Department for Transport

Local Authority Major Schemes

Benefits Management and Evaluation Framework

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Foreword

Effective investment in local transport is vital to growing our economy, improving communities, and delivering better services for people across the country. This Benefits Management and Evaluation Framework is a key tool to help us understand how well public money is being spent and ensure that every pound delivers real value.

For local authorities delivering transport schemes, this framework provides practical steps to track progress, strengthen the evidence base, and make the case for future investment. It draws on best practice from established sources such as Transport Analysis Guidance (TAG), the Magenta Book, and the Green Book, while reflecting real-world lessons from local scheme promoters.

By learning what works and sharing that knowledge, we can support better decision-making, improve outcomes, and deliver the transport infrastructure that communities need. This framework makes it easier to gather high-quality evidence without placing unnecessary burdens on local authorities, enabling robust evaluation at both the project and programme level.

We are committed to ensuring that public investment drives meaningful change. With this framework, we are setting out clear, practical principles to guide future decisions and deliver lasting benefits for people across the country.

Ian Mulheirn, Chief Analyst

1. Introduction and scope

1.1 The purpose of this framework is to set out the scope and requirements for the benefits management and evaluation of local authority major schemes seeking approval for funding by the Department for Transport (DfT). This includes schemes seeking approval for funding by the Major Road Network (MRN) and Large Local Majors (LLM) programmes. The Department may also apply this framework to the evaluation of other local transport funding, to be agreed with scheme promoters. This framework provides an update to the 2012 monitoring and evaluation framework for local authority major schemes.

1.2 The guidance in this document is primarily aimed at local authority scheme promoters and relevant stakeholders (such as external consultants) involved in the benefits management and evaluation of local authority major schemes related to:

- Local major road and bridge improvements or enhancements, including those impacting bus operations and active travel;
- Tram and light rail;
- Rail projects that fall under the remit of local authorities, such as local improvements to rail stations; and
- Road renewals and major maintenance.

The importance of benefits management and evaluation

1.3 The funding of local authority major schemes represents a substantial investment for the government. This benefits management and evaluation framework is a key tool to help us understand how well public money is being spent and ensure that every pound delivers real value, providing practical steps to track progress, strengthen the evidence base, and make the case for future investment.

1.4 High quality benefits management and evaluation will enable us to learn what works, support better decision-making, improve outcomes, and deliver the transport infrastructure that communities need. The DfT encourages scheme promoters to use benefits management and evaluation alongside one another to produce proportionate evidence on the benefits and impacts of local authority major schemes.

1.5 Benefits management is the identification, definition, planning, tracking, realisation and optimisation of benefits (i.e. the measurable changes that a scheme seeks to deliver). It aims to ensure that organisations realise the planned benefits from their investment. The benefits management of local authority major schemes will provide visibility of whether anticipated benefits are being realised so that benefits can be optimised so they outweigh scheme costs. It also ensures those benefits are managed and monitored beyond the point of scheme completion. The Infrastructure and Projects Authority supports the use of benefits management on government major projects.

1.6 Evaluation is an important activity for any learning organisation which aims to progressively improve its performance. It is a systematic process for understanding the relationships between a scheme's design, implementation and impact within the context in which it is delivered. The evaluation of local authority major schemes will help to understand how a scheme is being or has been implemented, what effects it has, for whom and why. It will identify what can be improved and estimates its overall impacts and cost-effectiveness.

1.7 Together, the benefits management and evaluation of local authority major schemes can deliver the following objectives:

- Provide accountability for the investment;
- Generate evidence to inform future spending decisions;
- Learn about which schemes deliver cost-effective transport solutions and under what circumstances;
- Enhance the operational effectiveness of existing schemes or future schemes; and
- Improve future initiatives based on learning.

1.8 Taking a consistent approach to benefits management and evaluation across local authority major schemes additionally allows meta-evaluation to be carried out by DfT on a periodic basis. This enables dissemination of good practice and lessons learnt across the programme. Examples of previous meta-evaluations can be found here. These have helped to identify that DfT funded local authority major schemes have generally improved local journey times, congestion, traffic flow, reliability, and passenger satisfaction, while often delivering high or very high value for money.

1.9 Overarching guidance on transport-related evaluation can be found in TAG unit E-1. This framework complements TAG unit E-1 by setting out the expectations and guidance tailored to the local authority major schemes context.

Structure of the framework

- **Section 1 - Introduction and scope**. This section sets out the purpose and scope of the framework, the importance of benefits management and evaluation, the structure of the framework, and a summary of updates made since the 2012 framework.

- **Section 2 - Information for scheme promoters**. This section sets out expectations for the benefits management and evaluation of local authority major schemes. It covers schemes in scope, funding benefits management and evaluation activities, quality assurance, milestones with scheme promoter sign-off responsibility, engagement with DfT, scheme typologies, evaluation tiers, and reporting requirements including scheme metrics.

- **Section 3 - Linking benefits management, evaluation, and the business case**. This section provides recommendations to scheme promoters and evaluation practitioners to ensure effective integration between the appraisal, benefits management, and evaluation of a scheme. It includes an overview of benefits management, evaluation, the relationship between the two, and how benefits management and evaluation activity relate to transport appraisal and development of the business case.

- **Section 4 - Theory of change**. Planning a scheme's benefits management and evaluation requires a thorough understanding of the intervention, the outcomes it is expected to achieve and exactly how it is expected to produce these results, i.e., the theory of change. The development of the theory of change should be used to support the design, delivery, and evaluation of an intervention. This section sets out the components to consider when developing a scheme's theory of change, approaches used to set out what an intervention is expected to achieve, and an example logic map visualisation.

- **Section 5 - Lessons learned and process evaluation**. For both benefits management and evaluation, it is best practice to capture and share lessons learned. This includes identifying the successes that occurred during scheme implementation, the challenges and difficulties encountered, and practices that were effective in achieving the desired outcomes. This section summarises the requirements for lessons learned and process evaluation, including the difference between a lighter-touch lessons learned exercise compared to process evaluation, the types of questions to ask, and the typical steps required.

- **Section 6 - Impact evaluation**. Impact evaluation seeks to understand what difference a scheme has made. Impact evaluation of local authority major schemes requires assessing a range of outcomes and impacts, and whether these can be attributed to the scheme in question. This section includes information on the types of questions to ask, steps to conduct an impact evaluation, different approaches to impact evaluation, data requirements, and a note on the use of model-based approaches.

- **Section 7 - Value for money evaluation**. Value for money evaluation is about understanding whether a scheme represents a good use of resources. Evaluations of local authority major schemes should include evaluating the extent to which value for money has been, or is on course to being, achieved. This section includes guidance on the criteria to assess the value for money of government spending, and how to evaluate a scheme's outturn value for money and other relevant impacts such as distributional impacts.

- **Section 9 - Further resources**. This section includes links to government resources which will be useful to scheme promoters and those involved in the benefits management and evaluation of local authority major schemes.

- **Annex A - Reporting requirements and recommend sources**. This annex provides information on reporting requirements and recommended sources to be measured throughout a scheme's evaluation. It includes details on metrics, suggested data sources, and units and method of measurement for each category of measures. It provides information on when measures should be reported on, and real-world examples of evaluation.

- **Annex B - Logic maps for each scheme typology**. This annex contains example logic maps for each of the scheme typologies. These are helpful starting points to be used when considering a scheme's theory of change.

- **Annex C - Glossary of specialist terms**. This annex contains a glossary of key terms relevant to benefits management and evaluation, and a table of acronyms.

Updates since the 2012 monitoring and evaluation framework for local authority major schemes

1.10 The framework has been updated to provide more detailed guidance to scheme promoters, support higher quality and proportionate benefits management and evaluation for learning and accountability purposes, and to ensure the framework is aligned with updates to key analytical guidance documents (including TAG, Magenta Book, Green Book).

1.11 This updated framework has implemented the following changes to improve the benefits management and evaluation of local authority major schemes:

- A clear set of definitions of relevant terms and concepts to enable a shared understanding between professionals with different backgrounds, available in the glossary (Annex C). As this is a benefits management and evaluation framework, appraisal definitions are outside the remit of this document. Information on appraisal terminology can be found in TAG.

- A recommendation to adopt a joint benefits management and evaluation approach (Sections 2 and 3), including new guidelines on reporting.

- Improved flexibility in relation to benefits management and evaluation requirements so that plans can be tailored to specific scheme objectives and characteristics (Section 2, and the accompanying benefits management and evaluation plan template).

- Updated guidance on the selection and design of benefits management and evaluation approaches in a local authority major schemes context (Sections 2 and 6).

- New guidance on how benefits management and evaluation activity relate to transport appraisal and development of the business case (Section 3).

- New guidance on evaluation of outturn value for money (Section 7).

- A set of suggested metrics (including sources, units, and methods of measurement) to promote consistent data collection across local authority major schemes (Annex A).

- Increased support for scheme promoters to meet the framework's requirements, including resources such as report templates.

2. Information for scheme promoters

2.1 This section sets out expectations for the benefits management and evaluation of local authority major schemes. It covers:

- Key things to know (schemes in scope, funding benefits management and evaluation, quality assurance, and milestones requiring scheme promoter sign-off);
- Engagement with DfT;
- Details of scheme typologies and evaluation tiers; and
- Reporting requirements, including collection of scheme metrics.

Key things to know

Schemes in scope

2.2 Schemes required to follow this benefits management and evaluation framework include those funded by the Major Road Network (MRN) and Large Local Majors (LLM). Further information on the MRN and LLM programmes, including the types of schemes eligible for funding, is available here. The Department may also apply this framework to the evaluation of other local transport funding, to be agreed with scheme promoters.

Funding benefits management and evaluation

2.3 Delivery of benefits management and evaluation activities should be regarded as a core function in the delivery of a transport scheme and should be budgeted for from an early stage of planning. An initial estimate of the proposed budget for benefits management and evaluation activities should be included in the Strategic Outline Case (SOC) and finalised by submission of the Full Business Case (FBC).

2.4 Scheme promoters should classify the funding for benefits management and evaluation activities as a capital (CDEL) expense (as long as the scheme is CDEL or expenses meet the ESA10 classification as set out in HM Treasury's Consolidated Budgeting Guidance Annex C) and ensure budget for these activities is retained

accordingly throughout the duration of the scheme evaluation. Funding of benefits management and evaluation remains the responsibility of the scheme promoter.

2.5 The benefits management and evaluation plan template provides a section to indicate the allocated budget for benefits management and evaluation activities, which scheme promoters may wish to use to internally ringfence this funding.

2.6 There is no 'one size fits all' approach for determining an appropriate budget for evaluation activities. However, scheme promoters are encouraged to consider proportionality: the scale, detail, and cost of evaluation should be proportionate for the scheme. As a 'ready reckoner', TAG unit E-1 notes that some authorities allocate between 0.5 - 5% of the overall scheme budget for evaluation activities, although evaluation experts should be consulted early on when considering an appropriate budget.

Quality assurance

2.7 Scheme promoters are responsible for the quality assurance of benefits management and evaluation reports before submitting them to DfT for review.

2.8 The Aqua Book: guidance on producing quality analysis for government - GOV.UK (www.gov.uk) provides guidance on the level of quality assurance to be undertaken in proportion to the analysis and overall project. This can help set the parameters of the quality assurance during the project scoping stage, although it should be reviewed to ensure applicability throughout the project life cycle with amendments made as necessary.

Benefits management and evaluation milestones

2.9 Tables 1 and 2 set out the milestones, related product or action, and timings for the design, preparation, and delivery of benefits management and evaluation of local authority major schemes. The requirements will involve input from a range of colleagues, including delivery professionals and analysts. Scheme promoters are responsible for ensuring each milestone is completed in a timely manner.

2.10 The DfT contact email address for all benefits management and evaluation queries is local.evaluation@dft.gov.uk.

Scheme approval stage

Requirement	Related product	When?	Who?	Sign off responsibility
Assign scheme to a typology (or typologies) Produce a draft logic map (see Annex B for examples)	Logic map Benefits management and evaluation plan	Strategic Outline Case (SOC)	Scheme promoter, project team, local evaluation analysts	Scheme promoter
Agree budget for benefits management and evaluation and include in the SOC	SOC	Complete for SOC	Scheme promoter, project team, local evaluation analysts	Scheme promoter
Agree evaluation tier with DfT (email or MS Teams call depending on complexity)	Benefits management and evaluation plan	Start for Outline Business Case (OBC)	Scheme promoter, local evaluation analysts	Scheme promoter
Identify expected benefits and set out how they will be measured and when they will be realised	Benefits profiles Benefits management and evaluation plan	Complete for Full Business Case (FBC)	Project team, local appraisal analysts	Scheme promoter
Define how benefits management and evaluation will be undertaken and how activities will be resourced over time	Benefits management and evaluation plan	Complete for FBC	Scheme promoter, project team, local evaluation analysts	Scheme promoter
Define roles and responsibilities for benefits management and evaluation, ensuring these extend to post delivery	Benefits management and evaluation plan	Complete for FBC	Scheme promoter, project team, local evaluation analysts	Scheme promoter
Produce appraisal handover pack	Appraisal handover pack Benefits management and evaluation plan	Complete for FBC	Local appraisal analysts	Scheme promoter
Submit benefits management and evaluation plan to DfT for review. DfT approval required prior to FBC submission	Benefits management and evaluation plan	Complete for FBC	Scheme promoter	Scheme promoter, DfT analysts

Table 1 Milestones for benefits management and evaluation activities: scheme approval stage

Scheme delivery / post-delivery stage

Requirement	Related product	When?	Who?	Sign off responsibility
Actively manage benefits with findings used to inform scheme decision making	Internal benefits management reporting	Throughout lifecycle, including post scheme opening	Project team	Scheme promoter
Monitor the scheme's benefits, outcomes, and impacts	Benefits management and evaluation reports (Year 1 and Year 3)	Throughout lifecycle, including post scheme opening	Project team, local evaluation analysts	Scheme promoter
Complete lessons learned exercise or process evaluation	Year 1 benefits management and evaluation report	Complete soon after scheme opening, include write-up in Year 1 report	Project team and/or local evaluation analysts	Scheme promoter
Submit Year 1 report for DfT review. Final report to be agreed by scheme promoter and DfT	Year 1 benefits management and evaluation report	Once one year of data has been collected post scheme opening	Scheme promoter, project team, local evaluation analysts	Scheme promoter, DfT analysts
Complete impact and value for money evaluation	Year 3 benefits management and evaluation report	Once three years of data has been collected post scheme opening	Local evaluation analysts	Scheme promoter
Submit Year 3 report for DfT review (standard tier schemes only). Final report to be agreed by scheme promoter and DfT	Year 3 benefits management and evaluation report	Once three years of data has been collected and analysed post scheme opening	Scheme promoter, project team, local evaluation analysts	Scheme promoter, DfT analysts

Table 2 Milestones for benefits management and evaluation activities: scheme delivery / post-delivery stage

Engagement with DfT

2.11 Scheme promoters should engage with DfT throughout the business case development process and post scheme opening, to ensure the benefits management and evaluation of a scheme will meet the framework's requirements and generate high quality evidence of the impacts.

Scheme approval

- As scheme promoters begin to develop their benefits management and evaluation plan, the proposed evaluation approaches should be agreed with DfT analysts, including the evaluation tier and whether process evaluation is required. This can be discussed via email or MS Teams call depending on the complexity of the scheme.

- Submit internally signed off benefits management and evaluation plan to local.evaluation@dft.gov.uk for DfT review at least three months prior to FBC submission. DfT will provide written feedback; final sign off by DfT is required prior to FBC submission.

Post scheme opening

- Once a year's worth of data has been collected post scheme opening, produce and submit an internally signed off Year 1 benefits management and evaluation report to local.evaluation@dft.gov.uk. DfT will provide written feedback, with the final report agreed by the scheme promoter and DfT. The final report should be approved by DfT no later than 12 months after year one data collection is complete.

- Once three years' worth of data has been collected post scheme opening, produce and submit an internally signed off Year 3 benefits management and evaluation report to local.evaluation@dft.gov.uk (standard tier schemes only). DfT will provide written feedback, with the final report agreed by the scheme promoter and DfT. The final report should be approved by DfT no later than 12 months after year three data collection is complete.

Benefits management and evaluation tiers

2.12 Schemes will be allocated to either a 'basic monitoring' or 'standard benefits management and evaluation' tier. 'Standard benefits management and evaluation' is the default tier to be used, except when certain circumstances apply.

2.13 The 'basic monitoring' tier is likely to only apply to a sub-set of maintenance schemes, such as certain schemes allocated to the major maintenance/renewal projects typology. All other schemes will be allocated to the 'standard benefits management and evaluation' tier. A scheme's tier should be agreed with DfT when developing the benefits management and evaluation plan.

2.14 **Basic monitoring:** this tier requires schemes to deliver simple monitoring and reporting based on a set of metrics related to the delivery of schemes rather than its benefits and impacts. This will involve reporting on key outputs such as scheme build (see Annex A.5), outturn costs, and delivered scheme e.g. kilometres of infrastructure resurfaced. These schemes are only required to complete a Year 1 report, and not a Year 3 report.

2.15 **Standard benefits management and evaluation:** this tier requires approaches to understand whether the scheme achieved its delivery targets and strategic objectives that were set out in the business case. The before/after intervention change should be assessed for selected metrics, with consideration of potential confounding factors (see Table 6 for metric requirements). The benefits management and evaluation approach does not need to demonstrate the causal impact of the scheme on observed change (with the exception of transformational schemes), although scheme promoters are welcome to undertake more robust counterfactual analysis to assess the extent of a scheme's contribution to the changes observed for selected metrics if considered feasible and/or proportionate.

A note on transformational schemes

2.16 Some local authority major schemes allocated to the 'standard benefits management and evaluation tier' will be transformational schemes. A scheme may be considered transformational if it meets some, or all, of the following criteria:

- Scale - local infrastructure schemes which are large in scale with a high cost. For example, schemes such as the Nottingham Express Transit extension, or the Stockport Town Centre Access Plan;

- Scheme nature - where the scheme is likely to result in at least one of the following:

- Land use change - where a scheme is likely to result in a significant change in how land is used in an area; and

- Acts as a tipping point - where a scheme is expected to provide a step change in connectivity which acts as a tipping point for agglomeration forces or other well-being enhancing investments, catalysing further economic or social impacts.

2.17 In the case of transformational schemes, the DfT expects scheme promoters to give special consideration to how transformational impacts will be assessed as part of the evaluation. If a scheme is considered to meet the above criteria, scheme promoters should engage with DfT at the early planning stage to (1) agree whether the scheme in question is transformational, and (2) discuss suitable evaluation of transformational impacts.

2.18 For further information on the transformational impacts of transport schemes, see the following literature review: Transformational impacts of transport - GOV.UK

2.19 Guidance on how to approach the evaluation of local authority major schemes is provided in Section 5 (process evaluation), Section 6 (impact evaluation) and Section 7 (value for money evaluation).

Scheme typology

2.20 For both basic and standard tier schemes, scheme promoters are encouraged to categorise their schemes into the below typology (noting a single scheme could comprise multiple typologies).

2.21 Categorising a scheme into a typology involves classifying it based on its characteristics. Using the typology below helps to understand how a scheme performs compared to similar ones and to identify areas for improvement, thus helping to improve learning across the local authority major schemes portfolio.

- **Improvements and enhancements** to road and bridge schemes, aiming to modify the structure of existing infrastructure to deliver new features of improvements, or to deliver new infrastructure;

- **Bus schemes** e.g. bus lane and bus station developments;

- **Active travel schemes** e.g. walking and cycling routes;
- **Tram and light rail projects**;
- **Public realm projects** e.g. improvements to rail stations that fall under the remit of local authorities such as piazza areas equipped with street furniture and digital signage; and
- **Major maintenance/renewal projects** aiming to repair and rehabilitate existing infrastructure.

2.22 A scheme's typology should be referred to in benefits management and evaluation reporting.

2.23 Example logic maps for each scheme typology are available in Annex B. Further information on theory of change development and logic mapping for local authority major schemes is provided in Section 4.

Reporting requirements

2.24 For all schemes in the 'Standard benefits management and evaluation' tier, scheme promoters are required to provide the three reports set out below to DfT. Scheme promoters should use the corresponding report templates to guide the structure and content of the reports.

- **Benefits management and evaluation plan:** The plan should set out the overall approach that scheme promoters intend to take for the benefits management and evaluation of local authority major schemes. This includes the key objectives and main research questions that the evaluation will answer, the metrics and data to be collected, and the approach to benefits management and evaluation including the analytical techniques selected to answer the research questions.
- **Year 1 benefits management and evaluation report:** A short report issued to the DfT one year post-opening, outlining data collection to date, scheme inputs and outputs, plans for future data collection, and lessons learned/process evaluation. The final report should be approved by DfT no later than 12 months after year one data collection is complete.
- **Year 3 benefits management and evaluation report:** A report providing an ex-post analysis of the outcomes and impact of the scheme and value for money evaluation. The report should answer the research questions set out in the benefits management and evaluation plan. The final report should be approved by DfT no later than 12 months after year three data collection is complete.

2.25 Exact reporting requirements will vary depending on whether a scheme is allocated to a basic or standard tier. Further detail on the content requirements for each report is provided below. Information on process and value for money evaluation requirements is provided in Section 5 and Section 7, respectively. While these are the minimum requirements, DfT welcomes scheme promoters to include additional evaluation activities to support organisations' own learning processes.

Benefits management and evaluation plan content requirements

2.26 All scheme promoters are required to submit a plan which sets out the overall approach that scheme promoters intend to take for the benefits management and evaluation of their scheme.

2.27 The benefits management and evaluation plan should include the content set out in Table 3. **Schemes allocated to the basic monitoring tier are not required to set out the benefits management and evaluation objectives and approaches.**

Content	Description	Tier(s)
Scheme background and context	Short description of the scheme (including costs, delivery timeframe, location, and wider delivery context)	Basic & standard
Scheme objectives and theory of change	Define the scheme objectives and how the scheme will achieve associated benefits and relevant outcomes and impacts	Basic & standard
Benefits management and evaluation objectives and research questions	Set out the scope of the benefits management and evaluation and the questions which the study will answer	Standard
Benefits management and evaluation approach	Clearly define which benefits management and evaluation approach(es), methods and techniques will be applied and the justification for the selected approach	Standard
Data requirements and collection methods	Provide details of the data being collected for each metric, ensuring it includes the pre-construction or pre-operation period for baselining. Provide an overview of the data collection approaches including assumptions being made about sample sizes, mode and frequency of data collection. Where appropriate, provide maps showing spatial coverage of data collection	Basic & standard
Resourcing and governance	Provide details of the benefits management and evaluation budget(s), the governance structure for the delivery of the benefits management and evaluation plan, including details of who will be responsible for delivering the plan and procedures for risk management and quality assurance	Basic & standard
Project plan	Project plan and data collection calendar, progress reporting back to the DfT, and timescale of reporting benefits management and evaluation findings	Basic & standard
Dissemination plan	Details of how the findings from the study will be communicated to key stakeholders, and how lessons learnt will be disseminated	Basic & standard

Table 3 Benefits management and evaluation plan content

Year 1 benefits management and evaluation report content requirements

2.28 All scheme promoters are expected to submit a year one post-opening benefits management and evaluation report. The report should include the content set out in Table 4 below.

2.29 For basic tier schemes, this includes a summary of the scheme background and context, scheme objectives, information on scheme inputs, outputs, and lessons learned or process evaluation conducted. For standard tier schemes, this should additionally include the planned data collection for each metric being monitored.

Content	Description	Tier(s)
Scheme name and type	Confirmation of scheme name and scheme type	Basic & standard
Benefits management and evaluation tier	Confirmation of benefits management and evaluation tier (as agreed with DfT)	Basic & standard
Introduction	Scheme background and context, original scheme specification, location, and scheme objectives	Basic & standard
Theory of change	The theory of change or logic map for the scheme, including information of any updates since the benefits management and evaluation plan	Basic & standard
Scheme inputs	Information on final scheme inputs including outturn costs and other scheme inputs (and how this compares to what was expected in the business case)	Basic & standard
Scheme outputs	Information on final scheme outputs including scheme build and delivered scheme (and how this compares to what was expected in the business case)	Basic & standard
Lessons learned/ process evaluation	This section should contain the lessons learned exercise, or if required, the fuller process evaluation conducted for the scheme	Basic & standard
Planned data collection	To provide an update on data collection for each metric listed in the original plan. Includes details of when baseline data was collected, any issues with baseline data collection, and confirmation of plans for post-opening data collection	Standard

Table 4 Year 1 benefits management and evaluation report content

Year 3 benefits management and evaluation report content requirements

2.30 Standard tier schemes are required to submit a final benefits management and evaluation report to DfT once three years' worth of data has been collected for selected metrics since scheme opening, containing details of the impact and value-for-money evaluation. Reports should include the content set out in Table 5 below. **Schemes allocated to the basic tier are not required to complete a Year 3 report.**

Content	Description	Tier(s)
Research questions	Information on the research questions to be answered in the report	Standard
Scheme outcomes and impacts	Information on the outcomes and impacts listed in the scheme's benefits management and evaluation plan. For each outcome or impact, the report should outline the objective(s) and research question(s) relevant to evaluating this outcome or impact, outline how the metric has been collected, show baseline data and final post-opening data, use of any counterfactual or comparator data, comparison with original projections (for core metrics), and a summary of whether the benefits have been realised for the objective	Standard
Value-for-money evaluation	This section should contain details of the VfM evaluation conducted for the scheme	Standard
Summary and conclusions	Summary of whether the scheme met its key objectives and whether the intended benefits were realised	Standard

Table 5 Year 3 benefits management and evaluation report content

Scheme metrics

2.31 The collection of data is key to the benefits management and evaluation of local authority major schemes. Scheme promoters should aim for a consistent approach to data collection both over time and between schemes, including data sources and methods of measurement.

2.32 The objectives of a scheme should be clearly defined with a list of metrics selected to measure whether the scheme's objectives have been realised.

2.33 All schemes (basic and standard tier) are required to report on the following scheme characteristics: scheme objectives, scheme build (see Annex A.5), outturn costs (see Annex A.6), and delivered scheme.

2.34 For standard tier schemes, schemes are additionally required to collect data and report on the following categories: transport outcomes, travel times and reliability, and carbon. Other categories (impacts on the local economy, air quality, safety, noise, biodiversity) are optional, and should be included if relevant to a scheme's objectives and/or if identified as an unintended consequence. A detailed list of information to include for each category and recommended data sources is provided in Annex A.

2.35 Where relevant, scheme promoters may wish to collect further data to meet local objectives and are welcome to include these in reporting.

Category	Scheme stage	Data collection timings	Tier(s)
Scheme objectives	Output, outcome, impact	Pre delivery/ three years post opening	Basic & standard
Scheme build	Input	During delivery	Basic & standard
Outturn costs	Input	During delivery/three years post opening	Basic & standard
Delivered scheme	Output	During delivery/post opening	Basic & standard
Transport outcomes	Outcome	Pre or during delivery/ one or three year(s) post opening*	Standard
Travel times and reliability	Outcome	Pre or during delivery/ three years post opening	Standard
Carbon	Impact	Pre or during delivery/ three years post opening	Standard
Impacts on the local economy	Impact	Pre or during delivery/ three years post opening	Standard (if linked to scheme objectives or unintended consequence)
Air quality	Impact	One year pre delivery/ one year post opening (continuous)	Standard (if linked to scheme objectives or unintended consequence)
Safety	Impact	Three years pre delivery/ three years post opening*	Standard (if linked to scheme objectives or unintended consequence)
Wider environmental impacts (noise and biodiversity)	Impact	Pre delivery/ three years post opening	Standard (if linked to scheme objectives or unintended consequence)

Table 6 Local authority major schemes data collection requirements (*for detailed recommendations on data collection timings for certain metrics, see Annex A)

3. Linking benefits management, evaluation, and the business case

3.1 This section provides recommendations to scheme promoters, project delivery professionals, and analysts to ensure effective integration between the appraisal, benefits management, and monitoring and evaluation of a scheme.

What is benefits management?

3.2 As defined in the benefits management literature, a benefit is the measurable improvement resulting from an output perceived as an advantage by one or more stakeholder(s).

3.3 Benefits management is the identification, definition, planning, tracking, realisation, and optimisation of benefits (i.e., of the measurable improvements that an intervention seeks to deliver). Its aim is to ensure organisations realise the planned benefits from their investments. It is a discipline that complements financial and cost management by tracking the benefits over time, therefore providing visibility of whether anticipated benefits are being realised so that benefits can be optimised so they outweigh project costs. It also ensures those benefits are managed and monitored beyond the point of project completion.

3.4 Projects can also result in disbenefits (negative outcomes). These should also be identified, because managing these is a key part of benefits management. Benefits management practitioners should carefully consider how to minimise disbenefits.

3.5 Benefits management is described in the Association for Project Management (APMG)'s Managing Benefits (2012). The Infrastructure and Projects Authority supports the use of benefits management on government major projects and has published guidance: Guide for Effective Benefits Management in Major Projects (publishing.service.gov.uk).

Benefits management and optimisation

3.6 While much of a scheme's benefits management activity takes place in the early stages of planning and delivery, it should continue to play a role in optimising a scheme's performance once opened. Two key questions to ask include:

- Is the scheme performing as you expected?
- What can you do to make sure you are realising the benefits?

3.7 The benefits management and evaluation plan template invites scheme promoters to identify priority benefits to measure. This can be used to ensure benefit metrics are tracked and, where necessary and achievable, take action if changes over time are not as expected. This will help to manage underperformance of the scheme and ensure that benefits are realised in full and as quickly as possible.

3.8 Example benefits optimisation activities may include marketing in cases where members of the public are not aware of the opportunities offered by a scheme or assessing changes to a scheme to address any identified issues.

3.9 Scheme promoters may wish to use benefits profiles to help with this task. The benefits profile sets out:

- How, when and by whom the benefit will be measured;
- How the data will be stored securely over time;
- Any known risks and mitigations to realising the benefit;
- Details of who owns the benefit and who is accountable for its realisation; and
- Timeline of when you expect the benefit to be realised (if possible).

3.10 Recognising that benefits management practitioners tend to be project delivery professionals, whereas evaluation professionals tend to be analysts, it is important to clearly define roles and responsibilities for benefits management during the planning stage, ensuring these extend to post delivery. Encouraging benefits management colleagues to engage closely with evaluation analysts can help to identify efficient ways to streamline data collection and ensure benefits management aligns with the evaluation.

Managing disbenefits

3.11 Schemes can have negative impacts as well as positive (i.e. ‘disbenefits’). Some disbenefits are anticipated: where these cannot be avoided, scheme promoters should work to mitigate them. Other disbenefits may arise unexpectedly – scheme promoters should aim to identify these through monitoring and, where possible, incorporate them into the benefits management plan when appropriate so that they can be measured, and act to mitigate them as required.

3.12 Learning generated from measuring the identified disbenefits and monitoring the mitigations should be applied where appropriate to other schemes and future investments.

3.13 Learnings from benefits management, including how benefits have been optimised, should be reported in the Year 1 and Year 3 benefits management and evaluation reports.

3.14 A best practice example demonstrating how benefits management has been applied to a large transport scheme can be found in Transport for London's Elizabeth line: evidencing the value.

What is evaluation?

3.15 Evaluation is a systematic assessment of the design, implementation, and outcomes of an intervention. It involves understanding how an intervention is being, or has been, implemented and what effects it has, for whom, and why. It identifies what can be improved and estimates its overall impacts and cost-effectiveness.

3.16 There are three main types of evaluation activity: process evaluation, impact evaluation, and value for money evaluation.

3.17 **Process evaluation** seeks to understand what can be learned from how the scheme was delivered. Process evaluations tend to examine activities involved in a scheme's implementation and the pathways by which the policy was delivered.

3.18 **Impact evaluation** is concerned with understanding what difference a scheme has made. Impact evaluations focus on the changes caused by an intervention; measurable achievements which either are themselves, or contribute to, the objectives of the intervention.

3.19 **Value for money evaluation** asks whether a scheme is a good use of resources. While impact demonstrates and, where possible, quantifies outcomes, it cannot on its own assess whether those outcomes are justified. Value for money evaluation considers such issues, including whether the benefits of the policy are outweighed by the costs, and whether the intervention remains the most effective use of resources.

What is monitoring?

3.20 Monitoring is a process for tracking progress in the implementation of an intervention by collecting data on its inputs, outputs and outcomes, with some evaluations continuing to monitor outcome measures after the intervention has ended. Monitoring should be planned before an intervention is delivered so that the data required to understand its progress is collected at the right time to inform future decisions for the intervention. This is particularly important for data that cannot be collected retrospectively, including baseline data, which should be collected before the intervention starts.

3.21 Monitoring and evaluation are closely related as a typical evaluation will rely heavily on monitoring data.

3.22 Monitoring is also used in benefits management, with a focus on monitoring a scheme's expected benefits and disbenefits.

3.23 There should be alignment of monitoring data collection for benefits management and evaluation purposes. To avoid duplication, local analysts and benefits management professionals should work together when producing the benefits management and evaluation plan.

What is the relationship between benefits management and evaluation?

3.24 Benefits management and evaluation are two distinct disciplines that have a shared aim of assessing what a project has delivered and whether it has met its objectives.

3.25 Table 7 provides definitions for benefits management and evaluation and outlines the key questions that they seek to answer.

Benefits management	**Evaluation**
A project management discipline that involves the identification, quantification, analysis, planning, tracking, realisation, and optimisation of benefits (i.e., the measurable changes that a project seeks to deliver). This seeks to ensure that organisations realise the planned benefits from their investments and minimise disbenefits. The benefits should be linked to what the scheme aims to deliver, though it does not assess the extent to which other factors may have contributed to those benefits.	Evaluation is a systematic assessment of the design, implementation, and outcomes of an intervention. This can include what difference it has made (impact evaluation), whether its benefits justified its costs (value-for-money evaluation), and how it was delivered (process evaluation). Evaluation aims to assess the impacts that can be attributed to the scheme in question, over and above what might have otherwise been expected without the scheme.
Key questions	Key questions
What are the benefits?	How was the scheme delivered?
How are those benefits changing over time?	What worked well and less well?
What are the benefits worth?	What difference did it make?
How will they be realised?	Did the benefits justify the costs?
Are we on track to realise them?	What lessons can be learnt?
What should be changed?	Were there any wider or unforeseen impacts?

Table 7 Benefits management and evaluation. Adapted from DfT's Rail Benefits Management and Evaluation Framework

3.26 There is overlap between benefits management and evaluation and they are considered complementary disciplines. They are both concerned with understanding the outcomes of an intervention and how these relate to what was planned. They both use monitoring to track progress with delivering outputs and outcomes. They are both concerned with accountability for investment expenditure and learning lessons for the future.

3.27 However, there are differences between the two approaches. For example, benefits management does not seek to establish how and why the outcomes came about and tends to mainly focus on directly measurable benefits of the intervention and their maximisation, whereas evaluation can take a broader and longer-term look at impacts and considers to what extent benefits are attributable to the intervention (and

not due to other factors or would have happened anyway). In terms of profession, benefits management practitioners tend to be project delivery professionals whereas evaluation professionals tend to be analysts. However, these are not absolute or universal distinctions.

3.28 Undertaking evaluation complements benefits management by looking beyond the immediate benefits of an intervention and capturing the impacts on the wider transport network and wider economic, social, or environmental benefits overall. Both benefits management and evaluation are crucial elements of programme delivery. They should be planned early and built into the delivery, with interim findings used to inform ongoing scheme delivery. Together, benefits management and evaluation can help to deliver interventions better, provide greater accountability and a strong evidence base to inform future decision making.

3.29 The DfT encourages scheme promoters to use benefits management and evaluation alongside one another to produce proportionate evidence on the benefits and impacts of local authority major schemes. For example, benefits management may be used to track delivery of the direct benefits that a scheme achieves (this data can be used to inform the later evaluation), while evaluation approaches are used to assess the extent to which the benefits can be attributed to the scheme and address broader questions about the overall impact of the scheme (therefore making use of benefits measured, alongside other data). Scheme promoters are recommended to produce a joint benefits management and evaluation plan to track and evaluate their schemes. The plan should follow the structure set out in the benefits management and evaluation plan template.

3.30 Benefits management processes are to be determined by local authorities, and the DfT does not expect to see benefits management documentation. Where benefits management outputs should be reported on (such as identified benefits and disbenefits), these are clearly specified in the report templates.

How does benefits management and evaluation activity relate to transport appraisal and development of the business case?

3.31 The DfT's appraisal framework is embedded in the transport business case approach used for local authority major schemes. Transport investment options are appraised from five perspectives in line with the HM Treasury five case model: the strategic case, economic case, commercial case, financial case, and management case. HM Treasury has published guidance to develop business cases using the five case model: Business case guidance for projects and programmes - GOV.UK. There is also transport specific business case guidance from DfT: Transport business case guidance - GOV.UK.

3.32 The appraisal of benefits in line with the DfT's TAG forms part of the economic dimension of the business case.

3.33 A scheme's benefits management and evaluation plan should be submitted as part of the management dimension of the business case.

3.34 The DfT will review the benefits management and evaluation plan for each scheme's business case, with DfT sign off required prior to the full business case submission. Scheme promoters should engage DfT's local evaluation team for advice on evaluation approaches during the early stages of drafting the benefits management and evaluation plan, to ensure appropriate and proportionate approaches are selected which are aligned with the scheme's objectives.

3.35 Good communication between project delivery, appraisal, and evaluation practitioners is required to ensure that benefits management and evaluation needs are considered at an early stage of scheme design.

3.36 The Department recommends that data and information storage are considered at an early stage in the appraisal process. The appraisal forecasts and assumptions that the evaluation might seek to validate need to be recorded and signposted in a secure location to ensure evaluators will know where to find them and how to access them when conducting the evaluation in the years following completion of appraisal tasks. This includes developing appraisal handover packs with documentation and data for subsequent evaluation. For guidance on appraisal handover packs, see Appendix D of TAG: Guidance for the Technical Project Manager.

3.37 Those involved in benefits management and evaluation planning should work closely with colleagues developing the business case to ensure that there is two-way dialogue. During the business case development stage, project delivery, appraisal, and evaluation practitioners are recommended to agree how approaches to benefits management and evaluation will be applied to the scheme in question, including shared definitions of concepts relevant to analysis. The local authority major schemes glossary, which includes definitions of fundamental concepts related to benefits management and evaluation, is a useful starting point for this activity (Annex C).

3.38 To strengthen the link between appraisal and evaluation, the benefits management and evaluation plan should include the theory of change from the business case (if present), including details of the metrics to be used for the benefits management and evaluation of the scheme.

3.39 Where available, findings from evaluations of similar schemes (including evaluations from the authority or DfT's published meta-evaluations) should be used to inform the strategic dimension of the business case.

3.40 For further information on linking appraisal and evaluation, see Strengthening the Links between Appraisal and Evaluation. This is a study commissioned by DfT which includes a set of recommendations on how to strengthen the links between appraisal and evaluation.

4. Theory of change

4.1 Benefits management and evaluation planning requires a thorough understanding of the intervention, the outcomes it is expected to achieve and exactly how it is expected to produce these results. This may be referred to as the theory of change of the intervention. The development of the theory of change can be used to support the design, delivery, and evaluation of an intervention and should be clearly outlined as part of the scheme's benefits management and evaluation plan.

4.2 Table 8 provides a set of components to consider when creating a scheme's theory of change. Aside from the standard inputs and outputs, the success of an intervention will rest on expectations or assumptions in relation to how it is implemented and the wider context in which it is delivered. It is important to make these broader assumptions explicit when planning an evaluation, as these assumptions should be tested when seeking to provide an explanation of why an intervention was successful (or not).

4.3 As well as including the intended outputs, outcomes, and impacts, it is important to consider if there are any potential unintended consequences of the scheme, either positive or negative. Consulting with a diverse mix of stakeholders will help to ensure that unintended consequences are identified. Once identified, they should be included in the theory of change to ensure they are also assessed during the evaluation.

Key components	Considerations
Context	The issue that needs addressing and the context in which it is located
Inputs	What is invested e.g. money, skills, people, activities
Outputs	What is delivered i.e., the quantifiable and often tangible results that are expected e.g. km of single lane cycle path
Outcomes (including benefits/disbenefits)	Short and medium-term results e.g. changes to traffic flows, modal shift
Impacts	Longer-term effects on transport usage and wider/social economic effects e.g. changes in wellbeing
Additional components	
Risks	Any identified risks to scheme success
Contextual factors and external influencers	Social, political, and environmental conditions
Unintended consequences	Changes other than those intended which might be equally beneficial or possibly sufficiently negative to outweigh the beneficial impacts
Assumptions	Assumptions include rationale, causality, environmental, and operational
Rationale assumptions	The nature of the problem; the selection of the intervention
Causal assumptions	How change will happen (any cause that hasn't been tested against actual data is an assumed cause)
Environmental assumptions	Whether there is an enabling environment/context where external influences and spheres of influence are understood
Operational assumptions	Whether there are resources to carry out a plan and that it is in line with people's needs

Table 8 Components to consider when developing a scheme's theory of change

4.4 A review of a scheme's business case (particularly the strategic dimension) will be a useful starting point when considering the scheme's theory of change. Stakeholders responsible for delivering the intervention or who manage activities that will be affected by it should be consulted and, ideally, involved in developing the theory of change. It is helpful to collect a range of perspectives about how the intervention is expected to work, to enable the evaluator to fully understand and co-develop the theory of change.

4.5 A scheme's theory of change can be utilised throughout its evaluation, as set out in Table 9 below.

Stage	Example use of theory of change
Scoping	Reach agreement on scope with stakeholders Prioritise research questions
Planning	Select data collection methods Create research materials Select outcome measures
Analysis	Categorise findings Investigate why an intervention did or did not work
Implementation	Organise emerging findings Monitor implementation
Communicating evidence	Structure report and dissemination materials

Table 9 Example uses of theory of change

4.6 There is no single correct way or format of creating a theory of change. The format can be adapted according to the needs of each scheme and the amount of information that the practitioner would like to include in a single table, diagram, or other visual representation. Yet, all options should contain the key components listed in Table 8 (i.e., a scheme's context, inputs, outputs, outcomes, and impacts).

4.7 Approaches used to set out what an intervention is expected to achieve include:

- **Logic mapping.** A logic map or model depicts the 'what' of an intervention (e.g., inputs going in, impacts coming out), while a theory of change is more detailed as it includes the theory of how the intervention is expected to work (setting out all the steps expected to be involved in achieving the desired outcomes), the assumptions made, the quality and strength of the evidence supporting them, and wider contextual factors. The logic map is a visual way to represent the theory of change of an intervention, set out as a logical chain running from inputs and activities to outputs, outcomes, and impacts (typically depicted in a horizontal or vertical chart or other formats such as tables). A completed map comprises multiple interacting causal chains. It may also show contextual factors and external influences which are expected to affect the intervention, key assumptions on which the theory of change rests and any identified risks to success. 'Theory of change', 'logic map', and 'logic model' are sometimes used interchangeably, though it is important to note these are not the same.

- **Benefits mapping.** This approach is used in benefits management to identify the benefits that will be realised by an intervention and the organisational objectives they relate to. It works backwards from these end points to set out the stages towards benefits realisation, the drivers that create the need to intervene, the assumed enablers (inputs) and enabling changes that will lead to the expected benefits being realised. A benefits map is typically developed through a benefits discovery workshop which serves as the starting point for the benefits management process.

4.8 In evaluation, the most common representation of the intervention logic is the logic map. An example of how a logic map can be set out is shown in Figure 1 below. Further information on this topic can be found in Logic mapping: hints and tips guide (publishing.service.gov.uk).

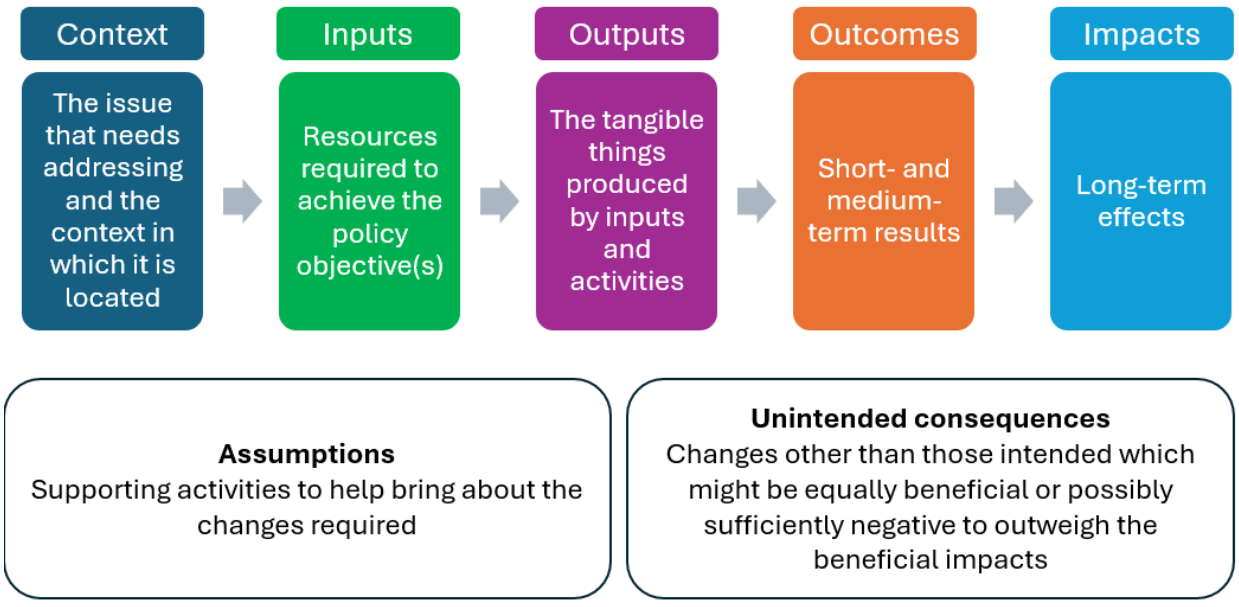

Figure 1 Example logic map visualisation

4.9 For most schemes, a lighter touch logic map will be sufficient. See Annex B for a set of example logic maps for the scheme typologies. These can be used as a helpful starting point for scheme promoters.

4.10 Where an intervention is not fully developed and where the implementation approach is novel, it is particularly advisable for local authority major schemes to produce a full theory of change which sets out the underlying assumptions, causal pathways, and risks between all the elements of the logic map. For advice on developing a full theory of change, contact local.evaluation@dft.gov.uk.

5. Lessons learned and process evaluation

5.1 For both benefits management and evaluation, it is best practice to capture and share lessons learned. All schemes are required to complete either (1) a short lessons learned exercise, or (2) a process evaluation, with findings reported in the Year 1 benefits management and evaluation report.

5.2 Whether a lighter-touch lessons learned exercise or more detailed process evaluation is required should be determined at the same time as agreeing the benefits management and evaluation tier (during the planning stage, prior to the FBC submission). Scheme promoters should contact local.evaluation@dft.gov.uk to discuss with DfT.

Lessons learned

5.3 Where a full process evaluation is not required, schemes must complete a short exercise which captures the main lessons learned from the development and delivery of the scheme, with a summary of lessons learned included in the Year 1 report. This exercise is expected to provide insights and reflections on the experiences, challenges, successes, and improvements identified throughout the course of the scheme.

5.4 These lessons learned may be gathered through a meeting with project delivery officials and senior stakeholders. Learnings may be collected throughout development and delivery, as well as shortly after the scheme has opened. It is important to ensure this is completed at an appropriate time before the project delivery team disbands so that relevant learnings are captured.

5.5 The lessons learned exercise for local authority major schemes should seek to cover the following aspects:

- Highlight the successes, achievements, and positive outcomes that occurred during scheme implementation;
- Describe the challenges and difficulties encountered during the process and extract valuable lessons from them;
- Identify the practices that were effective in achieving the desired outcomes; and

- Provide specific recommendations for improving processes, strategies, and project management practices.

Process evaluation

5.6 Process evaluation examines the activities involved in a scheme's implementation and the pathways by which the scheme was delivered. It explores whether the scheme was delivered as intended, what worked well, less well, for whom, and why, what could be improved, and how the context influenced delivery.

5.7 Compared to the lighter-touch lessons learned exercise (see 5.1 - 5.5), a full process evaluation is expected to be more extensive and structured. A process evaluation will explore the research questions (see 5.11) in greater depth, gather evidence from a wider breadth of stakeholders, and present a structured approach to data analysis.

5.8 Conducting a process evaluation involves using a variety of methods to assess the delivery of schemes. The methods can be qualitative and quantitative, including questionnaires, focus groups, interviews, and document review. See the Magenta Book for more information on research methods associated with process evaluation.

5.9 Process evaluation is useful for transport schemes where there is a need to learn from how the intervention was delivered, as this can affect the nature and scale of outcomes and impacts that result. This could include schemes where the implementation approach is novel and may change considerably in the future (for example, where a scheme's intended delivery model is piloted to assess its efficacy before deciding whether to roll it out more extensively).

5.10 Whether a full process evaluation is required should be determined at the same time as agreeing the benefits management and evaluation tier (during the planning stage).

5.11 Where process evaluation is required, scheme promoters should seek to answer the following high level process evaluation questions:

- Was the intervention delivered as intended?
- What worked well, or less well, for whom and why?
- What could be improved?
- How has the context influenced delivery?

5.12 The typical steps required to conduct a process evaluation of a local authority major scheme are summarised in Table 10. A write-up of the process evaluation should be included in the Year 1 report.

Step	Description
1	Identify the research questions to be addressed by the process evaluation
2	Understand the scheme by clearly defining its goals and objectives, reviewing or creating a theory of change that sets out the key components of the scheme including its inputs, outputs and outcomes
3	Choose appropriate data collection methods based on the nature of the scheme
4	Engage with stakeholders to receive feedback on the research questions and relevant project materials
5	Design data collection methods to answer the research questions and identify relevant documents for review e.g. project documentation
6	Collect and analyse relevant data to answer the research questions and write up the findings
7	Share findings and lessons learnt with relevant stakeholders, including programme staff, funders, and community members
8	Use the findings to make any necessary adjustments to the scheme implementation and to inform future scheme design

Table 10 Steps to conduct a process evaluation

6. Impact evaluation

6.1 Impact evaluation of local authority major schemes requires assessing a range of outcomes and impacts, and whether these can be attributed to the scheme in question. Scheme promoters should seek to answer the following high level impact evaluation questions:

- Did the scheme achieve its expected benefits and outcomes? To what extent?
- What difference did the scheme make? To what extent can the difference be attributed to the scheme?
- Has the scheme caused any unintended effects (positive or negative)?

A **benefit** is the measurable improvement resulting from an output which is perceived as positive by one or more stakeholder(s) and contributes towards one or more specified objective(s), e.g. reduced journey time

An **outcome** is a short- or medium-term result from the intervention, e.g. changes to traffic flows, modal shift

A scheme's **impact** is a longer-term effect on transport usage or wider social/economic effects, e.g. employment, productivity, wellbeing

Essentially, benefits are a sub-set of scheme outcomes which directly contribute to a scheme's objectives. A scheme may have additional outcomes which are still important to measure as part of impact evaluation.

6.2 Impact evaluation can be delivered by applying several approaches which vary in standards of quality and ability to determine attribution. Impact evaluation of local authority major schemes should aim for good standards of quality in the context of practical constraints of scheme design/implementation, including feasibility, ethics, data availability, proportionality, and cost. Information on measures of evaluation quality can be found in TAG unit E-1.

6.3 Impact evaluation is required for all standard tier schemes. The typical steps required to conduct impact evaluation of a local authority major scheme are summarised in Table 11.

Step	Description
1	Identify the research questions to be addressed by the impact evaluation
2	Understand the scheme by clearly defining its goals and objectives, reviewing or creating a theory of change that sets out the key components of the scheme including its inputs, outputs, and outcomes
3	Identify the impact evaluation approach(es), evaluation methods, and appropriate data collection methods to answer the research questions alongside practical considerations such as data availability, resources, and time available
5	Conduct data collection at appropriate timepoints, including at the baseline, one year post-opening, and three years' post-opening
6	Analyse the data to answer the impact evaluation questions and write up the findings in the Year 3 report
7	Share findings and lessons learnt with relevant stakeholders, including programme staff, funders, and community members
8	Where appropriate, compare evaluation data against ex-ante appraisal findings and use the evaluation findings to inform future scheme design

Table 11 Steps to conduct an impact evaluation

6.4 Annex A sets out the recommended metrics to measure the principal outputs, outcomes, and impacts of local authority major schemes.

6.5 An overview of the recommended approaches to impact evaluation for local authority major schemes is provided throughout the remainder of this section.

Approaches to impact evaluation

6.6 For local authority major schemes, the recommended approach to impact evaluation is to conduct a before/after comparison for selected measures, with some counterfactual comparisons where appropriate to provide context.

6.7 Scheme promoters are welcome to additionally undertake more robust approaches to impact evaluation to assess the extent of the intervention's contribution to the changes observed for selected metrics.

6.8 Scheme promoters should make use of their scheme's theory of change (discussed in Section 4) throughout the impact evaluation, including linking the scheme's monitoring and evaluation metrics to the theory of change. The theory of change should continue to be refined over the lifetime of the evaluation as new evidence is developed.

Before/after comparisons

6.9 A comparison of data collected before and after the intervention can be used for impact evaluation. This comparison provides an indication of the degree of change in selected benefits and outcomes between the point before the scheme became operational, and the period of time after it has operated.

6.10 Baseline data should be gathered prior to the intervention; this will be either pre-construction or pre-operation depending on the scheme type. Where the process of implementing of a scheme is expected to cause widespread disruption (e.g. where scheme construction affects local traffic), the baseline should be gathered pre-construction. Where minimal disruption is expected, the baseline should be gathered pre-operation. Scheme promoters should not use data pertaining to the base year in

the model used in the appraisal as these may be quite out of date by the time the intervention is operational.

6.11 **Before/after analysis** should be possible for all quantitative metrics collected to assess the extent of change for each scheme. It will draw on data collected to report on realised benefits, outputs, and outcomes. Details of relevant metrics to collect, including suggested sources, are provided in Annex A.

6.12 The local authority major schemes: meta evaluation 2011 to 2016 provides case study examples of before/after analysis conducted for local authority major schemes. These include:

- The Mansfield Interchange scheme involved the replacement of a bus station facility with an improved bus interchange with indoor waiting areas and a connecting footbridge to the railway station. A before/after comparison approach was taken to understand any changes in patronage since the scheme opening. The scheme compared patronage data collected when the old bus station was operational with patronage data collected when the new scheme was open. The comparison of patronage data identified that the upgraded bus station experienced a 4.6% increase in usage in its first year of operation.

- The Bath Transport Package scheme conducted a before/after analysis to identify changes to air quality since the implementation of sustainable travel interventions, including improved pedestrian areas and upgrades to bus routes. The evaluation compared pre-construction and post-opening nitrogen dioxide readings at selected monitoring sites. The collection of pre-construction readings at the baseline stage enabled the evaluators to identify a general improvement in conditions at most of the sites, demonstrating the importance of planning benefits management and evaluation at the early stage of a scheme.

Caveats

6.13 Before/after comparisons on their own cannot be used to make conclusions about the extent to which any observed change is attributable to the scheme. They are unable to account for local and wider changes in society and the economy, which can affect the outcomes of transport schemes. For example, the local area could be affected by another intervention which is not part of the evaluation. For wider changes, if an economic downturn leads to higher unemployment and a decrease in commuting, low 'after' figures on the use of a new bus route could lead us to conclude that the scheme has failed to meet its objectives, when in fact bus use might still be higher than it would have been without this intervention in place. Thus, a before/after comparison can result in misleading conclusions if it does account for changes in society and the economy. The use of counterfactuals can help to address this issue (see 6.16-6.20).

6.14 Before/after analyses can be significantly affected by major changes occurring between relevant data collection points. Two examples include the 2008 recession and the COVID-19 pandemic, both of which caused significant changes in transport use and therefore affected the validity of analytical comparisons over the relevant periods.

6.15 These analytical limitations can be mitigated by carefully planning the evaluation design and data source selection, using additional statistical analyses (such as counterfactual analysis) that can recover some of the validity lost due to unexpected changes, and reporting the methodology and caveats transparently in any evaluation outputs.

Counterfactual analysis

6.16 Given the limitations of before/after analysis, it is good practice to compare the outturn impacts (those observed after scheme opening) with a counterfactual. Counterfactual analysis produces credible estimates of what would have happened in the absence of the intervention and, as such, are critical to establishing causality and attribution. Counterfactual analysis can be based on control groups (created through random allocation), comparison groups (created through quasi-randomisation or matching on key characteristics), or other comparison units.

6.17 For local authority major schemes, comparisons with local, regional, and national trends can provide proportionate estimates of what would have occurred had the scheme not been implemented. These comparisons are particularly useful for impacts which are affected by wider societal and economic trends, such as traffic volume, journey time, and safety. Trend data should only be used where the local or regional area is unlikely to be affected by the scheme in question. For further information on other types of counterfactual analysis, see TAG unit E-1.

6.18 To contextualise and isolate a scheme's impacts, it is recommended to use existing datasets to provide a counterfactual estimate. Depending on the impact evaluated and the data available, changes should be compared to trends at local and regional levels from before and after scheme construction. In some cases, it may be more appropriate to compare to national trends (for example, where data is not available at the more granular local or regional level, or where the sample size is particularly small).

6.19 For example, it is possible to isolate a scheme's impact on traffic volumes in its study area by looking at changes in traffic trends at local levels using data from the road traffic statistics produced annually by DfT. These are estimates of total distances travelled on the country's roads each year, categorised by local authority and road type. Scheme promoters can combine the trend observed on the relevant road type and region and use this to produce a counterfactual flow estimate. This can act as an estimate of what traffic conditions would have been had the scheme not been implemented. For further information on counterfactual flow estimates, see National Highways' POPE methodology manual.

6.20 Scheme promoters may also wish to consider the use of a synthetic control. This approach uses data on trends in all potentially comparable areas to derive the synthetic control. This can help to overcome the issue of identifying appropriately matched corridors or locations because any one control corridor / area is not solely relied upon. Further information on the use of synthetic controls is available in section A2.6. of the Magenta Book: Annex A.

6.21 Where possible and proportionate, scheme promoters should seek to include counterfactual comparisons in the Year 3 report.

Advanced approaches

6.22 Scheme promoters may wish to undertake more robust approaches to impact evaluation to understand whether a scheme achieved its strategic objectives, and to assess the extent of its contribution to the changes observed for selected metrics.

6.23 Experimental and quasi-experimental approaches infer the impact of an intervention through statistical comparison to a group or time period unaffected by the intervention. Quasi-experimental methods are typically more feasible for local transport infrastructure interventions than experimental approaches because unlike experimental methods, quasi-experimental approaches do not require assigning participants to the intervention randomly. Possible quasi-experimental options are summarised below.

6.24 **Difference-in-differences (DiD).** At a minimum, DiD analysis requires two groups (or locations) – an intervention group and a comparison – as well as measuring the outcomes of interest before and after the intervention. The before/after difference in the intervention group is compared to the before/after difference in the comparison group, with any difference between the two differences being attributed to the intervention effect. DiD analysis is feasible where (1) a suitable comparator group can be identified, (2) there is sufficient and good quality data on the outcome of interest, and (3) the trends for the specific metric in both the treatment and comparator areas are parallel for a sufficient period before the intervention. For guidance on how to carry out DiD analysis, see Impact evaluation using Difference-in-Differences | Emerald Insight.

6.25 Other quasi-experimental approaches to impact evaluation include **regression discontinuity design** and **matched comparisons**. See TAG unit E-1 for further information.

6.26 **Theory-based approaches.** In conjunction with the impact evaluation approaches set out above, or when these are not feasible, predominantly theory-based approaches can be used, such as qualitative comparative analysis, contribution analysis, or process tracing. Theory-based methods can be used to investigate net impacts by exploring the causal chains thought to bring about change by an intervention. However, they do not provide precise estimates of effect sizes. Theory-based evaluation is explicitly concerned with both the extent of the change and why the change occurs. See the Magenta Book for further information.

Data requirements for impact evaluation

6.27 Scheme promoters should focus on collecting good-quality, standardised data following the recommendations for scheme metrics set out in Annex A. Data collection should be planned well in advance (preferably at the business case stage) to ensure that appropriate data is collected on a timely basis and will meet the requirements of the evaluation.

6.28 As a minimum, data collection should take place prior to the intervention being implemented (the baseline) and for a sufficient period of time post implementation. Establishing a baseline is an important step to carry out the before/after analysis described above. Baseline data should be collected either before construction begins or before the scheme is operational (dependent on the scheme type, described in section 6.10) rather than using data collected for appraisal calculations. This is because there is often a long time-lag between the appraisal being undertaken and the scheme opening, meaning that other external factors that may not be attributable to the scheme can influence the observed changes.

6.29 Data collection requirements should account for embedding (i.e. that schemes may take some time to embed and for behaviour to change), and seasonality (i.e. that passenger numbers and flows are impacted by seasonality and therefore one data collection point prior to and post intervention might not be appropriate). See TAG unit M1-2 for guidance on seasonality.

6.30 When conducting counterfactual analysis, care should be taken to avoid omitted variable bias (ensuring the comparison is fair and free from influences that cannot be accounted for in the analysis) and confounding, such as reverse causality (confusing cause and effect, which may occur when interventions are made in areas because they are expected to produce outcomes that the intervention is intended to achieve).

6.31 Data collection with Geographic Information Systems (GIS) tools is important. Combining geospatial data with socio-economic information enables a more precise and contextualised definition of the affected areas. This can be crucial for before/after analysis and in counterfactual evaluation by providing a tool to define treatment and comparison groups through the creation of spatial counterfactuals, which help measure what would have happened without the intervention.

A note on model-based approaches

6.32 The evaluation of local authority major schemes should avoid the use of modelling data to draw conclusions about impact. It is recommended that practitioners evaluating local authority major schemes **prioritise measurement of outputs and outcomes**. This is to avoid the risk that measurement of actual impact is obscured by carrying forward too many forecasting assumptions. Measured observations can be compared with modelled forecast data to improve accuracy of modelling for future schemes, but this should not require re-running of models.

6.33 Transport models are developed during a scheme's business case preparation to understand the impacts of the scheme relative to the without scheme scenario and are used to underpin the economic appraisal of a scheme. Transport models forecast the travel demand and other network characteristics with and without the intervention and inform other elements of appraisal such as user benefit analysis, local air quality, carbon, safety, noise, and wider economic impacts.

7. Value for money evaluation

7.1 As set out in DfT's value for money framework, achieving value for money can be defined as using public resources in a way that creates and maximises public value while achieving policy objectives.

7.2 In business cases, schemes should have been appraised in the economic dimension to provide analysis of their expected value for money (VfM). The appraisal of schemes, including calculation of a Benefit Cost Ratio (BCR), provides analysis of the potential costs and benefits. Appraisals also consider the uncertainty around VfM, usually by use of sensitivity tests or scenario tests. Appraisal handover packs should be created during business case development with documentation and data stored for subsequent VfM evaluation (see Section 3).

7.3 Evaluations of local authority major schemes should include evaluating the extent to which VfM has been, or is on course to being, achieved. Scheme promoters are required to complete an evaluation of VfM in the Year 3 report.

7.4 There are typically four criteria to assess the VfM of government spending:

- **Economy**: minimising the cost of resources used or required (inputs) – spending less;
- **Efficiency**: the relationship between the output from goods or services and the resources to produce them – spending well;
- **Effectiveness**: the relationship between the intended and actual results of public spending (outcomes) – spending wisely; and
- **Equity**: the extent to which services are available to, and reach all, people that they are intended to – spending fairly. Some people may receive differing levels of service for reasons other than differences in their levels of need.

7.5 DfT's TAG and VfM framework provide advice and tools for conducting robust and proportionate transport appraisals which are consistent with HM Treasury's Green Book guidance. This helps to ensure that business cases are aligned with best practice so that public money is spent appropriately.

7.6 There will be a range of possible benefits to transport users, the wider economy, environment and society, which should be considered in VfM evaluation. Most of the

economic benefits from major transport schemes are usually from travel time and cost savings to transport users. Evaluations of VfM should prioritise what to focus on by identifying the most significant impacts that are expected to provide most of the benefits of the scheme. They should then focus on applying suitable and proportionate evaluation methods for these impacts.

Evaluating outturn VfM

7.7 The economic appraisal reported in a business case will usually include a scheme's estimated BCR and VfM category. The BCR provides an indicative economic measure that is calculated by dividing the value of the monetised benefits (Present Value of Benefits) of a project by its monetised costs to the Broad Transport Budget (Present Value of Costs). The appraisal provides an assessment of the social welfare impacts of the proposal at the UK level.

7.8 A logic map or theory of change should have been developed during the appraisal and updated during the evaluation. This can be used to identify specific benefits pathways. That is, how inputs are expected to generate outputs, outcomes, and impacts, which can be measured and potentially given a monetary value. A logic map or theory of change may show that there are many complex benefits pathways for a scheme. To ensure feasibility, the VfM evaluation should identify and focus on the most significant benefits pathways and on the main intended impacts. The overall aim of the VfM evaluation is to provide evidence of whether the benefits exceed the costs, so there is no need to conduct a detailed analysis of every possible benefit.

7.9 A key metric that should be calculated in VfM evaluation is the outturn BCR. This can be calculated by collection of data on the outturn additional benefits and outturn costs generated by the scheme. These benefits and costs should be adjusted to a standard price and value base year consistent with the standard base year in DfT's TAG. They should then be as calculated and reported as Present Value of Benefits (PVB) and Present Value of Costs (PVC).

7.10 The BCR should be estimated for the whole scheme appraisal period (which is usually 60 years). Benefits from transport schemes can take several years to fully materialise after scheme opening, so analysis should be provided of the extent to which benefits are expected to occur in the future when estimating the PVB, using 3-year outturn data to inform the likely future trend in outcomes. As the evaluation will only have 3 years of observed outcomes data, it will have to extrapolate the 3-year outcomes data to take account of the whole appraisal period. This could include considering evidence relevant to the scheme on forecast future growth in traffic or in passenger numbers. The evaluation may be able to obtain additional evidence to forecast benefits and costs in future years and to consider how these may differ from the appraisal forecasts. DfT will consider the need to provide further guidance to scheme promoters on how to do this.

7.11 DfT's value for money framework states that provisional 'Low' VfM is based on adjusted BCR between 1 and 1.5. 'Medium' VfM is based on adjusted BCR between 1.5 and 2, and 'High' VfM is based on adjusted BCR between of 2.0 and 4.0. Adjusted BCR of 4.0 or higher will then lead to provisional 'Very High' VfM. Following determination of the provisional VfM category, the final VfM category is then

determined by consideration of other economic impacts (including indicative monetised impacts) and risks (both monetised and non-monetised) that have not yet been accounted for. The BCR should be calculated for the business case and for the evaluation to allow evaluations to examine the extent to which the scheme is on course to deliver VfM post-opening. Evaluations should calculate an outturn BCR using observed data.

7.12 The VfM evaluation should provide an estimate of outturn economic costs. It should examine how and why the outturn economic costs differ from the economic costs estimates in the business case. The outturn economic costs should be reported as Present Value of Costs (PVC). It should be clearly reported how outturn financial costs have been adjusted to outturn economic costs, including the adjustments for inflation and discounting.

7.13 Further information on calculation of PVB and PVC is provided in TAG unit A1-1 cost benefit analysis. Further information on adjusting benefits and costs to the TAG base year are provided in TAG unit A1-2 scheme cost.

Evaluating other VfM impacts

7.14 The Green Book, including the supplementary guidance on value for money, states that investments that do not meet strategic objectives cannot be considered good value for money. The VfM evaluation should consider the strategic context and how a scheme contributes to policy aims.

7.15 The BCR is not the sole factor which determines whether a scheme delivers VfM. Other considerations include non-monetised benefits and place-based impacts. The VfM category also accounts for the additional non-monetised benefits generated by a scheme, which can in some instances be significant to understanding overall VfM. In addition to the BCR, the VfM category should be considered at the evaluation stage.

7.16 The VfM assessment in an evaluation should consider the significant economic, environmental, and social impacts of the scheme, using monetised, quantitative, and qualitative analysis in line with HM Treasury's Green Book and DfT's value for money framework. The impacts considered are not limited to those directly impacting on the measured economy, nor to those that can be monetised.

7.17 Wider analysis which illuminates the investment case for the transport proposal should also be presented as part of the evaluation. This should include analysis around the extent to which the scheme has achieved its strategic objectives and wider government priorities at the time of funding.

7.18 Analysis of distributional impacts (equity) is also an important part of the appraisal analysis and should be considered in evaluations. As stated in the Green Book, place-based analysis should be conducted in appraisals for all proposals with an objective that is specific to a particular place or type of area and the impact on place will be the primary reference for the analysis. If distributional impacts are a key objective of a scheme (for example, to provide benefits to specific places or specific socioeconomic groups) then, when it is possible and proportionate, there should be analysis of these distributional impacts in the evaluation. For appraisals, detailed

guidance on this is provided in TAG unit A4-2 distributional impact appraisal - GOV.UK. However, DfT recognises this is a relatively less developed area of evaluation with further guidance needed on evaluation of distributional impacts. Therefore, evaluations might include a descriptive distributional analysis which sets out the evidence, if this is proportionate and relevant.

7.19 Impacts should, as far as feasible and proportionate, be quantified and a monetary value given to them. At the evaluation stage, for some impacts it will be possible to provide an outturn estimate of the monetised value. However, for other impacts, or in situations where quantitative and monetised data is limited, it might be more appropriate to use qualitative analysis to examine the scheme's impacts. In the context of appraisal, DfT's TAG identifies a need for monetary, quantitative and/or qualitative analysis depending on what impacts are being appraised. Further summary guidance on the use of monetary, quantitative, and qualitative analysis for specific impacts, and on monetisation of impacts, is provided in the context of appraisal in TAG Guidance for the Senior Responsible Officer, and detailed guidance is given in the relevant TAG units. This can help guide which types of analysis may be possible in VfM evaluations.

7.20 In VfM evaluation, there are likely to be continuing uncertainties about the benefits generated by a scheme, including about benefits that will be generated in later years. Therefore, sensitivity analysis should be considered to examine how changes in significant assumptions in the evaluation may change the conclusions about how benefits compare with cost.

8. Further resources

Local authority major schemes resources

- Local major schemes: meta-evaluation 2006 to 2010 - GOV.UK (www.gov.uk)
- Local major schemes: meta evaluation 2007 to 2012 - GOV.UK
- Local major schemes: meta-evaluation 2011 to 2016 (publishing.service.gov.uk)

Government resources

- Business case guidance for projects and programmes - GOV.UK
- DfT value for money framework - GOV.UK (www.gov.uk)
- Logic mapping: hints and tips guide - GOV.UK (www.gov.uk)
- Supporting public service transformation: cost benefit analysis guidance for local partnerships (www.gov.uk)
- TAG guidance for the senior responsible officer - GOV.UK
- TAG unit A1-1 cost-benefit analysis - GOV.UK
- TAG unit A1-2 scheme costs - GOV.UK
- TAG unit A4-2 distributional impact appraisal - GOV.UK
- TAG unit E-1 evaluation - GOV.UK (www.gov.uk)
- TAG unit M1-2 data sources and surveys - GOV.UK (www.gov.uk)
- The Aqua Book: guidance on producing quality analysis - GOV.UK
- The Magenta Book - GOV.UK (www.gov.uk)

- The Green Book (2022) - GOV.UK (www.gov.uk)
- Transport analysis guidance - GOV.UK (www.gov.uk)
- Understanding biodiversity net gain - GOV.UK

Annex A: Reporting requirements and recommended sources

A.1 This annex provides information on reporting requirements and recommend sources.

A.2 While the recommended data sources are appropriate and proportionate for many analytical circumstances, it is important to note that they have limitations which will often depend on the type of analysis conducted and the wider context the metric is being applied to measure. Scheme promoters are responsible for identifying and stating the limitations of all data sources used, including those outlined below.

Scheme objectives

A.3 Reporting of scheme objectives is required for all basic and standard tier schemes. The main objectives of the scheme should be identified and appropriate metrics agreed for measurement of achievement. This should include three main objectives, plus secondary objectives if relevant.

A.4 The identification of the main objectives should be consistent with the strategic dimension of the business case, including the scheme's spending objectives. The objectives should be monitored to assess whether the anticipated changes have occurred as forecast.

Scheme inputs

Scheme build

A.5 Reporting of scheme build is required for all basic and standard tier schemes. Information to provide: Forecast delivery time vs. actual delivery time and details of the reasons for any differences to scheduled delivery.

Outturn costs

A.6 Reporting of outturn costs is required for all basic and standard tier schemes. Information to provide: commentary on any variance from forecast costs, including evidence of differences between outturn and forecast costs and details of the reasons for differences. This could include information on the following (to be

reported as relevant to each scheme): outturn investment costs; risk budget; cost elements with savings; outturn operating costs; and outturn maintenance or other capital costs.

A.7 Outturn costs should be reported as financial (nominal) costs (not adjusted to a standard base year).

Scheme outputs

Delivered scheme

A.8 Reporting of delivered scheme is required for all basic and standard tier schemes. Information to provide:

- A description of scheme outputs;
- Identification of any changes to the scheme since funding approval. For example, changes to route and/or design of the scheme and details of the reasons for the changes;
- If relevant, identification of any changes to assumptions on fare levels or provision of services by operators and provision of any evidence and/or analysis available for the reason for any such changes; and
- Identification of changes to mitigation measures (e.g. on landscape, noise mitigation) with a description of the changes and the reasons for implementation.

A.9 Table A1 provides a list of example metrics for delivered scheme outputs. Not all metrics are expected to be reported on for all schemes, as the metrics to be reported on will be scheme and context dependent. Please note that this is not an exhaustive list and all relevant scheme outputs should be included.

Category	Metric	Suggested source	Unit of measurement	Method of measurement
New infrastructure delivered	Kilometres of new infrastructure	Monitoring data	km	New infrastructure km
New infrastructure delivered	Number of new stations delivered	Monitoring data	Number	Number of new stations
Improvement to existing infrastructure	Kilometres of infrastructure upgraded	Monitoring data	km	Measure for each distinct infrastructure
Improvement to existing infrastructure	Number of new safety features installed	Monitoring data	Number	Number of new features
Maintenance on existing infrastructure	Kilometres of infrastructure renewed / resurfaced	Monitoring data	km	Area of infrastructure that has been renewed

Table A1 Scheme metrics: Delivered scheme

Scheme outcomes

Transport outcomes

A.10 Reporting of transport outcomes is required for all standard tier schemes. Information to consider (as relevant to each scheme):

- Travel flows in the corridors of interest, including analysis of the difference between outturn results and scheme forecasts at both route and screenline level;
- Counts of pedestrians and cyclists;
- Patronage on the public transport system in the area of interest including analysis of the difference between outturn results and scheme forecasts at both route and screenline level (i.e. identification of abstraction from pre-existing services);
- Passenger experience; and
- Social inclusion.

A.11 Table A2 provides a list of suggested metrics for delivered scheme outcomes. Not all metrics are expected to be reported on for all schemes, as the metrics to be reported on will be scheme and context dependent.

A.12 Traffic flows should be measured at key locations and neutral months/times should be chosen for measurement (see section 2.4.5 of TAG unit M1-2). The key locations should be measured for a period of at least 1-2 weeks each time to ensure results are not skewed by unusual events such as accidents or other unexpected events.

A.13 The measurements should be carried out at locations expected to be affected by the scheme and at locations not expected to be affected by the scheme so that background trends can be understood.

A.14 Traffic flow baseline data should be collected prior to the intervention; this will be either pre-construction or pre-operation depending on the scheme type. Where the implementation of a scheme is expected to cause widespread disruption (e.g. where scheme construction affects local traffic), the baseline should be gathered pre-construction. Where minimal disruption is expected, the baseline should be gathered pre-operation. Scheme promoters should not use data collection from the base year model development for the evaluation as these may be quite out of date by the time the intervention is operational. Post intervention data should be collected approximately 6-12 months after the intervention is implemented. This is to ensure that users have enough time to get used to the intervention but is not too late so that the results are obscured by background changes.

A.15 See TAG unit M1-2 for further information on traffic flow data collection.

A.16 For measuring impacts related to social inclusion and passenger experience, promoters should make use of existing surveys where possible (such as the Your Bus Journey survey). However, there may be instances where it is more appropriate for scheme promoters to carry out bespoke surveys instead.

Category	Metric	Suggested source	Unit of measurement	Method of measurement
Traffic flows	Highway flows	DfT road traffic statistics, WebTRIS, Bespoke counts - automatic traffic counts, manual classified counts, automatic number plate recognition, camera surveys using artificial intelligence	Number	Classified or unclassified vehicle flows in each time period for links, turning movements and/or origin-destination pairs
Traffic flows	Cycling and walking flows	Automatic counts	Number	Total number for reporting period
Traffic flows	Cycling flows (authority level flows)	Google environmental insights	Number	Total number for reporting period
Traffic flows	Walking flows	Manual count	Number	Total number for reporting period
Mode shift	Mode shift	Intercept surveys	Percentage	Change
Mode share	Mode share	Residential surveys	Percentage	Actual share
Patronage	Bus patronage	Operators	Boardings	Total boardings for the reporting period
Patronage	Light rail patronage	Operators	Boardings	Total boardings for the reporting period
Patronage	Light rail station usage	Operators	Passengers	Total passengers for reporting period
Passenger experience	Passenger satisfaction	Surveys	Percentage	Overall satisfaction value
Passenger experience	Perceived personal safety	Surveys	Percentage	Overall safety value
Passenger experience	Satisfaction with ease of interchange between modes	Surveys	Percentage	Overall satisfaction value
Social inclusion	Access to key services	DfT connectivity metric	Connectivity	Overall connectivity value
Social inclusion	Physical access onto public transport	Surveys	Percentage	Overall access value
Social inclusion	Accessibility of information	Surveys	Percentage	Overall accessibility value

Table A2 Scheme metrics: Transport outcomes

Travel time and reliability

A.17 Reporting of travel time and reliability outcomes is required for all standard tier schemes. Information to consider:

- Travel times in the corridors of interest, including analysis of the difference between outturn results and scheme forecasts at route level; and

- Variability of travel times in the corridors of interest (including reliability for road schemes and performance/punctuality for public transport), and if applicable, analysis of the difference between outturn results and scheme forecasts at route level.

A.18 Recommended metrics and suggested data sources are provided in Table A3. Not all metrics are expected to be reported on for all schemes, the metrics to be reported on will be scheme and context dependent.

Category	Metric	Suggested source	Unit of measurement	Method of measurement
Travel time	Highway: Journey time, speeds, delays	Local authorities can request INRIX delay and travel time data from CONGESTION.STATS@dft.gov.uk. Other potential sources are bespoke moving car observers, Automatic Number Plate Recognition Surveys, WebTRIS, OpenRoute Service. There are also commercial providers of journey time data.	Minutes / seconds per vehicle per mile	Link travel times and delays
Travel time and reliability	Average journey time: Bus	Analyse Bus Open Data (ABODS)	Minutes	Average journey time for specific corridor/route
Travel time and reliability	Average speed: Bus	ABODS	Mph	Average bus speed for all routes or specific corridor/route
Travel time and reliability	Punctuality: Bus	ABODS	Percentage	Average on-time performance (punctuality) figures

Table A3 Scheme metrics: Travel time and reliability

Scheme impacts

Carbon

A.19 Reporting of carbon impacts is required for all standard tier schemes. Information to consider:

- Effect of the scheme on carbon emissions in the area of interest and analysis of the difference between outturn results and scheme forecasts.

A.20 Scheme promoters should clearly outline what planned carbon analysis is based on, including how emissions are calculated. Recommended metrics and data sources are outlined in Table A4.

A.21 The Department anticipates that carbon impacts will mostly be inferred from flow data or demand data. If a scheme is expected to impact traffic flows or speeds, a link-based method should be used to assess the user impacts.

A.22 Measurements from the baseline and post scheme-opening can be compared to provide an estimate of carbon impacts, provided allowance is also made for any underlying growth in the intervening time period, or other external influences.

A.23 Alternatively, if a scheme is expected to encourage modal shift or reduce the need to travel by car, the change in demand (with scheme vs. without scheme) should be used to calculate the avoided car kms, which can be converted into carbon reductions using the Department's TAG data book for CO2 equivalent. This methodology aligns with that used in appraisal (e.g. the Active Mode Appraisal Toolkit). This approach will require promoters to know about average speeds and trip lengths in the area.

A.24 Where modal shift to public transport is forecast, a similar approach can be applied by looking at increases in bus patronage, applying diversion factors from the TAG data book to estimate the fall in car users as a proportion of the bus patronage increase. The fall in car kms should be used alongside link-specific data such as average speed and vehicle fleet composition to estimate the fall in car kms within the network following the policy and the resulting carbon savings (using the TAG data book parameters).

A.25 It is recommended for lifecycle carbon impacts, including carbon associated with the construction of the schemes, to be considered as part of the evaluation. These might already be included under Carbon Management Plans (CMPs). Evaluation of lifecycle carbon impacts, including maintenance emissions, should be proportionate to the expected impacts.

Category	Metric	Suggested source	Unit of measurement	Method of measurement
Carbon (proxy)	Traffic flows	Bespoke counts	Number	Total number for reporting period
Carbon (proxy)	Cycling and walking flows	Automatic counts	Number	Total number for reporting period
Carbon (proxy)	Bus patronage	Operators	Boardings	Total boardings for the reporting period
Carbon (proxy)	Light rail patronage	Operators	Boardings	Total boardings for the reporting period
Carbon (proxy)	Mode shift	Intercept surveys	Percentage	Change
Carbon (proxy)	Mode share	Residential surveys	Percentage	Actual share

Table A4 Scheme metrics: Carbon

Impacts on the local economy

A.26 The direct impacts of transport schemes, such as transport time and cost savings for transport users, can generate wider economic impacts, including business investment, jobs, and economic output to the local economy where the scheme is located. The evaluation of impacts to the local economy should consider those local economy impacts that have not been reflected in other aspects of the evaluation. There are significant challenges in evaluating local economy impacts. The relatively small scale of local authority major schemes when compared with overall changes in

economic conditions, and the time lag associated with key economic changes, are among reasons why it can be challenging to evaluate local economic impacts.

A.27 Evaluation of the wider economic impacts to the local economy is required only where there is a clear rationale to do this analysis and when these impacts are a key aim or anticipated outcome of the scheme, for example identified as one of the main benefits pathways in the logic map or theory of change.

A.28 Before/after analysis for relevant metrics and the use of business surveys can be helpful to consider whether the scheme's theory of change is working as expected. Previous evaluations of local authority major schemes have included information on changing levels of employment, new housing and employment development, and business activity, as shown in the example below. However, attribution of impacts to schemes is difficult.

- The Midland Metro Birmingham City Centre Extension conducted business surveys which found the scheme made a positive contribution to local businesses. Of those surveyed, 30% of businesses strongly agreed that the metro extension would contribute to future prosperity. The proportion of employees of local businesses using the metro increased, although there were unclear outcomes on accessibility of business and attracting new staff. Further examples of the use of business surveys to evaluate local economic impacts can be found in the Local Authority Major Schemes: meta-evaluation of schemes 2011-2016.

A.29 The effects of the scheme on the local economy should have been considered in the strategic dimension and the economic dimension of the scheme's business case. The business case may, for example, have examined how the scheme would enable or facilitate development of housing or development of commercial space, and/or to have supported an increase in economic activity in the local area. The evaluation should look at what local economic impacts were identified in the business case and provide analysis of whether these impacts have materialised, or are on course to materialise, and whether changes in the local economy are because of the scheme.

A.30 Economic impacts such as new housing development or new business investment can have significant time lags following scheme opening, so the evaluation should take account of the timescales over which these impacts are expected to materialise, referring where possible to the expected timescales set out in the business case.

A.31 There are quasi-experimental and econometric evaluation methods that can be applied to strengthen evidence of attribution, but these are complex to use. It is expected that these complex evaluation methods will only be used for schemes that have local economic impacts that were expected in the scheme business case (or from post-implementation evidence) to be especially large and significant for the scheme, and that would be expected to be realised relatively swiftly (within three years). In these cases, that are expected to be relatively few, further advice should be obtained from DfT (local.evaluation@dft.gov.uk).

A.32 Where appropriate, scheme promoters can consider the following types of metrics to show how the scheme is contributing to local economic growth:

- Data and statistics on changes in local economic activity, including number of businesses, business turnover, employment, commercial floorspace, and local development.

- Stakeholder feedback such as feedback from business surveys, from private sector and public sector organisations on the impact of the scheme for the local economy.

A.33 When evaluating the local economic impacts, external factors unrelated to the scheme should be considered to examine the extent to which they contributed to a greater or lesser extent to the outturn impacts. External factors could include changes in national economic conditions (such as inflation) and business activity, or extreme weather events that may have contributed to changes in the local economy (either positively or negatively).

A.34 A 'distance decay' methodology can provide some insight into the possible effects to the local economy. Nearby areas tend to be similar – so it might be possible to focus on comparing areas that are closest to the scheme with similar areas further away. The assumption that the benefits to the local economy will be greater in areas closest to the scheme is reasonable when businesses and individuals located in those nearby areas benefit most from the improved transport provided by the scheme. This approach should be suitable for schemes where the impacts are expected to be concentrated in a limited number of areas close to the scheme, if these areas can be identified from details of the scheme and if there are unlikely to be widespread effects beyond the local areas.

A.35 Distance-based methods may not be appropriate for schemes which change the transport network in a way where benefits depend on factors other than distance to the scheme. For example, improvements to a road junction may benefit far away areas if many journeys to or from those areas pass through the junction. This also means impacts can differ across areas that are the same distance from a scheme. There are evaluation methods that consider changes in accessibility generated by a scheme, which may be suitable if it is anticipated that there could be impacts benefits over a further distance away from the scheme. However, information on travel times is unlikely to be available in many settings.

A.36 Even when relevant network data is available, shifting from a distance-based approach to an accessibility approach that allows for network effects involves considerable additional complexity to construct treatment intensities. Due to the cost of accessibility-based methods, this may be more suitable for the largest schemes for which the network effects could be more significant. However, for most local schemes, which are unlikely to generate widespread effects beyond local areas, the best approach will be to rely on distance to the scheme.

A.37 Even in the most complex scenarios, when schemes are small, before/after analysis will still be possible, although this will have lower level of robustness in attributing observed impacts to a specific scheme.

Data sources for evaluation of impacts on the local economy

A.38 The evaluation should make use of suitable data sources. Identifying and using suitable data for evaluation of impacts on the local economy can be complex. The

following section identifies some data sources that might be relevant. However, there are other data sources available that may be more suitable for specific evaluations, and other data may have also been gathered by local authorities that can be analysed for specific schemes.

A.39 It is complex and resource-intensive to obtain some data, such as the IDBR and BSD data referred to below, and to make the data ready for evaluation analysis. These data sources have not been specifically assembled for evaluation purposes and therefore their coverage and granularity may not meet the requirements of the evaluation entirely. Some statistics are only published after a significant time lag. Careful consideration and planning should be given to the resource and time required to access and analyse required data,

A.40 There are simpler open source data, such as nomisweb.co.uk, but these may not provide the data at the detailed local level that may be needed to evaluate the impact of a specific local scheme. The planning of the evaluation of impacts on the local economy should include identifying and considering the most suitable data sources.

A.41 Data on local economic activity, in terms of business outcomes at a local level, can be obtained from the Office for National Statistics' Business Structure Database (BSD). Local data from the BSD is accessed (from September 2024 for new projects) through the Integrated Data Service, and registration is required for access to this. The BSD includes a yearly snapshot of UK businesses that have registered for either VAT or PAYE.

A.42 The BSD includes data on sector of production (5-digit Standard Industrial Classification (SIC)) and employment for Local Units (LU) – which should be the smallest unit that makes sense for the firm (for example, a factory, shop, branch, etc). The BSD has limitations for businesses with multiple premises. Information on turnover is for Reporting Units (RUs) which can comprise more than one LU. An enterprise may choose to report data for regional RUs comprising all outlets (LUs) within a given region, and if so then turnover to LUs can be estimated based on employment shares.

A.43 Outcomes from the BSD that may be useful for evaluation of local economic impacts include total number of businesses, total employment, average employment within businesses, average turnover, and average labour productivity (defined at the firm level as turnover divided by the number of employees). For further information on the BSD, see Business Structure Database, UK - Integrated Data Service.

A.44 Residential property price data is available from the Land Registry's Price Paid, which covers almost all residential transactions in England and Wales. Data on new housing supply by local authority district is available from MHCLG and is from local authorities compiling quarterly information about new permanent dwellings.

A.45 The Valuation Office Agency publishes statistics relating to stock of non-domestic properties including business floorspace for England and Wales. The statistics provide information on the number and value of the stock of rateable properties, broken down by sector, geographic location, property type, and rateable value band. Also provided is the floorspace and rateable value per metre squared, where applicable, broken down by sector and geographic location.

Category	Metric	Suggested source	Unit of measurement	Method of measurement
Commercial and industrial floorspace	Stock of non-domestic properties including business floorspace	Valuation Office Agency	Stock of properties and total floorspace of the properties	Non-domestic rating: stock of properties including business floorspace
Local economic activity	Total number of businesses	ONS Business Structure Database	Business activity, size and location	Inter-Departmental Business Register (IDBR)
Local economic activity	Total and average employment	Business Register and Employment Survey	Number of employees	Business Register and Employment Survey
Local economic activity	Average labour productivity	ONS Business Structure Database	Turnover divided by the number of employees	Inter-Departmental Business Register (IDBR)
Local economic activity	New housing supply	MHCLG	Housing supply: net additional dwellings	Housing supply: net additional dwellings statistics
Local economic activity	Residential property price	Land Registry's Price Paid	Sale prices of properties	Sale prices of properties submitted to HM Land Registry for registration
Local economic activity	Stakeholder feedback	Business surveys	Responses from local businesses on how the scheme has affected their business activity, considered in turnover, employment, and productivity	Interviews or surveys of a sample of local businesses

Table A5 Scheme metrics: Impacts on the local economy

Air quality

A.46 Reporting of air quality impacts is recommended if relevant to a scheme's objectives and/or if identified as an unintended consequence. Evaluation of air quality is challenging and the approach taken should be proportionate to the expected impacts. Information to consider:

- Effect of the scheme on local air quality in the area of interest and analysis of the difference between outturn results and scheme forecasts. Particular attention should be paid to Local Air Quality Management Areas.

A.47 The pre- and post-intervention data should each include at least one year of data (data collected continuously for a period of one year) for each reporting period. Recommended metrics and data sources are outlined in Table A6.

A.48 In cases where diffusion tubes are used to measure NO2, as opposed to continuous analysers, it should be noted that time resolutions differ (monthly for diffusion tubes, compared to real time for continuous analysers).

Category	Metric	Suggested source	Unit of measurement	Method of measurement
Air quality	PM10 concentrations	Monitoring stations	Micrograms per cubic m	Absolute value for reporting period

Air quality	PM2.5 concentrations	Monitoring stations	Micrograms per cubic m	Absolute value for reporting period
Air quality	NO2 concentrations	Monitoring stations	Micrograms per cubic m	Absolute value for reporting period

Table A6 Scheme metrics: Air quality

Safety

A.49 Reporting of safety impacts is recommended if relevant to a scheme's objectives and/or if identified as an unintended consequence. Information to consider:

- Effect of the scheme on road casualties in the area of interest and analysis of the difference between outturn results and scheme forecasts.

A.50 It is recognised that it might not be possible to enable statistically sound evidence of change in casualty rates. The pre- and post-intervention data should each include at least three years' worth of data.

A.51 Recommended metrics and data sources are outlined in Table A7. Not all metrics are expected to be reported on for all schemes, the metrics to be reported on will be scheme and context dependent.

Category	Metric	Suggested source	Unit of measurement	Method of measurement
Safety	Number of fatalities	STATS19	Number	Number of fatalities
Safety	Number of serious injuries	STATS19	Number	Number of serious injuries
Safety	Total number of casualties	STATS19	Number	Number of fatalities and injuries
Safety	Perceived road safety	Passenger survey	Percentage	Overall perceived safety value

Table A7 Scheme metrics: Safety

Wider environmental impacts

A.52 Reporting of wider environmental impacts is recommended if relevant to a scheme's objectives and/or if identified as an unintended consequence. This includes evaluation of noise and biodiversity impacts. Information to consider:

- Effect of the scheme on noise levels at important receptor locations and analysis of the difference between outturn results and scheme forecasts.

- Effect of the scheme on biodiversity. Scheme promoters are responsible for identifying whether the biodiversity net gain legislation is applicable to a scheme. For further information, see Understanding biodiversity net gain - GOV.UK

A.53 Recommended metrics and data sources are outlined in Table A8.

A.54 In addition, scheme promoters may wish to consider evaluating impacts on landscape, townscape, the historic environment, and the water environment, if relevant.

Category	Metric	Suggested source	Unit of measurement	Method of measurement
Noise	Measured noise level	Receptor locations	dB	Absolute value per reporting period
Biodiversity	Statutory biodiversity metric	Field survey / remote sensing	Biodiversity unit	Biodiversity unit change (pre/post construction)

Table A8 Scheme metrics: Wider environmental impacts

Annex B: Logic maps for each scheme typology

Below are example logic maps for each of the scheme typologies.

- **Improvements and enhancements** to road and bridge schemes, aiming to modify the structure of existing infrastructure to deliver new features of improvements, or to deliver new infrastructure

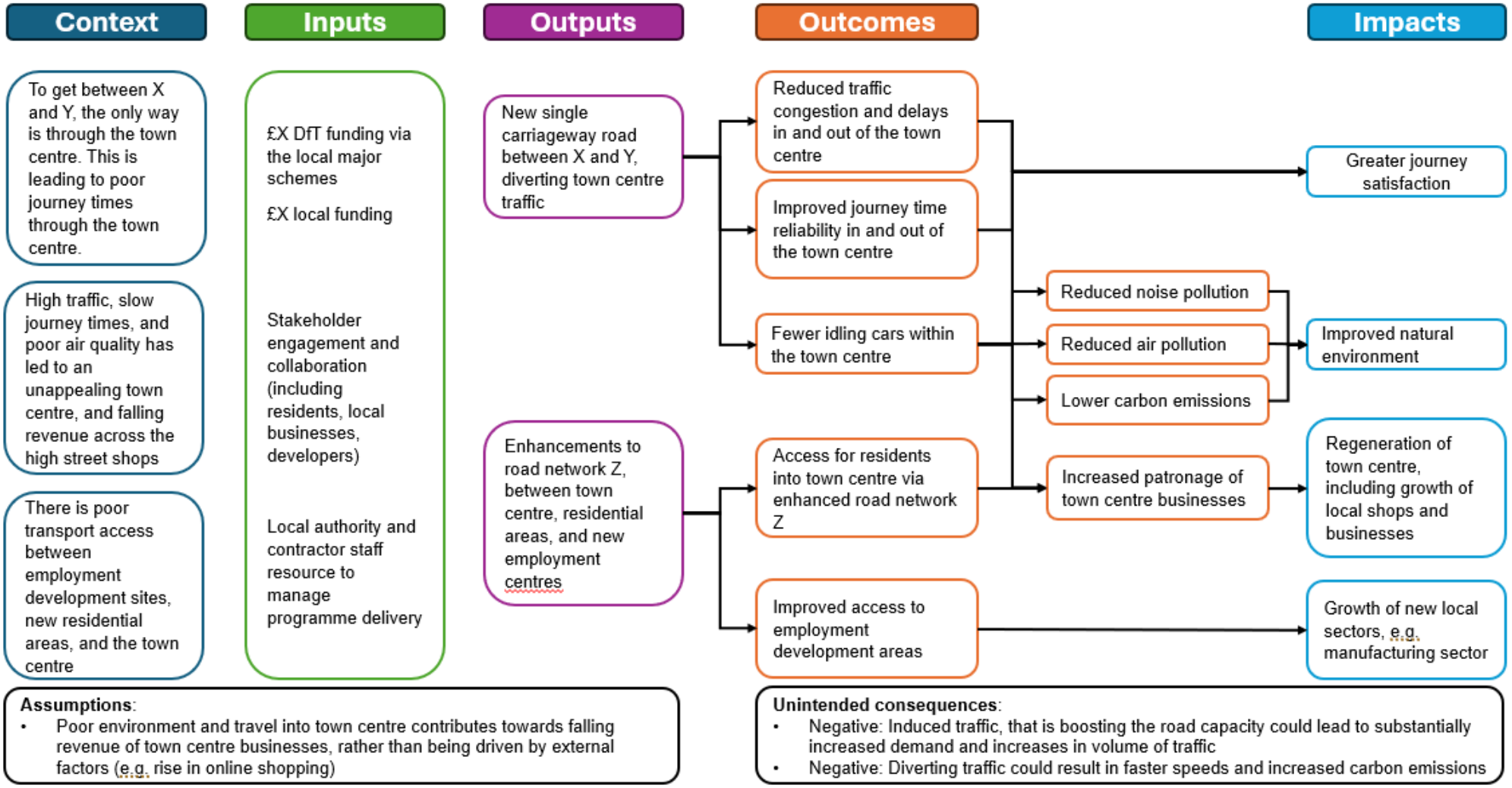

Figure A1 Example logic map: Local major road and bridge improvements and enhancements.

- **Bus schemes** e.g. bus lane and bus station developments;

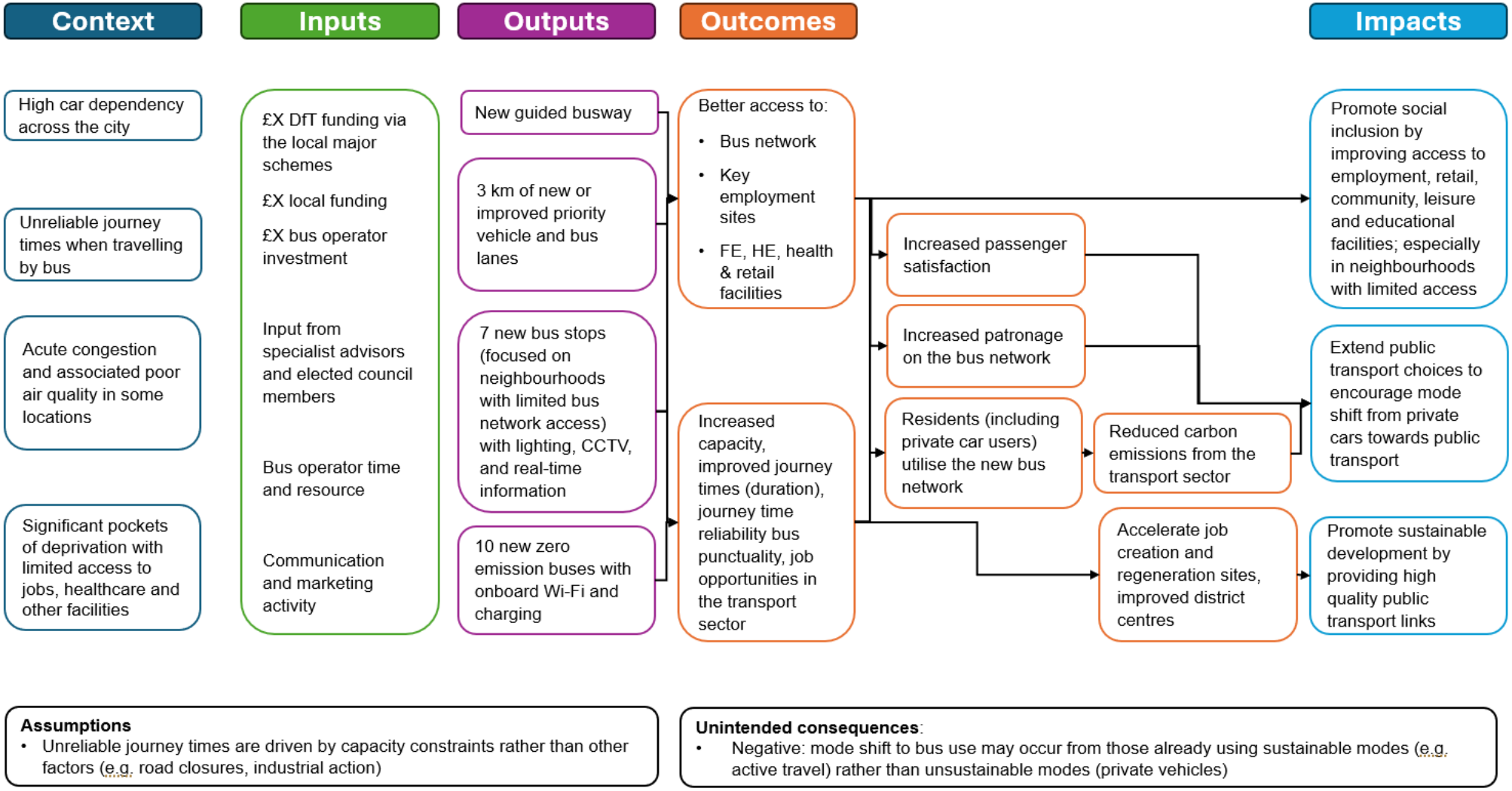

Figure A2 Example logic map: Road improvements that have a direct impact on bus schemes. (Adapted from West of England Combined Authority 2022 - Evaluation of the Greater Bristol metrobus schemes, one-year after, Figures 1-6, 1-7, 1-8).

- **Active travel schemes** e.g. walking and cycling routes;

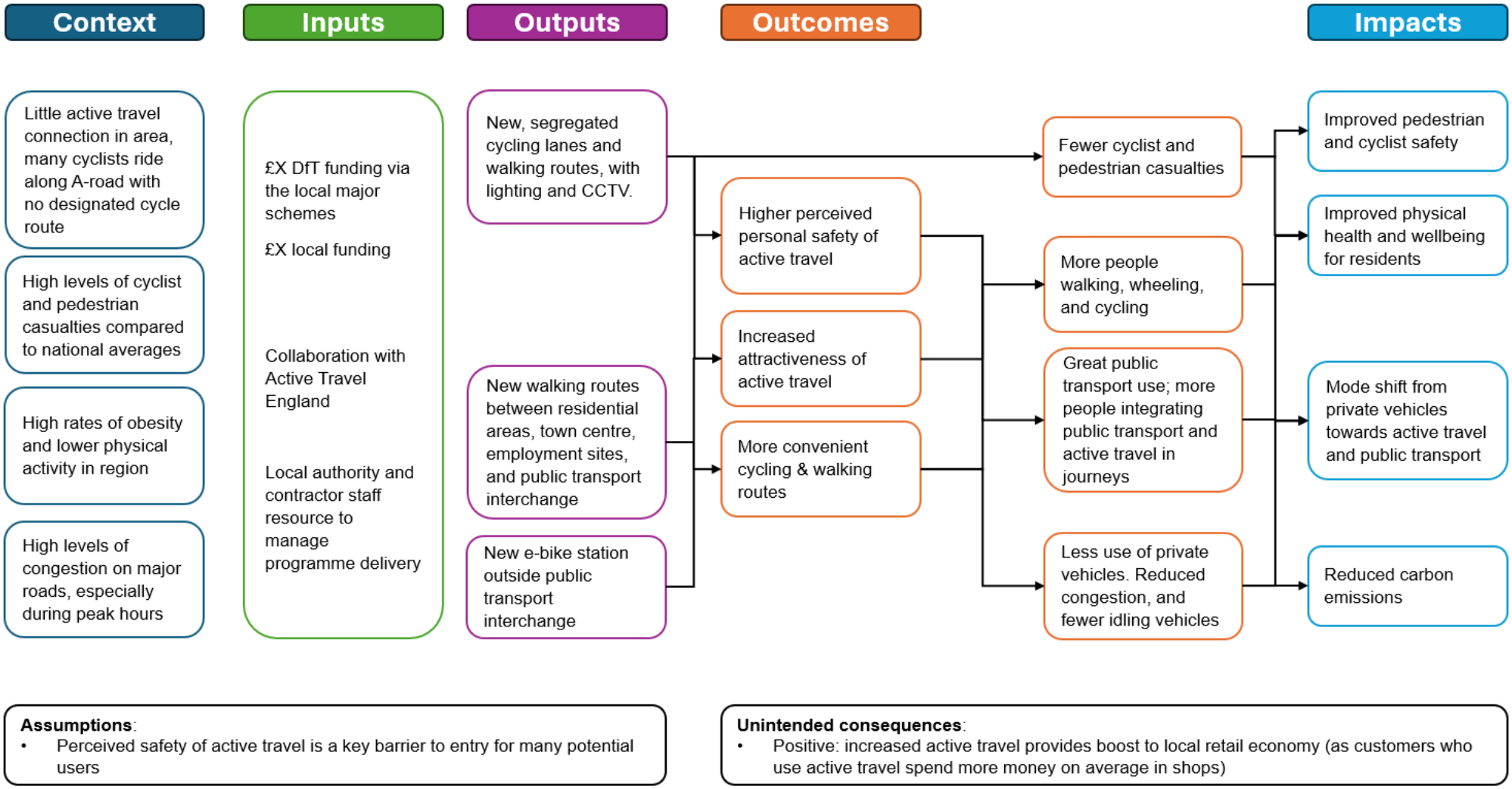

Figure A3 Example logic map: Road improvements that have a direct impact on active travel.

- **Tram and light rail projects;**

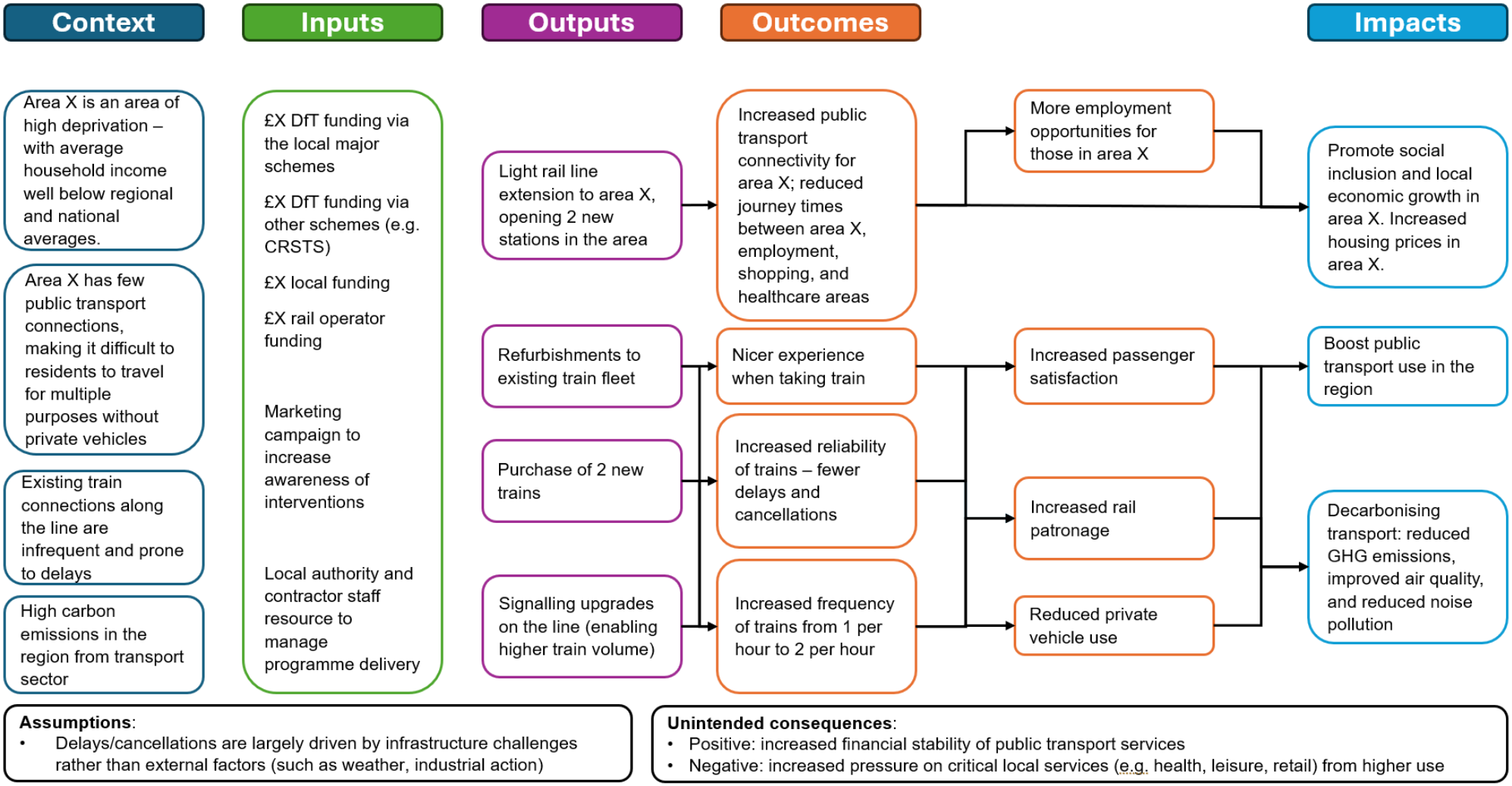

Figure A4 Example logic map: Tram and light rail projects.

- **Public realm projects** e.g. improvements to rail stations that fall under the remit of local authorities such as piazza areas equipped with street furniture and digital signage;

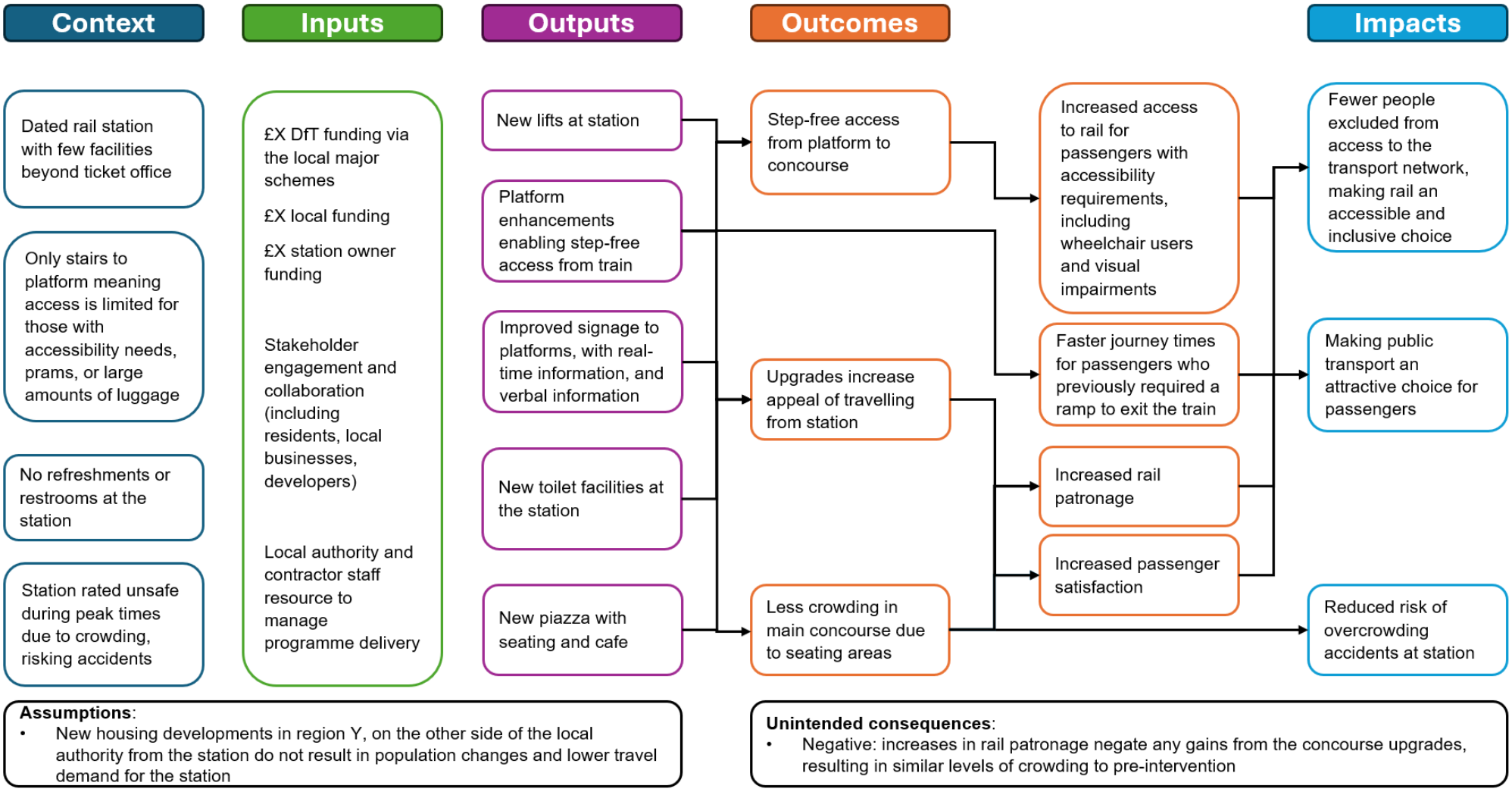

Figure A5 Example logic map: Public realm projects.

- **Major maintenance/renewal projects** aiming to repair and rehabilitate existing infrastructure.

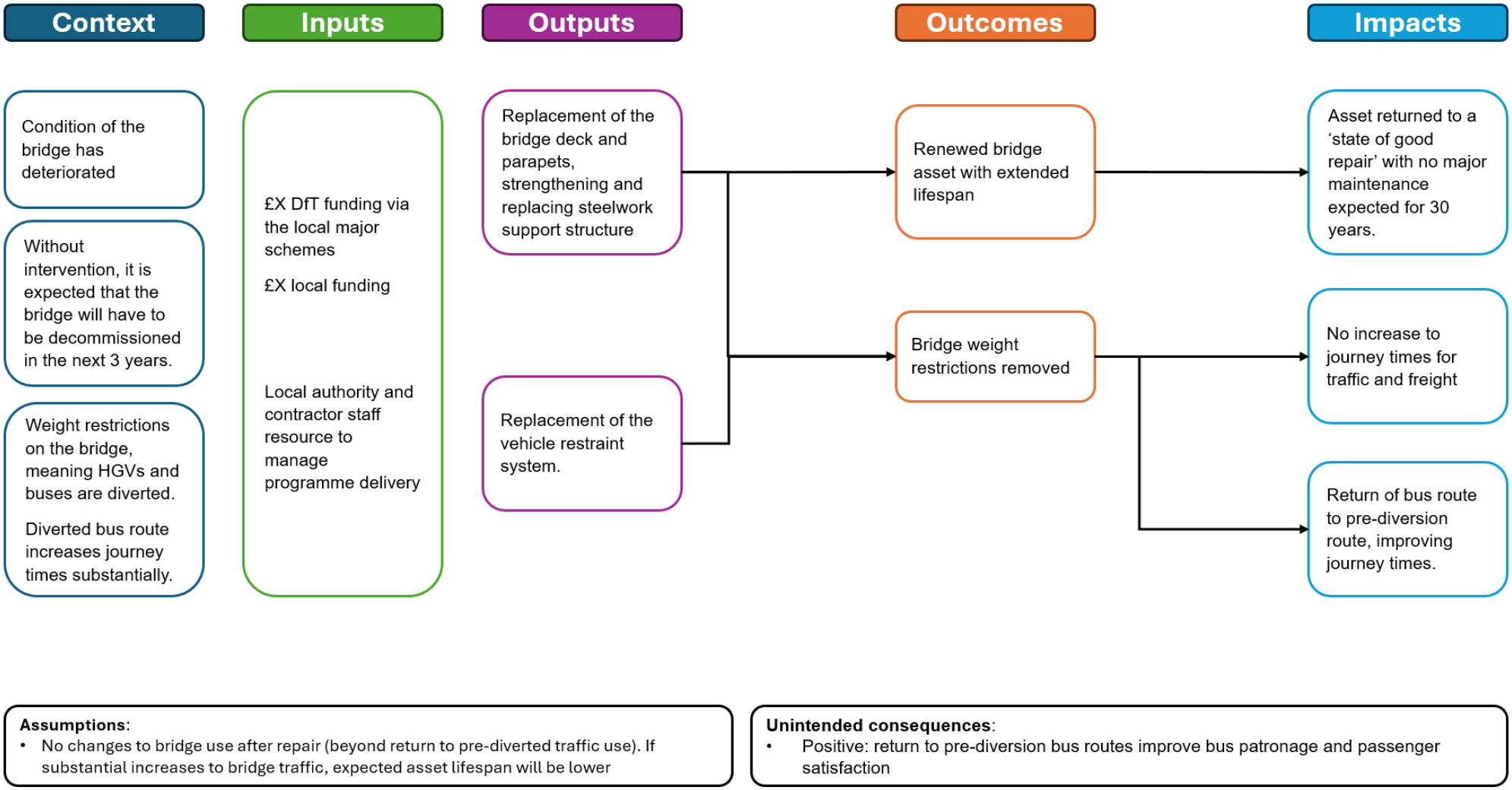

Figure A6 Example logic map: Major maintenance/renewal projects. (Adapted from TfL 2024 - Gallows Corner Monitoring and Evaluation Plan).

Annex C. Glossary and acronyms

Glossary

Concept	Definition
Appraisal	The process of assessing the costs, benefits, and risks of alternative ways to meet government objectives. It helps decision makers to understand the potential effects, trade-offs and overall impact of options by providing an objective evidence base for decision making.
Baseline data	Data collected on the measures of interest close to the start of scheme construction or scheme operation. Data should include the condition of the pre-scheme infrastructure which the scheme outputs seek to change (e.g. number of lanes available), and the performance the scheme seeks to influence (e.g. travel time).
Before/after comparison	A before versus after comparison (also called pre/post comparison) measures outcomes before introducing an intervention, and then again afterwards. Any changes in the outcomes are attributed to the intervention.
Benefit	From the benefits management literature, a benefit is the measurable improvement resulting from an output perceived as positive by one or more stakeholder(s), which contributes towards one or more specified objective(s).
Benefit category	Benefit categories can be used to group benefits. For example, scheme promoters can categorise benefits by recipient and identify whether benefits are financial, quantitative, or qualitative.
Benefit cost ratio (BCR)	BCR is a key measure used to appraise or evaluate the value for money of a scheme by comparing the total monetised benefits (and disbenefits) of a project to its total costs (cost to the Broad Transport Budget). The BCR indicates how much benefit is obtained for each unit of cost, with a BCR greater than 1 indicating that the scheme's benefits outweigh the costs.
Benefits realisation	Achievement of planned and defined benefits, to target (time, quality/quantity and cost), or exceeding target.
Benefits management	Benefits management is a structured approach to the identification, quantification, analysis, planning, tracking, realisation and optimisation of benefits, that is the measurable changes that a project seeks to deliver.
Causal inference	Causal attribution and contribution refer to being able to be confident there is a causal link between events – in particular between activities and results. The term 'causal attribution' refers to a direct causal link. The term 'causal contribution' can be used to recognise multiple contributing factors that produce results. The term 'causal inference' covers both and some impact evaluation methods can determine causal inference.
Cordons and screenlines	Cordons generally comprise a ring of data collection points to monitor movements into and out from an enclosed area, whilst screenlines involve a line of data collection points, to capture movements crossing that line.

Cost benefit analysis	Analysis which quantifies as many of the costs and benefits of a proposal as feasible, including items for which the market does not provide a satisfactory measure of economic value.
Counterfactual	Counterfactuals are estimates of what would have happened in the absence of the intervention and, as such, can be used to establish causality and attribution. Counterfactuals may be formulated by use of control groups (created through random allocation), comparison groups (created through quasi-randomisation or matching on key characteristics), and/or other comparisons. Formulation of counterfactuals can be assisted by use of the modelled scenarios.
Disbenefit	A measurable change resulting from an outcome perceived as negative by a stakeholder.
Do minimum	Also referred to as “without scheme”. Outcomes and impacts that would have been expected to occur in the absence of the intervention. Rather than drawing upon monitoring data, do minimum is based on modelling forecasts.
Do something	Also referred to as “with scheme”. Outcomes and impacts that would be expected to occur if the intervention is implemented. There may be multiple do-something options considering various versions of intervention. Do-something is based on modelling forecasts.
Evaluation	A systematic process for understanding the relationships between a scheme's design, implementation, and impact within the context in which it is delivered. It involves understanding how an intervention is being or has been implemented, what effects it has, for whom and why. It identifies what can be improved and estimates its overall impacts and cost-effectiveness. There are three main types of evaluation activity, each aiming to answer different but complementary questions: process evaluation, impact evaluation, and value-for-money evaluation. In evaluation, the neutral terms of 'outcomes' and 'impacts' are typically used in place of 'benefits' to describe the consequences of an intervention.
Ex-ante	Activity that occurs in the appraisal stage, before the scheme has been implemented.
Ex-post	Activity that occurs in the evaluation stage, after the scheme has been implemented.
Impacts	Longer-term effects on transport usage and wider social/economic effects, e.g. employment, productivity, wellbeing.
Impact evaluation	Impact evaluations seek to understand what difference the intervention has made. Typical questions include 'did the intervention achieve the expected outcome? to what extent?', 'how exactly did the intervention cause the observed impact?', 'to what extent can the difference be attributed to the intervention?', 'what would have happened anyway (without the intervention)?', and 'what unintended consequences did the intervention have (positive or negative)?'.
Inputs	The resources invested when implementing the scheme, e.g. money, skills, people, activities.
Lessons learned	A lessons learned exercise captures the main lessons learned from the development and delivery of the scheme. This is expected to provide insights and reflections on the experiences, challenges, successes, and improvements identified throughout the course of the scheme. Learnings may be collected throughout development and delivery, as well as shortly after the scheme has opened.
Logic mapping	A visual way to represent the theory of change of an intervention, setting out a logical chain running from inputs and activities to outputs, outcomes, and impacts.
Meta-evaluation	The systematic description and valuation of one or more evaluations.
Monetised outcomes and impacts	Benefits (i.e. an outcome perceived as positive) and disbenefits (i.e. an outcome perceived as negative) from a scheme converted into monetary terms using techniques such as social cost-benefit analysis.
Monitoring data	Data related to the outcome measures of interest and key factors expected to influence them. Monitoring data is essential for checking project progress against planned targets and estimating the impact and

	value-for-money of the scheme at a later stage. Data is divided into implementation monitoring (data associated with the intervention itself) and results monitoring (data associated with the expected benefits).
Net present value	The net present value calculates the difference between the economic monetised benefits and costs. As per TAG Unit A1-1, the NPV is a useful CBA metric where schemes or options do not impact on the 'Broad Transport Budget' or where they generate significant revenues that accrue to the 'Broad Transport Budget', offsetting investment and operating costs in the PVC. This varies depending on the size of the project while the BCR can be used to compare projects of different sizes.
Outcomes	Short- and medium-term results from the intervention, e.g. changes to traffic flows and modal shift.
Outputs	The quantifiable results that have been produced as a direct result from the intervention, e.g. new or improved roads, walking and cycling facilities, rail infrastructure.
Present value	Present value reflects that people prefer to consume goods and services now, rather than in the future. All monetised costs and benefits arising in the future need to be adjusted to take account of this phenomenon known as 'social time preference'. The technique used to perform this adjustment is known as 'discounting'. The present value of a stream of monetary values can be calculated by discounting the values in which they occur and then summing the stream of discounted values. Present value should be published in real prices so the effect of inflation is removed. Present values relate to the Department's base year specified in TAG.
Process evaluation	Process evaluations seek to understand what can be learnt from how the intervention was delivered. Typical questions include 'was the intervention delivered as intended?', 'what worked well, or less well, for whom and why?', 'what could be improved?', and 'how has the context influenced delivery?'.
Quasi-experimental impact evaluation approaches	These types of impact evaluation make comparisons between the beneficiaries of an intervention and a similar group that did not receive the intervention. These approaches typically provide the strongest, most objective evidence of impact.
Scheme costs	The capital expenditure (one-time investments made in assets or infrastructure) and operating expenditure (day-to-day costs of operating and maintaining the scheme).
Scheme related links	In relation to road improvement schemes. Scheme related links are defined as links which include the scheme but also links which serve as alternative routes for the scheme
Theory of change	The theory of how the intervention is expected to work (setting out all the steps expected to be involved in achieving the desired outcomes and impacts), the assumptions made, the quality and strength of the evidence supporting them, and wider contextual factors.
Value for money (VfM) evaluation	Value for money evaluation is a type of evaluation analysis used during or after implementation of a project, programme, or investment to assess whether the benefits that have been or are being delivered justify the costs involved.
Theory-based impact evaluation approaches	Theory-based impact evaluations draw conclusions about an intervention's impact through rigorous testing of whether the causal chains thought to bring about change are supported by sufficiently strong evidence and that alternative explanations can be ruled out. Theory-based evaluation is explicitly concerned with both the extent of the change and why change occurs; it tries to get inside the black-box of what happens between inputs and outcomes, and how that is affected by wider contexts.

Table A9 Glossary of specialist terms

Acronyms

Acronym	Definition
ABODS	Analyse Bus Open Data Service
BCR	Benefit Cost Ratio
BSD	Business Structure Database
CDEL	Capital Departmental Expenditure Limit
DfT	Department for Transport
DiD	Difference-in-Differences
FBC	Full Business Case
GIS	Geographic Information Systems
LLM	Large Local Majors
MHCLG	Ministry of Housing, Communities and Local Government
MRN	Major Road Network
OBC	Outline Business Case
POPE	Post Opening Project Evaluation
SOC	Strategic Outline Case
TAG	Transport Analysis Guidance
VfM	Value for money

Table A10 Acronyms