Liverpool City Region Combined Authority

LTP INTEGRATED IMPACT ASSESSMENT

Appendix F - Assessment of Draft LTP Policies and Delivery Plan

70099325
NOVEMBER 2025

PUBLIC

Liverpool City Region Combined Authority

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Appendix F - Assessment of Draft LTP Policies and Delivery Plan

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QUALITY CONTROL

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TABLES

1 INTRODUCTION

1.1.1. The assessment of the polices will predict the following:

- Overall effect significance (negative, positive, uncertain, both positive and negative or negligible);
- Nature of effect (direct, indirect);
- Spatial extent (local, regional, national, international);
- Reversibility of effect:
  - Reversible: The receptor can return to baseline condition without significant intervention;
  - Irreversible: The receptor would require significant intervention to return to baseline condition.
- Duration (short, medium or long term) – Short term: 0-5 years, Medium term: 5-10 years (up to the end of the plan period) Long term: 10+ years (beyond the plan period).

1.1.2. **Table F-1** below shows the key to effects that have been used within the assessments below. It should be noted that where uncertain and neutral effects have been identified, it has not been possible to determine the nature of effect, the spatial extent, the reversibility or the duration of effect. In this instance, these cells have been left blank.

Table F-1 – Key to Effects

Effect Significance	Key
Potential for significant positive effects	++
Potential for minor positive effects	+
Potential for minor negative effects	-
Potential for significant negative effects	--
Potential for both positive and negative effects	+/-
Uncertain effects	?
Negligible / No effect	0
Nature of effect (direct / indirect)	D / I
Spatial extent (local / regional / national / international)	L / R / N / I
Reversibility of effect (reversible / irreversible)	R / I
Duration (short / medium / long term)	ST / MT / LT

2 ASSESSMENT OF DRAFT POLICIES

2.1 GOAL 1: SUPPORT GOOD, CLEAN JOB GROWTH AND OPPORTUNITY FOR ALL

- Policy G1-1: Consider sustainable transport and movement in all we do as a Combined Authority.
- Policy G1-2: Prioritising measures and services that improve people's access to opportunity.
- Policy G1-3: Making it easy and affordable to travel.
- Policy G1-4: Reviewing our travel support offer.

Table F-2 – Goal 1: Support good, clean job growth and opportunity for all

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
IIA1: Population & Equalities	++	H	D	R	R	P	MT	Policies G1-1, G1-2, and G1-4 aim to improve transport gaps and barriers within the city region which will result in significant positive effects on IIA1, with particular emphasis on those with protected characteristics under the Equality Act 2010 and with economic disadvantage. This will be achieved by working together with relevant stakeholders such as local authorities, government bodies, Transport for the North, and the health sector to promote these policies during the redevelopment of town centres and communities to ensure these gaps and barriers are addressed, making good transport accessible for all. A more joined up city region will enable greater access to education, employment, and services which will positively contribute to the quality of life for the whole population.
IIA2: Human Health	++	H	I	R	R	P	MT	Policy G1-1 supports the modal shift to active transport modes which is likely to result in a significant positive effect on both physical and mental health of the population within the city region. A more joined up city region will enable greater access to education, employment, and services which will positively contribute to the quality of life for the whole population.
IIA3: Economy and Employment	++	M	I	R	R	P	MT	All policies within this goal will likely result in positive effects on the IIA3 due to improving access to employment for all through greater inter-regional accessibility. Fast, frequent and reliable connections between economic centres for people, businesses and goods will also bolster economic growth.
IIA4: Community Safety	+/-	M	I	R	R	P	MT	Improvements to the transport network under this goal will reduce sub-optimal travel (e.g. Walking along dark streets late at night), bringing benefits to the overall safety of the community. However, increased ease and convenience of e-scooter usage by inexperienced users through Policy G1-3 may generate an increase in road traffic accidents, posing a threat to community safety.
IIA5: Biodiversity and Natural Capital	+/-	H	D/I	R	R/I	P/T	LT	The reduction in air quality emissions (particularly the deposition of nitrogen from NO2/NOx) through reduced private vehicle usage will indirectly benefit the biodiversity assets within the City Region. However, the shift to more sustainable transport modes and decarbonisation of the transport next may require new development of which may lead to land take, which could result in the loss of habitats and natural capital. The scale of development and the interventions that may come forward at this stage are unknown.
IIA6: Landscape and Townscape	?	N/A	N/A	N/A	N/A	N/A	N/A	The reduction in air and noise pollution and the reduction in dominance of motorised vehicles will help to increase levels of tranquillity and improve to overall landscape and townscape quality. The introduction of new transport infrastructure, could however, result in potential land take and poor design could detract from the landscape and townscape setting. The scale of development and the interventions that may come forward at this stage are unknown.

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
IIA7: Historic Environment	?	N/A	N/A	N/A	N/A	N/A	N/A	The reduction in air and noise pollution and the reduction in dominance of motorised vehicles will help to increase levels of tranquillity and improve to overall setting of historic assets. Reductions in air pollution will also reduce levels of degradation of historic assets. The introduction of new transport infrastructure, could however, result in potential land take and poor design could detract from the setting of historic assets. The scale of development and the interventions that may come forward at this stage are unknown.
IIA8: Flood Risk	0	N/A	N/A	N/A	N/A	N/A	N/A	
IIA9: Water Quality	0	N/A	N/A	N/A	N/A	N/A	N/A	
IIA10: Air Quality	++	H	I	R	R	P	LT	The modal shift towards active travel and public transport encouraged by this goal will generate a reduction in carbon emissions, positively contributing to air quality improvements across the city region.
IIA11: Climate Change Resilience	0	N/A	N/A	N/A	N/A	N/A	N/A	
IIA12: Greenhouse Gases	+	H	I	R	R	P	MT	The modal shift towards active travel and public transport encouraged by this goal will lower total carbon emissions and other harmful pollutants. There may be some embodied carbon associated with the development of additional infrastructure to support these policies.
IIA13: Noise and Vibration	?	N/A	N/A	N/A	N/A	N/A	N/A	The modal shift towards active travel and public transport will likely reduce levels of noise from the transport network, particularly from motorised vehicles. However, there is potential that increasing the public transport offering, could increase levels of noise at rail stations, bus stops and stations and interchanges, as more services will be required to meet demand. This could have adverse effects on neighbouring receptors. However, at this stage the level of demand, uptake, schemes and services are unknown.
IIA14: Waste and Sustainable use of Resources	?	N/A	N/A	N/A	N/A	N/A	N/A	The level of construction required to support these policies is not currently known, but there is potential for these to generate waste. As schemes emerge there may be potential for these to support to minimise levels of waste and re-use existing infrastructure.
IIA15: Efficient use of land	?	N/A	N/A	N/A	N/A	N/A	N/A	The potential use of land is not currently known, for the infrastructure needed to support these policies. As schemes emerge there may be potential for these schemes to support the sustainable use of resource and efficient use of land.
Potential Cumulative/ Synergistic Effects	• IIA3: Economic growth is supported by policies under Goal 1 and Goal 2, via improved inter-regional connectivity (Goal 1) and more efficient and reliable freight journeys on less congested key network routes (Goal 2). The implementation of both of these will generate positive cumulative effects for economic growth across the City Region. • IIA5: There is potential for cumulative adverse effects on biodiversity if multiple schemes are delivered in combination, leading to the loss of habitats and species. • IIA6: There is potential for cumulative adverse effects on landscape and townscape if multiple schemes are delivered in combination. • IIA7: There is potential for cumulative increase in the loss of heritage assets and buried archelogy if multiple schemes are delivered in combination. • IIA10/11: Reductions in greenhouse gas emissions and associated air quality improvements will also be brought about by policies under the 'net-zero carbon and an improved environment' polices, leading to a positive cumulative effect on air quality in the region. • IIA13: There is potential for a cumulative increase in noise if multiple schemes come forward in certain locations.							
Mitigation and Enhancement Measures	• IIA1/IIA2/IIA4: Educational measures will need to be in place to support the transition to both digital ticketing and payment for travel and the use of new modes of sustainable transport. Select groups may experience difficulty with the uptake of a digitalised transport network, necessitating training resources to facilitate their learning and usage. Equally, the usage of e-scooters by inexperienced users may increase the risk of road traffic accidents, necessitating training sessions to improve overall road safety of users. • IIA4: Development should incorporate designing out crime principles.							

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
								• IIA5: Consideration needs to be given to the potential effects of construction of developments (noise, vibration and air pollution) on biodiversity, including designated sites. In addition, a lighting strategy should be prepared to minimise light spill onto retained or newly created habitat features. • IIA6: For individual schemes, landscape and visual impacts assessment should be undertaken to determine magnitude of impact and possible mitigation. • IIA6/IIA7: Sensitive design should be considered for any new developments and infrastructure to ensure positive effects on local heritage assets and landscapes. • IIA7: Characterisation work should be undertaken to understand the potential impact of transport interventions on historic places and inform assessments of an area's capacity to accommodate development. • IIA5/IIA6/IIA7: Well designed active travel routes could present opportunities to enhance habitat, ecological networks through habitat creation and improve the quality of visual amenity of the landscape and heritage assets by managing public access to or from the historic features within the City Region. • IIA11/12: Schemes should look to incorporate renewable energy generation methods, such as solar panels to reduce operational GHG emissions • IIA13: Acoustic assessments should be undertaken to establish baseline noise. Where possible, new developments which could increase noise levels, should avoid existing noisy locations. Incorporation of low-noise surfaces and noise barriers should be considered as part of design. • IIA14: A Site Waste Management Plan should be prepared as part of the Construction Environmental Management Plan (CEMP) and Operational Environmental Management Plan (OEMP) for any schemes that come forward. Development should support the use of sustainable sourced and/or recycled materials, as well as re-purposing existing infrastructure.
Recommendations								• Policy G1-1 should clarify the ways in which proposals should support the transport hierarchy for people of all ages and abilities. Specification on accessibility features could be set out. • Given its focus on the cost of living and barriers to employment, Policy G1-2 could specify that gaps and weaknesses in the transport system in more deprived areas will be targeted in the first instance.

2.2 GOAL 2: ACHIEVE NET-ZERO CARBON AND AN IMPROVED ENVIRONMENT

- Policy G2-1: Removing carbon emissions from transport.
- Policy G2-2: Delivering an integrated, sustainable mass transit network, tackling capacity problems and improving connectivity.
- Policy G2-3: The role of shared mobility and micromobility.
- Policy G2-4: Reallocating road space and making best use of finite capacity.
- Policy G2-5: Creating high quality, low carbon transport networks in Liverpool City Centre and in our main town centres.
- Policy G2-6: Delivering sustainable and efficient freight and logistics.
- Policy G2-7: Implementing “polluter pays” approaches.

Table F-3 - Goal 2: Net-zero carbon and an improved environment

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
IIA1: Population & Equalities	+/-	H	D	R	R/I	P	LT	Improvements to public transport and local walking and cycling routes (Policies G2-2 to G2-5) will have significant beneficial effects on the City Region's population. Consideration of Local Transport Note 1/20[1] (as per G2-2) will ensure that active travel routes will be inclusive to all users. Improvements to public transport and local walking and cycling routes will increase accessibility to employment, education and local facilities, with a focus on areas that currently poorly served by public transport services. This will particularly benefit those people that cannot drive such as the elderly, those with disabilities and younger people. The introduction of micromobility (Policy G2-3) could introduce new obstacles particularly at docking stations and parking bays. This could make pavements harder to navigate, particularly for disabled users and those with visual impairments. Parking bays that lack infrastructure can present greater challenges as bikes and or e-scooters can pile up and can create street clutter with vehicles left in inconvenient locations. Micromobility options themselves can also often exclude some users either through digital exclusion or physically as they often lack adaptive vehicle options. Removing carbon emissions rapidly in the aim for the City Region to be net zero emitting by 2035 (Policy G2-1) and supporting a 'polluter pays' principle (Policy G2-7) may disproportionally effects those in deprived areas who may be less able to adapt and accommodate changes for EV vehicles or price increases for tunnel tolls, parking, and road pricing petrol and diesel duty.
IIA2: Human Health	++	H	D	R	I	P	LT	Improvements to local walking and cycling routes (Policies G2-2 to G2-5) will have significant beneficial effects on the City Region's population due to supporting an active lifestyle which will help to improve physical and mental health. Reductions in carbon emissions will also have beneficial effects on health through improved air quality. A more joined up city region will enable greater access to education, employment, and services which will positively contribute to the quality of life for the whole population.
IIA3: Economy and Employment	++	H	D	N	I	P	LT	Improvements to the connectivity and capacity of the transport network will support future population growth across the City Region by increasing the areas attractiveness and opportunities for residents. Additionally, economic benefits of decarbonising the transport network could be sought through investment in innovative technology development, and development of sustainable supply chains. Economic competitiveness could be bolstered through reduced congestion on key network routes and more efficient and reliable freight journeys as a result. Improvements to active travel and public transport modes will also help to improve the populations access to education and employment opportunities.

[1] Department for Transport, Cycle Infrastructure Design, Local Transport Note 1/20, 2020, [online] available at: https://assets.publishing.service.gov.uk/media/5ffa1f96d3bf7f65d9e35825/cycle-infrastructure-design-ltn-1-20.pdf

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
								Additionally, the delivery of more sustainable and efficient freight and logistics with higher capacity to accommodate more rail freight and a shift from road to rail will have positive benefits on the economy.
IIA4: Community Safety	+/-	M	D	R	I	P	LT	Following principles with the Local Cycling and Walking Infrastructure Plan and the new standards within the Government's Gear Change strategy will ensure that the City Region delivers high quality, safe active trave (G2-2). The inclusion of segregated cycle lanes will also improve safety for riders and pedestrians and encourage more people, particularly women to use shared micromobility. This will help to reduce the number of cars on the road and therefore, the number of accidents. Equally, solutions to capacity and overcrowding problems at Liverpool Central Station and in the wider network will foster feelings of elevated safety and comfort when making use of transport services. The introduction of micromobility could present safety challenges, through misuse, theft and conflict between different pavement/ shared use path users.
IIA5: Biodiversity and Natural Capital	+/-	H	D/I	R	R/I	P/T	LT	The reduction in air quality emissions under Policy G2-1 (particularly the deposition of nitrogen from NO2/NOx) through reduced private vehicle usage will indirectly benefit the biodiversity assets within the City Region. However, the shift to more sustainable transport modes and decarbonisation of the transport next may require new development of which may lead to land take, which could result in the loss of habitats and natural capital. This is, however, considered to be small given the prioritisation of road space reallocation as per Policy G2-4.
IIA6: Landscape and Townscape	+/-	H	D/I	R	R/I	P/T	LT	The reduction in noise and air pollution from due to the modal shift in more sustainable transport modes is likely to increase tranquillity within the City Region, contributing to an improved overall sense of place. However, the size and scale of the infrastructure required to support the transition to more sustainable transport modes has the potential to negatively affect landscape and townscape due to land take and loss in visual amenity. Land take is, however, considered to be small given the prioritisation of road space reallocation as per Policy G2-4.
IIA7: Historic Environment	+/-	H	D/I	R	R/I	P/T	LT	The reduction in air and noise pollution and the reduction in dominance of motorised vehicles will help to increase levels of tranquillity and improve to overall setting of historic assets. Reductions in air pollution will also reduce levels of degradation of historic assets. Additionally, the reduction in noise pollution from lower levels of traffic in some areas could result in increased tranquillity, contribute to overall sense of place and the unique setting of heritage assets. The introduction of new transport infrastructure, could however, result in potential land take and poor design could detract from the setting of historic assets.
IIA8: Flood Risk	0	N/A	N/A	N/A	N/A	N/A	N/A	
IIA9: Water Quality	0	N/A	N/A	N/A	N/A	N/A	N/A	
IIA10: Air Quality	++	H	I	R	I	P	LT	The modal shift towards active travel and public transport encouraged by this goal will generate a reduction in carbon emissions, positively contributing to air quality improvements across the city region. Equally, the decarbonisation of freight and logistics activity under Policy G2-6 will generate improvements to local air quality.
IIA11: Climate Change Resilience	0	N/A	N/A	N/A	N/A	N/A	N/A	
IIA12: Greenhouse Gases	++	H	D	R	I	P	LT	Most policies within this goal will help to reduce carbon emissions and other harmful pollutants associated with transport within the City Region, through a modal shift to zero emission vehicles (G2-1), reducing car dependency through improving public transport and general connectivity (G2-2 to G2-5), decarbonising freight and logistics (G2-6).
IIA13: Noise and Vibration	+/-	M	I	R	I	P	LT	Reduced private vehicle usage and associated congestion may alleviate noise pollution in city centre areas across the City Region. Conversely, there may be some areas where noise pollution from transport may be increased, particularly at rail stations, bus stops and stations and interchanges, as more services will be required to meet demand. This could have adverse effects on neighbouring receptors.

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
IIA14: Waste and Sustainable use of Resources	+	M	D	R	I	P	LT	The focus on making best use of existing assets will indirectly reduce waste quantities associated with transport network construction activities.
IIA15: Efficient use of land	+	M	D	R	I	P	LT	Policy G2-1 acknowledges the consumption of resources through the construction of transport infrastructure and assets, and commits to making best use of existing assets, buildings and facilities in order to reduce resource consumption and waste generation. Policy G2-4 also aims to reallocate road space to make the best use of finite capacity. This will help to reduce the need for land take and valuable resources.
Potential Cumulative/ Synergistic Effects	• IIA3: Economic growth is supported by policies under Goal 1 and Goal 2, via improved inter-regional connectivity (Goal 1) and more efficient and reliable freight journeys on less congested key network routes (Goal 2). The implementation of both of these will generate positive cumulative effects for economic growth across the City Region. • IIA6: There is potential for cumulative adverse effects on landscape and townscape if multiple schemes are delivered in combination. • IIA7: There is potential for cumulative increase in the loss of heritage assets and buried archelogy if multiple schemes are delivered in combination. • IIA10/11: Reductions in greenhouse gas emissions and associated air quality improvements will also be brought about by policies under the 'net-zero carbon and an improved environment' polices, leading to a positive cumulative effect on air quality in the region. • IIA13: There is potential for a cumulative increase in noise if multiple schemes come forward in certain locations.							
Mitigation and Enhancement Measures	• IIA1: LCRCA could consider introduction of adaptive vehicles to shared micromobility schemes (e-scooters with a seat or three wheeled adaptive bikes). • IIA1/IIA2/IIA4: Educational measures will need to be in place to support the transition to both digital ticketing and payment for travel and the use of new modes of sustainable transport. Select groups may experience difficulty with the uptake of a digitalised transport network, necessitating training resources to facilitate their learning and usage. Equally, the usage of e-scooters by inexperienced users may increase the risk of road traffic accidents, necessitating training sessions to improve overall road safety of users. • IIA4: LCRCA should require in any shared micromobility contract that vehicles are regularly maintained to ensure they are safe to operate, in good working order, are adequately charged (for electric micromobility vehicles) and cleaned. Vehicles which are identified as unsafe should be removed and promptly made unavailable to hire. • IIA5/IIA6/IIA7: Well designed active travel routes could present opportunities to enhance habitat, ecological networks through habitat creation and improve the quality of visual amenity of the landscape and heritage assets by managing public access to or from the historic features within the City Region.							
Recommendations	• Policy G2-3 could suggest the idea of LGBTQIA+ only car clubs in order to more widely encourage the uptake of the scheme, in a way that is safe and comfortable for all users. • Policy G2-5 could specify particular measures that will be taken to make Liverpool City Centre a more attractive, liveable city. Stating sustainable movement is a good starting point, but targets for how this will be achieved would be useful in better implementing this goal. • Policy G2-6 could specify how LCRCA will support freights transition to rail / sustainable fuels - this could include monetary incentive to switch current operations in keeping with this goal.							

2.3 GOAL 3: IMPROVE HEALTH, SAFETY, AND QUALITY OF LIFE

- Policy G3-1: Reinforcing “Vision Zero” and Safe Systems approaches – no deaths or serious injuries on the city region’s roads by 2040
- Policy G3-2: Delivering clean, healthy travel and placemaking in all we do
- Policy G3-3: Improving air quality from transport
- Policy G3-4: Making all journeys safe, inclusive, attractive and reassuring for the user

Table F-4 - Health and quality of life

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
IIA1: Population & Equalities	++	H	D	R	R	P	MT	Policies G3-2 and G3-4 will result in significant positive effects on IIA1 due to the improvements made to active travel and public transport modes. By increasing the attractiveness and accessibility of these options, residents will not be so reliant on private vehicle usage - a particular benefit to those who are unable to access private transport in the first instance. General improvements to safety and health outcomes will also positively contribute to the overall quality of life for residents across the City Region.
IIA2: Human Health	++	H	D	R	R	P	MT	By making highways and other spaces used by the public safe and attractive for pedestrians and cyclists as a first priority, Policy G3-2 will encourage the uptake of active travel by all able residents, boosting physical activity levels and overall physical and mental health. Additionally, emphasis is put on provisions for horse riders and ensuring their safe and comfortable use of shared user paths. By improving access to this activity, the physical and mental wellbeing of those engaging with it will improve.
IIA3: Economy and Employment	+	M	I	R	R	P	MT	Making the LCR more accessible and attractive will help to support the tourism sector and may support new revenue streams. Measures such as school streets, Low Traffic Neighbourhoods and Mini Holland schemes may also help to increase footfall for local businesses.
IIA4: Community Safety	++	H	D	R	R	P	MT	Significant positive effects were identified for IIA4 for policies G3-1, G3-2, and G3-4. Policy G3-1 supports "Vision Zero" and Safe Systems approaches for no avoidable deaths or serious injuries on the city regions roads by 2040. By designing out dangerous road layouts and implementing a safe systems approach, this policy will help reduce road traffic accidents and improve overall safety. Policy G3-2 encourages the use of measures such as school streets, Low Traffic Neighbourhoods and ”Mini Holland” schemes and removing the dominance and dangers of street-level parking, which will help to make roads safer and more attractive for people who are walking, wheeling or cycling. Policy G3-4 will design out the risk of crime and anti-social behaviour, creating more inviting transport corridors and interchanges that are better lit to foster feelings of safety for all users.
IIA5: Biodiversity and Natural Capital	+	L	I	L	R	P	MT	Policy G3-2 aims to improve placemaking across the region, which includes the incorporation of planting. This could help to provide small scale habitats and increase biodiversity. Additionally, the reductions in air and noise pollution from reduced reliance upon motorised vehicles will help to alleviate pressure upon the regions valued habitats and species.
IIA6: Landscape and Townscape	++	M	D	R	R	P	MT	Policy G3-2 aims to improve the streetscape through good design, improvements to the public realm and provision of high quality street furniture. This coupled with the reduced dominance of motorised vehicles, will help to improve the quality and condition of the townscape and landscape.
IIA7: Historic Environment	+/-	M	D	R	R	P	MT	Improvements to the streetscape as per Policy G3-2 could help to improve the setting of historic assets, however, the introduction of new street furniture could give way to insensitive design and detract from their unique setting. The reduction in single occupancy journeys will help to reduce air pollution, which could help prevent further degradation of some of the region's unique historic assets. Additionally, reductions in noise pollution from lower levels of traffic in some areas could result in increased tranquillity, contribute to overall sense of place and the unique setting of heritage assets.

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
IIA8: Flood Risk	+	M	I	L	R	P	MT	The inclusion of planting, as per Policy G3-2, could help to alleviate flood risk within the urban environment, by absorbing and slowing down the flow of rainwater.
IIA9: Water Quality	+	M	I	L	R	P	MT	The inclusion of planting, as per Policy G3-2, could help to improve water quality. Green infrastructure in urban areas can help to improve the quality of water in urban areas. By storing and intercepting rainfall at the source which can reduce diffuse pollution by enhancing sediment retention.
IIA10: Air Quality	++	H	D	R	R	P	MT	Policy G3-3 will result in positive effects on IIA10, due to reducing all harmful emissions from the transport network using principles set out within the Authority's 2020 Air Quality Action Plan, to help eliminate the designated AQMA.
IIA11: Climate Change Resilience	+	M	I	L	R	P	MT	The inclusion of planting, as per Policy G3-2, could help to alleviate the effects of climate change, in particular flooding and overheating. Policy G3-3 aims to reduce carbon associated with the transport network by replacing with clean hydrogen, electricity and other sustainable sources, which will have positive effects for climate change resilience as it will reduce reliance on fossil fuels.
IIA12: Greenhouse Gases	++	H	D	R	R	P	MT	Policy G3-3 has resulted in significant positive effects on IIA12, due to reducing all harmful emissions (including carbon and nitrogen dioxide) from the transport network.
IIA13: Noise and Vibration	+	M	I	R	I	P	LT	Reduced private vehicle usage and associated congestion may alleviate noise pollution in city centre areas across the City Region.
IIA14: Waste and Sustainable use of Resources	0	N/A	N/A	N/A	N/A	N/A	N/A	
IIA15: Efficient use of land	0	N/A	N/A	N/A	N/A	N/A	N/A	
Potential Cumulative/ Synergistic Effects	• IIA5: There is potential for positive cumulative effects of biodiversity from a cumulative increase in green infrastructure. • IIA7: There is potential for cumulative degradation of the historic setting if multiple schemes are delivered in combination. • IIA10/11: Reductions in greenhouse gas emissions and associated air quality improvements will also be brought about by policies under the 'net-zero carbon and an improved environment' polices, leading to a positive cumulative effect on air quality in the region.							
Mitigation and Enhancement Measures	• IIA5/IIA6/IIA7: Well designed active travel routes could present opportunities to enhance habitat, ecological networks through habitat creation and improve the quality of visual amenity of the landscape and heritage assets by managing public access to or from the historic features within the City Region. • IIA5/IIA6/IIA11: Plants and trees should be carefully considered, in particular, hardy species that are resistant to pollution. Inclusion of pollinators will also help to support pollinating insects and other invertebrates. Further inclusion of bird boxes and bug hotels will help to boost biodiversity. • IIA8/IIA11: Sustainable urban drainage solutions should also be incorporated into design to further increase resilience to flooding and climate change.							
Recommendations	• Policy G3-1 could specify how Bikability will be rolled out, for example, through programmes in partnership with schools across the City Region. • Policy G3-2 should clarify the ways in which transport will become increasingly accessible for people of all ages and abilities. Specification on accessibility features could be set out.							

2.4 GOAL 4: TRANSPORT THAT'S WELL MAINTAINED AND TOUGH

- Policy G4-1: Well maintained transport infrastructure with regimes informed by good data.
- Policy G4-2: Delivering transport that can withstand the effects of climate change.
- Policy G4-3: Ensuring that we develop and maintain infrastructure in a sustainable way.

Table F-5 - Transport that's well maintained and tough

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
IIA1: Population & Equalities	+	M	D	R	I	P	LT	A road and footpath network that is in poor condition threatens the comfort and safety of its users, particularly those with a physical or sensory disability. A well maintained network will improve usability for all, improving general quality of life for residents.
IIA2: Human Health	+	M	D	R	I	P	LT	Through maintaining footways, cycleways and public rights of way, Policy G4-1 will indirectly support the uptake of active travel and therefore boost physical activity levels of residents, improving physical and mental health.
IIA3: Economy and Employment	+	M	D	R	I	P	LT	Through maintaining footways, cycleways and public rights of way, Policy G4-1 will indirectly support the uptake of active travel and therefore boost physical activity levels of residents, improving physical and mental health.
IIA4: Community Safety	+	M	D	R	I	P	MT	Well maintained highways will likely help reduce road traffic accidents, improving overall safety across the City Region. Policy G4-1 and G4-2 aim to increase the transport networks resilience to climate change which is likely to provide safer travel and minimise risk of physical harm. Policy G4-1 aims to work closely with industry partners to develop timely and robust inspection regimes and develop mitigation and action plans in response to changing weather patterns and their impact on aging rail and power infrastructure. This is likely to provide safer rail travel.
IIA5: Biodiversity and Natural Capital	++	M	D	R	I	P	MT	Under Policy G4-2, the retrofitting existing transport network facilities with green infrastructure will help mitigate impacts of climate change on the transport network. Policy G4-2's active support of carbon absorbing technologies will support wider biodiversity and nature recovery plans, making the City Region greener and more attractive for residents and visitors.
IIA6: Landscape and Townscape	+	M	D	R	I	P	LT	Green infrastructure implementation will boost the tranquillity of the local area, positively contributing to an improved sense of place.
IIA7: Historic Environment	+/-	M	D	R	R	P	MT	Improvements to the landscape and townscape through the provision of green infrastructure and optimisation of bus stops could help to improve the setting of historic assets, however, the introduction of new street furniture could give way to insensitive design and detract from their unique setting.
IIA8: Flood Risk	++	M	I	L	R	P	MT	Policy G4-2 aims to ensure that all new infrastructure and retrofitted projects are designed to reduce surface water runoff and flooding. Additionally, the incorporation of green infrastructure could help to alleviate flood risk within the urban environment, by absorbing and slowing down the flow of rainwater.

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
IIA9: Water Quality	++	M	I	L	R	P	MT	Policy G4-2 aims to ensure that all new infrastructure and retrofitted projects are developed in collaboration with utility companies to eliminate negative implications on the drainage network, helping to improve water quality across the region. In addition, the inclusion of green infrastructure could help to improve water quality. Green infrastructure in urban areas can help to improve the quality of water in urban areas. By storing and intercepting rainfall at the source which can reduce diffuse pollution by enhancing sediment retention.
IIA10: Air Quality	+	L	I	L	R	T	MT	The inclusion of green infrastructure can help to lessen the impacts of air pollution. Vegetation and trees can both influence atmospheric composition of trace gases and enable dispersion and deposition of air pollutants.
IIA11: Climate Change Resilience	++	H	D	R	I	P	LT	Under Policy G4-1 and G4-2, new transport infrastructure and assets should be designed, built and operated in anticipation of the effects of climate change they may face in their lifetime. Equally, existing infrastructure should be retrofitted with appropriate measures to ensure that threats including heat, wind, storm surges and precipitation are well managed. These measures will allow the continual use of the city regions transport network through challenging weather events.
IIA12: Greenhouse Gases	++	L	I	L	R	T	MT	Policy G4-3 aims to explore new ways of reducing carbon from transport infrastructure, including concrete, steel, glass and bituminous materials and short to new, low carbon technologies and alternative materials and construction methods in all that the LCRCA commission and deliver. These will include sustainable construction materials, and net zero energy generation sources, such as heat pumps, photovoltaics and wind power. This will help to reduce levels of embodied and operational carbon emissions. The inclusion of green infrastructure can help to lessen the impacts of greenhouse gases. Vegetation and trees can both influence atmospheric composition of trace gases and enable dispersion and deposition of air pollutants.
IIA13: Noise and Vibration	0	N/A	N/A	N/A	N/A	N/A	N/A	
IIA14: Waste and Sustainable use of Resources	++	M	D	R	D	P	LT	The focus on maximising resources and integration of circular economy principles will help to reduce waste quantities associated with transport network construction activities.
IIA15: Efficient use of land	++	M	D	R	I	P	LT	The preference towards maintaining existing infrastructure will help to minimise land take and protect the regions geology, soils and greenbelt.
Potential Cumulative/ Synergistic Effects	• IIA5: The combination of policies under Goals 4 and 5 support planting and green infrastructure, which could positively support the increase in biodiversity and natural capital across the region. • IIA11/12: The combination of policies under Goals 4 and 5, resilience will be built into the transport network in the face of climate change through both planning for different climate scenarios and building in anticipation of climate change effects. This will generate positive cumulative effects for climate change resilience across the City Region.							
Mitigation and Enhancement Measures	• IIA5/IIA6/IIA11: Plants and trees should be carefully considered, in particular, hardy species that are resistant to pollution. Inclusion of pollinators will also help to support pollinating insects and other invertebrates. Further inclusion of bird boxes and bug hotels will help to boost biodiversity. • IIA8/IIA11: Sustainable urban drainage solutions should also be incorporated into design to further increase resilience to flooding and climate change. • IIA14/IIA15: The reuse of existing materials should be done so under conditional circumstances, including contamination assessments.							
Recommendations	No recommendations have been identified.							

2.5 GOAL 5: PLAN AND RESPOND TO UNCERTAINTY AND CHANGE AND BE INNOVATIVE

- Policy G5-1: Testing proposals against uncertainty and change and applying scenario planning principles.
- Policy G5-2: Piloting options, trials and new technologies in a climate of uncertainty and change.
- Policy G5-3: A Smart City Region – Investing in new technologies and utilising Artificial Intelligence for good.

Table F-6 – Goal 5: Plan and respond to for uncertainty, and change and innovation

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
IIA1: Population & Equalities	?	M	D	R	R/I	P/T	ST/LT	The introduction of car clubs and ride sharing whilst focussing on providing access to EVs, not rather than ownership, will help to provide access to vehicles for those households which may not have access to their own vehicles. However, at this stage to how all protected characteristics will be supported by the rollout of various technological schemes. For instance, electric vehicle infrastructure will need to make disability considerations including the need for combined disabled and electric charging bays. Similarly, concessions may need to be considered for those lower income groups who may be priced out of the pay as you go model.
IIA2: Human Health	0	N/A	N/A	N/A	N/A	N/A	N/A	
IIA3: Economy and Employment	+/-	H	D/I	R	R	P/T	ST/LT	Whilst economic efficiencies will be made in avoiding overspending on unproven technologies via prior trailing, there is potential for funding clashes between trials and financial support for low income groups. If funding for support packages for low income groups is not protected access to transport for many could be compromised. Employment opportunities may be generated by the rollout of technological advancements in transport, although whether this brings direct benefit to residents in the city region is yet to be understood.
IIA4: Community Safety	++	H	D	R	I	P	LT	Improved digital connectivity proposed under Policy G5-3 will positively contribute to community safety. Better connection will facilitate communication between family and friends whilst travelling, alleviating feelings of fear and unease when utilising public transport. Moreover, technological innovation (including road safety camera improvements) will play a key role in reducing road traffic accidents across the city region.
IIA5: Biodiversity and Natural Capital	?	N/A	N/A	N/A	N/A	N/A	N/A	At this stage it is not clear what types of new technologies may emerge and the infrastructure and scale of development required to support them. If land take is required, there may be potential for small loss of habitats and species.
IIA6: Landscape and Townscape	?-	N/A	N/A	N/A	N/A	N/A	N/A	Under this goal, the townscape will develop to integrate electric vehicle charging proposals with bus, rail and other modes of transport. New charging hubs will also set up across the city region to facilitate the modal shift towards electric. Whilst network integration will improve urban space for users, this may reduce space available for green infrastructure and urban greening which will reduce the quality of the landscape. At this stage it is not clear what types of new technologies may emerge and the infrastructure and scale of development required to support them.
IIA7: Historic Environment	?	N/A	N/A	N/A	N/A	N/A	N/A	At this stage it is not clear what types of new technologies may emerge and the infrastructure and scale of development required to support them. If designed insensitively, there is potential for new infrastructure to detract from the setting of historic assets.
IIA8: Flood Risk	0	N/A	N/A	N/A	N/A	N/A	N/A	

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
IIA9: Water Quality	0	N/A	N/A	N/A	N/A	N/A	N/A	
IIA10: Air Quality	++	H	D	R	R	P/T	ST/LT	The electrification of cars will lead to a reduction in carbon emissions, positively contributing to air quality improvements across the city region.
IIA11: Climate Change Resilience	++	H	D	R	R	P/T	ST/LT	By planning for different future scenarios (including various climate projections) this goal will build climate resilience into transport infrastructure and assets.
IIA12: Greenhouse Gases	++	H	D	R	R	P/T	ST/LT	The wider rollout of sustainable public transport (including battery powered trains) will lead to a significantly lower number of private vehicles on the road, lowering total carbon emissions and other harmful pollutants. Equally, the electrification of cars will positively contribute to emission reductions. Positive effects have also been identified due to the 'dig once' approach to construction as it reduces reliance on fossil fuels and minimises release of GHGs.
IIA13: Noise and Vibration	+	H	I	R	R	T	MT	The increase in EVs along with better monitoring and digital connectivity, may help to reduce congestion and reliance upon petrol/ diesel vehicles, subsequently reducing noise from the transport network.
IIA14: Waste and Sustainable use of Resources	0	N/A	N/A	N/A	N/A	N/A	N/A	
IIA15: Efficient use of land	0	N/A	N/A	N/A	N/A	N/A	N/A	
Potential Cumulative/ Synergistic Effects	• IIA5: There is potential for cumulative adverse effects on biodiversity if multiple schemes are delivered in combination, leading to the loss of habitats and species. • IIA6: There is potential for cumulative adverse effects on landscape and townscape if multiple schemes are delivered in combination particularly id land take is required. • IIA7: There is potential for cumulative degradation of the historic setting if multiple schemes are delivered in combination, particularly in areas of high cultural heritage value. • IIA10/IIA12: Reductions in greenhouse gas emissions and associated air quality improvements will also be brought about by policies under the 'net-zero carbon and an improved environment' polices, leading to a positive cumulative effect on air quality in the region. • IIA11/IIA12: The combination of policies under Goals 4 and 5, resilience will be built into the transport network in the face of climate change through both planning for different climate scenarios and building in anticipation of climate change effects. This will generate positive cumulative effects for climate change resilience across the City Region.							
Mitigation and Enhancement Measures	• IIA1: Funding for the support packages for low income groups should be protected in the face of expenditure on technological advancement trailing to continue supporting low income groups. • IIA5: Consideration needs to be given to the potential effects of construction of developments (noise, vibration and air pollution) on biodiversity, including designated sites. • IIA6: For individual schemes, landscape and visual impacts assessment should be undertaken to determine magnitude of impact and possible mitigation. • IIA6/IIA7: Sensitive design should be considered for any new developments and infrastructure to ensure positive effects on local heritage assets and landscapes. • IIA7: Characterisation work should be undertaken to understand the potential impact of transport interventions on historic places and inform assessments of an area's capacity to accommodate development.							

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
Recommendations	Policy G5-2 could provide further detail on piloting of ticketing and pricing options (such as its end goals for users) in order to justify its use and support expenditure. The provision of 4G/5G to existing rail stations only will reinforce current hotspots and areas of poor connectivity. All new stations should be designed and constructed with similar technological improvements to support the evening out of access and convenience for users.							

3 ASSESSMENT OF DRAFT DELIVERY PLAN

3.1 SHORT TERM (PRESENT – MARCH 2027)

- City Region Sustainable Transport Settlement Scheme (CRSTS) which aims to:
  - Drive growth and productivity through infrastructure investment
  - Level up services towards the standards of the best
  - Decarbonise transport, especially promoting modal shift from cars to public transport, walking and cycling
- Smaller amounts of capital and revenue funding sources, including:
  - Consolidated Active Travel Funding (CATF)
  - Bus Improvement Plan (BSIP) funding
  - Local Electric Vehicle Infrastructure (LEVI) funding
  - Additional pothole repair funding
- The LCRCA transport levy of £107.09m in 2025/26

Table F-7 – Assessment of short-term objectives

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
IIA1: Population & Equalities	**++/-**	H	D	R	R/I	P	ST	Improvements to public transport and local walking and cycling routes through funding schemes are likely to have significant beneficial effects on the City Region's population. Improvements to public transport and active travel infrastructure will likely increase accessibility to employment, education and local facilities, especially if focused on areas that are currently poorly served by public transport services. This will particularly benefit those people that cannot drive such as the elderly, those with disabilities and younger people. By increasing the attractiveness and accessibility of these options, residents will not be so reliant on private vehicle usage - a particular benefit to those who are unable to access private transport in the first instance. Additionally, positive effects are associated with schemes that promote accessibility such as the £46 million from the LCRCA transport levy to support the comprehensive concessionary travel scheme to break down transport barriers for older people, people with disabilities and carers. There may be minor negative benefits related to construction works carried out to improve the transport network infrastructure, which may lead to temporary severance of services. Construction works may also introduce obstacles which could make pavements harder to navigate, particularly for disabled users and those with visual impairments.
IIA2: Human Health	**++**	H	D	R	I	P	ST	One of the objectives of CRSTS is to decarbonise transport, especially promoting a modal shift from cars to public transport, walking and cycling. Alongside this, the CATF will lead to improvements to local walking and cycling routes will have significant beneficial effects on the City Region's population due to supporting an active lifestyle which will help to improve physical and mental health. Reductions in carbon emissions will also have beneficial effects on health through improved air quality. Funding schemes that aim to improve the attractiveness and quality of active travel and public transport will also improve connectivity across the region, enabling greater access to education, employment, and services which will positively contribute to the quality of life for the whole population.

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
IIA3: Economy and Employment	**++**	H	D	L	R	T	ST	Funding schemes aim to improve connectivity by sustainable travel to key destinations and opportunities across the city region, as well as improving the attractiveness and quality of active travel, bus and rail options. A more joined up city region will enable greater access to education, employment, and services which will positively benefit the local economy and employment market. Investment in travel infrastructure is likely to lead to more fast, frequent and reliable connections between economic centres for people, businesses and goods and will bolster economic growth.
IIA4: Community Safety	**++**	M	I	L	R	P	ST	Funding schemes that improve highways, such as pothole repair funding, will likely help reduce road traffic accidents, improving overall safety across the City Region. Encouraging a modal shift away from cars to active transport will also help to reduce the number of cars on the road and therefore, the number of accidents. Additionally, improving existing connections and increasing the frequency and reliability of transport connections will improve feelings of safety, especially during the evening, at night, and in the dark.
IIA5: Biodiversity and Natural Capital	**+/?**	H	D/I	R	R	P/T	ST	The most significant part of the short-term delivery plan, the CRSTS scheme, aims to decarbonise transport, especially promoting modal shift from cars to public transport, walking and cycling. This shift to more sustainable transport modes and decarbonisation of the transport network may require new development, which may lead to land take and result in the loss of habitats and natural capital. The nature and significance of effects will be determined at the project level through the detailed design and layout of specific interventions. While it is likely that suitable mitigation is available to reduce the significance of any residual effects, this is uncertain at this stage given the strategic nature of the assessment and the level of information available. The reduction in air quality emissions through reduced private vehicle usage will indirectly benefit the biodiversity assets within the City Region.
IIA6: Landscape and Townscape	**+/-/?**	N/A	N/A	N/A	N/A	N/A	ST	The reduction in noise and air pollution due to the modal shift to more sustainable transport modes is likely to increase tranquillity and improve the overall landscape and townscape quality. The potential introduction of new transport infrastructure, could however, result in potential land take and poor design could detract from the landscape and townscape setting. The nature and significance of effects will be determined at the project level through the detailed design and layout of specific interventions. While it is likely that suitable mitigation is available to reduce the significance of any residual effects, this is uncertain at this stage given the strategic nature of the assessment and the level of information available.
IIA7: Historic Environment	**+/-/?**	N/A	N/A	N/A	N/A	N/A	ST	The reduction in air and noise pollution and the reduction in dominance of motorised vehicles will help to increase levels of tranquillity and improve to overall setting of historic assets. Reductions in air pollution will also reduce levels of degradation of historic assets. The introduction of new transport infrastructure, could however, result in potential land take and poor design could detract from the setting of historic assets. The nature and significance of effects will be determined at the project level through the detailed design and layout of specific interventions. While it is likely that suitable mitigation is available to reduce the significance of any residual effects, this is uncertain at this stage given the strategic nature of the assessment and the level of information available.
IIA8: Flood Risk	**?**	N/A	N/A	N/A	N/A	N/A	N/A	The potential increased use of hard-standing surfaces as part of these proposed improvements could increase surface water runoff, therefore, resulting in potential negative effects on flooding. However, the proposed developments are likely to incorporate permeable surfaces and SUDs which will help to reduce flood risk and provide climate resilience.
IIA9: Water Quality	**?**	N/A	N/A	N/A	N/A	N/A	N/A	The potential increased use of hard-standing surfaces as part of these proposed improvements could increase surface water runoff, which is likely to carry pollutants, resulting in potential negative effects on water quality. However, the

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
								proposed developments are likely to incorporate permeable surfaces and SUDs which will help to reduce negative impacts on water quality.
IIA10: Air Quality	**++/-**	H	I	R	I	P	ST	There is potential for positive effects upon air quality due to the promotion of active travel and sustainable transport modes, which is likely to encourage a modal shift away from private vehicle use, reducing emissions arising from transport and therefore improving air quality. Additionally, projects that contribute to highways improvements and maintenance may have positive long-term effects upon air quality due to reducing congestion and vehicle idling times. However, there may be minor negative benefits related to construction works carried out to improve the transport network infrastructure, which may lead to temporary reductions in air quality.
IIA11: Climate Change Resilience	**+**	M	D/I	R	R	P	ST	Positive effects have been identified in relation schemes that focus on carbon reduction and promotion of a modal shift from cars to public transport, walking and cycling. Schemes included in the short-term delivery plan include the CRSTS aim to decarbonise transport, CATF funding to support delivery of high-quality active travel infrastructure, and the LEVI funding to support the delivery of electric vehicle infrastructure across the region. Such schemes are beneficial to climate change resilience due to reducing reliance on fossil fuels, reducing greenhouse gas emissions and other harmful pollutants, and improving air quality.
IIA12: Greenhouse Gases	**+**	H	D	R	R	P	ST	The modal shift towards active travel and public transport encouraged by the short-term objectives will lead to a significantly lower number of private vehicles on the road, lowering total carbon emissions and other harmful pollutants. However, there may be some embodied carbon associated with the development of additional infrastructure to support these policies.
IIA13: Noise and Vibration	**+/-/?**	H	D	L	R	P	ST	The modal shift towards active travel and public transport will likely reduce levels of noise from the transport network, particularly from motorised vehicles. However, there is potential that increasing the public transport offering, could increase levels of noise at rail stations, bus stops and stations and interchanges, as more services will be required to meet demand. This could have adverse effects on neighbouring receptors. However, at this stage the level of demand, uptake, schemes and services are unknown.
IIA14: Waste and Sustainable use of Resources	**?**	N/A	N/A	N/A	N/A	N/A	ST	The level of construction required to support these schemes is not currently known, but there is potential for these to generate waste. As schemes emerge there may be potential for these to support to minimise levels of waste and re-use existing infrastructure.
IIA15: Efficient use of land	**?**	N/A	N/A	N/A	N/A	N/A	ST	Given the urban nature of the plan area, the majority of proposed interventions are likely to involve the use of brownfield land with a positive effect on this IIA objective through the efficient use of land. However, there is also the potential for the loss of greenfield land and open space. Given the strategic nature of the assessment and taking a precautionary approach an uncertain effect has been identified. The detailed design of the schemes should seek the sustainable use of resources and efficient use of land where possible.
Potential Cumulative/ Synergistic Effects	• IIA1: There is potential for positive cumulative effects on population and equalities if multiple schemes are delivered in combination that improve connectivity and accessibility to key services across the region. • IIA2: There is potential for positive cumulative effects on human health if multiple schemes are delivered in combination that promote active travel and improve access to health services. • IIA3: Economic growth is supported by the various funding sources outlined in the short-term objectives. The implementation of all sources of capital and revenue funding schemes will generate positive cumulative effects for economic growth across the City Region. • IIA5: There is potential for cumulative positive effects on biodiversity if multiple schemes are delivered in combination that deliver Biodiversity Net Gain (BNG). • IIA5: There is potential for cumulative adverse effects on biodiversity if multiple schemes are delivered in combination, leading to the loss of habitats and species. • IIA6: There is potential for cumulative adverse effects on landscape and townscape if multiple schemes are delivered in combination particularly if land take is required. • IIA7: There is potential for cumulative degradation of the historic setting if multiple schemes are delivered in combination, particularly in areas of high cultural heritage value.							

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
								• IIA10/IIA11: Reductions in greenhouse gas emissions and associated air quality improvements will be implemented by all schemes that aim to decarbonise transport and promote sustainable travel, leading to a positive cumulative effect on air quality in the region. • IIA13: There is potential for a cumulative increase in noise if multiple schemes come forward in similar locations.
Mitigation and Enhancement Measures and Recommendations								• IIA4: Development should incorporate designing out crime principles. • IIA5: Development should incorporate measures that lead to BNG. • IIA5: Consideration needs to be given to the potential effects of construction of developments (noise, vibration and air pollution) on biodiversity, including designated sites. In addition, a lighting strategy should be prepared to minimise light spill onto retained or newly created habitat features. • IIA6: For individual schemes, landscape and visual impacts assessment should be undertaken to determine magnitude of impact and possible mitigation. • IIA6/IIA7: Sensitive design should be considered for any new developments and infrastructure to ensure positive effects on local heritage assets and landscapes. • IIA5/IIA6/IIA7: Well designed active travel routes could present opportunities to enhance habitat, ecological networks through habitat creation and improve the quality of visual amenity of the landscape and heritage assets by managing public access to or from the historic features within the City Region. • IIA8/IIA11: Sustainable urban drainage solutions should be incorporated into design to further increase resilience to flooding and climate change • IIA11/IIA12: Schemes should look to incorporate renewable energy generation methods, such as solar panels to reduce operational GHG emissions • IIA13: Acoustic assessments should be undertaken to establish baseline noise. Where possible, new developments which could increase noise levels, should avoid existing noisy locations. Incorporation of low-noise surfaces and noise barriers should be considered as part of design. • IIA14/IIA15: The reuse of existing materials should be done so under conditional circumstances, including contamination assessments. • IIA15: The detailed design of schemes should seek the efficient use of land where possible.

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3.2 MEDIUM TERM (APRIL 2027 – MARCH 2032)

- Transport for City Regions (TCR) funding will provide £1.581bn of multi-year, consolidated funding settlement to the LCR. A place-based approach to scheme development bringing together housing, economic development and transport alongside emerging policy, the thematic priorities include:
  - Bus Transformation Programme to support the delivery of bus franchising
  - Place-based allocations to support key investment sites and aligned to housing pipeline
  - Three new rail stations and investment in rapid transit route
  - A fully accessible Merseyrail network and completion of Liverpool Baltic Station
  - Significant investment in active travel in line with the City Region and local LCWIPs
  - Investment in highways to enhance assets and support efforts towards Vision Zero
  - Investment to support development of integrated transport network
- LCRCA transport levy

Table F-8 – Assessment of medium-term objectives

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
IIA1: Population & Equalities	**++/-**	H	D	R	R/I	P	MT	Improvements to transport infrastructure through the TCR funding scheme will have significant beneficial effects on the City Region's population. Improvements to public transport and highways and development of new rail stations will increase accessibility to employment, education and local facilities, especially when utilising a place-based approach and if focused on areas that are currently poorly served by public transport services and areas where new development is proposed. This will particularly benefit those people that cannot drive such as the elderly, those with disabilities and younger people. Further positive effects are associated with schemes that promote accessibility, such as the £46 million from the LCRCA transport levy to support the comprehensive concessionary travel scheme to break down transport barriers for older people, people with disabilities and carers. Further measures such as the 'Access for All' rail programme to make accessibility improvements across the 19 rail stations that do not have step-free access will benefit those with mobility restrictions. There may be minor negative benefits related to construction works carried out to improve the transport network infrastructure, which may lead to temporary severance of services. Construction works may also introduce obstacles which could make pavements harder to navigate, particularly for disabled users and those with visual impairments.
IIA2: Human Health	**++**	H	D	R	I	P	MT	Promoting a modal shift from cars to public transport, walking and cycling will have significant beneficial effects on the City Region's population due to supporting an active lifestyle which will help to improve physical and mental health. Reductions in carbon emissions will also have beneficial effects on health through improved air quality. Funding schemes that aim to improve the attractiveness and quality of active travel and public transport will also improve connectivity across the region, enabling greater access to education, employment, and services which will positively contribute to the quality of life for the whole population.
IIA3: Economy and Employment	**++**	H	D	L	R	P	MT	The TCR funding programme includes a number of schemes that will act to improve connectivity by sustainable travel to key destinations and opportunities across the city region, as well as improving the attractiveness and quality of active travel, bus and rail options. A more joined up city region will enable greater access to education, employment, and services which will positively contribute to the quality of life for the whole population. Investment in travel infrastructure is likely to lead to more fast, frequent and reliable connections between economic centres for people, businesses and goods and will bolster economic growth.

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
IIA4: Community Safety	**++**	M	I	L	R	P	MT	Funding schemes that improve highways will likely help reduce road traffic accidents, improving overall safety across the City Region. Encouraging the use of public and active transport and a modal shift away from cars will help to reduce the number of cars on the road and therefore, the number of accidents. Additionally, improving existing connections and increasing the frequency and reliability of transport connections will improve feelings of safety, especially during the evening, at night, and in the dark.
IIA5: Biodiversity and Natural Capital	**+/-/?**	H	D/I	R	R	P/T	MT	There is potential for negative effects arising from construction activities, particularly due to noise and vibration, temporary alteration to the settings and access of designated sites that intersect or are located within close proximity to proposed schemes. However, it is assumed that these will be appropriately mitigated through implementation of a CEMP. In the long term, there is potential for positive effects on biodiversity due to schemes contributing to reductions in traffic disturbance from noise and vibration, as well as reduced degradation from poor air quality. Additionally, the development of active and sustainable travel networks may contribute to improved accessibility and therefore appreciation of designated sites within the LCR. However, in the long term, there is potential for negative effects upon designated sites as there is potential for increased visitor numbers to through improved access to designated sites/ sensitive receptors. Although these are not considered to be significant at this strategic level, they will need to be appropriately considered as the schemes develop. The nature and significance of effects will be determined at the project level through the detailed design and layout of specific interventions. While it is likely that suitable mitigation is available to reduce the significance of any residual effects, this is uncertain at this stage given the strategic nature of the assessment and the level of information available.
IIA6: Landscape and Townscape	**+/-/?**	H	I	R	I	P	MT	There is likely to be positive effects upon the landscape and townscape as a result of reducing private vehicle use and reducing air and noise pollution, therefore enhancing the landscape and townscape setting due to reduced disturbance and increased levels of tranquillity. The introduction of new transport infrastructure, could however, result in potential land take and could detract from the setting, resulting in negative effects on landscape and townscape. However, positive effects may be realised where schemes are utilising the existing highways network, or brownfield land and implementing nature-based solutions. The nature and significance of effects will be determined at the project level through the detailed design and layout of specific interventions. While it is likely that suitable mitigation is available to reduce the significance of any residual effects, this is uncertain at this stage given the strategic nature of the assessment and the level of information available..
IIA7: Historic Environment	**+/-/?**	H	I	R	I	P	MT	In the short term, there is potential for negative effects arising from construction activities, particularly due to noise and vibration, temporary alteration to settings, as well as altering access to those assets that are intersected by schemes. However, it is assumed that these will be appropriately mitigated through implementation of a CEMP. In the long term, there is potential for positive effects on heritage assets due to schemes contributing to enhancing the setting of heritage assets, due to reductions in traffic disturbance from noise and vibration. Additionally, the development of active and sustainable travel networks may contribute to improved accessibility and therefore appreciation of the historic environment and heritage assets within the LCRCA. Additionally, the promotion of sustainable travel modes and reduced private vehicle usage is likely to improve air quality which will help to reduce degradation of heritage assets through poor air quality. Potential effects on buried archaeological assets would need to be considered at scheme level. The nature and significance of effects will be determined at the project level through the detailed design and layout of specific interventions. While it is likely that suitable mitigation is available to reduce the significance of any residual effects, this is uncertain at this stage given the strategic nature of the assessment and the level of information available.

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
IIA8: Flood Risk	**?**	N/A	N/A	N/A	N/A	N/A	MT	Included within the TCR highways maintenance scheme is the objective to support the maintenance of existing network, structures and assets with a focus on road safety and climate resilience. This may include measures such as SUDs which will help to reduce flood risk and provide climate resilience and provide minor positive benefits to flood risk. However, the potential increased use of hard-standing surfaces as part of proposed improvements could increase surface water runoff, therefore, resulting in potential negative effects on flooding. At this stage, the exact measures are uncertain.
IIA9: Water Quality	**?**	N/A	N/A	N/A	N/A	N/A	MT	The potential increased use of hard-standing surfaces as part of these proposed improvements could increase surface water runoff, which is likely to carry pollutants, resulting in potential negative effects on water quality. However, the proposed developments are likely to incorporate permeable surfaces and SUDs which will help to reduce negative impacts on water quality.
IIA10: Air Quality	**++/-**	H	D/I	R	I	P	MT	There is potential for positive effects upon air quality due to the promotion of active travel and sustainable transport modes, which is likely to encourage a modal shift away from private vehicle use, reducing emissions arising from transport and therefore improving air quality. Additionally, projects that contribute to highways improvements and maintenance may have positive long-term effects upon air quality due to reducing congestion and vehicle idling times. However, there is potential that some schemes, for example Paddington / KQ, may encourage private vehicle use due to improvements of junctions and the highways network. There is also the potential for new or re-routed traffic movements associated with new rail stations. These type of schemes may have localised negative effects upon air quality which would require further consideration at project level. In the case of new train stations, it is expected that the potential localised adverse impacts would usually be outweighed by positive air quality impacts arising from the model shift as people transfer to using the train for the main part of the journey. In the short-term, if multiple schemes are delivered in combination, there is potential for minor negative effects upon air quality as a result of construction activities and equipment. However, this is not anticipated to be significant due to their short-term nature and can be appropriately mitigated against through a CEMP.
IIA11: Climate Change Resilience	**+**	M	D/I	R	R	P	MT	Positive effects have been identified due to the objective included within the TCR highways maintenance scheme to support the maintenance of existing network, structures and assets with a focus on road safety and climate resilience. This may include measures such as SUDs which will help to reduce flood risk and provide climate resilience. Minor positive effects have been identified due to the 'dig once' approach to construction and managing surface water and pollution problems which builds on the maintenance and climate resilience priorities under Goal 4 of the core LTP. The 'dig once' approach coordinates construction works to minimise disruption and increase efficiency, which is beneficial to climate change resilience, and it reduces reliance on fossil fuels and minimises release of GHGs.
IIA12: Greenhouse Gases	**+/-**	H	D/I	R	I	P	MT	There is potential for positive effects upon greenhouse gases due to the projects largely promoting active travel and sustainable transport modes, which is likely to encourage a modal shift away from private vehicle use, reducing emissions arising from transport and therefore reducing greenhouse gas emissions. Additionally, projects that contribute to highways improvements and maintenance may have positive long-term effects upon greenhouse gas emissions due to reducing congestion and vehicle idling times. Positive effects have also been identified due to the 'dig once' approach to construction as it reduces reliance on fossil fuels and minimises release of GHGs. However, there is potential that large-scale schemes, such as the construction of three new rail stations, may lead to a temporary increase in GHG emissions. There is also the potential for new or re-routed traffic movements associated with new rail stations. These type of schemes may have localised negative effects upon greenhouse gases in the vicinity of the new station which would require further consideration at project level.

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
								In the short-term, if multiple schemes are delivered in combination, there is potential for minor negative effects upon greenhouse gases as a result of construction activities and equipment. However, this is not anticipated to be significant due to their short-term nature and can be appropriately mitigated against through a CEMP.
IIA13: Noise and Vibration	**+/-**	H	D/I	L	R	P	MT	Due to the nature of projects largely promoting active and sustainable transport modes, it is likely to encourage a modal shift away from private vehicle use, reducing road noise, congestion, and vehicle idling times. However, there is potential that some schemes, may encourage private vehicle use due to improvements of junctions and the highways network. There is also the potential for increased noise and vibration associated with the proposed three new rail stations. These type of schemes may have localised negative effects upon noise which would require further consideration at project level. In the short-term, if multiple schemes are delivered in combination, there is potential for minor negative effects upon noise and vibration as a result of construction. However, this is not anticipated to be significant and can be appropriately mitigated against through a CEMP.
IIA14: Waste and Sustainable use of Resources	**?**	N/A	N/A	N/A	N/A	N/A	MT	The level of construction required to support these policies is not currently known, but there is potential for these to generate waste. As schemes emerge there may be potential for these to support to minimise levels of waste and re-use existing infrastructure.
IIA15: Efficient use of land	**?**	N/A	N/A	N/A	N/A	N/A	MT	The potential use of land is not currently known, for the infrastructure needed to support these policies. As schemes emerge there may be potential for these schemes to support the sustainable use of resource and efficient use of land.
Potential Cumulative/ Synergistic Effects	• IIA1: There is potential for positive cumulative effects on population and equalities if multiple schemes are delivered in combination that improve connectivity and accessibility to key services across the region. • IIA2: There is potential for positive cumulative effects on human health if multiple schemes are delivered in combination that promote active travel and improve access to health services. • IIA3: Economic growth is supported by the various funding sources. The implementation of all sources of capital and revenue funding schemes will generate positive cumulative effects for economic growth across the City Region. • IIA5: There is potential for cumulative positive effects on biodiversity if multiple schemes are delivered in combination that deliver BNG. • IIA5: There is potential for cumulative adverse effects on biodiversity if multiple schemes are delivered in combination, leading to the loss of habitats and species. • IIA6: There is potential for cumulative adverse effects on landscape and townscape if multiple schemes are delivered in combination particularly id land take is required. • IIA7: There is potential for cumulative degradation of the historic setting if multiple schemes are delivered in combination, particularly in areas of high cultural heritage value. • IIA10/IIA11: Reductions in greenhouse gas emissions and associated air quality improvements will be implemented by all schemes that aim to decarbonise transport and promote sustainable travel, leading to a positive cumulative effect on air quality in the region. • IIA13: There is potential for a cumulative increase in noise if multiple schemes come forward in similar locations.							
Mitigation and Enhancement Measures and Recommendations	• IIA4: Development should incorporate designing out crime principles. • IIA5: Development should incorporate measures that lead to BNG. • IIA5: Consideration needs to be given to the potential effects of construction of developments (noise, vibration and air pollution) on biodiversity, including designated sites. In addition, a lighting strategy should be prepared to minimise light spill onto retained or newly created habitat features. • IIA6: For individual schemes, landscape and visual impacts assessment should be undertaken to determine magnitude of impact and possible mitigation. • IIA6/IIA7: Sensitive design should be considered for any new developments and infrastructure to ensure positive effects on local heritage assets and landscapes. • IIA5/IIA6/IIA7: Well designed active travel routes could present opportunities to enhance habitat, ecological networks through habitat creation and improve the quality of visual amenity of the landscape and heritage assets by managing public access to or from the historic features within the City Region.							

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
	• IIA12: Schemes should look to incorporate renewable energy generation methods, such as solar panels to reduce operational GHG emissions • IIA13: Acoustic assessments should be undertaken to establish baseline noise. Where possible, new developments which could increase noise levels, should avoid existing noisy locations. Incorporation of low-noise surfaces and noise barriers should be considered as part of design. • IIA14/IIA15: The reuse of existing materials should be done so under conditional circumstances, including contamination assessments.							

3.3 LONG TERM (APRIL 2032 – MARCH 2040)

- The longer-term delivery period will be shaped by the delivery of the short- and medium-term objectives, and as such, there is no funding certainty. Potential interventions include:
  - Liverpool – Manchester Rail Line
  - Liverpool Central Station expansion and regeneration
  - Mersey Tidal Active Travel route
  - Merseyrail Network Extensions
  - New rail stations
  - Interchange renewals/improvements
  - Zero emission ferries
  - St George's Gateway
  - Maghull Health Park active travel
  - Parkside Rail Freight
  - Rail station improvements
  - Maintaining resilient transport assets
  - Wider rollout of Rapid Transit
  - Devolution and further reform
  - Efficiency and making best use of our networks

Table F-9 – Assessment of long-term objectives

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
IIA1: Population & Equalities	++	H	D	R	I	P	LT	Significant positive effects are likely as projects such as the new line between Liverpool and Manchester, new rail stations, and rail station improvements will help relieve congestion and capacity constraints on existing rail links for both people and freight, improving connectivity and helping to meet the needs of future population growth. Improvements to public transport and local walking and cycling routes, such as the Mersey Tidal Active travel and Maghull Health Park active travel will increase accessibility to employment, education and local facilities, especially if focused on areas that are currently poorly served by public transport services. This will particularly benefit those people that cannot drive such as the elderly, those with disabilities and younger people. By increasing the attractiveness and accessibility of these options, residents will not be so reliant on private vehicle usage - a particular benefit to those who are unable to access private transport in the first instance. There may be minor negative benefits related to construction works carried out to improve the transport network infrastructure, which may lead to temporary severance of services. Construction works may also introduce obstacles which could make pavements harder to navigate, particularly for disabled users and those with visual impairments.
IIA2: Human Health	++	H	D	R	I	P	LT	Measures such as the Mersey Tidal Active travel route and Maghull Health Park active travel are likely to promote a modal shift from cars to public transport, walking and cycling and will have significant beneficial effects on the City Region's population due to supporting an active lifestyle which will help to improve physical and mental health. Promotion of active travel is also likely to lead to reductions in carbon emissions which will have beneficial effects on health through improved air quality. Funding schemes that aim to improve the attractiveness and

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
								quality of active travel will also improve connectivity across the region, enabling greater access to education, employment, and services which will positively contribute to the quality of life for the whole population.
IIA3: Economy and Employment	**++/-**	H	D	L	R	P	LT	The long-term measures include a number of schemes that will act to improve connectivity by sustainable travel to key destinations and opportunities across the city region, as well as improving the attractiveness and quality of active travel, bus and rail options. A more joined up city region will enable greater access to education, employment, and services which will positively contribute to the quality of life for the whole population. Fast, frequent and reliable connections between economic centres for people, businesses and goods will also bolster economic growth. In the short-term, construction activities related to the large-scale schemes may lead to disturbance and/or severance of key employment sites and retail sites, which may have a minor negative effect on the local economy and employment.
IIA4: Community Safety	**+**	M	I	L	R	P	LT	Funding schemes that improve highways will likely help reduce road traffic accidents, improving overall safety across the City Region. Additionally, encouraging the use of and making improvements to public transport and active transport networks, and encouraging a modal shift away from cars will help to reduce the number of cars on the road and therefore, the number of accidents. Additionally, improving existing connections and increasing the frequency and reliability of transport connections will improve feelings of safety, especially during the evening, at night, and in the dark.
IIA5: Biodiversity and Natural Capital	**+/-/?**	H	D/I	R	R	P/T	LT	There is potential for negative effects arising from construction activities, particularly due to noise and vibration, temporary alteration to the settings and access of designated sites that intersect or are located within close proximity to proposed schemes. However, it is assumed that these will be appropriately mitigated through implementation of a CEMP. In the long term, there is potential for positive effects on biodiversity due to schemes contributing to reductions in traffic disturbance from noise and vibration, as well improvements to air quality. Additionally, the development of active and sustainable travel networks may contribute to improved accessibility and therefore appreciation of the designated sites within the LCR. However, in the long term, there is potential for negative effects upon designated sites as there is potential for increased visitor numbers to result in degradation of sites. Although these are not considered to be significant at this high level, they will need to be appropriately considered as the schemes develop. The nature and significance of effects will be determined at the project level through the detailed design and layout of specific interventions. While it is likely that suitable mitigation is available to reduce the significance of any residual effects, this is uncertain at this stage given the strategic nature of the assessment and the level of information available.
IIA6: Landscape and Townscape	**+/-?**	N/A	N/A	N/A	N/A	N/A	LT	The introduction of new transport infrastructure may result in potential land take or utilisation of greenfield land and poor design could detract from the landscape and townscape setting. The size and scale of development and the interventions that may come forward at this stage are unknown. Positive effects are anticipated where schemes are utilising the existing highways network, or brownfield land. In the long term, schemes have the potential to result in positive effects upon landscape and townscape due to enhancement of the public realm, and landscape setting through high quality design (particularly for schemes located in areas of low townscape value). There is also likely to be additional positive effects upon the landscape and townscape as a result of reducing private vehicle use, therefore enhancing the landscape and townscape setting due to reduced disturbance.

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
								The nature and significance of effects will be determined at the project level through the detailed design and layout of specific interventions. While it is likely that suitable mitigation is available to reduce the significance of any residual effects, this is uncertain at this stage given the strategic nature of the assessment and the level of information available.
IIA7: Historic Environment	**+/-/?**	N/A	N/A	N/A	N/A	N/A	LT	The reduction in air and noise pollution and the reduction in dominance of motorised vehicles will help to increase levels of tranquillity and improve to overall setting of historic assets. Reductions in air pollution will also reduce levels of degradation of historic assets. The introduction of new transport infrastructure, could however, result in potential land take and poor design could detract from the setting of historic assets. The nature and significance of effects will be determined at the project level through the detailed design and layout of specific interventions. While it is likely that suitable mitigation is available to reduce the significance of any residual effects, this is uncertain at this stage given the strategic nature of the assessment and the level of information available.
IIA8: Flood Risk	**?**	N/A	N/A	N/A	N/A	N/A	LT	The addition of increased use of hard standing surfaces as part of these proposed developments could increase surface water runoff, therefore, resulting in potential negative effects on flooding. It is assumed that the proposed developments are likely to incorporate permeable surfaces and SUDs which will help to reduce flood risk and provide climate resilience. However, at this stage, the exact measures are not known.
IIA9: Water Quality	**?**	N/A	N/A	N/A	N/A	N/A	LT	The potential increased use of hard-standing surfaces as part of these proposed improvements could increase surface water runoff, which is likely to carry pollutants, resulting in potential negative effects on water quality. However, the proposed developments are likely to incorporate permeable surfaces and SUDs which will help to reduce negative impacts on water quality.
IIA10: Air Quality	**++/-**	H	D/I	R	I	P	LT	There is potential for positive effects upon air quality due to the potential schemes that are promoting active and sustainable transport modes, which is likely to encourage a modal shift away from private vehicle use, reducing emissions arising from transport and therefore improving air quality. Additionally, those projects that contribute to highways improvements and maintenance may have positive long-term effects upon air quality due to reducing congestion, and therefore vehicle idling times. However, there is potential that some schemes, such as new rail stations, may have localised negative effects upon air quality in the vicinity of new stations, which would require further consideration at project level. In the case of new train stations, it is expected that the potential localised adverse impacts would usually be outweighed by positive air quality impacts arising from the model shift as people transfer to using the train for the main part of the journey. In the short-term, if multiple schemes are delivered in combination, there is potential for minor negative effects upon air quality as a result of construction activities and equipment. However, this is not anticipated to be significant due to their short-term nature and can be appropriately mitigated against through a CEMP.
IIA11: Climate Change Resilience	**+/?**	M	D/I	R	R	P	LT	Included in the long-term objectives is a goal of 'Maintaining resilient transport assets' which will likely have positive effects against climate change resilience across the region, however, the exact measures are currently not known.
IIA12: Greenhouse Gases	**+/-**	H	D/I	R	I	P	LT	The modal shift towards active travel and public transport will lead to a significantly lower number of private vehicles on the road, reducing total carbon emissions and other harmful pollutants. There may be some embodied carbon associated with the development of additional infrastructure to support these policies.

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
								In the short-term, if multiple schemes are delivered in combination, there is potential for minor negative effects upon greenhouse gases as a result of construction activities and equipment. However, this is not anticipated to be significant due to their short-term nature and can be appropriately mitigated against through a CEMP.
IIA13: Noise and Vibration	**+/-**	H	D/I	L	R	P	LT	Due to the nature of projects largely promoting active and sustainable transport modes, it is likely to encourage a modal shift away from private vehicle use, reducing road noise. Additionally, schemes that contribute to highways improvements and maintenance may have positive long-term effects upon noise due to reducing congestion, and therefore vehicle idling times and traffic congestion noise. However, there is potential that some schemes, may encourage private vehicle use due to improvements of junctions and the highways network. There is also the potential for new or re-routed traffic movements associated with new rail stations. These type of schemes may have localised negative effects upon noise which would require further consideration at project level. If multiple schemes are delivered in combination, there is potential for minor negative effects upon noise and vibration as a result of construction. However, this is not anticipated to be significant and can be appropriately mitigated against through a CEMP.
IIA14: Waste and Sustainable use of Resources	**?**	N/A	N/A	N/A	N/A	N/A	LT	The level of construction required to support these policies is not currently known, but there is potential for these to generate waste. As schemes emerge there may be potential for these to support to minimise levels of waste and re-use existing infrastructure.
IIA15: Efficient use of land	**?**	N/A	N/A	N/A	N/A	N/A	LT	The potential use of land is not currently known, for the infrastructure needed to support these policies. As schemes emerge there may be potential for these schemes to support the sustainable use of resource and efficient use of land.
Potential Cumulative/ Synergistic Effects	• IIA1: There is potential for positive cumulative effects on population and equalities if multiple schemes are delivered in combination that improve connectivity and accessibility to key services across the region. • IIA2: There is potential for positive cumulative effects on human health if multiple schemes are delivered in combination that promote active travel and improve access to health services. • IIA3: Economic growth is supported by the various funding sources. The implementation of all sources of capital and revenue funding schemes will generate positive cumulative effects for economic growth across the City Region. • IIA5: There is potential for cumulative positive effects on biodiversity if multiple schemes are delivered in combination that deliver BNG. • IIA5: There is potential for cumulative adverse effects on biodiversity if multiple schemes are delivered in combination, leading to the loss of habitats and species. • IIA6: There is potential for cumulative adverse effects on landscape and townscape if multiple schemes are delivered in combination particularly id land take is required. • IIA7: There is potential for cumulative degradation of the historic setting if multiple schemes are delivered in combination, particularly in areas of high cultural heritage value. • IIA10/IIA11: Reductions in greenhouse gas emissions and associated air quality improvements will be implemented by all schemes that aim to decarbonise transport and promote sustainable travel, leading to a positive cumulative effect on air quality in the region. • IIA13: There is potential for a cumulative increase in noise if multiple schemes come forward in similar locations.							
Mitigation and Enhancement Measures and Recommendations	• IIA4: Development should incorporate designing out crime principles. • IIA5: Development should incorporate measures that lead to BNG. • IIA5: Consideration needs to be given to the potential effects of construction of developments (noise, vibration and air pollution) on biodiversity, including designated sites. In addition, a lighting strategy should be prepared to minimise light spill onto retained or newly created habitat features.							

IIA Objective	Significance	Magnitude	Nature of effect	Spatial Extent	Reversibility	Permanence	Duration	Description of potential Effects
								• IIA6: For individual schemes, landscape and visual impacts assessment should be undertaken to determine magnitude of impact and possible mitigation. • IIA6/IIA7: Sensitive design should be considered for any new developments and infrastructure to ensure positive effects on local heritage assets and landscapes. • IIA5/IIA6/IIA7: Well designed active travel routes could present opportunities to enhance habitat, ecological networks through habitat creation and improve the quality of visual amenity of the landscape and heritage assets by managing public access to or from the historic features within the City Region. • IIA8/IIA11: Sustainable urban drainage solutions should be incorporated into design to further increase resilience to flooding and climate change • IIA11/IIA12: Schemes should look to incorporate renewable energy generation methods, such as solar panels to reduce operational GHG emissions • IIA13: Acoustic assessments should be undertaken to establish baseline noise. Where possible, new developments which could increase noise levels, should avoid existing noisy locations. Incorporation of low-noise surfaces and noise barriers should be considered as part of design. • IIA14/IIA15: The reuse of existing materials should be done so under conditional circumstances, including contamination assessments.

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