



# Investment Prioritisation Framework

# Methodology Technical Note

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Prepared in partnership with



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## Investment Prioritisation Framework - Methodology Technical Note

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# 1 Introduction

England's Economic Heartland (EEH) is the sub-national transport body responsible for bringing together local transport authorities in a strategic partnership for the region extending from Swindon to Cambridgeshire and Northamptonshire to Hertfordshire. We work with our partners to provide leadership on strategic transport infrastructure.

Our 2021 Regional Transport Strategy, **Connecting People, Transforming Journeys**, is an evidence-based, vision-led framework focused on enabling economic growth in a way that delivers a net zero transport system no later than 2050, with an ambition to reach this by 2040.



To achieve our Transport Strategy ambitions we need to do things differently when it comes to the way we plan for and invest in our transport system.

Advancing on the Transport Strategy has been a range of programmes and initiatives looking to identify “interventions” to improve transport services and infrastructure in the region.

This has included EEH's programme of Connectivity Studies, that since 2022 has involved a series of projects looking in detail at the needs of particular study areas and corridors.

## Requirement to advise on areas for investment

In addition to preparation of a Transport Strategy, the Cities and Local Government Devolution Act 2016 that established EEH sets the basis for the Government's clear expectation that sub-national transport bodies provide credible, clear advice on infrastructure investment priorities in the region.

The regional Transport Strategy contained a first iteration of a regional infrastructure investment pipeline that was based on 'known' priority interventions captured through stakeholder engagement. The further technical studies and a more robust evidence base have created an opportunity for a refreshed investment pipeline looking ahead to 2050 and beyond.

## Purpose

**The purpose of the Investment Prioritisation Framework (the Framework) is to support an evidence-based process, proportionate to regional scale working, that presents our strategic transport infrastructure priorities as a range of interventions in response to specific objectives ('levels of service'), rather than an explicit list.** The overall aim is to bring together interventions identified through EEH's body of work into a single dynamic list and filtering tool that can operate flexibly and be sustained and updated over time.

The benefit of a framework approach is that the most relevant interventions to deliver a particular improvement in levels of service (Part 4) can be identified and supported to secure investment through an appropriate funding mechanism. The approach also provides longevity to each proposed intervention and allows for further iterations as interventions are further developed and our technical work continues.



## 2 Building the Long List

The basis of the Framework is its 'Long List' that includes strategic interventions that have been recommended through EEH's direct work or by its partner organisations and delivery bodies such as Network Rail and National Highways.

There are two types of information recorded against each entry in the Framework, with these being:

- **Intervention Information** (detailed in [Part 3](#)) is objective factors that help to define the nature of each intervention and will allow the EEH team and stakeholders to filter based on specific queries. For example, it will allow the user to identify active travel interventions that still need a Strategic Outline Case and propose these to Government should they make specific funding available.
- **Levels of Service Criteria** (detail in [Part 4](#)) are qualitatively assessed intervention outcome-based criteria informed by key indicators and other evidence that allow for entries to be assessed against the priorities contained in the 2021 Transport Strategy. For example, it will allow the user to determine those interventions that could be expected to significantly reduce journey time variability/ reduce journey times (#7 Journey Time) while increasing the number and percentage of journeys using active travel and public transport (#3 Modal Shift).

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<sup>1</sup> As part of its Regional Evidence Base, EEH developed its "Places of Strategic Importance" narrative that informs the Investment Prioritisation Framework, most notably in the determination of whether an intervention is 'strategic' and should therefore be included. The Places of Strategic Importance narrative was

An entry in the Framework could be at any stage of intervention development, ranging from a broad 'opportunity' through to an intervention that has been delivered. Table 1 below details each of the Intervention Stage options, with only those progressed to 'Proposed Intervention' being assessed against the Level of Service Criteria.

A list of source documents used to compile the first version of the Framework are included in [Appendix A](#).

### How to define a strategic intervention

The strategic nature of sub-national transport bodies means that our focus for securing pan-regional support for investment is for interventions that are strategic in scale and impact.

An intervention will typically only be added as an entry to the Framework Tool where it meets at least one of the following tests:

1. Benefit two or more local authorities in the EEH region;
2. Benefits 2 or more sub-national transport bodies or have national benefit;
3. Where the intervention covers at least one place of strategic importance<sup>1</sup> ;
4. Provides sustainable surface access to international gateways/markets;

supplemented by a data led exercise considering factors such as population, employment, priority sector jobs and GVA (for example) for built up areas across the region.

5. Supports improvements to regional east west connectivity;
6. Supports improvements to regional north south connectivity;
7. Realises the potential for rail freight; or
8. Supports strategic road freight.

place-based or strategic corridor interventions to contribute to a strategic scale level of impact. This will be undertaken on a case-by-case basis with decisions of this nature over time informing any future update to the above tests.

EEH may determine that a local intervention that does not meet these tests may benefit from inclusion or identify the need to be packaged with existing or new

**Table 1: EEH Intervention Development Stages**

Intervention Stage	Description	Next Step
<b>Opportunity</b>	The need to deliver a certain level of service (for example 4 trains per hour) has been identified but the geography and or infrastructure requirements are not yet identified to sufficient detail to be taken forward as a proposed intervention or be included and assessed in the Investment Prioritisation Framework (e.g. improve transport network capacity for commuters between Town A and City B).	Levels of Service Assessment in EEH Investment Prioritisation Framework
<b>Proposed intervention</b>	Potential scheme to improve the transport network, with outline detail on where it would be located, the transport mode (if known), any known details on the type(s) of new infrastructure required, expected levels of any services, and relationship to existing transport network or proposed interventions (including if it is complementary or an alternative).	Proceed to scheme-specific feasibility study
<b>Feasibility / pre-Strategic Outline Case</b>	Feasibility stage (Determine Stage under the DfT Rail Network Enhancements Pipeline (RNEP) framework) where at least the following basic information on the specific scheme is known: problem identification, impact of not changing, scope, potential options, indicative costs, non-monetised benefits, indicative value for money category (indicative BCR desirable if monetised benefits are available), timetable of development, planning and construction, and key uncertainties in the value for money assessment, such as around the estimation of key impacts, and assumptions used in analysis.	Move to SOC and updated as needed based on feedback
<b>Strategic Outline Case</b>	An SOC (also referred to as Strategic Outline Business Case (SOBC)) (Decision to Develop under the RNEP framework) establishes the potential scope of the transport proposal, setting out the rationale for intervention (the case for change) and confirms how the investment will further the organisation's priorities and wider government ambitions (the strategic fit) to determine the 'preferred way forward'. This stage determines the SMART (specific, measurable, achievable, relevant, and time-constrained) spending objectives of the proposal and, by using the options framework-filter (Green Book chapter 4), considers a longlist of option choices and assembles an optimised shortlist of viable options for more detailed appraisal at OBC stage.	Move to OBC and updated as needed based on feedback

Intervention Stage	Description	Next Step
<b>Outline Business Case</b>	The OBC (Develop Stage and Design to Design under the RNEP framework) checks and, where satisfactory, reconfirms the conclusion made in the SOC and concentrates on detailed assessments of the shortlisted options to find the optimum solution. The strategic dimension should be revisited and reconfirmed at the OBC stage. Full economic and financial appraisals should take place, a preferred option is selected and, where relevant, preparations are made for the potential contract through the development of the commercial dimension. The arrangements required to ensure successful delivery are set out in the management dimension.	Permissions and powers sought for delivery
<b>Permissions and powers</b>	Required permissions are being sought (e.g. planning approval) to facilitate delivery.	Proceed to Full Business Case
<b>Procurement for delivery</b>	Procurement process(es) undertaken to facilitate delivery of intervention (e.g. engagement with supply chain).	Procurement outcomes included in Full Business Case
<b>Full Business Case</b>	This takes place within the procurement phase of the project (Design Stage and Decision to Deliver under the RNEP framework), following detailed negotiations with potential service providers/suppliers prior to the formal signing of contracts and the procurement of goods and services. This is usually the stage at which final Treasury approval is required. The purpose of the FBC is to revisit the OBC and record the findings of the subsequent procurement activities; together with the recommendation for an affordable solution which continues to optimise value for money, and detailed arrangements for the successful delivery of required goods and implementation of services from the recommended supplier/s.	Commencement of construction (Shovel Ready)
<b>Under construction / development</b>	Intervention and or service improvement is funded and is in the process of being constructed/delivered (Delivery, Acceptance and Deploy Stages under the RNEP framework). <i>Note: If project has been divided into stages for delivery, these should be listed as variations of the Intervention.</i>	n/a
<b>Complete / in operation</b>	Intervention is in operation with monitoring and evaluation underway.	n/a
<b>Cancelled / postponed</b>	Project is no longer viable as an intervention due to changing needs (e.g. reduced demand) or an alternative has been developed (e.g. rail capacity enhancement avoiding long term need for road building).	

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Intervention Stage	Description	Next Step
<b>Unknown</b>	The Intervention Description and source resources have insufficient information at this time to effectively determine Project Stage.	

# 3 Intervention Information

For each individual entry, the Framework has the option to record and filter a range of information relating to the Opportunity or Proposed Intervention. For each Opportunity this will be the only information recorded with entries at Proposed Intervention or higher level of development also being assessed against the Levels of Service Criteria (see next section of this document).

The Intervention Information able to be recorded in the Framework includes:

- Framework ID
- Intervention Name
- Intervention Description
- Strategic Intervention
- Mode(s)
- Road Network
- Local Transport Area
- Likely Lead Organisation
- Supporting Organisation
- Project Stage (Completed)
- Project Stage (Next Step)
- Next Step Underway?
- Capital Investment
- Public Operational Investment
- Revenue Generation

- Timescale
- Deliverability
- Stakeholder Acceptability
- Source and References

The following provides guidance on how the intervention information should be recorded along with some examples.

## Framework ID

A ten (10) digit unique identifier that allows EEH staff and partners to clearly identify entries even as names, descriptions and other information evolves over time as interventions are developed.

The structure of these consists of 'EEH' for STB region, '000000' for intervention number, and 'A' for variation (that is, a later alternative approach to an intervention may use the letter B, C, etc).

An existing Framework ID should never be changed and a new ID should always:

- Be added in the next largest number;
- Not reuse past ID numbers; and
- Not duplicate any ID number already in use.

## Intervention Name

The Plain English name of what is proposed, with acronyms and generic descriptions avoided. Where possible, the Intervention Name should be less than 20 words and not require prior knowledge to understand what is proposed. For example, *Exampletown Main Line Regional Rail Service*.

## Intervention Description

**This is the primary aspect of an entry against which the Level of Service Criteria assessment will be undertaken, so it is important that all core elements are captured in a short Plain English description**, giving as much specific intervention detail as possible on:

- Where it would be located (including key localities and corridors);
- The transport mode(s), if known, or highlighted as to be determine if not;
- Any known details on the type(s) of new infrastructure required;
- Expected levels of any new or improved services; and
- Relationship to existing transport network or proposed interventions (including if it is complementary or an alternative).

Where possible the core elements of the Intervention Description should be less than 300 words, although this may be added to as an intervention is developed. It should also reference work done elsewhere where relevant, with supporting documents to be listed under Source (see below).

The following is an example of how an Intervention Description could concisely capture the above elements of the Exampletown Main Line Regional Rail Service:

*Alleviating and avoiding traffic congestion on the A99999 and other local roads (such as from planned local housing development) by making better use of the Exampletown Main Line with an increase in train service frequency between Town A and City B from 2tph currently to a minimum of 5tph (12min intervals) to provide a metro standard of service between the two urban areas combined with extended operating hours. All services would stop at In-Between Suburb C Station and Market Town D Station, with at least 50% increase in car and cycle parking provision in the immediate vicinity of all four stations and the upgrading of adjacent bus stops to include canopy enclosures and real time information displays.*

*Costings should reflect that while daytime Monday-Saturday service increases may be possible using existing resources, later scheme development stages will determine if additional rolling stock or drivers would be required to run metro frequency on Sundays and in the early mornings/evenings throughout the week. Improved connecting bus services to be included as part of a separate but related scheme.*

## Strategic Intervention

This field records a **Yes**, **No** or **Unknown** relative to the tests noted in [Part 2](#) of whether the entry meets the requirements for an EEH strategic intervention.

Where an entry is 'No' it should be made clear in the Intervention Description why it has been included in the Framework. If it is 'Unknown' then the nature of what is proposed should be reviewed relative to the tests as well as any other relevant considerations. No entry should have an Unknown in this field for an extended period of time.

## Mode(s)

This series of fields records a **Y** or **N** across the following Mode options where they are directly enhanced in delivery of the proposed intervention:

- **Active Travel** – Includes walking, cycling, wheeling, horse-riding, and micro and e-mobility modes which includes scooters and e-bikes.
- **Bus / Coach** – Includes all kinds of bus and coach including public, private and franchise operators across local and regional routes. Also includes smaller scale operations and high frequency systems, as well as tour buses and coaches.
- **Freight** – Includes all kinds of freight movement across the region regardless of mode and journey distance, including first and last mile.
- **Mass Transit** – Includes all interventions seeing to deliver high frequency public transit services, such as a bus-based rapid transit system.
- **Mobility Hub / Interchange** – Includes any location where users or freight can change between modes, including but not limited to Park and Ride sites, bus interchanges, railway stations and Mobility Hubs.

- **On Demand** – Includes all modes that do not operate on a fixed timetable and or route, including (digital) Demand Responsive Transport (DRT), taxis, and ridesharing services.
- **Private Vehicle** – Includes all types of private vehicles, including vans, cars, motorcycles, as well as car clubs.
- **Rail** – Includes all modes that make use of fixed rail routes, including heavy and light rail.
- **Other / Not Applicable** – Includes any option not covered above or not relating to any particular mode of transport.

In the final Framework this is a single multi-select field.

## Road Network

These fields records a **Y** or **N** to provide the ability to sort interventions by whether they are part of different road networks and network responsibility:

- Strategic Road Network (SRN)
- Major Road Network (MRN)
- Local Road Network
- Not Applicable

In the final Framework this is a single multi-select field.

## Local Authority Area

This series of fields records a **Y** or **N** across the following Local Authority areas with the former to be noted where an intervention is located within and or will directly impact the Local Transport or Highway Authority area (that is, not just the lead authority for an intervention):

- Bedford Borough Council
- Buckinghamshire Council
- Cambridgeshire County Council\*
- Central Bedfordshire Council
- Hertfordshire County Council
- Luton Borough Council
- Milton Keynes City Council
- North Northamptonshire Council
- Oxfordshire County Council
- Peterborough City Council\*
- Swindon Borough Council
- West Northamptonshire Council

In the final Framework this is a single multi-select field.

\*Note: Cambridgeshire & Peterborough Combined Authority is the Local Transport Authority for the area that includes Cambridgeshire County Council and Peterborough City Council which are the Highway Authorities for the area. The Combined Authority is closely involved in many projects but is typically not involved in directly managing the delivery of transport projects in the region.

## Likely Lead Organisation

This series of fields records a **Y** or **N** against the type of organisation likely to lead the progression of the intervention to its next Project Stage and or through to delivery. Where possible, only one Lead Organisation should be selected for each entry with the Intervention Description updated to reflect any specific nuances (for example, particular arrangements required for delivered).

The options for this series of fields includes:

- Department for Transport (DfT)
- Network Rail\*
- National Highways
- Active Travel England
- Sustrans
- England's Economic Heartland
- Local Authorities\*\*
- Operators
- Other / private sector

In the final Framework this is a single multi-select field.

\* In future some entries may be changed to Great British Railways.

\*\*Local Authorities includes local transport authorities, local highways authorities, combined authorities, etc. For example; different interventions may be led by Cambridgeshire County Council or Cambridgeshire & Peterborough Combined Authority depending on the type of project and funding.

## Supporting Organisation

This series of fields records a **Y** or **N** against the same list as Likely Lead Organisation, with multiple options able to be selected for all those to be involved in the intervention's progression to delivery. For example, an organisation that is not responsible for leading the delivery of an intervention but will support such as EEH and Local Transport Authorities supporting Network Rail in delivery of railway capacity improvements.

In the final Framework this is a single multi-select field.

## Project Stage (Completed)

This field records the **most recently completed stage** of the intervention's development, based on the following options detailed in Table 1 above:

- Opportunity
- Proposed intervention
- Feasibility / pre-Strategic Outline Case
- Strategic Outline Case
- Outline Business Case
- Permissions and powers
- Procurement for delivery
- Full Business Case
- Under construction / development
- Complete / in operation
- Cancelled / postponed
- Unknown

## Project Stage (Next Step)

This field uses the same list from Project Stage (Completed) and detailed in Table 1 above, except for 'Opportunity' which is not included as it is not a next step from any of those listed.

## Next Step Underway?

This field records a **Yes**, **No** or **Unknown** based on whether Project Stage (Next Step) is underway by the Likely Lead Organisation. Where it is being taken forward by a different organisation, the Likely Lead Organisation and Support Organisation fields for the entry should be updated.

## Capital Investment

Based on available information, this field records one of the following **bands of expected capital investment** required to deliver the intervention:

- Up to £1million
- £1m-£5m
- £5m- £20m
- £20m-50m
- £50m - £250m
- £250m+
- Unknown

*Unknown* should only be used wherever there is insufficient information to reasonably select an appropriate band.

## Public Operational Investment

Based on available information, this field records the relative level (**High**, **Medium**, **Low**, or **Unknown**) of public-funded financial support (subsidy) required to deliver the intervention. For example, the level of public financial subsidy required to operate and maintain a strategic road (some organisations record this as capital investment), or the level of public financial contribution required to operate and maintain a rural or demand responsive bus service. In these examples, 'High' would entail all or most operational costs needing to be covered by public funding, while 'Medium' would involve a mix, and 'Low' should expect little or no public funding to cover operations.

## Revenue Generation

Based on available information, this field records the relative level (**High**, **Medium**, **Low**, or **Unknown**) of possible levels of revenue relative to capital and operational investment that could be generated from the intervention. For example, ticket sales on an enhanced regional coach or local bus service could be considered Medium but a major new toll road would be High.

## Timescale

This field records the expected and or ideal timeframe for the implementation of the intervention and when the region would begin to benefit. This is based on the options of **Short**, **Medium**, and **Long term**, or **Unknown** based on the following for this version of the Framework:

- Short term - Intervention ideally completed by 2030
- Medium term - Intervention ideally completed by 2040
- Long term - Intervention ideally completed by 2050

## Deliverability

The scale, complexity, and mode(s) of the proposed intervention relative to the existing transport network, similar projects, and comparable alternatives should be used to determine one of the following bands of deliverability:

- **Significant complexity** – Likely to involve substantial use of less proven new technologies, involve substantial physical change to existing transport infrastructure and services, and or is likely to require complicated approvals and land acquisition processes.
- **Moderate complexity** – Could make use of some elements of less proven technology, involve some physical change to existing transport infrastructure or services, or is likely to involve extended approvals or land acquisition processes.
- **Minor complexity** – Expected to make use of well proven technologies with changes to existing transport infrastructure or services able to be managed with minimal disruption and is only likely to involve less complicated approvals or land acquisition processes.
- **No significant challenges** – Largely being delivered through use of existing or expanded transport infrastructure (for example, additional but similar buses) with few or no approvals or land acquisition required.
- **Unknown** – Where a band in this field is not clear. For example, if the entry is in early stages of development and key technical or route details are not yet available.

## Stakeholder Acceptability

This field records the **current known level of acceptability** measured ‘on balance’ based on known views of the general public and political decision makers with lower ratings reflecting a need for further scheme engagement and or development. The available options for this field are:

- **Very High** – General and specific details of the intervention are well known with overall strong current public and political support.
- **High** – General details of the intervention are well known with strong current public and political support, but some doubts are openly discussed.
- **Medium** – General details of the intervention are mostly known with current public and political support positive on balance.
- **Low** – Details of the intervention are less well known and or current public and political support is negative on balance.
- **Very Low** – The intervention is less well known or seen to be misunderstood and or current public and political support is negative.
- **Unknown** – There is currently insufficient detail to determine.

For example, off-road cycle path developed from a Local Transport Plan recommendation that is well-understood and supported by the general public and local councillors would be noted as Very High. Whereas a major road scheme that is not supported by the local community would be Low or Very Low depending on whether its details are somewhat or well understood respectively.

**Important note:** This entry should be guided principally by the Likely Lead Organisation and relevant Local Transport Authorities, being updated as their understanding of how an intervention is understood and or supported evolves over time.

## Source and References

This is a **free text field** where the basis for the entry should be recorded, being updated as the intervention is developed from an opportunity through to Full Business Case and delivery. For example, “*direct recommendation from Exometown Main Line Rail Study (2022), www.exometown...*”

Where a supporting document is noted, the entry should record the level of alignment (for example, with the Regional Transport Strategy).

## 4 Levels of Service Criteria

Table 2 shows how the Framework contains twelve (12) intervention scale of impact or “outcomes” based Levels of Service Criteria that align with the four principles of the 2021 regional Transport Strategy. These criteria are currently unweighted and all are “in play”, but assessments against each can be filtered to create shortlist(s) against a specific set of outcomes and/or degrees of outcome.

**Using the Intervention Description each has the option to be assessed against seven outcome levels based on terminology in line with that used by the Department for Transport, with A being the most positive and G being the least:**

- A.** Significant positive outcome
- B.** Moderate positive outcome
- C.** Slight positive outcome
- D.** Mixed / neutral outcome
- E.** Slight negative outcome
- F.** Moderate negative outcome
- G.** Significant negative outcome

There is also the option for an entry to be assessed as X – Unknown where the Intervention Description and source resources have insufficient information at this time to effectively assess the criteria. As with Intervention Information, Unknown elements should be resolved as interventions are further developed. For example, project scope and impacts will be better understood in a Full Business Case with assessment against each Level of Service Criteria being more accurate and less subject to change.

**Table 2: Transport Strategy Principles and Levels of Service Criteria**

EEH Transport Strategy Principle	Level of Service Criteria
<b>Principle 1:</b> Achieving net zero carbon emissions from transport no later than 2050, with an ambition to reach this by 2040.	Embodied emissions
	Operational emissions
	Modal shift
<b>Principle 2:</b> Improving quality of life and wellbeing through a safe and inclusive transport system accessible to all which emphasises sustainable and active travel.	Environment
	Safety and Accessibility
	Health and wellbeing
<b>Principle 3:</b> Supporting the regional economy by connecting people and businesses to markets and opportunities.	Journey time
	Economic growth
	Local connectivity
<b>Principle 4:</b> Ensuring the Heartland works for the UK by enabling the efficient movement of people and goods through the region and to/from international gateways, in a way which lessens its environmental impact.	Regional connectivity
	Strategic routes
	Interchange

## Criteria 1: Embodied Emissions

**Avoid a net increase in Greenhouse Gas (GHG) emissions resulting from construction**

**Why is this important to EEH?**

This criterion is important as reducing excess greenhouse gas emissions over the coming years is both essential and a legal requirement to ensure the world can avoid the most severe impacts of human-induced climate change such as an increase in severe weather events. It is also a core element of EEH's Transport Strategy vision for the region.

Assessment should be informed by:

- Industry best practice standards such as BREEAM Infrastructure<sup>i</sup>; and
- Expected emissions caused by construction, such as those defined by DfT Transport Analysis Guidance (TAG)<sup>ii</sup>, PAS 2080 framework<sup>iii</sup> and or Scope 1, 2 and 3 emissions<sup>iv</sup>, where specific calculations have been undertaken:
  - *Scope 1: Emissions from sources that an organisation directly generates (for example, emissions from onsite equipment);*
  - *Scope 2: Emissions a company causes indirectly that come from where the energy it purchases and uses is produced (for example, power supply to electric construction vehicles); and*
  - *Scope 3: All emissions not covered in scope 1 or 2, created by the supply chain and or upstream use (for example, steel manufacture).*

Sources that ensure an evidence-led approach could include:

- Statement on scope, particularly where the core project is defined relative to optional or associated aspects such as tree planting or materials reuse;
- Carbon reporting of lead and supporting organisations; and
- Any Environmental Impact Assessments / Integrated Sustainability Assessments.

**Table 3: How to Apply the Embodied Emissions Criteria**

	Level of Service Outcome	Description
<b>A</b>	Significant net reduction in emissions from construction	The intervention will be delivered resulting in an overall net reduction in GHG emissions (excluding operational emissions) resulting from extensive use of best practice approaches, including reuse of existing materials and infrastructure. For example, large scale tree planting or use of carbon sinking materials such as fly ash cement included as part of a core scope also involving reuse of existing roadways.
<b>B</b>	Moderate net reduction in emissions from construction	As per Level A but with moderate impact resulting from only some reuse of existing infrastructure and substantial use of offsetting techniques like tree planting as part of core scope.
<b>C</b>	Slight net reduction in emissions from construction	As per Level A but will only slightly better performance than net zero. For example, through use of leading industry standards such as BREEAM Infrastructure.
<b>D</b>	No overall change in emissions associated with construction	The intervention is to be delivered with no overall increase or reduction in emissions. For example, through use of electric construction vehicles.
<b>E</b>	Slight net increase in emissions from construction	Approach to delivery will result in some increase in emissions but this would be balanced through use of some existing infrastructure and materials.
<b>F</b>	Moderate net increase in emissions from construction	Intervention will result in additional GHG emissions being released. For example, through large scale new construction with only some recycled materials.
<b>G</b>	Significant net increase in emissions from construction	Intervention will result in large quantity of additional GHG emissions being released. For example, through large scale new construction with new materials.

## Criteria 2: Operational Emissions

### *Likely to reduce net operational GHG emissions of the transport network*

#### Why is this important to EEH?

This criterion is important as GHG emissions emitted through the operation of our transport network are a core element in the total emissions released by the sector. Along with Embodied Emissions, understanding, measuring, and reducing these emissions is essential to meet our goals and legal requirements in this area.

Assessment should be informed by:

- Expected emissions resulting from the operation of the intervention, particularly for more progressed schemes where specific calculations have been undertaken based on an accepted standard (for example, DFT TAG);
- Industry best practice standards such as zero carbon emission buses and rail electrification powered by fully renewable electricity; and
- The extent the core scope of the intervention includes elements that address its ability to influence the release or reduction of emissions.

Sources that ensure an evidence-led approach could include:

- Potential for reducing carbon emissions per km travelled; and
- The intervention type and where it is located. For example, an active travel versus major roads intervention in more dense urban areas.

#### Lifecycle Emissions

**An indication of the whole lifecycle emissions of an intervention can be obtained through consideration of embodied and operational emissions over the number of years the asset is expected to be in operation.**

Table 4: How to Apply the Operational Emissions Criteria

	Level of Service Outcome	Description
<b>A</b>	Significant net reduction in overall emissions from transport network operations	Operation of the overall intervention (all elements in its core scope) uses best practice approaches to actively reduce large amounts of total greenhouse gas emissions through use of carbon sequestration and other advanced techniques.
<b>B</b>	Moderate net reduction in overall emissions from transport network operations	Operation of the overall intervention (all elements in its core scope) actively reduces total greenhouse gas emissions through use of carbon sequestration and other advanced techniques.
<b>C</b>	Fewer overall emissions from transport network operations	Operation of the overall intervention (all elements in its core scope) results in a better than net zero carbon equivalent emissions, reducing emissions more each year than it causes their release.
<b>D</b>	No overall change in emissions from transport network operations	Operation of the overall intervention (all elements in its core scope) results in net zero emissions on average across each year.
<b>E</b>	Slight net increase in emissions from transport network operations	Operation of the overall intervention (all elements in its core scope) results in less than net zero carbon equivalent emissions, increasing total emissions each year more than it is able to reduce them.
<b>F</b>	Moderate net increase in emissions from transport network operations	Operation of the overall intervention (all elements in its core scope) uses outdated approaches that result in an overall increase in total greenhouse gas emissions.
<b>G</b>	Significant net increase in emissions from transport network operations	Operation of the overall intervention (all elements in its core scope) expected to cause a significant increase in greenhouse gas emissions with little/no reduction.

### Criteria 3: Modal Shift

***Increase the number and percentage of journeys using active travel and public transport***

Why is this important to EEH?

This criterion is important as it indicates an intervention’s ability to influence travel behaviours within the region and increasing the uptake of active travel and public transport. This includes encouraging use of modes that make better use of existing infrastructure and reduce negative environmental and social impacts of passenger and freight movements.

Assessment should be informed by:

- Whether an intervention will increase access to or uptake of more sustainable transport options, such as giving those who drive private vehicles a comparable alternative by public transport;
- Extent the intervention would support more efficient use of existing transport infrastructure. For example, ability of an enhanced bus services to carry more passengers than a single occupant vehicle; and
- The ways the intervention would make using more sustainable modes more attractive for potential users.

Sources that ensure an evidence-led approach could include:

- Expected unmet demand based on similar projects elsewhere;
- Data and research into the willingness to use alternative modes;
- Modelling and other data into potential for mode shift. For example, current and future population, employment, and other trip generators; evidence on trip lengths by mode; accessibility analysis;
- Discontinuous transport routes and how they will be better connected; and
- Traffic safety and collision data and its alignment to the intervention.

**Table 5: How to Apply the Mode Shift Criteria**

	Level of Service Outcome	Description
<b>A</b>	Significant increase in journeys by active travel or public transport	Intervention is likely to result in substantial numbers of passenger or freight journeys shifting to active modes, public transport, or a combination of the two such as walking, wheeling, cycling or horse-riding.
<b>B</b>	Moderate increase in journeys by active travel or public transport	Intervention avoids an increase in private vehicle traffic with some passenger or freight journeys shifting to active travel, public transport or a combination of public transport services or active travel modes.
<b>C</b>	Slight increase in journeys by active travel or public transport	Intervention is likely to result in some passenger or freight journeys shifting to active travel, public transport or a combination of public transport services or active travel modes.
<b>D</b>	No overall change to journeys by active travel or public transport	Intervention will achieve no net change in the number of passenger or freight journeys being made by public transport or active travel modes each year.
<b>E</b>	Slight reduction in number of journeys made by active travel or public transport	Intervention is likely to result in fewer passenger or freight journeys using a combination of public transport services or active travel modes.
<b>F</b>	Moderate reduction in number of journeys made by active travel or public transport	Intervention results in an increase in private vehicle traffic with fewer passenger or freight journeys using a combination of public transport services or active travel modes.
<b>G</b>	Significant reduction in number of journeys made by active travel or public transport	Intervention results in a significant increase in private vehicle traffic with far fewer passenger or freight journeys using a combination of public transport services or active travel modes.

## Criteria 4: Environment

### *Conserve and enhance the region's natural and historic environments*

#### Why is this important to EEH?

This criterion is important as protecting the region's natural environment, which makes the EEH region an attractive place to live, work and visit. It is an essential element in the responsible operation and future development of our transportation network. Similarly, better understanding and protecting our cultural heritage is a key consideration in the development of proposed transport interventions.

Assessment should be informed by:

- Known environmental risks and opportunities specific to the intervention and or identified in similar projects;
- Extent that environmental and cultural heritage protection is a central element of the core scope for the intervention; and
- Whether a precautionary approach is being taken to identifying and mitigating risks to the natural and historic environment as an intervention is further developed and delivered.

Sources that ensure an evidence-led approach could include:

- Data sources available to EEH such as Magic Map and the Cadence resource; and
- Sustainability, biodiversity, and other impact assessments required through the intervention development and approvals process; and
- Guidance issued by local, national, and international bodies relating to the protection of the region's natural and historic environment. For example, local planning guidelines through to UNESCO World Heritage Site protection plans.

**Table 6: How to Apply the Environment Criteria**

	Level of Service Outcome	Description
<b>A</b>	Significant net improvement in natural and historic environments	Overall intervention is expected to significantly enhance local environment elements such as biodiversity and the quality of waterways, with best practice care taken in preservation of and education around, and sustainable access to historic locations, structures, and sites.
<b>B</b>	Moderate net improvement in national and historic environments	Overall intervention is expected to enhance local environment elements such as biodiversity and the quality of waterways, with particular care taken in preservation of historic locations, structures, and sites.
<b>C</b>	Slight net improvement in national and historic environments	Overall intervention is expected to enhance local environment elements such as biodiversity and the quality of waterways, and protect historic locations, structures, and sites.
<b>D</b>	No overall change to natural and historic environments	Overall intervention expected to maintain current quality of local environment elements such as biodiversity and protect historic locations, structures, and sites.
<b>E</b>	Slight damage to natural and historic environments	Overall intervention expected to result in some damage to the local environment but protect historic locations, structures, and sites.
<b>F</b>	Moderate damage to natural and historic environments	Overall intervention expected to result in damage to the local environment and degrade some historic locations, structures, or sites.
<b>G</b>	Significant damage to natural and historic environments	Overall intervention expected to result in significant damage to the local environment and risks damage or destruction of historic locations, structures, or sites.

## Criteria 5: Safety and Accessibility

*Provide greater levels of safety, inclusivity, affordability, and accessibility*

Why is this important to EEH?

This criterion is important as providing a safe, accessible, affordable, and inclusive transport network is essential in ensuring everyone in the region can access key services and opportunities. Equally important is the ability to move goods across the region without unnecessary friction and high risk of accidents.

Assessment should be informed by:

- Extent the accessible and inclusive design of the intervention will reduce car dependency for journeys by increasing available mode choice, particularly in areas of higher relative deprivation;
- The relative safety and cost of travel after the intervention is delivered, particularly against driving a private vehicle or not travelling; and
- How the intervention will impact perceptions of a safe, inclusive, affordable, and accessible transport network in the region.

Sources that ensure an evidence-led approach could include:

- Compliance with safety and accessibility guidelines, such as British, European, and International design standards;
- Levels of relative deprivation and how the intervention would be expected to impact these (for example, as highlighted by EEH's Cadence tool);
- Data on transport access and choice such as access to key services measured by average journey times;
- Research and other insights on the safety and affordability of passenger and freight services across urban and rural environments; and
- Impact of similar interventions delivered elsewhere and how outcomes have differed from expectation or intentions.

Table 7: How to Apply the Safety and Accessibility Criteria

	Level of Service Outcome	Description
<b>A</b>	Significant improvement toward a safe, inclusive, affordable, and accessible transport network	Intervention will provide far more people with access to a range of transport options, significantly reduce the overall cost of moving people or goods, and or deliver a step change towards creating a safer and more accessible transport network in the region.
<b>B</b>	Moderate improvement toward a safe, inclusive, affordable, and accessible transport network	Intervention will provide greater access to a range of transport options, reduce the overall cost of moving people or goods, and or deliver a step change towards creating a safer and more accessible transport network.
<b>C</b>	Slight improvement toward a safe, inclusive, affordable, and accessible transport network	Intervention will increase the range of transport options, reduce the overall cost of moving people or goods, and or deliver improvements in transport network safety and accessibility.
<b>D</b>	No overall change toward a safe, inclusive, affordable, and accessible transport network	Intervention will achieve no overall change in the range of transport options available, their relative cost, and or deliver no safety and or accessibility improvements.
<b>E</b>	Slight reduction away from a safe, inclusive, affordable, and accessible transport network	Intervention will likely decrease the range of transport options, increase the overall cost of moving people or goods, and or deliver additional safety risks and or accessibility barriers.
<b>F</b>	Moderate reduction away from a safe, inclusive, affordable, and accessible transport network	Intervention will decrease the range of transport options, increase the overall cost of moving people or goods, and or reduce overall transport network safety and or accessibility.
<b>G</b>	Significant reduction away from a safe, inclusive, affordable, and accessible transport network	Intervention significantly decrease available transport options, substantially increase the costs, and or result in a notable decrease in network safety and or accessibility.

## Criteria 6: Health and Wellbeing

### *Improve air quality and the quality of life of local communities*

#### Why is this important to EEH?

This criterion is important as the health and wellbeing of local communities and individual residents is critical in ensuring the transport network meets their needs and enhances their quality of life even when they are not using it.

Assessment should be informed by:

- Existing evidence of the general public health and individual wellbeing benefits or impacts from different modes of travel;
- The known public health impacts likely to result if the intervention is delivered; and
- Impacts on personal wellbeing based on the intervention scope and similar schemes delivered elsewhere. For example, if the intervention helps improve access to greenspace or helps provide uptake of active travel.

Sources that ensure an evidence-led approach could include:

- Travel demand forecasts, particularly on local roads;
- Data available on expected air and noise pollution impacts, particularly in areas with existing or proposed air quality management areas;
- Baselines and projected reductions or increases in resulting health inequalities;
- Feedback provided by local and national public health bodies, including local community health charities; and
- Alignment with national metrics defined by the UK Government, and interventional measures such as the Sustainable Development Goals.

**Table 8: How to Apply the Health and Wellbeing Criteria**

	Level of Service Outcome	Description
<b>A</b>	Significant positive impact to quality of life for local communities	Intervention is closely aligned with public health policies at local and national levels and is expected to significantly improve the quality of life for those using and or living near to the transport network through reduced vehicle traffic, or air and noise pollution.
<b>B</b>	Moderate positive impact to quality of life for local communities	Intervention is aligned with public health policies at local and national levels and is expected to generally improve the quality of life for those using and or living near to the transport network.
<b>C</b>	Slight positive impact to quality of life for local communities	Intervention is generally aligned with public health policies at local and national levels and may improve the quality of life for those using and or living near to the transport network.
<b>D</b>	No overall change in quality of life for local communities	Intervention does not contradict public health policies at local and national levels and is expected to deliver no net change to the quality of life for those using and or living near to the transport network.
<b>E</b>	Slight negative impact to quality of life for local communities	Intervention contradicts some public health policy and is expected to somewhat reduce the quality of life for those using and or living near to the network.
<b>F</b>	Moderate negative impact to quality of life for local communities	Intervention contradicts public health policy and is expected to reduce the quality of life for those using and or living near to the transport network.
<b>G</b>	Strong negative impact to quality of life for local communities	Intervention directly contradicts public health policy and is expected to significantly reduce the quality of life for those using and or living near to the network.

## Criteria 7: Journey Time

### *Reduced journey times and or improve journey time reliability (across all modes)*

#### Why is this important to EEH?

This criterion is important as long or unpredictable journey times can be a significant factor in someone’s willingness to use a particular mode or travel or to travel to, within or through the region at all. Both can also add to poor perceptions of the transport network and wider region.

Assessment should be informed by:

- The extent an intervention is expected to reduce average journey times on either the specific corridor and or across the wider transport network, particularly in peaks periods such as weekday mornings and major events;
- Improvements to reliability of a particular mode’s ability to be used to make a passenger or freight journey (for example, rail enhancements may lead to more reliability but not necessarily shorter peak journey times); and
- Whether the intervention is likely to induce demand in the short or long term that may cause increased journey time variability in the same or other locations. For example, dualling of a strategic road leading to additional traffic on both that route and surrounding local roads.

Sources that ensure an evidence-led approach could include:

- Traffic modelling based on the proposed and similar interventions;
- Research into accuracy of historic traffic modelling undertaken based on older ‘predict and provide’ approaches, particularly within the same region;
- Efficiency metrics of different modes relative to known network capacity; and
- Trends in vehicle use and technology, for example, increased use of lane assists and other driving automation technologies.

Table 9: How to Apply the Journey Time Criteria

	Level of Service Outcome	Description
<b>A</b>	Significant decrease in journey time variability	Intervention will substantially reduce journey time variability making trip planning highly predictable while also avoiding inducing demand that cannot be otherwise accommodated in the transport network.
<b>B</b>	Moderate decrease in journey time variability	Intervention will reduce journey time variability making trip planning more predictable while also mostly avoiding inducing demand that cannot be otherwise accommodated in the transport network.
<b>C</b>	Slight decrease in journey time variability	Intervention will likely reduce journey time variability making trip planning somewhat more predictable while also seeking to avoid inducing demand that cannot be otherwise accommodated in the network.
<b>D</b>	No overall change in journey time variability	Intervention is not expected to make any overall change in journey time variability or induce additional demand on the transport network.
<b>E</b>	Slight increase in journey time variability	Intervention will likely increase reduce journey time variability making trip planning somewhat less predictable while also avoiding inducing demand that cannot be otherwise accommodated in the network.
<b>F</b>	Moderate increase in journey time variability	Intervention will increase journey time variability making trip planning less predictable and may induce demand that cannot be otherwise accommodated in the transport network.
<b>G</b>	Significant increase in journey time variability	Intervention will significantly increase journey time variability and induce demand that cannot be otherwise accommodated in the transport network.

## Criteria 8: Economic Growth

### *Support sustainable economic growth and inward investment in all areas*

#### Why is this important to EEH?

Ours is one of the world’s leading economic regions, with its success founded on science and technology innovation, powered by a network of world-leading universities and research centres. This criterion is important as sustainable economic growth and inward investment will reinforce the region’s role as an innovation powerhouse and help grow job opportunities and incomes for all.

Assessment should be informed by:

- Likely economic growth unlocked by the intervention, particular types of growth that do not rely on consumption of non-renewable resources and remain within the capacity of those that are renewable;
- How the core project scope seeks to better leverage public and private sector funds to foster an even more resilient regional economy; and
- Whether an intervention is aligned to best practice land use planning and will support refurbishment, regeneration of existing communities or directly support planned development.

Sources that ensure an evidence-led approach could include:

- Alignment with adopted local plans and similar documents developed based on sustainable economic growth principles. For example, supporting strategic growth sites around existing multimodal corridors as identified in Project View and EEH’s Places of Strategic Importance work;
- Benchmarking against appraisals and or evaluations of what has worked in the past and their impacts;
- Jobs growth projections based on the intervention, particularly those including local apprenticeships leading to long term careers; and
- Alignment with the regions existing economic strengths, such as advanced research and development undertaken in partnership with the universities of Oxford, Cambridge, and elsewhere.

Table 10: How to Apply the Economic Growth Criteria

	Level of Service Outcome	Description
<b>A</b>	Significant economic or investment benefits	Intervention is expected to support a wider and significant shift to more sustainable economic and jobs growth across the region, and or to attract large levels of additional inward investment to the area (for example, investment into advanced research).
<b>B</b>	Moderate economic or investment benefits	Intervention is expected to support a wider shift to more sustainable economic and jobs growth across the region, and or to attract additional inward investment to the area.
<b>C</b>	Slight economic or investment benefits	Intervention is likely to support a shift to more sustainable economic and jobs growth across the region, and or could attract additional inward investment to the area.
<b>D</b>	No overall change to economic growth or investment	Intervention is not expected to result in any overall change to jobs, economic growth, or inward investment to the area.
<b>E</b>	Slight economic or investment cost	Intervention is likely to work against a shift to more sustainable economic and jobs growth across the region, and or could push away additional investment.
<b>F</b>	Moderate economic or investment cost	Intervention is expected to work against a wider shift to more sustainable economic and jobs growth across the region, and or to push away additional investment.
<b>G</b>	Significant economic or investment cost	Intervention is expected to actively work against a wider and significant shift to more sustainable economic and jobs growth across the region, and or push away large levels of additional investment.

## Criteria 9: Local Connectivity

*Improve the connectivity in and/or between places of strategic importance and key economic centres*

Why is this important to EEH?

This criterion is important as connecting places of strategic importance within the region is a core focus of sub-national transport bodies work to support Local Transport Authorities. Improved local connectivity is also essential for improving wider connectivity to, from and through the region.

Assessment should be informed by:

- The extent to which an intervention will improve connections in and or between places of strategic importance such as towns, education institutions, and large employment sites;
- How the intervention will complement other existing modes to expand choice and network resilience for passenger and freight journeys between places of strategic importance; and
- The frequency, operating hours, and reliability of services.

Sources that ensure an evidence-led approach could include:

- Intervention specific proposals on local transport changes and impacts;
- EEH Places of Strategic Importance dataset and associated work;
- Local Transport Plans, Bus Service Improvement Plans, active travel strategies and similar work from local transport authorities; and
- Levelling up policies and recommendations.

Table 11: How to Apply the Local Connectivity Criteria

	Level of Service Outcome	Description
<b>A</b>	Significant improvement to local strategic connectivity	Intervention is expected to lead to a substantial improvement in local connectivity for passengers and/or goods between places of strategic importance.
<b>B</b>	Moderate improvement to local strategic connectivity	Intervention is expected to lead to an improvement in local connectivity for passengers and/or goods between places of strategic importance.
<b>C</b>	Slight improvement to local strategic connectivity	Intervention is likely to lead to an improvement in local connectivity for passengers and/or goods between places of strategic importance.
<b>D</b>	No overall change to local strategic connectivity	Intervention is not expected to deliver any overall change in local connectivity for passengers or goods between places of strategic importance.
<b>E</b>	Slight reduction to local strategic connectivity	Intervention is likely to lead to a decrease in local connectivity for passengers and/or goods between places of strategic importance.
<b>F</b>	Moderate reduction to local strategic connectivity	Intervention is expected to lead to a decrease in local connectivity for passengers and/or goods between places of strategic importance.
<b>G</b>	Significant reduction to local strategic connectivity	Intervention is expected to lead to a significant decrease in local connectivity for passengers and/or goods between places of strategic importance.

## Criteria 10: Regional Connectivity

*Encourage the safe and sustainable movement of people and goods throughout the region(s) and/or to international gateways*

Why is this important to EEH?

This criterion is important as improving wider connectivity to, from and through the region is an essential element in strategic transport planning that complements considerations of Local Connectivity. A core aspect of regional connectivity is ensuring people and freight can move easily to and from international gateways such as airports, ports, and the Channel Tunnel.

Assessment should be informed by:

- The extent an intervention will improve access to an international gateway within or beyond the region. For example, improving connections to Heathrow or Luton Airports;
- How the intervention will complement other existing modes to expand choice and network resilience for passenger and freight journeys to, from and through the region and international gateways; and
- The frequency, operating hours, and reliability of services.

Sources that ensure an evidence-led approach could include:

- Alignment to plans of national network operators such as Sustrans, National Highways and Network Rail;
- Local and national freight and international travel strategies; and
- Studies that show how the intervention or similar projects can contribute to the safer and more sustainable movement of people and goods. For example, case studies, research papers and industry best practice guidance.

Table 12: How to Apply the Regional Connectivity Criteria

	Level of Service Outcome	Description
<b>A</b>	Significant improvement to regional strategic connectivity	Intervention is expected to lead to a substantial improvement in regional connectivity for passengers and or goods to, from and through the region and international gateways.
<b>B</b>	Moderate improvement to regional strategic connectivity	Intervention is expected to lead to an improvement regional connectivity for passengers and or goods to, from and through the region and international gateways.
<b>C</b>	Slight improvement to regional strategic connectivity	Intervention is likely to lead to an improvement regional connectivity for passengers and or goods to, from and through the region and international gateways.
<b>D</b>	No overall change to regional strategic connectivity	Intervention is not expected to deliver any overall change in regional connectivity for passengers and or goods to, from and through the region and international gateways.
<b>E</b>	Slight reduction to regional strategic connectivity	Intervention is likely to lead to a decrease in regional connectivity for passengers and or goods to, from and through the region and international gateways.
<b>F</b>	Moderate reduction to regional strategic connectivity	Intervention is expected to lead to a decrease in regional connectivity to, from and through the region and international gateways.
<b>G</b>	Significant reduction to regional strategic connectivity	Intervention is expected to lead to a significant decrease regional connectivity to, from and through the region and international gateways.

## Criteria 11: Strategic Routes

*Ensure strategic journeys can use and keep to strategic routes*

Why is this important to EEH?

This criterion is important as it is focused on limiting the impact of strategic freight and passenger journeys on local routes and communities by better ensuring they make use of designated strategic rail and road infrastructure. For example, seeking to reduce the impact of HGVs on local villages and rural areas.

Assessment should be informed by:

- The extent to which an intervention is likely to change routes taken by strategic freight or passenger services where these involve unnecessary use of local networks;
- How the intervention will enable strategic journeys on strategic routes; and
- Ways in which an intervention would force strategic freight and passenger services to use designated strategic rail and road infrastructure when moving throughout the region.

Sources that ensure an evidence-led approach could include:

- Traffic modelling forecasts for the specific intervention and or similar projects. For example, freight routing and how the intervention impacts HGV movements;
- Best practice approaches for non-strategic road remodelling to reinforce their role as part of local networks; and
- Surveys and other insights into local perceptions around strategic journeys over time. For example, opinions on the impact of HGVs.

**Table 13: How to Apply the Strategic Routes Criteria**

	Level of Service Outcome	Description
<b>A</b>	Significant increase in strategic journeys staying on strategic routes	Overall the intervention is expected to substantially reduce the impact of strategic passenger and or freight journeys on local communities by encouraging the use of designated purpose-built routes.
<b>B</b>	Moderate increase in strategic journeys staying on strategic routes	Overall the intervention is expected to reduce the impact of strategic passenger and or freight journeys on local communities by encouraging the use of designated purpose-built routes.
<b>C</b>	Slight increase in strategic journeys staying on strategic routes	Overall the intervention is likely to reduce the impact of strategic passenger and or freight journeys on local communities by encouraging the use of designated purpose-built routes.
<b>D</b>	No overall change increase in strategic journeys staying on strategic routes	No overall change expected from the intervention on the number, percentage, or impact of strategic journeys using non-strategic routes.
<b>E</b>	Slight reduction in strategic journeys staying on strategic routes	Overall the intervention is likely to increase the impact of strategic passenger and or freight journeys on local communities by encouraging the use of designated purpose-built routes.
<b>F</b>	Moderate reduction in strategic journeys staying on strategic routes	Overall the intervention is expected to increase the impact of strategic passenger and or freight journeys on local communities by encouraging the use of designated purpose-built routes.
<b>G</b>	Significant reduction in strategic journeys staying on strategic routes	Overall the intervention is expected to significantly increase adverse impacts from strategic passenger and or freight journeys on local communities.

## Criteria 12: Interchange

### *Facilitate more frictionless transfer between modes for people and goods*

#### Why is this important to EEH?

This criterion is important as the transfer between modes can often be the weakest points in a multimodal transport network, influencing perspective on ease and desirability of a multi-modal journey. Reducing friction at those movements in any journey can improve the efficiency of the existing network infrastructure and build stronger cases for investments in expanding modal choice for passenger and freight movements.

Assessment should be informed by:

- The extent to which an intervention will improve perceived friction when transferring between modes, such as making it easier to understand how to transfer between a train and bus service; and
- The extent to which an intervention will reduce or remove actual moments of friction when transferring between modes, such as moving goods to or from last mile delivery options, like cargo bikes.

Sources that ensure an evidence-led approach could include:

- Best practice in improving connections between modes, such as guidance on developing mobility hubs and interchanges or alignment of timetables and services;
- Existing public transport and car demand by corridor through key nodes and forecast growth in demand and local development;
- The expected increase in modes or services thereof being provided in a specific location; and
- The existing complexity of the points of interchange and extent to which the intervention will deliver meaningful improvement.

**Table 14: How to Apply the Interchange Criteria**

	Level of Service Outcome	Description
<b>A</b>	Significant improvement in frictionless transfer between modes	Intervention is expected to substantially improve the actual and perceived interchange experience between multiple different modes moving freight and or passengers.
<b>B</b>	Moderate improvement in frictionless transfer between modes	Intervention is expected to improve the actual and perceived interchange experience between multiple different modes moving freight and or passengers.
<b>C</b>	Slight improvement in frictionless transfer between modes	Intervention is likely to improve the actual and perceived interchange experience between different modes moving freight and or passengers.
<b>D</b>	No change in frictionless transfer between modes	The intervention will not result in any overall change in the interchange experience for passengers or goods.
<b>E</b>	Slight reduction in frictionless transfer between modes	Intervention is likely to present barriers to the actual and perceived interchange experience between different modes moving freight and or passengers.
<b>F</b>	Moderate reduction in frictionless transfer between modes	Intervention is expected to present barriers to the actual and perceived interchange experience between multiple different modes moving freight and or passengers.
<b>G</b>	Significant reduction in frictionless transfer between modes	Intervention is expected to present significant barriers to the actual and perceived interchange experience between multiple different modes moving freight and or passengers.

# Appendix A: List of Source Documents

The following are the primary source documents from which the initial Long List for the EEH Investment Prioritisation Framework. The range of formats in how possible interventions were presented and described required interpretation by the project team, which further updates made through stakeholder moderation to ensure entries in the first version of the Framework were as accurate and up to date as possible.

- [EEH Transport Strategy: Connecting People, Transforming Journeys](#) (2021)
- [EEH Connectivity Studies Programme](#)\*
  - *EEH Connectivity Study 1 – Oxford - Milton Keynes (2022)*
  - *EEH Connectivity Study 2 – Peterborough – Northampton (2022)*
  - *EEH Connectivity Study 3 – Swindon – Didcot – Oxford (2023)*
  - *EEH Connectivity Study 4 – Thames Valley – Northampton (2024)*
  - *EEH Connectivity Study 5 – Southern East West Movements (2024)*
- [EEH Regional Bus Strategy](#) (2022)
- [EEH Strategic Rail Objectives](#) (2023)
- [EEH Passenger Rail Study Phase One](#) (2020)
- [EEH Passenger Rail Study Phase Two](#) (2021)
- [EEH Freight Study](#) (2019)
- EEH Oxford to Cambridge Area Connectivity: Roads Study
- [Department for Transport Road Investment Strategy 2 \(RIS2\): 2020 to 2025](#) (2020)
- [Department for Transport Rail Network Enhancements Pipeline Autumn 2019 Schemes Update](#) (2019)
- [EEH East West Rail Strategic Narrative](#) (2022)
- [EEE Active Travel Strategy Phase 1: The Ambition](#) (2022)
- [EEH Active Travel Strategy Phase 2: The Opportunity](#) (2023)
- EEH & Sustrans Varsity Way Network Assessment and Options Development 2021-2022 (2022)
- MDS Transmodal for EEH, The Importance of Rail Freight to England’s Economic Heartland (2022)
- [East West Mian Line Partnership, Building Better Connections: The business imperative for EWR](#) (2022)
- [National Infrastructure Commission, National Infrastructure Assessment 1](#) (2018)

\*The sixth and final study is due to be completed in early 2025 and will be integrated into the Framework as part of a subsequent update

## Appendix B: Example Levels of Service Assessments

The following are a series of indicative Level of Service (LOS) assessments to provide further insight into how scores may be allocated. Individual intervention scores will vary based on the location and nature of what is proposed, and may evolve as a proposal is assessed in more detail toward a Full Business Case and delivery.

		Criteria 1: Embodied Emissions	Criteria 2: Operational Emissions	Criteria 3: Modal Shift	Criteria 4: Environment	Criteria 5: Safety and Accessibility	Criteria 6: Health and Wellbeing	Criteria 7: Journey Time	Criteria 8: Economic Growth	Criteria 9: Local Connectivity	Criteria 10: Regional Connectivity	Criteria 11: Strategic Routes	Criteria 12: Interchange
EEH000ZZZ1	Mass Rapid Transit Scheme	E	A	A	C	A	A	B	B	A	C	D	A
EEH000ZZZ2	Ax Road Dual Carriageway	G	F	F	F	C	F	A	A	B	B	A	D
EEH000ZZZ3	Rail Junction Capacity Enhancements	F	A	B	B	C	C	A	A	B	A	A	A
EEH000ZZZ4	Active Travel Link	X	X	C	C	C	A	X	X	C	D	D	X
EEH000ZZZ5	Strategic Mobility Hub	E	C	B	C	B	B	D	D	A	B	D	A

## Example 1: Mass Rapid Transit Scheme

**Project Description:** X to support Y Strategy Implementation of a high quality MRT service delivering a fast and attractive public transport connection on segregated routes across X, potentially linked to expanding network of strategic mobility hubs in the region. The system would provide: dedicated running lanes; priority at junctions; distinctive stops with real-time passenger information; cashless payment systems and network branding.

### Indicative LOS scores:

Criteria 1: Embodied Emissions	Criteria 2: Operational Emissions	Criteria 3: Modal Shift	Criteria 4: Environment	Criteria 5: Safety and Accessibility	Criteria 6: Health and Wellbeing
E - Slight net increase in emissions from construction	A - Significant net reduction in overall emissions from transport network operations	A - Significant increase in journeys by active travel or public transport	C - Slight net improvement in national and historic environments	A - Significant improvement toward a safe, inclusive, affordable, and accessible transport network	A - Significant positive impact to quality of life for local communities
Criteria 7: Journey Time	Criteria 8: Economic Growth	Criteria 9: Local Connectivity	Criteria 10: Regional Connectivity	Criteria 11: Strategic Routes	Criteria 12: Interchange
B - Moderate decrease in journey times and or improvement in journey time reliability	B - Moderate economic or investment benefits	A - Significant improvement to local strategic connectivity	C - Slight improvement to regional strategic connectivity	D - No overall change increase in strategic journeys staying on strategic routes	A - Significant improvement in frictionless transfer between modes

## Example 2: Dual Carriageway

**Project Description:** As part of X improvements the Y road will be dualled. The scheme will build upon the already complete and under other construction phases to deliver online dualling of the existing single carriageway, with dualling up to the Roundabout and beyond still required between Y and Z.

### Indicative LOS scores:

Criteria 1: Embodied Emissions	Criteria 2: Operational Emissions	Criteria 3: Modal Shift	Criteria 4: Environment	Criteria 5: Safety and Accessibility	Criteria 6: Health and Wellbeing
<i>G - Significant net increase in emissions from construction</i>	<i>F - Moderate net increase in emissions from transport network operations</i>	<i>F - Moderate reduction in number of journeys made by active travel or public transport</i>	<i>F - Moderate damage to natural and historic environments</i>	<i>C - Slight improvement toward a safe, inclusive, affordable, and accessible transport network</i>	<i>F - Moderate negative impact to quality of life for local communities</i>

Criteria 7: Journey Time	Criteria 8: Economic Growth	Criteria 9: Local Connectivity	Criteria 10: Regional Connectivity	Criteria 11: Strategic Routes	Criteria 12: Interchange
<i>B - Moderate decrease in journey times and or improvement in journey time reliability</i>	<i>A - Significant economic or investment benefits</i>	<i>B - Moderate improvement to local strategic connectivity</i>	<i>B - Moderate improvement to regional strategic connectivity</i>	<i>A - Significant increase in strategic journeys staying on strategic routes</i>	<i>D - No change in frictionless transfer between modes</i>

### Example 3: Rail Junction Capacity Enhancements

**Project Description:** To increase capacity through the X for freight and passenger services. This intervention enables freight movements between Y and Z and would also enable modal shift from road to rail for freight. X is a bottleneck.

#### Indicative LOS scores:

Criteria 1: Embodied Emissions	Criteria 2: Operational Emissions	Criteria 3: Modal Shift	Criteria 4: Environment	Criteria 5: Safety and Accessibility	Criteria 6: Health and Wellbeing
F - Moderate net increase in emissions from construction	A - Significant net reduction in overall emissions from transport network operations	B - Moderate increase in journeys by active travel or public transport	B - Moderate net improvement in national and historic environments	C - Slight improvement toward a safe, inclusive, affordable, and accessible transport network	C - Slight positive impact to quality of life for local communities
Criteria 7: Journey Time	Criteria 8: Economic Growth	Criteria 9: Local Connectivity	Criteria 10: Regional Connectivity	Criteria 11: Strategic Routes	Criteria 12: Interchange
A - Significant decrease in journey times and or improvement in journey time reliability	A - Significant economic or investment benefits	B - Moderate improvement to local strategic connectivity	A - Significant improvement to regional strategic connectivity	A - Significant increase in strategic journeys staying on strategic routes	A - Significant improvement in frictionless transfer between modes

## Example 4: Active Travel Link

**Project Description:** *No further details provided*

**Indicative LOS scores:**

Criteria 1: Embodied Emissions	Criteria 2: Operational Emissions	Criteria 3: Modal Shift	Criteria 4: Environment	Criteria 5: Safety and Accessibility	Criteria 6: Health and Wellbeing
X - Unknown	X - Unknown	C - Slight increase in journeys by active travel or public transport	C - Slight net improvement in national and historic environments	C - Slight improvement toward a safe, inclusive, affordable, and accessible transport network	A - Significant positive impact to quality of life for local communities

Criteria 7: Journey Time	Criteria 8: Economic Growth	Criteria 9: Local Connectivity	Criteria 10: Regional Connectivity	Criteria 11: Strategic Routes	Criteria 12: Interchange
X - Unknown	X - Unknown	C - Slight improvement to local strategic connectivity	D - No overall change to regional strategic connectivity	D - No overall change increase in strategic journeys staying on strategic routes	X - Unknown

## Example 5: Strategic Mobility Hubs

**Project Description:** Measures between Y and Z to reduce bus journey times, improve reliability and facilitate the introduction of new express bus services, including Upgrades to all stops services by existing X service between Y and Z; Bus priority between A and B; Bus priority at X junction south of Y; Bus priority at X roundabout in Y; X Interchange in Y (e.g., mode filter on X and / or road space reassignment on Y); and Bus priority at X.

### Indicative LOS scores:

Criteria 1: Embodied Emissions	Criteria 2: Operational Emissions	Criteria 3: Modal Shift	Criteria 4: Environment	Criteria 5: Safety and Accessibility	Criteria 6: Health and Wellbeing
E - Slight net increase in emissions from construction	C - Fewer overall emissions from transport network operations	B - Moderate increase in journeys by active travel or public transport	C - Slight net improvement in national and historic environments	B - Moderate improvement toward a safe, inclusive, affordable, and accessible transport network	B - Moderate positive impact to quality of life for local communities
Criteria 7: Journey Time	Criteria 8: Economic Growth	Criteria 9: Local Connectivity	Criteria 10: Regional Connectivity	Criteria 11: Strategic Routes	Criteria 12: Interchange
D - No overall change in journey times or journey time reliability	D - No overall change to economic growth or investment	A - Significant improvement to local strategic connectivity	B - Moderate improvement to regional strategic connectivity	D - No overall change increase in strategic journeys staying on strategic routes	A - Significant improvement in frictionless transfer between modes

## Endnotes for Methodology Technical Note

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<sup>i</sup> BREEAM Infrastructure (<https://bregroup.com/products/ceequal/>)

<sup>ii</sup> Department for Transport, Transport Analysis Guidance (TAG) unit A3 Environmental Impact Appraisal (<https://www.gov.uk/government/publications/tag-unit-a3-environmental-impact-appraisal>)

<sup>iii</sup> PAS 2080:2023 Carbon management in buildings and infrastructure (<https://www.bsigroup.com/en-GB/standards/pas-2080/>)

<sup>iv</sup> What are Scope 1, 2 and 3 Emissions (<https://www.nationalgrid.com/stories/energy-explained/what-are-scope-1-2-3-carbon-emissions>)