

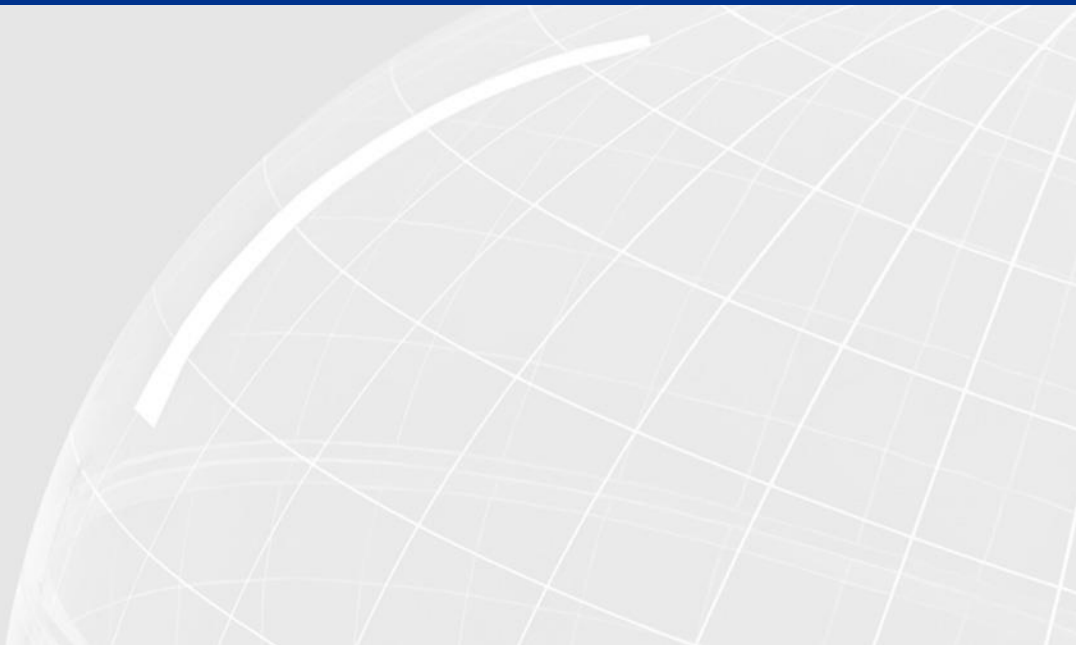


Preston Western Distributor Full Business Case

Monitoring and Evaluation Plan

15 April 2019

Lancashire County Council



Preston Western Distributor Full Business Case

Project No: B2237517
 Document Title: Monitoring and Evaluation Plan
 Document No.: 686/09f
 Revision: 3
 Date: 15 April 2019
 Client Name: Lancashire County Council
 Client No: Lancashire County Council
 Project Manager: Sergey Makov
 Author: Masoumeh Rajabi
 File Name: P:\B2000000\B2237517 - Preston Western Distributor OBC\3 JC Tech Work\3.3 FBC Model Update\3.3.2 Reports\8. M&E\B2237517 Preston Western Distributor ME Plan - Rev03.docx

Jacobs U.K. Limited

1 City Walk
 Leeds, West Yorkshire LS11 9DX
 United Kingdom
 T +44 (0)113 242 6771
 F +44 (0)113 389 1389
www.jacobs.com

© Copyright 2019 Jacobs U.K. Limited. The concepts and information contained in this document are the property of Jacobs. Use or copying of this document in whole or in part without the written permission of Jacobs constitutes an infringement of copyright.

Limitation: This document has been prepared on behalf of, and for the exclusive use of Jacobs' client, and is subject to, and issued in accordance with, the provisions of the contract between Jacobs and the client. Jacobs accepts no liability or responsibility whatsoever for, or in respect of, any use of, or reliance upon, this document by any third party.

Document history and status

Revision	Date	Description	By	Review	Approved
Revision 0	22 January 2019	Issued to LCC for review	MR	SM	SM
Revision 1	06 February 2019	Issued to LCC for review	MR	SM	SM
Revision 1	18 February 2019	Issued to Atkins/DfT for review	MR	SM	SM
Revision 2	03 April 2019	Addressing Atkins Comments	MR	SM	SM
Revision 3	10 April 2019	Addressing Atkins Comments	MR	SM	SM

Contents

1.	Introduction.....	1
1.1	Background and Purpose of Report.....	1
1.2	Sources of Information	1
1.3	Report Structure	2
2.	Scheme Overview.....	3
2.1	Proposed Scheme	3
2.2	Scheme Objectives.....	4
3.	Monitoring and Evaluation Requirements	5
3.1	Introduction	5
3.2	Definitions	5
3.3	DfT Monitoring and Evaluation Framework for Local Authority Major Schemes.....	6
3.3.1	Standard Monitoring	6
3.3.2	Enhanced Monitoring.....	6
3.3.3	Fuller Evaluation	6
3.4	LEP Growth Deal Monitoring and Evaluation Framework.....	8
4.	Logic Mapping	10
4.1	Introduction.....	10
4.2	Method.....	10
4.3	Logic Map	10
5.	Evaluation Objectives and Research Questions.....	12
5.1	Evaluation Objectives	12
5.2	Research Questions	12
6.	Evaluation Approach.....	13
6.1	Evaluation Types	13
6.2	Process Evaluation.....	13
6.2.1	Scheme Delivery Process	13
6.2.2	Delivered Scheme	18
6.2.3	Outturn Costs	20
6.3	Impact Evaluation	20
6.3.1	Scheme Objectives.....	21
6.3.2	Travel Demand	24
6.3.3	Impacts on Travel Time and Journey Time Reliability	26
6.3.4	Impacts on the Economy	28
6.3.5	Impacts on Carbon	30
6.3.6	Impacts on Noise.....	30
6.3.7	Impacts on Local Air Quality.....	31
6.3.8	Impacts on Accidents	32
6.4	Economic Evaluation	33
6.4.1	Outturn Appraisal Assumptions.....	33
7.	Data Collection	34

7.1	Introduction	34
7.2	Data Collection Requirements	34
8.	Resourcing and Governance	37
8.1	Introduction	37
8.2	Governance Structure	37
8.3	Key Roles	37
8.3.1	Evaluation Manager	37
8.3.2	Preston Western Distributor (PWD) Project Board	37
8.3.3	Steering Group	37
8.3.4	Preston Western Distributor (PWD) Project Manager	38
8.3.5	Delivery Team	38
8.3.6	Preston City Council	38
8.3.7	Department for Transport (DfT) and Lancashire Enterprise Partnership (LEP)	38
8.4	Quality Assurance	39
8.5	Risk Management	39
8.6	Timescale for Reporting	40
8.7	Dissemination Plan	40
8.1	Budgetary Estimates	41
9.	LEP Monitoring and Evaluation Requirements	42

Appendix A. Questionnaires

Appendix B. ATC Count Sites

Appendix C. Monitoring and Evaluation Budgetary Estimates

Appendix D. LEP Economic Output Table

List of Figures

Figure 2-1: Scheme Location	3
Figure 4-1: Logic Map	11
Figure 6-1: Access to Warton Enterprise Zone before and after PWD	23
Figure 6-2: Journey Time Routes	24
Figure 6-3: Traffic Count Locations	25
Figure 8-1: Governance Structure	39

List of Tables

Table 3-A: LEP Monitoring Metrics	9
Table 6-A: Scheme Delivery Process	15
Table 6-B: Delivered Scheme	19
Table 6-C: Scheme Costs	20
Table 6-D: North West Preston Housing Estimated Built-out Rate	22
Table 6-E: Travel Demand	25
Table 6-F: Travel Time and Reliability	28
Table 6-G: Impacts on the economy	29
Table 7-A: Data Collection Requirements	35
Table 8-A: Management of Risks	39
Table 8-B: Monitoring and Evaluation Budgetary Estimates	41
Table 9-A: LEP Framework Metrics	42

1. Introduction

1.1 Background and Purpose of Report

The purpose of this Monitoring and Evaluation Plan is to set out a framework to monitor and evaluate the success of the Preston Western Distributor (PWD) scheme. This plan has been produced based on frameworks outlined by the Department for Transport (DfT) and the Lancashire Enterprise Partnership (LEP), given that the PWD is a DfT retained scheme and also sits within the LEP Growth Deal programme. The Monitoring and Evaluation Plan enables the DfT and the LEP to understand what has been spent and what has been delivered, as well as to provide information for demonstrating that their funding for local-level investment has provided value for money for the taxpayer and ensuring that lessons learnt from this evidence are used to inform future decision making.

In September 2012, the DfT released a framework to meet responsibilities for the evaluation of Local Authority Major Schemes (entitled, “Monitoring and Evaluation Framework for Local Authority Major Schemes” (to be referred as “the DfT’s guidance” throughout the remainder of this report)). The framework sets out:

- The expectations for the monitoring and evaluation of Local Authority Major Schemes and engagement with DfT
- Standard Monitoring requirements
- Enhanced Monitoring requirements
- Fuller Evaluation requirements
- The schemes selected for Fuller Evaluation
- Monitoring and Evaluation Plan requirements

The DfT’s guidance is designed to make the process as consistent and proportionate as possible. It also aims to be complementary with the devolution of decision making, developing a consistent evidence base to enable a clear demonstration that intended outcomes and impacts have been delivered effectively, and assess whether scheme objectives have been achieved. This will provide valuable evidence to support future funding of such investment streams. A consistent monitoring approach across all Local Authority Major Schemes will also facilitate programme level analysis to be carried out by the DfT on a regular basis, enabling dissemination of good practice and lessons learnt across the investment programme.

The funding of Local Authority Major Schemes represents a substantial investment for government. Evaluating the investment would satisfy the following objectives:

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

Where the outcomes differ from expectations, the evidence base needs to be able to identify the reasons why and record lessons that can be learnt. In developing these proposals evaluation best practice has been taken into account to determine the most appropriate approach for this scheme.

1.2 Sources of Information

The guidance documents used for the report are given below:

- Growth Deal Monitoring and Evaluation Framework, Lancashire Enterprise Partnership May 2016;
- Growth Deal Monitoring and Evaluation Framework, Lancashire Enterprise Partnership May 2015

- Monitoring and Evaluation Strategy, Department for Transport March 2013
- Monitoring and Evaluation Framework for Local Authority Major Schemes, Department for Transport September 2012;
- Best Practice Guidance for Planning the Fuller Evaluations of Local Authority Major Schemes (Draft) (DfT, 2013);
- Logic Mapping Hints and Tips (Tavistock Institute, October 2010); and,
- Guidance for Transport Impact Evaluations, Tavistock Institute & AECOM, March 2010.

1.3 Report Structure

This report is structured as follows:

- Chapter 2: Scheme Overview
- Chapter 3: Monitoring and Evaluation Requirements
- Chapter 4: Logic Mapping
- Chapter 5: Evaluation Objectives and Research Questions
- Chapter 6: Evaluation Approach
- Chapter 7: Data Collection
- Chapter 8: Resourcing and Governance
- Chapter 9: LEP Monitoring and Evaluation Requirements

2. Scheme Overview

2.1 Proposed Scheme

The Preston Western Distributor (PWD) is a key component of the programme of measures set out in the Central Lancashire Transport Masterplan (CLTM) that collectively will support the scale of development set out in the approved Central Lancashire Core Strategy and will mitigate its impact on the transport network.

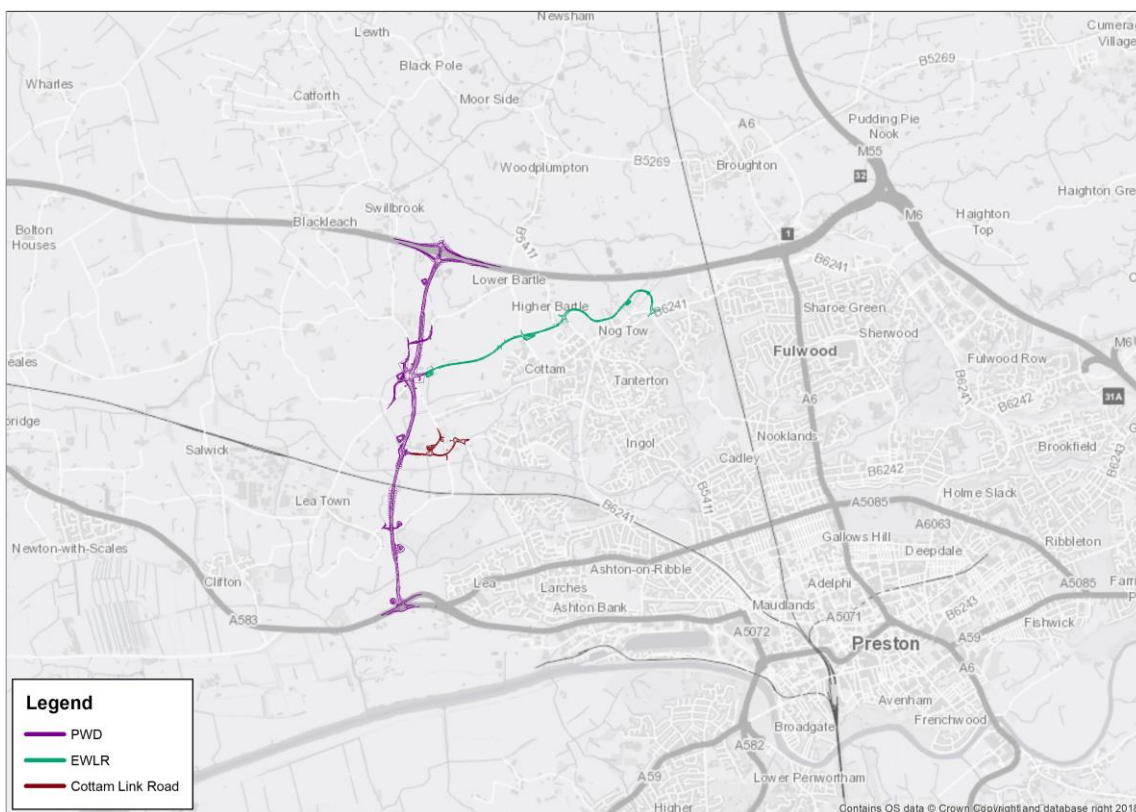
The PWD preferred option consists of construction of a new 4.3km dual carriageway road to support delivery of the North West Preston strategic housing location (more than 5,000 dwellings) and improve access to both the Strategic Road Network in Northwest Preston, and to/from the Enterprise Zone at Warton.

The scheme includes a new full access junction with the M55 (Junction 2). It also provides direct links into existing Cottam development areas, the potential Cottam Parkway Rail Station, and direct connection to the East West Link Road. The PWD scheme will also include a combined cycleway footway along the eastern side of the proposed scheme between the A583 and the proposed East West Link (EWL) Road which would tie into existing footpaths and cycle facilities.

As part of the scheme several minor roads (e.g. Lea Road, Sidgreaves Ln) will be altered in the provision of a new roundabout to connect north/south and to/from the East West Link Road. The East West Link Road provides the spine through the Strategic Housing Development and therefore providing connectivity to the PWD of the 5000+ houses proposed. Additionally, it connects the PWD scheme directly with existing highway network at Lightfoot Lane.

The scheme is one of the four major highways schemes in the Preston, South Ribble and Lancashire City Deal and is in Transport for Lancashire's agreed and prioritised Investment Programme.

A map showing the location of the scheme is included in Figure 2-1 below.



2.2 Scheme Objectives

The confirmed scheme objectives as defined in the Option Assessment Report (June 2017) and the PWD Strategic Case are split into two tiers. The three primary objectives are critical to delivery of the Core Strategy and are identified within the CLTM. The eight supporting objectives relate to the current and future problems within the PWD area of impact. The full set of objectives is listed below:

The published three primary objectives of the proposed scheme are as follows:

- **Support local economic growth** by unlocking housing development in North West Preston;
- **Improve access of the Warton Enterprise Zone** to strategic road network and wider labour market catchment; and
- **Reduce congestion** and associated delays on the arterial and radial routes within the Preston urban area.

The supporting objectives of the scheme have been identified as:

1. *Facilitate access to the proposed Cottam Parkway rail station;*
2. *Facilitate the implementation of bus priority measures;*
3. *Facilitate the provision of enhanced walking and cycling networks;*
4. *Facilitate enhancement of the public realm and local centres;*
5. *Improve road safety;*
6. *Improve air quality and reduce noise pollution;*
7. *Support further housing and employment growth potential in Central Lancashire; and*
8. *Support the future delivery of a new Ribble Crossing joining with the A582 and A59 routes west of Penwortham.*

3. Monitoring and Evaluation Requirements

3.1 Introduction

The Monitoring and Evaluation proposals set out in this report are drawn from the guidance outlined in the **Monitoring and Evaluation Framework for Local Authority Major Schemes** issued by DfT (September 2012) and the **Growth Deal Monitoring & Evaluation Framework** issued by the Lancashire Enterprise Partnership (LEP). The LEP's Monitoring and Evaluation Framework published in May 2015 and May 2016 have been used in the preparation of this report and is in line with the principles set out in the DfT guideline. This Monitoring and Evaluation Plan has been based on the 2016 guidance, except for the PWD's Project Specific metrics (discussed in Section 3.4) which are taken from the 2015 document. The remainder of this report will refer to the latest published document (2016).

The DfT Monitoring and Evaluation Framework guidance sets out three tiers of Monitoring and Evaluation:

- a) Standard Monitoring
- b) Enhanced Monitoring
- c) Fuller Evaluation

All Local Authority Major Schemes approved for funding as part of the 'Supported Pool' in 2010 or as part of the 'Development Pool' process in late 2011 / early 2012 are required to undertake Standard Monitoring.

Those schemes that cost more than £50m or which are anticipated to have significant impact upon indicators (e.g. local air quality) are required to undertake Enhanced Monitoring.

A selection of schemes, as identified by the DfT, are also required to undertake a Fuller Evaluation, which consists of assessments of the delivery process, outcomes and impacts, and value for money. These schemes have been selected based on the scale of investment, the nature of the scheme and the benefits to be gained from the evaluation evidence generated.

The LEP guidance requires that a monitoring and evaluation plan to include three types of metrics:

- Input Core Metrics known as top three metrics
- Outcomes Core Metrics
- Project Specific Outputs and Outcomes Metrics

The PWD scheme has been selected for Fuller Evaluation by the DfT. Therefore, the Monitoring and Evaluation Plan for the PWD has been developed to cover all three tiers (proportionate to the scheme) required by DfT listed above.

Given that the Fuller evaluation is the most comprehensive level of evaluation and LEP's requirements are similar to the DfT's, the main body structure of this report is based on the DfT's guidance. However, in order to ensure that the proposed plan includes all three types of LEP's metrics listed above, Chapter 9 maps each LEP metric to the DfT's metrics fully explained in Chapter 6.

Requirements for each tier in DfT guidance are summarised below. Full details of the proposals to satisfy those requirements are set out in Chapter 5, 6 and 7.

3.2 Definitions

This section explains the terms Monitoring and Evaluation and defines the four terms that are frequently used in the framework, namely Context, Inputs, Outputs, Outcomes and Impacts, as described below:

Monitoring is defined as “*the formal reporting and evidencing that spend and outputs are being delivered to target*” and allows for a review of the momentum towards the achievement of milestone and progress towards creation of the outputs. The approach to monitoring encompasses consideration of a core set of metrics covering the activities, outputs and outcomes associated with the main types of intervention.

Evaluation is defined as “*the assessment of policy effectiveness and efficiency during and after delivery. It uses evidence around outcomes and impacts in order to assess an interventions success*”. Evaluation has strong links to monitoring, however it allows for more accurate judgement to be drawn on the effectiveness of interventions and to understand and learn “what works” in different areas and why. Evaluation commences towards the completion of the projects, whereas monitoring is ongoing throughout their implementation.

Context - the problems and issues identified in the local area;

Inputs - What is being invested in terms of resources, equipment, skills and activities undertaken;

Outputs - What has been delivered and how it is being used, such as roads built, bus services delivered;

Outcomes - Short-term intermediate effects, such as changes in traffic flows, modal shifts; and

Impacts - Longer-term effects on wider social and economic outcomes, such as supporting economic growth.

3.3 DfT Monitoring and Evaluation Framework for Local Authority Major Schemes

3.3.1 Standard Monitoring

Based on DfT’s guidance, the following (covering inputs, outputs, outcomes and impacts) are the standard measures that should be monitored for all schemes:

- Scheme build;
- Delivered scheme;
- Costs;
- Scheme Objectives;
- Travel demand;
- Travel times and reliability of travel times;
- Impacts on the economy; and
- Carbon Impacts.

3.3.2 Enhanced Monitoring

In addition to those in Standard tier, the following measures will need to be assessed for schemes as part of Enhanced monitoring:

- Noise;
- Local Air Quality; and,
- Accidents.

3.3.3 Fuller Evaluation

The aim of undertaking the DfT’s Fuller Evaluation on selected schemes is to generate additional evidence on:

- Whether the scheme was delivered effectively and efficiently;
- The causal effect of the scheme on the anticipated outcomes and whether these have contributed to the intended impacts; and,
- Whether it had any unintended adverse or positive effects.

It should seek to answer the following high-level questions:

- How was the scheme delivered? This covers the processes by which the scheme was implemented and is undertaken via a **process evaluation**;
- What difference did the scheme make? This requires an assessment of the outcomes and impacts generated by the scheme and is undertaken via an **impact evaluation**; and,
- Did the benefits justify the costs? Once the evidence on processes and impacts is available it is important to assess whether the costs of the scheme have been outweighed by the benefits via an **economic evaluation**.

It should build on the evidence generated through the Standard and Enhanced monitoring. Fuller Evaluation is unique to individual schemes. It is therefore important that the evaluation design is able to clearly demonstrate the intended and unintended outcomes of the scheme.

The requirement to undertake a Fuller Evaluation recognises that the design of evaluations should be tailored to the specific context of the scheme. Local Authority scheme promoters are responsible for designing the evaluation approach which is best suited to their scheme and the research questions which the evaluation needs to address.

The DfT also recognise that the approach adopted needs to be cost effective and proportionate. The DfT's guidance framework aims to strike a balance between ensuring evidence is available to demonstrate which schemes offer the best value for money, and to facilitate programme level analysis, without being too much of a burden on Local Authorities.

The following are additional measures that should be monitored and evaluated based on Fuller Evaluation requirements for those Local Authority Major Schemes selected by the DfT.

- Delivery process;
- Travel behaviour;
- Impacts on the Economy;
- Impacts on Carbon;
- Scheme objectives; and,
- Outturn appraisal assumptions.

In line with the DfT guidance, the mechanism and timing for reporting of the PWD monitoring and evaluation are as follows:

- **One Year After Report:** An initial report based on data collected at least one year (but less than two years) after scheme opening; with a report published within two years of scheme opening.
- **Final Report:** A final report based on both 'one year after' data and further data collected approximately five years after scheme opening; with a report published within six years of scheme opening.

3.4 LEP Growth Deal Monitoring and Evaluation Framework

Similar to DfT guidance, LEP model for monitoring and evaluation is based primarily around a set of metrics, grouped under three classes, covering the activities, outputs and outcomes associated with the main typologies of intervention. LEP guidance clearly defines a number of Project Specific metrics to be monitored for the PWD scheme in addition to the Input and Outcomes Core Metrics. Table 3-A shows the inputs, outputs and outcomes identified for the PWD monitoring with the correspondent metric that will be used to monitor them in accordance with the Lancashire Enterprise Partnership guidance.

Input Core metrics (also referred to as Top Three metrics in the LEP guidance) consist of “Expenditure”, “Funding breakdown” and “In-kind resources provided”. It should be noted that at this stage, no “In-kind resources” (i.e. Land, buildings or other assets) are expected to be provided to resource the intervention. However, this metric will be included in case the situation changes in the future.

The Outcomes Core Metrics consist of “Jobs connected to the intervention”, “Commercial floorspace constructed”, “Housing unit starts” and “Housing units completed.”

Housing unit starts and completed refers to both direct housing sites and “impact” sites according to the LEP guidance. In the case of the PWD, the North West Preston Strategic Housing Location has been identified to be dependent on provision of the Preston Western Distributor. The number of dependent housing unit starts and completions will be sourced from the Local Authority Annual Monitoring Reports.

The PWD facilitates improved access to the Warton Enterprise Zone. However, for the purposes of this Monitoring and Evaluation plan, whilst there will be improved access, it is considered that the PWD scheme will not have a direct outcome on job numbers. Hence the outcomes ‘Jobs connected to the intervention’ and ‘Commercial floor space constructed’ in the Core metric will not be monitored or evaluated.

The remaining metrics are split into “Project Specific Outputs and Outcomes” which are to be collected where relevant to the intervention and “Additional Monitoring – for specific schemes”. The metrics within the ‘Project Specific Outputs and Outcomes’ category pertinent to the PWD scheme were identified in the 2015 LEP guidance.

In addition to the above, the LEP guidance requires an assessment of the value for money upon completion of the PWD scheme. The assessment should be undertaken by considering the evidence of the outputs and outcomes monitored.

As mentioned earlier, Chapter 9 provides reference of a matching monitoring measure from DfT’s guidance to each of these metrics.

Table 3-A: LEP Monitoring Metrics

Monitoring Metrics - Lancashire Enterprise Partnership			Outcomes/Outputs		
Core Metrics	Inputs	Expenditure	Capital investment via LGF		
		Funding breakdown	Capital investment via Local Government		
		In-kind resources provided	Capital investment into M55 (Jn 2) from Highways England		
	Outcomes	Housing unit starts	No “In-kind resources” are expected to be provided to resource the intervention.		
Project Specific Outputs and Outcomes	Type of infrastructure delivered		5,000 new houses in North West Preston and further housing and employment growth in Central Lancashire		
			New junction on the M55		
	Total length of newly built roads		Link road to the proposed Cottam Parkway rail station		
	Total length of new cycle ways		4.3 km of new dual-carriageway road connecting M55 and A583		
Additional Monitoring - for specific schemes	Average daily traffic and by peak/non-peak periods		A segregated footway and cycleway on eastern side of the new highway with controlled crossing facilities at all junctions on the route. The total length will be 2.85 km.		
	Average AM and PM peak journey time per mile on key routes (journey time measurement)		Improved Access to Warton Enterprise Zone	Reduced delays at existing M55 junctions	Improved Journey Times on Local Road Network
	Day-to-day travel time variability		Redistribution of traffic from congested routes		
	Average annual CO2 emissions		Reduction in Accidents and casualties		
	Accident rate		Improved Journey Time Reliability for trips to and from Warton Enterprise Zone		
	Casualty rate		Change in CO2 emissions		
	Nitrogen Oxide and particulate emissions		Reduction in Accidents and casualties		
	Traffic noise levels at receptor locations		Reduction in Vulnerable User Casualties		
	Bus/light rail travel time by peak period		Reduction in Accidents and casualties		
	Pedestrians counts on new/existing routes		Improved Journey Time Reliability for trips to and from Warton Enterprise Zone		
	Cycle journeys on new/existing routes		Change in CO2 emissions		

4. Logic Mapping

4.1 Introduction

To support the monitoring and evaluation process, scheme promoters need to clearly articulate the assumptions underpinning how the scheme will deliver the intended outcomes and impacts. The DfT Monitoring Framework guidance, along with the LEP guidance, recommend that logic mapping should be undertaken by scheme promoters to present their scheme's causal pathways (the chain of connections showing how a scheme is expected to achieve desired results and anticipated benefits).

This chapter provides the Logic Map of the PWD scheme, illustrating how the scheme objectives are linked to the stages of the project, beginning with the scheme inputs and followed by the consequent outputs, outcomes and impacts.

4.2 Method

Logic mapping is a systematic and visual way of presenting the key steps required in order to turn a set of resources or inputs into activities and outputs that are designed to lead to a specific set of changes or outcomes / impacts. The aim is to articulate the underlying causal theory based on the assumptions and evidence underpinning the rationale for the scheme.

Causality is central to logic maps, as they order events in such a way that the presence of one event or action leads to, or causes, a subsequent event or action.

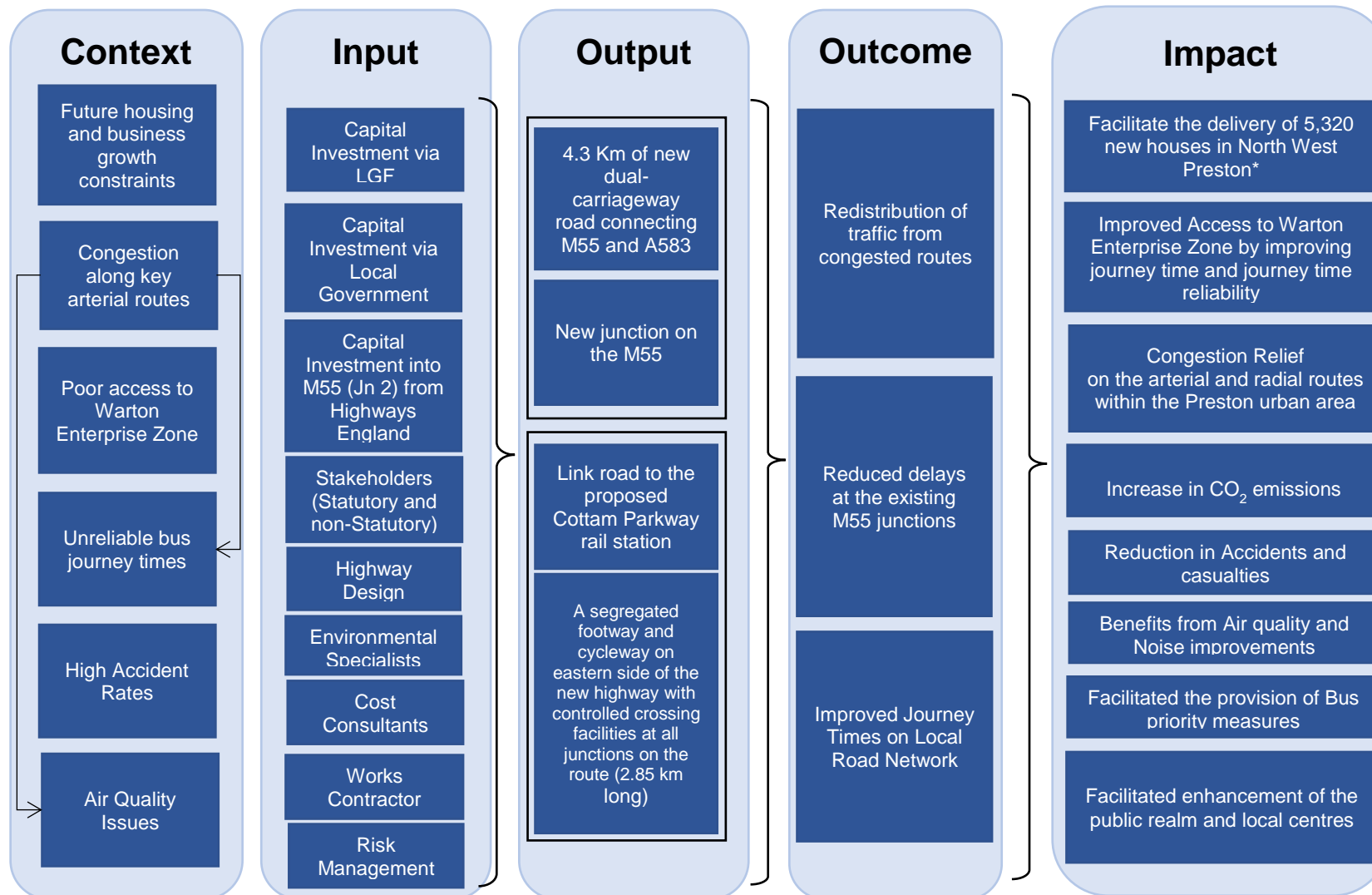
Logic maps should seek to:

- Articulate what needs to happen in order for the anticipated outcomes and impacts to be achieved;
- Provide a clear line of sight between the inputs and the anticipated impacts;
- Visualise unintended effects;
- Highlight gaps in the evidence base and therefore help to focus evaluation effort accordingly;
- Outline the stages between the inputs and the desired impacts, which provides a transparent assessment framework within which existing evidence and evaluation results can be combined to provide answers to the evaluation questions; and
- Point to where the links between the inputs, outputs, outcomes and impacts are unclear, which aids delivery as well as evaluation design.

4.3 Logic Map

The logic map for the scheme is shown in Figure 4-1 and has been produced following the guidance from The Tavistock Institute and DfT. This has been used to aid the development of the monitoring and evaluation strategy for the PWD scheme.

The outputs and outcomes in the logic map are aligned with the scheme primary and supporting objectives defined in Section 2.2.



* The PWD will support the delivery of 5,320 dwellings at North West Preston Development. However, only 3,575 dwellings are truly dependent on the PWD, as 1,745 dwellings already have planning permission and therefore could be potentially delivered even without the PWD in place.

Figure 4-1: Logic Map

5. Evaluation Objectives and Research Questions

5.1 Evaluation Objectives

The evaluation is being undertaken to demonstrate that the scheme has achieved what it is intended to do, and the scheme objectives are satisfied. It also allows lessons to be learned from the experience of implementing the scheme and the sharing of these lessons for future scheme appraisals.

This overarching objective can be broken down into the following evaluation objectives.

To demonstrate that:

- The resources committed to make the project a reality have been utilised and managed effectively.
- The scheme has resulted in the forecast levels of demand and hence the associated changes related to other routes in the area.
- Through the presence and use of the scheme, the anticipated benefits have been realised.
- The scheme has in reality facilitated the construction of significant housing in the Northwest Preston.
- The scheme has been a justified investment in the area.

5.2 Research Questions

In order to demonstrate that an evaluation objective has been met, multiple sources of information may need to be considered together. To assist with gathering that information, research questions have been posed that help to break down the objectives into discrete blocks of information. In subsequent sections of this document, the data that will be collected and collated to answer these questions are provided.

The research questions are listed below and are ordered in terms of their mapping to the evaluation objectives above.

RQ.1. How effectively was the project managed and executed? Was the scheme delivered on time and within budget?

RQ.2. What contributed to the successes and are there any lessons to be learnt from the scheme delivery stage?

RQ.3. Was there any cost overrun? If yes, what were the reasons and how did the scheme promoters respond to them?

RQ.4. Is the traffic demand using the scheme in line with the forecasts? If differences are evident, for what reasons have these occurred?

RQ.5. Has the scheme improved journey times within Preston Urban area and hence resulted in reduction in congestion?

RQ.6. Did dependent development occur within anticipated timescales? What effects did this have on land use, land values and housing levels?

RQ.7. Has the scheme delivered accessibility improvements to local areas, such as Warton Enterprise Zone, in the ways expected in appraisal?

RQ.8. Do the outturn costs and benefits demonstrate that investment in the project was justified?

6. Evaluation Approach

6.1 Evaluation Types

On top of the Standard and Enhanced Monitoring, the DfT framework, requires three types of complementary evaluation types to be implemented as part of Fuller evaluation. These are:

- **Process Evaluation** - how was the scheme delivered?
- **Impact Evaluation** - what difference did the scheme make?
- **Economic Evaluation** - did the benefits justify the costs?

This chapter details the proposed methodology and the reporting mechanisms to be adopted for each evaluation type. Data collection requirements and programme are discussed in Chapter 7.

6.2 Process Evaluation

The process evaluation will focus on those activities that are associated with how the scheme's inputs were utilised to create the outputs. It is therefore concerned with the following categories from the Monitoring and Evaluation Framework that focus on collecting data during the scheme implementation:

- Scheme Build;
- Delivery Process;
- Delivered Scheme; and,
- Outturn Costs.

Since Scheme Build as required for Standard Monitoring in DfT guidance and Delivery Process required as part of Fuller Evaluation are inter-related, i.e. the information collected as part of Scheme Build will be used to inform the evaluation of Delivery Process, these two measures are combined and explained under one section, named Scheme Delivery Process.

The Evaluation Manager will be responsible for the overall coordination and management of the Monitoring and Evaluation process. The Evaluation Manager will not be involved in the day to day scheme delivery but will be a visible member of the team who is able to objectively assess the various elements of Monitoring and Evaluation metrics. He/she will be supported by a team leader from each discipline. Further details of various roles during the monitoring and evaluation process of the PWD are discussed in Section 8.3.

6.2.1 Scheme Delivery Process

Monitoring of the scheme build process will form a key component of the ongoing delivery of the scheme. Key information and evidence, such as programme, costs, risks and resources, will be monitored and collected throughout the implementation stage of the scheme by the Project Team. It will also be informed by regular progress reporting and Cabinet papers used to update the Project Board and council Members as part of the ongoing scheme delivery. The Gateway Review process will also be used to inform the evidence on key successes and failures within the delivery process.

Table 6-A provides a summary of the key items that will be included within the evaluation of scheme delivery. Information will be documented as part of regular progress meetings (monthly), Project Board meetings (every three months), Cabinet papers and Gateway Reviews at key milestones.

In addition to the review of key documents and evidence described above, the evaluation of the scheme delivery process will seek feedback from key stakeholders, and delivery partners to answer the key questions about the Scheme Delivery process listed in Table 6-A. The evaluation of scheme delivery is expected to provide answers to research question RQ.1 and RQ.2.

The evaluation of the Scheme Build will be published within the 'One Year After Report'.

It is proposed that a lesson learnt session should be held to seek feedback from the Project Board, Project Team, Gateway Review Team and the Main Works Contractor on the delivery process of the scheme and ask all the items in 1 to 8, Questionnaire A in Appendix A. The Evaluation Manager would also receive a copy. It should be noted that item 1 will also be included in other questionnaires (to be discussed in the next sections) intended for developers, residents/ road users and business owners/employees.

The Questionnaire will be delivered, and the responses assessed within 6-12 months of the opening of the scheme, and the results will be reported within the 'One Year After Report' and the Final Report.

The Project Board will be responsible for ensuring details are readily available and clearly documented for supply to the Evaluation Manager.

Table 6-A: Scheme Delivery Process

<i>Areas to be monitored/evaluated</i>	<i>Details</i>	<i>Baseline</i>
<i>Programme and Scheme Planning</i>	<p>The scheme delivery process will be monitored by reviewing the progress against the proposed delivery programme put forward as part of the Best and Final Funding Bid / confirmation of funding.</p> <p>Key milestones in the delivery process will be used to understand whether the Scheme Build is on track to deliver the anticipated benefits and details of any variances will be documented and discussed.</p> <p>The cause of any delays/changes to the project programme encountered during scheme build will be explored and their effects on the on the scheme delivery and cost will be evaluated (for lesson learnt)</p>	Project Plan, including programme and resources, will be provided by the Main Works Contractor
<i>Stakeholder management</i>	<p>The evaluation of Stakeholder management will report the approaches adopted, such as holding workshops, for engaging with statutory bodies and non- statutory stakeholders. It will also focus upon the effectiveness of engagement.</p> <p>Both statutory bodies and non-statutory stakeholders, such as the public, will be asked for their views on Stakeholder Engagement:</p> <p>1. Stakeholder Engagement: Was stakeholder engagement thorough, open, and at the right times?</p> <p>Details of Stakeholder engagement undertaken during the delivery process, will be published, along with key findings. This will be used to inform potential lessons learned from effective consultation and to clearly demonstrate its value.</p>	Stakeholder management plan to be documented.
<i>Scheme Context</i>	<p>The scheme context is the overall setting of the scheme in terms of its rationale, surrounding circumstances as well intended objectives, outcomes and impacts. Monitoring scheme context will allow to monitor the picture of the situation in which a scheme is implemented, and changes occur. It can reveal how an outcome or an impact may have been influenced by something other than the scheme itself (such as the wider environment of a scheme or other changes taking place).</p> <p>During the delivery process, the scheme context will be routinely monitored and any significant changes to the context (from the time of planning) during construction will be identified and documented to help determine whether similar results may be expected for other schemes or whether the results are scheme-specific. Where changes have occurred in comparison to the baseline, their impacts on the success of the scheme will be analysed.</p> <p>The fuller evaluating will seek to answer the following key question about the Scheme Delivery process:</p> <p>2. Scheme Context: What was the context for the scheme at the time of submission for planning, and did it change over time? If yes, what was the impact of change on the success of scheme?</p>	Create Scheme Context baseline through the Scheme full business case

Areas to be monitored/evaluated	Details	Baseline
Scheme Inputs	<p>Key success factors and any obstacles to resourcing the scheme will be assessed. Wider analysis of non-financial inputs, such as staffing, skills/expertise, securing approvals, etc. will be provided.</p> <p>Feedback via a lesson learnt session will be gathered from key stakeholders, delivery partners and the project team members on the delivery process, factors leading to success of the scheme and key obstacles to resourcing the scheme, the effectiveness of governance and project management processes. This will consider capital and revenue investment, staffing, skills / expertise, leveraging resources, securing approvals, accessing fit-for-purpose materials and services.</p> <p>The fuller evaluating will seek to answer the following key question about the Scheme Delivery process:</p> <ol style="list-style-type: none"> 3. Programme: How well was the programme managed through scheme development and scheme delivery? Were changes recorded well and communicated well? Was the scheme delivered on time? 4. Resources: What does the Delivery Team think were the critical success factors and key obstacles to scheme delivery in terms of resources e.g. staff, skills, services, materials etc.? Was good advice / work provided by specialists or sub-consultants? 5. Project Management and Coordination: Was the project management / coordination on such a multi-disciplinary project well managed? Was it recorded well and communicated well? 6. Scheme Costs: How do the latest scheme costs compare to those originally envisaged? Was the scheme delivered on within budget? How were changes in costs communicated? Were the different levels of Optimism Bias Adjustment used at various stages of the scheme development appropriate? 7. Overall: What worked well and what are the lessons learnt for other schemes? 	<p>Identify potential success factors and obstacles to resourcing, and any risks associated with them to be included in the risk register, to be managed via the risk management process.</p>
Risk Management	<p>The risk management process along with identification and assessment of the project key risks will be monitored at key stages in the delivery process e.g. planning application / consent, funding / business case submissions, Gateway Reviews and during construction.</p> <p>This will be used to inform the overall impact of risk upon the delivery process, the appropriateness of risk assumptions within the scheme cost estimates and use of Optimism Bias uplift within the scheme appraisal.</p> <p>The success and effectiveness of risk management strategy as well as the chosen mitigation approaches on key risks (as documented by the risk management process) will be then assessed. The risk strategy will be evaluated based on the level of transparency, comprehensiveness, etc. A case study will be undertaken on a specific key risk escalated and managed.</p> <p>Views will also be sought on the effectiveness of the risk management strategy and associated mitigation of key risks. It will include consideration of safety during construction, delays and any negative (perceived or real) impacts on transport users, local communities and businesses during construction.</p>	<p>Risk Register to be documented by the Main Works Contractor's Risk Manager and reviewed with the scheme promoter. Key risks, their impacts, probability and mitigation measures to be identified.</p>

	<p>The fuller evaluating will seek to answer the following key question about the Scheme Delivery process:</p> <p>8. Risk Management:</p> <ul style="list-style-type: none"> • Were all risks identified in the early stages of scheme development? • If new risks became apparent during the course of scheme development or delivery, could they have been reasonably foreseen? • Was the reporting of risks open and transparent? Were risks recorded well and communicated well? • How were risks managed during scheme development and delivery? Were actions clearly recorded and allocated? • Were actions taken by the nominated person responsible? • What worked well and what are the lessons learnt for other schemes? 	
--	---	--

6.2.2 Delivered Scheme

Details of the Delivered Scheme will be provided within the 'One Year After Report'. This will provide a detailed comparison of the proposed scheme at funding approval, detailed design and the delivered scheme.

The Project Manager will be responsible for ensuring details are readily available and clearly documented for supply to the Evaluation Manager.

Table 6-B provides a summary of the key items that will be included within the evaluation of the Delivered Scheme.

Feedbacks from key stakeholders, developers, residents and business owners/ employees will be sought about their views on whether the scheme met their expectations, particularly on quality (item 9 below). The Evaluation Manager would also receive a copy. This question will be part of Questionnaires B, C and D, provided in Appendix A. These questionnaires are further discussed in this report.

The evaluation will primarily be undertaken by the Evaluation Manager. This will ensure an objective evaluation is achieved.

The Questionnaire surveys will be sent out within 6-12 months of the opening of the scheme, and the results will be reported within the 'One Year After Report' and the Final Report.

Table 6-B: Delivered Scheme

<i>Areas to be monitored/evaluated</i>	<i>Details</i>	<i>Baseline</i>
<i>Scheme Output</i>	<p>The following information will be documented:</p> <ul style="list-style-type: none"> • Full description of implemented scheme • Plans of the delivered scheme • Plans of individual elements as required <p>The design team will work alongside the construction team to identify and document the outturn deliverable against the planned deliverables including (but not limited to) the total length of newly built roads and the cycle routes.</p> <p>This will also involve an evaluation of whether the scheme has been delivered to the quality standard expected based upon the evidence collected from the activities of quality control team during construction and a qualitative appraisal of the quality standards achieved benchmarked against best practice.</p> <p>Feedback from key stakeholders, seeking their views on whether the scheme met their expectations, particularly on quality:</p> <p>9. Quality of delivered scheme: Has the quality of the scheme met your expectations?</p>	<p>Baseline is the scheme specifications provided in the approved business case.</p> <p>Mitigation measures are provided in the scheme Environmental Statement.</p>
<i>Changes</i>	<p>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 any such changes. In cases where the output differs from what was expected, potential impacts on the delivery of outcomes will be provided.</p>	
<i>Intended Beneficiaries</i>	<p>A qualitative assessment of whether the scheme has reached the intended beneficiaries e.g. road users, pedestrians, cyclists, and developers and residents in Preston.</p>	
<i>Assessment of Casual Pathway</i>	<p>An evaluation of the delivered scheme will be undertaken to provide evidence that the scheme has been delivered as intended and is on track to deliver the intended outcomes. Upon completion of construction, a detailed comparison of the scheme proposals included within the business case, planning application, detailed design and the outturn deliverables will be carried out.</p>	
<i>Mitigation</i>	<p>Identification of changes to mitigation measures (e.g. on landscape, noise mitigation etc.) with a clear description of the changes and the reasons for implementation (or non-implementation).</p>	

6.2.3 Outturn Costs

A detailed account of the Scheme Costs will be provided within the 'One Year After Report' and 'Final Report'.

It will provide a detailed comparison of the cost estimates at funding approval, detailed design, the outturn values once the scheme is delivered and, for maintenance costs, 4-5 years after scheme opening.

The design team and the cost consultants will work alongside the construction team to identify and document the outturn costs against the cost estimates. Evaluation of cost overruns will provide answer the research question RQ.3.

The Project Manager will be responsible for ensuring details are readily available and clearly documented for supply to the Evaluation Manager.

Table 6-C provides a summary of the key items that will be included within the evaluation of the Scheme Costs.

Table 6-C: Scheme Costs

<i>Metric</i>	<i>Details</i>	<i>Baseline</i>
<i>Outturn costs</i>	Outturn investment costs broken down into key elements as provided in the business case, and essentially broken down by expenditure, funding profile and in-kind resource. Note: At this stage, no "In-kind resources" (i.e. Land, buildings or other assets) are expected to be provided to resource the intervention. However, this metric will be reported in case the situation changes in the future	The final (or target) forecast cost is provided in the approved business case.
<i>Risk</i>	Details of the manifestation of identified risks within each element of the scheme cost estimate.	
<i>Savings</i>	Identification of those cost elements with savings, and identification of the reasons for those cost savings.	
<i>Overruns</i>	Analysis of those cost elements with overruns, identification of the reasons for those cost overruns, and identification of ways to reduce the likelihood and scale of cost overruns.	
<i>Maintenance costs</i>	The scheme is not expected to require any maintenance work for the first 10 years. Therefore, monitoring of maintenance costs will be undertaken merely to ensure that the forecast assumptions did not underestimate any additional costs during the first five years of the scheme opening. Comparison of outturn maintenance or other capital costs with those forecast analysis of any variations from forecast and any unanticipated costs identified.	

6.3 Impact Evaluation

There are a number of ways of approaching an impact evaluation depending on its purpose. Impact evaluation can be carried out for accountability purposes based on scheme outcome. This approach focuses on identifying whether a predicted outcome has been achieved by comparing the situation prior to the scheme to that following its introduction and observing changes that are anticipated effects assumed to have resulted from the intervention.

Impact evaluation can also be undertaken for knowledge purposes which seek to go further and generate understanding and transferable lessons. It includes understanding why and under what conditions change has been observed, and using quantitative and qualitative methods and data from different sources to inform the evidence base ('triangulation') to strengthen confidence in the conclusions.

The proposed impact evaluation for the PWD will be based on a combination of accountability and knowledge approaches, by adequately and proportionally collecting information concerned with the changes that occur once the scheme is complete to provide the basis for analysing whether the scheme has produced or been a catalyst for the intended results.

The following categories from the Monitoring and Evaluation Framework will be evaluated:

- Scheme Objectives;
- Travel Demand;
- Travel Times & Reliability;
- Impacts on the Economy;
- Impacts on Carbon;
- Impacts on Noise;
- Impacts on Local Air Quality; and,
- Impacts on Accidents;

The subsequent sections provide further information on each category.

6.3.1 Scheme Objectives

DfT guidance suggests that up to three main objectives of the scheme should be evaluated against appropriate metrics to enable an assessment to be made of how scheme objectives have been realised.

The evaluation of the scheme objectives will be provided within both the 'One Year After Report' and the Final Report.

The following three primary objectives of the PWD have been selected as the primary focus of this evaluation metric:

1. **Support local economic growth** by unlocking housing development in North West Preston;
2. **Improve access of the Warton Enterprise Zone** to strategic road network and wider labour market catchment; and,
3. **Reduce congestion** and associated delays on the arterial and radial routes within the Preston urban area.

The recommended evaluation approach for each of the three chosen scheme Objectives are outlined below.

The Project Manager will be responsible for ensuring details are readily available and clearly documented for supply to the Evaluation Manager.

Objective 1: Support local economic growth by unlocking housing development in North West Preston

One of the primary objectives of the PWD scheme is to support local economic growth by unlocking housing development in North West Preston. This development was identified in the Central Lancashire Core Strategy as a strategic location capable of making a particularly large contribution to meeting Preston's future housing needs and is central to the economic growth objectives in Lancashire.

The Preston Western Distributor is a key component of a programme of measures set out in the Central Lancashire Transport Master Plan, that collectively will support the scale of development set out in the approved Central Lancashire Core Strategy and mitigate its impact on the transport network. Based on the Masterplan numbers the PWD will support the delivery of 5,320 dwellings at North West Preston by providing access for local traffic to the strategic road network and deterring it from using the congested routes to the east. However, since 1,745 of these dwellings had already had planning permission (prior to PWD being fully approved) and therefore could be delivered even without PWD in place, only 3,575 of those dwellings are truly dependent on PWD (i.e. could not occur without the scheme).

As per the latest information there will be 5,932 houses in NWP development, of which 628 have already been built and 1,421 will be built prior to 2022/23, which is the scheme opening year. This information is summarised in Table 6-D. The numbers under 'Total without target year' refer to the applications that do not have targets available at the time of writing. The evaluation of the scheme's impact to support local housing growth will be undertaken by monitoring the number of planning consent granted and the comparison of the built-out rate of the North West Preston to the forecast information.

Table 6-D: North West Preston Housing Estimated Built-out Rate

Planning Status	Built	Total without target year	Prior 2022/23 Target	2022/23 Target	2023/24 Target	2024/25 Target	2025/26 Target	2026/27 Target	2027/28 Target	TOTAL All Years
Outline Planning Consent		811								811
Full Planning Consent	628	2,325	1,421	149	146	146	137	75	13	5,040
Planning application in place		81								81
Total	628	3,217	1,421	149	146	146	137	75	13	5,932

Analysis will be undertaken within 6-12 months of the opening of the scheme, as well as, 4 to 5 years after opening.

The Team Leader for the Planning Data Collection will be responsible for ensuring the above data is readily available and clearly documented for supply to the Evaluation Manager. Section 8.3 provides further details on the key roles during the monitoring and evaluation process.

Additional details on the evaluation of the PWD impacts on local growth is provided in Section 6.3.4.

Objective 2: Improve access of the Warton Enterprise Zone to strategic road network and wider labour market catchment

Congestion in central Preston leads to long and unreliable journey times to/from and between Warton and Samlesbury. The route between the two sites is of particular importance to local economy as it links the two Enterprise Zones (which together form the Lancashire Enterprise Zone). The alternative route to Warton is via the M55 J3 and along the A585 and A584 which also have congestion issues, or via local rat-runs in the AM/PM peaks via Wrea Green. These routes however are constrained by nature of the narrow rural roads with restricted driver sight, and are not designed for high levels of traffic.

Poor access to/from Warton Enterprise Zone results in slow journey times and poor journey time reliability for employees, suppliers and customers thus constraining the potential of one of the fastest growing enterprise zones in the country.

The PWD is expected to improve access to the Enterprise Zone at Warton and support its future growth due to reduction in congestion and incidents. Improvement on access to Warton Enterprise Zone is going to be monitored and evaluated by comparing travel times between M55 junction 1 and Warton Enterprise Zone as shown in Figure 6-1 below.

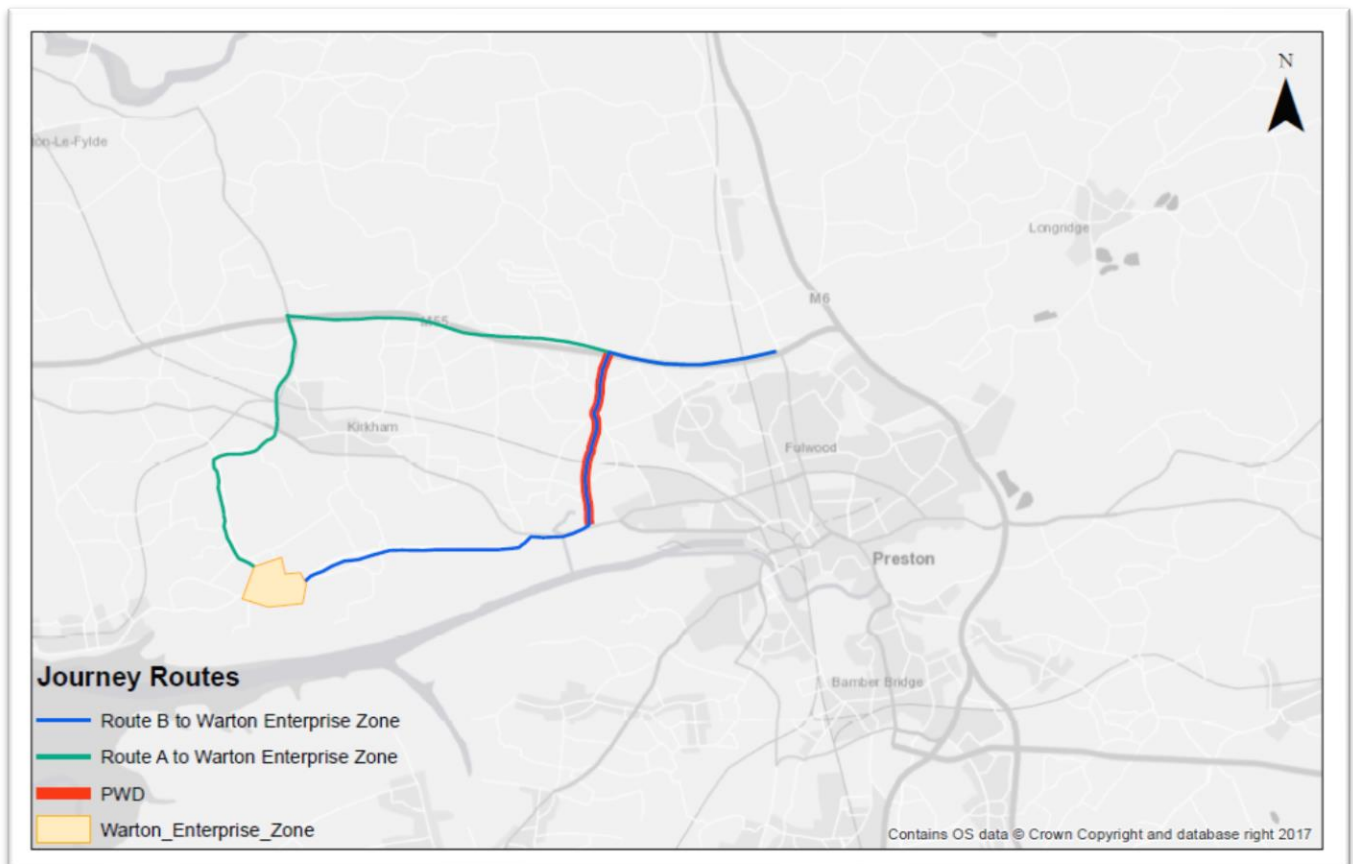


Figure 6-1: Access to Warton Enterprise Zone before and after PWD

The Team Leader for the Journey Times Data Collection will be responsible for ensuring the above data is readily available and clearly documented for supply to the Evaluation Manager.

Additional details on the evaluation of the PWD impacts on Journey Time and Reliability is provided in Section 6.3.3.

Objective 3: Reduce congestion and associated delays on the arterial and radial routes within the Preston urban area

The limited capacity of the road network, together with the very high traffic demand is the main cause of congestion in and around Preston.

Congestion in the morning and evening peak periods causes lengthy travel times and poor journey time reliability for strategic east-west and north-south traffic through Preston. It is preventing ease of access to/from key employment sites, as well as causing delays and frustration for motorists. Significant delay is present on key approaches to the strategic road network, and especially at M55 J1 and J3 in particular. Congestion, even at current traffic levels is comprehensive, and is present on all key arterial and radial routes to/from the City.

The journey time data will be further used to monitor the average AM and PM peak journey times on key routes in order to establish if the PWD delivered on the predicted outcomes to improve journey times on local road network and reduce delays at existing M55 junctions.

Figure 6-2 shows the proposed routes for journey time and journey time variability analysis along the:

- Motorways;
- A Roads; and
- B Roads

Once the journey time data is available, a comparison with the pre-scheme situation and the model predicted journey times is going to be performed for the local road network shown in Figure 6-2.

Journey time data will be also analysed to monitor and evaluate reduction in delays at M55 junction 1 and junction 3. The comparison will be made with the delays before the PWD is constructed to make a conclusion on whether the scheme has achieved its predicted outcome.

The Team Leader for the Journey Times Data Collection will be responsible for ensuring the above data is readily available and clearly documented for supply to the Evaluation Manager.

Additional details on the evaluation of the PWD impacts on Journey Time and Reliability is provided in Section 6.3.3.

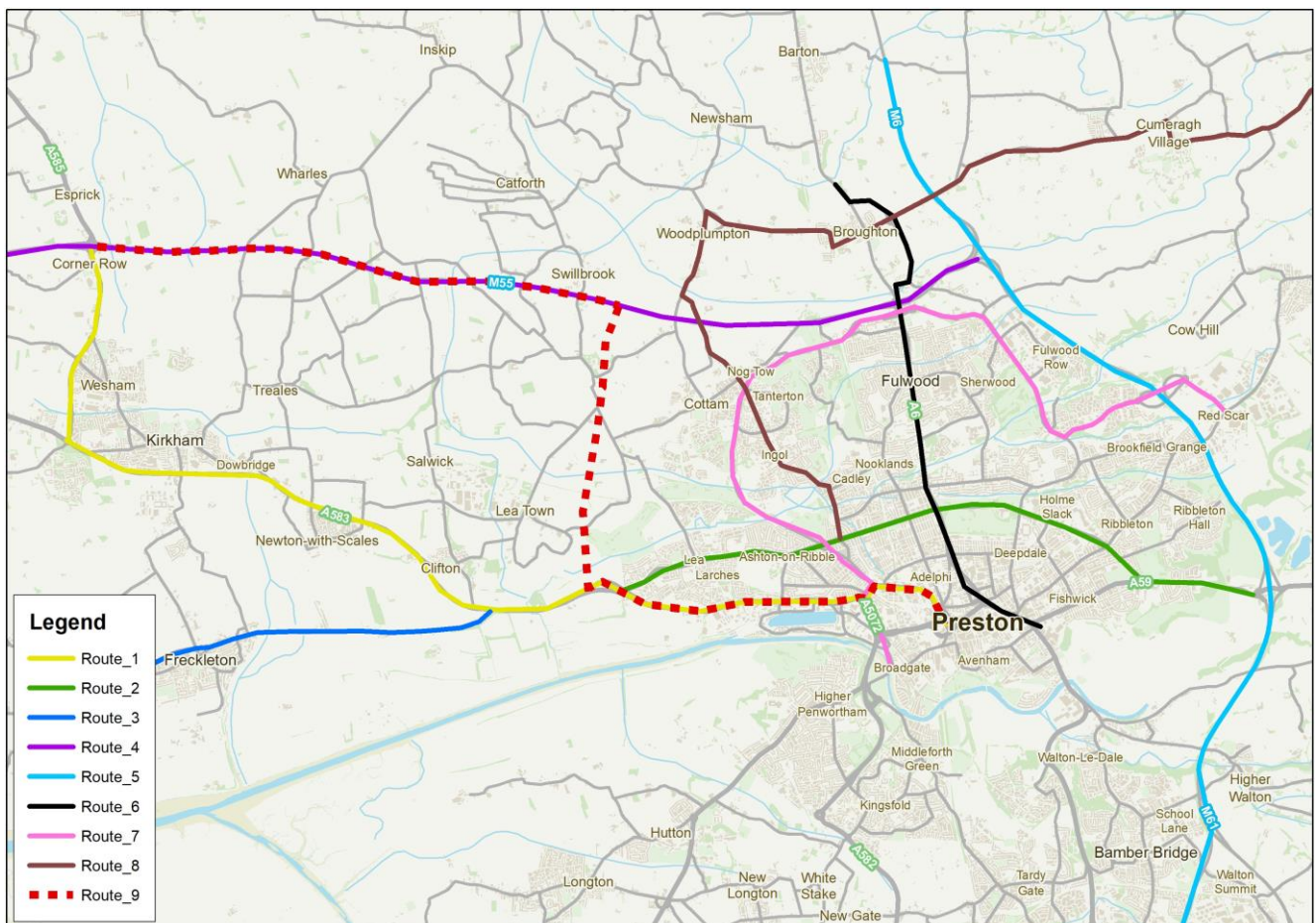


Figure 6-2: Journey Time Routes

6.3.2 Travel Demand

Travel demand information will be collected on key corridors of travel that are affected by the scheme. This data will help in assessment of whether the scheme has had the anticipated effect on travel patterns and whether the scheme has been successful in delivering the outcome in relation to redistribution of traffic from congested routes.

The evaluation of the travel demand metrics will be provided within both the 'One Year After Report' and the Final Report.

Table 6-E provides a summary of the metrics that will be considered to evaluate changes in Travel Demand as a result of the scheme. The locations of the surveys are shown in Figure 6-3 and detailed in Appendix B.

It has been made sure that the proposed counts cover a sufficient part of the area that is forecast to be most impacted by the scheme in terms of traffic flow and environmental impacts (which will be discussed in the consequent sections).

Since the PWD will provide segregated walking/cycling facility, it is proposed to collect pedestrians and cycles counts on the scheme itself. The new junctions on the PWD will have the automatic pedestrian / cycle counting devices installed.; therefore, the pedestrian/cycle counts will be collected at the new junctions. Although the scheme is expected to facilitate enhancement of the walking and cycling network (partially through provision of additional walking and cycling routes as direct outputs of the scheme), it may be difficult to estimate how much of changes in pedestrian and cycle numbers can be directly attributed to the PWD. Therefore, the purpose of monitoring these counts will be to understand the level of demand on the segregated routes, given that there will be no forecast demand to compare the counts with.

Data will be collected for the baseline conditions (pre-opening), the settling down period post-construction (within 1 year of opening) and the longer-term impact (4 to 5 years after opening).

The Team Leader for the Travel Demand Data Collection will be responsible for ensuring the above data is readily available and clearly documented for supply to the Evaluation Manager.

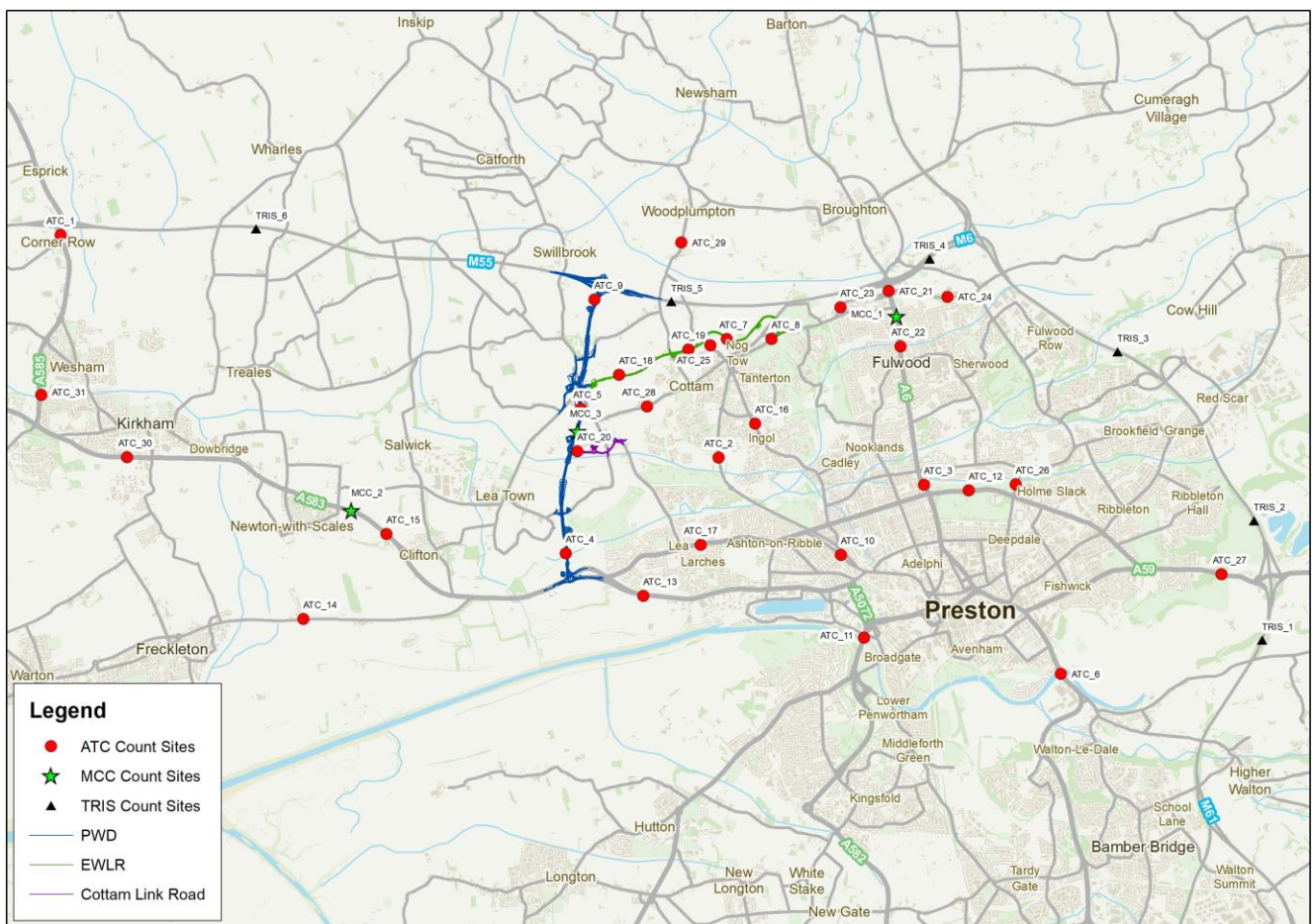


Figure 6-3: Traffic Count Locations

Table 6-E: Travel Demand

Areas to be monitored/evaluated	Details	Baseline
Traffic Flows	Traffic volumes will be monitored using Automatic Traffic Counts (ATC) that either will be available as part of the traffic systems infrastructure within some of signalised junctions (potentially sites 7, 8, 10, 18, 19, 23, 24, 25, and 26), or will be collected as additional temporary ATCs on key routes that are expected to be affected by the Scheme. There are	Pre-construction counts and Forecasts values and estimates (in Traffic

Areas to be monitored/evaluated	Details	Baseline
	<p>three Manual Classified Counts (MCC) also proposed to obtain the vehicular composition in the area.</p> <p>Daily weekday traffic flows (07:00-19:00) will be collected and assessed for two weeks in a neutral month (April, May, June, September, October or November). The MCCs will be collected for one-day during the ATC surveys.</p> <p>Data from the ATCs will also be used to derive an average daily traffic for peak and non-peak periods. Highways England TRIS data is available for permanent ATC locations on the M55 and M6. Flow data will be collected for both eastbound and westbound movements at the site currently between J1 and J3. With the introduction of the PWD, this site will lie between J1 and J2.</p> <p>The collected data will be used to derive peak hour traffic flows:</p> <p>AM: 8:00-9:00</p> <p>IP: average 10:00-16:00</p> <p>PM: 17:00-18:00</p> <p>It should be noted that the traffic count data will be also used to produce necessary flows for the environmental assessment.</p> <p>The peak hour flows will be compared with the traffic flows predicted at the scheme appraisal stage using the CLHTM traffic model and with the flows measured before the construction of the scheme, with the focus on the roads which are expected to be relieved from congestion once the PWD is built. In conjunction with the research question RQ. 4, the traffic data on the PWD itself will be used to investigate to confirm the following:</p> <ul style="list-style-type: none"> - Is the traffic level in line with the forecasts? - Are travellers using the scheme in the anticipated manner? (e.g. Time of day, direction) - If differences are evident, for what reasons have these occurred? 	Forecast Report)

6.3.3 Impacts on Travel Time and Journey Time Reliability

Travel times will form a key measure of the success of the scheme in delivering on the predicted outcomes and impacts related to relieving congestion on existing routes and improving access to Warton Enterprise Zone from the wider transport network. Scheme impacts on the travel time are discussed in Section 6.3.1 above in the context of the scheme's objectives evaluation.

The impacts of the scheme on the journey time reliability will be calculated using the approach explained in Table 6-F.

Journey times and journey time reliability data will be analysed using data obtained from TrafficMaster. Data will be collected for key routes, as listed below and as shown in Figure 6-1 and Figure 6-2:

- Route A: Between M55 J1 and Warton via M55 J3;
- Route B: Between M55 J1 and Warton via M55 J2;
- Route 1: Between M55 J3, along the A585 and A583, and Preston city centre;
- Route 2: Between A5085 Blackpool Road M6 J31;
- Route 3: Between the A584 (at Church Lane) and A583 Blackpool Road;
- Route 4: Between the link just before M55 J3 and M55 J1;
- Route 5: Between the links to the north and south of Preston on M6;
- Route 6: Between Broughton bypass, travelling through Preston along the A6, and the A59 in the city centre of Preston;

- Route 7: Between Strand Road, along Eastway and Tom Benson Way, and A59 in the city centre of Preston;
- Route 8: Between Woodplumpton road and east of M6 on Cumeragh lane; and,
- Route 9: Between M55 J3, along the A585 and A583, and Preston city centre; via the PWD.

The comparison of the baseline and post opening travel times would allow the evaluation team to answer research Q.5. The analysis will be undertaken pre-construction, within 1 year after opening and 4 to 5 years after opening.

The PWD impact on the reliability of public transport services, particularly bus services, in the study area will also be evaluated.

In the current situation, with a network that does not have enough spare capacity to allow bus priority measures to be installed, buses must share the road space with other vehicles and suffer the same delays as other road users. This leads to long journey times and poor journey time reliability on bus services. The PWD scheme is expected to facilitate the implementation of bus priority measures as a result of reducing congestion in central Preston. This should have a positive impact on journey times and reliability of bus services.

Therefore, using the travel time impacts and establishing whether the bus priority measures have been installed will allow the impact of the PWD on bus travel time and travel time reliability to be evaluated. This would eliminate the need for expensive journey time surveys. A qualitative statement on the scheme impact on bus journey times and reliability will be included in the One Year and Five-Year monitoring and evaluation reports

The Team Leader for the Journey Times Data Collection will be responsible for ensuring the above data is readily available and clearly documented for supply to the Evaluation Manager.

The evaluation of the travel time and reliability metrics will be provided within both the 'One Year After Report' and the Final Report.

Table 6-F: Travel Time and Reliability

Areas to be monitored/evaluated	Details	Baseline
Travel times	<p>Journey times data will be analysed using data obtained from TrafficMaster Data.</p> <p>Data will be collected in the same neutral month as the Travel Demand data. Analysis will be undertaken for weekday peak hours i.e. 0800-0900hrs and 1700-1800hrs. Analysis will also be undertaken on a typical Saturday within the same neutral month for 1100-1200hrs to derive an uncongested journey time.</p>	Pre-construction journey times and Forecasts values and estimates (in Traffic Forecast Report)
Journey time reliability	<p>Analysis will be undertaken for average and day-to-day variations during weekday peak hours i.e. 0800-0900hrs and 1700-1800hrs.</p> <p>The statistic value known as standard deviation can be used to measure reliability and has been identified as one of the metrics for monitoring and evaluation of the PWD scheme. The usual data source for calculating journey time standard deviation is Automated Number Plate Recognition (ANPR) surveys. Given the expense of ANPR surveys and taking into account the availability of the Traffic Master data it is proposed that an alternative approach be used for monitoring and evaluation of journey time reliability where the Buffer Index (BI) is a suitable metric.</p> <p>BI represents the time a traveller should allow in addition to the average travel time to ensure on time arrival 95% of the time. A higher BI value reflects a more unreliable journey time.</p> <p>The buffer index is calculated using the following equation:</p> <p style="text-align: center;"><i>For a specific route and time period:</i></p> $\text{Buffer index (\%)} = \frac{95^{\text{th}} \text{ percentile travel time} - \text{average travel time}}{\text{average travel time}}$ <p>This method of assessing journey time reliability has been developed by the US Department of Transportation and Jacobs have used it on several Highways England projects over the past years.</p>	

6.3.4 Impacts on the Economy

Scheme promoters are required to monitor and report information which shows how the scheme is contributing to economic growth. Three measures, relevant to the scheme's impacts, have been selected from the DfT's guidance for this purpose: congestion relief on arterial and radial routes within Preston, facilitating delivery of Northwest Preston housing development (i.e. local development) and increasing access to Warton Enterprise Zone (i.e. job opportunities).

The Monitoring and Evaluation approach for the PWD proposes the third questionnaire, Questionnaire B in Appendix A, in the form of online survey, that would also seek feedback from local residents and road users on whether the scheme has met the objective in reducing congestion in Preston and improving accessibility (item 10 below).

A third questionnaire (Questionnaire C in Appendix A) will be also produced to be specifically sent to the developers to gather evidence on how transport schemes get houses built (research question RQ.6).

The last survey, Questionnaire D in Appendix A, will aim to gather views from business and employees in Warton Enterprise zone on the role of the PWD in improving access to Warton Enterprise Zone (research question RQ.7).

The Evaluation Manager would also receive a copy of the questionnaires.

The evaluation will primarily be undertaken by the Evaluation Manager. This will ensure an objective evaluation is achieved.

The Questionnaire surveys will be sent out within 6-12 months of the opening of the scheme, as well as 4-5 years from the scheme opening and the results will be reported within the 'One Year After Report' and the Final Report.

The evaluation of the impact on the economy will be provided within both the 'One Year After Report' and the Final Report.

The evaluation metrics that will be employed to understand potential impacts upon economic growth are summarised in Table 6-G.

Table 6-G: Impacts on the economy

Areas to be monitored/evaluated	Details
<i>Congestion Relief</i>	<p>Travel time surveys and traffic counts (covered as part of scheme objectives). Key stakeholders and public views on the congestion relief will be sought.</p> <p>10. Congestion Relief:</p> <ul style="list-style-type: none"> - Has the scheme reduced congestion in Preston, particularly on A6, M55 J1 and J3, and A583 during peak hours? - Has the accessibility improved between North West Preston and the Strategic Road Network? - Do you use the PWD to access the M55? Which route you used to take before the PWD? - Has the scheme resulted in North West Preston being a better place to live and work? <p>Further consultation with the main bus operator(s) will provide an overall picture regarding the impact on service frequency and reliability.</p>
<i>Facilitating Local Development North West Preston Residential</i>	<p>This evaluation will be built on the monitoring data collected for the build-out rates as part of Scheme Objective measure, explain in Section 6.3.1. A survey (Questionnaire D) with developers will be undertaken to understand the role of the scheme in influencing the delivery of Northwest Preston housing development by answering the following research questions:</p> <p>11. Facilitating Local Development:</p> <ul style="list-style-type: none"> - Did dependent development occur within anticipated timescales? What effect did this have on land use and value and housing level? - Was the type and scale of residential development the same or different to those forecasts? - Has development been accelerated by the addition of the scheme? If not, what is getting in the way? - What was the role of the PWD in delivering the houses? - How the process of building the 5320 dwellings has gone? Any lessons learned?
<i>Increasing access to job opportunities</i>	<p>Targeted business/employee surveys at Warton Enterprise zone will be built upon the journey time analysis undertook as part of Scheme Objective measure, explain in Section 6.3.1. It will aim to gather views from the employees at employment sites at Warton Enterprise zone about if the new scheme has directly improved accessibility for employees by answering the following research questions:</p> <p>12. Increasing access to job opportunities:</p> <p>a. For business owners:</p>

Areas to be monitored/evaluated	Details
	<p>a) Is your business new (that is after opening the PWD) or existing (prior to the PWD) at Warton Enterprise?</p> <p>b) If new, where were you previously located? What were the main reasons for needing to relocate or, for new businesses, starting up a new business? Did the accessibility afforded by the scheme influence your decision to locate here?</p> <p>c) If existing, has the scheme improved the accessibility to Warton Enterprise Zone? Have you expanded your business because of better transport connection in the area? Has the scheme had any impacts on improving the connectivity with other major employment sites, such as Samlesbury? Has the scheme reduced congestion in the area and overall reduced your commuting journey time? Is the journey time more reliable, that is any difference in journey time day-to-day variation?</p> <p>b. For employees:</p> <p>d) Are you a new employee (that is after opening the PWD) or existing (prior to the PWD) at Warton Enterprise?</p> <p>e) If new, where were you previously located? What were the main reasons for needing to relocate? Did the accessibility afforded by the scheme influence your decision to locate here?</p> <p>f) If existing, has the scheme improved the accessibility to Warton Enterprise Zone? Has the scheme reduced congestion in the area and overall reduced your commuting journey time? Is the journey time more reliable, that is any difference in journey time day-to-day variation?</p>

6.3.5 Impacts on Carbon

The scheme promoters are required to monitor and report information which shows how the scheme has impacted carbon emissions. As this scheme is predominantly a highway scheme, there are unlikely to be any significant changes in modal shift. The main effect on Carbon would therefore be from changes in speed and distance travelled with the introduction of the scheme. When coupled with the changes in flows, this will provide information on the robustness of the forecast changes in Carbon.

As a proportionate approach, it is proposed that CO₂ emissions to be calculated from the data collected as part of Travel Demand, since changes in the volume of traffic and their speeds affect carbon emissions.

The emission calculation would use the traffic data to calculate AADT, % HDV and speed data, which would then be used in line with DMRB guidance and the associated IANs, or other nationally recognised methodology appropriate at the time of monitoring, to calculate changes in emissions from traffic data before the scheme and after the scheme. The CO₂ emission will be calculated for the pre-construction and after opening scenario and the result will be compared against the forecast estimates in the approved business case. The scheme is expected to have net disbenefit on the CO₂ emission.

Assessments would be made 6-12 months and 4 to 5 years after the opening of the scheme.

The evaluation of the impact on Carbon will be provided within both the 'One Year After Report' and the Final Report.

The Team Leader for the Environmental Assessment will be responsible for ensuring details are readily available and clearly documented for supply to the Evaluation Manager.

6.3.6 Impacts on Noise

The annual average noise levels will be monitored in order to establish if the Preston Western Distributor delivered on the predicted impacts to reduce noise pollution on the local road network.

In the Environmental Statement (ES) for the proposed scheme, the scheme was considered to have a net beneficial effect in terms of significant noise effects, particularly when considering the number of significant benefits achieved to noise sensitive receptors with a noise level already in excess of the Significant Observed Adverse Effect Level (SOAEL). However, although there were considerably more 'significant beneficial effects' predicted, 'significant adverse impacts' were also predicted.

In the case of the PWD, monitoring noise level is not an effective method to demonstrate beneficial/adverse noise impacts. The road traffic noise measurements would be dependent on the local conditions at the time of the survey (weather, seasonal changes in traffic, etc) and would not necessarily reflect changes in the annual road traffic noise level. The effect of the scheme on noise levels, and the analysis of the difference between outturn results and scheme forecasts will be therefore undertaken using data obtained from travel demand and journey times.

Traffic data (average annual daily traffic flow, speed and composition) gathered as part of the Travel Demand measure will allow the noise models to be produced for the noise impact assessment to be updated with more up-to-date road traffic data for the roads in the vicinity of the scheme, for before and after the scheme is built. In the UK industry standard methodology for predicting road traffic noise, Calculation of Road Traffic Noise (CRTN, 1988), the prediction method constitutes the preferred calculation technique, as measurement of road traffic noise directly is dependent on the road traffic, weather conditions, seasonal variations etc. during the survey period and does not take annual average conditions into account.

The updated noise models will be used to update the Design Manual for Roads and Bridges (DMRB) defined detailed noise assessment that was undertaken in the ES, to determine if actual noise impacts are as predicted in the ES.

The Team Leader for the Environmental Assessment will be responsible for ensuring details are readily available and clearly documented for supply to the Evaluation Manager.

The evaluation of the impact of the scheme upon noise levels will be provided within both the 'One Year After Report' and the Final Report.

6.3.7 Impacts on Local Air Quality

The likely impacts on local air quality once the scheme is in place relate predominantly to the changes in traffic emissions for vehicles travelling along affected roads in the study area.

In the Economic Case (EC) for the PWD scheme, the scheme was considered to have a small net positive effect on AQ.

Similar to monitoring carbon impacts, it is proposed that emissions would be calculated for NO_x, and PM₁₀ using the traffic demand and speed data, as it would be very costly to monitor PM₁₀ concentrations and the impact of the scheme on PM₁₀ was insignificant.

The emission calculation would use the traffic data to calculate AADT, % HDV and speed data, which would then be used in line with DMRB guidance and the associated IANs, or other nationally recognised methodology appropriate at the time of monitoring, to calculate changes in emissions from traffic data before the scheme and after the scheme.

The NO_x, and PM₁₀ emission will be calculated for the pre-construction and after opening scenario and the result will be compared against the forecast estimates in the approved business case.

The Team Leader for Environmental Data Collection will be responsible for ensuring details are readily available and clearly documented for supply to the Evaluation Manager.

The evaluation of the impact of the scheme upon air quality will be provided within both the 'One Year after Report' and the Final Report.

6.3.8 Impacts on Accidents

One of the objectives of the scheme is to improve road safety, particularly within Preston. When the scheme is built the traffic is expected to transfer from local roads with accident rates higher than national average to a modern standard dual carriageway road, thus providing significant accident savings. The accident rate and casualty rate will be monitored in order to establish if the PWD delivered on the predicted impact to improve safety on the local road network.

The majority of safety benefits are expected along the A583-A59 corridor and on A6 within Preston which will experience a significant reduction in traffic with the PWD in place. In line with WebTAG, the DfT industry-standard COBA-LT software was used to derive accident benefits of the scheme. COBA-LT compares the predicted numbers of accidents with and without the scheme, and converts them into monetary values by multiplying the numbers of accidents by their monetised costs.

The accident and casualty rates will be monitored annually using the STATS 19 accident database. It is proposed that STATS 19 data is obtained for the five years before construction and annually for each year in the monitoring period.

Comparisons will be made between forecast and outturn number of accidents on the journey times routes as shown in Figure 6-2, and the roads surrounding Lea town (Sidgreaves Lane and Lea Road) Clifton (Lea Lane, Deepdale Lane and Church Lane) and Treales (church Road, Kirkham Road and Carr Lane). According to the results of accident assessment for the scheme, these selected routes have been identified to have the highest predicted changes in accidents. The forecast estimates (baseline data) is provided in the Economic Assessment Report (EAR).

The above comparisons will be undertaken for the period 5 years after the scheme opening in order to assess the impact of the scheme on road safety, and will be reported in the Final report. The baseline and the first year after opening accident data will be reported in the 'One Year after Report', without any further analysis, given that the impact of the scheme in reducing the number of accidents may not be realised within the first year. The analysis of the accident/ casualty in the first year and 5 years post opening will be also used to identify any initial key safety concerns that may need to be addressed.

Analysis of the STATS19 data will also be undertaken to identify the impact upon vulnerable groups by identifying pedestrians and cycle accidents and those involving young children, the elderly and young drivers.

As accidents are directly related to traffic flows, consideration will also be given to changes in traffic flows with the introduction of the scheme, as well as any infrastructure changes and developments that were not included as part of the Do-Minimum scenario for the scheme.

The Project Manager will be responsible for ensuring details are readily available and clearly documented for supply to the Evaluation Manager.

6.4 Economic Evaluation

Once the evidence on the process and impact evaluations is available it is important to value the benefits of the scheme and relate these to the cost of the intervention. This would allow an economic evaluation of the scheme to assess whether the costs of the scheme have been outweighed by the benefits and to confirm the robustness of value for money assessment of the scheme in the business case.

The next section provides further details on the approach to assess the scheme appraisal assumptions against the outturn values.

6.4.1 Outturn Appraisal Assumptions

The Fuller Evaluation of appraisal assumptions will focus on the robustness (or otherwise) of the assumptions used for the appraisal during scheme preparation compared to those at outturn. In particular, comparisons will be made of actual GDP and fuel prices from the Office of National Statistics with those assumed in the economic analysis. Comparisons of forecast and outturn Scheme Costs, Travel Demand and Journey Times will also be made, as described in sections 6.2.3, 6.3.2 and 6.3.3, respectively above.

The main purpose of this evaluation is to understand if the scheme has achieved the value for money that was forecast and answer the research RQ.8 in Section 5.2.

The overall approach is presented below:

- If outturn flows and journey times along the scheme and on relieved roads are similar to the forecast values in the With Scheme scenario, it would be reasonable to assume that the scheme has achieved the forecast value for money. Therefore, no further value for money assessment will be undertaken. It is recommended that comparison of flows and journey times to be undertaken using the criteria outlined in WebTAG Unit M3.1. The forecast flows are provided in the Traffic Forecast Report.
- If outturn flows on the scheme and relieved roads are significantly different to the forecast with scheme flows, then a completely separate approach will need to be adopted. This is likely to include RSIs on all key roads crossing a cordon surrounding the study area, together with extensive counts. If this was to arise, the alternative approach will be discussed and agreed with the DfT before any additional data collection starts.

The results of the outturn appraisal assumptions evaluation will be reported within the Final Report only in line with the DfT guidance.

7. Data Collection

7.1 Introduction

This chapter of the report sets out the data collection requirements, timescales and budgetary estimates associated with each of the evaluation measures described in the previous chapter.

7.2 Data Collection Requirements

Table 7-A provides a summary of the data collection requirements for each of the evaluation metrics outlined within this document, together with an indication of when the data collection would be required within the monitoring and evaluation period. The indicative timescales are based upon the current programmed opening of the scheme in Autumn 2022 i.e. 1 year after surveys would be undertaken in neutral months in Autumn 2023, with the 4 to 5 years after surveys in Autumn 2027 in the same neutral months. The baseline data will be collected prior to the commencement of scheme construction; that is prior to Autumn 2019.

Table 7-A: Data Collection Requirements

Areas to be monitored/evaluated		Data to be collected	Timescale			
			Baseline	Construction	~1 yearr after Scheme Opening	~5 years after Scheme Opening
Process Evaluation						
1. Scheme Delivery Process	Programme and Scheme Planning	<ul style="list-style-type: none">Project Plan, including programme and resources, will be provided by the Main Works Contractor.	✓	✓	✓	-
	Stakeholder management	<ul style="list-style-type: none">Stakeholder management plan to be documented.Feedback from delivery team, developers, residents, road users and business owners/ employees (Workshop and Online survey)	✓	✓	✓	-
	Scheme Context	<ul style="list-style-type: none">Scheme Context baseline document through the Scheme full business caseScheme Context during construction	-	✓	✓	-
	Scheme Inputs	<ul style="list-style-type: none">Key success factors and any obstacles to resourcing the scheme during deliveryDelivery Team Lesson Learnt session and Questionnaire: Questionnaire A (Lesson learnt workshop)	-	✓	✓	-
	Risk Management	<ul style="list-style-type: none">Risk RegisterDelivery Team Lesson Learnt session and Questionnaire: Questionnaire A (Lesson learnt workshop)	-	✓	✓	-
2. Delivered Scheme	Scheme Output	<ul style="list-style-type: none">Scheme specifications provided in the approved business case and detailed designs prior to start of constructionQuestionnaire B, C & D (Online survey)	✓	✓	✓	-
	Changes	<ul style="list-style-type: none">Changes to the scheme during construction	✓	✓	✓	-
	Intended Beneficiaries	<ul style="list-style-type: none">Qualitative assessment of whether the scheme has reached the intended beneficiaries	✓	-	✓	-
	Assessment of Casual Pathway	<ul style="list-style-type: none">Detailed comparison of the scheme proposals and the outturn deliverables	✓	-	✓	-
	Mitigation	<ul style="list-style-type: none">Changes to mitigation measures during construction	✓	✓	✓	-
3. Scheme Costs	All elements of the scheme cost	<ul style="list-style-type: none">Scheme costs at the time of funding approvalDetails of costs during and post construction	✓	✓	✓	✓ (Maintenance cost)

Areas to be monitored/evaluated		Data to be collected	Timescale			
			Baseline	Construction	~1 yearr after Scheme Opening	~5 years after Scheme Opening
Impact Evaluation						
4. Scheme Objectives	Scheme's three primary objectives	<ul style="list-style-type: none">Planning Data and built-out rate for Northwest Preston Development - Developer SurveysJourney times surveys	✓	-	✓	✓
5. Travel Demand	Traffic	<ul style="list-style-type: none">Traffic counts (Automatic Traffic Counts and Manual Classified Counts)	✓	-	✓	✓
6. Travel Time and Reliability	Travel times and journey time reliability	<ul style="list-style-type: none">Journey times surveys (Trafficmaster data)	✓	-	✓	✓
7. Impact on the Economy	Congestion Relief	<ul style="list-style-type: none">Journey times surveys (Trafficmaster data)Stakeholder Questionnaire: Questionnaire B (Online survey)	✓	-	✓	✓
	Facilitating Local Development North West Preston Residential	<ul style="list-style-type: none">Questionnaire C (Online survey)	-	-	✓	✓
	Increasing access to job opportunities	Questionnaire D (Online survey)	-	-	✓	✓
8. Impact on Carbon	-	<ul style="list-style-type: none">Traffic counts (Automatic Traffic Counts and Manual Classified Counts)Journey times surveys (Trafficmaster data)	✓	-	✓	✓
9. Impact on Noise	-	<ul style="list-style-type: none">Traffic counts (Automatic Traffic Counts and Manual Classified Counts)Journey times surveys (Trafficmaster data)	✓	-	✓	✓
10. Local Air Quality	-	<ul style="list-style-type: none">Traffic counts (Automatic Traffic Counts and Manual Classified Counts)Journey times surveys (Trafficmaster data)	✓	-	✓	✓
11. Impact on Accidents	-	<ul style="list-style-type: none">Traffic counts (Automatic Traffic Counts)STATS19	✓	-	✓	✓
Economic Evaluation						
12. Outturn Appraisal Assumptions	Value for money assessment	<ul style="list-style-type: none">Traffic counts (Automatic Traffic Counts)Journey times surveys (Trafficmaster data)Comparison of GDP and fuel prices between the forecast and outturn	✓	-	✓	✓

8. Resourcing and Governance

8.1 Introduction

Lancashire County Council (LCC) will be responsible for the collection and collation of all monitoring data from City Deal projects. LCC is responsible for ensuring that outputs and milestones are met according to agreed timescales; that projects spend according to the agreed framework and can evidence both progress and spend. This evidence can be used to satisfy all parties that projects are progressing as per the agreed Business Case and that LCC is acting in a transparent and neutral way.

The scheme sponsor, LCC, will be responsible for the cost of the monitoring and evaluation. LCC have accounted for resourcing the Monitoring and Evaluation Plan within future spending allocation and the cost of monitoring and evaluation has been added to the total cost of the scheme in the FBC.

Preston City Council will collect and provide the development related information at their own cost.

This chapter sets out the proposed Governance arrangements to be adopted as part of the Monitoring and Evaluation strategy. It provides details of the key roles responsible for each aspect of the scheme evaluation, the reporting lines and information dissemination.

8.2 Governance Structure

The proposed management structure for the coordination and delivery of the scheme evaluation is summarised in Figure 8-1 with key roles discussed in more detail within the subsequent paragraphs.

8.3 Key Roles

8.3.1 Evaluation Manager

The Evaluation Manager will be responsible for the overall coordination and management of the Monitoring and Evaluation process and the production of relevant Evaluation Reports. The Evaluation Manager will be of an appropriate position and hold the relevant skills to be able to directly influence resources and drive the process forward. The Evaluation Manager will have knowledge of the scheme but will not be heavily involved in the process. This will ensure the avoidance of bias within the reporting procedure. In addition, they will have knowledge and appropriate experience of the appraisal and review process to ensure that the overall objectives are met.

The Evaluation Manager will also be responsible for the dissemination of the Monitoring and Evaluation information to the Project Board, the DfT and key stakeholders. Further details are discussed in Section 8.4 below.

8.3.2 Preston Western Distributor (PWD) Project Board

The Project Board will act as an advisory role to the evaluation team to enable best use of local knowledge, experience and skills for the monitoring and evaluation process. This will ensure that the monitoring and evaluation is effectively managed and considers a wide range of views. The Project Board consists of the appropriate members of the local authorities for the scheme (Lancashire County Council and Preston City Council).

8.3.3 Steering Group

The Steering Group will be made up of key officers within Lancashire County Council, members of the project team and external consultants employed to help deliver the scheme. Additional stakeholders who have a vested interest in the scheme may also be represented within the steering group. External stakeholders are likely to include representatives from the DfT, LEP as well as members / officers from other agencies or organisations.

The steering group will undertake an advisory role to the evaluation team to ensure that best use is made of local knowledge, experience and skills as part of the evaluation process. This will ensure that the evaluation is effectively managed and driven forward with consideration of a range of views.

The steering group will also advise on the commissioning of any sub consultants required to undertake specific elements of the evaluation such as data collection / analysis.

Upon completion the results of the evaluation will be presented to the steering group. A review will be undertaken to establish whether the evaluation has fully captured the resultant impacts of the scheme.

8.3.4 Preston Western Distributor (PWD) Project Manager

The PWD Project Manager is responsible for commissioning the main works contracts and other elements of the scheme including land assembly, permissions and approvals.

8.3.5 Delivery Team

Below the Steering group will be the delivery teams, each managed and led by a discipline Team Leader.

Each team leader will be directly responsible for ensuring that work is completed in line with the Evaluation Plan and will report directly to the Evaluation Manager. Team Leaders will be responsible for identifying and reporting potential issues at an early stage to ensure resources are appropriately allocated to limit risks.

8.3.6 Preston City Council

Preston City Council will be responsible for providing data on housing developments involved in the project impact area.

8.3.7 Department for Transport (DfT) and Lancashire Enterprise Partnership (LEP)

The DfT and LEP Boards and two sub-committees of the Board (Growth Deal Management Board and LEP Performance Committee) require regular monitoring and evaluation information. The mechanism for provision of this information is via formal reports, as required.

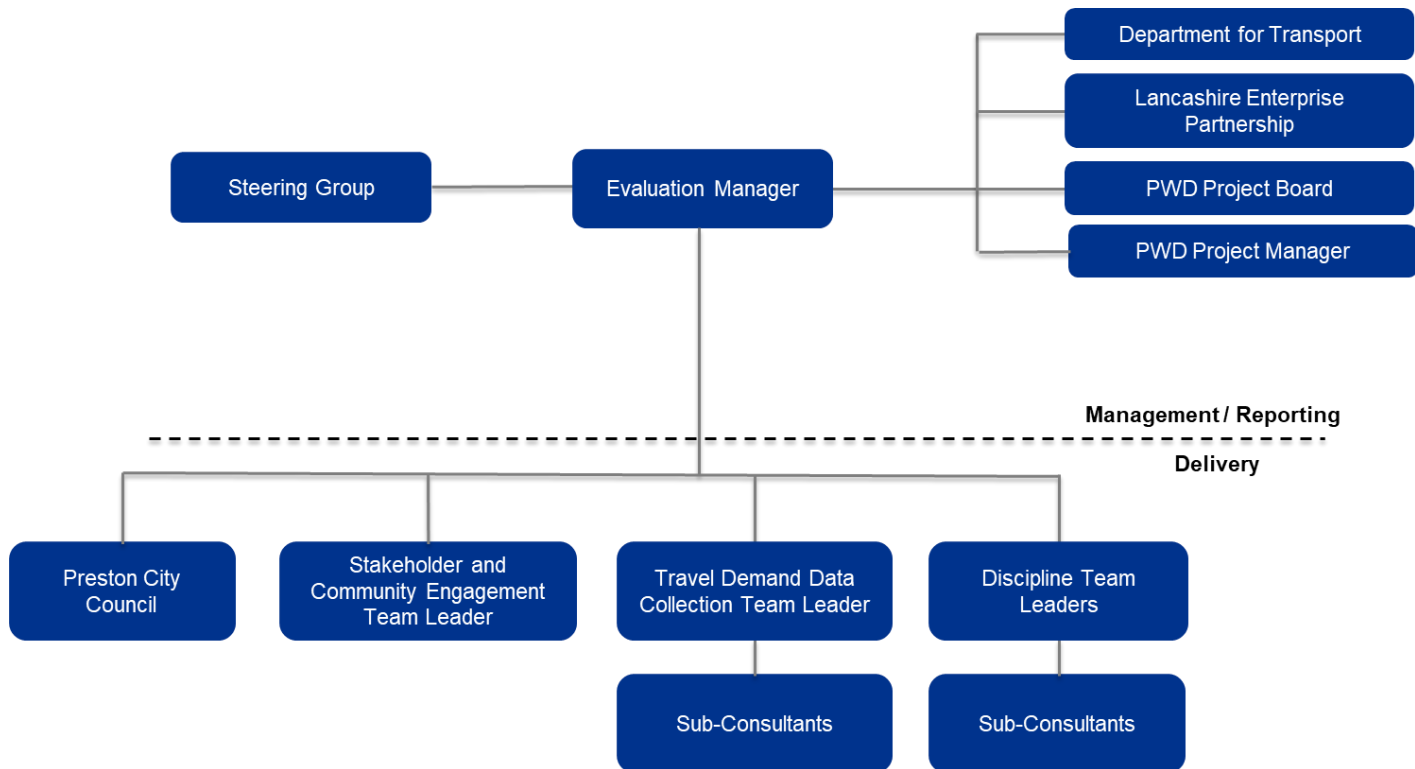


Figure 8-1: Governance Structure

8.4 Quality Assurance

In order to ensure that the monitoring and evaluation exercise is a productive endeavour, the findings must be accurate, reliable and uncompromised. The evaluation must be independent, inclusive, robust and transparent.

There may be pressures on the evaluation project timescales and/or resources. Should such a situation occur, it is preferable to reduce the scope of the evaluation rather than compromise the quality of the evaluation.

The Evaluation Manager will ensure consistency in data collection, the methodology used, reporting and the interpreting of findings. The Evaluation Manager will be independent of the project team, providing impartiality to the evaluation. More information regarding the role of the Evaluation Manager is given in Section 8.3.1 above.

Quality control is the responsibility of the Evaluation Manager. Quality assurance procedures will be implemented throughout the evaluation programme, enabling an early response to any problems encountered.

8.5 Risk Management

The following section outlines potential risks to the Monitoring and Evaluation Plan. It is important for the success of this plan that any potential risks are identified and mitigated accordingly Table 8-A outlines potential risks and associated mitigation measures where appropriate.

Table 8-A: Management of Risks

Risk	Detail
Failure to gather sufficient, good quality data	To allow for robust data collection where possible existing data sources have been recommended to reduce risk. It is also recommended that an additional data collection plan is produced prior to the Full Business Case.

Risk	Detail
Data accessibility	Engagement with Highways England (HE) and DfT is essential in order to collate appropriate traffic data and JT data on SRN. It is recommended that the sponsor consults the website and / or the HE to ascertain the coverage of their existing data collection programme. Data provided by the Department for Transport might not be available (as published annually) for a full year after scheme opening.
Evaluation fails to fully address objectives	It will be the responsibility of the Evaluation Manager to ensure the approach agreed in this document is adhered to.
Year before construction data compromised by the start of construction works	The data collection period is planned to take place in advance of the current expected start date for construction. The scheme promoter will need to be aware of the importance of year before construction data collection taking place before the start of construction.
Outcome/impact evaluation being carried out too early	Data collection will take place at regular intervals as defined by the monitoring and evaluation plan. The frequency of monitoring of individual metrics has been defined as per guidance contained in this report in order to capture the outcomes and impacts respectively, allowing sufficient time for the scheme benefits to take effect.
Failure to understand the limitations of the data	The methods of data collection outlined in this report have been designed to provide suitably detailed data for the evaluation requirements of the scheme and will be agreed with the DfT and the LEP.
Failure to foresee future analytical or data requirements	Lancashire County Council are aware of the permanent count sites and housing data needed to complete each stage of the evaluation. Data collection and analysis procedures will be agreed with the DfT and LEP.
Producing evaluation findings that are not actionable or that do not have clear implications	The One Year After Report and Final Report will summarise findings in terms of lessons learned and improvements to scheme planning and delivery that could have brought about greater benefits. This information can then be used to inform proposals and decision making for similar schemes and to ensure good practice is replicated.
Poor or disrupted planning as a result of insufficient time, resources or management priority	The evaluation programme follows the DfT and LEP guidance and will be agreed with the DfT and LEP. A suitably experienced independent Evaluation Manager will be appointed, who will be responsible for the delivery of the evaluation programme.
Failure to account for other outcome/impact influencing factors, and so not being able to directly attribute outcomes/impacts to this scheme	The Monitoring and Evaluation Plan will have to be assessed on an ongoing basis for its suitability, and amended as necessary to take account of any factors that may arise during the Monitoring and Evaluation programme.

8.6 Timescale for Reporting

Monitoring and Evaluation progress will be reported within the Quarterly Reports issued to the DfT and LEP during scheme construction. In accordance with the LEP Growth Deal M&E Framework, LEP Economic Output Table in Appendix D will be also issued along with the reports.

Post-implementation, based on the expected data collection programme given in section 7.2, the One Year After Report is expected to be issued to the DfT and LEP in early Summer 2025, followed by the Final Report in early Summer 2029. This timeframe allows a six-month window for data to be collated, analysed and the findings to be reported.

8.7 Dissemination Plan

The One Year After and the Final (Five Year After) monitoring and evaluation reports will be disseminated to the Project Board, the DfT, the LEP and other key stakeholders by the Evaluation Manager. Subject to acceptance

from these two bodies and LCC the results and conclusions will be made available to the other Stakeholders and scheme promoters through available channels such as:

- Direct reports to Stakeholders;
- Lancashire County Council Website;
- Press releases Transport Industry Networks; and,
- Transport research conferences.

Consideration will be given to the level of detail of the information that would be supplied to each of the associated audience groups.

8.1 Budgetary Estimates

Table 8-B provides a summary of the budgetary estimates for the completion of the Monitoring and Evaluation of the scheme. The cost estimate has been benchmarked against other similar scheme in the area namely A683 Bay Gateway (known as Heysham to M6 Link road) and Crewe Green Link Road South.

Appendix C provides additional details and the assumptions used to calculate the estimated cost.

Table 8-B: Monitoring and Evaluation Budgetary Estimates

Items	Indicative Costs				
	Baseline	Construction	~1 yr after	4-5 yrs after	TOTAL
Process Evaluation	£1,000	£6,000	£4,000	£1,000	£12,000
Impact Evaluation	£19,800	£0	£33,000	£39,600	£92,400
Economic Evaluation	-	-	-	£6,000	£6,000
Reporting	-	-	£3,200	£3,200	£6,400
Contingency	£4,160	£1,200	£5,400	£6,600	£17,360
Evaluation Manager	£3,124	£18,743	£12,495	£12,495	£46,858
TOTALS	£28,084	£25,943	£58,095	£68,895	£181,018

9. LEP Monitoring and Evaluation Requirements

As mentioned in Section 3.1, in addition to DfT's requirements, the PWD Monitoring and Evaluation Plan should satisfy the LEP Framework guidance as well. For this purpose, each metric in LEP guidance is mapped to the DfT monitoring and evaluation measure in order to ensure that monitoring and evaluation measures selected in this report suitably satisfy the LEP monitoring and evaluation framework. Table 9-A provides the list of LEP Framework metrics to be considered for the PWD and the corresponding reference for each metrics in the report.

It has been agreed with LEP that it is appropriate to align the monitoring frequency of these metrics and all post opening reporting to the DfT Year 1 and Year 5 timeframes.

Table 9-A: LEP Framework Metrics

Input Core Metrics (Top Three)	Reference in the Report
Expenditure	Section 6.2.4 Outturn Costs
Funding breakdown	Section 6.2.4 Outturn Costs
In-kind resource	At this stage, no "In-kind resources" (i.e. Land, buildings or other assets) are expected to be provided to resource the intervention. However, this metric will be monitored in case the situation changes in the future.
the Outcomes Core Metrics	Reference in the Report
Housing unit starts	Section 6.3.1 Scheme Objectives and Section 6.3.4 Impact on the Economy
Housing units completed	
Project Specific Outputs and Outcomes	Reference in the Report
Total length of newly built roads	Section 6.2.3 Delivered Scheme
Total length of new cycleways	Section 6.2.3 Delivered Scheme
Type of infrastructure delivered	Section 6.2.3 Delivered Scheme
Type of service improvement delivered	N/A
Average daily traffic and by peak/non peak periods	Section 6.3.2 Travel Demand
Average AM and PM peak journey time per mile on key routes (journey time measurement)	Section 6.3.2 Travel Demand
Average AM and PM peak journey time on key routes (journey time measurement)	Section 6.3.3 Travel Time and Reliability
Day-to-day travel time variability	Section 6.3.3 Travel Time and Reliability
Average annual CO ₂ emissions	Section 6.3.5 Impact on Carbon
Accident rate	Section 6.3.8 Impact on Accidents
Casualty rate	Section 6.3.8 Impact on Accidents
Nitrogen Oxide and particulate emissions	Section 6.3.7 Impact on Local Air Quality
Traffic noise levels at receptor locations	Section 6.3.6 Impact on Noise
Bus/light rail travel time by peak period	Section 6.3.3 Travel Time and Reliability
Pedestrians counts on new/existing routes	Section 6.3.2 Travel Demand
Cycle journeys on new/existing routes	Section 6.3.2 Travel Demand

As stated earlier, the PWD will not directly unlock any employment development. As part of the scheme's appraisal, the number of jobs created indirectly from NWP housing development was calculated and quantified to measure the change in GVA. It is estimated that the NWP development will indirectly support 536 jobs, resulting in £104m of associated GVA benefit to local area.

Whilst not in the LEP guidance, it is understood that in addition to housing units LEP will require monitoring the scheme impact on Gross Value Added (GVA). GVA impacts associated with the NWP development (dependent on the PWD) will be calculated using the assumptions and methodology outlined in the Economic Impact Report (EIR, Jan. 2019). The outcome will be provided within both the 'One Year After Report' and the Final Report.

Appendix A. Questionnaires

Questionnaire A:

Intended for: Scheme Delivery Team

- **Stakeholder Engagement:** Was stakeholder engagement thorough, open, and at the right times?
- **Project Context:** What was the context for the scheme at the time of submission for planning, and did it change over time? If yes, what was the impact of change on the success of scheme?
- **Programme:** How well was the programme managed through scheme development and scheme delivery? Were changes recorded well and communicated well? Was the scheme delivered on time?
- **Resources:** What does the Delivery Team think were the critical success factors and key obstacles to scheme delivery in terms of resources e.g. staff, skills, services, materials etc.? Was good advice / work provided by specialists or sub-consultants?
- **Project Management and Coordination:** Was the project management / coordination on such a multi-disciplinary project well managed? Was it recorded well and communicated well?
- **Scheme Costs:** How do the latest scheme costs compare to those originally envisaged? Was the scheme delivered on within budget? How were changes in costs communicated? Were the different levels of Optimism Bias Adjustment used at various stages of the scheme development appropriate?
- **Overall:** What worked well and what are the lessons learnt for other schemes?
- **Risk Management:**
 - Were all risks identified in the early stages of scheme development?
 - If new risks became apparent during the course of scheme development or delivery, could they have been reasonably foreseen?
 - Was the reporting of risks open and transparent?
 - Were risks recorded well and communicated well?
 - How were risks managed during scheme development and delivery? Were actions clearly recorded and allocated?
 - Were actions taken by the nominated person responsible?
 - What worked well and what are the lessons learnt for other schemes?

Questionnaire B:

Intended for: Residents/ Road Users

- **Stakeholder Engagement:** Was stakeholder engagement thorough, open, and at the right times?
- **Quality of delivered scheme:** Has the quality of the scheme met your expectations?

Congestion Relief:

- Has the scheme reduced congestion in Preston, particularly on A6, M55 J1 and J3, and A583 during peak hours?
- Has the accessibility improved between North West Preston and the Strategic Road Network?

- Do you use the PWD to access the M55? Which route you used to take before the PWD?
- Has the scheme resulted in North West Preston being a better place to live and work?

Questionnaire C:

Intended for: Developers

- **Stakeholder Engagement:** Was stakeholder engagement thorough, open, and at the right times?
- **Quality of delivered scheme:** Has the quality of the scheme met your expectations?

Facilitating Local Development:

- Did dependent development occur within anticipated timescales? What effect did this have on land use and value and housing level?
- Was the type and scale of residential development the same or different to those forecasts?
- Has development been accelerated by the addition of the scheme? If not, what is getting in the way?
- What was the role of the PWD in delivering the houses?
- How the process of building the 5320 dwellings has gone? Any lessons learned?

Questionnaire D:

Intended for: Business Owners and Employees at Warton Enterprise Zone

- **Stakeholder Engagement:** Was stakeholder engagement thorough, open, and at the right times?
- **Quality of delivered scheme:** Has the quality of the scheme met your expectations?

Increasing access to job opportunities:

- For business owners:
 - Is your business new (that is after opening the PWD) or existing (prior to the PWD) at Warton Enterprise?
 - If new, where were you previously located? What were the main reasons for needing to relocate or, for new businesses, starting up a new business? Did the accessibility afforded by the scheme influence your decision to locate here?
 - If existing, has the scheme improved the accessibility to Warton Enterprise Zone? Have you expanded your business because of better transport connection in the area? Has the scheme had any impacts on improving the connectivity with other major employment sites, such as Samlesbury? Has the scheme reduced congestion in the area and overall reduced your commuting journey time? Is the journey time more reliable, that is any difference in journey time day-to-day variation?
- For employees:
 - Are you a new employee (that is after opening the PWD) or existing (prior to the PWD) at Warton Enterprise?
 - If new, where were you previously located? What were the main reasons for needing to relocate? Did the accessibility afforded by the scheme influence your decision to locate here?

- If existing, has the scheme improved the accessibility to Warton Enterprise Zone? Has the scheme reduced congestion in the area and overall reduced your commuting journey time? Is the journey time more reliable, that is any difference in journey time day-to-day variation?

Appendix B. ATC Count Sites

No.	ATC Site Name	Type of Count Site	Location
1	ATC_1	ATC	Along A585 Below Junction 3 of M55
2	ATC_2	ATC	Along B6241 Tom Benson Way after the roundabout with B5411
3	ATC_3	ATC	Along the A6 before the junction with A5085 Blackpool Road
4	ATC_4	ATC	Along the Preston Western Distributor between junction with Cottam Link and roundabout with A583
5	ATC_5	ATC	Along the Preston Western Distributor between junction with Cottam Link and junction with East West Link
6	ATC_6	ATC	Along the A6 London Road before the junction with A675 and after the River Ribble crossing
7	ATC_7	ATC	Along the East West Link Road, between the junctions with Tabley Lane and Tom Benson Way
2	ATC_8	ATC	Along the B6241 Tom Benson Way between the junction with B5411 and junction with East West Link
9	ATC_9	ATC	Along the Preston Western Distributor north of the junction with East West Link and below the new junction with M55
10	ATC_10	ATC	Along B6241 Tulketh Brow south of the junction with B2641 Tom Benson Way and north of the junction with A583 towards the city centre
11	ATC_11	ATC	Along A59 at point where it cross River Ribble
12	ATC_12	ATC	Along A5085 Blackpool Road between junction with A6 and junction with A6063
13	ATC_13	ATC	Along A583 Riversway between junction with Pedder's Lane and junction with Preston Western Distributor
14	ATC_14	ATC	Along A584 Preston New Road between junction with Blackpool Road and junction with Kirkham Road
15	ATC_15	ATC	Along A583 Blackpool road between junction with A584 and junction with B5192

No.	ATC Site Name	Type of Count Site	Location
16	ATC_16	ATC	Along B5411 Tag Lane between junction with B6241 and junction with A5085
17	ATC_17	ATC	Along A5085 Blackpool Road between junction with Lea Road and Pedders Lane
18	ATC_18	ATC	Along East West Link Road between junction with Preston Western Distributor and Sandy Lane
19	ATC_19	ATC	Along Tabley Lane between junction with East West Link Road and Tom Benson Way.
20	ATC_20	ATC	Along Cottam link between junction with Preston Western Distributor and roundabout with Sidgreaves Lane
21	ATC_21	ATC	Along A6 between junction with B6241 and junction 1 of M55
22	ATC_22	ATC	Along A6 between junction with Black Bull Lane and junction with Ashwood Road
23	ATC_23	ATC	Along B6241 Lightfoot Lane between junction with East West Link and junction with A6
24	ATC_24	ATC	Along B6241 Eastway between junction with A6 and junction with Haighton Green Lane
25	ATC_25	ATC	Along East West Link Road between junction with Sandy Lane and Tabley Lane
26	ATC_26	ATC	Along Sir Tom Finney Way between junction with Blackpool Road and Watling Street Road
27	ATC_27	ATC	Along A6 before M6 J31
28	ATC_28	ATC	Along Hoyles Lane, between junction with Sidgreaves Lane and Sandy Lane
29	ATC_29	ATC	Along Woodplumpton Road, between junction with B5269 Newsham Hall Lane and Tabley Lane
30	ATC_30	ATC	Along the A583 Kirkham Bypass, between the junction with Freckleton Street and Ribby Road
31	ATC_31	ATC	Along the A585 between the junction with A583 Blackpool Road and the roundabout connecting to Weeton Road

No.	ATC Site Name	Type of Count Site	Location
32	TRIS_1	TRIS	Along M6 between junction 30 and 29
33	TRIS_2	TRIS	Along M6 between junction 31 and 31a
34	TRIS_3	TRIS	Along M6 between junction 31a and 32
35	TRIS_4	TRIS	Along M55 between junction 32 M6 and junction 1 M55
36	TRIS_5	TRIS	Along M55 between junction 3 M55 and new junction 2 M55
37	TRIS_6	TRIS	Along M55 between junction 1 M55 and new junction 2 M55
38	MCC_1	MCC	Along the A6 between junction with Lightfoot Lane and Black Bull Lane
39	MCC_2	MCC	Along A583 Blackpool Road between junction with Preston New Road and Vicarage Lane
40	MCC_3	MCC	Along PWD between junction with EWLR and Cottam Link Road

Appendix C. Monitoring and Evaluation Budgetary Estimates

Areas to be monitored/evaluated	Indicative Cost														Comments/Assumptions
	Survey Design/Prep.	Baseline			Construction			~1 year after Scheme Opening			~5 years after Scheme Opening			Total	
Process Evaluation		Surveys	Analysing & Reporting	Sub-Total	Surveys	Analysing & Reporting	Sub-Total	Surveys	Analysing & Reporting	Sub-Total	Surveys	Analysing & Reporting	Sub-Total		
1. Scheme Delivery Process 2. Delivered Scheme 3. Scheme Costs	-	-	£1,000	£1,000	-	£6,000	£6,000	-	£1,000	£1,000	-	£1,000	£1,000	£9,000	For the baseline cost includes compiling information on final design, final cost, resources etc. Assumption = Analysis and reporting as part of regular monthly progress meetings i.e. only small additional costs but over a large number of months. Also, only maintenance costs to be assessed (if there is any) in ~5 years after Scheme Opening.
4. Questionnare A (Lesson Learnt Session with Delivery Team)	-	-	-	-	-	-	-	-	£3,000	£3,000	-	-	-	£3,000	
Sub-Total for Process Evaluation	-	-	£1,000	£1,000	-	£6,000	£6,000	-	£4,000	£4,000	-	£1,000	£1,000	£12,000	
Impact Evaluation															
5. Scheme Objectives	-	-	-	-	-	-	-	-	£2,000	£2,000	-	£2,000	£2,000	£4,000	Cost of data collection surveys are covered in item 6. Pre-construction information for build-out rate is already available as used in forecasting. Anlaysis and reporting of number of planning permission granted and number of houses built will be undertaken by LCC routinely (only small additional cost).
6. Travel Demand: Traffic Counts	£4,000	£6,800	£3,000	£13,800	-	-	-	£10,000	£2,000	£12,000	£13,600	£2,000	£15,600	£41,400	Typical survey costs per site is based on a similar scheme Assumption = Temporary ATCs used at 22 sites at £400 per year (Data for 9 sites will be obtained from signals infrastructure system) Assumption = Temporary MCCs used at 3 sites at £400 per year Assumption = No monitoring during construction
7. Travel Time and Reliability	-	-	£6,000	£6,000	-	-	-	-	£4,000	£4,000	-	£4,000	£4,000	£14,000	Assumption: a) Surveys = Use of TrafficMaster data i.e. free b) £4,000 for journey time survey analysis for the baseline and, then £3,000 for the 1-year and 5-year assessments. c) £2,000 for calculating journey time reliability for the baseline and, then £1,000 for the 1-year and 5-year assessments.
8a. Impact on the Economy: Congestion Relief (Questionnaire B: Online Survey to gather Public View on congestion relief)	-	-	-	-	-	-	-	-	£2,000	£2,000	-	£2,000	£2,000	£4,000	
8b. Impact on the Economy: Facilitating Local Development (Questionnaire C: Online Survey with developers)	-	-	-	-	-	-	-	-	£2,000	£2,000	-	£2,000	£2,000	£4,000	
8c. Impact on the Economy: Increasig access to jobs(Questionnaire D: Online Survey with businesses and employess)	-	-	-	-	-	-	-	-	£2,000	£2,000	-	£2,000	£2,000	£4,000	
9. Impact on Carbon	-	-	-	-	-	-	-	-	£3,000	£3,000	-	£2,000	£2,000	£5,000	Cost of data collection surveys are covered in item 6 and 7. This cost is just for calculating emissions.
10. Impact on Noise	-	-	-	-	-	-	-	-	£3,000	£3,000	-	£3,000	£3,000	£6,000	Cost of data collection surveys are covered in item 6 and 7. This cost is just for updatin Noise model
11. Local Air Quality	-	-	-	-	-	-	-	-	£3,000	£3,000	-	£2,000	£2,000	£5,000	Cost of data collection surveys are covered in item 6 and 7. This cost is just for calculating emissions.
12. Impact on Accidents	-	-	-	-	-	-	-	-	-	-	-	£5,000	£5,000	£5,000	
Sub-Total for Impact Evaluation	£4,000	£6,800	£9,000	£19,800	£0	£0	£0	£10,000	£23,000	£33,000	£13,600	£26,000	£39,600	£92,400	
Economic Evaluation															
13. Outturn Appraisal Assumptions	-	-	-	-	-	-	-	-	-	-	-	£6,000	£6,000	£6,000	Observed flows and times will be compared against forecasts. If they are comparable, it can be assumed that the scheme has delivered the forecast value for money. If not, an alternative apparoach will be discussed with DfT.
Sub-Total for Economic Evaluation	-	-	-	-	-	-	-	-	-	-	-	£6,000	£6,000	£6,000	
Data Collection															
Sub-Total for Data Collection	£4,000	£6,800	-	£10,800	-	-	-	-	-	-	£13,600	-	£13,600	£24,400	
Reporting and Project Management															
Reporting	-	-	-	-	-	-	-	-	£3,200	£3,200	-	£3,200	£3,200	£6,400	
Evaluation Manager	-	-	-	£3,124	-	-	£18,743	-	-	£12,495	-	-	£12,495	£46,858	
Contingency	£800	£1,360	£2,000	£4,160	-	£1,200	£1,200	-	£5,400	£5,400	-	£6,600	£6,600	£17,360	20% of survey design and analysing/reporting cost
Grand Total	£4,800	£8,160	£12,000	£28,084	£0	£7,200	£25,943	£10,000	£35,600	£58,095	£13,600	£42,800	£68,895	£181,018	

Appendix D. LEP Economic Output Table

Metrics, Outputs & Outcomes	Planning Status	Built	Total without target year	Prior 2022/23 Target	2022/23 Target	2023/24 Target	2024/25 Target	2025/26 Target	2026/27 Target	2027/28 Target	TOTAL All Years	Delivery/who responsible for collection	How Collected	Comments
Economic Impact (GVA)											£104m	LCC/Preston City Council and Developer	Annual data from Preston City Council Development Control visits, first Council Tax or information from Developer when habitable	This is the total Net GVA Benefits over the period to 2037 associated with delivering the 5,320 houses at North West Preston. The change in GVA is based on the assumption that each new home will indirectly support 0.15 new jobs in the local economy. This results in 536 jobs overall. Each job is assumed to have a 'persistence' in the economy of 10 years, i.e. the GVA benefit for each job is accrued for 10 years. The GVA will be calculated using the same methodology as in FBC and proportionally compared to the forecast total GVA value. The information on who will be responsible and how collected refer to collecting outturn housing information.
Business Creation											N/A			
Employment Creation											536			The PWD will not directly unlock any employment development. As part of the scheme's appraisal, the number of jobs created indirectly from NWP housing development was calculated and quantified to measure the change in GVA. It is estimated that the NWP development will indirectly support 536 jobs, resulting in £104m of associated GVA benefit to local area.
Housing Growth	Outline Planning Consent		811								811	LCC/Preston City Council and Developer	Annual data from Preston City Council Development Control visits, first Council Tax or information from Developer when habitable	During the FBC development, the planning information provided by LCC indicated that there will be 5,320 houses planned to be built in North West Preston Development. Based on that information 1,745 dwellings already had planning permission (prior to PWD being fully approved) and therefore could be potentially delivered even without PWD in place, therefore, it was established that only 3,575 of those dwellings were truly dependent on PWD (i.e. could not occur without the scheme). However, the latest information from LCC suggests that there will be 5,932 houses in NWP development, of which 628 have already been built and 1,421 will be built prior to 2022/23, which is the scheme opening year. The numbers under 'Total without target year' refer to the applications that do not have targets available at the time of writing.
	Full Planning Consent	628	2,325	1,421	149	146	146	137	75	13	5,040			
	Planning application in place		81								81			
Total length of newly built roads New 4.3 km dual carriageway road				Road Completed							1 year post scheme completion	LCC Highways	1 year post scheme completion	
Total length of new cycleways A segregated 3-m wide footway and cycleway on the Eastern side of the PWD with controlled crossing facilities at all junctions on the route				Road Completed							1 year post scheme completion	LCC Highways	1 year post scheme completion	
Type of infrastructure delivered				Road Completed							1 year post scheme completion	LCC Highways	2 year post scheme completion	
Type of service improvement delivered											N/A			
Average daily traffic and by peak/non peak periods											Pre / post opening (1 year and 5 years after opening)	-	Automatic Traffic Counts (ATC) that either will be available as part of the traffic systems infrastructure within some of signalised junctions or will be	
Average AM and PM peak journey time per mile on key routes (journey time measurement)											Pre / post opening (1 year and 5 years after opening)	-	TrafficMaster Data	
Average AM and PM peak journey time on key routes (journey time measurement)											Pre / post opening (1 year and 5 years after opening)	-	TrafficMaster Data	
Day-to-day travel time variability											Pre / post opening (1 year and 5 years after opening)	-	TrafficMaster Data	Variability will calculated based on the methodology described in 6.3.3.
Average annual CO2 emissions											Pre / post opening (1 year and 5 years after opening)	-	Traffic Count / TrafficMaster Data	CO2 emission will be calculated from traffic count and journey time data using WebTAG standard worksheets, as a proportionate approach.
Accident rate											Pre / post opening (1 year and 5 years after opening)		STATS19	Accident and casualty data will be collected for 5 years prior to the scheme and annually for up to 5 years post opening.
Casualty rate											Pre / post opening (1 year and 5 years after opening)		STATS19	Accident and casualty data will be collected for 5 years prior to the scheme and annually for up to 5 years post opening.
Nitrogen Oxide and particulate emissions											Pre / post opening (1 year and 5 years after opening)		Traffic Count / TrafficMaster Data	NOx and PM10 emission will be calculated from traffic count and journey time data using WebTAG standard worksheets, as a proportionate approach.
Traffic noise levels at receptor locations											Pre / post opening (1 year and 5 years after opening)		Traffic Count / TrafficMaster Data	Noise impacts will be calculated from traffic count and journey time data using WebTAG standard worksheets, as a proportionate approach.
Pedestrians counts on new/existing routes (#)											Post opening (1 year and 5 years after opening)		Automatic Pedestrian/Cycle count devices inbuilt in the new junctions.	To be collected at the new junctions on the PWD.
Cycle journeys on new/existing routes (#)											Post opening (1 year and 5 years after opening)		Automatic Pedestrian/Cycle count devices inbuilt in the new junctions.	