals for an Institute of Future Mobility include a clear commitment to using the innovative ecosystem that we will create in the North East to encourage our region to become the natural place for transport innovators of the future to test their ideas and analyse their success or failure. We therefore see the transport innovations funded in this programme as a start point – much more additional learning and insights will be gained from our Future Mobility Zone as it progresses.

SECTION G – Declarations

G1. Senior Responsible Owner Declaration

As Senior Responsible Owner for the North East FMZ I hereby submit this request for approval to DfT on behalf of the North East Combined Authority and confirm that I have the necessary authority to do so.

I confirm that the North East Combined Authority will have all the necessary statutory powers in place to ensure the planned timescales in the application can be realised.

Name: Philip Meikle

Signed:

Position: Transport Strategy Director, Nexus



Submission of Bids

The deadline for bids is: 23:59pm on 24 May 2019.

An electronic copy (including supporting material) should be submitted to:
FutureMobilityZones@dft.gov.uk

However, if you must send hard copies of papers, please provide three copies to:

Fran McMahon
Future Mobility Zones
Department for Transport
3/27, Great Minster House
33 Horseferry Road
London
SW1P 4DR